The Everyman's Home

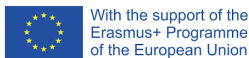## Niemelänranta Development

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1.0 Introduction

In the face of rapid urbanization on a global scale, it is common opportunities, and therefore populations, to become concentrated in larger cities. While this may offer some benefits, including cultural exchange and more potential for innovation, there are also drawbacks. For smaller cities, this can often lead to population reductions. It can be hard to keep the existing population from leaving for greener pastures, and even harder to attract new residents when employment and cultural activities are focused in the bigger cities.

Heinola is one such town. Upon visiting, one can feel the tranquility of the city. One local on our tour mentioned that in Heinola, you can still find silence.

Another theme was the natural beauty of the region. The surrounding water defines the South and West edges of the city, and forestry is a major aspect of the region's economy (Versowood, 2022). These were defining concepts for our approach to a Heinola development plan. We wanted to design a Niemelänranta development plan that embraced this tranquil, nature-oriented identity of the area. *Jokamiehenoikeus* translates to "Every Mans Right". It is the right to experience the wilderness of Finland uninhibited (Suomen Latu, n.d.). This right is ancient in Finland, and is part of the Finnish identity of being connected to nature. We believe this sense of freedom and connection to nature is what draws people to Heinola.

Vision

Our goals for the development include the following themes:

- Creating and Preserving a Sense of Place and Cultural Identity

- Maintaining Biodiversity Through Fostering a Nature-Based Culture

- An Integrated Community by Connecting Existing Residents with the Anticipated Population Increase

- Enhancing the City's Economic Opportunities

Heinola needs to grow, and we hope to facilitate that growth in a way that maintains the sense of place and cultural identity of the area, while facilitating sustainable economic growth and keeping the existing community intact.

Figure 1.1 Aerial View of Heinola (City of Heinola, n.d.)

1.1 Project Background

Heinola is the third largest municipality in Finland region of Päijät-Häme with a population of 18,344 in 2021. The town is home to an older population (65 years and above) which accounts for 36% of the population while age groups such as 0-14, 15-24,25-44,45-64 years account for 10.6%, 8.3%, 16.3% and 28.6% respectively. The population of Heinola is projected to shrink below 16,000 in 2040 if the status quo remains.

Geographically, the town is located in the eastern part of the Päijänne Tavastia region, Finland, near the borders of the South Savonia region and the Kymenlaakso region. Heinola is sandwiched between Ruotsalainen and Konnivesi lakes.

A waterway connecting the lakes runs through the town and, together with an esker, is a defining geographical feature of Heinola. Heinola is connected to Lahti and Helsinki by a freeway that also crosses Lake Ruotsalainen on the Tähtiniemi Bridge in the town's northern portion. Heinola also serves as the southern terminus of Finland's national highway 5, which runs over 900 kilometers north through Kuopio and Kajaani to Sodankylä. The town prides itself in the wood processing industry which is the largest employer before the 2000s recession, which led to the closing of wood allied industries. This gradually shaped the present nature of the town.

Figure 1.1.2 Geographical Map of Heinola (City of Heinola, n.d.)
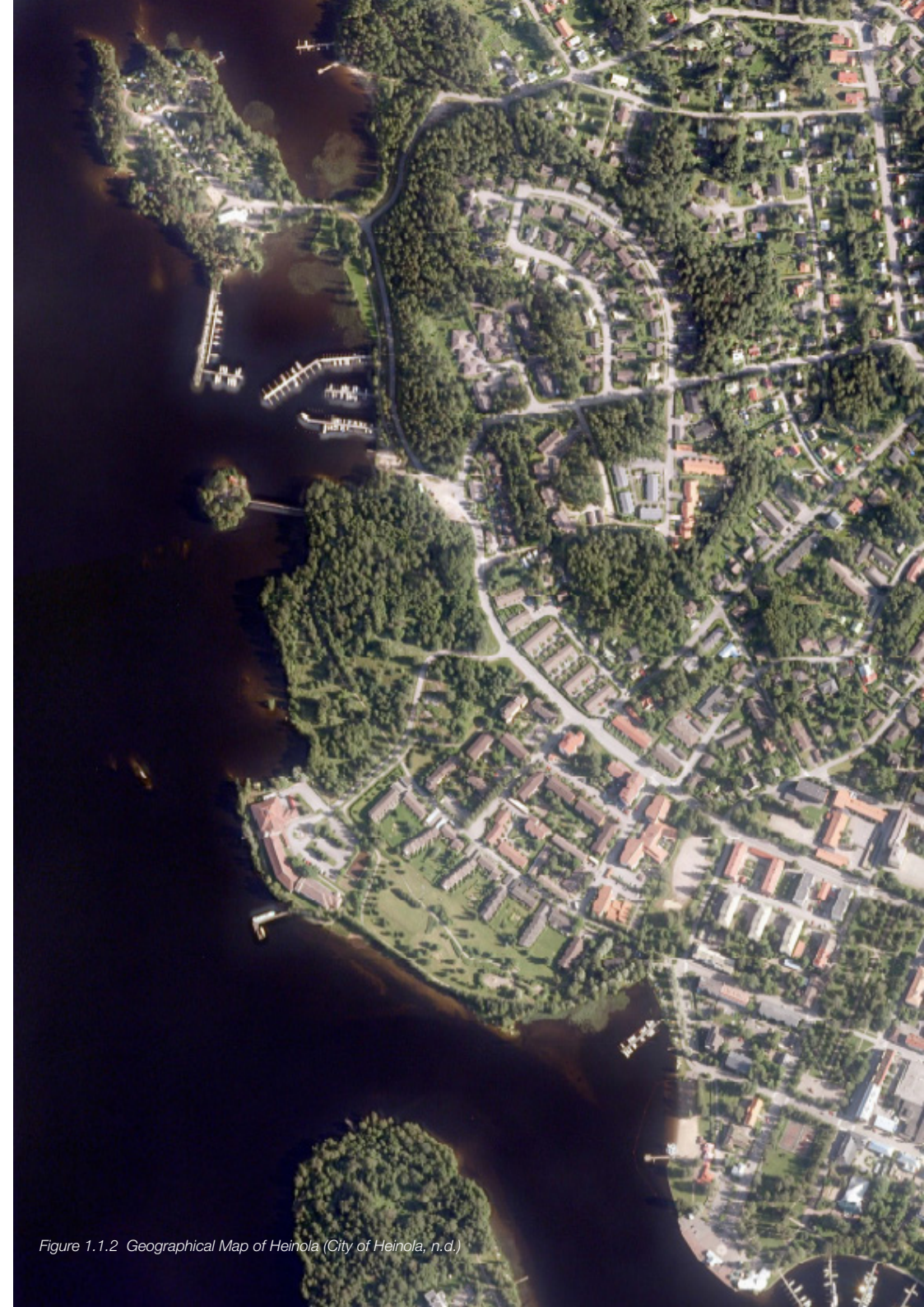
From figure 1.1.3, the town is majorly occupied with aged population (65 years and above), this figure increased in 2021 by 6.41% while other age groups such as child and young people (-2.72%), young adult (0.46%) and other working age (-1.39%) reduced due to immigration to other towns and cities.

Neighbouring cities have been accommodating the residents of Heinola migrating away due to the low economic opportunities. The net migration figure for Heinola in 2021 shown that 15-24 year-olds have the highest net migration away. Lahti, Helsinki and Vantaa are the top three destinations of those leaving Heinola (Figure 1.1.4).

From 2016 to 2022, there has been a major concentration on employment in industrial and health/social services sector. The industrial sector (both small and large scale) has provided about 6,700 jobs in Heinola. Health and social services are also a growing sector in Heinola which is due to the demographics of the population.

The presence of more aged people requires more health and social services workers to care and support the elderly. This sector provided about 4,600 jobs within this period. In 2019, 6556 residents were employed with 2015 of them working outside the municipality and only 4541 working and living within the municipality.

This shows that about 30.7% of Heinola residents work outside the city, which is contributing to the gradual relocation of the residents to other towns. Out of the 6199 of jobs provided within the municipality, 1658 employees are from other neighbouring municipalities. This shows also that about 27% of jobs in Heinola in 2019 were filled by residents of other municipalities due to the exodus of the working age group out of the town (Figure 1.1.5).

Despite the dwindling population and economic activities, the town still enjoys positive emotions from both locals and Finns living elsewhere. It is also known as an attractive place to tourists in Finland.
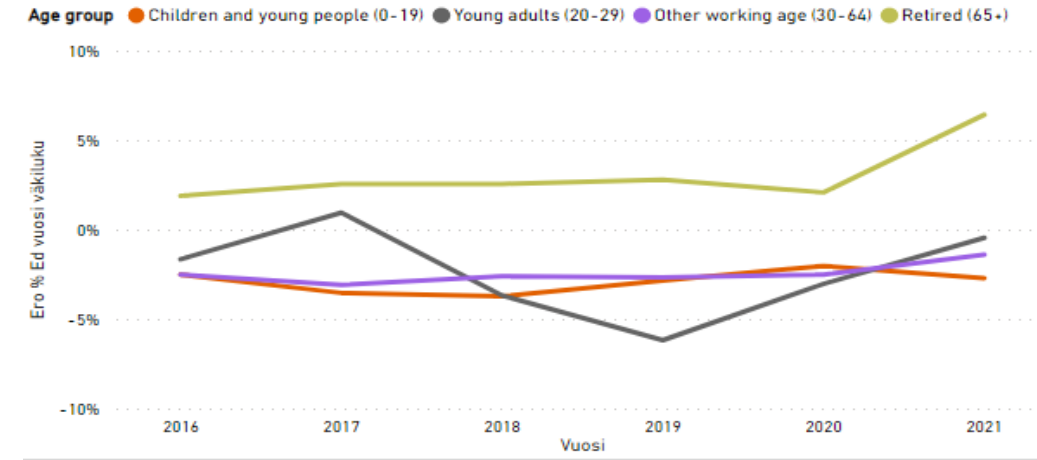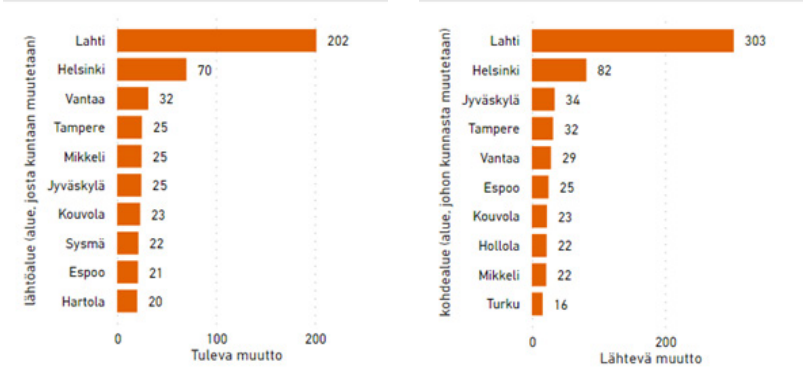

Figure 1.1.4 Migration and depature (Statistics Finland, n.d.)
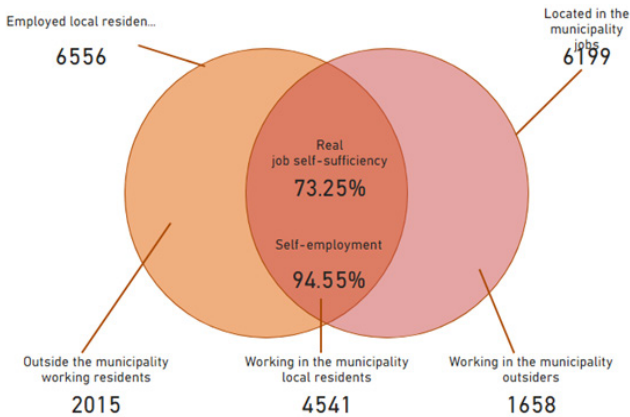
Figure 1.1.5 Heinola employment structure since 2019 (Statistics Finland, n.d.)

Figure 1.1.3 Population by Age Group, (Statistics Finland, n.d.)

In 2020, the city conducted an Emotional Value Index (EVI rating) analysis for residents and those who lives elsewhere. The findings show a rating of 62/100 for those living in Heinola who expressed positive, engaged and prosocial behavior, while the rating was 75/100 for those living outside the city. This is compared to the city of Lahti and Vantaa, where the scores were 54/100 and 52/100, respectively. This shows the likelihood of Finns preferring Heinola over Lahti and Vantaa as a place to live and spend time.

Before the pandemic, the city also enjoyed a good number of tourist annually. Between 2015 and 2019, Heinola welcomed an average of 97,134 local and international tourists annually who spent at least a night in town. According to LikeFinland (a nationwide leisure time media), Heinola was once chosen as the "Destination of the Month– July, 2019" in Finland. This highlights the serene and beautiful views of nature, the luxurious spa culture, and the accommodating residents.

2.0 Literature and Case Studies

2.1 Nordhavn, Denmark

Nordhavn is a former industrial harbour close to Copenhagen city center. The area will provide living spaces for 40,000 inhabitants and workspace for another 40,000 people. The development of the area began in 2009 and is to be completed in 40–50 years. The vision is for Nordhavn to be sustainable in all the aspects. The buildings should have very low energy consumption and ecological energy sources are widely used. The affordability of the housing to also low-income residents is an important aspect in the area design (Holland, 2021). Nordhavn is strongly focused on green mobility with the priority for bicycles, pedestrians and public transport.

The idea is to be able to reach shops, workplaces, cultural facilities and public transport in five minutes' walk from any point of the area. A super cycle path tours the area and parking is centered (Holland 2021, Justesen).

Nordhavn consists of a number of small islets dividing it into local districts. The water is always close by and the waterline is kept open for everyone. The area is very compact with a variety of building sizes and types but with a human scale. Natural landscapes vary from urban green areas and promenades into larger scenic areas (Cobe, Justesen).

Figure 2.1.2 Waterfront View (Cobe, n.d.)

Figure 2.1.1 Aerial View of Nordhavn (Cobe, n.d.)

Figure 2.1.3 Nordhavn before development (Cobe, n.d.)

Figure 2.1.4 Nordhavn upon completion (Cobe, n.d.)

Figure 2.1.5 An extra loop on the Metro city ring connecting Nordhavn with the city centre. (Cobe, n.d.)

Figure 2.1.6 Green corridor for bikes connecting Nordhavn to the larger biking network of the city. (Cobe, n.d.)

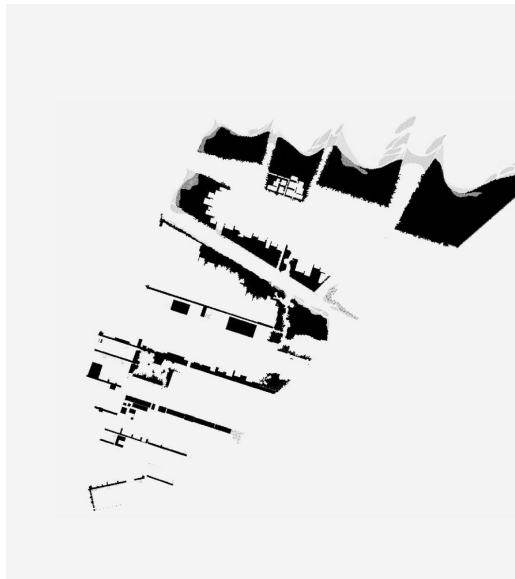Figure 2.1.7 The green loop – five-minute city (Cobe, n.d.)

Figure 2.1.8 Strips of green spaces run from east to west (Cobe, n.d.)

Figure 2.1.9 Nordhavn canals (Cobe, n.d.)

2.2 Seattle, USA

Figure 2.2.1 Green Lake Aerial View (Cascade Creatives, 2016)

Another city we considered for waterfront design and implementation is the city of Seattle in the United States. Both cities have heavy precipitation and a high level of treecover (Cedar Lake Ventures, n.d.). With Seattle getting ranked as the second most sustainable city in the United States (Empowering Pumps, 2021), it can offer many insights into appropriate sustainable development for waterfront cities. One major component of smart design is a wet city is appropriate stormwater mitigation strategies. When we walked through Heinola, many of the walking paths had streams crossing them due to a recent rain event, which reduces walkability of neighborhoods. Stormwater can also carry non-point source pollution to nearby waterways, causing detrimental impacts to the surrounding bioregion (Zhang and Xu, 2011).

The Seattle RainWise programmme offers rebates for homeowners to install rain gardens and cisterns on their own property (Sullivan, 2021). This allows for the "sponge city" principle to work on both public and private land, reducing the pressure on centralized stormwater management infrastructure. These installations also beautify the city and create space for native biodiversity.

Seattle also developed the Seattle Green Factor, an urban green area index that measures both the quality and quantity of green space within a city (Seattle DCI, 2018). This prevents development from damaging the city's identity as a lush, verdant metropolis, and also supports local biodiversity. Tools like these to ensure green space in a growing city can have a positive impact on maintaining both the natural and cultural capital of Heinola.

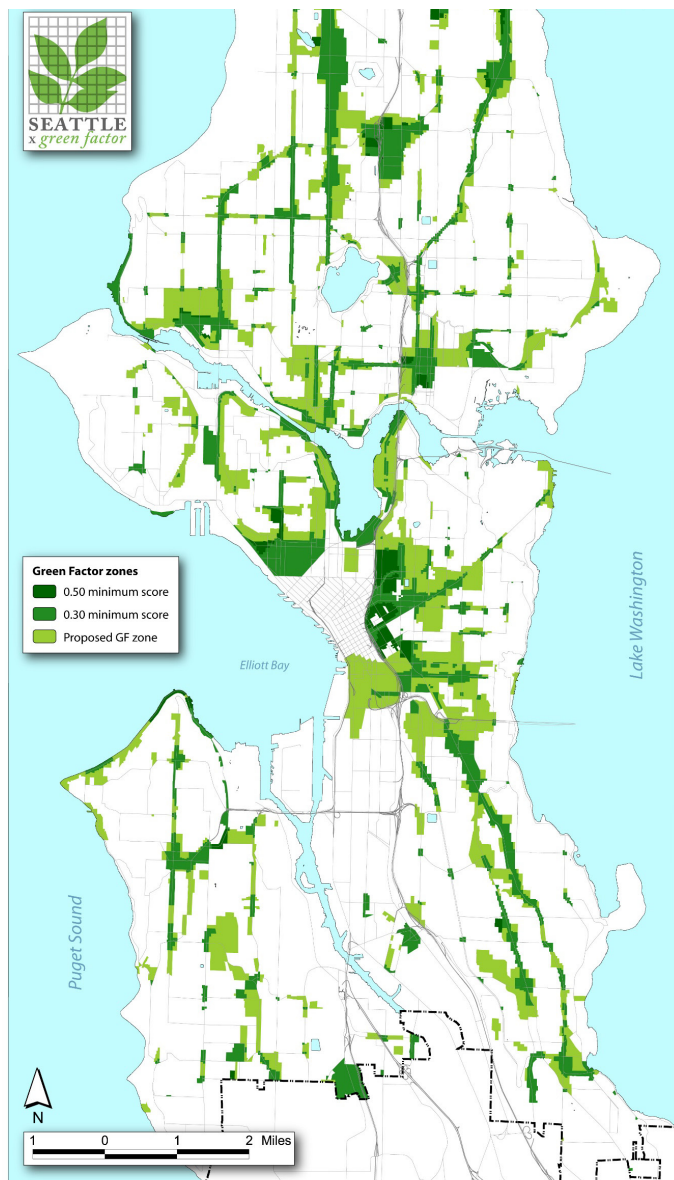Figure 2.2.2 Seattle waterfront view (Lindsey Wasson, 2020)

Figure 2.2.3 Seattle Green Factor (City of Seattle, n.d.)

Figure 2.2.4 Seattle RainWise Rebate Basins (City of Seattle, n.d.)

Figure 2.2.5 Bike Map (City of Seattle, n.d.)

2.3 Boston, Massachusetts, USA

Boston is the most populous city in Massachusetts and 24th in the country. Located along the North Atlantic Ocean and on a land mass of 125km2, it is a thriving center of scientific research (44 institutions of higher education in the defined region), notable among them and first in USA is Harvard University.

The city developed their first citywide plan (Imagine Boston 2030) for the next 50 years which will be instrumental to achieving the vision and goals of the city. Imagine Boston 2030's action areas are physical locations where initiatives come together to respond to key opportunities and challenges which are the physical embodiment of Boston's boldest aspirations.

This plan calls for revitalizing existing neighborhoods in order to boost urban vitality and affirm each neighborhood's distinct identity. They focus on creating a dense, walkable, mixed-use core where more people can live, work, and gather. Outside of the urban core, the city plans to develop new mixed-use neighborhoods on the outskirts of existing ones.

To Increase opportunity and decrease disparities, the plan includes coordinated investments in transportation, neighborhood vibrancy, and education. Finally, a plan to build a waterfront for all Bostonians that is climate-resilient and has the stewardship required to thrive for future generations is in place (Figure 2.2.3).
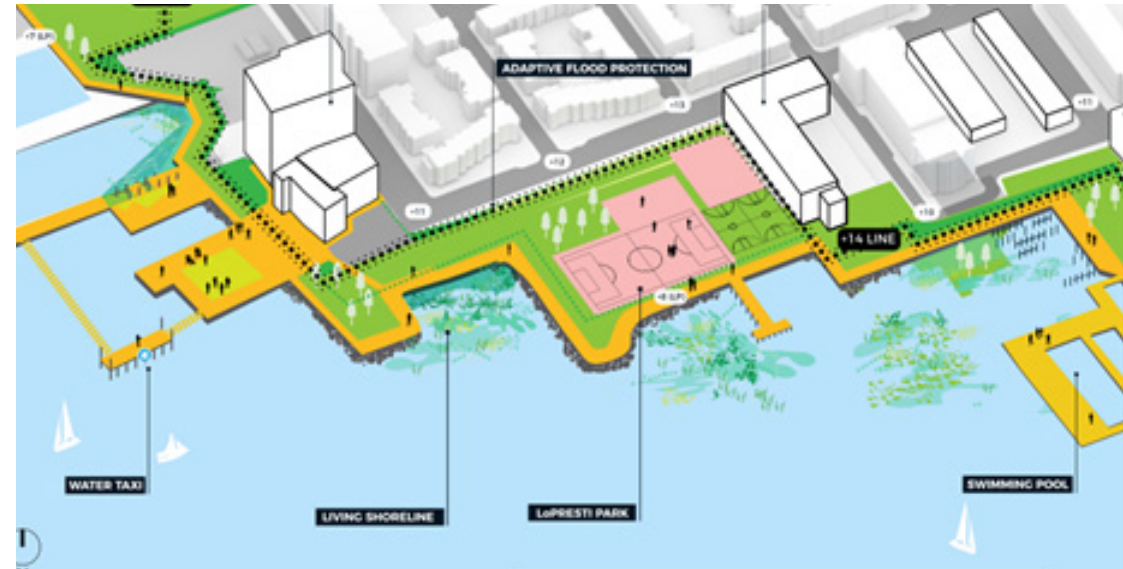

Figure 2.2.3 Shoreline design plan for East Boston neighbourhood (East Boston and Charlestown, 2017)
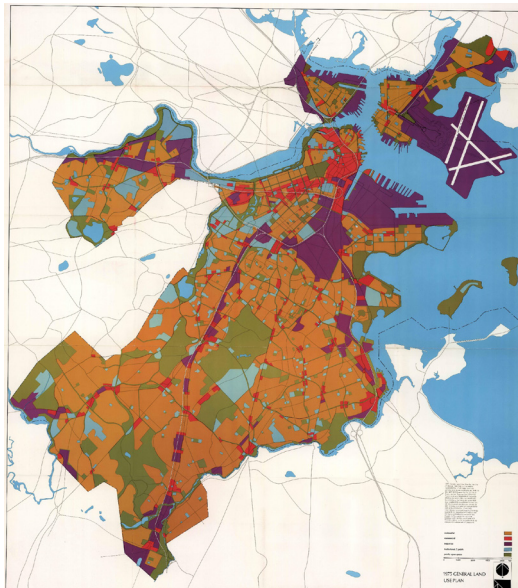

Figure 2.3.1 Boston Zoning Plan (Imagine Boston, 2015)

Figure 2.3.2 Boston Aerial View (Imagine Boston, 2015)

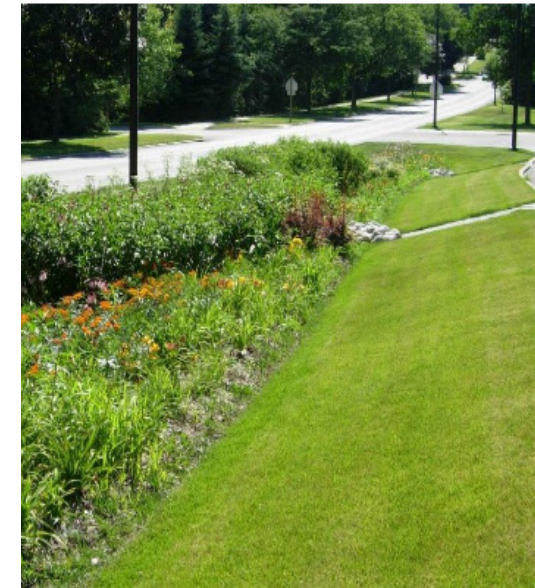*Figure 2.3.4 Open Parks (Imagine Boston, 2015)*

Figure 2.3.5 Stormwater drainage (Imagine Boston, 2015)

2.4 Burns Beach, Perth, Australia

Burns Beach is a ground-breaking coastal residential development in Joondalup that focuses on important linkages and vistas to the shore (Emerge Associates, n.d.). Commenced in 2003, the estate boasts around 1500 homes and is seeking to provide 1650 homes upon completion in 2025.

The estate is designed around a central-spine boulevard which strategically facilitates panoramic views of the ocean, visually connecting people to the coastline from a significant distance inland. It also boasts its connectivity to other community and regional facilities, giving access to various amenities to its residents. In 2021, Burns Beach has been awarded Best Residential Development at the Urban Development Institute of Australia's (UDIA) Awards for Excellence (Peet, n.d.).

The site's development aim is to establish an environmentally, economically, and socially sustainable development to meet the needs of current and future generations (City of Joondalup, 2016). It encourages social diversity by accommodating a variety of sociodemographic groupings through the establishment of a variety of lot sizes to allow for a diversity of dwellings. Environment sustainability is maintained through residential settlement with minimal ecological footprint as almost half of the site is Reserved for Parks and Recreation and will be set aside for bushland conservation purposes and as foreshore reserve. The introduction of an additional 1,600 families to the area supportsexisting infrastructure and community services, including the northern railway line and bus services which further enhances its economy.

Figure 2.4.2 Burns Beach Location Map (City of Joondalup, 2020)

Figure 2.4.1 Burns Beach Aerial View (Peet, n.d.)
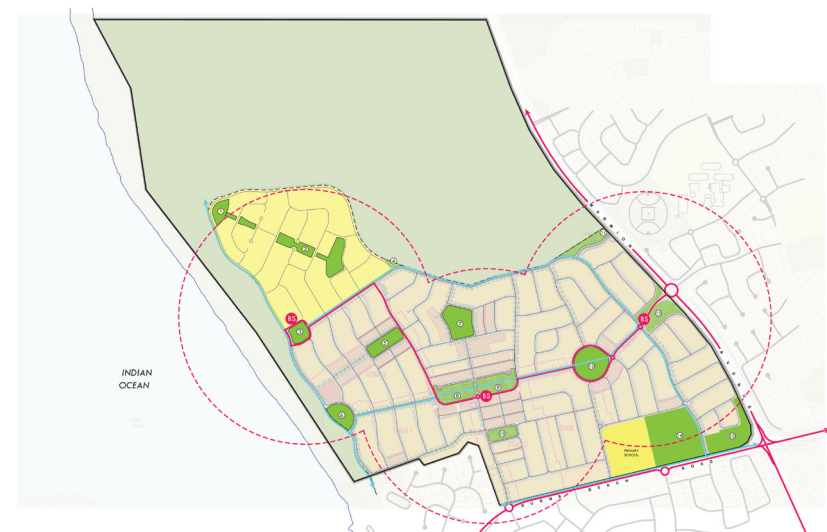
Figure 2.4.3 Transport Network (City of Joondalup, 2020)

Figure 2.4.4 Burns Beach Master Plan (City of Joondalup, 2020)

LEGEND

- Stage Boundary
- Temporary Car Park
- Display Village
- Zoned for Commercial
- Current Release
- Zoned for Kiosk/Café
- Future Release
- Previous Release
- Existing Residential

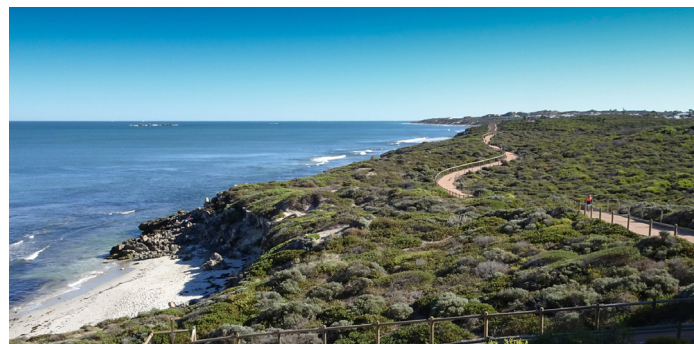*Figure 2.4.5 Bike path (City of Joondalup, 2020)*

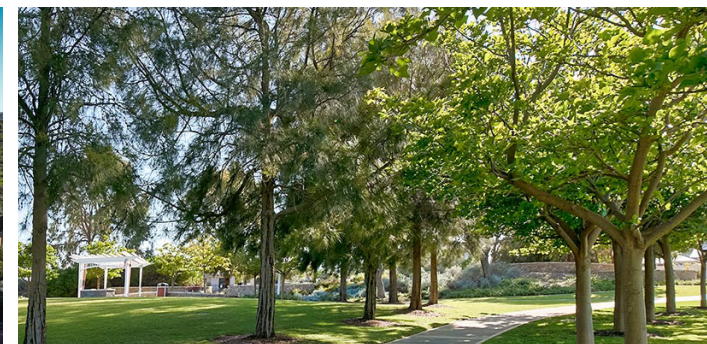*Figure 2.4.6 Shore Area View (City of Joondalup, 2020)*

Figure 2.4.7 Parks (City of Joondalup, 2020)

2.5 Lahti Competition for Niemi Shore Area

The Niemi area in Lahti is to be developed from an industrial harbour area into a district for living, working and recreation. To gain ideas on how to develop the area an architectural competition was organized (Lahden kaupunki, 2022). The three winning development proposals, "Tukki, hiiva ja mallas", "Baywatch", and "Lahden Poukama" share numerous design principals.

They preserve features of the area's industrial history, i.e. building masses and types, using materials predominant in the industrial area currently (Niemen ranta-alueen ideakilpailu, 2022a, 2022b and 2022c). The vehicle traffic in the area is addressed on the main routes and parking is central. The priority of mobility is in cycling, walking and public transport.

There will be continuous routes for cycling and walking from the city center with the beach promenade being a focal point. The lake shore will be a vivid meeting point with vast park areas, decks, saunas and room for markets and happenings (Niemen ranta-alueen ideakilpailu, 2022a, 2022b and 2022c). The green areas form a continuous green corridor with various biotopes. Roof top gardens and green roofs add the amount of urban green in the area. The stormwater is being retained in rain gardens and filtered using biological techniques before leading it into the lake (Niemen ranta-alueen ideakilpailu, 2022a, 2022b and 2022c).

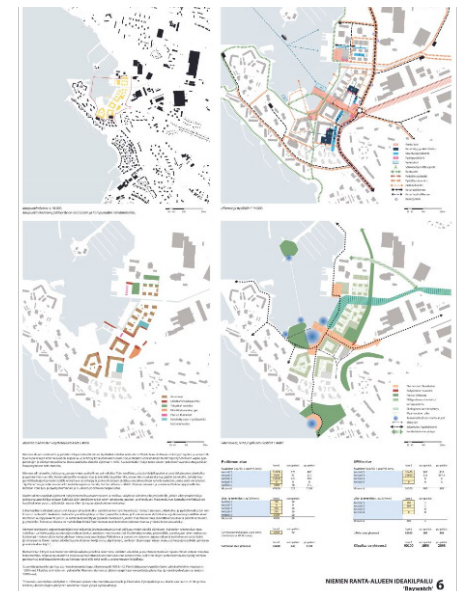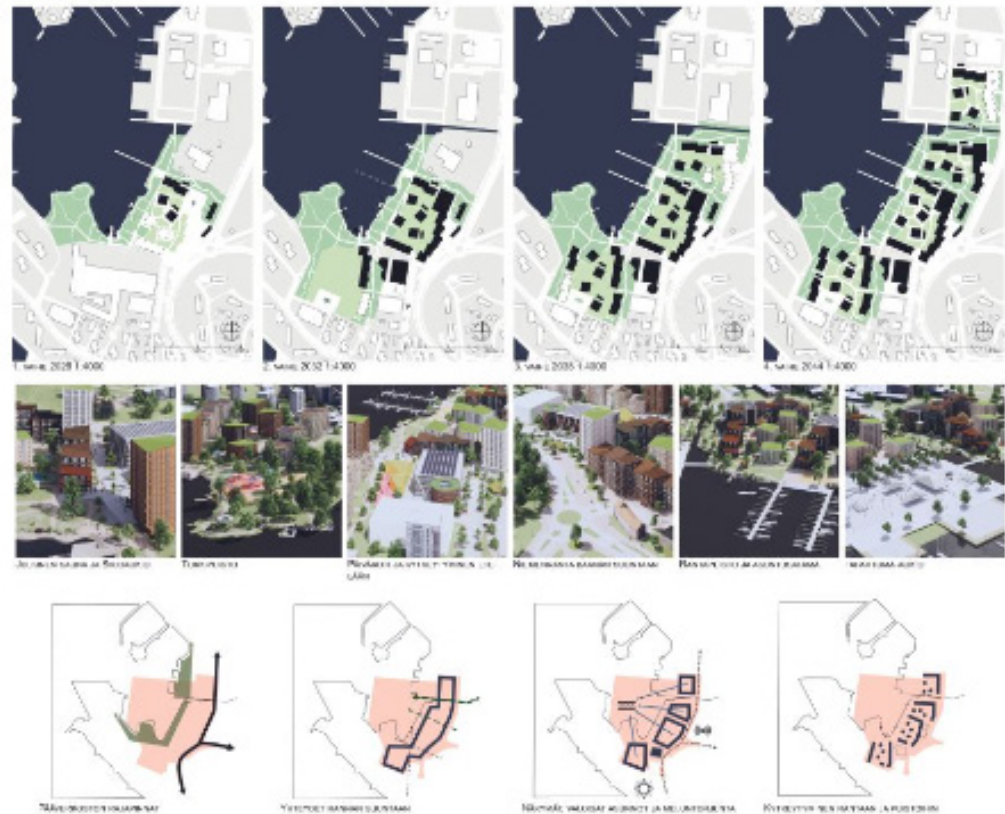*Figure 2.5.2 Lahden Poukama Proposal*

Figure 2.5.2 Lahden Poukama Proposal

Figure 2.5.3 Tukki, hiiva ja mallas Proposal

3.0 Analysis

3.1 Existing Site Analysis

The city's request for a development plan focused on the Niemelänranta waterfront area of Heinola. This area is predominantly natural landscapes, but includes some pre-existing structures. The two largest natural areas are Heinolan Rantapuisto the forested area south of Heinäsaari. Smaller but important recreational areas include the swimming area north of Heinäsaari and the Vierasvenelaituri marina beach. There are already many pedestrian and ski paths throughout all of these recreational areas, which gives an initial structure for future active mobility solutions.

In terms of businesses within our area of interest, the most notable include the Heinäsaari campground, Hotel Kumpeli, and RantaCasino Restaurant and Bar.

Figure 3.1.2 highlights important environmental considerations in the site analysis. Of particular interest is that much of the sun and wind comes from the coastal areas of Heinola. This creates an interesting challenge, as in cold climates, good design would block the wind but invite the sun, for ideal thermal comfort. One should also note the Tähtiniemi bridge is a potential source of noise pollution for the city and the Niemelänranta area of interest in particular
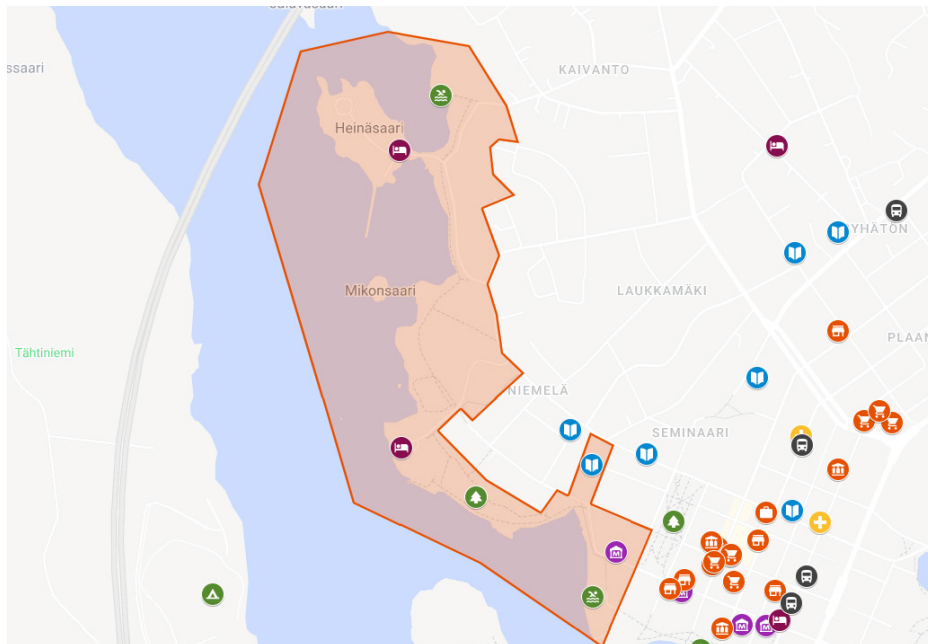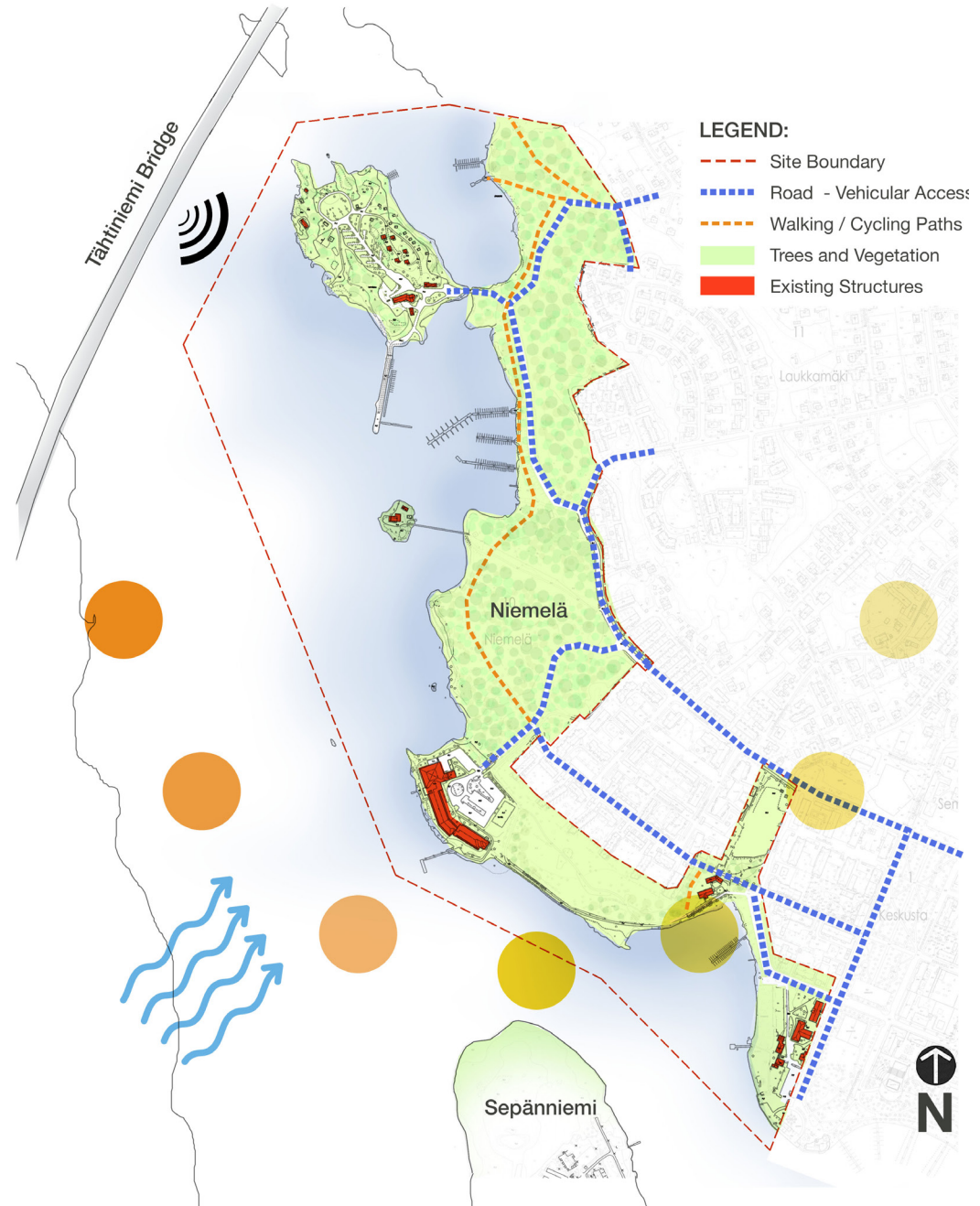
Figure 3.1.1 Points of Interests

LEGEND:
- Site Boundary
- Road - Vehicular Access
- Walking / Cycling Paths
- Trees and Vegetation
- Existing Structures

Figure 3.1.2 Niemelänranta Area Site Analysis

3.2 SWOT Analysis

The SWOT analysis shows the internal (strength and weakness) and external (opportunities and threat) factors that can influence the growth of Heinola positively or negatively. By analyzing these factors, we can better ensure that our design approach works in conjunction with existing benefits without exacerbating potential problems.

STRENGTHS

• Part of Unesco Geopark and Finnish National Urban Park Programme

• EVI Ratings higher than Lahti and above average for Finland – Positive perspective of city from locals and outsiders

• Proximity to city center, existing residential areas, harbours, and hotel for tourists

• Proper road networks and walkability with connections to outdoor tracks & activities

• Enhanced spaces for biodiversity and connections for biking and walking

• More people friendly neighbourhood with the new pedestrian zone & central parking

• Forest resources and allied industry

• More health care related jobs due to growing aged population

WEAKNESSES

• Limited year round social and cultural activities as heavy rain and snow make many outdoor parks unavailable during much of the year

• Less service bus schedules to city center (back and forth - only twice a week)

• Lack of housing variety and recreational facilities along the lake

• Noise pollution from existing bridge and highway

• Aging population could lead to more drastic population reduction in coming years

OPPORTUNITIES

• Received Geopark Status in 2021, so tourism results may not yet be realized

• Willingness of both local and international tourists to visit all year round

• Good connection to other municipalities with the region

• Funding from EU as a good prospect for growth

THREATS

• Lack of train connection to Helsinki

• Growing neighbouring cities like Lahti and Helsinki at the expense of Heinola

• Limited finance from Regional and National government

• Residents from other municipalities take about one third of jobs within Heinola

• Low workforce

• Noise pollution from the bridge

3.3 Proposed Development Site Analysis

Figure 3.3.1 Development Pattern

LEGEND
- Preserved Structures
- Preserved Green Areas
- Enhanced or Developed Areas
- New Structures/ Facilities

Figure 3.3.2 Radius Map

LEGEND
- 100m radius
- 200m radius
- 300m radius
- 400m radius

City Center

Residential Areas

Figure 3.3.3 Accessibility Map

LEGEND
- Dual Use Paths (Cycling and Walking)
- Roads
- Bike Rental Points
- Parking Areas
- Service Parking Areas

Development Pattern

In line with the project's vision to coexist with nature, the existing strength of the site which is its natural green areas are preserved, together with the existing hotel (Hotel Kumpeli), and some structures of cultural value such as the House of Chief Constable Aschan (Figure 3.3.1).

Further enhancements are done to the existing facilities and areas as such as increasing the docking and adding iconic structures in the Heinassari area. Lastly, new structures with provision for future expansion are added with keeping minimal interventions to the existing biodiversity in mind.

Accessibility

Radius map shows how far the key points are from each other (Figure 3.3.2), where a 400m radius can take up to 5-7 mins walk. The project aims to become a walkable neighbourhood in the future which is accessible to everyone. Aside from enhancement of vehicle access,

dual paths for both cycling and walking are also provided (Figure 3.3.3). The site also has public parking areas which are accessible to the entire site, as well as service parking areas for each facilities and bike rental points to enhance connectivity and mobility.

4.0 Development Proposal

Vision

Heinola reimagined as an epicenter for nature-oriented education and lifestyles, with opportunity for anyone who wants a balance between urban and natural community

Themes

Sense of Place & Cultural Identity

Nature-Based Culture

Enhanced Economy

Integrated Community

RECREATIONAL SPACES

PARKING

SWIMMING AREA

HOSTEL

DOCKING AREA

FLOATING HOUSES

PEDESTRIAN BRIDGE

NATURE-BASED LEARNING CENTRE

PARKING

EXISTING HOTEL

MIXED-USE BUILDING

PARK & WEEKEND MARKET

PEDESTRIAN BRIDGE

N

4.1 Heinassari Recreational Area

Currently, Heinäsaari is a camping site. Although this is a useful feature to bring outsiders to Heinola, it does not function as a community building or economically enriching space. Given its natural beauty and proximity to the city, there is so much more potential for this area to enhance the local and regional experience.

For our design, Heinäsaari will be a center of day-tourism and Finnish culture experience. The recreational area in Heinäsaari will include a variety of saunas in different sizes and atmospheres. One could experience tranquility and calmness in a small dim sauna watching a real fire or choose a more vibrant bigger one with room for bigger groups. In between sauna there's a possibility to cool off and dip into the water. Small businesses where visitors can enjoy a good meal or have some drinks close to water will add to the experience.

A more active side of the recreational center offers possibility to attend to various activities in the area and to rent equipment for it. The rental options could include bikes, kayaks, SUP-boards and snowshoes. The local entrepreneurs can offer their services such as lessons and guided tours on all the recreational options. The good connections to the outdoor trails and can further enhance the experience. Other activities like water sports, fishing trips, sauna yoga, wellness nights and weekends could be the type of things to attract people to the area. The focus is to keep the place active throughout the year, not only during summer. Special attention should be paid to the services and activities during winter and the traditional off-season to attract locals and tourists to visit.

Kaivanto beach is a nice and natural swimming area in a peaceful bay away from the boat traffic. The goal is to enhance the current state with a bigger scale deck for people to have more space for dipping in the water, diving, sunbathing and just enjoying themselves. A diving tower would attract more swimmers to the area. The dressing rooms and toilets follow the common guidelines of the public furniture in the area.

For the growing amount of visitors by boat, there will be a need for more docking space. This is to be located in the vicinity of the Heinäsaari, allowing direct access to both Heinäsaari and the shore. Additionally, a hostel will provide accommodation for both short- and long-term visitors in the area. This hostel can also accommodate tourism that may have been displaced by transforming the existing camping area on the island. Because there is already luxury accommodations near the water at Hotel Kumpeli, a more affordable hostel will also diversify the type of people who can access Heinola for tourism. Our plan outlines a single building for the short-term hostel development, with space for two more as the city's tourism and recreation economy expands.
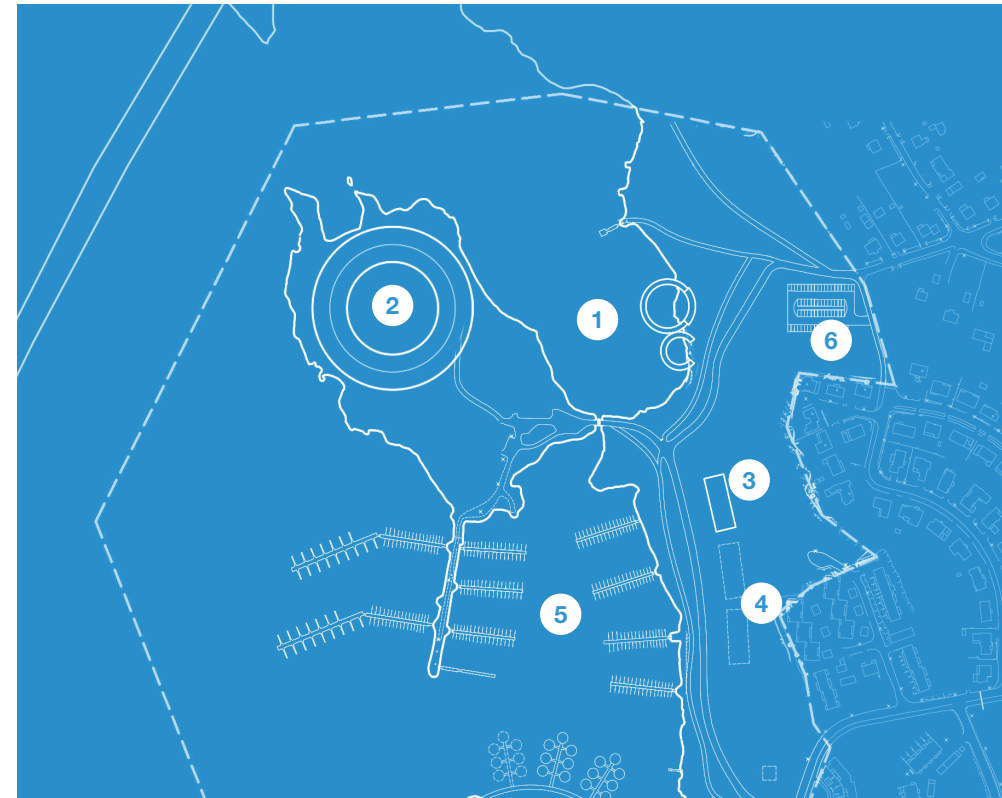
Legend:

① Swimming Area

② Recreational Spaces

③ Hostel

④ Hostel Expansion

⑤ Docking Area

⑥ Public Parking Space
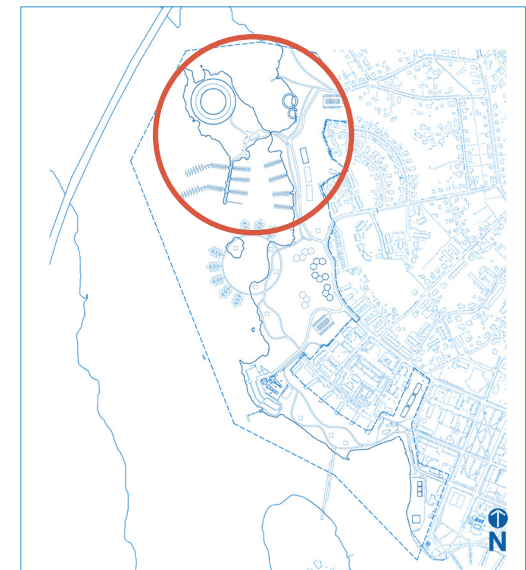
Key Plan

SWIMMING AREA ①

Figure 4.1.1 Eastern and Western Bathing Resort (Archdaily, 2021)

Figure 4.1.2 Eastern and Western Bathing Resort Aerial View (Archdaily, 2021)

Figure 4.1.3 Schelokovsky Hutor Forest Park (Archdaily, 2018)

RECREATIONAL SPACES ②

Figure 4.1.4 River Sauna (Archdaily, 2009)

Figure 4.1.5 Almanakken Exterior (Sweco Danmark, 2021)
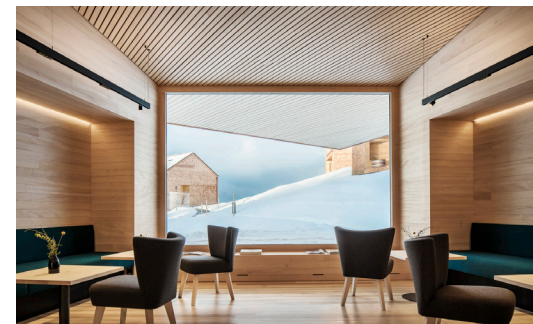
Figure 4.1.6 Peterhof Alpe Furx Hotel Cafe View (Archdaily, 2021)

Figure 4.1.7 Winter biking (Laajis, n.d.)

Figure 4.1.8 Water activities (City of Heinola, n.d.)

Figure 4.1.9 Mountain trails (City of Heinola, n.d.)

HOSTEL ③

Figure 4.1.10 Icaro Hotel (Archdaily, 2021)

Figure 4.1.11 Peterhof Alpe Furx Hotel Interior (Archdaily, 2021)

Figure 4.1.12 Icaro Hotel Details (Archdaily, 2021)

4.2 Nature-Based Learning Spaces

In order to retain young adults and attract families to Heinola, we are proposing a nature based learning center in the central forested area of Niemelänranta. The goal is to create opportunities for Heinola to grow while also enhancing the nature-oriented culture of the area. The short-term vision for the space would be a nature and education oriented community center.

The flexibility of use would allow for the space to change and evolve with the needs of the community. But initially, the space could be used as a daycare, thereby making the neighborhood more amenable to young working families.

The space could also be used to host adult educational experiences in wilderness-oriented activites such as fishing, foraging, plant identification, or crafting or building with natural materials. This could create jobs for locals who have ample experience with nature-based living, while also attracting nonlocals who might want to take a class or want a structured weekend activity. These classes could also support the equipment rental businesses on Heinäsaari (some of these classes may require kayaks, snowshoes, etc.), creating economic synergy. If the center is successful, later it could be scaled up for a larger community impact.

There is ample science supporting the improved learning outcomes of nature-based primary schools (Kuo, Barnes and Jordan, 2019), and there are many examples of successful nature schools throughout Northern Europe, despite extreme weather (Cohen et al., 2017).

If the center is successful, later it could be scaled up for a larger community impact. There is ample science supporting the improved learning outcomes of nature-based primary schools (Kuo, Barnes and Jordan, 2019), and there are many examples of successful nature schools throughout Northern Europe, despite extreme weather (Cohen et al., 2017).

If the population changes in Heinola require expanded education infrastructure, this site can be easily scaled to meet those needs. Additionally, Heinola would be a great site for an expansion of LAB's Wood Engineering programme, given its proximity to working forests and the Versowood plant. Heinola could strengthen its relationship to Lahti by developing the center to help support LAB classes, when proximity to forest could strengthen the curriculum.

In terms of design, the school would aim to keep a small, decentralized footprint in the forest, thereby keeping as much of the area forested as possible. Wood architecture, in the style of the examples given, would continue to create nature- and wood-focused design continuity throughout the Niemelänranta site, and contribute to the identity of the center as intwined with nature, rather than separate from it.

Legend:

1 Nature Learning Centre

2 Floating Houses

3 Learning Center Expansion

4 Floating Houses Expansion

5 Public Parking Space

6 Existing Hotel (Hotel Kumpeli)
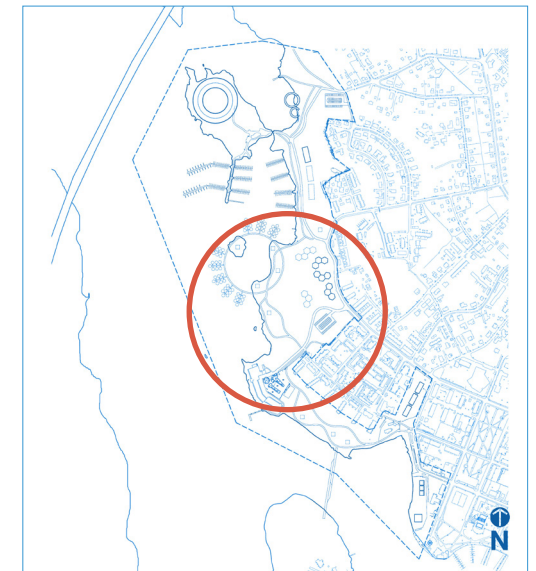
Key Plan

Figure 4.2.1 Korea National Arboretum Children's Forest School (Archdaily, 2021)

Figure 4.2.2 The Woodstock (Atelier Yokyok, n.d.)

Figure 4.2.3 Korea National Arboretum Children's Forest School (Archdaily, 2021)

Figure 4.2.4 Nature-based learning (Soaring Eagle Nature School, n.d.)
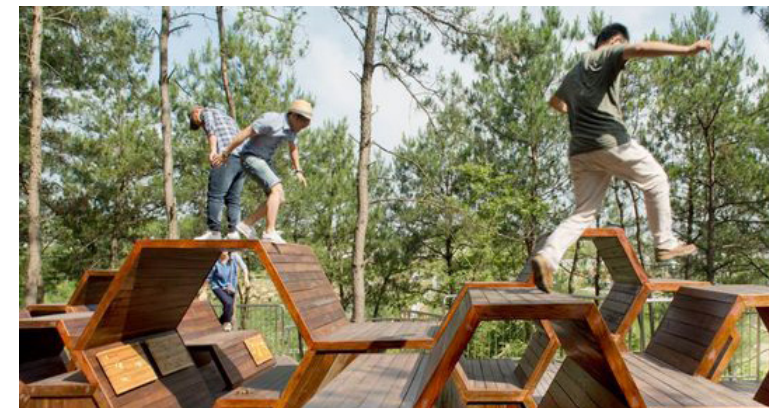

Figure 4.2.5 Marvel Valley by Z+T Studio (Archdaily, 2017)

4.3 Floating House Community

As mentioned in our meeting with the Heinola development team, there is some interest in outside investors developing floating houses. We propose that these houses be located between the expanded dock and the nature school. With the houses visible from the dock, they will create another strong visual identifier for visitors to Heinäsaari.

They could also be an opportunity to highlight and publicize the nature school. By creating a floating house design competition, advertising the nature school as the center for the contest, the community within Heinola as well as the entire region could learn about the nature school and the Niemelänranta redevelopment.

This could help reinforce the connection between LAB and the nature school as well, as the design competition can target wood engineering professionals.

If the floating house investors decide to move forward with a larger community of floating houses, the private island nearby would be a great location for a circular community of these homes to form. By purchasing the island and creating a round dock connecting the island, the floating houses, and the mainland, the small, underutilized island can become a focal point for the transformation of Heinola and create unique housing opportunities that could draw more wealthy families to the area.

Figure 4.3.2 Ecological Floating House by Giancarlo Zema (Giancarlo Zema Design Group, 2022)

Figure 4.3.3 Refuge House (Wim Goes Architectuur, 2014)

Figure 4.3.4 Floating Barn Proposal (Archdaily, 2012)

Figure 4.2.1 Floating House Community

4.4 Commercial Spaces

There has been significant drop in commercial activities which is a major sector for employment in the study area. The need for an integrated community with enhanced economic activities through direct and indirect jobs, supporting small scale business and creating investment opportunity in Heinola are major pillars in our proposed development. In other to make this sustainable, the design caters to commercial activities that supports both older and younger populations, which will result in a socially integrated community without compromising its commercial viability. The commercial development comprises of a mixed use building and open stall market area.

Mixed Use Building

The proposed development would be a two story building which will accommodate commercial, social and agricultural activities. The first floor of will have a gym/physiotherapy space and a café. The gym/physiotherapy spot will accommodate young residents for exercise and healthy living practices while the elderly will benefit from therapeutic physiotherapy sessions. This is expected to serve the residents throughout the year, creating places for people to interact even in winter. The café is position to be easily accessible for both locals and tourists, in order to make spaces for interaction. The second floor is a coworking space for tech or remote workers. The pandemic brought the possibility of working from home, and this experience means that many employees will look for places to accommodate remote working. Heinola is also positioning itself to accommodate tech hubs and startups, as coworking spaces allow entrepreneurs to collaborate. This floor will serve these dual purposes, with both public and private spaces provided for users to create an office environment for social interaction and networking. The roof of the building will be a rooftop garden. This is a growing practice in urban environments not only provides an opportunity to own a garden, but also offers environmental benefits to the area.

Open Stall Market Area

The proposed location is an underutilized space of beachfront land which can be enhanced so the community feels ownership and engagement, and where design serves function. In order to further improve economic activities and foster social interaction, this plan is proposing a weekend market space within the neighbourhood. Here, human needs will be met through local commerce, which will uplift and integrate the town.

As the town grows and commercial activities arise, it serves the community to have a weekend market space where people come weekly to interact, connect, and spend money locally. This market will support small businesses by creating a space to display their goods and services, whereas residents can sell unused wares or crafts. This market can connect with the nature-based school by creating an outlet for artist to share what they have created in a local context.

Legend:

1. Mixed-Use Building
2. Open Stall Market Area
3. Open Public Parks
4. Pedestrian Bridge
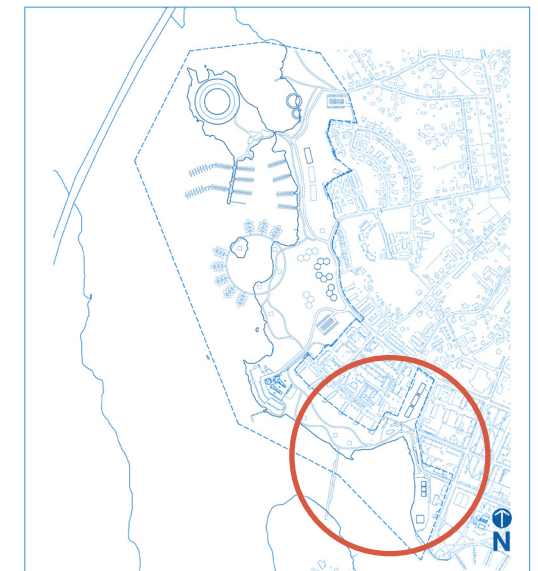
Key Plan

Figure 4.4.1 Gym (The Regents of the University of Colorado, 2020)

Figure 4.4.4 Cafe and Restaurant (Unsplash.com, 2019)

Figure 4.4.6 Open Market Stalls (Stbernardstudio, n.d.)

Figure 4.4.2 Peterhof Alpe Furx Hotel Working Space View (Archdaily, 2021)
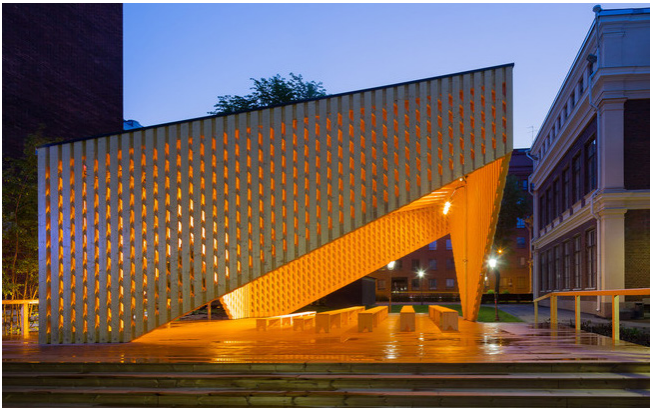

Figure 4.4.5 Rooftop garden (Ostergro, n.d.)

Figure 4.4.7 Wood Open Pavilion (Archdaily, 2021)

Figure 4.4.3 Co-Working space pods (Spaceworks, n.d.)

Figure 4.4.8 Wood Open Pavilion (Archdaily, 2021)

4.5 Parks and Mobility

Green Parks and public open spaces are included in our site not only to preserve the biodiversity but also to create spaces where the community can gather and experience chance encounters. The connections to Niemelänranta area by car are adequate, and there are pedestrian and cycling paths along the streets and throughout the shoreline parks. In some areas, the current pedestrian and cycling paths are quite narrow and paved with rock dust.

To improve the accessibility of the northern part of the region of interest, the dual-use pedestrian and cycling routes will be wider and preferably with an asphalt pavement. The winter maintenance on the routes should be of good quality. The people using the routes should be able to trust that the routes are clear from snow when they need them. The existing skiing track could be extended to lead all the way to city center following the pedestrian and cycling path. This would help people to access the new recreational area in a new way and to tie the outdoor activity venues more closely to the city center.

There should be benches along the routes. They would be an essential part of accessibility for especially older people to have a break on their way. And if set on the right places the benches would also provide a good setting to admire the nature and views in the area. There will be two new parking areas in the area, near Heinäsaari and near Hotel Kumpeli. To reduce the effects of stormwater, the parking areas will be made using permeable paving or the stormwater could be conducted to

special bioretention or biofiltration areas, including rain gardens of native plants. The noise from the traffic on Tähtiniemi bridge can diminish the comfortability of the area. To block the noise some noise barriers could be installed into the sides of the bridge. The design of the barrier should be chosen carefully so that it doesn't ruin the design of the bridge that has become one of the city's landmarks. Neither should the views from the bridge be blocked. Transparent noise barriers that have regular maintenance from the city would be the best option.

In addition to the Tähtiniemi bridge improvements, several other bridge projects are proposed. These create a cohesive theme in the area using bridges as a defining trait of the area. For example, wood architectural features can be added to the bridge to Heinäsaari, which would further add to the iconic visual designs for the island. The circular pedestrian bridge proposed for Mikonsaari could share design themes with the other bridges to tie the developments together.

Finally, a new pedestrian bridge from Möljänpuisto to Sepänniemi area will bring the area's nature trail and medieval history closer to Niemelänranta area. This bridge would be elevated enough for small boats to still pass through the area, but still small enough to make an intimate walking area. This would highlight the history of the area as a trading route, while enhancing the city's connection to the forested area in Sepänniemi.
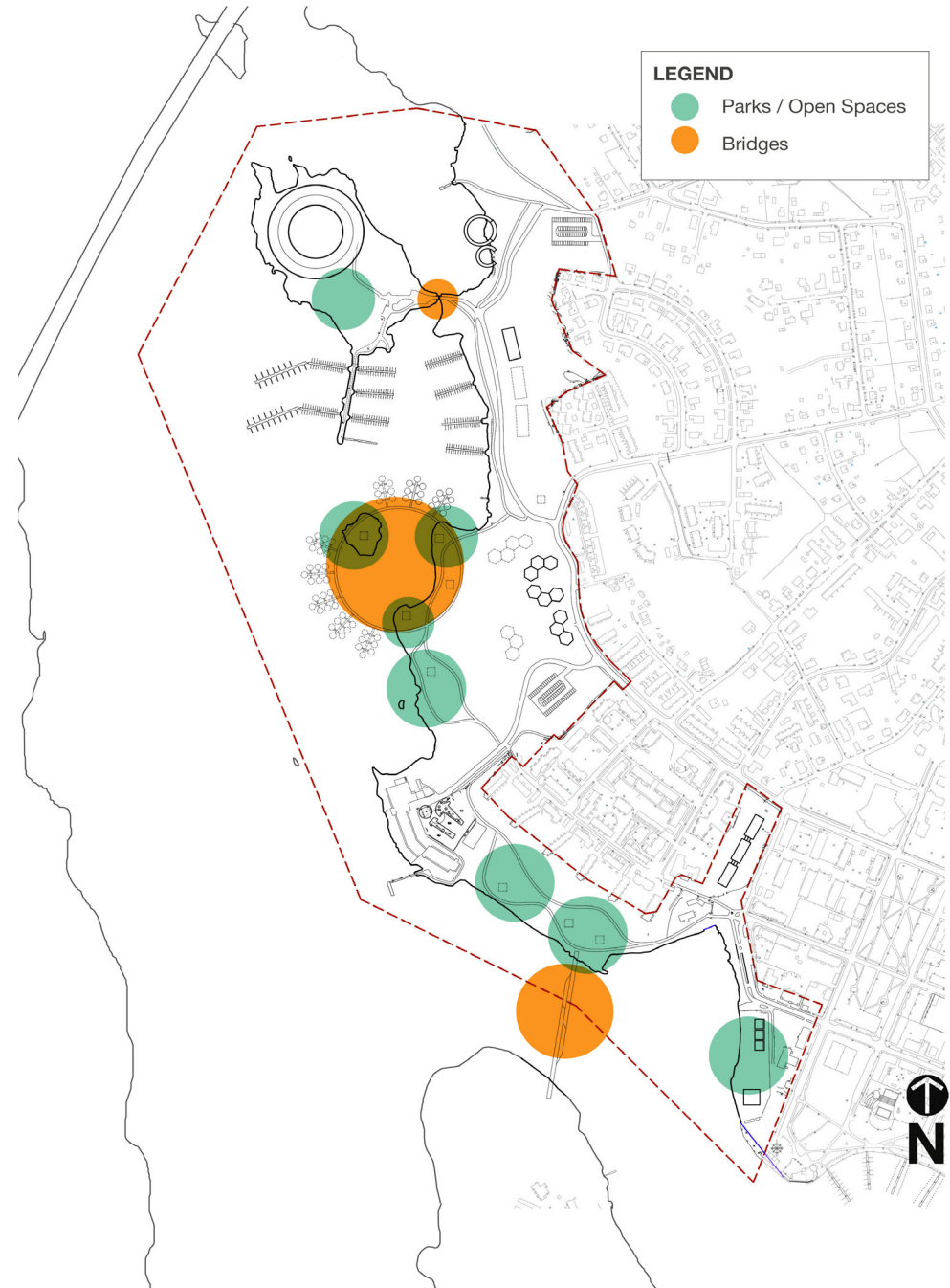
Figure 4.5.1 Parks and Bridges Map

Figure 4.5.2 Hoshinoya Fuji Resort (Archdaily, 2018)

Figure 4.5.3 Hila Pavilion (Archdaily, 2018)

Figure 4.5.4 Schelokovsky Hutor Forest Park (Archdaily, 2018)

Figure 4.5.5 Hoshinoya Fuji Resort (Archdaily, 2018)

Figure 4.5.6 Tokyu Plaza Omotesando Harajuku (Archdaily, 2018)

Figure 4.5.7 Timber Bridge in Gulou Waterfront (Archdaily, 2022)

Figure 4.5.8 Providence Pedestrian Bridge (Archdaily, 2020)

Figure 4.5.9 The Infinite Bridge (Archdaily, 2015)

Figure 4.5.10 Schelokovsky Hutor Forest Park (Archdaily, 2018)

Figure 4.5.11 Bridge noise barrier (Yente, 2022)

4.6 Sense of Place and Design Features

To enhance the sense of place and the unique character of Heinola, a certain design theme is imposed to the proposed structures which relates to our main vision. Aside from using wood as our main material, we also proposed typical street furniture and wayfinding signages placed around the site to build an identity within the area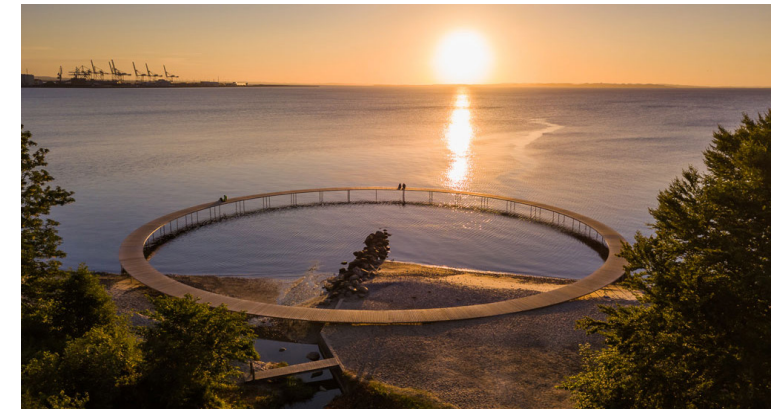. Round structures are mostly proposed on certain areas for people to enjoy the natural views of the site, as seen in the recreation area, swimming area, and the pedestrian bridge to Mikonsaari.

Features of traditional Finnish architecture, including rough-sawn finishes and locally available materials will enhance the experience of Heinola as a picturesque Finnish town in the wilderness. The use of native plants in design features will also add to this effect. We also included immersive natural education by providing these plant tags with QR codes along the paths where people of all ages can learn more about nature and specific ecological species native to the area. The links in the QR codes will be offered in multiple languages, to offer additional incentives for foreigners to visit or settle down in Heinola. This will enhance the sense of place in the area by connecting nature to the everyday life of locals. It also encourages an interest in ecological education which can support the mission of the nature-based learning center.

Lastly, pavilions, public sculptures, and art made by the locals should also be encouraged in parks along the site to improve community involvement and boost their sense of relatedness. The experience of living in Heinola should be palpable and visually apparent to both locals and guests to the area. By unifying the urban design features, while also allowing for organic growth of culturally relevant marking points through local art, the city can deepen its unique identity even while undergoing development.

Figure 4.6.1 Wood Pavilion (Archdaily, 2018)

Figure 4.6.2 Aerial view showing pavilion and street furniture (Archdaily, 2018)
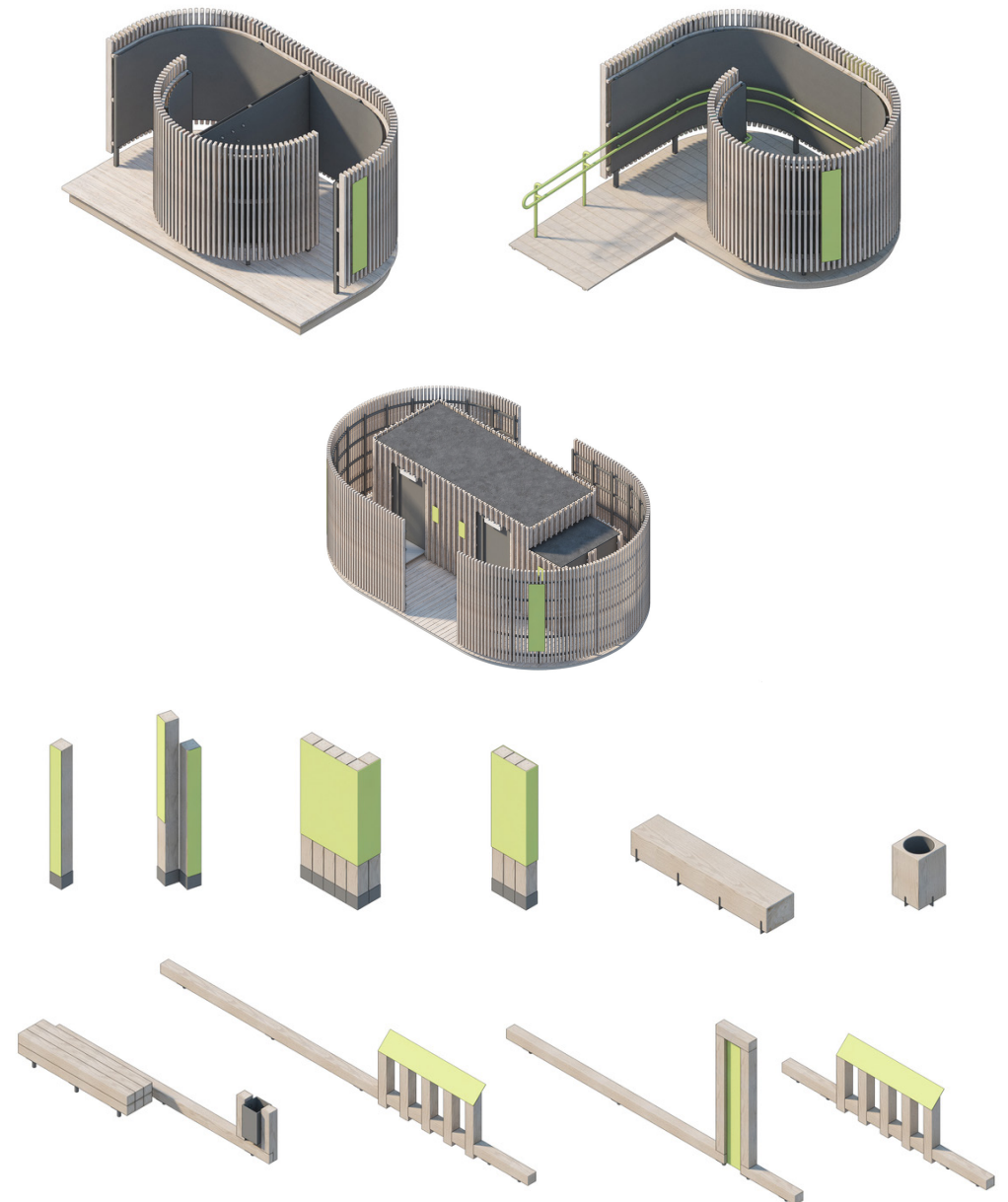
Figure 4.6.3 Pavilion, Navigation and Street Furniture Typical Design (Archdaily, 2018)

Figure 4.6.4 Zona Santiago Outdoor Classroom (Archdaily, 2021)

Figure 4.6.5 Timber Bridge Interior (Archdaily, 2022)

Figure 4.6.6 County Governor Aschan's House (City of Heinola, n.d.)

Figure 4.6.8 Nature-based learning (Soaring Eagle Nature School, n.d.)

Figure 4.6.9l nformation post with metal plaque and QR code (Steve Andrews, 2013)

Figure 4.6.10 Plant identification with QR code (Douglas-Hart Foundation, n.d.)

4.7 Planning Approach Timeline

SHORT TERM (0-5 years)

- Planning with stakeholders and community feedback
- Investor engagement
- Path enhancement and commercial spaces development
- Heinäsaari area development
- Learning centre development
- Mixed-use development

LONG TERM (5-25 years)

- Evaluation and monitoring
- Learning centre expansion, LAB Wood engineering extension campus development
- Floating house design competition as a part of community involvement in planning
- Construction of floating houses and hostel expansion
- Bridge renovations and monitoring of developed areas
- Plans for expansion of floating houses and integration of needed facilities

5.0 Conclusion

Development Goals

Our goal in this design plan was to meet four major design criteria mentioned in the beginning of the report. Below, the tools for meeting these goals are summarized.

Creating and Preserving a Sense of Place and Cultural Identity

The development of iconic structures, such as the nature school, pedestrian bridge, and Heinäsaari recreation area, builds a sense of place within the city. These define the character of the city by creating architectural factors that define the visual landscape of the area and strengthen the local identity.

Maintaining Biodiversity Through Fostering a Nature-Based Culture

The nature based school can offer a central hub for anyone interested in nature and environmental sciences. Daycare programs or the potential to expand the school can also instill this reverence for nature into the next generation of locals. Rooftop gardens allow people in the urban core to feel closer to nature while also growing some of their own food. And finally, the immersive natural education through incorporating QR codes and design-centric signage within the natural areas of Niemelänranta will allow anyone to become better integrated with the natural spaces surrounding them.

An Integrated Community by Connecting Existing Residents with the Anticipated Population Increase

The neighborhood market will act as a mixing point for people from different backgrounds within the city. Heinäsaari recreation area will be a place for both locals and tourists to mix, and both of these locations offer opportunity for chance encounters. The nature school can elevate older folks with a lifetime of experience in natural living and help build intergenerational bridges.

Enhancing the City's Economic Opportunities.

All of the development areas outlined in the design will bring both direct and indirect jobs to the region. Heinäsaari recreation area, the associated hostel, the mixed use development, and the nature school all are opportunities to attract outside investment to help fund the redevelopment where the city cannot afford the work. The potential for a coworking space and the extension campus for the LAB Wood Engineering program can serve to increase the likelihood of established professionals settling down in the city, and possibly starting businesses in the future.

Public Participation

This is an utmost priority to make this proposal sustainable. We must have strategies for public participation will be built on two fundamental groups: the direct and indirect stakeholders. Direct stakeholders will include residents, existing business owners, employees (both residents and non-residents), NGOs, CBOs etc.

The indirect stakeholders comprise of the potential developers or employers, tourists, locals of Heinola staying in other cities or countries, students (e.g from LAB), etc. All stakeholders will play an important role in making inclusive decisions about the development of Heinola by identifying their biggest priorities and their most urgent concerns, which will frame our approach towards creating more vibrant and accommodating town for everyonFor the success of the development, the city must create a redesigned community-meeting format to provide more context, updates, and feedback for clarity. This will be done through enhanced techniques (documentation, digital and web based, multi-media, social media and NTS); and enhanced participation which will involve collaborative and empowering participatory approaches rather than simple informing and consulting.
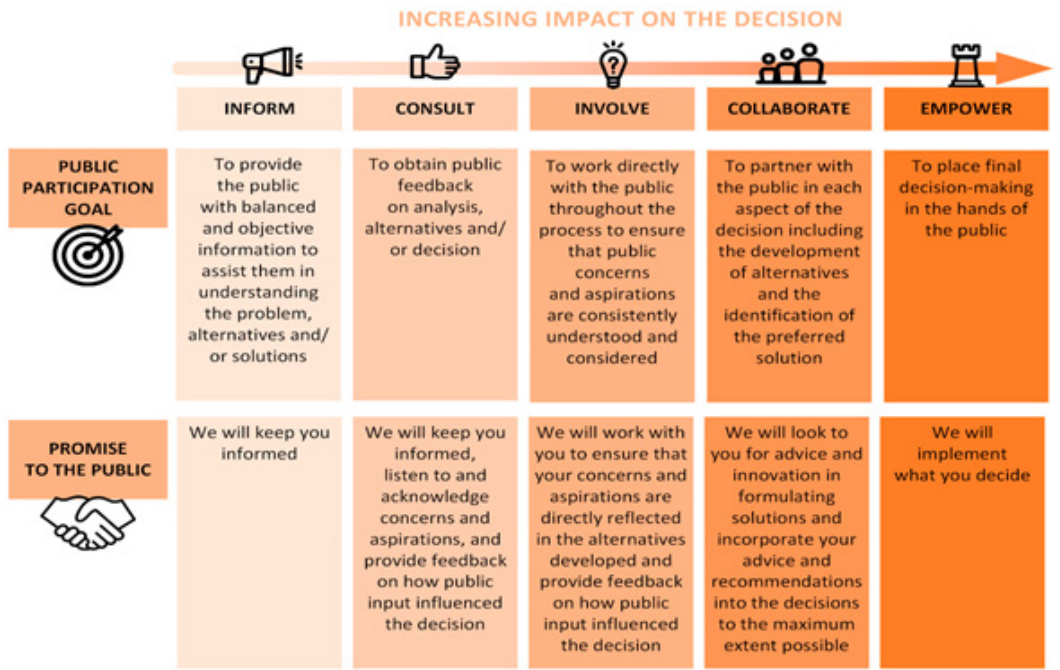

Figure 5.1 The spectrum of Public participation (Babelon et al 2021)
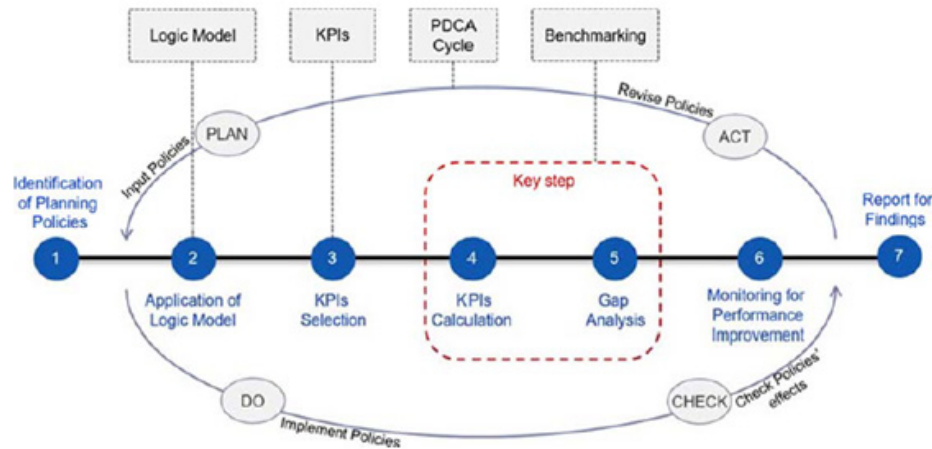
Evaluation and Monitoring

Figure 5.2 M&E System steps (Quyen et al 2018)

Urban planning seeks to efficiently maximize the available resources. To create the desired outcome in a planning process is essential for the success of these development goals. To achieve this, a system of monitoring and evaluation must be in place throughout the planning process until the goals/objectives are achieved; a system that will actualize the plan, test it, and include feedback for good performance (Zall-Kusek and Rist 2004). A Monitoring and Evaluation (M&E) system for this proposed development will employ Seven steps to achieve the final planning goals.

Step 1: Identification of detailed planning policies that supports planning goals.

Step 2: The application of logic models (this is used to develop Key Performance Indicators – KPIs) will illustrate how planning policies (inputs) work (through activities) to get results (outputs) and benefits (outcomes).

Step 3: Selection of KPIs. In this step, we have to translate outputs and outcomes into measurable performance indicators, as output-KPIs and outcome-KPIs, respectively.

Step 4: KPI calculation as benchmarking for the policy's effect on the target value by a suitable tool which will provide performance data of the process.

Step 5: Performance information is compiled and analyzed to identify performance gaps.

Step 6: Monitoring for performance improvement will be carried out based on the identifiedperformance gaps and followed by an action plan.

step 7: These findings will be presented in report format for decision makers and other

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