Booklet of

REVIVING SKELLEFTEÅ

Post industrial Resilience Water Solutions in the Urban context for the Future City of Skellefteå 2050.

Degree project in Urban Planning and Design (AD2EXU)
Sustainable Urban Planning and Design Master´s Program
KTH School of Architecture and Built Environment

Lubna Boltakke

Dear SUPD teachers,

I would like to express my gratitude for being one of your students. My master years is nearing an end, but my gratitude to you as my teachers will not be over.

Thank you for letting me learn from my mistakes. I will forever be grateful for this fact. I am really proud to be one of your students.

Thanks a lot.

Context

The scales and project stages

Global water issues
National Pollutions
About Skellefteå
Municipality Plan 2030
Aim of the project

Unit 1 2030
Water as a source

Unit 2 2040
Industry as a leader

Unit 3 2050
Urban centre as productive and protective

Detailed zooms in for :
City Centre
Skellfteå canal

Abstract

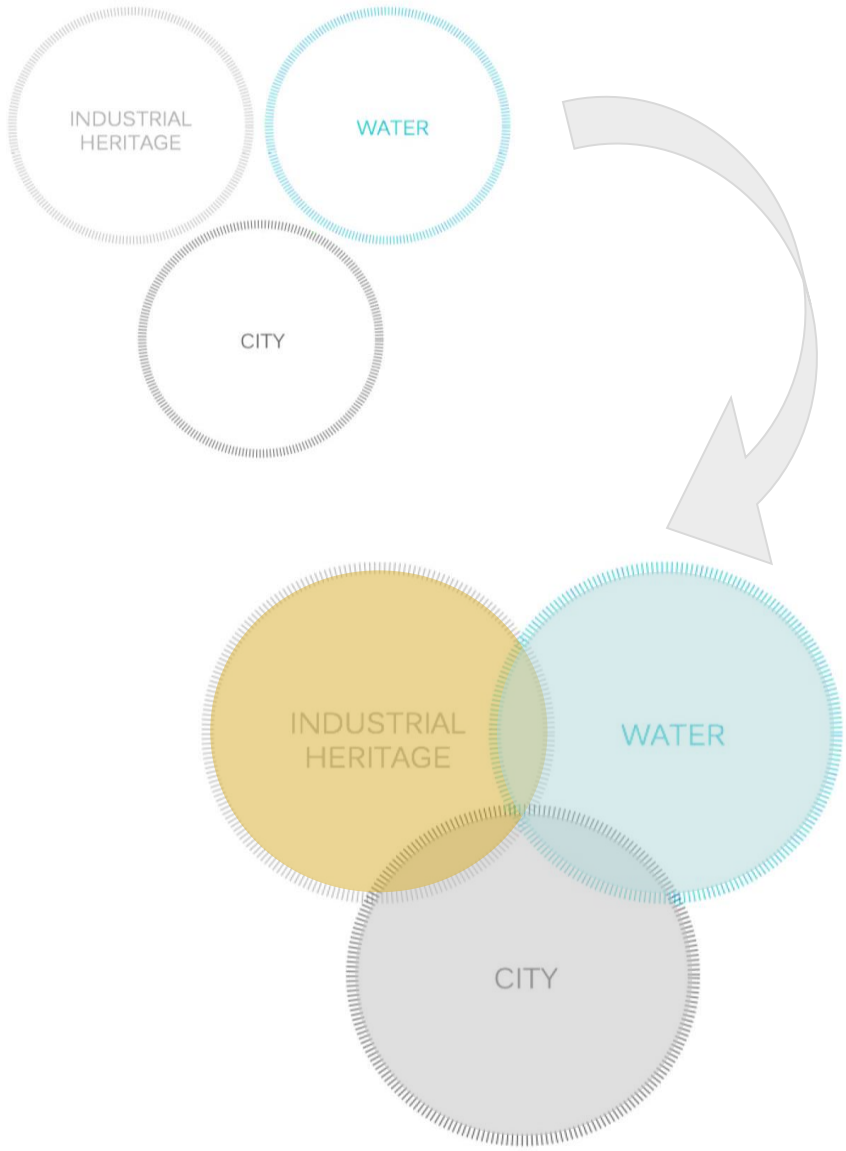
The changes that we are seeing and anticipating are largely due to human behaviour. Arctic sea ice is at the lowest levels ever recorded. The volume of Arctic ice has decreased dramatically over the past decade. . The consequences of losing the Arctic ice cover are expected to be enormous if the ice is no longer able to reflect sunlight, as the region could warm more than it is now. And water quality would goes to its lowest levels since the flooding levels is higher.

Industry also is considered as major source of water pollution; it produces pollutants very harmful to people and the environment. Many industrial plants use freshwater surfaces for the transfer of waste from the factory to rivers, lakes and oceans.

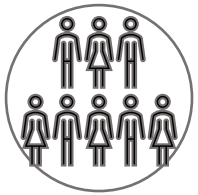
This could lead to increased ocean temperatures with unknown effects on the weather system. Moreover the natural habitats of many species are being destroyed. Environmentally destructive practices and the increasing number of people living in harm's way can exacerbate natural disasters. Through forest degradation and river engineering. Filling wetlands, destabilizing the climate, we are changing the natural system so that its ability to protect us diminishes.

Cities around industrial locations can lose their vigor and vitality just as surely as a once hot product can lose its cutting edge cool.

Meanwhile working on city development into ecological perspective means gathering all the systems together in circular system make post industrial future cities greener place to live and fresher attractive centres.



Background



By applying the most conservative estimations regarding population growth provided by the UN, the world's population will increase by about 3 billion until 2050.

WHO estimates that 844 million people lack basic drinking-water service and that by 2025, half of the world's population will be living in water-stressed areas.

Water for Sustainable Food and Agriculture, A report produced for the G20 Presidency of Germany http://www.fao.org/3/a-i7959e.pdf

By the year 2050, approximately 70% of the earth's population will live in urban centres.

According to FAO (food and agriculture organization of the United Nations), Water use grew at almost twice the rate of population increase and on average and agriculture accounts for 70% of global freshwater withdrawals.

As the world population continues to increase, it is projected that we will need to construct 3 billion units of affordable and sustainable housing over the next 30 years.

In 2019, agriculture used 50% of global habitable land area.
Some 795 million people in the world do not have enough food to lead a healthy active life. That means one in every 7 people globally.

Skellefteå is a city in Eastern Norrland's of Sweden, by the Baltic sea, with around 72 000 population in 2014. The municipality have plan to be home for 80 000 habitants by 2030.
Skellefteå, has northern Sweden's strongest and most technology-intensive industry.

The municipality contains a strong tradition of entrepreneurship originating within the rich natural resources - forests, ore and river. the massive heavy industries are in mining, wood, energy and metals.

Regional specialization: minerals and metals, forestry and wood, rubber and plastic, mechanical industry and energy production.

Northvolt

City Park

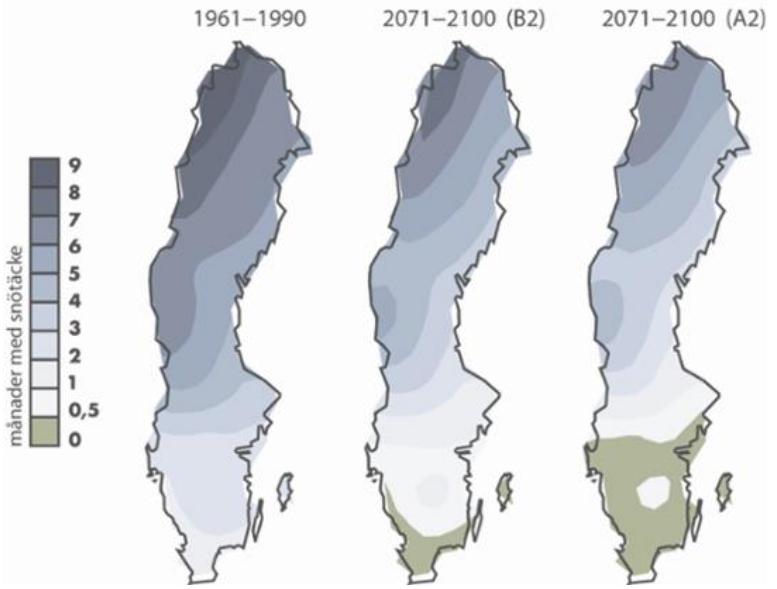
Water Edge

Harbour

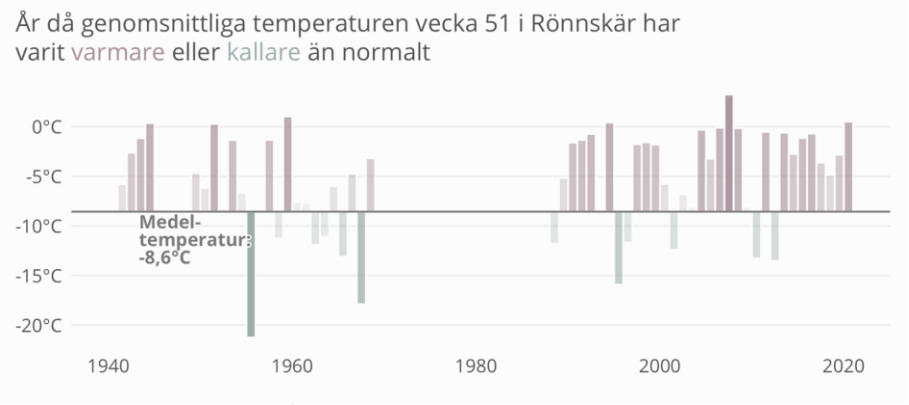
CHALLENGES

WATER

Climate changes we are witnessing and those that are predicted are largely due to human behaviour.
Ecologically destructive practices can worsen natural disasters. By destabilizing the climate, we are altering the natural system so that its ability to protect us is diminished. Arctic sea ice volume has declined dramatically over the past decade. In 2011 the minimum was more than 50% below that of 2005.
The consequences of losing ice coverage are expected to be immense: the cities will heat up leading to an increase of ocean temperatures with effects on weather system
Another challenge is the water condition: the Baltic Sea is susceptible to pollution by hazard out substances. Various types of industrial activities, busy traffic, and intensive farming and animal husbandry, emit and discharge hazardous substances, Northern Baltic Proper received the lowest status classifications (bad or poor).



Snow Level in Sweden the week 51

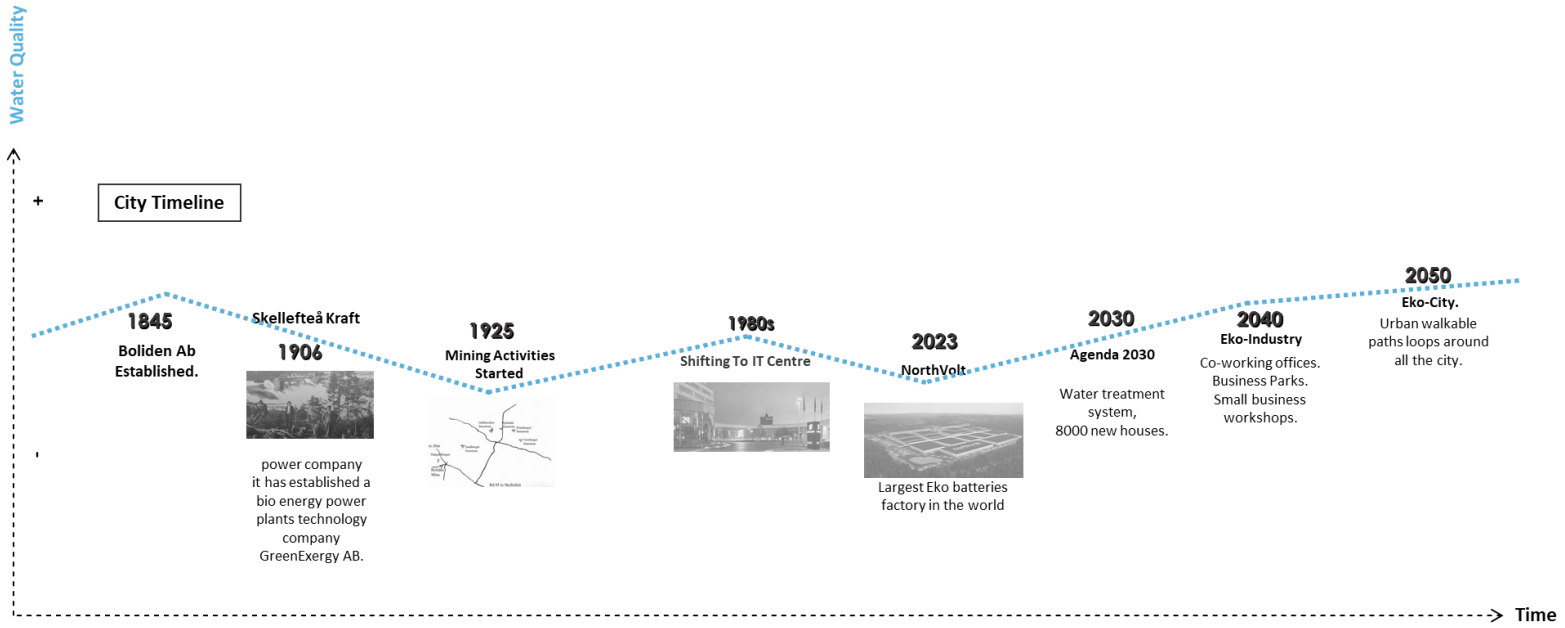


Annual temperature in Skellefteå

INDUSTRIAL

Industrial activities began in the 1800's and clear changes were made to the landscape of Skellefteå. With the invention of the steam engine, mining, industries settled on the banks of the water, making use of resources and water networks.

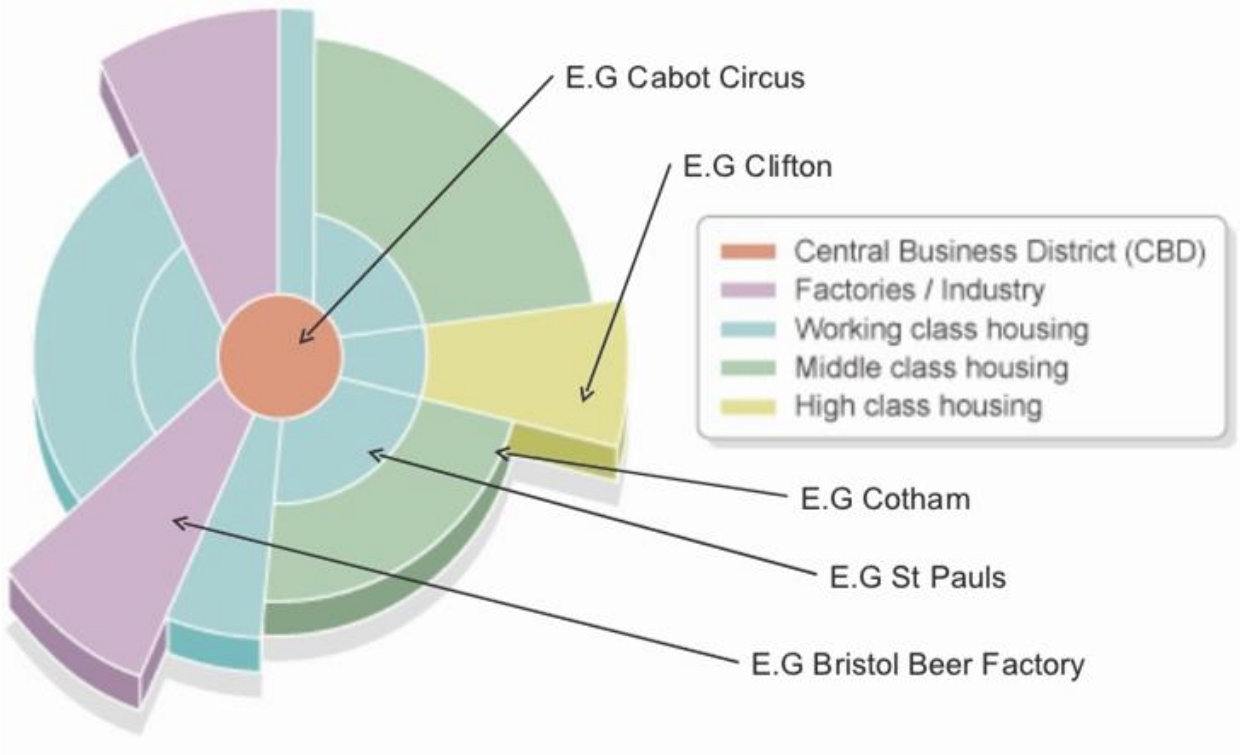
In the past, industries were located on the outskirts of the city. The production sites were dependent on a network of transactions and transportation. Today the city is growing and are integrated into industrial sites where, but this pattern is still visible.



Timeline For The Industrial Development Of The City

CITY

The city of skellefteå is divided into different hubs and that's regarding the social and economical sector which feeling in each hub. The is structure was found by the economist Homer Hoyt in 1939. (His model, the sector model, proposed that a city develops in sectors). Certain areas of the city are more attractive for various activities, either by chance or due to geographical and environmental reasons. As the city grows and these activities flourish and expand abroad, it does so in a wedge and becomes a section of the city.
With notice that the industrial centrums have been developed and updated into new forms but still the city centre have unequal situation with other parts of the city.



Hoyt Model

Method

Research

Background studies for Skellefteå

- **Literature Review**
- **Case study** (Göteborg , Oxelösund)

Site Study

- **Quantitative Research** (Statistics, Diagrams, demographics)
- **Qualitative Research** (interview with urban planning department in Skellefteå, SMHI reports, social media data).

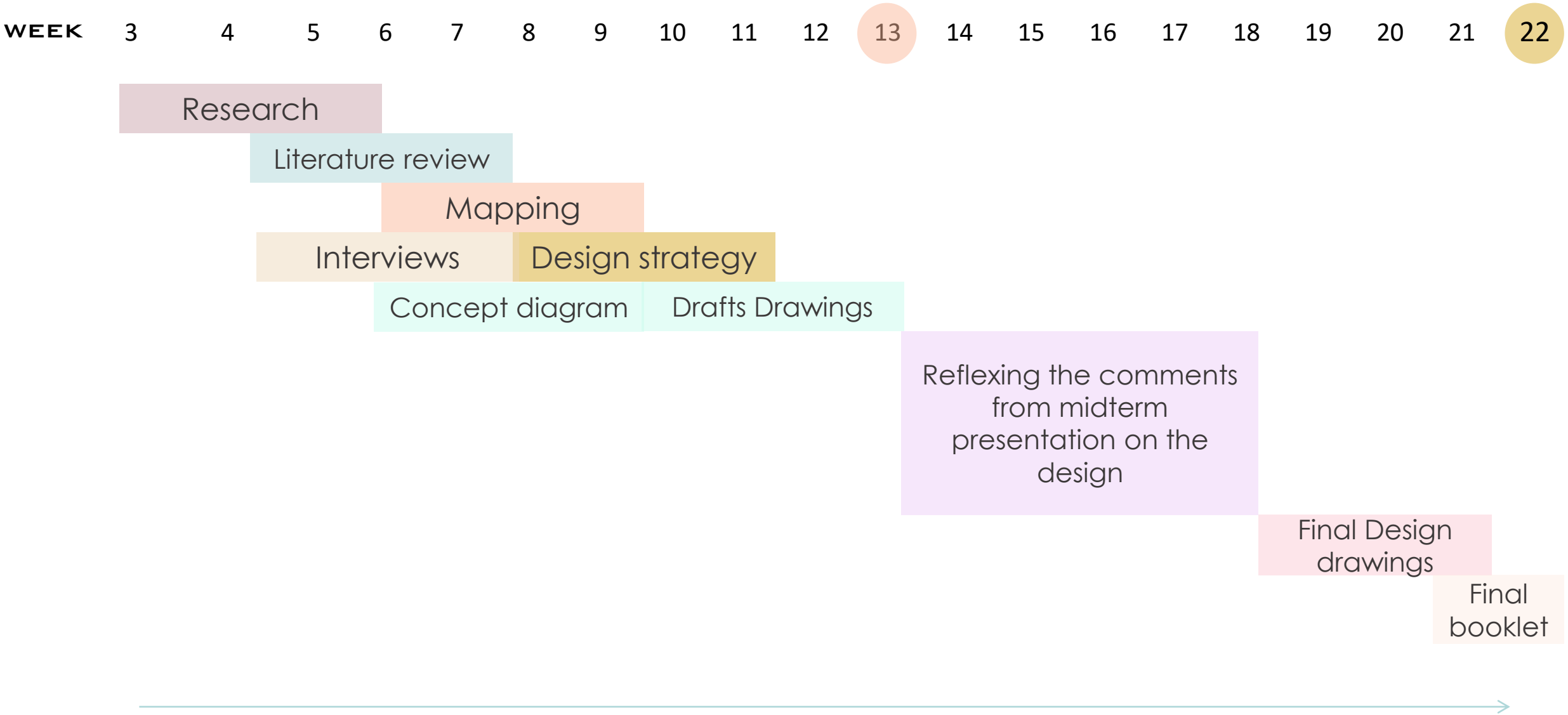
Analysis

- **Catalogue** (Typologies Map , Site Analyses , Concept Diagram)

Results

- **Catalogue** (Master plan, Sections, Axonometric Drawings , Perspectives)

Timeline


WEEK
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Research
Literature review
Mapping
Interviews
Design strategy
Concept diagram
Drafts Drawings
Reflexing the comments from midterm presentation on the design
Final Design drawings
Final booklet

Research Questions:

How to transform and reconnect local industries hubs to the city By:

- Develop waste-water management system in industrial hub ?
- Reviving the river edge by adding Riverwalk and active spaces.
- Settle and employ newly moved workers in the sustainable north?

Thanks!

Lubna Boltakke
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