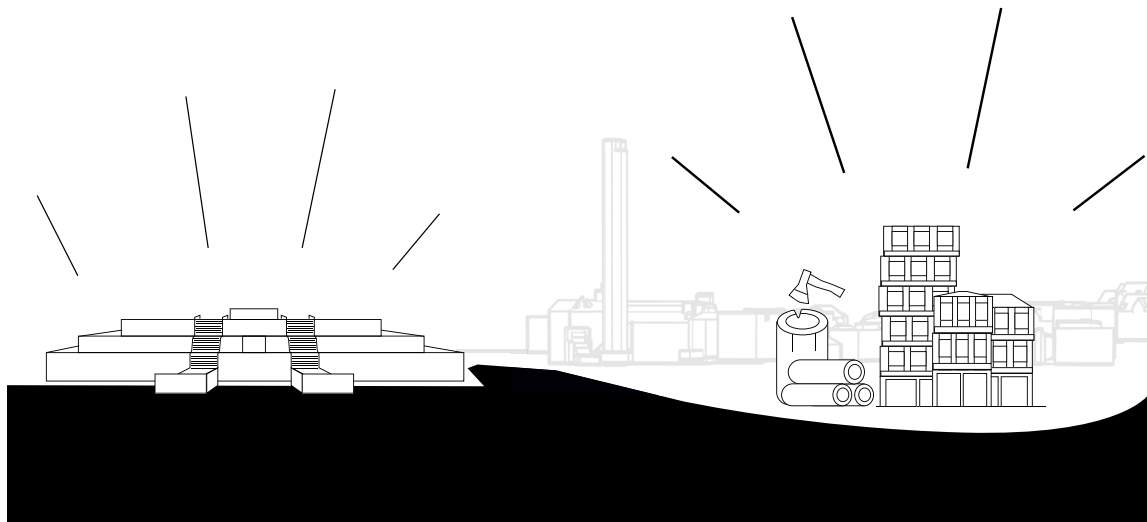


SHOWPIECE OF TALLINN TIMBER



EXPLORING THE POTENTIAL OF KALLARANA KVARTAL



RESEARCH PLAN

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Figure: Concept scheme (Boeter, 2023).

1. TOPIC AND RELEVANCY

Estonian prefabricated houses form one of the country's key industries with 140 enterprises (Hamburg et al., 2018). The production is considered to be efficient and specialised thanks to Estonia's century long timber building tradition, with the first log buildings in the Estonian region originating 2000 years ago (Uus, 2013). However, 91% of Estonian construction and manufacturing timber is currently exported (Puuinfo, 2015). The main market is Scandinavia, but also Alpine log homes and German saunas are constructed from Estonian wood. The tallest timber building in the world (as of 2014) was largely manufactured in Estonia, but was built in Norway (Hamburg et al., 2018).

Despite Tallinn having many areas with millennium-old wooden architecture, the past century has been one of industrialisation and material innovation resulting in the built environment being dominated by concrete, steel and glass. Especially during Soviet occupation, timber construction and wooden architecture were scarce. Industrialization, new building materials, an economic crisis resulting in minimization of labour cost, and the communist ideology led to new dominant materials and construction methods (Jänes, 2015, p.292).

Now, wooden buildings make up a only a small part of contemporary architecture of Tallinn, being limited to a handful of architects designing small apartment- and single fam-

ily buildings (Välja, 2015) (see Figure 1). The amount of larger-scale buildings that are constructed in timber are all below 10% (see Diagram 1). Despite recent innovation, this step up in scale has not been taken yet. The timber construction industry and tradition does not seem to get used to its true potential during times in which the need for timber construction is bigger then ever. An architectural timber showpiece could put Tallinn on the map as the industrial and traditional wood country that it already secretly is.

Building Type	Amount of which built in wood
Small apartments	71%
Apartment buildings	11%
Offices/Accomodations	6%
Trade/Service/Industry	13%
Education/Health care	6%
Warehouses/Transport	0%

Diagram 1: Ratio of timber buildings in Tallinn. (Rohetiigri. (2022).

Through this research and design I will try to emphasize this missed opportunity and explore the huge potential of timber architecture of Tallinn. The aim here is to add to the current knowledge on timber construction, to learn from contemporary and traditional Estonian timber architecture and to come up with innovative and inspiring design solutions to the current problems of the built environment of Tallinn.



Figure 1: Own pictures of Tallinn timber houses. (Boeter, 2023).

2. PROJECT SITE & DESIGN AGENDA

Despite timber being the topic of this research and design graduation, it is not the goal on itself to design a wooden building. The goal is to acknowledge the potential that this construction method has in Estonia and use it to add spatial value to the city of Tallinn, the city that this years graduation studio of Methods of Analysis focuses on.

After visiting the city and analysing it as a group, it occurred that, like every city or site, Tallinn faces its own unique set of challenges and opportunities to improve on its built environment. A number of these topics are present in an area that has recently been through some big transformations: the coastal zone. Despite the waterfront once being an integral part of urban activities in the Hanseatic town, the coast was closed off completely for the public during the period of Soviet occupation between 1944 and 1991 (Levald & Valdmann, 2005). However, since the independence the seafont and its heritage came back on the

agenda (Pae, 2022). During the site visit it occurred to many of us that our expectations of these developments had to be adjusted. Many of the industrial coastal areas had already been developed. When walking around the Põhja-Tallinn area, the nearly complete transformation of Kalaranna Kvartal especially sparked my interest. Although some of the qualities of the high end materials, street furniture and massive windows overlooking the bay cannot be denied, the function of the area in the urban network seemed to be unclear and undefined.

This feeling got confirmed by the contextual analysis of my group that showed that the Kalaranna district was set up to end up as an island, cut off from the rest of the city. When analysing borders within Tallinn, one of the conclusions was that a well functioning city would be a combination between unity, transition and contrast (see Figure 2). Borders are often a symptom of the transition between

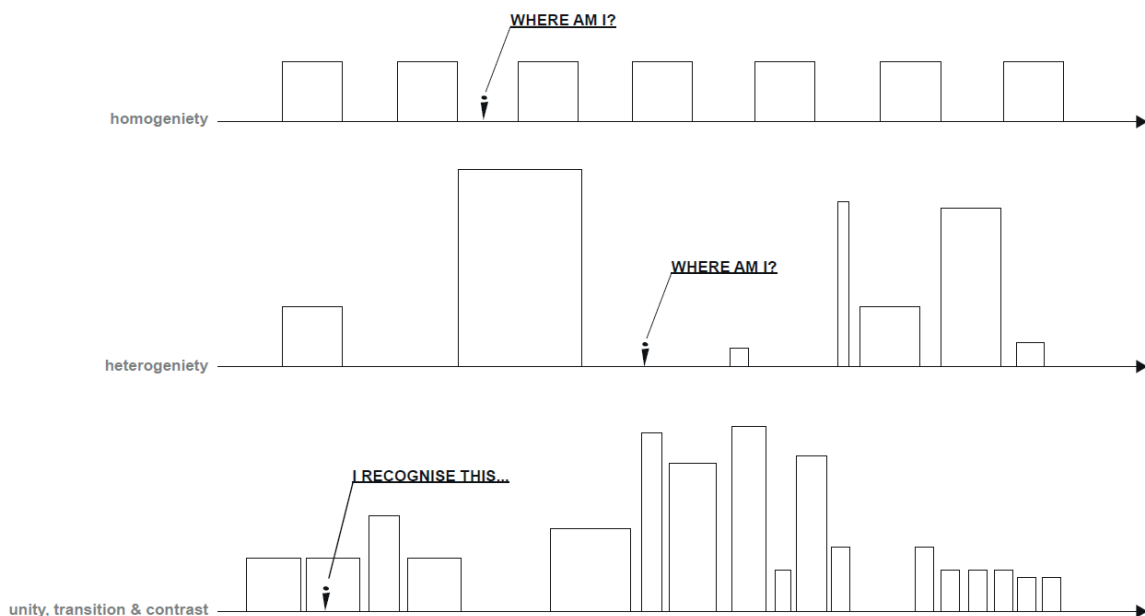


Figure 2: Contextual analysis of Tallinn. (Boeter, 2023).

two or more of these areas with unique unifying properties. If a city were to be completely homogenous or heterogenous, there would not be any point of recognition (see Figure 2) or incentive for people to go to a certain area since the city would be an endless patchwork of the same thing.

This forming of a uniform city is exactly what seems to be happening at the coastal area developments. Even though Estonia has the most square meters of retail space per person in Europe (Sevtsjuk, 2020), the Pattarei prison gets turned into a shopping mall, the Sadama harbour became an alcohol shopping paradise for Fins and now Kalaranna is facing the same strategy of attracting people from other neighbourhoods with cafes and shops. Sure, the private spaces of the apartments have quality on their own, however, these public spaces and its functions are almost identical to the rest of recent city and waterfront developments. In combination with the fact that the area is cut off by a road, and on the seaside and thus not on-route for many people that travel to and from the city centre, the unclear identity of the neighbourhood results in an isolated area that attracts not more than the inhabitants of Kalaranna themselves (see Figure 3).

This uniformity is not only apparent in the use of the area, but also in the spatial and architectural design. Although there is political ambition for a transition into sustainable construction, these designs do not seem to share this vision on the future. Traditional methods of construction like concrete and steel structures are used and the main transportation seems to be by car, resulting in underground parkings, which in turn creates an induced demand and accounts for almost 50% of the carbon footprint of a single building.

In this research and design process I will try to combine these missed spatial-, functional-

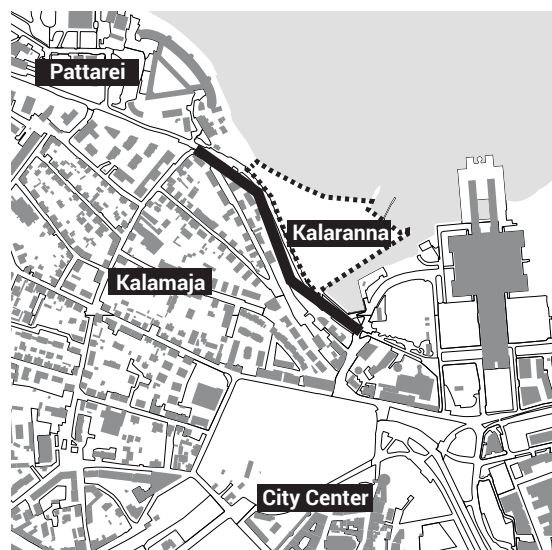


Figure 3: Unclear function of Kalaranna district. (Boeter, 2023).

and timber construction potentials that Kalaranna has by examining the following research question:

'How can a new scale of timber construction help Kalarrana Kvartal become a showpiece of the Estonian timber construction industry and -tradition, taking a clear spatial and functional position in the urban network of Tallinn?'

First I will investigate the potential of a new scale of timber construction through the following sub questions:

'What are the traditional timber construction methods of Tallinn?'

'What are the contemporary innovations of timber construction and how do these offer opportunities for other building typologies that are not small apartments?'

Secondly, I will explore the site specific poten-

tial of Kalarrana Kvartal to become a show-piece of the Estonian timber construction industry and -tradition, taking a clear spatial and functional position in the urban network of Tallinn through this second set of sub questions:

'What are the spatial and architectural elements that can make the area recognisable and distinct as a timber hub?'

'What can be the functional program that contributes to this new characteristic or identity?'

The research on these topics is already in development since the start of the academic year, but these questions will help me to narrow down to a specific identity, program, set of users and architecture for the design process. The current direction of these topics has already been pointing towards a general direction.

Already thoroughly discussed, the direction of an identity based on timber has huge potential. Especially next to the Linnahall, Kalaranna can become an icon of the future of Tallinn, based on their own material, tradition and innovation, contrasting to the Soviet concrete legacy (see Figure 4).

The program has not been defined,

however Figure 5 shows the start of an investigation on timber related businesses in Tallinn. These businesses are mainly focussed on software, licensing, sales and education since these types suit the inner city location more than the sound and air polluting heavy production part of the timber industry. Since the majority of small apartments in Tallinn is already constructed in timber, I will look for both a different kind of program and a step up in scale from these traditional small scale timber buildings. This step up in scale of in combination with a concentration of timber businesses can strengthen the before mentioned character of the new Kalaranna.

With this variety of small businesses, education and maybe a program mix with housing, I will try to prevent the pitfall of gentrifying the neighbourhood and attract a broad variety of people.

This characteristic and program as well as the material culture and innovation from the first research questions will then inform the resulting architecture. My goal is to let these themes and researches lead to both a design on the urban scale of the full neighbourhood as well as a more detailed architectural design of a single large scale, mixed use, building inside that neighbourhood.

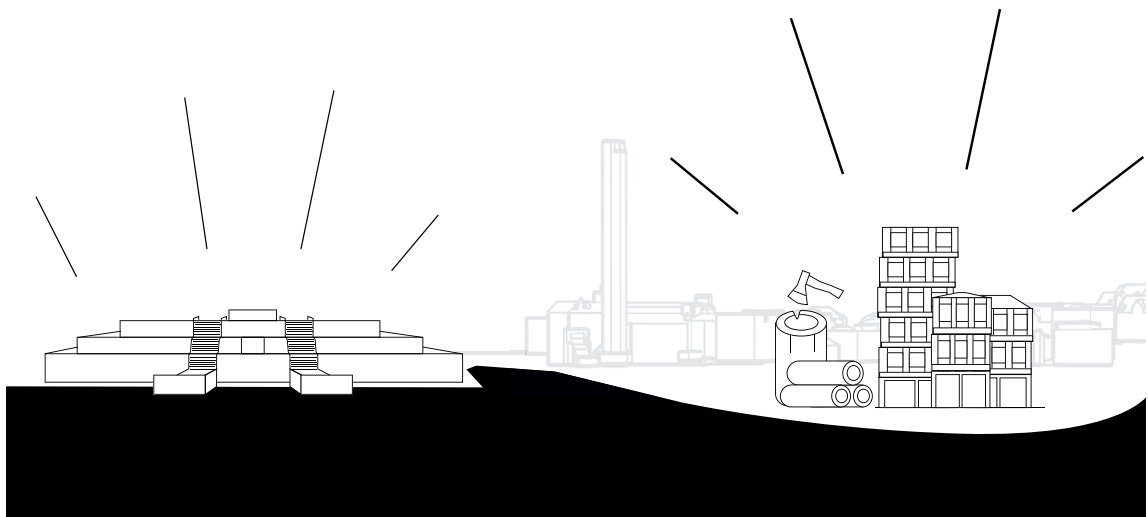


Figure 4: Concept scheme. (Boeter, 2023).



Figure 5: Concept scheme; clustering of timber industry. Left: Now. Right: Proposal. (Boeter, 2023).

3. ANALYTICAL FRAMEWORK

This research and design can be seen as an investigation on both timber construction and on solving urban spatial problems through recognisable architecture. In order to support this study the current discourse on timber innovation, timber tradition and recognisable urban architecture must be defined clearly.

Timber tradition

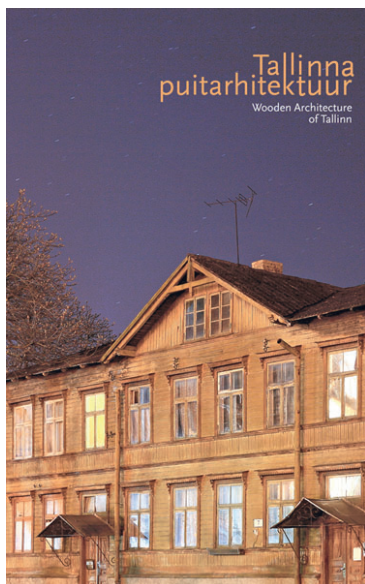
The tradition of timber construction in Tallinn has been briefly touched upon in the first chapter of this research proposal, however, the books by Välja (2015) and Tihase (1974) offer a more in depth view of the exact definition of traditional log building and peasant architecture of Estonia. Along with more contemporary sources like *Timber Framing*, a journal of the timber framers guild, I will try to define more clearly how wood was traditionally used by craftsmen and how this could still be relevant or usable today.

Timber innovation

To investigate the second sub question, I will look more into the contemporary innovations of timber construction and how do these offer opportunities for other building typologies. Internationally, Hamburg et al. (2018) already did a study on the best practices for construction of high-rise timber buildings. However, I will try to focus more on timber innovation in Tallinn itself with works from the likes of Siim Tuksam (2020) and Sille Pihlak (2020) that focus on digitalization and automatization.

Characteristic urban areas

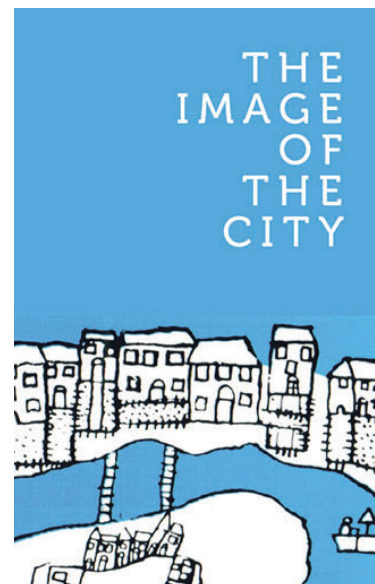
Also theoretically interesting are the second set of sub questions that focus on the identity of a place. Kevin Lynch in *The Image of the City* (1964) states that inhabitants recognise a city through: paths, edges, districts, nodes and landmarks. Norberg-Schulz tries to define the essential elements of an architectural object by saying: “every appearance has an indicative function, and when we consider an appearance, we should ask what could be eliminated without the figure losing its identity.” (Norberg-Schulz, 2000, p. 137). Henri Lefebvre also touches on this subject by discussing alternative spaces and times of simultaneity, contact, and exchange (1996, p. 147).



Leele Välja: *Tallinna puitarhitektuur*, 2015.



SiimTuksam: *Modulated Modularity*, 2020



Kevin Lynch: *The image of the city*, 1964.

4. METHODOLOGY

This research aims to identify what the potential of timber in Tallinn is and how timber architecture can play a role in contrasting to the spatial uniformity of the city. To research this, theory of literature and precedents will be combined with the practice of analysing the city through mapping experiences of others and my own experiences through evaluation of the fieldwork.

Some precedents that will help me grasp both traditional and innovative contemporary timber architecture will be:

Traditional timber buildings:

- Altja fishing village (see Figure 6); a typical log house village that can teach me about traditional building methods and detailing;
- Tallinn Houses; the most famous building typology of Tallinn can inform me about how and why facades were decorated the way they are and what the typology has to do with those factors.

Contemporary projects:

- Treet building; is located in Bergen, Norway, but the timber frame modules are produced in Estonia which makes this interesting to look at the innovation that and companies that are tied to this project;

- Pelgulinna State High School; is a project by Must Architects, of which we visited an exhibition and Tallinn, and can show me the contemporary state of load-bearing timber structures and the use of full-size trees.

I intend not only to analyse these projects through pictures and renders, but to redraw and model them to understand them more thoroughly and explore my own interpretations. Methods that inspired me especially are the works by Beverly Buchanan (see Figure 7) that explore the identity of a place, also focusing on timber constructions. Using these and similar methods, I will re-evaluate the current design of Kalaranna Kvartal by KTA, as well as the alternative competition entries by 3+1, Taavi Polme and DAGOpen.

To investigate the functional and architectural position in the urban network of Tallinn, I will continue my inventory of timber businesses and talk to an inhabitant of Kalamaja, the bordering neighbourhood, what would be properties of an area that would attract him personally.

To illustrate the positioning of these methods during the research and design, figure 8 shows a diagram of the structure of this process.



Figure 6: Detail of the Altja fishing village (Ajapaik, 1973).



Figure 7: Beverly Buchanan's 'Ruins and Rituals'. (Fox, 2017).

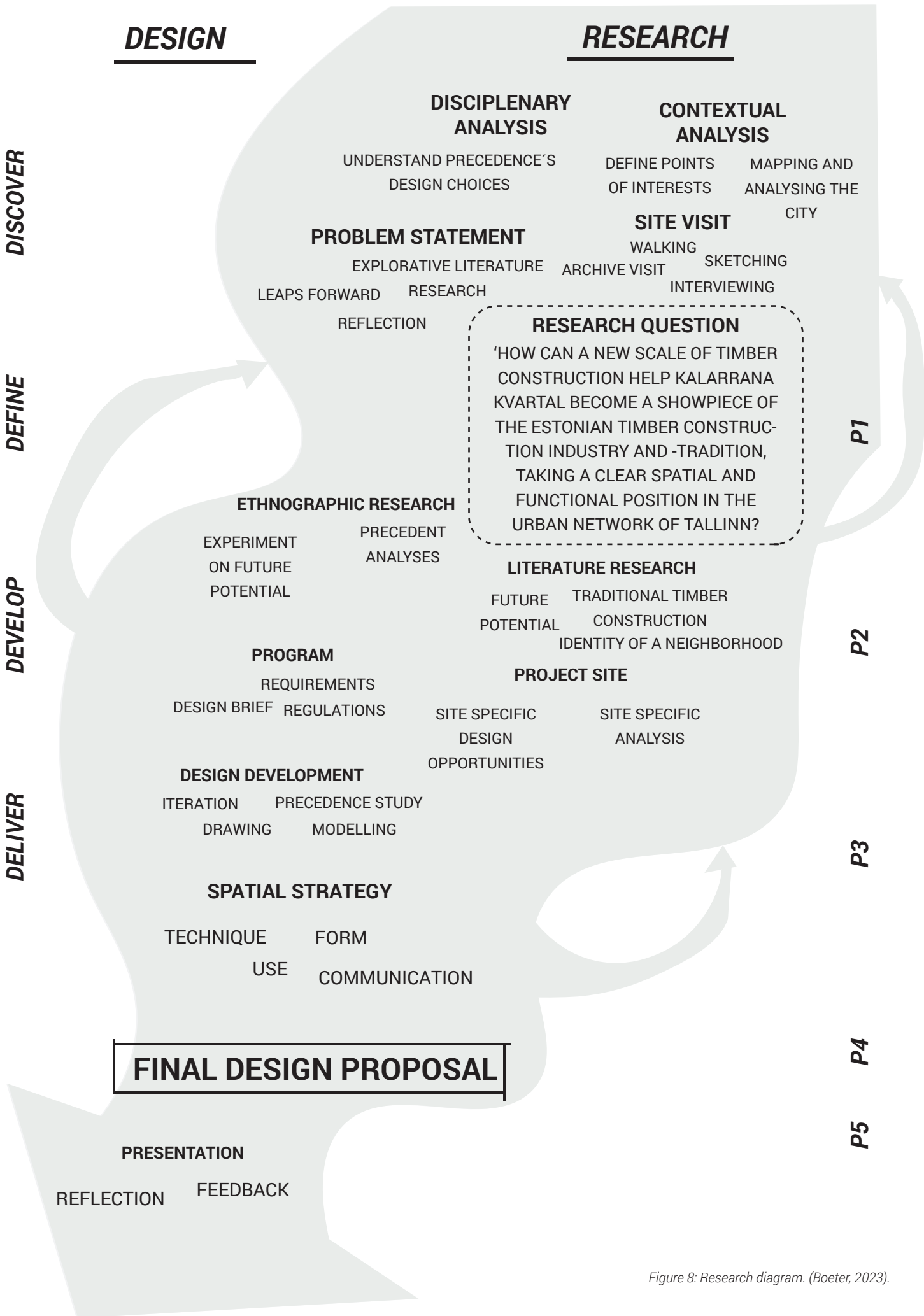


Figure 8: Research diagram. (Boeter, 2023).

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