

**EESTI
ELAMUD
ESTONIAN
DWELLINGS
ЭСТОНСКОЕ
ЖИЛЬЁ**

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PRE-DIPLOMA
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ESTONIAN DWELLINGS
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PREFACE

In order to understand this diploma project, both authorship and point-of-view play a key role. I found the inception of the idea in my own background. By understanding where I come from, one could perhaps understand part of the diploma project.

I was born in 1993, soon after the fall of the Soviet union. My mother is of Slavic descent, born half Belarusian and Ukrainian. She grew up in Eastern Russia before moving with my grandmother to the Estonian SSR. In time she would meet my father, a native Estonian. They moved into a 3-room apartment in the satellite city of *Õismäe* where they would have two children; my older brother and myself.

The population of Tallinn consists of an Estonian majority and a Russian minority. It was uncommon to intermarry as Russians often didn't learn Estonian nor assimilate into the Estonian culture. Fueled by the Estonian independence of 1991, a growing resentment against the Russian minority started to form. Being born of both ethnicities I would identify as Estonian to fit in at my Estonian-speaking school.

In 2005, my mother, my brother and I moved to Norway following my parent's divorce. During this time my mother urged me to assimilate to the Norwegian way of life but most importantly not forget my Russian heritage. I learned Norwegian quickly and developed a heavy accent in both of my mother tongues. I've started to identify as Norwegian upon gaining my Norwegian citizenship in 2012.

I would occasionally spend my summers in Estonia and In 2013, I moved back for a year to reconnect with my father's side of the family. During that time I'd never really feel Estonian due to my heavy Norwegian accent and identity.

Since moving back to Norway, starting my studies in Oslo, and generally becoming older I've learned to celebrate the unique circumstances of my heritage and my cultural identity. Although I do not see myself moving back to Estonia, I find great interest in Estonian culture and almost feel protective of it. I have a unique point-of-view as I recognize the Estonian way of life, yet have the ability to see it in a critical way as an outsider.

In choosing the topic for my diploma I found the possible crossing of my architectural practise with my estophile side. As a way to understand contemporary Estonian culture I want to study the history of Estonian dwellings. Dwellings in particular as I see them as a result, and vessels of culture. I wish that you, the reader, find this topic as interesting and informative as I do.

INTENTIONS

The goal of this pre-diploma is to underline the intentions for my diploma semester. I wish to have a broad focus and write about topics that may or may not impact the diploma work, but can possibly enrich the understanding of the subject. Nevertheless this pre-diploma serves as a sort of compilation of studies, research, drawings, history, and mappings, all trying to contextualize this broad theme.

The dwelling has to adapt to the comfort of the inhabitants, taking on different shapes and materiality depending on local climate and resources. The size and the spatial organization may tell us about the nature and traditions of the households. How we build our dwellings also tell us about what kind of society we live in or aspire to be.

I believe that as an architectural project, dwellings as a program are universally recognized. There are no distractions regarding the peculiarity of the program or the specifics of the end users, as dwellings are understood by all individuals. Dwellings represent the fundamental form of architecture as shelter.

I believe that understanding a dwelling aids one in interpreting the culture in which the dwellings are built. At the same time the social, economic and political environments can also inform the architecture of the dwelling.

In this pre-diploma I will present the findings I believe are important. I'm going to introduce you to the country of Estonia and its history. Then I want to go through the contemporary economy and the real estate market as well as the political climate in Estonia. I will also present the Estonian masonry stove found in Estonian dwellings, which inspired me to write about this topic to begin with. I've also compiled seven case-studies of dwellings throughout the Estonian history that can inform and contextualize the built environment in the Estonian capital city of Tallinn.

All of these parts I hope can contextualize and inform the project to a point where I am confident to create what would become the goal of my diploma project - a contemporary Estonian dwelling.



ESTONIA AT A GLANCE



Sinimustvalge, "The blue-black-white",
the official flag of Estonia

Estonia is a sovereign state in Northern Europe. It is bordered to the north by the Gulf of Finland with Finland on the other side, to the west by the Baltic Sea with Sweden on the other side, to the south by Latvia and to the east by Lake Peipus and Russia.

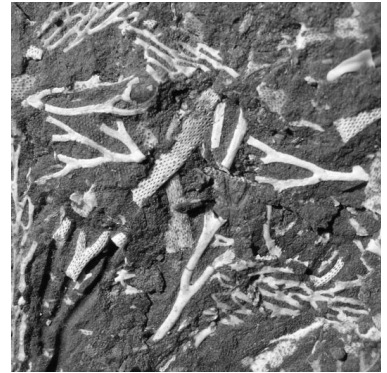
The country consists of a mainland where the largest cities such as the capital city of Tallinn, Tartu, and Narva are located, as well as around 2 000 islands in the Baltic sea and the Gulf of Finland, largest being Saaremaa and Hiiumaa. Estonia makes up 45 000 sqkm making it larger than Denmark and The Netherlands, but smaller than Slovakia and the Dominican Republic.

Estonia has a population of 1.3 million people consisting of 70% Estonians, 25% Russians as well as Finns and Slavic peoples such as Ukrainians and Belarusians. Estonia is one of the few former Soviet republics to have a growing population.

Estonian (*Eesti Keel*) is the official language and is spoken natively by about 1.1 million people: 922 000 people in Estonia and 160 000 outside Estonia. Estonian is a Southern-Finnic language and is the second most spoken language among all the Finnic languages.

Estonia entered the NATO and the European Union in 2004 and entered the Eurozone in 2011. Estonia ranks 40th in nominal GDP per capita with \$23 500 (2019 Estimate) and has the lowest debt to GDP ratio in the European Union at 8.4% (2018).

Electricity production in Estonia is largely dependent on fossil fuels. In 2007, more than 90% of power was generated from oil shale. The Estonian energy company, *Eesti Energia* owns the largest oil shale-fuelled power plants in the world, *Narva Power Plants*. This in part affects the average CO2 emission per capita with 17 metric tons annually (2016). This ranks Estonia 11th in CO2 emission per capita surpassing the United States and Saudi Arabia.



Shale oil is an unconventional source of fossil fuel in which the oil is trapped in rock fragments and extracted in a process that adds hydrogen to remove impurities. The refined products can be used for the same purposes as those derived from crude oil

Tallinn is the capital and the largest city in Estonia. It is on the northern coast of the country, on the shore of the Gulf of Finland. From the 13th century until 1918 (and briefly during the Nazi occupation of Estonia from 1941 to 1944), the city was known as Reval.

Tallinn has a mild climate with warm summers and cold, snowy winters. Winters are cold but mild for its latitude, owing to its coastal location. The average temperature in February, the coldest month, is -4°C . The warmest month is usually July, with an average of 17°C . Tallinn receives 618 millimeters of precipitation annually which is evenly distributed throughout the year, although March and April are the driest months, averaging about 30 millimeters while July and August are the wettest months with 74 millimeters of precipitation

The population of Tallinn fell following the breakup of the Soviet union. The capital's population neared 480 000 inhabitants in 1990 but fell to 400 000 in 2000. The population only started to grow since year 2010 from 390 000 to 430 000 in 2017. Part of the growth in recent years can be attributed to the introduction of free public transport to its inhabitants registered in Tallinn. Since the launch in 2013, an additional 25 000 people have registered in the city.



Tallinn became the first capital in Europe to have free public transport to registered inhabitants. By validating the *Ühiskaart* the public transport authority gets data on passenger commutes. Tourists pay a modest fare with a day ticket going for 3€

Estonia has established itself as a digital society facilitating citizen interactions with the state through the use of electronic solutions. Each Estonian citizen possesses an electronic chip-enabled ID card, which allows the user to access a range of public services as most are available to citizens as e-services. In most cases there is no need to physically attend the agency providing the service. Estonia became the first country to hold legally binding general elections over the internet.

Estonia since 2014 has issued electronic residency to non-citizens abroad. E-residents receive similar chip-enabled ID card allowing them the access the same public services as Estonian nationals. E-residents can start companies in Estonia and in part practice business in the whole EU. While e-residency provides access to Estonian services, it does not grant physical residency, the right to enter the country, or the ability to use the ID card as physical identification or as a travel document.



The Estonian ID card gives access to civic services as library cards, medical prescriptions and records, and can be used to sign documents electronically.

ESTONIAN HISTORY

The area of today's Estonia were settled at the end of the last ice age as the receding glaciers uncovered the land around 10 000 years ago. The region was inhabited by Uralic peoples around 8 500 years ago as pottery associated with their early culture have been found in Estonia, Finland and in Eastern Russia. These peoples practiced paganism and were one of the few last vestiges of pagans in Europe before succumbing to the Northern Crusades in early 13th century.



"Dannebrog falling from the sky during the battle of Lyndanisse", chalcography based on painting by C.A. Lorentzen, 1809. Origin legend for the Danish flag. The flag holds the world record of being the oldest continuously used national flag.

As a result of the Northern Crusades the area fell under the control of the Danes after winning the battle at *Lyndanisse* (today Tallinn) in 1219. As the Danes conquered the city, they built the fortress of *Castrum Danorum* (Lat. Danish Castle) at *Toompea*. The locals referred to the castle as *Taani-linn* (Est. Danish City) which is believed to be the origin of Tallinn's name. This site became contested due to its geographical position between Scandinavia and Russia.

Following the death of Christopher the II of Denmark, the Danish realm fell into turmoil. Duchy of Estonia was subsequently sold to Teutonic Order in 1346 and became part of the autonomous region of the German speaking Livonian Order. During the 13th century the city was part of the Hanseatic League, a mercantile and military alliance of German-dominated cities in Northern Europe.

Duchy of Estonia would change hands once again during the Livonian War (1558–1583) fought between Tsarist Russia and a coalition of Kingdom of Sweden, Denmark-Norway, and the Union of the Grand Duchy of Lithuania and the Kingdom of Poland. The coalition won the war and Duchy of Estonia fell under the rule of the Swedish crown.

The time of Swedish rule is sometimes jokingly referred to as the "*vana hea Rootsi aeg*" (Est. good old Swedish times). During this time the Swedish authorities enacted many reforms that lessened the influence of the local German-speaking aristocracy, to the benefit of the Estonian-speaking peasantry. Swedish reforms included the establishment of educational institutions such as the University of Tartu, and promoting Lutheranism by providing translations of the bible in Estonian. This in turn helped rise the literacy rate in the Baltic provinces of Estonia and Livonia. The Swedish also dissolved the old feudal systems established by the Teutonic Order in the 14th century, bettering the living conditions of the Estonian peasantry.

The Swedish rule came to an end in 1710 as the Swedish dominions of Estonia and Livonia were integrated into the Russian Empire. The Russians reintroduced the serf system in which the local peasantry lost their rights and became subjects to the Russian crown.

During the 18th century the ideals of the Enlightenment and The French Revolution motivated the local upper class consisting of educated German immigrants and local Baltic Germans to write literature for the Estonian speaking peasantry. This in turn helped spark the Estonian national awakening. The self-denomination *Eestlane* (Est. Estonian) spread among Estonians around this time. Estonian books increased from 18 in 1750s to 54 in 1790s. The Estonian national epic *Kalevipoeg* was published in 1862 and the first Estonian daily newspaper *Postimees* began appearing in 1891.

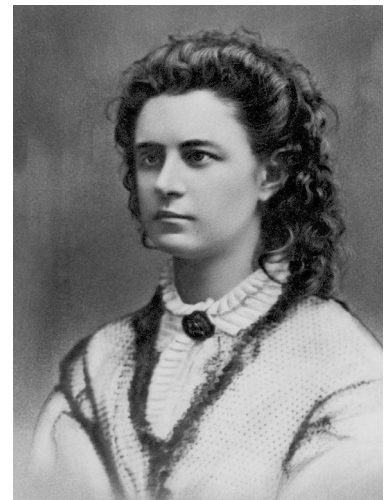
The cities became Estonicized quickly, and in 1897 ethnic Estonians comprised two-thirds of the total Estonian urban population. In 1897 96% of the Estonian and Livonian population were literate, second highest in Tsarist Russia after the Finns.

As the Russian Revolution of 1905 swept throughout the Tsarist realm, the Estonians called for national autonomy. Following the October revolution of 1917 and the German victories against the Russian army in the First World War, Estonia declared itself as an independent republic on 24th of February 1918.

The first period of independence lasted 22 years, beginning in 1918. In this time the newly formed Estonian government underwent a number of economic, social, and political reforms necessary to come to terms with its new found freedom. One of the major acts the government carried out was a land reform. The large estates of the Baltic German nobility were expropriated, dissolving the centuries old upper class.

In the wake of the second world war the Soviet union and Nazi Germany signed the Molotov-Ribbentrop Pact, Dividing Eastern Europe into spheres of influence. Estonia fell under the Soviet sphere of influence. 1940 saw the Soviet occupation and subsequent deportations and executions during Stalin's rule. Nazi Germany invaded Eastern Europe despite the agreement with the Soviets. During the Soviet bombing of 1944 the historic city of Narva and one third of Tallinn's residential areas were destroyed. During the 40s 30 000 Estonians were deported to Siberia and many more lost their life in active combat

Following Stalin's death, Nikita Khrushchev (b. 1894, d.1971) became the leader of the Communist Party from 1953 to 1964, bringing about the "Khrushchev Thaw". During this period the repression and censorship in the Soviet Union were relaxed. Khrushchev would also oversee the building of mass-housing all over the Soviet Union as housing shortage became a problem. Technological advancements in prefabrication and mass production resulted in a building boom. Satellite cities like *Mustamäe* in Tallinn and *Annelinn* in Tartu became manifestations of the Soviet agenda.



One of the most celebrated Estonian poets and playwrights Lydia Koidula (b. 1843, d. 1886). Koidula was part of the Estonian National Awakening. She is considered the founder of Estonian theatre.

During Brezhnev's (b.1906, d.1962) time in office lasting from 1964 to 1982 saw the completion of satellite cities like *Lasnamäe* and *Õismäe* containing dwellings of higher standards compared to those built during Khrushchev's time, built to house ethnically Russian workforce as part of the russification of Estonia. Tallinn held the sailing events during the Moscow Olympic Games in 1980, which in turn saw construction of the upgraded Tallinn Airport, Olümpia hotell, Pirita Yachting Centre, and the *Linnahall*.

The last of the Soviet leaders, Mikhail Gorbachev (b.1931), in office from 1985 to 1991, would introduce political movements of *Glasnost* (Rus. transparency) and *Perestroika* (Rus. restructuring) in part bringing about breakup of the Soviet Union. Perestroika particularly made political activity possible again, starting an independence restoration process in the Baltic states known as the Singing Revolution that lasted four years with various protests and acts of defiance. The Estonian Independence was declared on the evening of 20 August 1991.

ESTONIAN ECONOMY AND REAL ESTATE

Since the breakup of the Soviet union the construction of housing units in Estonia decelerated dramatically with the decline of the population. The population decreased from 1.56 million in 1990 to 1.39 million in 2000. Construction of housing didn't pick up until year 2000.

The period between 1990 and 2000 saw most of the changes in the interiors of the existing dwellings. This was the time of *Euroremont* as dwellings were upgraded to seemingly western standards. These upgrades can be called superficial as treatments were limited to surfaces and bathrooms upgrades. Inspired by imagery seen on the new international television channels, floors were typically laid with wood print linoleum and paired with neutral, pastel-colored wallpapers.

The completion of new dwellings picked up again in the year 2000. During the first decade of this millennium the Estonian housing market experienced a boom. The average price of 2-room flats in Tallinn rose by 450% from 2000 to 2007, and the prices of three-room rose by 412%. In two years owner-occupancy rates went up from 85% in 2002 to 96% in 2004. The rental market shrank from 12% of households in 2002 to just 4% in 2004.

After the fall of the Soviet union Estonia experienced a substantial economic boom. The Estonian GDP expanded from 4.37 billion USD in 1995 to 25.92 billion USD in 2017. From 2000 to 2006, Estonia's economy expanded by an average of 8% annually. The unemployment rate fell from 14.9% in 2000 to 4.2% in 2019. Today the economic boom is slowly stagnating growing only 3.5% in 2018 compared to 4.9 in 2017.

The economy is expected to slow further, with projected GDP growth of 2.7% this year and 2.4% in 2020.

Demand for dwellings is slowing, yet dwellings are being sold for higher prices. In 2018, the number of purchase-sale contracts fell by 5.5% to 48 900 units from the year earlier. In contrast, the value of contracts rose by 5.5% to €3.42 billion over the same period.

The rising prices of housing are slowing down as well. In Tallinn average price of apartments increased by a modest 3.48%, €1 843 per square metre in 2018. Adjusted for inflation, apartment prices were almost unchanged in 2018 from the previous year.

Dwelling completions have picked up since 2014 but are expected to slow in coming years as less building permits are being granted. From 2014 to 2018, 24 000 new dwellings were completed with a growth of about 24% annually.

Around 50% of Estonia is covered by forests, 10% of which are protected. Firewood is the second most used source of domestic fuels, largest being oil shale. Wood is commonly used both on an industrial scale and in the residential sector by the traditional masonry stoves. Woodworking is a key industry in Estonia and makes up 15% of the country's export. In addition Estonia has a large industry focused on prefabricated wooden homes, many of them exported to Scandinavia.

POLITICAL ENVIROMENT

Estonian Parliamentary election was held on March 3rd 2019. *The Reform Party* (liberal) remained the largest party but were unsuccessful in forming a cabinet because of disagreements on tax matters with the the second largest party, *The Centre Party*. *The Centre Party* formed the 2019 - 2023 cabinet with *EKRE* (far-right) and *Pro Patria* (conservative). On April 17th, the new cabinet got approval of Riigikogu with the support of 55 out of 101 MPs. This current cabinet was sworn in on April 29th of 2019.

The cabinet has received criticism on behalf of *EKRE*. During the swearing-in of the new cabinet, Estonian President Kersti Kaljulaid wore a sweatshirt with the slogan "*Sõna on vaba*" (Est. the word is free) - an obvious statement of the importance of freedom of speech.

Although not much can be gathered from the parties 2019 programs about housing or larger building projects, there are strong intention on preserving the Estonian culture. *ERKE* especially sees the survival of Estonian ethnicity as its main objective. Estonia has come out to be one of the most progressive nations of among the former Soviet Republics, but the 2019 - 2023 cabinet may have come as a desire to distance Estonia from western ideologies.

ESTONIAN MASONARY STOVES



A newly modernized masonry stove, equipped with a digital thermometer.

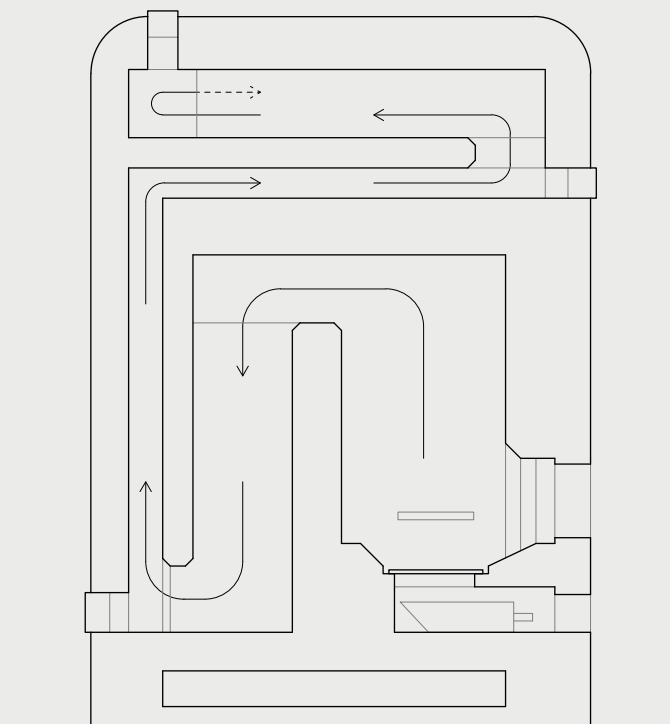
A masonry stove consists of a closed hearth and heat-exchange channels all built into a masonry thermal mass. As the hearth is lit with firewood the smoke travels through the heat channels that in turn warm the brick. This makes masonry stoves heat-retaining and fuel efficient compared to ironcast stoves and open hearth fireplaces. The masonry stoves release heat evenly up to 36 hours after the fire has been put out. Doubled with effective insulation with low R-values means that less fuel can be used and the dwelling can retain heat longer. These stoves would predominantly be used during colder months from October to March. Climatically Tallinn lies on a preferable spot because of its immediate proximity to the Gulf of Finland, as the body of water evens out the local temperature avoiding large changes.

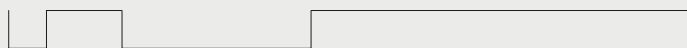
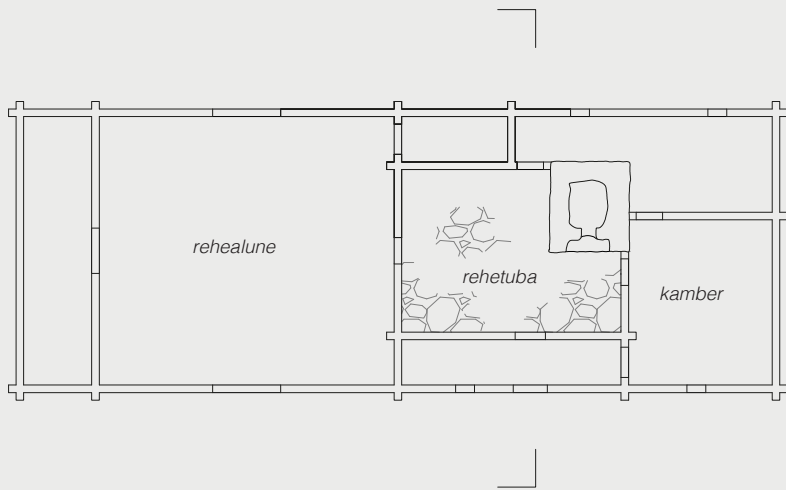
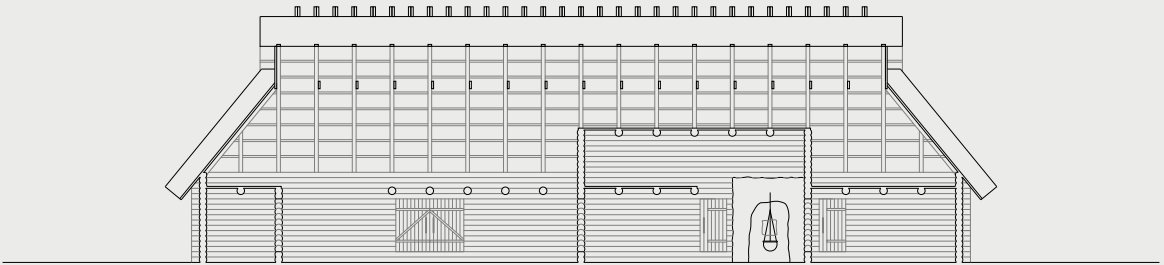
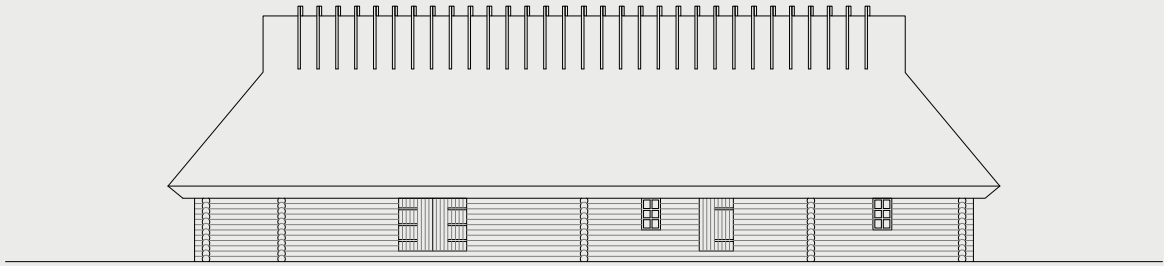
Similar to other Northern European cultures, Estonians have used fire as a source of heat since arriving to these colder regions. This tradition has persisted into our time. The first notable examples of heating was in the *Rehielamu* in which a large kiln with a great thermal capacity was used to dry out wheat grains after reaping. This method of grain drying was so successful that it lasted from the 11th century right up until the industrial revolution, with innovations being added such as chimneys that cleared the living spaces of smoke and stovetops that made cooking food even easier.

The masonry stove that many Estonians associate with domestic heating comes from the Alpine region of Southern Germany. These ovens were introduced around the time of the Swedish rule of Estonia around 16th century. During this time urban residents lived in the building type referred to as *vanabalti maja* where the dwelling was heated through a central masonry room called *mantelkorsten*. As the masonry stove entered this typology, the smoke was led into this central room by flues and out through the vent in the ceiling. The adoption of masonry stoves increased to a point where building of the *mantelkorsten* fell out of favor. 19th century housings like the *Lenderi maja* introduced masonry stoves in multi-story structures, although ornaments typically associated with Swedish *kakelugn* and German *kachelofen* were uncommon. The building of masonry stoves persisted until the introduction of soviet building typologies in the mid 20th century that favored central heating. During recent decades the building of masonry stoves have made a comeback because of their effectiveness, largely in single-family homes.

The EU has come with expectation for domestic firewood heating as to comply with the goal of reducing greenhouse gases. In essence the burning of firewood is carbon neutral as exactly the same amount of carbon is released that the wood collected during its growth. It is known that firewood heating causes the release of small soot particles into the air that in turn worsens the local environment.

Innovations done in Austria and tested at the Estonian University of Life Sciences have found new ways of shaping the hearth that burns through the firewood in a more effective and cleaner way. By calculating dimensions and energy production in a computer software, a skilled heater mason or *pottsepp* as they are called in Estonian, can build masonry heaters with cleaner burning. This means that the stove burns the firewood more efficiently, even cumbusting soot, resulting in the exhaust with far less particles.





REHIELAMU

Est. Drying barn dwelling

1000 - 1850

This agrarian typology appeared in the 11th century and was commonplace in Estonia, Ingria (today Leningradskaya Oblast, Russia), and Livonia (today northern Latvia). These buildings would house all functions associated with farming and also serve as the main dwelling of the household. This typology fell out of use around the time of the industrial revolution. Often built as wooden structures, some variations in stone could be found around the islands in the west.

As the name suggest the *rehielamu* contains both living and working functions. Generally they would be divided into three main rooms: *rehealune* (threshing room), *kamber* (chambers), and *rehetuba* (kiln room), the latter being the most important.

Within the *rehetuba* was a large stone kiln called the *reheahi*. This kiln functioned as the main source of heat in the dwelling. Being a massive stone objects, once fired up it would retain heat for a long time. Initially built without chimneys, those would appear in the 17th century, the smoke would simply go out into the room and exit through small opening near the ridge of the hip roof. Often times the *rehetuba* was used as a sauna.

Because of the climate in Estonia the grain in the field would not dry sufficiently and had to be dried after reaping. In fall after reaping the grain would be hoisted over the beams in the *rehetuba* and the room would subsequently be heated for a couple of weeks. This would drive out the humidity in the grain and prepare it for the threshing. The threshing took place in the *rehealune* as to separate the grain from the spikelets. The grain was kept in the cool *kamber* during winter and the *rehealune* would hold the farm animals and the farm equipment. The *rehetuba* become the main dwelling space in the house.

Life in an *rehielamu* was not forgiving. Estonia was under Tsarist Russia between 1721 and 1917 during which the liberal rule of the former Swedish kinds was abolished by the Russian Tsars. Serfdom in Russia wasn't abandoned until the 1860s so many of the peasants living in *rehielamu* were serfs.

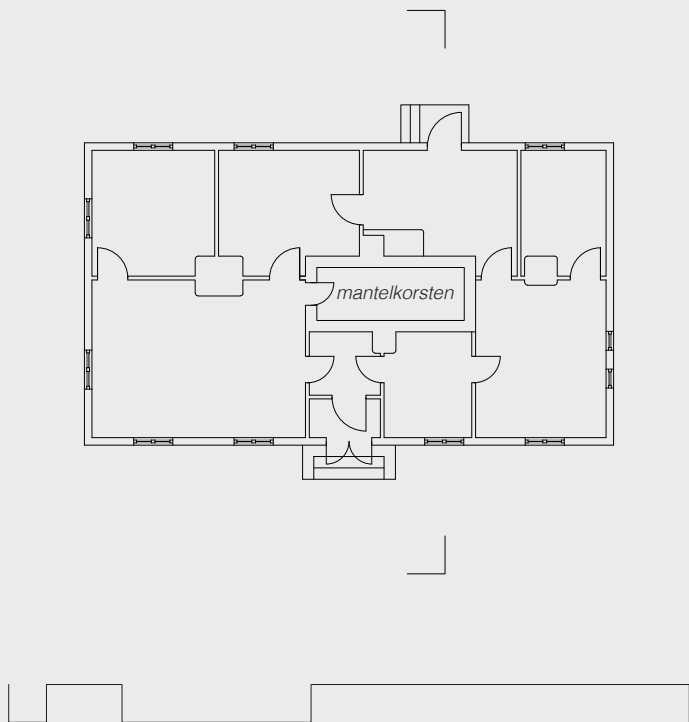
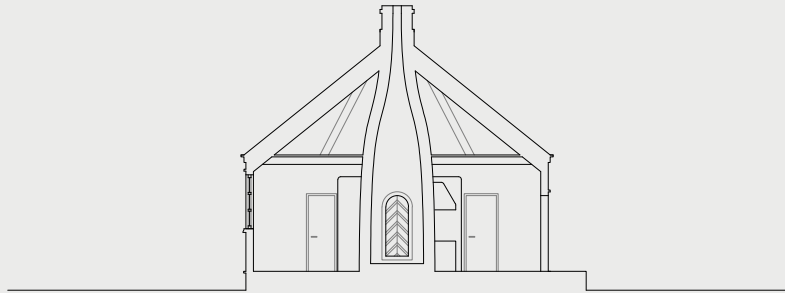
The *rehielamu* went out of favour around mid 19th century when agriculture became industrialized and more efficient. Less labour was needed and more people were free to work in other fields. Most would move into bigger town where they could find jobs at factories. This was the point when Estonia moved from being an agrarian society to becoming an industrial society.



A drawing of a *reheahi* by Matti Ruljand from 1961. Around the 17th century chimneys would be added to most *rehielamu*. This meant that the space above the kiln was now smoke free and that space could be inhabited. Some kilns got sleeping spaces on top, which would keep the subjects warm during winter. Most kilns got added stovetops where food could be evenly heated.



This image from early 20th captures the agrarian life of Estonians. Here we see grain threshing in the *rehealune*. Since the room lacked windows the workers would keep the large doors open. After threshing the grain would be left over threshold so that the wind would blow away the remaining wheat spikelets.



VANABALTI MAJA

Est. Old Baltic house

1700 - 1900

The *vanabalti maja* was an early urban typologi commonly built between the 18th and the 20th centuries. These buildings were small, single story wooden structures built as log houses, clad with either panel or daub. The roofs were tall that encompassed the *mantelkorsten*, a room that was made up of a huge hood. As an urban typology, these buildings made use of facade ornaments. During the 18th century most of the buildings were built in the baroque style, although being much simpler.

The central room was the *mantelkorsten* built in either brick or stone. This room housed the stove top where the food was prepared. The smoke of stove would escape trough the chimney above. *Vanabalti majad* were heated by masonry stoves that had flues connecting to the central hood room, although early version lacked this innovation. These stoves were much more favorable as they were more efficient, heat retaining, and kept the smoke out of the living spaces. In time the kitchen was moved out the *mantelkorsten* and the central room became vacant, often used as storage.

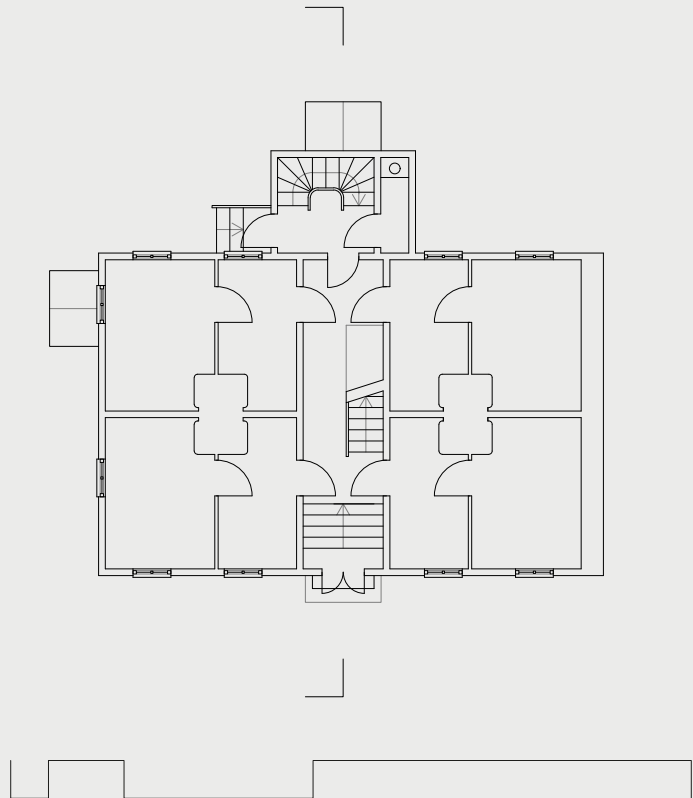
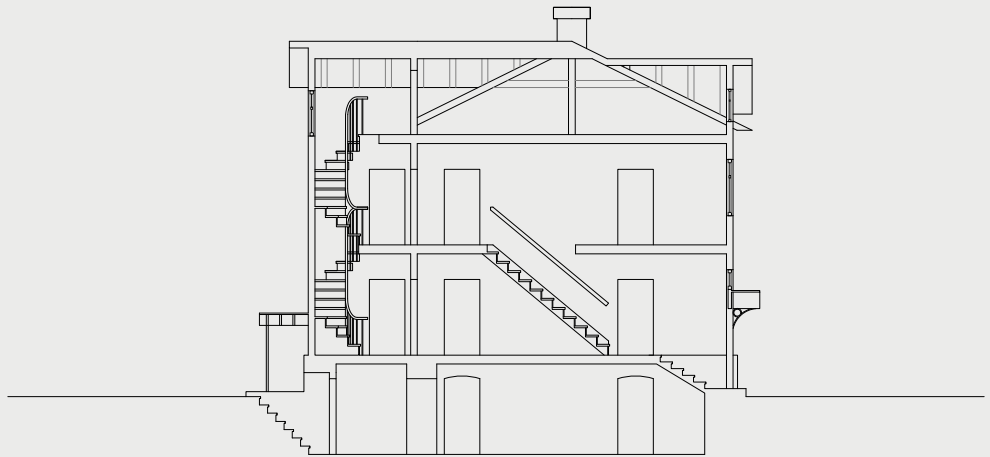
Since these buildings were built close to the city centers, they were the first to go when building higher density housing, as the plots they occupied were valuable real estate. Tallinn was left with just a handful of *vanabalti majad*, whilst some are still remaining in large numbers in small cities like Paide or Viljandi.



The door of a *vanabalti maja*, Lai street 24 in Tartu. Although in the baroque style, the ornaments are simple.



A 18th century *vanabalti maja* being torn down in front of a newly built *Khrushchyovka* at Pärnu street 8 in Paide. Many of these early urban dwellings were built close to city centers and were often demolished as to make way for buildings with higher densities.



LENDERI MAJA

Est. Lender style house

1880 - 1920

Lender's houses were predominantly built as tenements during the end of the 19th to the beginning of the 20th century. At this time Tallinn experienced massive urbanization. The Baltic railroad opened in 1870, connecting Tallinn to St. Petersburg, the capital of The Russian Empire, thus connecting Estonia to the rest of the Russian realm. This stimulated trade relations considerably. Machinery manufacturing and the pulp and paper industry developed. *Lutheri Vineeri ja Mööblivabrik* (est. Luther Plywood and Furniture Factory) was established in 1877, becoming an important seat of industry in Tallinn.

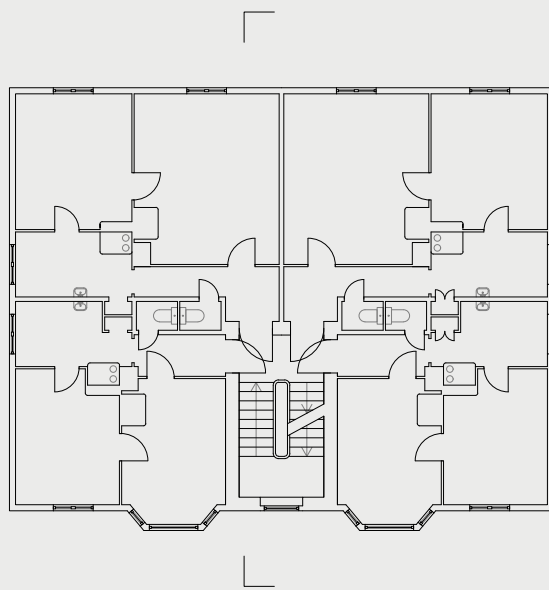
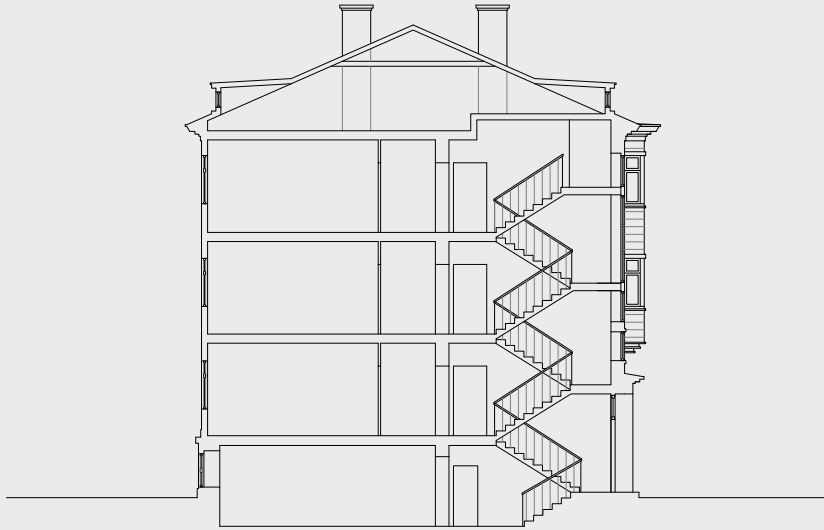
Tallinn's population grew from 50 000 inhabitants in 1881 to 64 000 in 1897, causing a housing shortage during the turn of the century. The namesake of the Lenderi maja, Valdemar Lender (1879-1939) was an engineer who was elected as the first Estonian born mayor of Tallinn in 1906, while also working at the city's construction department. Although not being the architect behind the Lender style, he oversaw the construction of these buildings during his time in office.

These houses featured two levels of dwellings built using logs on a limestone foundation. Each building contained around eight apartments as well as *pesuköök* (est. lit. washing kitchen), a room in the cellar for washing clothes. Communal restrooms were located in the stairwells. Building regulations required two points of egress in case of fire. Apartments were commonly 2-room apartments featured masonry stoves between rooms that were used to heat the spaces and cook food on stoves. These houses were predominantly built in the suburbs of Tallinn, still walking distance to the city centre and around thousand of these buildings still exist today.

All of these wooden buildings have since been listed with the city officials being strict on historical restoration. Because of their proximity to the city centre and character, these buildings have experienced a renaissance with the prices of these homes rising considerably. The areas in which they were built in are experiencing gentrification as these areas are quiet, lush with greenery, and have a high social control.



A renovated *Lenderi style house* at Luise street in Tallinn



TALLINNA MAJA

Est. Tallinn style house

1920 - 1940

As Tallinn's growth persisted reaching 138 000 inhabitants in 1934, the Lender style house slowly evolved into the Tallinna maja or Tallinn style house. Although still built as tenements, these buildings featured two major innovations: a masonry stairwell that eliminated the need for the second staircase, and structure built of wooden frames cutting down the cost of construction and more importantly the time it took to build. Houses built in the Lender style had were of log structures meaning they the wood had to settle and dry before the tenants could move in. Similarity to the Lender style houses, the financing of the Tallinn type had to come from private builders. Often times the house owner would live in the buildings.

The Tallinn style house brought with it improvements to residential living. These new homes brought with them more varied spaces: *suurtuba* (est.lit. large room) being used as the main living space, *väiketuba* (est.lit small room) primarily used as a bedroom, and a kitchen, all situated around a central masonry stove. These apartments included a toilet room although the bathrooms would be found in the cellar, as well as spaces for washing clothes. As the foundations were made taller, the street side of the house could be used for smaller commercial spaces. The Tallinn style houses embraced electricity as it was introduced city-wide in 1913.

Although around 500 Tallinn style houses still stand today, they all are of different characters. Buildings vary in size, height and even in number of floors. The early variants in the 20s accommodated apartments with considerably higher renting prices than the Lendri style housing, although in the 30s this would change as buildings would feature many different sizes of apartments, from single-room apartments to 3-room apartments.

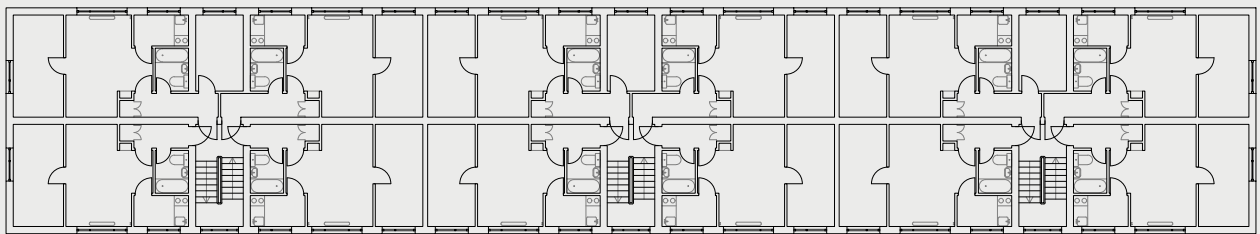
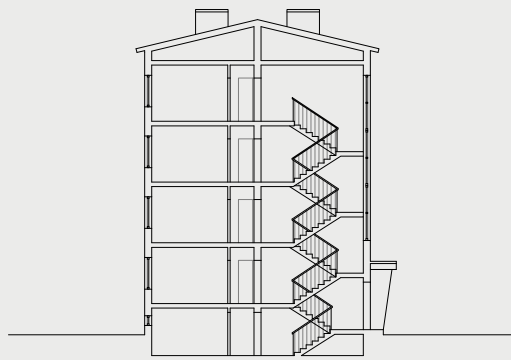
The building of these houses stopped with the Soviet invasion of 1940. Instead of tearing down the Tallinn style house and building Soviet styled apartment blocks, the Soviets took this housing typology into use as they were recently built and of good quality. The larger apartments would be subdivided as to make room for more residents, but later many of these changes would be reverted following the Estonian Independence of 1991.



A Tallinn style house at Ristiku street 15. In this image the building has yet to receive its paneling.



Remains of a burned down Tallinn style house at Kopli Liinid in northern Tallinn. The central staircase was built in brick, complying with fire-safety regulations at the time.



ХРУЩЁВКА 1-317

Rus. *Khrushchyovka*,

Khrushchevs' house

1950 - 1970

Built during the 1950s, the Khrushchyovkas were the first mass housing projects to be deployed in the Soviet Union. This building type as well as later variants changed the Soviet cities to the immediately recognizable imagery we associate with the former communist state.

As the *Stalinks* (Stalin age dwellings) were built in brick and featured ornaments, the construction was expensive and labour intensive. The housing shortage worsened during the Second World War as Joseph Stalin (b.1878, d. 1953) focused production on industry and failed to provide housing for the quickly urbanizing Soviet population. The Soviet population found themselves living in communal apartments, sharing living spaces with strangers. In 1950s the estimated living space per person was less than 5 square meters.

After Stalin's death the Soviet Government, lead by Nikita Khrushchev, called for solutions for the housing shortage. Prefabricated concrete panels were found to be most cost-effective and easily scalable for mass production. Initial plans of housing blocks were developed during the end of the 50s and sent to the engineers and architects in the thirteen Soviet Republics to be optimized for local materials, production plants and climates.

This commission was awarded to the Estonian practice called "Estonprojekt" lead by Mart Port. In 1956 the practice would design the Estonian housing series named "*Tüüpelamu 1-317*" (Est. Livingtype 1-317). The Estonian type was not fully prefabricated but rather built of pre-fabricated building blocks made out of calcium-silicate as the Estonian factories already produced bricks in this material due to large lime deposits found locally.

The Estonian *Khrushchyovka* was a 4, to 5 story lamella with three stairwells. Each floor had four nearly identical apartments measuring 37 square meters, most being 2-room flats. The ceiling heights were low, around 2.4 meters

The traditional masonry stove was substituted by central heating. The kitchens were small, as it was expected that inhabitants would eat at restaurants in the area. Early Estonian blocks would lack balconies commonly seen on southern variants. The living spaces would become unbearably warm during summer and dreadfully cold during winter as the insulation was minimal. The blocks also lacked soundproofing so noise would propagate throughout the block.

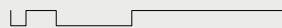
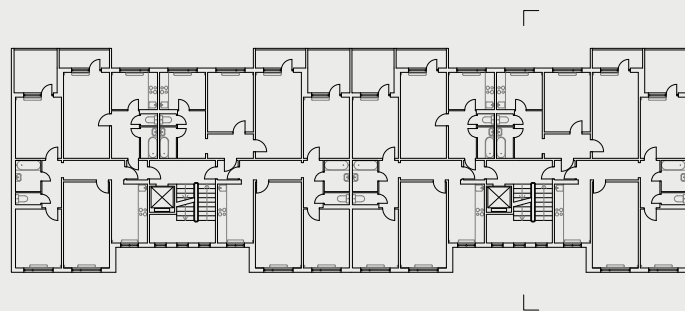
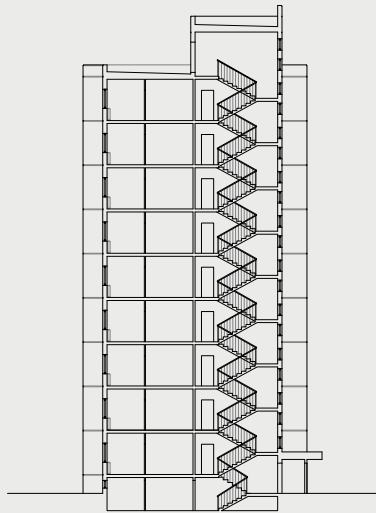
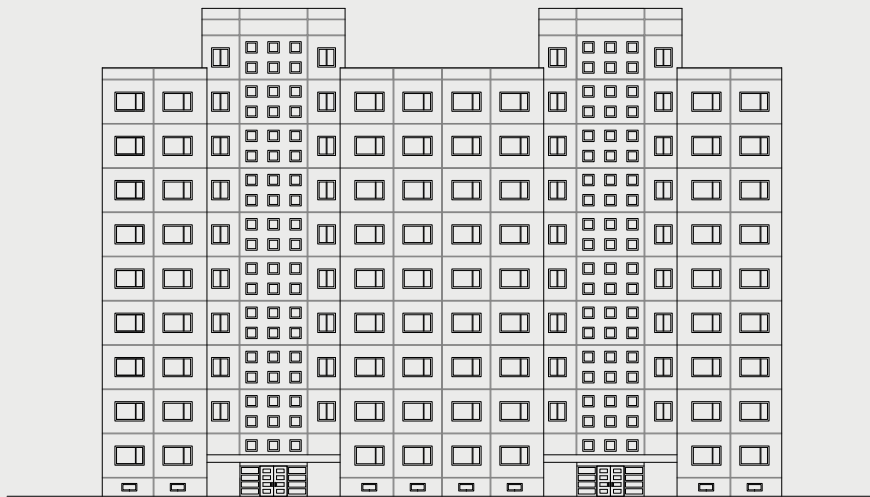


Initially they were built near city centers on lots destroyed by air raids or as replacements for old low density buildings (much like the *vanabalti maja* that disappeared in Tallinn during this time). When deployed in massive quantities, they required planning of whole satellite cities. These would be self contained with kindergarteners, schools and grocery stores as well as markets and restaurants. The satellite cities would connect to the city centre by public transit, often by busses, *marchutkas* (routed taxicabs, usually vans) or trolleys. The inhabitants would often commute out of the satellite cities for work. Examples of these satellite cities are *Mustamäe* in Tallinn and *Annelinn* in Tartu.

The flats were allocated on a queue basis that resulted in social and ethnic assimilation. This in turn avoided the ghettoization often associated with projects of this scale in the west, but yet failed to develop neighbourly sense of belonging.

Khrushchyovkas were built as temporary housing with expected lifetime of 25 years. Many *khrushchyovkas* in Tallinn have been renovated expanding on their lifetime, while Moscow city officials are slowly tearing down these structures.

During the 60s the Soviet Union built 2,2 million *Khrushchyovkas* annually. The *Khrushchyovka* helped rid the Soviet Union of what they deemed as inequalities and leveled both social and ethnic classes. They became the manifestations of Soviet ideologies and would in time develop into denser and more comfortable forms of housing.



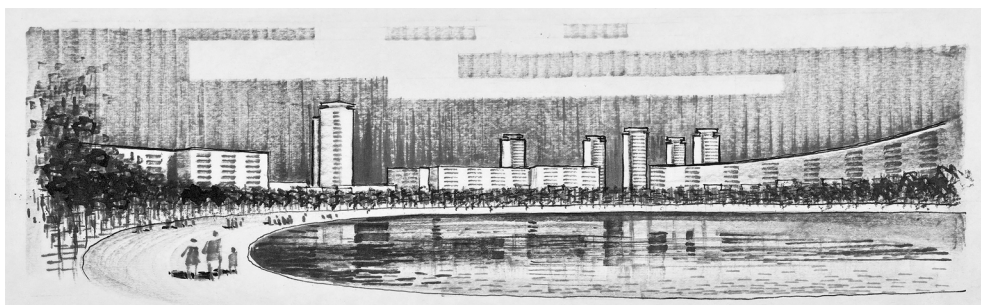
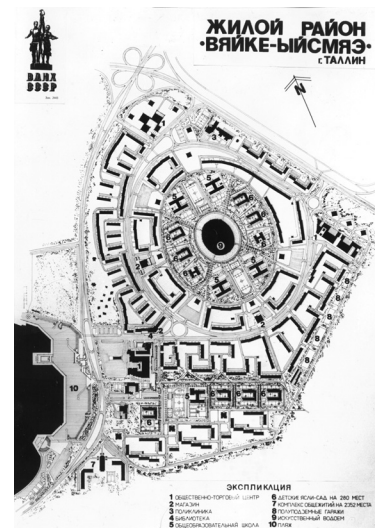
БРЕЖНЕВКА 111-121

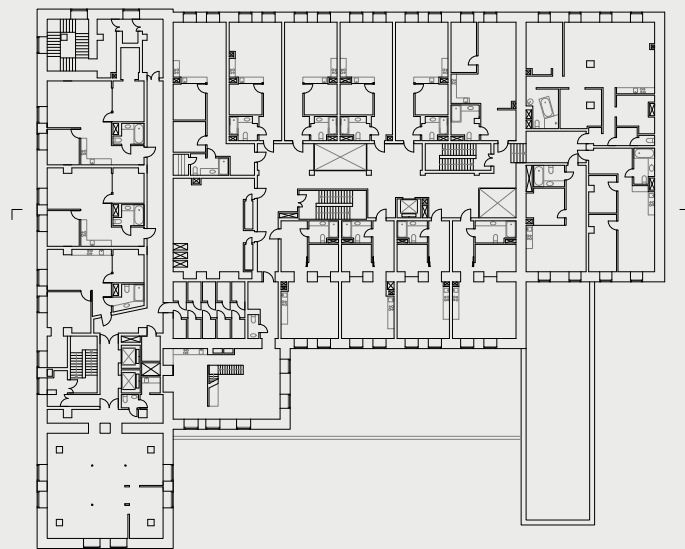
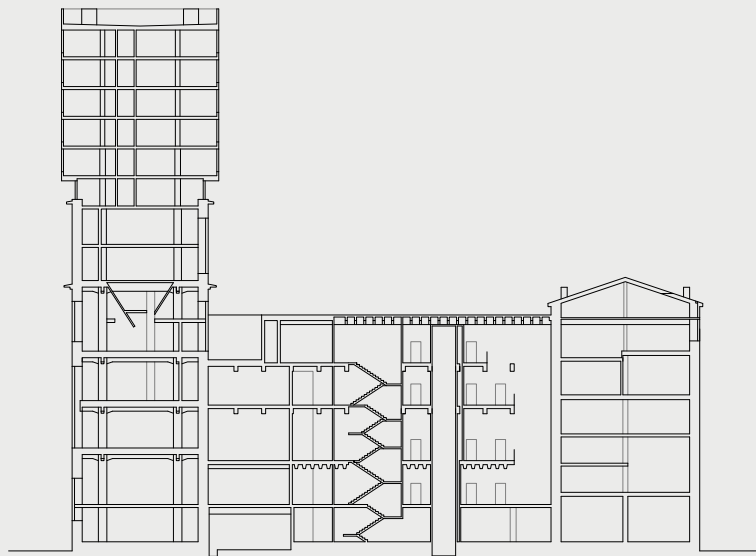
Rus. *Brezhnevka*,
Brezhnevs' house
1970 - 1990

The *Brezhnevka* (after the Soviet leader Brezhnev, 1964-1982) is best understood as an improved continuation of the *Khrushchyovka*. The establishment of the mass-housing industry resulted in increased development of the various housing series. In Estonia the 111-121 series was deployed during the 70s in building the *Õismäe* and *Lasnamäe* satellite cites. These districts consisted of 5, 9, and 16 story buildings, due to the soviet housing regulations regarding elevators; passenger elevator in buildings taller than 5 stories, and passenger and freight elevator in buildings taller than 9 stories. The most abundant of the buildings were the 9 story *Brezhnevkas* commonly built in a linear fashion, colloquially dubbed the *hiina müür* or the chinese wall in Estonian, the longest of which being 450 meters long.

Instead of using calcium-silicate blocks, these new buildings were built using concrete panels prefabricated off site. Each floor contained four apartments: a single room, 2-room and two 3-room apartments all with private balconies typically facing south. The ceiling heights of this series was considerably higher than that of the *Khrushchyovka*, around 2.7 meters. From the stairwell one would first enter a small entrance that lead into two different apartments. The apartment themselves were organized along a hallway from which all rooms were accessible. All rooms would be fitted with radiators heated centrally. The sizes of the room followed their functions, main living area being the largest (17 sqm), followed by the bedrooms (13 sqm) and the kitchen (9 sqm).

As mentioned the 111-121 series *Brezhnevka* were deployed in large quantities contained within a satellite city. The satellite cities of the 70s and 80s differed from those built in earlier as the composition no longer followed necessity - building mass housing quickly - but rather by ideology. This can be seen in *Õismäe* (est.lit. Blossom Hill) as it was built as a circular city surrounding a vast shared green space. Located at the periphery of the park would be kindergartens and schools, framed by the 9 story apartment buildings.





FAHLE MAJA

Rus. Fahle house

1926, 2006

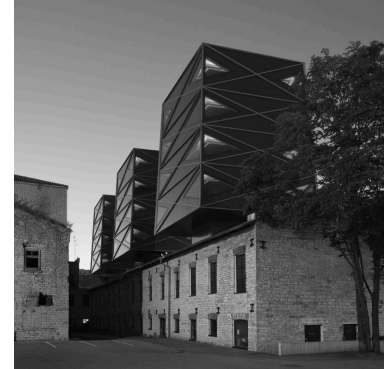
Fahle maja (est. Fahle house) is a transformation project completed in 2006 by *KOKO arhitektid*. It is one of the most memorable and characteristic examples of Estonian architecture during the recent economic boom. Built around a cellulose factory designed by the Estonian architect Erich Jacoby in 1926, that was left abandoned since the fall of the Soviet union.

The building features a mixed-use program consisting of commercial and residential functions. Especially prominent is the six-story glass volume built on top of the existing boiler house. The memory of the former factory is omnipresent as many existing surfaces were left untreated, the distinctions between old and new are kept clear. This is following quote is how the architects describe living in *Fahle maja*:

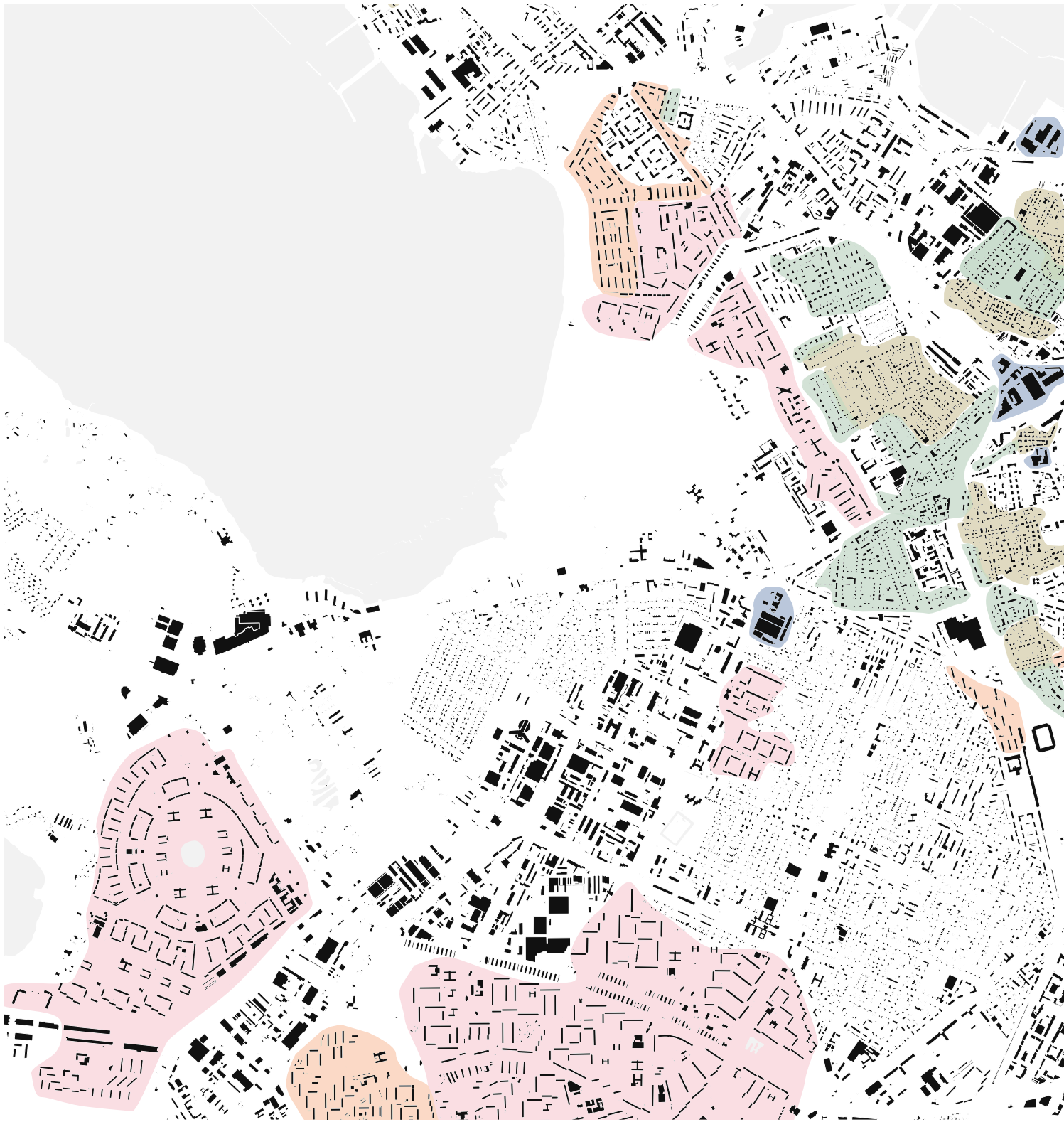
“It is a modern, chic and stylish living environment, which is meant for a self-aware, wealthy, youthful customer, and an environment that supports and cultivates an urban elitist life-style”.

This narrative is common regarding contemporary Estonian architecture. As the economic boom picked up around year 2000, most projects were transforming neglected buildings in the city centre. These older buildings were situated on valuable lots that through modernization could score the developers a high profits. The transformations also featured some kind of stark contrast to the existing buildings they occupied and those of satellite cities as to distance themselves from the historic context. Instead of being an anonymous grey housing block in the sea of gray housing blocks, the development in Tallinn wishes to see every project as a unique and in my opinion as erratic object.

This approach to housing is on the other extreme end comparing to the Soviet era *Brezhnevkas*. If the communist mass housing is regarded as demographically diverse but too rational, then the recent development of urban housing can be classified as its clear opposite; it is very specific to which demographics it caters to, and often contain apartments with irrational solutions (as usually happens when cramming dwellings into an old factory). The *Fahle Maja* and similar types are built to stand out and they follow the narrative of the recent economic boom. So when *KOKO arhitektid* describe an “environment that supports and cultivates an urban elitist life-style”, they refer to the new ideals that housing development tries to achieve, and clear distancing from the ideology of the 20th century.



Similar project by *KOKO Arhitektid* at the *Rottermanni Kvartal*. This building is commercial only.



Lenderi Maja, 1880s



Tallinna tüüpi maja, 1922



Khrushchovka

The Russian Empire

Estonian Declaration of Independence

Invasion of Nazi-Germany
Soviet occupation

1880

1890

1900

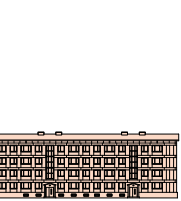
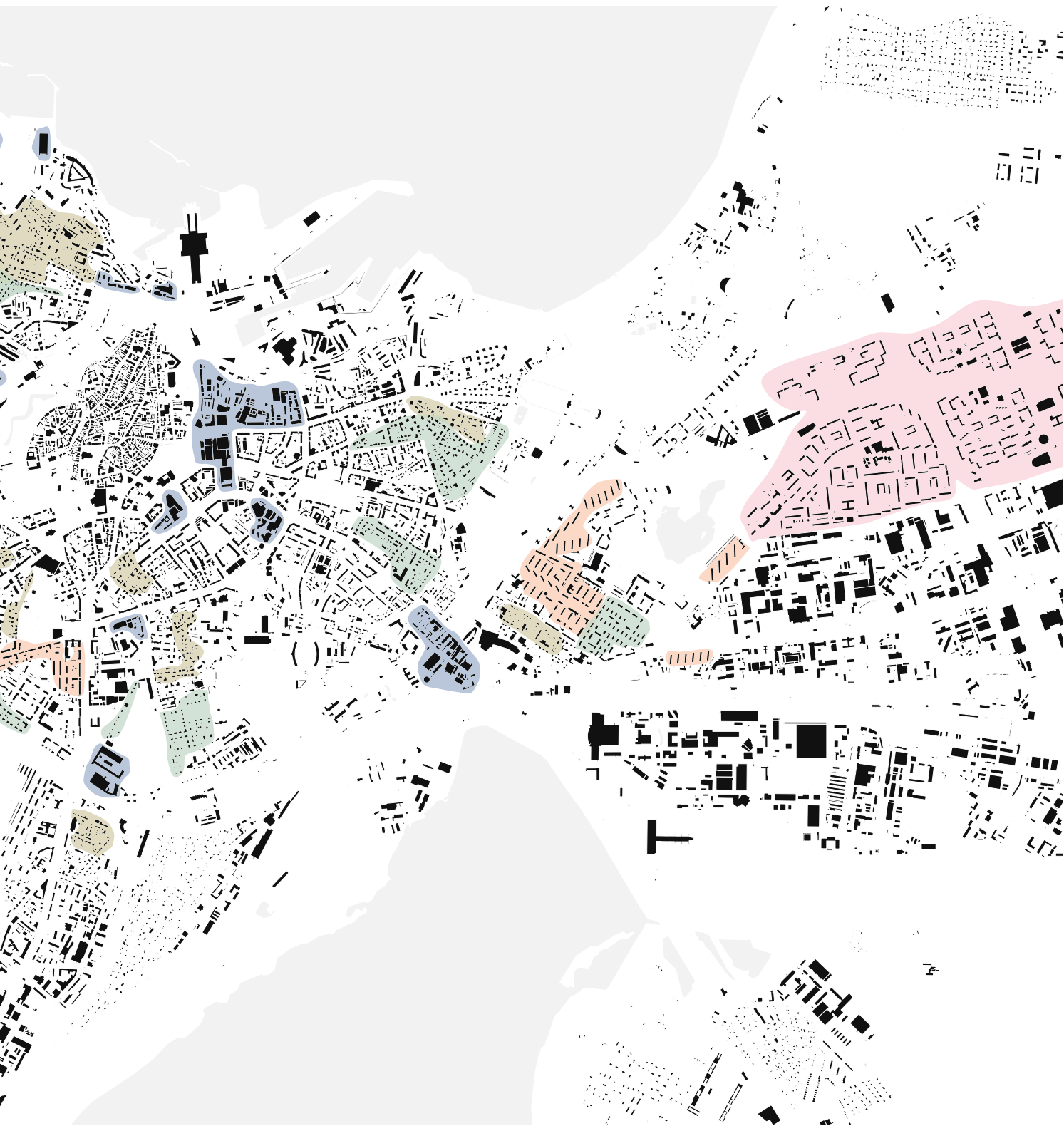
1910

1920

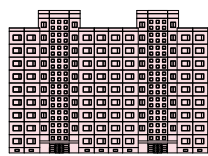
1930

1940

1950



Puhkusekvartaal 1-317, 1956



Brezhnevka 111-121, 1973



Fahle Maja, 2006



SUMMARY

I believe that to generate good architecture the author has to understand fundamental forces in the society. These forces include but are not limited to culture, heritage, economy, demand and political regime. There also has to be elements of innovation, novelty and authorship as a contribution to a larger architectural discipline. All that considered, architecture's fundamental goal is to solve a need by creating beautiful and livable spaces.

In this pre-diploma I've hopefully built up an understanding of the situation by peering into the many facets of the local circumstances, enough that I can confidently start designing the project. Some questions still remain unanswered. How am I going to react to the existing situation? What kind, and how many dwellings are necessary? What is the nature of the site?

I believe that the dwellings designed during the course of the next semester have to possess the integrity of Estonian architectural tradition, having the historical and traditional customs embedded in them. Although the current political cabinet is personally off putting and endangering the many progressive strides the country has had during the past 28 years of independence, I do believe that in the protection of Estonian culture is important.

The quality and durability of the dwellings is also key. As the housing market is cooling and the demand for housing is going down, the owner won't have the motivation to sell and as a result will most likely stay in their dwellings for longer. The dwellings therefore must be flexible enough to last the next century without succumbing to alterations.

I believe that a suitable starting point would be analysing the Tallinn style house closer as they were built in similar societal conditions. The size and the their organization of the outdoor space is also of interest. The Tallinn style house inherently possesses great inherent qualities for urban living with spaces for light commers facing the street and quieter, more private side towards the back. The relatively short facades and varied breaks create good cityspaces and the use of materials and ornaments add character and beauty.

Regarding the site. Since I haven't had the chance to go to Tallinn this semester to find suitable location, I have set aside a week in the beginning of the diploma semester to do so, although I have some areas in mind.

As for the finishing words; I can't wait to start working on this project as it's so close to me personally. I've already learned a lot from writing this pre-diploma and I'm motivated to start working on it in August.

DIPLOMA SCHEDULE

MONTH	WEEK	CRITS	OBJECTIVES AND SCALE
AUG	32		Reactive work and initial ideas. Choosing focus
	33	Study trip to Tallinn	Choosing a site in Tallinn
	34	Table crit	Site analysis, strategy for deployment 1:500
SEP	35		
	36		
	37	Table crit	Testing of concepts regarding dwellings 1:100
	38		
OCT	39		
	40	Table crit	Understanding structural and technical aspects 1:50
	41		
	42		
	43	Mid-crit	Detailing 1:10
NOV	44		
	45		
	46	Table crit	Production
DEC	47		
	48		Completion of all drawings
	49	Table crit	
	50	13th Final delivery	
	51		
JAN	52		
	01		
	02	6th - 10th Presentations	

