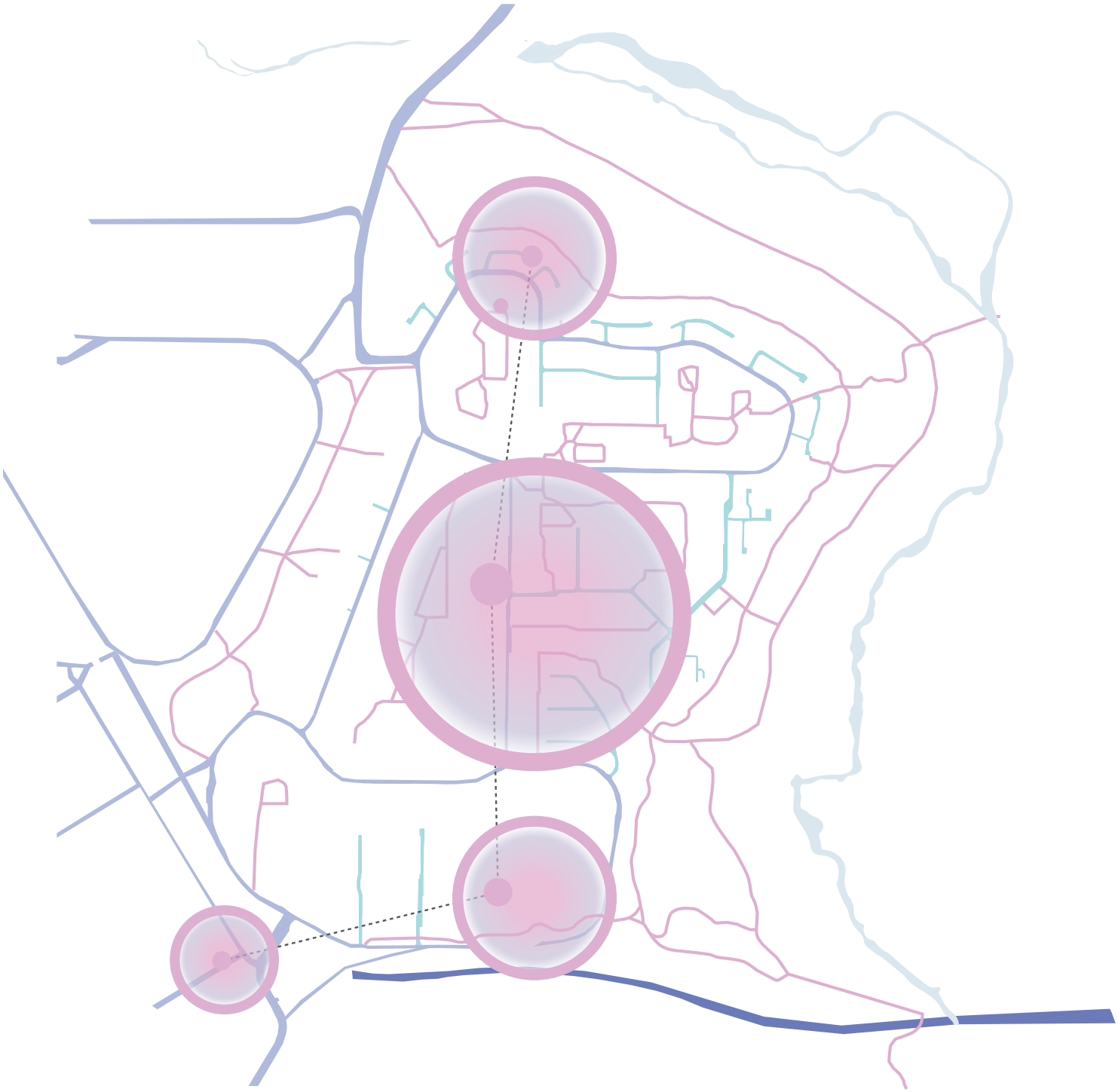
Efra-Breidholt

A New Spatial Identity

An intervention about public space in Reykjavik | Iceland



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Efra-Breidholt

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The identity of a place is the extension of people that lives on it, individuals' feelings that experience a space and the meaning that they give to it.

Acknowledges

We express our sincere gratitude to the contribution of professors Paris and Dezio. This project could not have been possible to do without their participation and supervision on the process.

We also thanks to our relatives and friends who were supporting us during these studying years, and in special to our close family: siblings and parents, for helping us to successfully finish one stage more in life.

After all the work, the result of this thesis is the one we were expecting, and we are sure that the lessons learned during this path will remain for the rest our personal and professional life.

ABSTRACT

English

Spatial identity is the set of characteristics that allow someone to acquire a sense of belonging to the geographical space. Each individual's spatial identity can be different from each other. Even though, it can be considered as a single element, it can be subdivided in three members, "physical form", "activities" and "meaning".

Mentioned that, this research focus on Efra-Breidholt, a sub-urban neighborhood of the city of Reykjavik in Iceland, where is possible to find a lack of adequate urban characteristics that facilitate the development of spatial identity, due to its physical configuration and its disconnection to the city, inhabitants and history. The aim of the project is to explore how urban scale strategies can directly influence on the identity and social life of public spaces, and to regenerate this neighborhood through the proposal of punctual solutions. So that, in a further process, the whole investigation can be used as guide to help improving the spatial identity of other places with similar characteristics.

To achieve these goals, this paper departs with a study of the context, from the city to the neighborhood scale, that is done simultaneously with the investigation of general concepts, and similar previous developed urban plans around the topic and physical context. With a conclusion section for the mentioned part, where concepts as life in between buildings, local heritage and people perception (people as driver for identity) are prioritized, the research continues with the case of Efra-Breidholt, where is proposed conceptual and physical solutions in three different scales, pretending to attach the area to the city.

The result of the work is not just the final design at spatial level for the mentioned neighborhood, but also, it is a compilation of the most suitable urban strategies that can improve the spatial identity and be reused in other contexts. Thus, obtaining a plan for the improvement of Efra-Breidholt for the following 10 years and a conceptual methodology that can be reused further.

Italiano

L'identità spaziale è l'insieme delle caratteristiche che consentono ad un individuo di acquisire un senso di appartenenza ad uno specifico spazio geografico. L'identità spaziale di ognuno differisce a seconda delle proprie esperienze. Anche se considerato come un elemento unico, può essere suddiviso in tre parti, "forma fisica", "attività" e "significato".

Premesso che, questa ricerca focalizza l'attenzione su Efra-Breidholt, un quartiere periferico della città di Reykjavik in Islanda, dove è possibile riscontrare una mancanza di caratteristiche urbane adeguate che facilitino lo sviluppo dell'identità spaziale, a causa della sua configurazione fisica e del suo distacco dalla città, dagli abitanti e dalla storia. L'obiettivo del progetto è esplorare come le strategie a scala urbana possono influenzare direttamente l'identità e la vita sociale degli spazi pubblici e rigenerare questo quartiere attraverso la proposta di soluzioni puntuali. In modo che, in un ulteriore processo, l'intera indagine possa essere utilizzata come guida per aiutare a migliorare l'identità spaziale di altri luoghi con caratteristiche simili.

Per raggiungere questi obiettivi, questo lavoro parte da uno studio del contesto, dalla città alla scala di quartiere, che viene svolto simultaneamente con l'indagine di concetti generali e piani urbani simili sviluppati in precedenza attorno all'argomento e al contesto fisico. Con una sezione conclusiva per la parte menzionata, in cui vengono privilegiati concetti come la vita tra gli edifici, il patrimonio locale e la percezione delle persone (le persone come driver per l'identità), la ricerca prosegue con il caso di Efra-Breidholt, dove vengono proposte soluzioni concettuali e fisiche in tre diverse scale, provando a legare l'area di progetto alla città.

Il risultato del lavoro non è solo il progetto definitivo a livello spaziale per il quartiere citato, ma è anche una raccolta delle strategie urbane più idonee alla possibilità di migliorare l'identità spaziale, ed essere riutilizzate in altri contesti. Ottenendo così un piano per il miglioramento di Efra-Breidholt per i successivi 10 anni e una metodologia concettuale che può essere successivamente riutilizzata.

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INTRODUCTION

Streets, squares, and public spaces have contributed to define cultural, social, economic, and political functions on the city. Historically, they have been and continue being the first axis in which the "status" of a place has been measured, from a chaotic and unorganized settlement up to an systematized city. Nevertheless, often the bad quality and low maintenance of these spaces have reflected a declination on the physical, economic, and social qualities of a city (Gehl & Rogers, 2010).

To simplify what is a "open public space", it could be said that it is a place that generally is open and accessible to people, but if the group of words is referring to what it can be considered a high quality public space, the definition gets much more complex, since it should provide not only accessibility, but also connectivity, crime protection, shelter from the weather, isolation from traffic, opportunities to rest and work, chances to congregate, and not less important identity. This group of characteristics, at the same time, are the primary ingredient of what an urban environment and indeed, the city are (Gehl & Rogers, 2010).

Just like in the urban space concept, the term identity is in a study process that haven't finalized yet, where its importance to the city is crucial, given its direct influence on the public open space and social life. If we refer to the socio-spatial context, the identity of a place can be perceived as the set of meanings that people get relating a particular area with their personal experiences, and the construction of their social identities. Whereas, in the same context, spatial identity deals with the complex relations between natural, morphological, socio-economic, cultural, and other factors (Kuvac & Schwai, 2017).

Spatial identity cannot be built just by disposing people from varied social groups and identities in a neighborhood, because, as it has been seen in the past, they will not know how to act and communicate in the public space that they have in common. Besides, it has to be considered that the identity construction is a continuous process that neither starts nor finishes with the physical construction of a specific area. Even though, it is important to mention, that the group of the "built elements" as the housing facilities, streets, squares and so on, almost in all cases, affect on the people's social life and sense of belonging to an area (Kuvac & Schwai, 2017).

To understand better and apply these concepts, the selected case of study is in Iceland, in a suburban neighborhood of Reykjavik, called Efra-Breidholt, where it is clearly visible different problematics in the urban composition of the public areas, with a consequential lacking of social life and therefore identity. With the previous explanation in mind, the purpose of this study is to understand how urban scale design strategies, besides improving the public open space, can influence on the construction of spatial identity and therefore impact on the development of the social life.

Among the general objectives is set out:

- To explore how urban scale strategies can directly influence on the identity and social life of public spaces.
- To develop a possible methodology, based on urban scale strategies to improve the spatial identity of a place.
- To regenerate the public open spaces of Efra-Breidholt, proposing solutions that revitalize the spatial identity of the neighborhood

As part of the specific objectives, the research is focus on:

- Recognizing urban strategies from the development of public spaces in a case of study.
- Determinating the impact of urban strategies applied in other contexts and evaluating their possible use in our case of study.
- Understanding the physical context and background of our case of study.
- Proposing punctual solutions for the open space of Breidholt, focusing on the core of it.

To achieve the mentioned objectives the research defines key concepts and relate them between each other pretending to explain terms as open space and identity. For this, different literature as "Sprawl Repair Manual" written by Gallina Tachieva and "Cities for People" by Jan Gehl, will be used, supporting definitions and, in a further step, strategies that will be explained through already developed cases of study. The analysis of these cases of study as Urridaholt and Orrestad Masterplans, at the same time, will facilitate the evaluation and understanding of urban strategies and the relation with spatial identity.

Besides, at the same time, it will be done a research that will allow knowing Efra-Breidholt in detail. This will include an analysis of its physical conditions, social composition, historical development, history, an so, on different scales, departing from a large context as is Reykjavik.

On a following stage, according to what it has been learned, and a prioritizing matrix, it will be selected the most important strategies to improve the open public space of Efra-Breidholt. Thereby, a global solution, capable of involving open public spaces of diverse nature, would be proposed and designed, pretending to improve the neighborhood condition.

It must be pointed out that identity studies have been developed for decades, evolving and maturing the definition throughout the time. But, simultaneously, making it more diverse, with concepts that goes from "Place Identity" that involves fields as geography, urban design and landscape architecture, to "Spatial Identity" as itself. For the case of Reykjavik, the topic has been explored indirectly through academical projects and developed master plans, but they mostly focus on the city center, where Breidholt does not form part. However, it has been investigated many aspects of the neighborhood that can help this project to understand and improve its

spatial identity, as the history and the urban and social problematics.

Therefore, this document is mainly composed by three chapters and the conclusion. The first one, General Context, which is divided in three subtopics describes and explains the conditions of Reykjavik, Breidholt and Efra-Breidholt, from its physical conditions to its social problematics. The second one, "Cases of Study and Literature", exposes the studied references and describe the concepts taken into account for this investigation, with a matching conclusion that explains the importance of them to our proposal. The third one, "Project", applies the learned concepts and contextual information of the place, to elaborate a possible solution for Efra-Breidholt. And finally, the conclusion, summarizes the three chapters and extract the bases that can be applied in other projects.

The impact of the research, to which it is expected to arrive, consists, from one side on improving the conditions of the development area, which is Breidholt, and from the other side, developing a path to work on the spatial identity through urban strategies. With the developed project, it is expected to be able to extract a possible way to work in places with similar characteristics as it can be other neighborhoods of Reykjavik which have, basically, the same conditions; contemplating that the identity of each area will always differ from each other.

1

CONTEXT

Iceland

Intro

Located in the North Atlantic Ocean, lying on the constantly active geologic border between North America and Europe, Iceland is a land of vivid contrasts of climate, geography, and culture. In addition to, sparkling glaciers, such as Vatna Glacier which is the largest glacial in Europe that lies across its ruggedly mountain ranges. The abundant hot geysers that have been providing heat to many homes, buildings and greenhouses in the country. And the offshore Gulf Stream that surprisingly provides a mild climate to, what is one of the most inhabited places on the northern of planet (Kristinsson et al. 2021).

Iceland is a small European country situated midway between North America and Europe just below the Arctic Circle. The location is characterized by a very peculiar weather, with the presence of both Arctic and Gulf winds, that permitted the past populations to develop settlements in these territories (Martin et al., 2018).

In the island's early history, the presence of harsh winters, volcanic eruptions, and the outbreak of plagues have affected its growth many times, with 37 famines recorded between 1500 and 1804. The first census of Iceland found a population of more than 50,000 in 1703, which declined to 40,000 after the massive eruptions of the Laki volcano between 1783 and 1784. As living conditions improved, the population began to grow, eventually hitting 60,000 in 1850 then 320,000 by 2008 (World Population Review, 2022).

Figure 1: *Iceland Localization. Adapted from Reykjavik Research and Analysis, 2018.*

Climate and Light

Despite its northerly location, Iceland is more a livable place than the opposite. This is thanks to the warming effects of the Gulf Stream which provides a temperate climate year-round. However, Icelandic weather can be often volatile. The Gulf Stream brings mild Atlantic air in contact with colder Arctic air, resulting in frequent and abrupt weather shifts that may be experience in a single day (Martin et al., 2018).

Iceland does not have a rainy season, but precipitation peaks from October to February, with the southern and western parts receiving most of the rainfall. The North, East, and interior areas experience a colder winter temperature but warmer summers, and noticeably less snow and rain. (Martin et al., 2018).

Most significant to Iceland is the extreme duality in lighting conditions that it experiences throughout the year. During summer it can be experienced day long sunlight whilst the winter, equally as much darkness (Martin et al., 2018).

Due to its proximity to the Arctic Circle, Iceland experiences very high and low quantities of sunlight. The summer months are subject to the natural phenomena of the midnight sun, where the sun barely kiss the horizon. While the winter months suffer from extreme of sunlight, receiving light only for 2 to 4 hours a day. A fluctuation of 22 hours is what Icelanders will experience between the peaks of summer and winter (Martin et al., 2018).

On June 21st, the sun will set in Reykjavik at midnight and then rise again at 3am. In the Spring and Autumn experience gradually the change in lighting conditions (from early November it is lost around 10 minutes of daylight each day). On December 21st, the sun will rise around 11.30am and set at 3.30pm. The position of sun in winter never rises above 2 degrees. This condition directly influences on the circadian rhythm (Martin et al., 2018)

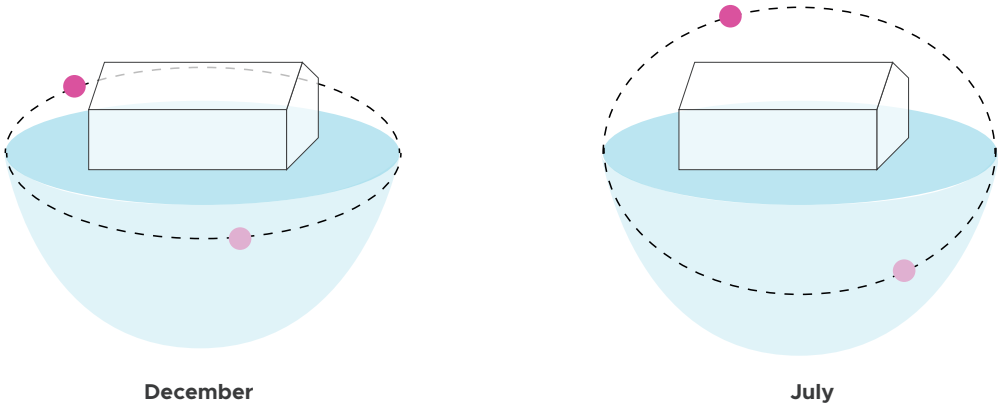


Figure 2 : Reykjavik Sun Path. *Adapted from Reykjavik Research and Analysis, 2018.*

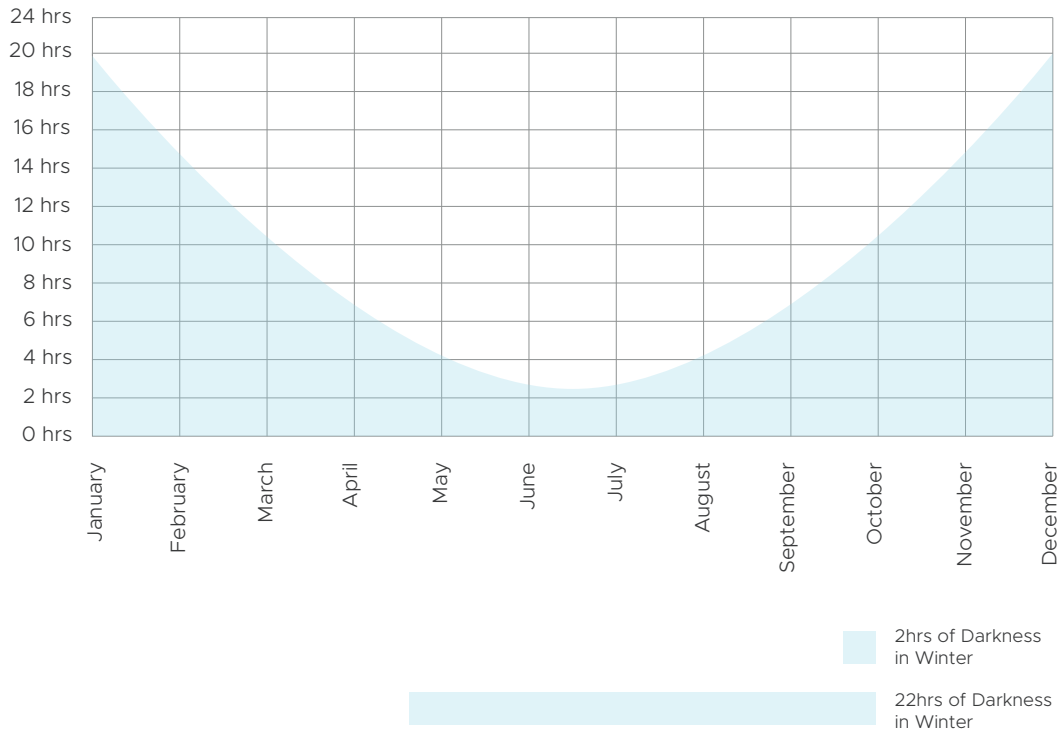


Figure 3 : Reykjavik Sun Hours. *Adapted from Reykjavik Research and Analysis, 2018.*

The circadian rhythm is body's 24-hour clock that is running in the background, regulating the timing of biological processes and daily behaviors. In essence it is the sleep/wake cycle. Light (along with food) is the prime factor that affects this cycle, considering, that the exposure to light releases serotonin, which is known as the feel-good neurotransmitter that promotes wellbeing and feeling of happiness, and allows us to concentrate, while with removal of light, prompts the release of the hormone melanin which 'reminds' the body to take a break and sleep (Martin et al. 2018).

This is an important thematic for Icelandic people since it influences their life, and it also deals with the use of the public space. The light condition, especially in winter, has an influent role in the function of the public space, which are trying to avoid the constant darkness and make people enjoy them (Martin et al., 2018).

With the correct approach to this condition of the island, urban spaces can implement a specific type of design, in particular for public areas as parks and squares that, in support with the incorporation of activities that work for the two main seasons, could reactivate their use and therefore contribute to the spatial identity of the area.

Figure 4 : Reykjavik View. *Reprinted from City Guide: Reykjavik - Iceland, 2018*

Reykjavik

The Birth of the City

It is known that Ingolfur Arnason and Hallveig Frodadottir were Iceland's first permanent settlers, locating themselves in Reykjavik. They established their place to stay in 874, and choosing this area was not a random decision. To decide where he and his family would settle, Ingolfur threw his high seat pillars, the symbols of his chieftainship, into the sea, and scoured the coast to see where they would land. The location he found later was dotted with many steaming hot springs. The direct translation of Reykjavík is 'Bay of Smokes' (Chapman, 2021).

In the late Middle Ages and early modern period, Reykjavik had a little presence on the Icelandic history. However, the island itself went through huge changes, experiencing from a civil war up to being absorbed into the Kingdom of Norway in the 13th Century (Chapman, 2021). Until the 20th century remained as a small fishing village. Later, it was granted with municipal powers, and it was designated as the administrative center of

the Danish-ruled Island, around 1786. In 1918, it became the capital of the self-governing Iceland under the Danish king, and in 1944, the capital of the independent Republic of Iceland (Britannica, T. Editors of Encyclopaedia, 2019).

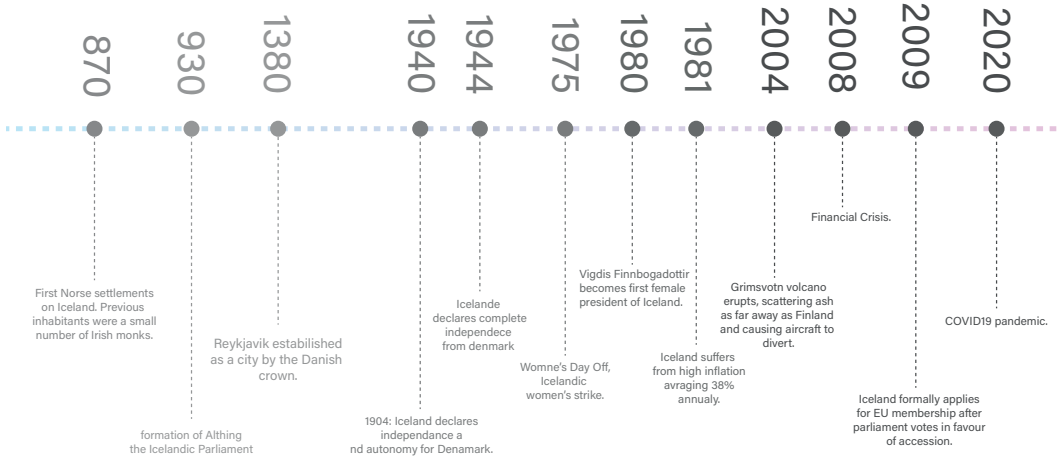


Figure 5: Timeline.

The Importance of Reykjavik and the Society in Iceland

Cities and larger towns have been the driving force of change, growth and progress through the history. It is possible to call this phenomenon the power of closeness or selectiveness of the masses. A mass that is composed by people attracts more people that later will develop a dependence. The created density and diversity of the population generates the ground for more complex communications, due to the new challenges, problems and task that appear with the time (City of Reykjavik, n.d.).

Reykjavik as the most important city in the country has not only been a driving force for the economic growth, but also for liberalism and tolerance, so the urban society has acted as an antidote to separatism and conservatism. This city is the outpost of the country in the international community, education and attractiveness for industrial development. Therefore, given this condition it must continue being the driving force for the economic growth and innovation, and a platform for progressive business, research and studies (City of Reykjavik, n.d.).

It is known that the attractiveness of Reykjavik as an habitat for people from all over the world will continue increasing in the following decades, together with the environmental problems that will come due to the growth of the population. For this reason, it is important to develop tightly mixed settlements with social diversity, close services, trade, community institutions and identity. The proposed strategies should include the periphery were new garden suburbs could also enjoy the benefits that the “old city” offers

and, at the same time, the tranquility, healthy air that the proximity to open nature has (City of Reykjavik, n.d.).

Figure 6: Reykjavik Aerial View. *Reprinted from Cosa fare nella capitale dell'Islanda, 2017.*

The People

The country was founded upon Danish Sovereignty and many of the influences of it still remain today in the country as the values and religion. Because of the Iceland's isolated position, it was lately settled by the Danish empire, and as a result it has considerably small population from the very begging. Iceland's population, with 338.000 people is a lot smaller than the average of other European countries. Moreover, when the population spread is analyzed, the results show that almost 69% of the country's population resides in the capital city (Martin et al., 2018).

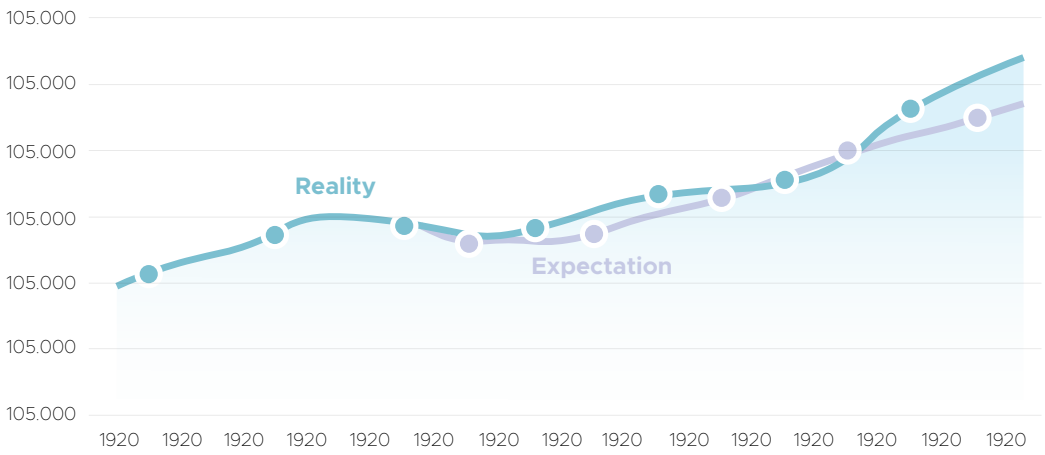


Figure 7: Reykjavik Population. *Adapted from Reykjavik Research and Analysis, 2018.*

Overall, Iceland has a surface area of 103,001 square kilometers (39,770 square miles) and it is the 108th largest in this aspect. However, that harsh geographical landscape is one of the reasons why its population remains so low. Iceland has the lowest population density of all European countries with just 3 people per kilometer (8/square mile) (World Population Review, 2022).

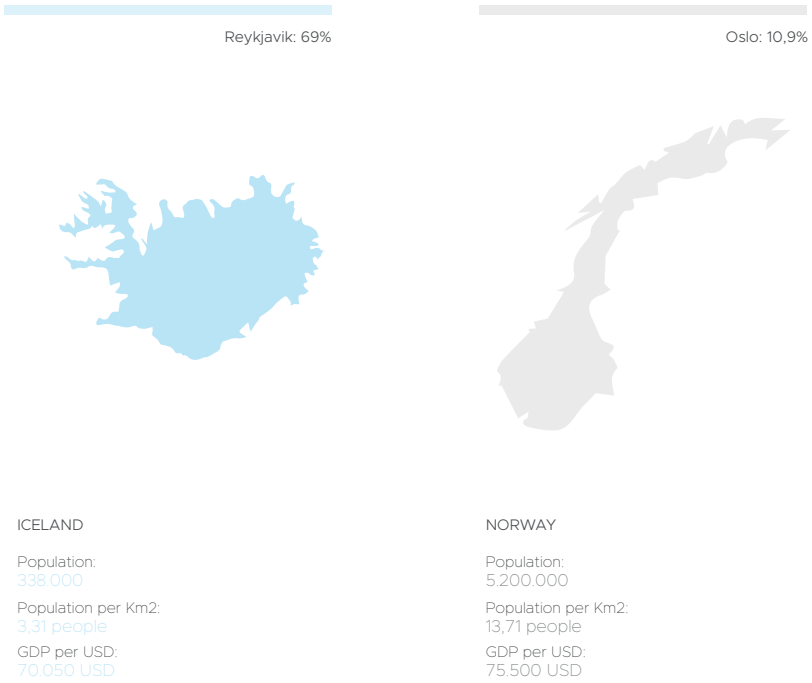


Figure 8: Reykjavik Population Comparison. *Adapted from Reykjavik Research and Analysis, 2018.*

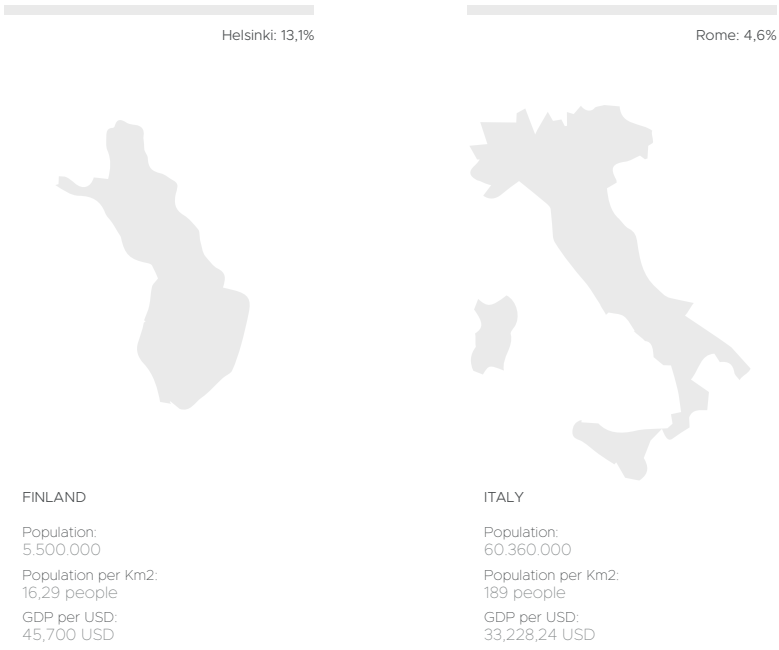


Figure 9: Reykjavik Population Comparison II. *Adapted from Reykjavik Research and Analysis, 2018.*

On the last period, the economic growth and opening of the country to the international market started to create a demand of foreign labor and skills. However, the foreign population of Iceland had stood at less than 2% for decades and just began to rise in the late '90s and really took off from 2005, peaking at 7.6% in 2009 (Council of Europe, 2014). In 2019, there were 50,272 immigrants in Iceland, which was the 14.1% of the population, in comparison to 2018 were they represented 12.6% with 43,736 people (Statistics Iceland, 2019).

The migration represents a huge factor in the population analysis, the number of migrants increased dramatically in the last twenty years, especially in the neighborhood of Breidholt, which is giving home to the 34% of them. This is one of the reasons why this area is often related to a ghetto or a segregated place. In the next years the predictions show that the number of inhabitants in the city, and indeed the number of migrants, will constantly increase, and that includes Breidholt area (Reykjavikurborg, 2014).

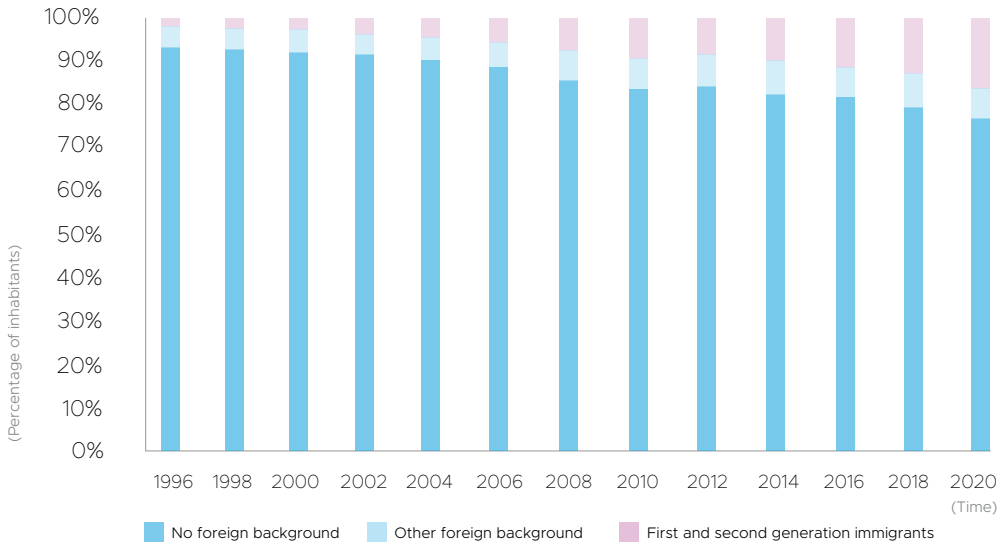


Figure 10: Reykjavik People Origin. *Reprinted from Statistics Iceland, 2018.*

This is important data for the further development of the city since, the expectations on the population growth give a reason to work on the development of new residences and urban public areas for the communitarian life.

Growing City

Reykjavik is not only important for being the most crowded and developed city in the country, but also, even though it is recently constituted, in some way its behavior makes it "representative" for the whole country,

because it contains the majority of the population and it is the driving force. In this city, as in other places the community of people attracted more people, maintaining the diversity of the place (Martin et al., 2018).

That is why now, the city must continue being a pillar for the economic growth and innovation in the country, and a platform for progressive business and education activities. In consequence, it needs to be planned in a orderly manner, especially in the growing sub-urban areas as Breidholt (City of Reykjavik, 2020).

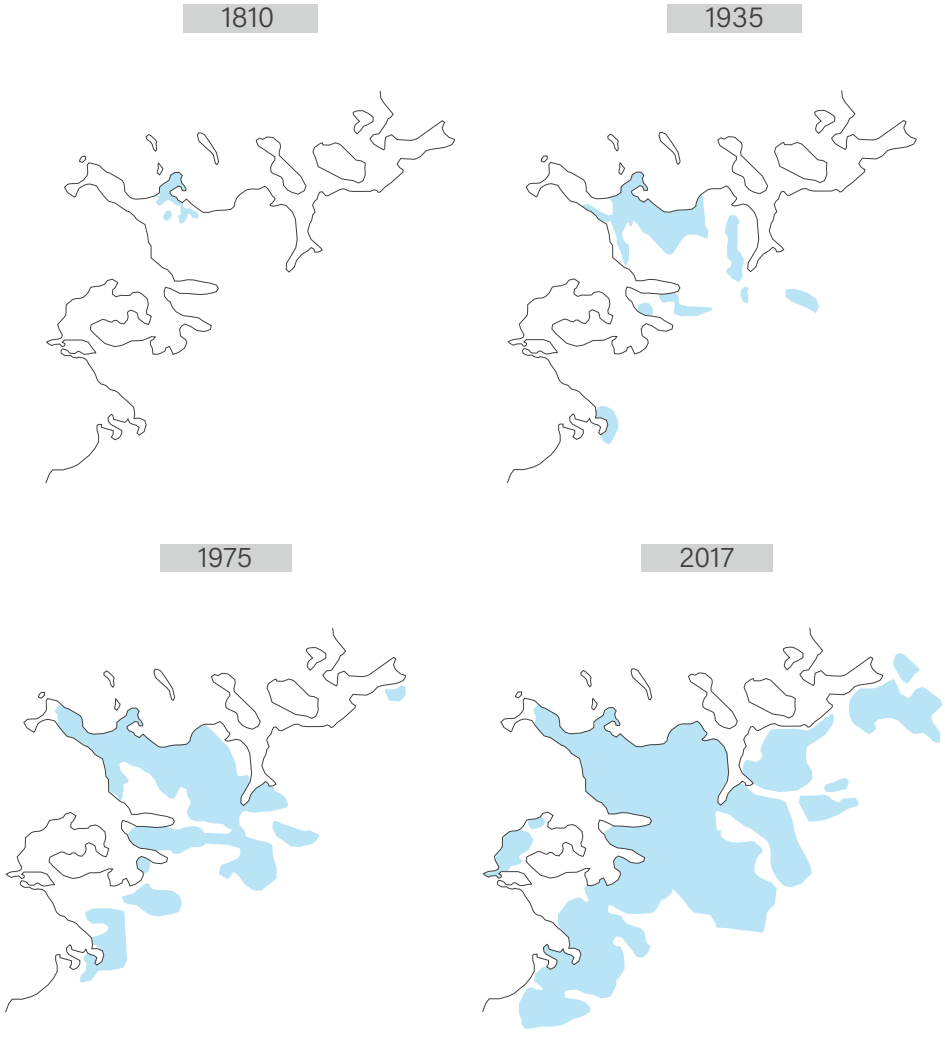


Figure 11: Reykjavik Growth. *Adapted from Reykjavik Research and Analysis, 2018.*

The Population of Reykjavik is expected to increase by 25,000 residents by 2030, creating a need for 14,500 new residential units, that is why the main emphasis of the Municipal Plan, in the past years, has been to create suitable conditions for its continuous growth (City of Reykjavik, 2014).

Deforestation

Fossil evidence indicates that Iceland was generally forested before glaciations. Around 1150 years ago forests covered approximately 25-40% of the Icelandic territory. Today the percentage has completely changed to 1.9%, making Iceland famous for its, yet amazing, treeless landscape. Mainly composed by pines, birch, rowan and aspen that survived until the time of the human settlements (Skograektin, n.d.).

At the same time, in the past, settlers cut down forests to create fields and grazing land. And sheep, which were overpopulated became a very important part of the economy and a source of food in the island, increasing the problematic, due to, its food was the only existent vegetation in the country (Skograektin, n.d.).

It may be considered that cold temperatures have caused some problems, but human presence and livestock grazing are the reasons why today Iceland is facing a huge lack of forested areas with also negative consequences on their economy and livability of the country (Skograektin, n.d.).

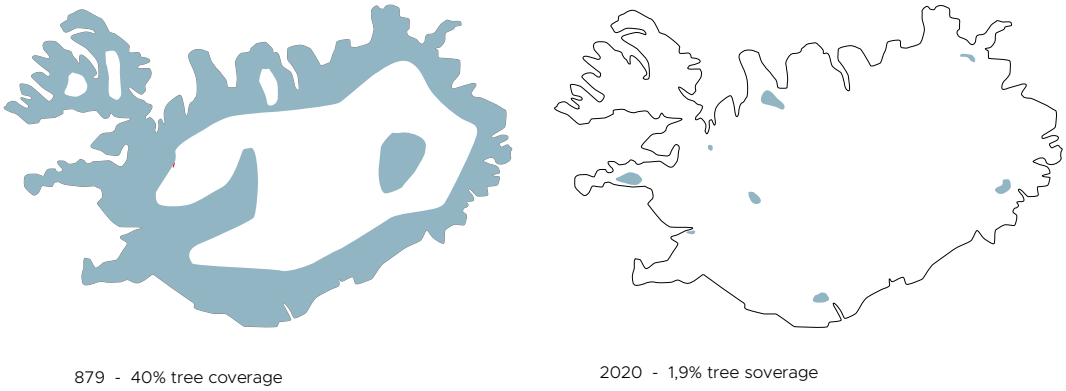


Figure 12: Reykjavik Deforestation. *Adapted from Reykjavik Research and Analysis, 2018.*

On the other side, afforestation through planting increased roughly 6 million seedlings per year during 2007-2009. After the financial crisis of 2008-2009, fundings for forestry were cut drastically, resulting in a drastic reduction in planting, going down to 3 million per year in 2015. Despite the rapid economic recovery in Iceland during 2014-2016, fundings for forestry have only increased slightly (Skograektin, n.d.).

During the last years the situation is changing, in 2021, Reforest Action, the national organization, Icelandic Forest Service and the citizens' association Woods Up, is planning 20,000 trees on the region with lava fields. In the future, this will help Iceland to protect from climatic hazards and a new page on forest history will be written (Skograektin, n.d.).

Figure 13: Iceland/Reykjavik Landscape.

Iceland is working hard to reduce its contributions to the climate change, there are plans for Reykjavik to become carbon neutral by 2040. Adding trees is a big part of those plans, getting in addition benefits to the human health. It may be possible that it has never been a completely forested land, but now Iceland's leaders are working to restore their real ecosystem and protecting the wooded areas (Government of Iceland, n.d.).

In the area of Breidholt, its periphery with the riverbank represents one of the largest wooded zones around the urban zone. Moreover, Ellidaa river, for its natural surroundings is considered as one of the best places in the zone for practicing activities in the open air as walking or making picnics. And, for the city, it represents a landmark, a hidden nature gem, a peaceful recreation area and an important place for fishing activities (salmon and trout).

There is a good opportunity of improvement within this area with the activation of it through different activities that can work around the river thematic. But also, the chance to protect and reinforce the wooden area, which according to the national and local plans, it should attract tourists and citizens, but at the same time keep untouched its natural value.

80%

Of Iceland woods have been deforested

700

Hectares of Icelands largest forest

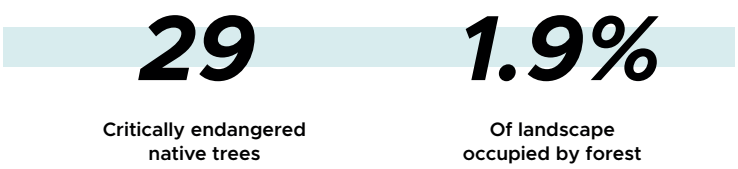


Figure 14: Deforestation.

Figure 15: Ellidaa River. *Reprinted from Ellidaardalur - A hidden gem in Reykjavik, n.d.*

Agriculture and Fish Farming

At the end of the nineteenth century agriculture and farming were still providing a livelihood for almost two-thirds of the population, and they took the second place after fishing in terms of national income. They have been an economic driver next to fishing since the early years of human presence in the country, even though the 78% of Iceland is inactive in terms of agriculture and horticulture and just a percent of the land is used for cultivation of food (Jonsson, 1993).

Fishing, in terms of popularity, has been in competence with agriculture since the early history of Iceland. In the early days of Iceland as a country, locals survived through catching fish themselves from the Atlantic. Their whole diet was based on the fish, so there is no doubt that much of Icelandic cuisine is based on fish recipes. Icelander lives depend on this food, so it makes sense that there should be a sustainable way of fishing to supply for food requirements. Through a well-developed fishery management, the fishermen can provide to the local and tourist population a sustainable, healthy product (Jonsson, 1993).

An interesting solution that matches farming and fishing in a sustainable direction is the aquaculture. It is a useful approach to the fish market and production that can sustain the needs of the country without attacking the environment and the ecosystem. Fish farming means that fish are raised commercially in an enclosure or a tank for the sole purpose of creating food. In some cases, it have been hailed as the solution to overfishing problem and in the island up to now, it has been a great alternative to supply the food market requirements, improve the cost efficiency without losing quality, and overall, preserve the fish welfare. A well-developed aquaculture in man-made fishing ponds can save some types of fish as the salmon or trout.

What is interesting for this research is that with this activity is possible to create new focused buildings or areas that are characterized by the presence of the aquaculture, with the goal of involving all the community with secondary activities that could be generated from one, creating new social interactions, new physical conditions, new meanings for the users and consequently a new spatial identity.

Identity Crisis

The presence of many different specific characteristics in Iceland, related to the territory, the environment and the population, can give an interesting direction for the identity of the nation. That is why, now, what is going to be investigated is the crisis and lack of a spatial identity in the city's spaces, especially on those that are in suburban areas, such as Breidholt, where the absence of attractive communitarian spaces to generate social interactions, and new activities contributed in a bad way to the poor utilization of the outdoor spaces, and the consequential absence of a spatial identity.

Many different architectural and urban issues have been found in Reykjavik. This city, which is the most representative in all the country, unfortunately it shows the lack of a clear identity of the place. Some of the problems that influence on this condition are the low density, city sprawling and car dependency that seems to be attached to the culture of the country. Which, at the same time, can also be considered as a direct consequence of the modernistic and sparse urban planning applied in the early years of development of the city.

Finally, other aspect that contribute to the increase of the identity crisis, has been found in the lack and poor utilization of the public space, which is emphasized by the fact that many Icelanders are used to spend their free-time with in-door based activities. In effect, in many cases the public space for excellence is the pool, since swimming and pools have been a long tradition for the inhabitants.

All these issues presented already, have been empowered by the pandemic period, with the lock-down and the abandonment of the public life.

They became more evident after the catastrophic event of the Covid-19, and now it exists the possibility of changing the vision of these spaces according to the new social and communitarian needs.

Covid-19 pandemic has not necessarily changed physically our environments, but also the practices that are engage to them. The sphere of movement and social circles have shrunk; restrictions on social gathering and the closure on workplaces and indoor recreational places, has led to the need of flying away indoor meetings and social engagement, changing the role of outdoor spaces. Practices we once undertook in certain places do not necessarily fit anymore. Parks as spaces for social interaction now need to facilitate social distancing as well as recuperation, sport, and play. As the practices and roles of places change, it is necessary to keep reinventing the different human connections (Butler, 2021).

Now, it is more important to have life in the neighborhood since people is commuting less. And new places to work, since new patterns appeared as the smart working, which demands new places close to residences as cafeterias, shared terraces and so on, basically, spaces where it will be set new kind of interactions.

What, it may be clearer is that, healthier cities are within reach, as is evident from the impact of the pandemic on the declining numbers around commuting, and the developing of alternative transporting means as circling or just walking. Due to this, today it is possible to experience cities with better air quality and clearer skies due to less traffic.

Several cities, including London and Paris have been inspired by this idea and plan on introducing car-free streets post lock-down. Street activities can spill on the areas formerly used by vehicles. This may encourage people to keep the streets active yet maintain the social distance norms, making them a safe space for social interaction (Lomas & Dillet, 2020).

Breidholt

The city of Reykjavik is divided into six service districts and ten neighborhoods. Breidholt is one of these districts and it is located in the southern suburbs of the city. Originally it was a small village; from the end of World War II to 1960, where it was considered mostly as an outer boundary of the inhabited areas of Reykjavik. Its name comes from one of the farms that used to be in the area, and it literally means “wide hill (Wilkinson, C., 2016).

Breidholt district, with a population of 21.000 inhabitants, is about **500 hectares**, and is located precisely on a hill in the banks of Reykjavik. It limits on the west by Reykjanestbraut highway, on the north by Ellidaardalur

river, on the east by Vatnsendahraed area and Ellidaardalur river, and on the south by Fifuhvammsland in Kopavugur town (Reykjavikurborg, 2014).

Figure 16: Breidholt Localization

Figure 17: Breidholt Limits

Development History

There is not much information about the beginning of the settlement. The first registers refer to 1325, date where a private small chapel in honor to Saint Blasius was built. Later in the time, the area became part of the Royal properties, during the period denominated the Reformation. Subsequently, based on some manuscripts of Jon Sigurdsson it was written that the place abandoned, around 1600 (Reykjavikurborg, 2014).

After this, on some registers of the Land Book of Arni Magnusson and Pal Vidalin, from 1703, it is stated that this area of land is reserved for the priest and people who serve to the church, at the same time, around those dates the area was already domesticated and the soil was cultivated. For 1906, the area of Breidholt was bought by the city of Reykjavik, and it became officially part of the city form around 1923 (Reykjavikurborg, 2014).

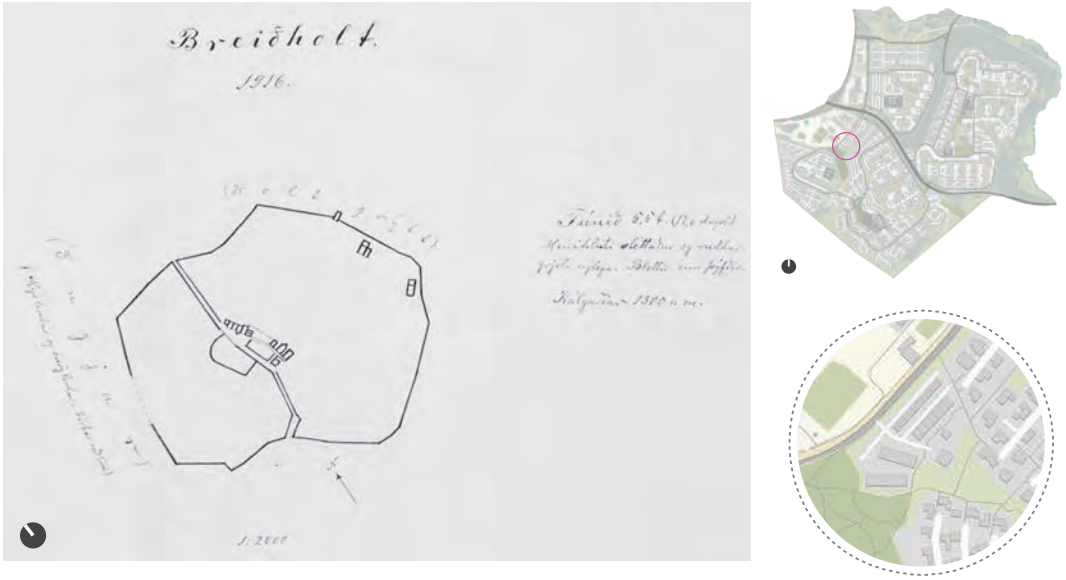


Figure 18: Breidholt 1916. *Adapted from Breidholt, Efra-Breidholt, 2020. Note: Black lines represent the position of some infrastructure on Breidholt around 1916. According to the findings, this was the position of the last town's residential building, a church, and cemetery. The remains of this buildings are probably the only ones from this period.*

For a long time Breidholt was full of farms, and in 1940 many small buildings were demolished, the only ones remaining were a barn and a cowshed that were used as a shopping center for the new Alaska Plantation in 1960, a company established by Jon. H. Bjornsson, a landscape architect. These buildings were accompanied by 14 hectares of heritage land and 4 hectares of leased land (Reykjavikurborg, 2014).

Following the Second World War, there was an enormous increase of the population in Reykjavik. On the 50s and 60s, Reykjavik underwent through an unprecedented boom, which in 1962, led the city to implement zoning plans. On the period before, many people lived in unhealthy and unacceptable housing around the city (Reykjavikurborg, 2014).

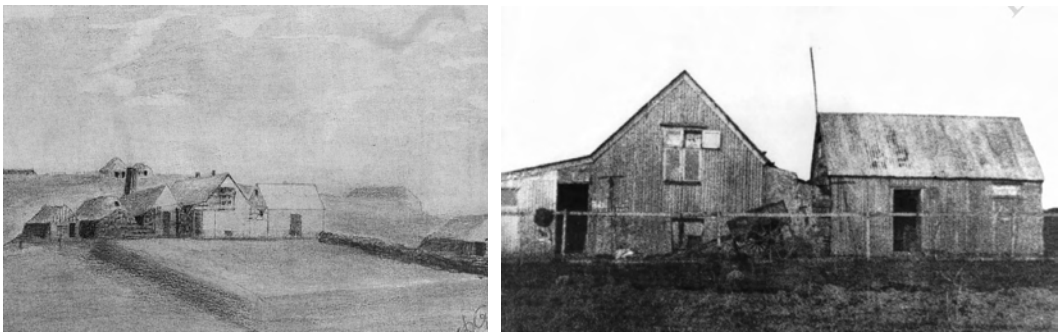


Figure 19: First buildings. *Reprinted from Breidholt, Efra-Breidholt, 2020. Note: Breidholt last townhouse on a drawing by Porkel Gislason, with a possible date around 1932. A bath house or a residential building, made on timber, with some shed attached to it, with a possible date after 1940.*

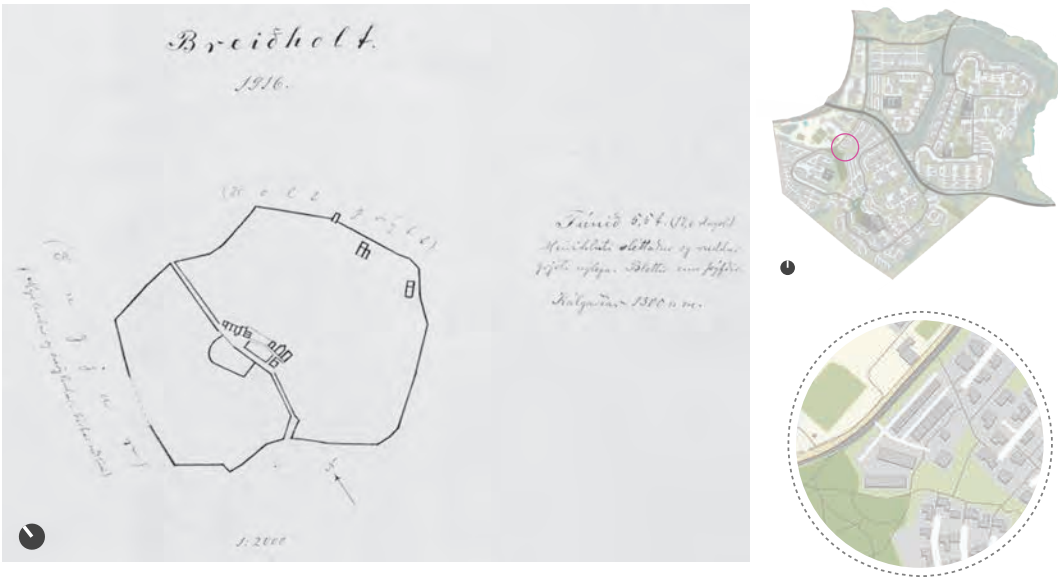


Figure 20: Blesugrof and Ellidaardalur on a map from 1947. *Adapted from Breidholt, Efra-Breidholt, 2020*

Figure 21: Haunting houses close to the river on around 1950-1960, *Reprinted from Breidholt, Efra-Breidholt, 2020.*

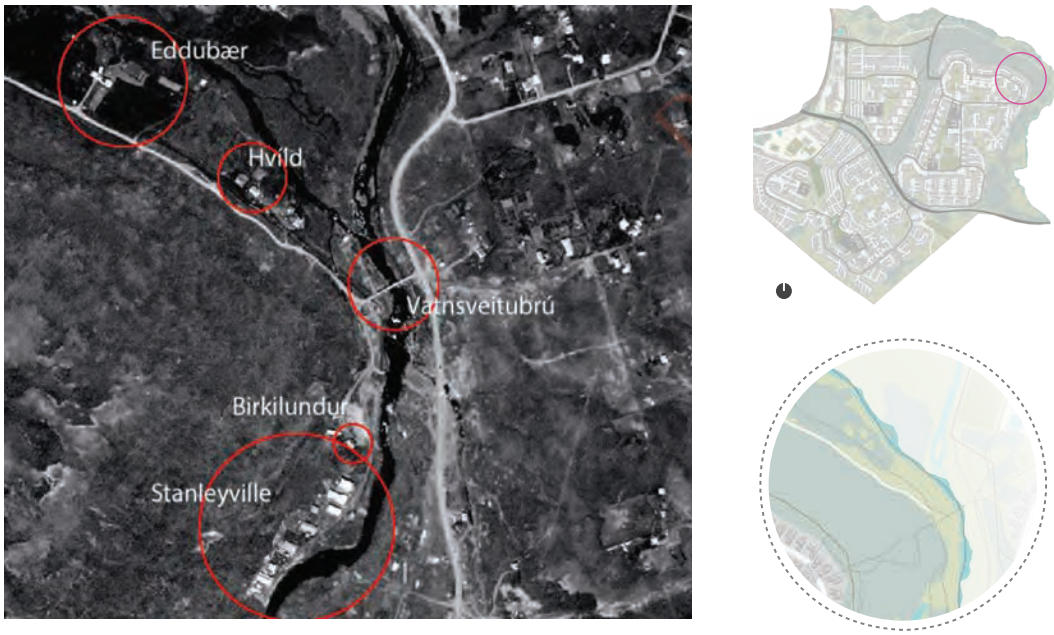


Figure 22: Informal settlement. *Adapted from Breidholt, Efra-Breidholt, 2020. Note: Stanleyville an informal settlement near Ellidaa, with a water bridge, and some houses, possibly built around 60's and demolished on 70's.*

Around 1960, Breidholt was prepared for a new organization, and it grew relatively fast in a short time, developing crowded residential areas. Due to population pressure, around 1966 some development plans were published for Breidholt, with the idea of building single-family houses and cheap apartments. For this purpose, it was established The Executive Committee of the Building Plan. The committee concluded that a semi-revolution in construction was needed, incorporating technology in Iceland to find a construction system that could meet acceptable condition that balance quality, cost and time (Reykjavikurborg, 2014).

The district, was divided into three smaller neighborhoods Nedra

Breidholt, built first, from 1967-1976, Efra-Breidholt and Seljahverfi, built in parallel from 1970 to mid 90's, according to the nature surroundings and the age of the settlement. In this effort, around 1250 apartments were constructed, with the assistance of the government and the trade union. With the presence of these conditions low-wage earners were able to acquire apartments in the area. The executed buildings and apartments had layout all the districts inside Breidholt, arriving to the point that the general image of this area became monotonous, especially in Seljahverfi district (Reykjavikurborg, 2014).

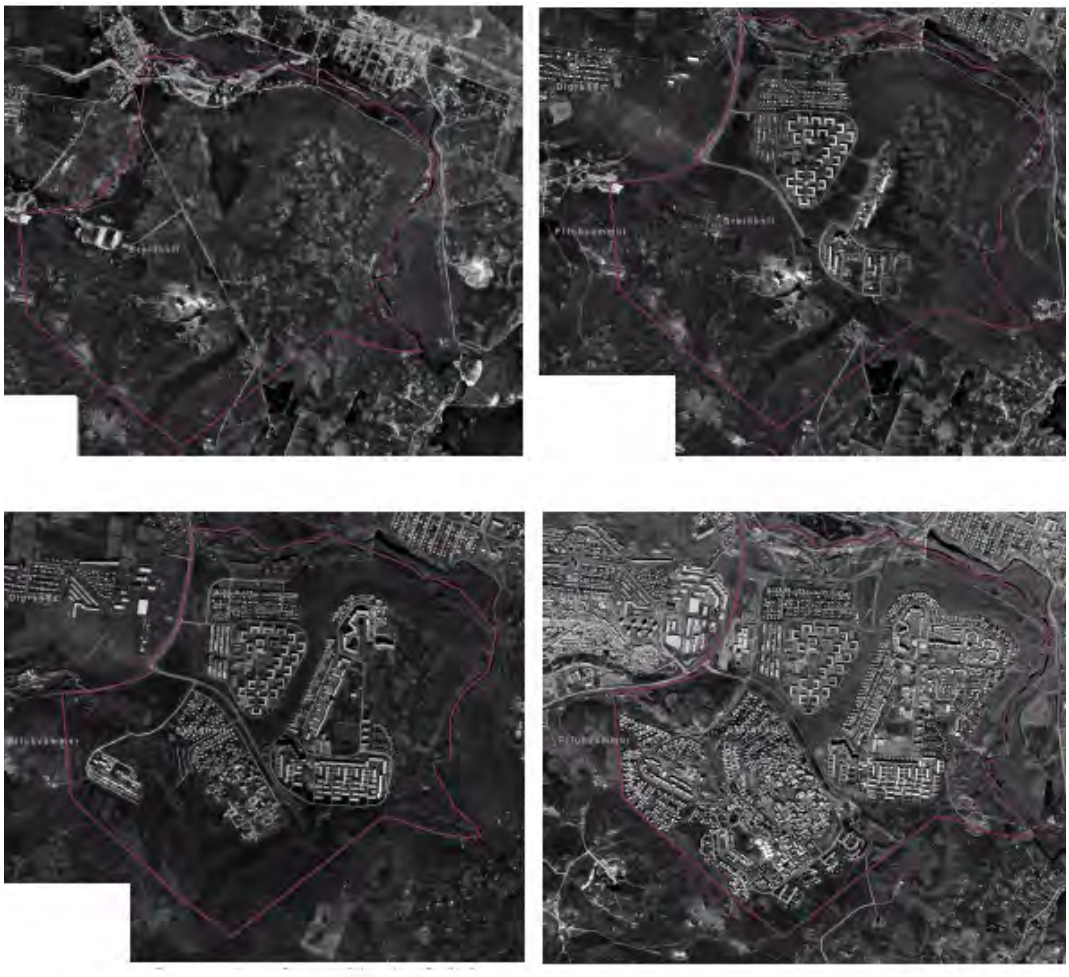


Figure 23: Breidholt Development. *Reprinted from Breidholt, Efra-Breidholt, 2020. Note:* 1965,1971,1975,1990.

The nest on which the district stands has been shaped by residence buildings for centuries, where each generation marked the footprint in the area, the city and the country. The environment is known now is therefore man-made, to a large extent. Today, it is barely possible to see some of the signs of development; with the remnants of some buildings, the rest is hidden in the ground (Reykjavikurborg, 2014).

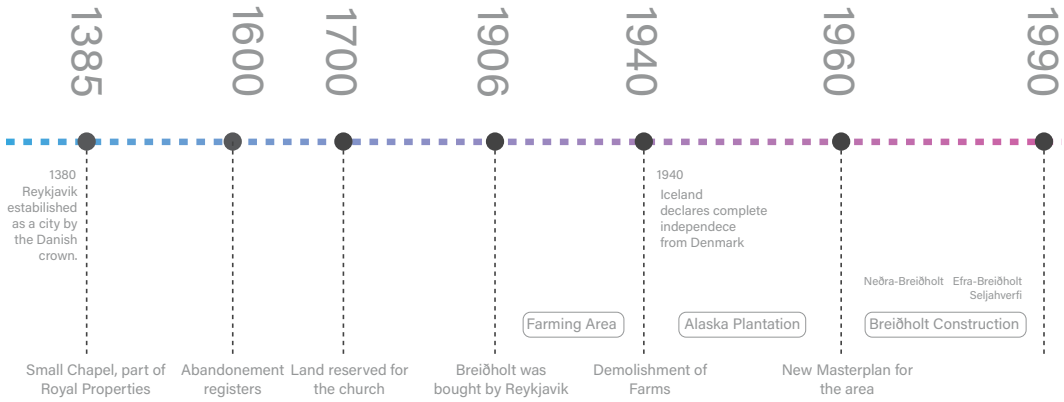


Figure 24: Timeline Breidholt.

General Characteristics

It is important to mention that Breidholt district was the first actual suburb in the city of Reykjavik together with Arbaejarhverfi, and for 1999, Breidholt was the highest populated area in Reykjavik with 22,030 inhabitants. Up to the present time, from the date that the main masterplan was constructed, there have not been major urban changes. The only main past interventions consisted of some land-use changes to increment the parking places, housing units or the develop of a few commercial business (Reykjavikurborg, 2014).

Breidholt is the most populous district in the city of Reykjavik with over 20,700 inhabitants at 7,678 homes. There is a high proportion of foreigners, around 18% of the total amount in comparison to the existing 8% in Reykjavik. In Efra-Breidholt the proportion is 24.6%, higher than Nedra Breidholt, 16.2%, and Seljahverfi, 11.8%. The largest group is composed by Polish people (Reykjavikurborg, 2014).

Physically the district is recognized by a mix of detached houses, untouched nature on the surroundings, and tall apartment buildings located in the center of each neighborhood, in addition to small shopping areas and, institutional and local services (Reykjavikurborg, 2014).

The spirit of the area it may be characterized by the "strong work" with an emphasis on generational communication, this can be easily seen on the so-called Breidholt Days Event, developed each year. The neighborhood is also boast by a strong school service and sport activities. Nevertheless, one of the main issues is the lack of clear Identity, directly related with the physical form of the district and its development through the time (Reykjavikurborg, 2014).

Figure 25: Aerial View Breidholt. *Reprinted from Mats Photography, 2020.*

Green Areas and Public Space

The whole district area is surrounded by open outdoor recreation spaces that are also intertwined in between neighborhoods. In average the permeable area, which includes parks, is around the 47% of the total amount, and there is a presence of pedestrian paths around the nature (Reykjavikurborg, 2014).

Figure 26: Green Areas. *Adapted from Breidholt, Efra-Breidholt, 2020.*

Ellidaardalur is the most important green area of the district with 270 hectares. Given the relation with the river, Ellidaa, which runs next to it, the valley becomes one of the most important visited outdoor recreation areas in the city. The area is basically well-vegetated, because of the forestation developed form the 50's, and along the area is possible to find several natural formations as gravel areas, glacial pits, and lava sectors (Reykjavikurborg, 2014).

However, the importance of this area also comes from the activities developed on it along the time. Ellidaardalur has been an agricultural and farming area for a long time. There are traces of both activities from the 14th century. Another activity developed in the area it has been the salmon fishing which nowadays is still present from mid-June to mid-September (Reykjavíkurborga & Landslag, 2020).

Figure 27: River and Natural Areas. *Adapted from Reykjavikurborg - Ellidaardalur, 2020.*

Nevertheless, this physical condition is not exploited at all, when it could be one of the unique characteristics to be used in the neighborhood to develop the identity of the neighborhoods.

Most of the green areas are outside the district, generating a heavy contrast with the interior of the it, which is mostly constructed and disconnected from nature. Both, Efra-Breidholt and the other two neighborhoods lack of public spaces and well-developed open areas, which include streets, sidewalks and squares. If to this, it is added the car dependency problem, it may be possible to find the reason why there is a lack of use of the open space in the area.

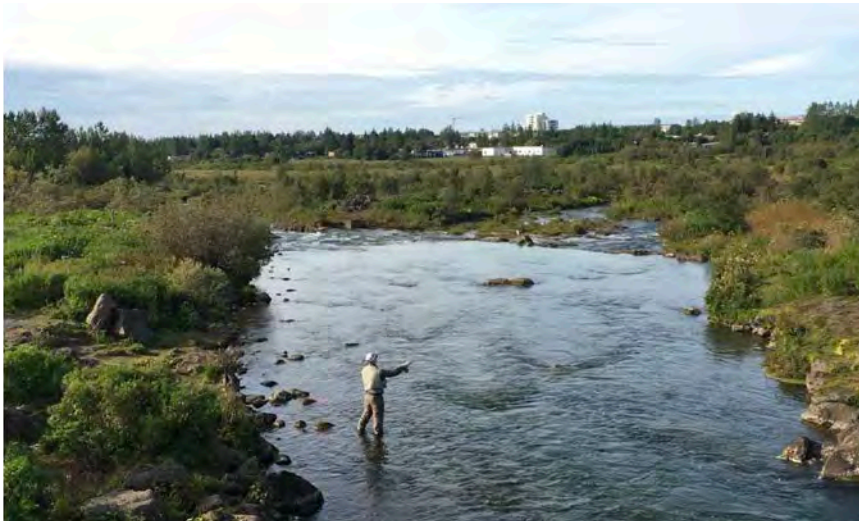


Figure 28: Fishing Area Near Old Aqueduct in Vatsnveitubruna. *Reprinted from Reykjavikurborg - Ellidaardalur, 2020.*

Figure 29: Pedestrian Paths. *Adapted from Breidholt, Efra-Breidholt, 2020.*

In general, it can be said that public spaces lack of functions, furniture, paths, illumination, maintenance, scale and so on. Moreover, most of the areas are surrounded by long monotonous uncrossable streets with speeds faster than 50km/hour or tall fences and long housing blocks discontented with the space. Finally, but not less important, the existing architecture is not trying to protect the people from the low temperatures, wind and rain, nor providing artificially lit spaces for the reunion of locals over the winter months.

Figure 30: Sport Field Entrance on Austurberg Street in Efra-Breidholt. *Reprinted from Austurberg & Gedurber, Breidholt, 2021.*

Sprawl and Urban Density

The city of Reykjavik has undergone an increase in urban sprawl over the last decades, were Breidholt has been part. This has resulted in a heavy car dependency, deforestation and "flat development" across the land.

Breidholt, besides being a non-mixed neighborhood, composed mostly by housing, has a medium low housing density and variety of it, which does not favor the city and that can be improved. The difference among each area of the district is given by its composition. While it is possible to find areas with huge housing blocks, there are others full of detached single houses. It can be said that both cases are not working well on urban terms, since both directly impact on the livability of the district (Reykjavikurborg, 2014).

In all Breidholt, there are 7,780 apartments which 3,599 are located in Efra, which in reference to the area, 157 ha, are around 23 apartments/ha. The

general quantity is even lower for the whole district having 15 apartments/ha. In terms of population, there are 39 inhabitants/ha, considering just Efra the quantity is from 60 to 80 inhabitants/ha (Reykjavikurborg, 2014).

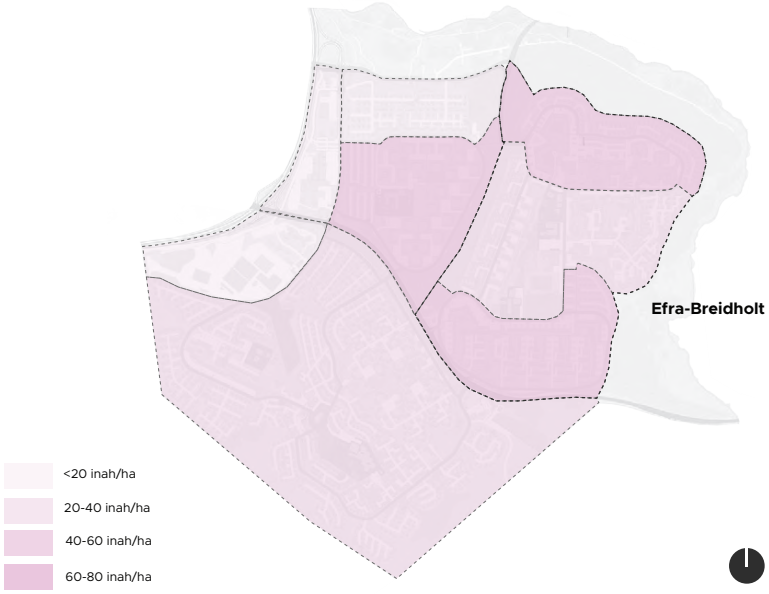


Figure 31: Inhabitants - Density. *Adapted from Breidholt, Efra-Breidholt, 2020.*

With this problematic in mind, current the city hall has a masterplan that works on densification, which is principally based on densification points around the new stations of the public transportation development. In reference to this proposal, the numbers presented before are on the limits for a sustainable development or under it. According to the text, a "good" density should between +40 apartments/ha and +80 inhabitant/ha (Reykjavikurborg, 2014).

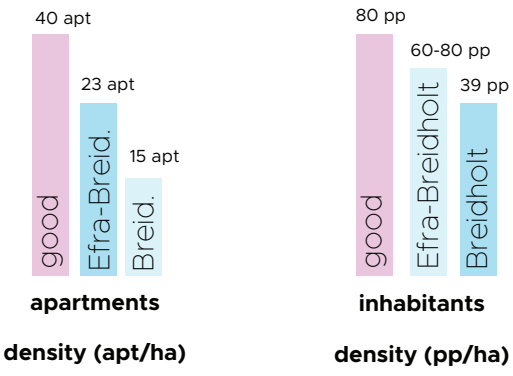


Figure 32: Density Numbers. *Adapted from Breidholt, Efra-Breidholt, 2020.*

Car Dependency

The car dependency problem is not only present in Breidholt, but also in the whole city and country. In effect, Iceland is on the first positioned countries of Europe in reference to the quantity of cars per capita (Martin et al., 2018).

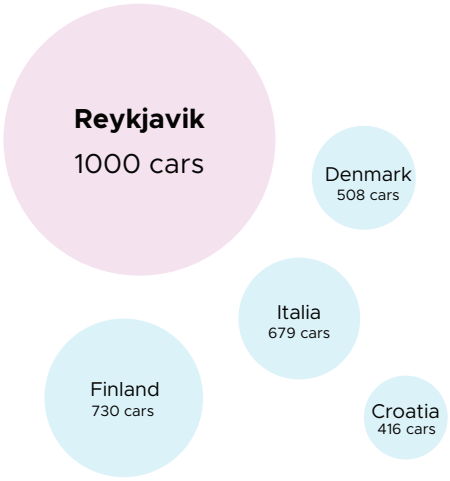


Figure 33: Cars Quantity. *Adapted from Reykjavik Research and Analysis, 2018.*

Reykjavik relies on car over all different transportation means, including walking. Driving in the city allows to cross it in around 15 minutes, same time that would be spent to arrive to the city center from Breidholt. Here more than 50% of infrastructure is dedicated particularly for cars, and in unfortunately, urban plans continue to be based on developing more streets and parking places (Martin et al., 2018).

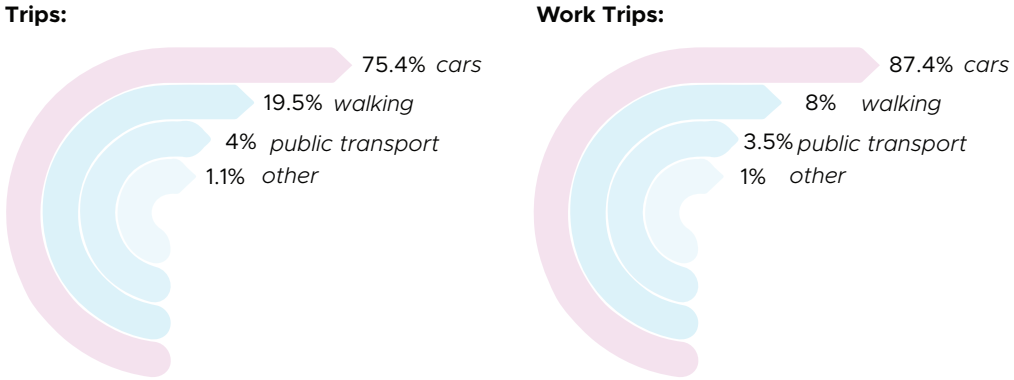


Figure 34: Commutation. *Adapted from Reykjavik Research and Analysis, 2018.*

Transportation

Breidholt should be considered as a development area since it is in the area of influence of the coming Borgoline (BRT system). According to the city hall's masterplan for 2040, 80% of the new

apartments should be built within this area. From that number, 90 % of the new dwellings will be built in disturbed areas or already built-areas, and it will no be possible to build them on natural areas. In relation to the job market, 80% of the new jobs should develop around the transportation line. (City of Reykjavik, 2020).

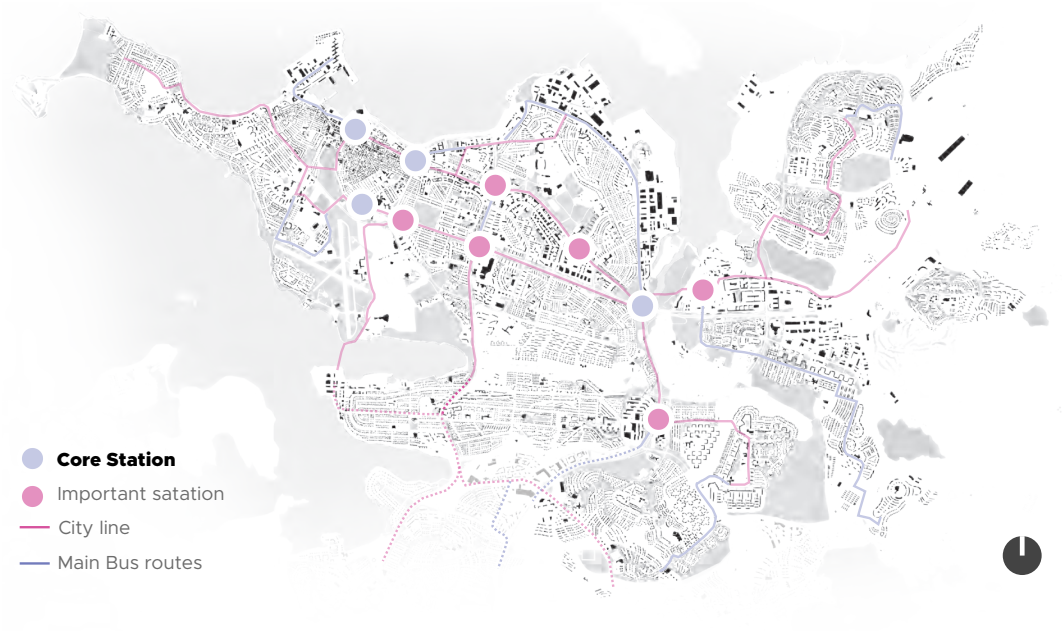


Figure 35: Transportation System in Reykjavik. *Adapted from Betri Almenningssamgongur, n.d.*

The City Line will arrive to Breidholt as part of the Red Line and Green Line of the system, both directly connected to the city center. It is expected to arrive up to Breidholt on 2029, and it will use for some parts a shared lane, and for other a separated one (Borgolinan, n.d.).

Community

Breidholt, unlike any other neighborhood or community in Iceland, is considered by many Icelanders as the “only ghetto” in the country. It is furthermore the district that has received the most negative press coverage through the years due to the conflicts between the government and inhabitants of the area, regarding salary and benefits. In particular, Efra-Breidholt got more bad reputation, since there was a really high rate of low-income families and a great number of single parents living there, in addition to the unemployment rate which is already high in the whole area (Jonsdottir, 2011).

Nevertheless, these problems do not really compromise the security of the area, since in the last years, there have not been major safeness problems, and it has occurred more issues in the city center than in Breidholt. The insecurity perception, comes more from a physical problematic of the public space, which in general is abandoned and unused due to the lack of

facilities and attractions for the people (Jonsdottir, 2011).

On the other side, based on local meetings, the community of Breidholt seems to be proud of their neighborhood and consider it to be a good place to live in, but it has grown tiresome of the lack of maintenance and interventions towards the "slumfication" of the area. In a kind of protest to this phenomena, the school in Efra-Breidholt organizes each year an event called "Ghetto Week"celebrating rap and hip-hop culture, which, at the same time, is popular in the neighborhood (Jonsdottir, 2011)

Figure 36: Comunity in Breidholt (111, Spessi). *Reprinted from 111 Straight Outta Breidholt, 2011*

Efra-Breidholt

Efra-Breidholt (Upper-Breidholt), is one of the three neighborhoods that compose Breidholt district. As the others, is delimited by large traffic routes and a huge natural area. It is divided in smaller three areas which are: in the north, Holar, in the middle Berg and in the south Fell (Reykjavikurborg, 2014).

The area is fairy well-organized and mainly composed by a mixture of housing buildings, which go from single detached houses to mega blocks, that physically characterize the neighborhood, but that at the same time are in conflict with the urban public space. The neighborhood has a well-defined central area with a lot of recreational outdoor opportunities and is

physically well connected to the river area, Ellidaardalur (Reykjavikurborg, 2014).

Figure 37: Efra-Breidholt, Holar. *Reprinted from Rafn Sig, Iceland Photo Hallery, 2018.*

Figure 38: Efra-Breidholt Service Core.

Figure 39: Efra-Breidholt, Holar Aerial View. *Reprinted from Breidholt 3, 2020.*

Regarding the population in Efra-Breidholt there are 8.432 inhabitants and it has a "desirable" composition of people in terms of age and sex, since is mixed and is full of young-adult people. As mentioned before, there is a considerable percentage of migrants, whose condition cannot be qualified as the best since. Based on statistics, the 25% of them are broken or unemployed (Reykjavikurborg, 2014).

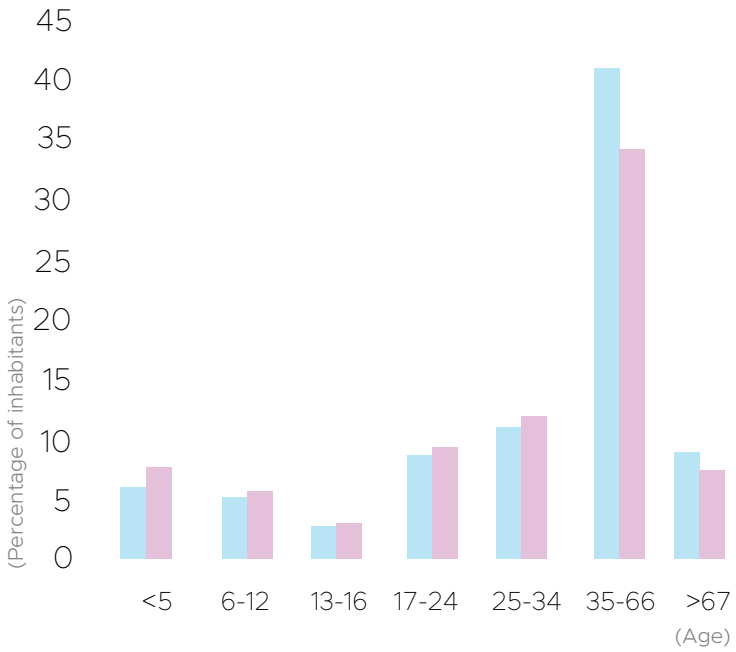


Figure 40: Age Composition. *Adapted from Breidholt, Efra-Breidholt, 2020.*

Land Use

Efra-Breidholt can be considered as a suburban housing neighborhood due to the high precedence of housing. In addition to the three subdivisions of the neighborhood, it is possible to find a main central core on it. This core is the only one that offer services to the area and is the place where is possible to find facilities as an important cultural center, a library, a church, sportive areas and so on. Nevertheless, all of these spaces are disconnected from each other, they lack of relation with the surroundings and they do not incorporate open spaces. This causes, that the importance of the area gets reduced, and that can only be perceived from the function of the public buildings and the streets configuration (Reykjavikurborg, 2014).

Figure 41: Efra-Breidholt Land Use. *Adapted from Breidholt, Efra-Breidholt, 2020.*

Streets and walking distances

The modernistic way in which Efra-Breidholt is designed is characterized by the wide streets without human scale and the proper size according to its function and population of the area.

There are three types of streets in the neighborhood, recognizable by the width and the frequency of use:

- A highway that surrounds the area (413).
- Main streets that surround the three sub-areas and cross the center (Norduholar, Sudurholar, Austurberg, Vesturberg, Nodurfell, Sudurfell).
- And secondary streets that connects to the last ones as Gerduberg, and others.

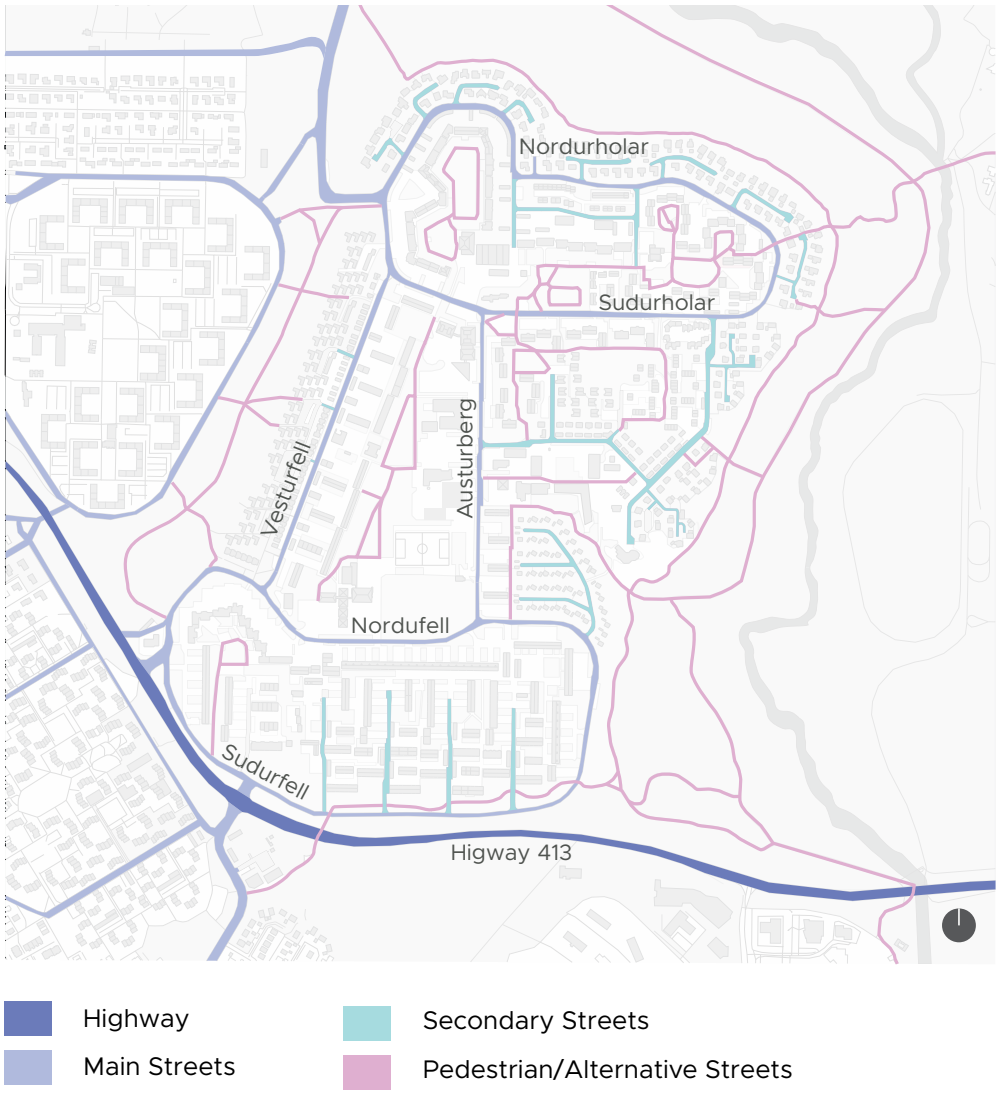


Figure 42: Streets Hierarchy. *Adapted from Breidholt, Efra-Breidholt, 2020.*

Figure 43: Austurberg Section. *Adapted from Google Maps, 2021.*

All of them lack of a proper design empathized for pedestrians, and its hierarchy is not well established. On the interior of the neighborhood, given the physical features, streets create a barrier between the apartment buildings' outside and the roads, facilitating users to ride with speeds over 30km/h. There is a lack of good quality sidewalks, which from the 60's, together with the circulation structure, have barely change. There is also absence of integrated cycleways to the urban space. In conclusion, extensive maintenance and improvements are needed on many footpaths.

Figure 44: Street on Fell Area. *Adapted from Google Maps, 2021.*

Regarding to the reachability of the spaces, considering that the average walking distance to a city park of 10ha should be estimated at 800m, to a neighborhood park, 300m, and to a recreation area, 200m, in Efra-Breidholt 90% of the residents live within a radius of 300m of an open area.

The accessibility to supply services and supermarkets is varied, between the 45-60% of the services are in a distance of 1.2km (15 minutes approximately), which according to the references it can still be improved to achieve a walkable city. The 15% of the resting houses are in a desirable condition and the last 15%, in a good one.

Figure 45: Distances

Natural Paths

In general, there is good presence of natural paths for hiking in Efra- Breidholt, all of them located in the periphery and accessible from the perimeter of the urban area. None of them have a high presence in the

center of neighborhood, disconnecting both areas and avoiding any kind of nature presence on the core. This can be also easily perceived by the simple fact of missing sidewalks.

Buildings

Efra-Breidholt is different from many parts of Reykjavik in the way that its buildings are very similar within the neighborhood and clearly separated between areas by the type. In this area is possible to find 5 clear kinds of constructions: 8 floor buildings, 2-4 floor buildings, villas, paired houses and buildings dedicated to services, commerce and institutions.

Figure 46: Building Type

The dominant type of housing is the one of apartment buildings, which basically consist of blocks from 2 to 4 floors that were the city's answer to the need of housing for people with low resources, as well as for the growing local population that had caused the city to expand in the previous years (Reykjavikurborg, 2014).

Buildings are dominantly made of concrete, as all the country constructions, due to Iceland's lack of clay mines and usable forests. Basically, they all look the same in terms of height, size and composition which create monotony and repetitiveness in the neighborhood, turning this condition as an element that composes the identity of the area, but not in the best way. An example of this, is the famous 320m long apartment building, with 200 apartments and 20 staircases in Fell which seems to be a fortress wall (Reykjavikurborg, 2014).

Figure 47: Building on Nordurfell. *Adapted from Google Maps, 2021.*

In addition, it must be mentioned the lack of relation between buildings and the context present in the neighborhood which is characterized by:

- High presence of parking lots between buildings and open space.
- High presence of garages on the ground floor of the buildings.
- Long distances from the main entrance of the buildings to the streets, without any kind of functional space.
- No commerce on the ground floor
- No mixed-use buildings
- Unbalanced open private paces between tall buildings and single housing.
- Fences on single houses

Housing

The larger group of houses is composed by attached houses, followed by single houses and housing blocks. In reference to the number of rooms, even though the tendency of the population in terms of family member is dramatically reducing, in Breidholt the quantity of apartments with one or two bedroom is less than the 25 % (Reykjavikurborg, 2014).

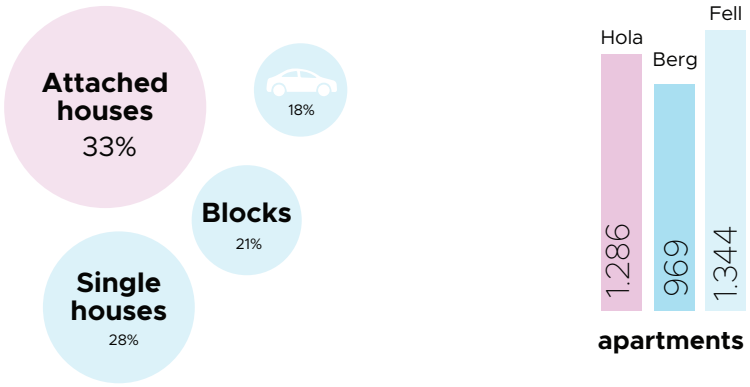


Figure 48: Type of Housing Buildings. *Adapted from Breidholt, Efra-Breidholt, 2020.*

According to the masterplan of the city for 2040, the number of dwellings should be incremented to be able to provide enough residences for the growing population. The new residential areas should be around 2 to 5 floors, and the density should work according to the Borgoline stations, where it should be higher. It is possible to modify these conditions to develop a high-rise building (8 story), only for particular cases according to the new studies (Reykjavikurborg, 2014).

Public Spaces

Given the location of Efra-Breidholt, which is in the periphery of Reykjavik, it is possible to find on its vast green areas, which represent the 50% of the total am mount, as it was mentioned before. However, it is not possible to perceive this due to the disconnection of the natural area with the center of the neighborhood.

Moreover, the mentioned condition is emphasized by the simple fact that there is a huge lack of public spaces in the neighborhood, as parks and squares. In fact, there is just two single tiny squares, without any kind of design, function and importance, that is why, at the public space level, there is no definition in the center zone, making difficult to consider it as a meeting point. Other public spaces consist in buffer zones between the streets, buildings and parking lots, semi-private gardens and solid flat surfaces made of concrete, all of them without any kind of function and therefore unused.

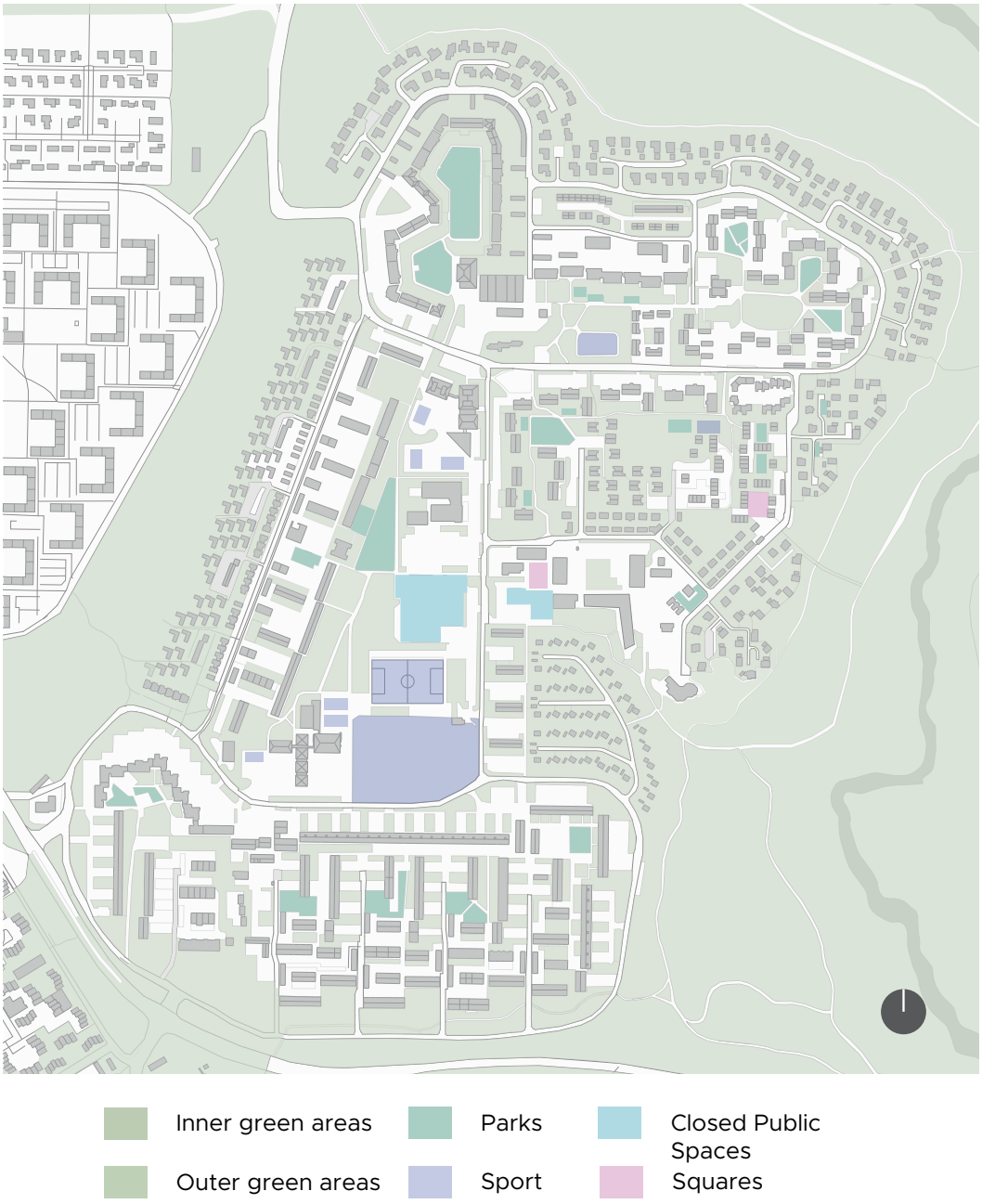


Figure 49: Green Areas.

Talking about the qualities of the existent public spaces, once again, its hard to find appropriate areas for social interaction. In general, besides being disconnected and unmaintained, they do not have enough illumination, furniture and facilities and many of them are over scaled, which convert these areas into simple pieces of land. Many of these spaces do not even work because they do not answer the climate conditions of the area and the sun light, which should be having at least the 50 % of area with at least 5 hour of sun (May 1st (Reykjavikurborg, 2014).

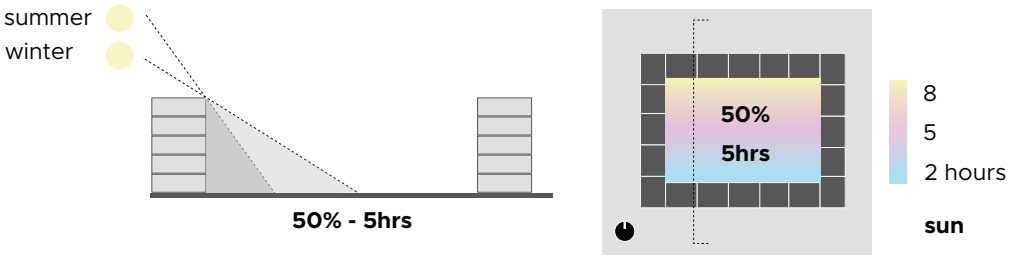


Figure 50: Sun Path. *Adapted from Reykjavik 2040, 2020.*

Figure 51: Green Open Area on Nordufell. *Adapted from Breidholt is a District in Reykjavik, n.d.*

Figure 52: Buffer Area in Nordurfell. *Adapted from Breidholt is a District in Reykjavik, n.d.*

According to the physical condition of the public spaces, it is possible to create a differentiation based on its size, functions and relation with the surroundings.

- **Street front:** are spaces next to main streets close to residential buildings as Nordurfell and Sudurholar.
- **Core Area:** are voids in between public buildings in the central area (Austurberg, Gerduberg).
- **Urban Voids:** are areas randomly placed without use (in the inner part of the subdivision of the neighborhood).
- **Parking Places:** are big parking lots next to buildings
- **Green Voids:** are the main underdeveloped parks and green areas generally placed in the center zone.
- **Development Areas** is the area located in the natural zone, which is established by the City Hall as a possible space for further development (Fell).

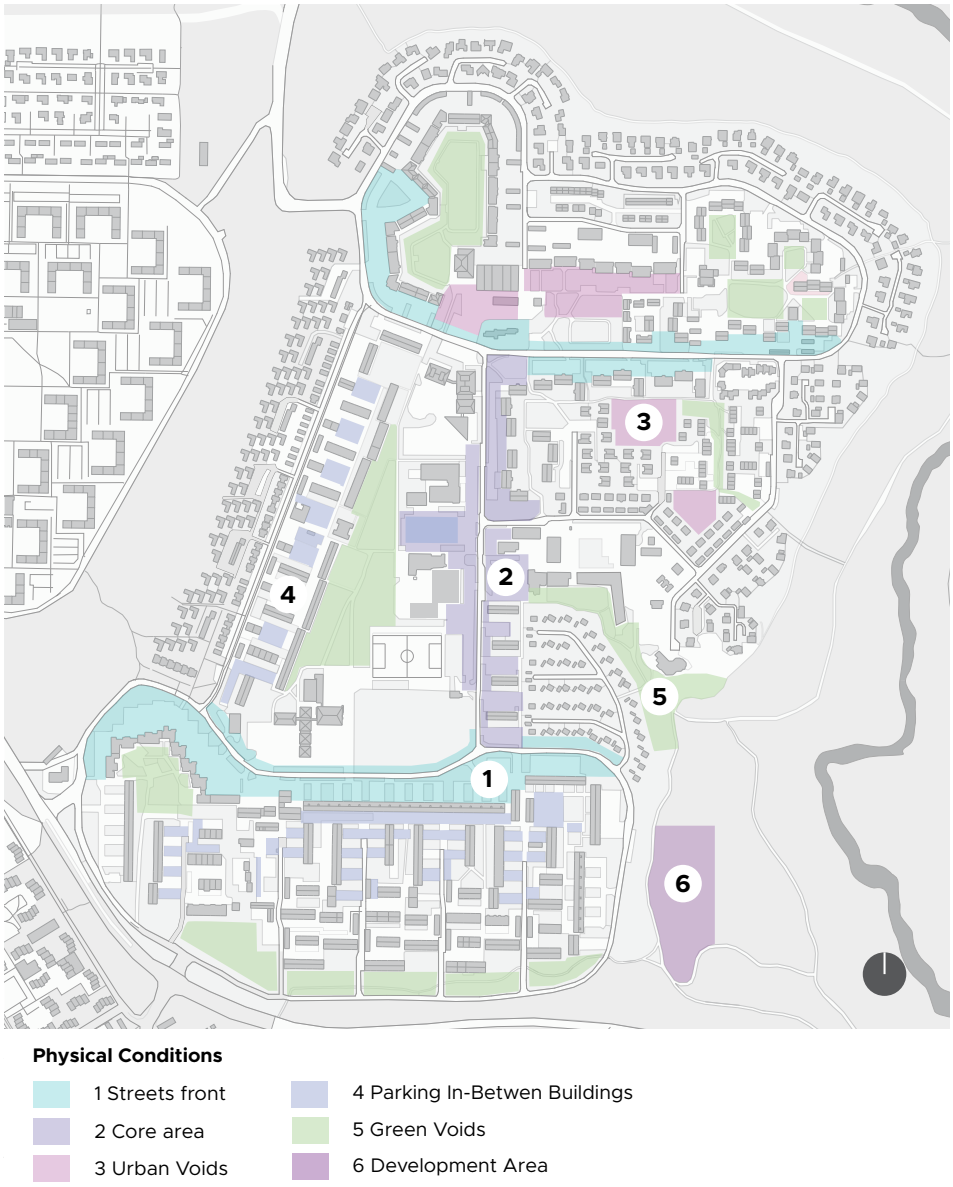


Figure 53: Physical Conditions

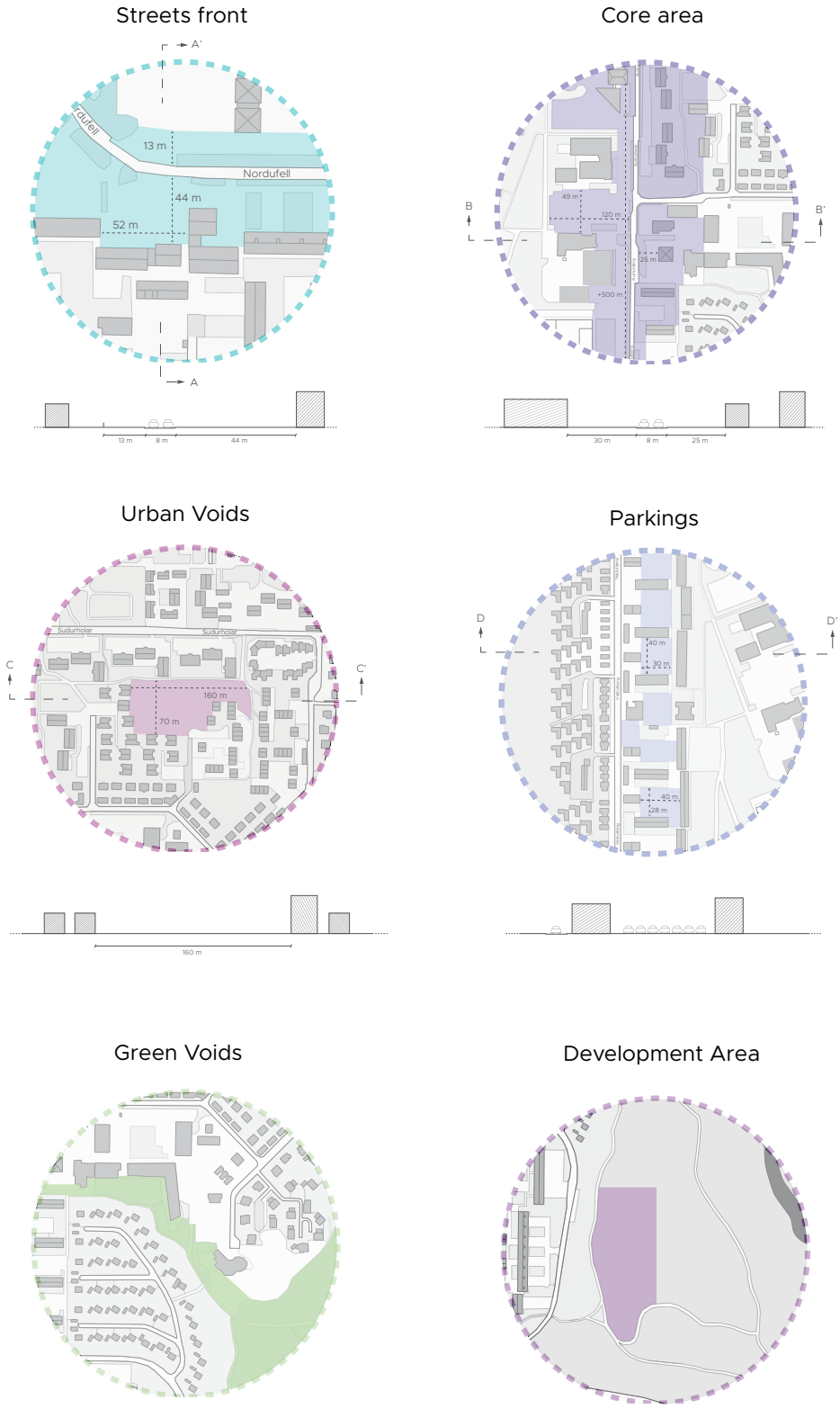


Figure 54: Zoom - Physical Conditions.

Figure 55: Center Core Area. *Reprinted from Austurberg & Gerduber, Breidholt, 2021.*

Cover Semi-Public Spaces

Given the climate and light conditions of the country, cover public spaces are of importance for the residents, since they are meeting points for socializing when weather conditions are no proper for being outside. Excluding the school buildings, in Efra-Breidholt, there are just three cover public spaces, which are the swimming pool, the library and the community center. These three buildings do not have any prominence in the neighborhood, and does not work with the surroundings.

Business and Commerce

Business areas can be found in different zones of the district, with the most important located in Mjodd in Nedra Breidholt. In Efra-Breidholt the higher concentration of commerce and businesses is in Gerduberg (central street). It is calculated that per inhabitant there is around 1.2 square meters of commerce, which in terms of sufficiency is not the best according to the local development indexes. Actually, as an example of this, there is only four grocery stores and one have been closed recently, which means that the numbers are still lowering (Reykjavikurborg, 2014).

Further, based on a poll made by the City Hall, it is found that many residents of Breidholt would like to introduce commerce areas, but they have found little opportunities to generate by their own means given the lack of support and physical space destinate to the activity. Locals, consider that gardens development could incentive the commerce in the area (Reykjavikurborg, 2014).

Parking Areas

As it is possible to detect at first sight, the number of parking places in Efra- Breidholt is excessive, to the point that they have converted in one of the most important physical characteristics of the neighborhood that contributes in a wrong way to its identity. There is around 3.704 units, being the number higher than in the other two neighborhoods that compose Breidholt. Since there are 3,599 apartments, basically it means that there is almost one parking place of each apartment. In relation to the public spaces, as parks, 70% may correspond to big parking lots (Reykjavikurborg, 2014).

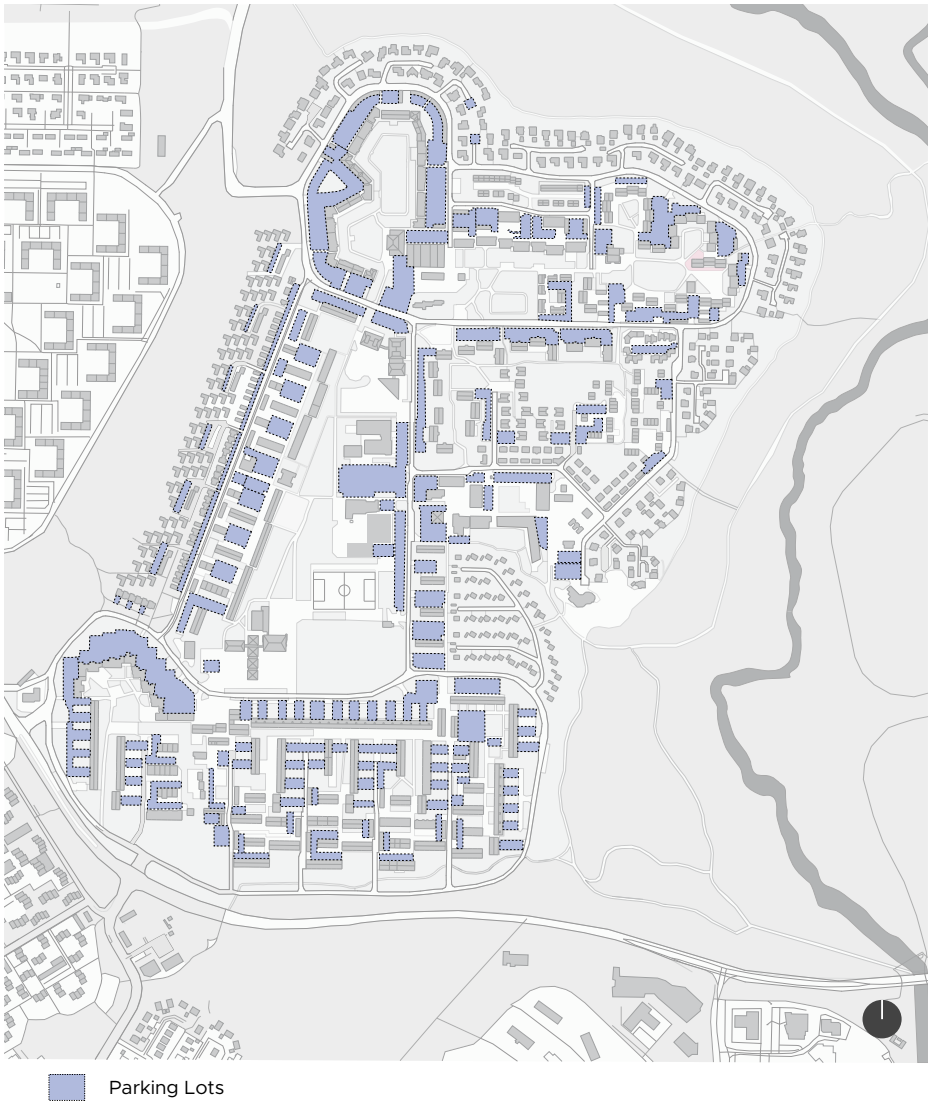


Figure 56: Parking Lots

Efra-Breidholt General Plan

Currently, there are two masterplans in the city which propose policies for the development of the city towards a distant future. Either the Municipal plan for Reykjavik 2001-2024 and the 2010-2030 incorporates Breidholt as an important place of development due to its condition of being the most populated neighborhood in Reykjavik.

In general terms, the plans mark a shift in the city's policy around transportation and neighborhood density, ensuring suitable conditions for its continuous growth. It exists an emphasis in adding services in each neighborhood to decrease motorized traffic, while at the same time bicycle lanes and pedestrian walkways are increased. The goal is to create a more cohesive and dense area, and thereby improve the use of land to avoid the urban sprawl. With denser and mixed settlements, people habits can change and indeed impact less in the environmental (City of Reykjavik, 2014).

Figure 57: Efra-Breidholt View. *Adapted from Breidholt is a District in Reykjavik, n.d.*

People as a Driver for Changes

It may be hard to restore or create the identity of a place without getting information for the own users of a further project. In an urban project inhabitants can be used as a driver for development of spatial identity, especially if we consider that they are who give the meaning to the physical space.

What people feel, perceive, understand and imagine is part of the significance and memory of a place, that is why in this section, a compilation of information is retrieved from in place surveys done by the authors of this paper, in a visit to Reykjavik and the City Hall in "Reykjavik Neighborhood Plan" document (City of Reykjavik, 2014) giving to the research not only a hint to reach more accurate proposals, but also in some cases the answer to what may be the best solution to apply in a specific place.

As a general overview of what the surveys compiled, it is possible to identify in the following map, with different intensity of colors, the areas that were mentioned with more frequency, to implement future projects around the improvement of the open space. Based on 50 people's answer the results were:

Figure 58: Survey, quantity of mentions of a problematic area.

Some general problems, mentioned, around all those spaces where about the lack of facilities to use them more properly, as ramps, benches, lights, some shelter to avoid the wind and the heating system that melts the ice on the floor, that is present in many other areas of the center of Reykjavik.

A particular case found, was the parking lot next to the pool of Efra-Beidholt. It was expected to get answers as a misconceived space, but just around 4 people mentioned that it should be transformed into other type of space. The reason was obvious, people use it a lot for cars, as they depend on this type of transportation to commute around the neighborhood, and moreover, the pool is one of the most visited places in the area, it can be said, that even more than the library and the community center. This aspect can also be sustained with the information from the city hall, where people mentioned that they are still aware about the possible future lack of parking lots (Reykjavikurborg, 2014).

Figure 59: Pool Area Parking Lot.

If it is grouped the problems by thematic, these are the topics mentioned by the residents of Efra-Breidholt, and the number of times they referred to.

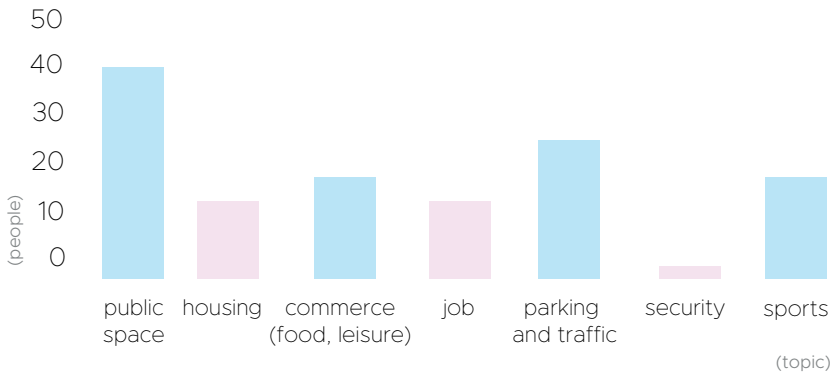


Figure 60: Type of Problems.

In spite of the mentioned problematics, in the questions set regarding to the personal security, nobody mentioned that have been a victim of an act that risked their personal integrity. Even more, people brought up that maybe is more than 10 years that they have not seen a dangerous event. So, they consider that now, in the present, is just a matter of a big bad reputation acquired with time, that should be worked on, together with the physical conditions of the neighborhood.

Figure 61: Holar.

On the other side, based on the city hall's information, it was possible to find other kind of requirements for the neighborhood as:

Figure 62: Other Requirements of Efra-Breidholt.

Besides, in the same document, subsequent from the creation of focal groups, and after being informed about the necessity of increasing the quantity of apartments to create a mix dense neighborhood, it was possible to get some suggestions from the residents about how the area should be densified and changed.

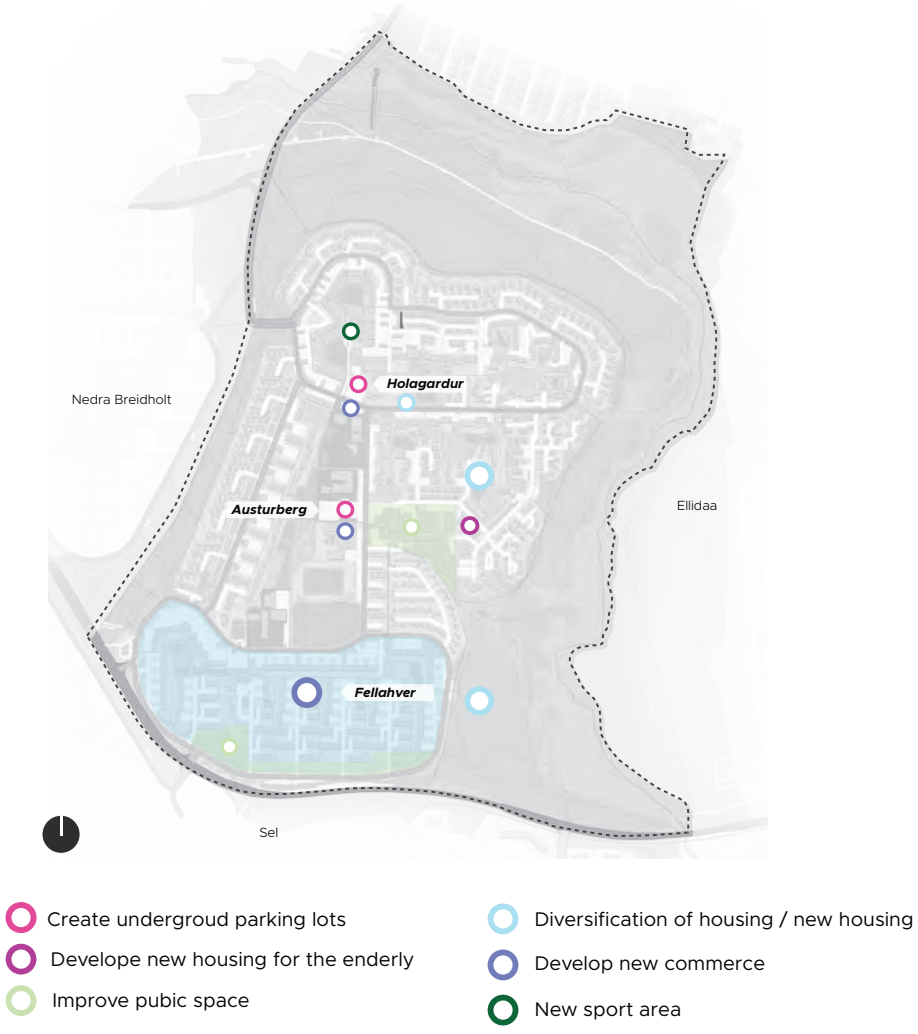


Figure 63: Problems' location in Efra-Breidholt

Figure 64: Austurberg Street

SWOT Analysis

After analyzing the area of study from the large to the neighborhood scale, it has been viable to detect the strengths, weaknesses, opportunities and threats of Efra-Breidholt.

As studied before, it is possible to see that the main problems have to be with the physical urban conditions of the area which are directly related with identity of the neighborhood. While, on the other hand, it is detected that one of the main strengths is associated with the nature and its historical use, making possible to anchor these characteristics to a proposal that could improve the neighborhood.

At the same time, both conditions are used to set the possible threats that may be found along the proposal development and the opportunities that can be used as departing points to improve Efra-Breidholt. Below it is possible to find a summary chart with main aspects to be taken into account.

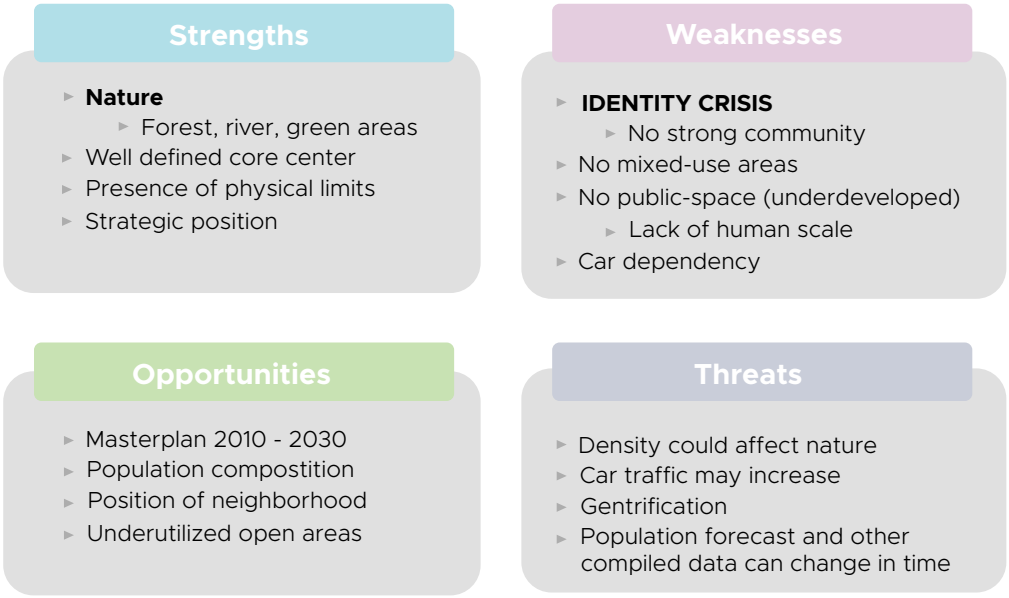


Figure 65: SWOT Analysis

2

CASES OF STUDY AND LITERATURE

The following chapter is narrated through cases of study, in order to be able to understand in deep how spatial identity can be built in a neighborhood. Different kind of strategies are explained to understand their relationship with the urban context, high quality open spaces and the construction of a unique identity. To be able to evaluate them, the text is supported by literature that focus on aspects as urban sprawl and public space development, subjects that, at the same time, are completely related with main problematic of Efra-Breidholt.

Four projects with different characteristics have been selected, mainly for their relationship with the Nordic context and their emphasis in the search of identity. In some cases, it may seem that there is no topic in common, but all of the examples studied in group allow this work to compare and select the best ideas for the new case of study. Each project differs from the other in terms of scale, extension, masterplan implementation process, preexisting conditions and others aspects, and is this particularity in general the one that allow the extraction of strategies with different nature. Therefore, the presented analysis, will be different on each case.

It is important to underline that the text does not pretend to be a simple description of the characteristics of the reference cases and their adopted strategies. On the contrary, as mentioned before, it is more an explanation and assessment of them, with their possible further uses in the project. For this reason, it has also been outlined some strategies that have not been the best solution on this type of problematic, while on the other hand, unrelated strategies have not been described in detail.

The two main books used in the chapter are Cities for the People by Jan Gehl and Sprawl Repair by Gallina Tachieva. The first one allows the proper understanding of a 'livable open space' and the importance of urban concepts as the scale, urban edges, the life between buildings, and others, for the generation of a high-quality space with identity, which as it is possible to known lacks in Efra-Breidholt. While the second book, due to its content is related to the understanding of sub-urban contexts dominated by sprawl characteristics, it makes possible to develop a critical thinking on the topic and understand some punctual strategies to solve this problem.

Moreover, both texts are of particular interest for the project, in the way that Cities for the People, besides explaining concepts, often refers to examples in the Nordic context, in specific in Denmark, and, the Sprawl Repair, works in suburb areas, with similar physical structure and urban development history to Efra-Breidholt.

In relation to the selection of the projects to be analyzed, Urridaholt Masterplan was chosen for its similar conditions with Breidholt, not only physical, where is possible to find the same natural context, climate and so on, but also for the size and final scope of the project, which is to make the area a well develop suburban zone. Furthermore, the strategies behind the project beyond working on identity, they generate an auto-sustainable

neighborhood, departing from medium scale proposals to punctual interventions.

Orestad intervention, despite the fact that its scale is bigger, it is of interest for this project the possibility that it gives to evaluate a group of interventions that already have been applied through two masterplans, 27 and 7 years ago. In general, on the first intervention is possible to see the failures of a modernistic approach on the urban development, with mega-blocks and mono functional areas, whereas in the second, the regeneration of the neighborhood with opposite applied strategies, makes possible to compare two different results in the same area.

Superkilen project, once again, is in the Nordic context, but is designed with a different approach. With this example is possible to see how a small-scale intervention can reactivate a whole neighborhood, just by working around the public space and making an specific area act as the core of a large context. The approach mechanism used here works, completely, around the identity, using detailed analysis of the social composition of the neighborhood, to know how inhabitants use the space and the future possible activities that they might need. In this project spatial identity is also achieved through "people's expression" and a unique landscape/urban design, which make it differs from the previous cases of study.

The last project, HafenCity masterplan, even though it seems to be different given the conditions of its location, in a historic center, it has strategies for the development of public space and identity search, of interest, due to its connection and understanding of the history, culture and heritage of the city, which is related to the sea, ports, industry and music. Analyzing this case, allows to sum up the importance of intangible elements on urban and architectural interventions. And moreover, with the Elbphilarmonie project construction, and the understanding of its purpose, it is possible to be critic with the project and to rethink about the adopted solution and its possible application in a contexts as Efra-Breidholt.

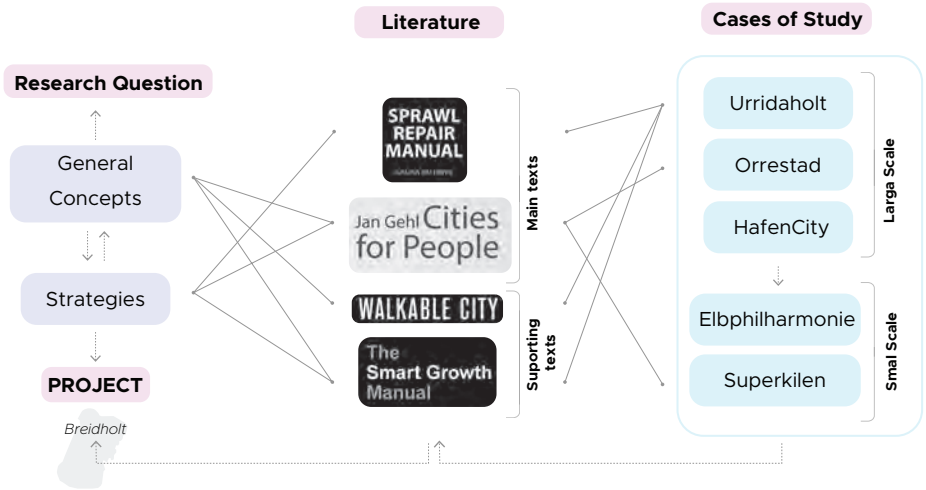


Figure 66: Cases of Study and Literature Relation

Key Concepts

Identity

A simple definition of identity can be, “a set of characteristics of an individual or a community that characterize them compared to others”. Both, the architectural and urban elements relate to the term since they make a place belongs to its location and nowhere else, and conform key components of a particular society, its history and culture. Their physical condition developed with time allow them to be transmitters of identity, or rupture elements to create a differentiation (Velasco, 2021).

In specific, for the case of urban space, identity can be also considered as the result of the type of planning, of its respect for the past and its integration with the future. It is an actual approach of over-viewing the urban image but perceived in relation with the appropriation of the city and the defense of its heritage.

From very early settlements it has been possible to identify urban characteristics that highlight the identity of a place. An example of this are roman settlements which urban layout was established with some regularity, following the Etruscan and Hellenistic model, around the two main perpendicular streets, the cardus and the decumanus, and a wall to protect the community. These two aspects, show a sense of organization on the community and its necessity of protection (Smith, 2005).

However, with the pass of time, the transformation of the cities given the technological development and the society adaptation to it have affected this characteristic. With more emphasis from the end of the 20th century and more intense in the current 21st century, where globalization has turned practically every aspect of our life upside down (Alva, 2019). The consequences of a lack of urban identity may be translated on abandonment, insecurity, loss of economic value, the absence of elements that make one place different from another, and even social segregation or deterioration of the quality of life (Alva, 2019).

Spatial Identity

Spatial identity is the set of characteristics that allow someone to acquire a sense of belonging to the geographical space in which they will develop. The spatial identity of an individual can be different, and it is defined by the set of components, characteristics and categories that define the geographic space. According to Kuvac (2017) and other authors, spatial identity is an integral dimension for understanding a place making and experience. To achieve well developed public spaces, it must provide to users a sense of attachment, both emotionally and physically, so they can become vital parts of the life of a city, and at the same time, space can

reflects inhabitants' characteristics.

Notwithstanding, the single element of spatial identity can be divided to be explained in a better way. The physical form, activity and meaning are three of the main elements that mix together to give the identity sense of a place (Ujang & Zakariya, 2015).

- **Meaning:** A place cannot be separated from the people who make places and invest meanings on them, since inhabitants are the ones that interpret, narrate, perceive, feel, understand, and imagine. It is apparent that without addressing the significance of the people's psychological connection with places, any form of assessment in determining place quality will be inadequate (Ujang & Zakariya, 2015).

  In many cases the interpreted meaning of a specific area is completely related to intangible elements that facilitate its cultural and social comprehension.

- **Activity:** The quality of urban life today has to do, among other things, with the recognition that diverse social groups need diverse landscapes for diverse activities. Offering a variety of uses for diverse populations will reflect this condition in the public space, enriching people' interactions and therefore the space, giving it a particular identity (Dougherty, 2006).

- **Physical Form:** Refers to urban layout and its physical structure, the same that organize it and is composed by urban elements as streets, green areas, patterns, equipment and so on. The physical form can be considered as the base of the other to concepts since is the one that influence directly on people's first perception and therefore attachment to the place (Ujang & Zakariya, 2015).

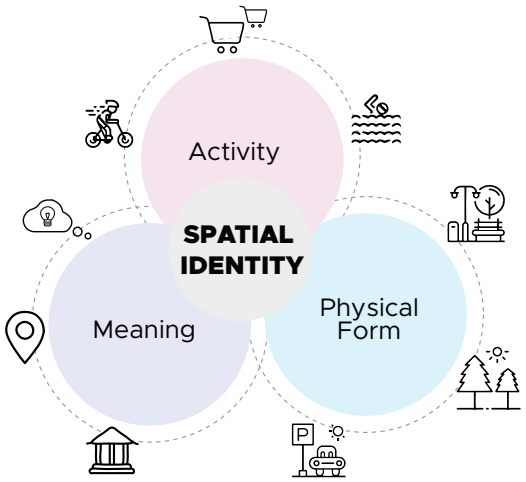


Figure 67: Spatial Identity

In relation to the physical form, Kevin Lynch on his book Image of

the City (1960), mentions how as part of identity a place can be memorable based on legibility. For him, this means the ease by which its physical parts and components can be recognized and organized into a coherent pattern. A legible city is one that utilize patterns of recognizable symbols, those that are at once easily identifiable and grouped logically. Lynch defined the elements that make up these symbols as paths, edges, districts, nodes, and landmarks.

- **Paths:** Is any route or channel along which somebody travels. Prominent, legible paths are those that lend character, and might include a concentration of specific activity or distinct facade along a street.
- **Edges:** Are boundaries between distinct areas: examples in the city landscape may include roads, parks, shopping districts and residential areas; or natural barriers such as water and green spaces.
- **Nodes:** are focus point for orientation. Squares, junctions, and access to transport are examples of them. Paths that cross can be nodes, though too many could render them indistinguishable.
- **Districts:** are large city areas which observer can mentally go inside of.
- **Landmarks:** are external points of orientation. The key physical characteristic of them is their uniqueness or memorability. To be easily identifiable, they should have a clear form, contrasting with its surroundings, and spatial prominence (Lynch, 1960).

With these elements on mind as a general reference, it is possible to establish a relation between the physical form of place and urban strategies that can work on the improvement of them, and then influence on the spatial identity. At the same time, knowing that open public spaces are the main ingredient of the urban environment, it is possible to set urban strategies as key mechanisms to propose around this topic.

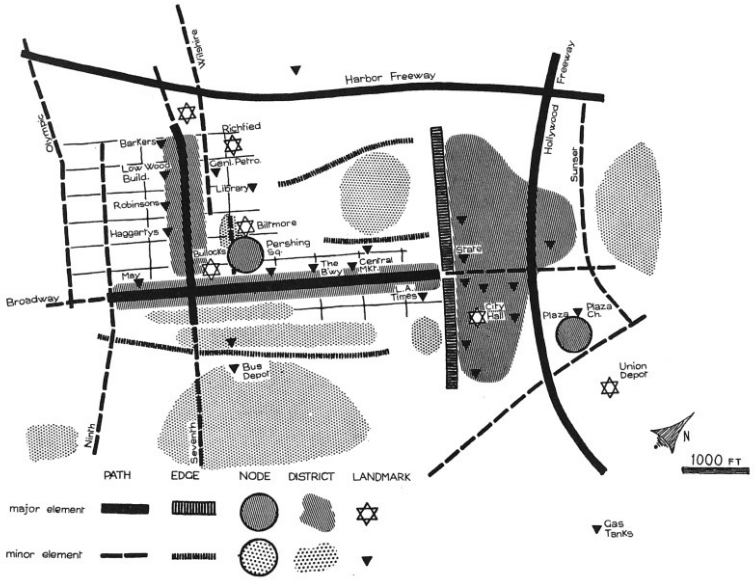


Figure 68: Los Angeles Analysis. *Reprinted from The image of the City, 1960.*

Cases of Study

Urridaholt, Reykjavik

The Urridaholt project is located in a large-scale urban extension in Gardabaer Town (101 ha), in the outskirts of Reykjavik, to the south of Breidholt. Its quickly access to the highway ensures an easy communication with the capital area. One of the best qualities of the site is its placement in between the natural environment, which gives the project a unique perspective, surrounded by a ring of mountains (Urridaholt ehf, 2006).

The development plan for the area creates a compact, diverse and mixed-use neighborhood with numerous infrastructures, pretending to answer to the general problematic exiting in the zone around urban sprawling, low-density neighborhoods, car dependency and lack of identity. The plan includes a plan for up to 1,625 apartments built in a mix settlement of detached houses and apartment buildings, with up to 90,000 m2 of office and service areas (Urridaholt ehf, 2006).

The first steps for the design of the project were done by 200. Nowadays, the project finalized the design process and it construction is on the way (Urridaholt ehf, 2006).

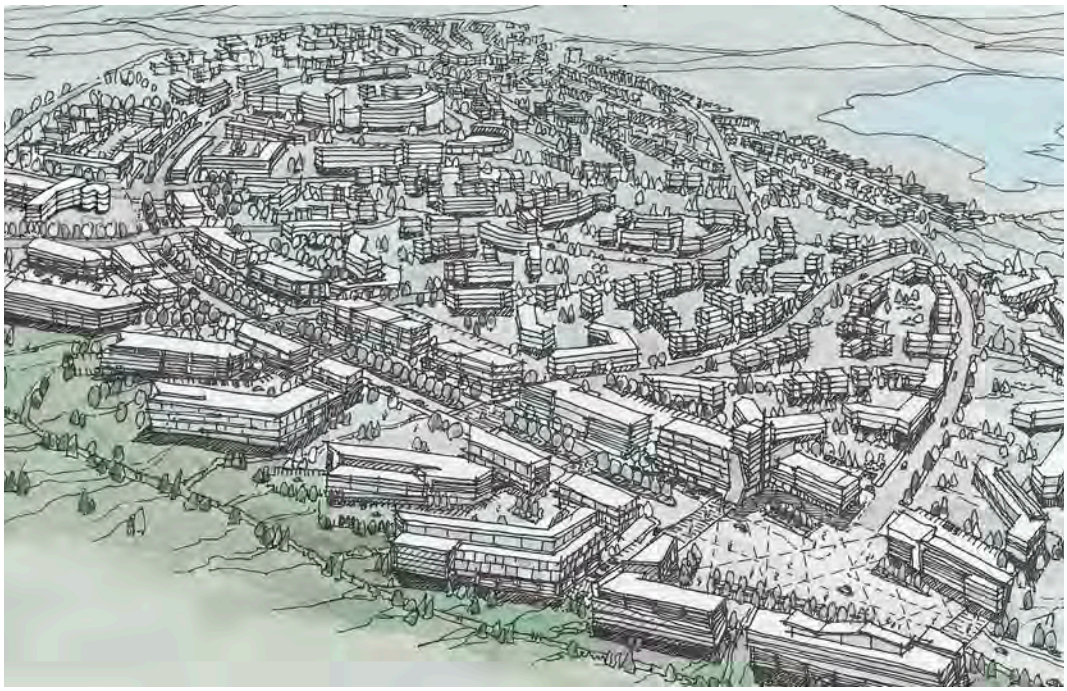


Figure 69: General View Urridaholt. *Reprinted from Rammaskipulag fyrir Urridaholt i Gardabae, 2006.*

Figure 70: General Plan Urridaholt. *Reprinted from Rammaskipulag fyrir Urridaholt i Gardabae, 2006.*

Large Scale Strategy

According to Tachieva (2010) establishing a neighborhood structure and connecting it to a larger region is the greatest design challenge to develop on a masterplan for a neighborhood. An analysis in a regional scale allows the designers to identify the surroundings and choose the perfect area to work in, and to include the proper strategies to solve problems that go beyond a small community. Unfortunately, based in this aspect and the found bibliography, this project lacks of an integral connection to the residential neighborhoods next to it and the shopping area, or there is no any deep analysis of it. Nevertheless, there are many other strategies at this scale that are working and can be used as good examples, as departing from the delimitation of working areas in order to preserve natural surroundings.

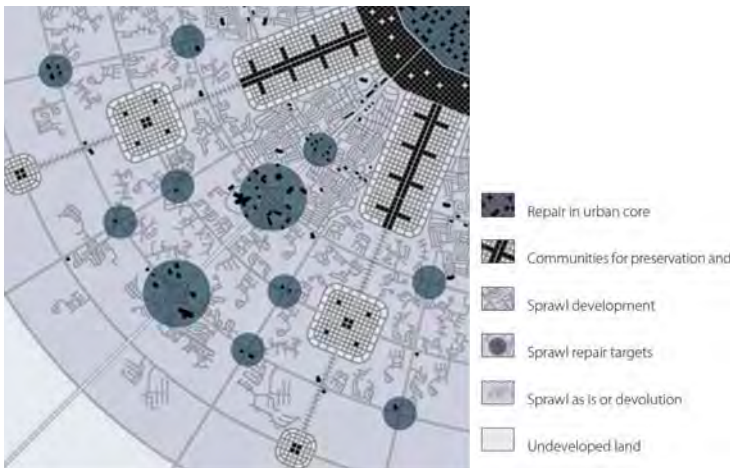


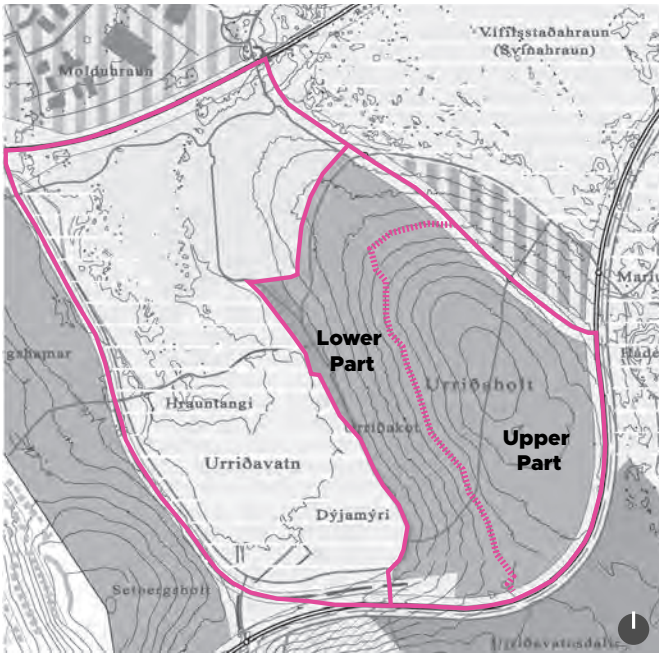
Figure 71: Repair Targets and Nodes Identification Strategy. *Reprinted from Sprawl Repair Manual, 2010.*

Zonification

A well-developed neighborhood structure is one of the first important steps to define a neighborhood before going deeper, and is key to define subsequent strategies related to transportation, densification and so on (Tachieva, 2010). As it happens in this case, it is also important to set zones based on its preexisting conditions as the topography and other natural elements.

The zonification is a strategy that gives legibility and identity to the neighborhood, it can make distinguishable the elements mentioned by Kevin Lynch on “Image of the city” (1960) as edges, landmarks and in particular districts, which in this case work in a different scale, since the project is a neighborhood. In consequence, with this strategy applied, Urridaholt avoids the monotony and clearly define its composition and center.

It can be highlighted that this case uses three types of zonification, one based on the mountainous topography, a second one based on a general zonification that consider it natural surroundings and a last one based new specialized functions to be assigned (Gardabaer Town Hall, 2006).



- **Upper P.** public buildings and social activities
- **Lower P.** more residential are

Figure 72: Urridaholt Zonification - Topography. *Reprinted from Rammaskipulag fyrir Urridaholt i Gardabae, 2006*.

In Urridaholt even though the residential area is the focal point of the plan, it is the school, sport facilities, main public spaces, health care services and so on, the infrastructure that will be located in the upper areas to enjoy the benefits of the hill in terms on view. In the design, it is possible to find:

- **Haholt:** A mixed-use core area with tall buildings and a unique characteristic based on formal strategies and functions.
- **Vidskiptasteiti:** A shopping area, developed around a main street close to the nature and therefore the mountains. The street works with nature not only with the incorporation of trees but also with the incorporation of green areas on voids, creating a direct connection between the buildings, open space and natural surroundings,
- **Residential Areas:** Three residential areas with different types of houses (size, composition...). In the higher part it is developed a higher density area, close to the civic center with the development of taller buildings, while in the areas closest to the lake it is possible to find more detached, semi-detached and terraced house (Urridaholt ehf, 2006).

Five subdivisions according to the main proposed use:
- Haholtid: Work and Civic
- Vidskiptahverfi: Commerce
- Residential x 3

Figure 73: Urridaholt Zonification . *Reprinted from Rammaskipulag fyrir Urridaholt i Gardabae, 2006.*

Walkable City and Mixed-Use

Since human population and housing construction growth is inevitable, it must be shaped into the most intelligent possible form through master plans that are based upon the model of the mixed-use and walkable neighborhoods (Duany et al., 2010).

A neighborhood in general, should be compact, walkable, diverse, and connected. It should be as much as it can in order not to waste land, and be walkable (around five-minute walk from edge to center).

As Jeff Speck mentions on Walkable Cities (2012), in order promote the use of open spaces through the "walkability", a walk has to satisfy four main conditions: it must be useful, safe, interesting and comfortable.

- **Useful** means that most aspects of daily life are located close at hand and organized in a way that walking serves them as well.
- **Safe** means that the street has been designed to give pedestrians a fighting chance against being hit by automobiles.
- **Comfortable** means that buildings and landscape shape urban streets into outdoor living rooms.
- **Interesting** means that sidewalks are lined by unique buildings with sings of humanity around (Speck, 2012).

These four conditions work together creating high quality open spaces with unique characteristics that reflect the identity of a place. The lack of street life and pedestrian culture is one of the reasons why a neighborhood fail for developing unity.

Urridaholt development plan incorporate all of these conditions on streets and open areas, for example in Vidskiptasteiti, in the commerce area of the neighborhood, it is purposed a nodal development avoiding monotony on the street and creating a focal point. At the same time, the variety of functions distributed on the neighborhood generate a complete community (Urridaholt ehf, 2006).

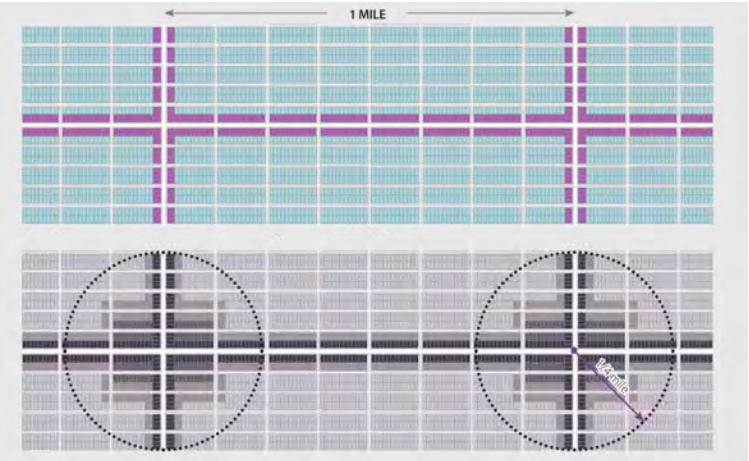


Figure 74: Comparison Linear Development and Nodal Development. *Reprinted from Sprawl Repair Manual, 2010.*

Urridaholt is able o satisfy the ordinary daily needs of its residents within walking distances. It contains a balanced mix of uses, including large and small dwellings, retail spaces, workplaces, and civic buildings. It is a complete neighborhood since it provides their residents pedestrian access to schools, day care, recreational centers, and a variety of open spaces, (Duany et al., 2010).

Figure 75: 10 Minutes Walk. *Adapted from Rammaskipulag fyrir Urridaholt i Gardabae, 2006*.

Mixed-Use and Diversity

A mixed offer on housing contains a wide range of dwelling types, that ensure a mixed society, with young and old people, and families with diverse economical condition (Tachieva, 2010). In Urridaholt, even there is a established zonification with a pattern for the location of tall buildings on the upper part, to encourage density, and single housing on the lower part, next to the lake, to preserve it. There is not a single type building in each area, making possible to find many types of housing buildings and apartment units in all of the five areas in the neighborhood.

Figure 76: Building Diversification. *Reprinted from Rammaskipulag fyrir Urridaholt i Gardabae, 2006*.

Climate Response

For this aspect it has been considered: the layout of the settlement, which respond to the low light and short sun timing during the winter, making spaces enjoy more sun. The shape of the buildings, which help to break the wind creating a shelter effect. The height of houses which is measured to keep shadows to the minimum and maintain visibility. And, additionally, the treatment on facades, which use light colors to attract more light. For the public spaces in specific, they keep open to the south, without buildings, so they can receive more light (Urridaholt ehf, 2006).

Figure 77: Weather Protection on Vidskiptasteiti. *Reprinted from Rammaskipulag fyrir Urridaholt i Gardabae, 2006*.

Nature and Open Spaces

Public spaces, open areas and other outdoor recreation areas encourage the coexistence of outdoor activities for people of all ages. At the same time, they draw attention to peculiarities of Urridaholt as its history and nature to highlight unique characteristics of the place and work on its identity.

Bringing nature to the urban interventions, these include forests, existing topography and natural drainage patterns, as it is done in this project, it is one of the most effective ways to create memorable places and contribute to elevate the real estate value while sustaining the environment (Duany et al., 2010).

In Urridaholt masterplan it has been established a direct connection with the mountains and the surrounding forests, it extracts the natural identity of Iceland, forgotten in other contexts as Breidholt, to highlight itself. For achieving this condition, Urridaholt incorporate two green corridors that

follow the topography and preexisting water channels, creating a sustainable solution for the drainage system. Both line up the upper parts of the hill with the main square, the school, the swimming pool and the lake. Moreover, nature get in touch with architecture through the incorporation of green voids in between buildings and streets (Urridaholt ehf, 2006).

Figure 78: Green Axis in Urridaholt. *Reprinted from Rammaskipulag fyrir Urridaholt i Gardabae, 2006.*

Streets and Parking Places

The design of all streets should aim to create an eco-friendly, safe and livable open space with optimal conditions for walking and cycling. Its characteristics should make them distinguishable and hierarchized according to its location and uses, contrary to what it has be found on Breidholt in general, where there is no any kind distinction.

For the case of parking places, the topic requires and open discourse for each case, since adding parking places can decrease the quality of the area and incentive the car use, but at the same time, it can benefit the real states management and therefore the economic side.

Urridaholt, is not always using the best strategies on this topic, since the quantity of parking places still seem to be high for each square meter, arriving to 3 parking places for villas and 2 for apartments >90m2. Moreover, parking plots are not always located in the best way, affecting the view from the streets and pushing away people from buildings and open areas (Urridaholt ehf, 2006).

Some possible solutions, besides the ones that involve local

government regulations to rationalize them, is the generation of garages and possible flexible areas, that with time or at different points of the day can have different uses. A more drastic solution can be the elimination of them to incorporate other kind of buildings through an specific analysis of uses (Tachieva, 2010).

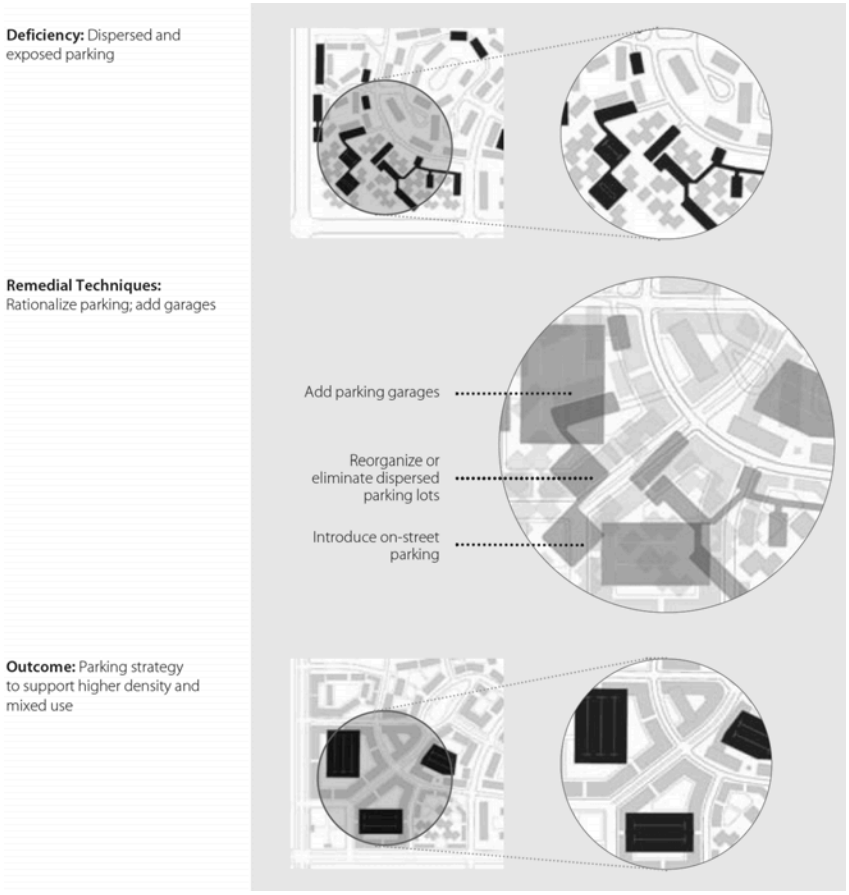


Figure 79: Parking Places. *Reprinted from Sprawl Repair Manual, 2010.*

Local Activities

The incorporation of a local activity as a supporting point for the development of a new masterplan can really create a path in the search of identity, strong community ,and the activation of public spaces. Generate a space where local food can be produced, a workshop can be developed, or even a small cultural festival can be done can make the area ideal for socializing, creating local networks and even educating people (Tachieva, 2010).

For example, in the case local food production, it can be easily introduced through community gardens and allotments within blocks, or in public spaces, private gardens, backyards or on the roofs of buildings. It can make use underutilized open space to develop agriculture activities,

activate local economy through new business related to primary sources and improve the identity of the place. The introduction of urban agriculture will provide to many residents the access to fresh produce within walking distance. Moreover, it will also make the community more sustainable in the long term by supplying some of its food requirements by the local production. Similar benefits could be able to achieve with other local activities (Tachieva, 2010).

To completely integrate this aspect in the open spaces, the local activity should be incorporated on all scales, in this way the effects of it will be deeper at the social and economic level (Tachieva, 2010).

The studied case does not implement on its masterplan a strategy as the described below in direct way, but in some way incorporating the nature to the core of the neighborhood tries to stimulate outdoor nature sports as a new local activity, nevertheless it could have been more useful to treat it as and independent strategy to relate it more with the social and economic aspects. In any case Efra-Breidholt, the implantation of a strategy like this one could work as the base of urban regeneration plan.

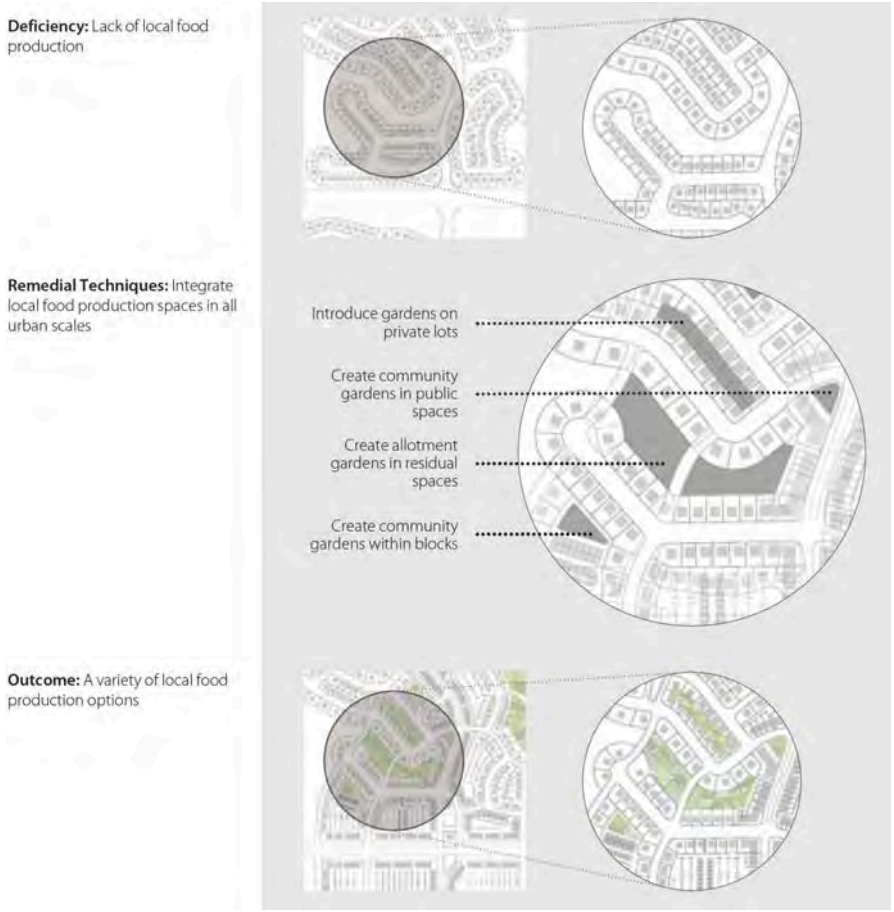


Figure 80: Local Activities. *Reprinted from Sprawl Repair Manual, 2010.*

Orestad, Copenhagen

The project is developed in the Amager island in Copenhagen, a strategic location in between the city center, the airport and Malmo the third most populated city in Sweden. The selection of the area was set in 1994 through a policy of cross-border integration for the economic reactivation of the City through the intense offer of products and services (Balaguer Berga, 2012).

Since the beginning, the project aimed to be the continuation of the city, and it was expected to grow fast in few years and set the area in the economic position of auto financed. The purpose incorporated many multi-functional spaces based on residential and tertiary uses, together with the presence of different equipment of different nature. This new area was thought to be a new high quality urban public space and an artistic environment, that can work as a lab for new ideas (Balaguer Berga, 2012).

The masterplan should also help to give a new identity to the area, characterizing it as a “business district”, which, unfortunately, later became one of the most evident critical issues in the project. Today, the developed spaces are still trying to attract people to the streets (Danish Ministry of The Environment., n.d.). So, the project has been taken, as reference of well and not well implemented urban practices.

Figure 81: Orestad General View. *Reprinted from Orestad - Urban nature and world class architecture, 2021.*

District division

The masterplan set four districts well recognizable: Orestad Nord, Amager Faelled, Orestad City and Orestad Syd. They run across the metro line and they follow the direction of this public infrastructure. For each of

them, it was generated a different identity, through peculiar buildings, such as the University, radio tower, concert hall, public park, some residential buildings, or the Hospital. Moreover, it was placed a neuralgic center, that work as it, which is Orestad City. The overall picture of the strategic framing of the project is, both symbolic-cognitively and organizationally, therefore it is innovative but at the same time rather introverted (Trkulja, 2011).

Different areas in Orestad

1 Orestad Nord
2 Amager Fallaed
3 Bella Centre
4 Orestad Centre
5 Orestad Syd

M Metro Line
New Areas

Figure 82: Orestad Division. *Adapted from Orestad: Copenhagen's radical new town project in transition, 2014.*

Notwithstanding, this distribution have had some inconveniences that influenced drastically to the social and public life. The disposition of the different single building in each district was done with poor communication space between them and the lack of well-developed public open spaces have given to Orestad a sort of anonymity, as a direct consequence of its own structure and of how people interacted in the public space, where no non-necessary activity was generated.

Infrastructural connections: the metro line

The project started with the construction of a big new infrastructure, a driver-less metro line that connected the Orestad region with the rest of the city; this new service allowed the daily commutation of more than 80.000 users as students and workers, with subway stations around each 1,2 km, and trains running every 5 minutes (Balaguer Berga, 2012).

The system is very important for Orestad because it represents the spine of the zone, giving the possibility, to this "business campus", to develop the economic life and sub-sequentially all the other aspects of a neighborhood life. Nevertheless, it should have given vitality to the whole area and be the base for the development and activation of the economy inside the district, but it was not achieved completely.

According to Speck (2013), the implementation of public services

is fundamental in the public open space discourse. Hence, this is one of the key points from which planners should re-activate the social life of a neighborhood. The more accessible is a place the more people will have the possibility to join the area and create new social interactions.

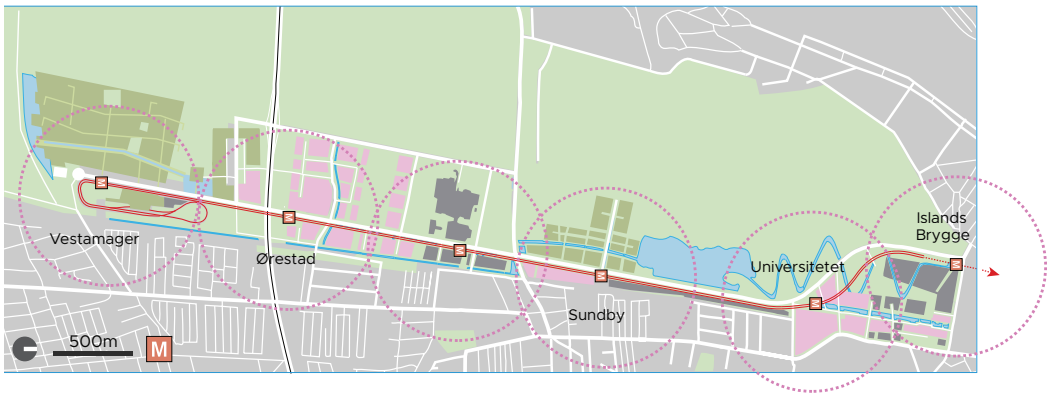


Figure 83: Orestad Subway. *Adapted from Orestad: Copenhagen's radical new town project in transition, 2014.*

In Breidholt, where a lack of public transportation and connectivity with the city center is affecting the district's outdoor life, the topic will also have to be analyzed.

Infrastructural connections: water as a departing point

Orestad represents an innovative approach with the distinctive use of water for aesthetic purposes, through the storm water management, which gives a general structure to the project and maybe the most unique characteristic that contributes to the identity of the area. A fundamental point of the masterplan is a continuous body of water framing the whole area, flowing along the full north to south axis of the city. Having buildings and public spaces next to it (Danish Ministry of The Environment., n.d.).

Orestad is built on former marshland and since the reclamation of the land was completed in 1964, waterholes, ponds and canals have been characteristic elements of the area, that is why from an early stage, its was suggested the use of open water to provide character and identity to the vast area (Danish Ministry of The Environment., n.d.).

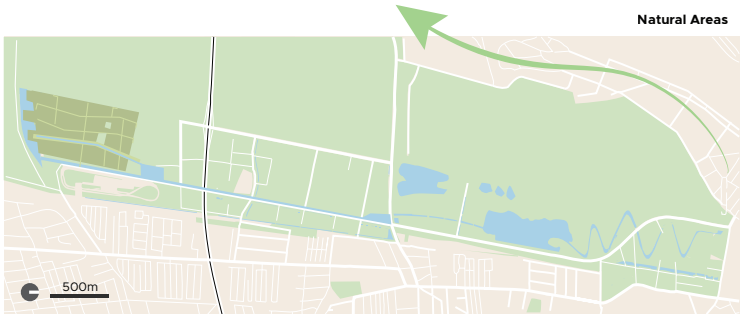


Figure 84: Natural Areas. *Adapted from Orestad: Copenhagen's radical new town project in transition, 2014.*

Figure 85: Water System. *Adapted from Orestad: Copenhagen's radical new town project in transition, 2014.*

Nevertheless, the proposal was not achieved completely since, many areas were developed equally, and even thought water is highlighting the whole project, zones as Orestad Nord, where it should be extended the university, remained without identity and a group of generic buildings, undistinguished from the rest. Moreover, in the proposal, the lack of scale in the elements, and the canals to, does not encourage completely the use of open space. So, the exposure and utilization of storm water runoff in urban areas, works partially, for this case, since it could have provided a recreational value too (Balaguer Berga, 2012).

The Human Scale and the Modernistic Approach

In this project is clear that one of the biggest problematics can be found in the absence of a human condition in the public spaces. The scale of the buildings and the surrounding is not acting as a people condenser, but it remained close to a modernistic idea of urban planning, where the juxtaposition of elements inside a determined space is trying to define the district area. Walking through some of the streets of Orestad makes possible to see the fragmented urban fabric by giant public spaces of poor quality (Olsson, 2013).

Figure 86: Orestad Public Space. *Adapted from The Story Behind Failure, 2013.*

The initial 1994 masterplan took some good strategies for the growth of the neighborhood, bringing new people and activities inside. But the physical approach used to place buildings and its functions reflected into

a less active public life respect to the prevision. These conditions is also explained by the absence of a human scale in the design of the public and in the in between buildings areas. From surveys, it can be also known that part of the population feels isolated and anonymous because of the lack of shared activities on open spaces. For example, in come core areas of the project is still present the sensation of "periphery" making possible to feel Oreastad as a "dormitory neighborhood" (Trkulja, 2011).

The same problematic is visible in the Icelandic neighborhood of Efra-Breidholt, where the low quality public open spaces are not the involving people nor generating sociality; according to Jan Gehl (2010) the goal of a good quality open public space is to generate new "optional activities". It may be considered that they are not fundamental for people's life, but they generate the largest part of the social interactions and they work, subsequently, for the development of an active public life and a spatial identity.

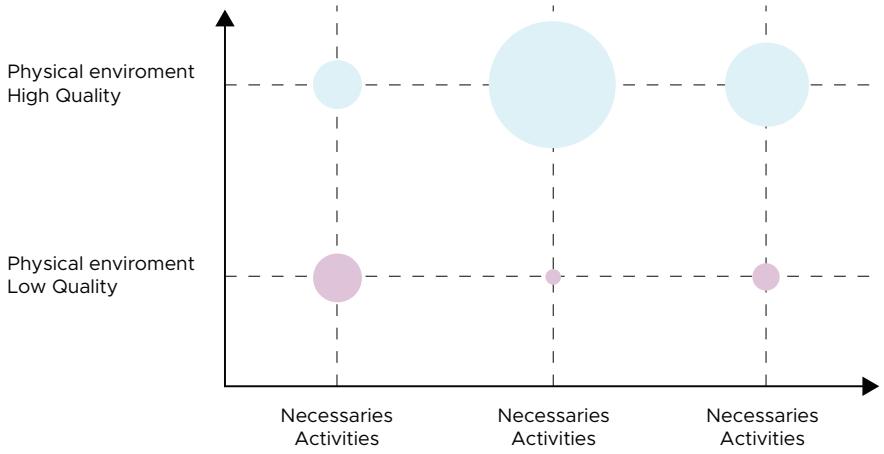


Figure 87: Activities and Environment Relations. *Reprinted from Cities for People, 2010.*

This concept, make more evident the spatial identity problem in Efra-Breidholt, where social interactions have been placed as a secondary element. In the neighborhood, it seems that people are not appropriating the outdoor space, nor they are using it in the way that is supposed to be.

Use of the Scale in Orestad Syd

While Orestad was developing, new ideas have came, after doing some analyses around the open space. Therefore, it has been implemented new interventions with the purpose of creating new and better social interactions between inhabitants. Within it is possible to find spaces that involve more the people into the city's life and create livable and active public areas. Some of these proposals are placed in the southern part of the neighborhood, in Orestad Syd (Kalvebodkvarteret Vest, 2014).

The objective for this area was to develop a district with clear and distinct spatial features that can create urban identity, through the reinforcement of the nature incorporation, that was done before too, by the inclusion of new main corridors. At the same time, the major north-south corridors pretend to bind the districts together and extend the local features to the borders (Kalvebodkvarteret Vest, 2014).

Figure 88: Orestad Syd Axis. *Reprinted from Orestad Syd, 2014.*

Principal Connections as the core of public life and edges

In the new proposal subway stations work in a strategic way, so they can attract more people to the established main streets, generating an intense movement on them, with extra activities and great urban strength. The streets here take a primary role in the identification of the quality of the public open spaces of this zone. In reference to the old masterplan, is clearly visible how the proposal focuses on small spaces that people can enjoy walking into them and setting the base for the consequential social activities that are enhanced by a high-quality design (Kalvebodkvarteret Vest, 2014).

In Orestad Syd, respect to its predecessor, there is a totally different perspective for the development of the "edges". Edges now are a fundamental part because they turned into exchanging zones between the two citizen spheres, the constructed and the natural. They make possible new social interactions and a great variety of activities, with the overall goal of making people staying longer periods of time in these spaces, instead of using them as transitional areas (Kalvebodkvarteret Vest, 2014).

As part of this topic, according to Jan Gehl (2010), and to what it has been possible to see in this case study, the rhythm and also the composition

of the ground floor elevations become relevant for the city's life, due to fact that, those are the areas where most public activities take place.

Figure 89: Orestad Syd Life In-between Buildings. *Reprinted from Orestad Syd, 2014.*

For Efra-Breidholt case, this concept is of particular interest given the presence of giant unused buffer areas and lower levels of the buildings without any relation to the open spaces. Improving this condition may be crucial for the development of public life and the social exchange.

Diversity, human scale and in-between buildings' life

Considering that the division of the districts into smaller neighborhoods may strengthen the local identity and provides more housing types and situations to choose from and thus a greater social mix in the area, planners of Orestad Syd, divided it into six areas that suppose to be developed with different approaches, increasing the variety and diversity for the inhabitants (Kalvebodkvarteret Vest, 2014).

The strategy, at the same time pretends to give the district 'more goods on the shelf' which will be a crucial element for the district's social and commercial success. At the same time, the individuation of the district's border can be useful for developing areas with edge characteristics, that will communicate with the outside (Kalvebodkvarteret Vest, 2014).

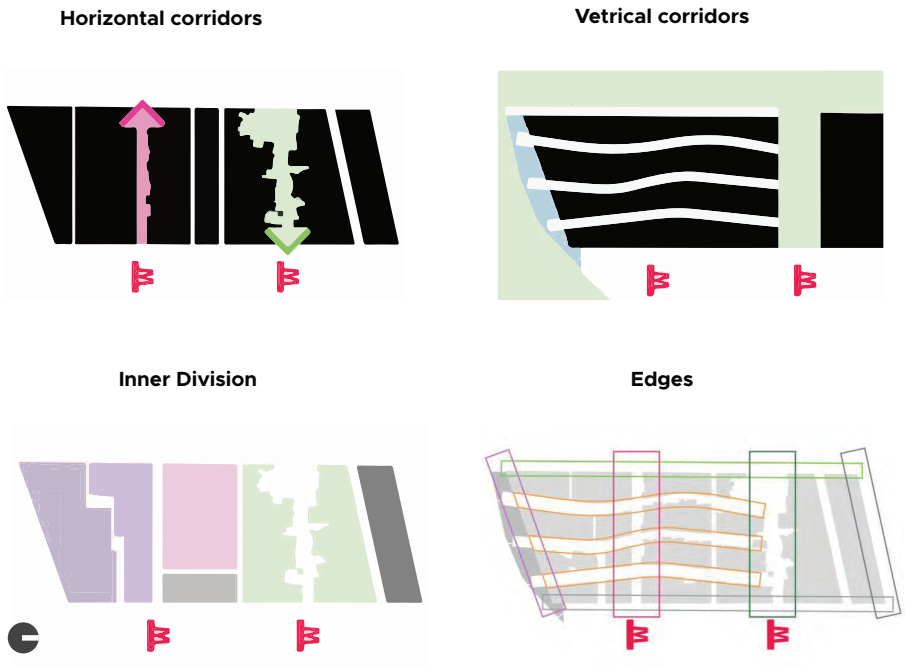


Figure 90: Corridors, Division and Edges. *Reprinted from Orestad Syd, 2014.*

In addition, this topic together with the design of open areas pretend to introduce the human scale on public spaces, which influence directly on the perception and sense of comfortability and security of their users. A space of 100m, more or less the size of regular soccer filed, is not perceived as one of 10m, where it can fit a pocket park, since in the first one, contrary to the second one people will immediately feel impossibility to see everything and reach thing by hand (Gehl, 2010).

Many public areas in Orestad Syd were developed with the concept of life in-between buildings, which recognizes the open space as a generator of social interaction and activities. The more activities are, more things too see, more interactions among users, more time spent on the space (Gehl, 2010). On the contrary, in Efra-Breidholt, it is present completely the opposite, with voids and buffer zones with no activities as public spaces.

All this elements together, facilitate the generation of the sense of belonging, which is one of the most important elements that allow spaces to function properly over the time.

Superkilen Park, Copenhagen

The Superkilen Park is a project developed in Norrebro District in the city of Copenhagen. In the area it is possible to find people belonging to more the 60 different countries around the world. And is this condition the most important factor taken into account for the early stages of the design proposal. Basically, inhabitants are taken as a driver for the development of the city space, which later will include large range of the optional activities

that will activate the open space (Sanchez, 2021).

Surveys are at the base of this type of approach. In the process, BIG, Topotek and Superflex, the developers of the project, first focused on what were people's needs regarding the city public spaces and what was able to make them feel conformable and identified. Based in the results, the project was divided into three areas: Green, Black and Red. Each of them, incorporated a specific characterization to create an strong sense of spatial identity. In effect it is possible to find commercial, cultural and sportive areas, intertwined each other to allow people know each other through a diver interaction (Sanchez, 2021).

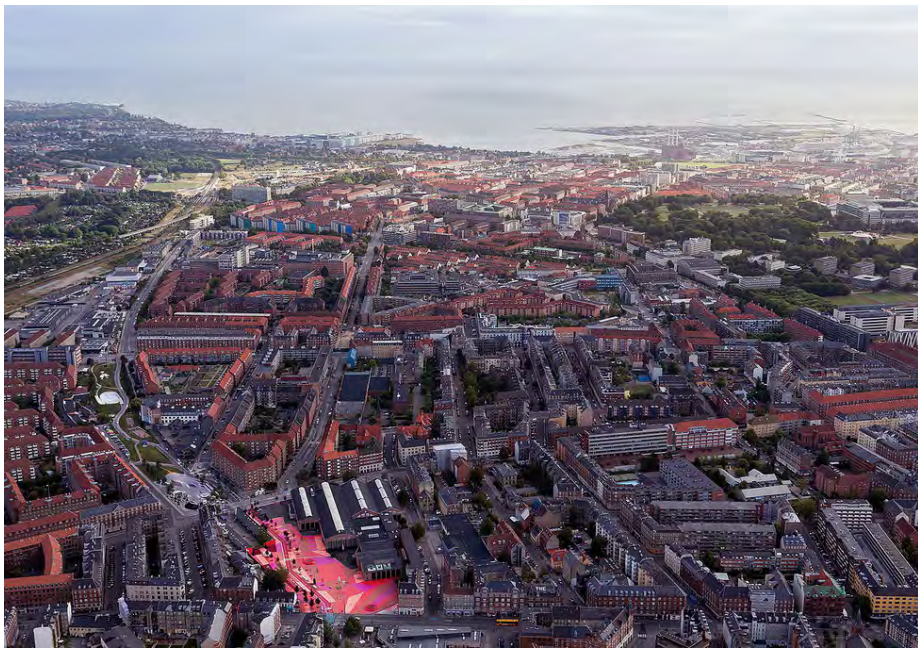


Figure 91: Superkilen Aerial View. *Reprinted from Superkilen/Topotek 1 + BIG Architects + Superflex, 2021.*

People as Driver for Spatial Identity and Design

In the proposal, a selection of 99 objects from 59 different countries shared the urban space as an expression and celebration of the diversity existing in the neighborhood, and the city. It is possible to find from old benches and reused working out machine from Los Angeles to palm trees from China, turning the are into something similar to a collage, as its people composition (Sanchez, 2021).

This type of urban regeneration is fundamental in the discourse of the spatial identity, since using surveys it was possible to know about what the inhabitants were feeling inside this space before and what they would have like to see in the new spaces. The same of methodology could be useful in Efra-Breidholt, where is a high precede of migrants and open public spaces underused.

Figure 92: Nationalities in the Area. *Reprinted from Superkilen/Topotek 1 + BIG Architects + Superflex, 2021.*

The statement coming from an Icelandic Eddic poem "Man is man's greatest joy", express in few words how human nature works around the social environment. And this is exactly on what this project focus. Adding a variety of activities based on the requirements, as a box rink have made people spend more time in public areas, giving to them a collective meaning and making possible the exchanging of elements as feeling, behaviors and faces that together contribute to the spatial identity.

In conclusion, with this example, it can be seen that urban planning and the urban designer play a fundamental role, for the development of spatial identity. It is the mix of well-developed physical spaces and well conceptualized ideas the ones that facilitate its improvement.

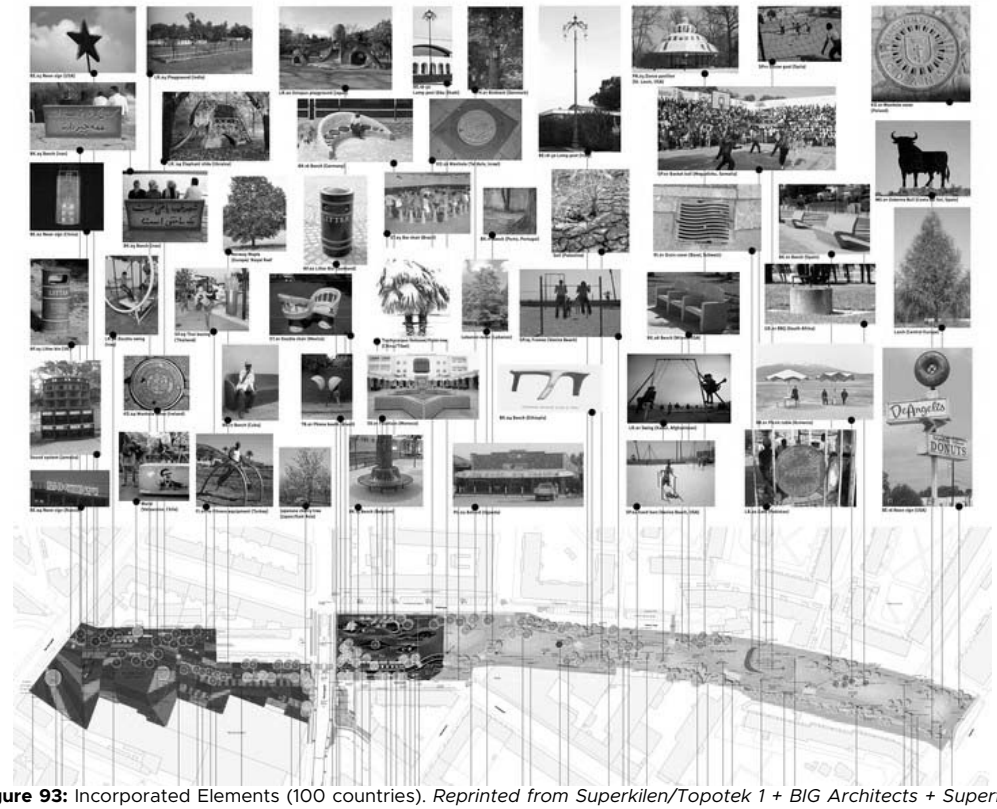


Figure 93: Incorporated Elements (100 countries). *Reprinted from Superkilen/Topotek 1 + BIG Architects + Superflex, 2021.*

HafenCity, Hamburg

With a population of 5.000 citizens, HafenCity is one of the neighborhoods that grows up faster in Hamburg. Located on the Elbe River, which provides access to the North-Sea, the identity of the area is rooted in its 1,200-year maritime history and the economic significance of its port. The project is one of the largest inner-city redevelopment interventions in Europe (Bruns-Berentelg, 2013).

Along the time HafenCity experimented with the implementation of diverse transformations. The first time that drastically changed it, is 150 years ago. Between the 1860s and the end of the 19th century, the neighborhood was turned into Hamburg's new port and industrial district, characterized by modern transshipments from water to land, and by its connection to a highly capable transport network. By the 1990s, to the contrary, there were established new production locations, including a large coffee roaster, a power plant and warehouses. (Bruns-Berentelg, 2013)

Figure 94: HafenCity. *Reprinted from HafenCity Hamburg, 2014.*

Today a masterplan is on execution from 1999, and its being built since 2010, expecting to have more than 60 buildings on it, 40,000 new jobs and 12.000 people living on it. Unfortunately, given the physical conditions of the place, a complete mix between old a new buildings was not possible, nevertheless the connection with the historical surrounding is well achieved (Bruns-Berentelg, 2013).

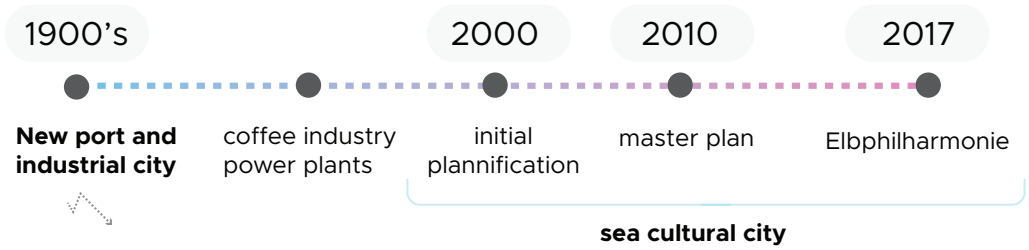


Figure 95: Timeline HafenCity. *Adapted from HafenCity Hamburg, 2014.*

Identity Trough the History

The identity of HafenCity is by no means solely created on a physical and material level, but nonetheless to a large extent. The rugged milieu of the Elbe River, the port in the south and its musical heritage is determinative on a principal level (Bruns-Berentelg, 2014).

On the development of the project, in reference to the preservation of identity at the physical and material level, the proposals kept architecturally conservative. HafenCity, up to a certain point oppose to expressive architecture, with some exceptions. For instance, the height of the new buildings are developed with a reference of the existing structures (Bruns-Berentelg, 2014).

The horizontal and vertical mixture of uses and subdivision into various quarters with individual identities of their own, make open spaces being used by a great number of actors. The local identity of the neighborhood is brought by residential use, jobs and culture, besides the international importance that HafenCity is acquiring from the highlighting of the mentioned historical traditions (Bruns-Berentelg, 2014).

And the last but not least important, an element that contributes on the construction of the identity of HafenCity is the implementation of a unique design not only on open spaces but also on buildings. Regarding to this condition, the Elbphilarmonie becomes an example of built landmark, since it brings the historical background of the place and create a function for the building that can be exported to the open space and consequently reactivate the whole area through its implementation.

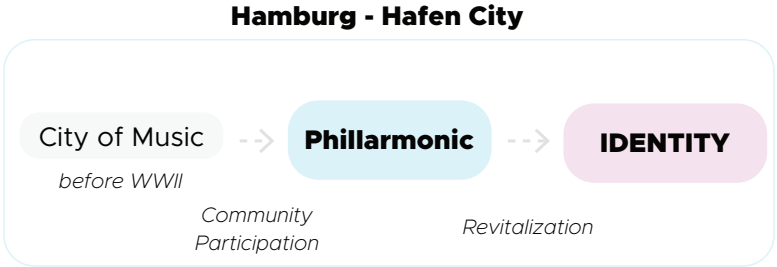


Figure 96: City of Music - Relations

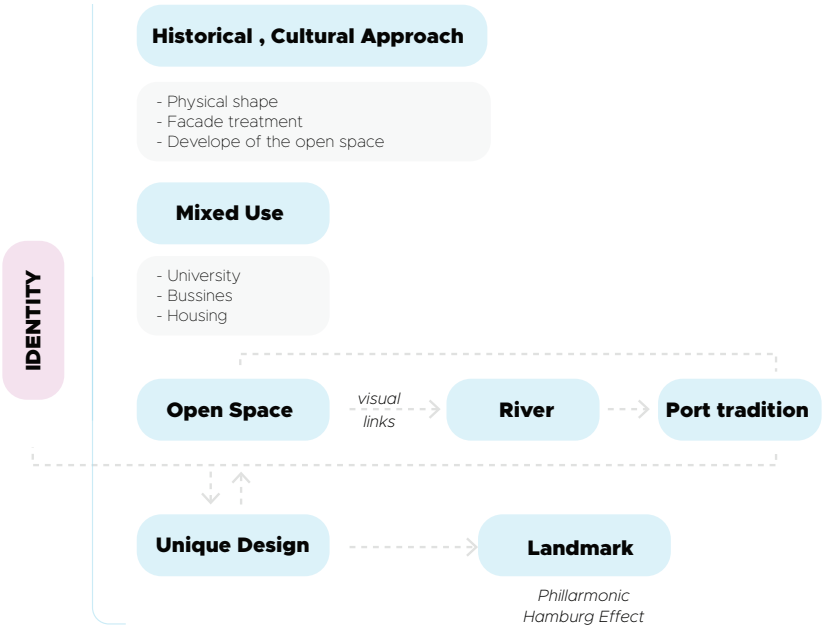


Figure 97: Identity Process.

Elbphilharmonie as an Identity Builder

The building designed by Herzog & de Meuron was projected in 2007 and completed at the end of 2016. Even tough is one of the most expensive concert halls ever built globally it has been highly successful in its intended system function for attract tourists, turn the surroundings into a location for Hamburg's design, media and cultural industries and bring diverse group of urban actors (Heuer & Rundle, 2021).

The Elbphilharmonie has a special role as an identity builder for Hafen-City. Just like the Sydney Opera House, the building is not just an outstanding architectural icon, but also it picks up on the still-dominant image of Hamburg as a seaport town with a musical and cultural tradition where, as mentioned before, the inner city gets in contact with the river, while also unmistakably expanding on that. This is achieved in architectural terms by its apparent imposition on the building of wharf warehouse, which despite the fact it is only retained as a three-dimensional form based on its outer walls, it still constitutes an important element of the modern port. Besides, the public plaza, next to it created at a height of 35 meters on the level between the warehouse and the actual concert hall, also contribute to this aspect appearing as a space where the old meets the new (Heuer & Rundle, 2021).

Finally, to understand how a strategy of this type, even though in a different scale, can be applied in a context as Efra-Breidholt, a comparison between the Elbphilharmonie and the famous, Guggemheim of Bilbao is done below, pretending to show the successes and failures' difference between the two proposals.

Elbphilharmonie

- One of the **richest cities** in Europe with a growing population.

- The project emerged in a **context of debates**, rather than be conceived as a spearhead of an economic and urban regeneration element

- Is a **complementary project** to the Laeiszhalle infrastructure dedicated for concerts with a long tradition as a center of music.

- Project topic and its capability to **act pemently on the open space of the city,** bringing permanence attendance and torurism.

- Though for r**egenerate the city-identity**, and contitnue wiht the **old traditions.**

Guggemheim Bilbao

- **City in decline** and afflicted by a a political movement.

- Additional infrastructure for the city with no **prior tradition in contemporary art**.

- Project topic hard to explore, based on the experience of the city, to create a continous activation on the city.

- Thinked for **people (international)** that are not properly part of the permanent community.

Figure 98: Elbphilarmonie Comparison. *Adapted from HafenCity Hamburg, 2014.*

Analysis

From the examination of different cases of study, it has been possible to evaluate a series of urban devices that are able to generate activities and identity inside a public open space. The previous qualitative analysis on existing cases helped to understand how they have worked in similar contexts. Now, it is recognized how through the application of all the mentioned strategies is possible to work and improve the different attributes that are fundamental in the construction of the spatial identity, which, as it is known, is composed by the physical form, activities, and meaning.

Enlisting the different urban approaches facilitated the examination and understanding of them. Thanks to the relations that have been found among each other and between the attributes of the spatial identity, it is possible to evidence the multiple inner correlations and different levels of dependence.

In the graphics presented, the different urban devices have been compared and connected between each other. They show which of these strategies have a larger number of connections. According to that, it is possible highlight the devices that can have more importance and impact in relation to the others.

Figure 99: Summary Table.

This selection is aimed at guiding the interventions for the actual problematics, in the Reykjavik's neighborhood, Efra-Breidholt. For this reason, these graphics are already considering chapter one conclusions, in particular the SWOT analysis (strengths, weakness, opportunities and threats), generating results addressed to our case of study. This is of particular interest, since the conclusion can vary in other cases of study, having a prioritization on other strategies, despite the fact that all of them

can be used to work on the spatial identity, due to its inner connections, which later could also become an anchor for the application of more urban tools.

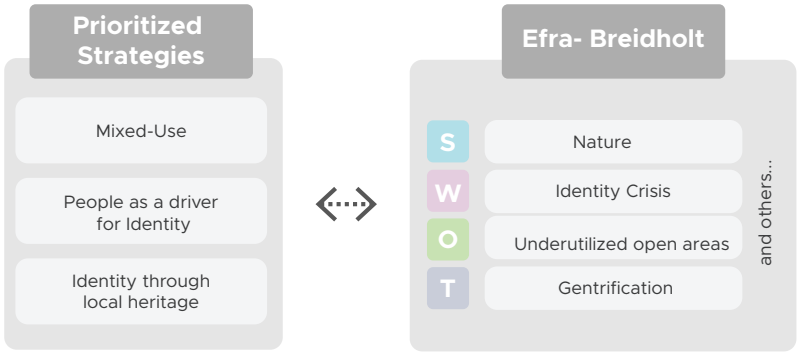


Figure 100: Strategies Connection.

For this case, based on what it has been learned, the three highlighted elements are the following. The human scale approach, which is related to the people's "comfortable" sphere for the design of the public spaces in the city. People as a driver for identity, which talk about the population involvement's importance for the generation of a good quality public space. And, the local Heritage, which compile a series of intangible elements as it is the history or the culture of the area, to emphasize the meaning of a place.

In a following step, it has been done a second type analysis, to understand how the enlisted elements are related to the three attributes that compose the spatial identity (physical form, activities, meaning). In relation the spatial identity, it is possible to set primary, secondary and third level relations for each strategy according to the level of impact that they could have on each attribute. This is only the starting point of the application of the hierarchized strategies in this Icelandic case.

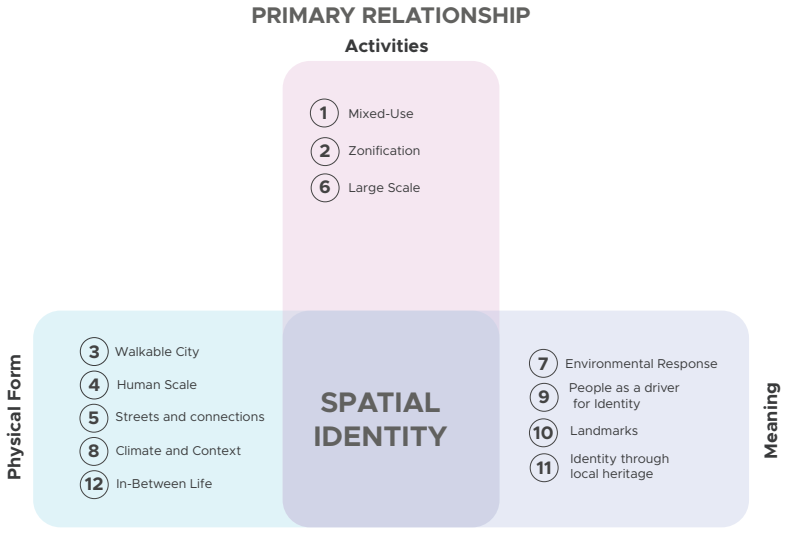


Figure 101: Primary Relation.

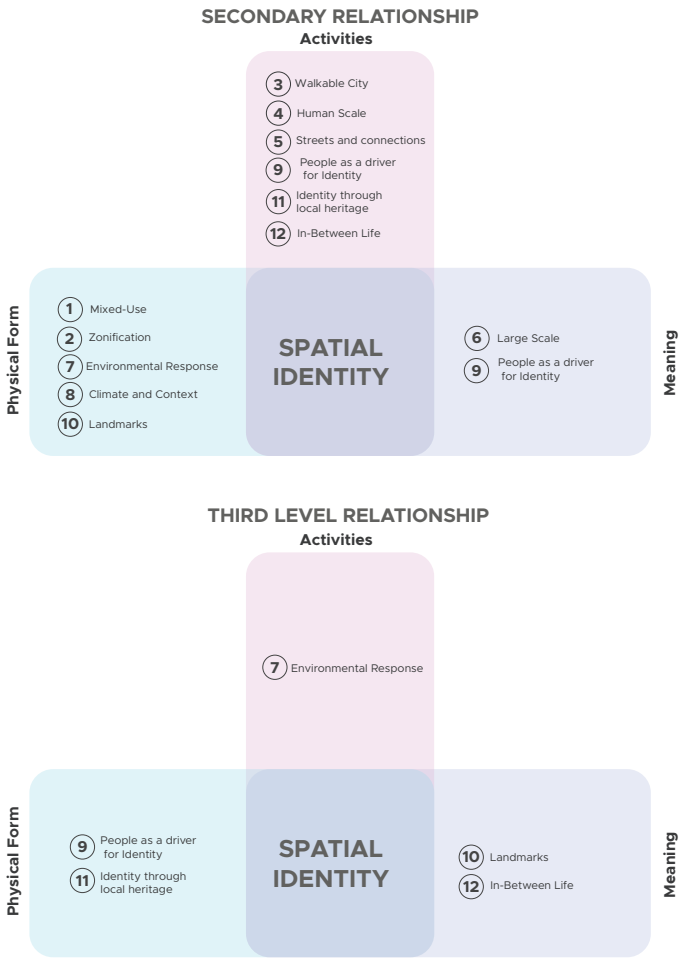


Figure 102: Secondary and Third Level Relations with Spatial Identity.

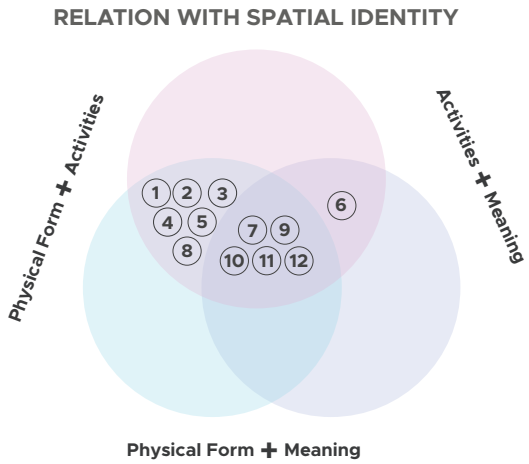


Figure 103: Relations with Spatial Identity (Table 6)

Finally, after the evaluation is done, it is possible to depart with a specific proposal for Efra-Breidholt.

3

PROJECT

Design Strategy and Limits

After it is understood the main concepts that are related to spatial identity and the explored cases of study developed before; and defined a design methodology for the conceptual part, the process continues with the interventions for Efra-Breidholt which is the selected case of study for this project.

As the main characteristic in Iceland is the nature, it will be the element that will become the guideline to regenerate Efra-Breidholt, and will connect most of the urban strategies enlisted before. Nature will be "controlled" in the urban space, through its design and activation.

Based on what it has been learn, the masterplan for Efra-Breidholt works in different scales, answering the local problematic and looking for an integration with Reykjavik, in order to propose a global solution for problems as density and lack of public space that are present all around the neighborhood and the city. For this, the strategies studied before are used in the way that they allow the proposal to find a solution that solves the neighborhood problems, considering a time for its development of around ten years, due to the fact that some of the interventions based on data projections for that period.

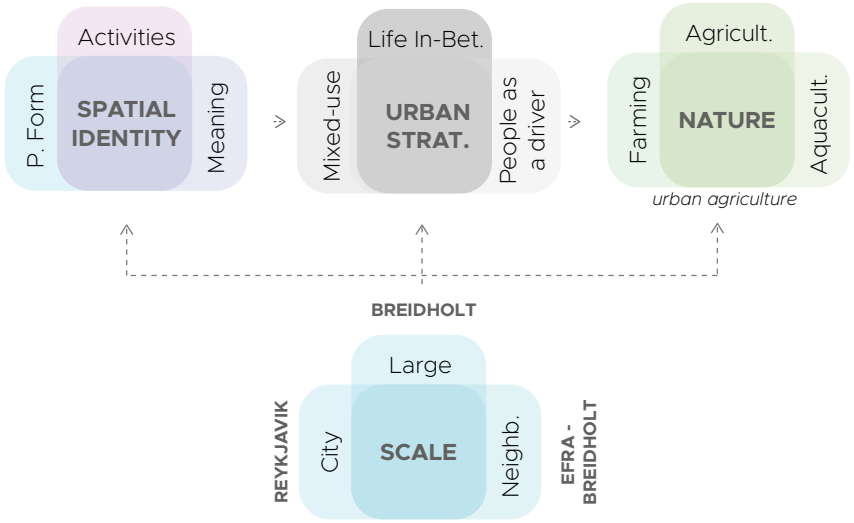


Figure 104: Design Strategy.

The three determined scales are the city scale, the large scale and the neighborhood scale. It must be said that they have proposals that are completely intertwined and are developed simultaneous in some cases, in order the benefit each other. The first one, the city scale, will set a group of conceptual strategies that will allow Efra-Breidholt to attach to Reykjavik. The second one, the large scale, will work with on interventions in between

conceptual and physical elements, focusing in the immediate areas that are next to Efra-Breidholt. Finally, the third one, the neighborhood scale the will concentrate with more emphasis on the core area and the main streets with the spaces around them of Efra-Breidholt, giving particular attention to problematic of the excess of parking lots and buffer zones and the possibility of its reutilization.

In reference to the physical limits, at the city scale there is not any defined physical border, since the proposals will work in a conceptual way, but it can be said that they it would be the ones that they will follow the main strategy to be proposed, the green corridor, that will be explained later in detail. At the neighborhood scale, the limits are the district of Breidholt and at neighborhood scale, are along Efra-Breidholt.

City Scale

At the city scale the proposal works mainly with two strategies, one that incorporate Breidholt to the city as a key area for the green areas development and as the gate or link between the city and natural surrounding areas. And one that establishes a guideline for the organization of housing based on the population increment, that as it has been studied, it requires particular attention.

It may be considered that the first strategy is more related to the spatial identity, given the physical conditions of the neighborhood, and its historical development which has always been set by the nature. Nevertheless understanding the population growth and the areas for housing development also influence on it, especially when the working areas are full of voids, buffer zones, and long distances between buildings, streets and other infrastructure, that does not facilitates the users the use of the open space.

In addition, it has to be mentioned that the reason for selecting Efra-Breidholt as the area to be develop, is also given by it condition of potential development area. A characteristic that was discovered in the previous research, and that will be continued having with the new masterplan.

Finally, what it should be understood is that the development of a plan at this scale for this project more than pretending to solve large scale problematics of the city, is creating a conceptual proposal than links Efra-Breidholt with a global concept.

The first condition that must be recognized at the city scale is the difference of density that exist on the east and west side of the city, set by the Route 41 (Reykjanebraut). Even though the quantity of voids, buffer zones and non-utilized areas seems to be the same the consolidation of

the neighborhoods, in density terms, differ from each other. Having less developed areas and more industrial zones in the east side, but at the same time more nature surrounding it, depicting a duality.

Figure 105: Reykjavik's Urban Separation.

Figure 106: Route 41. *Reprinted from Road 41 (Iceland), 2021.*

Given the physical conditions of the Route 41, the highway also generates a disconnection problem between both sites of Reykjavik, so

the project will suggest a departing proposal that will integrate both areas through the natural areas.

Figure 107: Reykjavik's Zoomed Areas - West and East Side.

In reference to the density problem the proposal set priority areas for development based on new stations of the Borgoline for 2030. In particular it selects the areas that are on the east side of the city, and the ones that are outside the city but still connected to it with the BDT line. Within this selection Breidholt is included, thus the decision of the project to working on improvements in the area is supported one more time. Although, in Efra-Breidholt, the population density is already in good conditions, as it is mentioned before, 40 apt/ha and 90 pp/ha, numbers can still improve to reach a density that ensures Reykjavik proper development for the next 20 years, departing from 60apt/ha to 120 apt/ha (Reykjavíkurborg, 2020a).

Figure 108: Reykjavik's Population 2040. *Adapted from 2040, 2020.*

Figure 109: Densification Zones.

The proposal will focus on an average growth which means focus on the Strong Growth II presented in the previous chart, and it will work in a solution of high density, option A or B, that later will be explored in detail at the neighborhood scale. It is understood that the problematic of population is much more complex and requires and exhaustive analysis. Nevertheless, to answer the problematic that the project is working on, the following estimated numbers allow the proposal to choose a consequential path with the already established master plans for Reykjavik, while at the same time permit to set expansion barriers and anchoring points , as it has been suggested to use in studied bibliography.

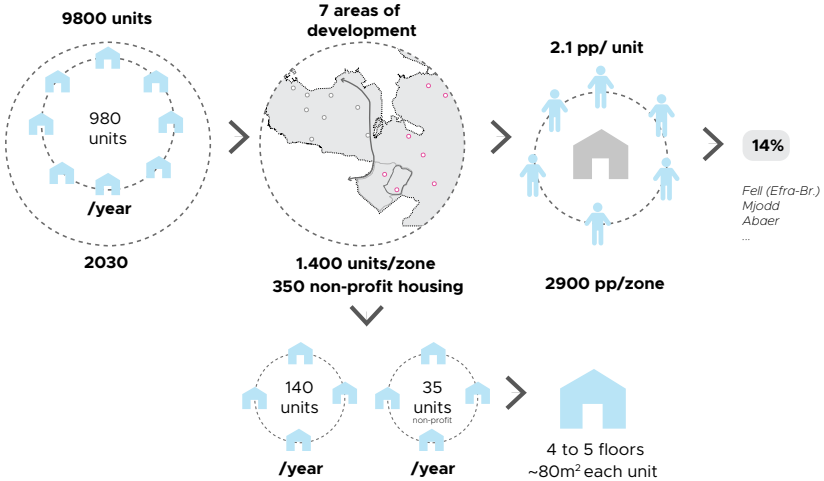


Figure 110: Densification Process.

It must not be forgotten that having the right number for density and people in a neighborhood, contributes to the proper development, provided that it respects and generates a right mix of people in terms of age, sex, social and economic condition. Moreover, together with the transportation system it reduces the car dependency, and with the right implementation of infrastructure it encourage a walkable city.

The second proposal pretends to generate a strategy that connects Efra-Breidholt physical conditions and problematics with the city. And at the same time, one that incorporates the neighborhood with the surroundings, which includes the nature and the city center, therefore it is set a green corridor that will work as the first Metropolitan Park in the area.

For this purpose, it was mapped all the buffer zones, natural areas, and green non-utilized areas of city, discovering the possibility to join many of them in a single space.

Figure 111: Reykjavik's Green Areas.

Reykjavik Park and Zoo Squares

Figure 112: Reykjavik's Zoom, Green Areas and Squares.

At the same time parking lots were also mapped, discovering a high quantity of them in many zones of the city, including Efra-Breidholt. Both mapping activities, allowed to see the lack of importance that it has been given to the public space. Basically, is much easier to find parking lots and urban voids than parks and squares. In a general view, it just possible to find one representative park in the city, Reykjavik Park and Zoo and around five squares, concentrated in a single area, the city center. It is pretty clear that the east side has more natural areas than the west side, and that is on what the proposal will focus. Bringing more infrastructure for the west side, and more nature for the east side, so it can be broken the existing duality.

Figure 113: Reykjavik Park and Zoo. *Reprinted from 25 ara afmaeli Fjolskyldu og husdyragardsins, 2018.*

Parking Lots

Figure 114: Reykjavik's Parking Lots.

Figure 115: Austurvollur. *Reprinted from Walks Around the Austurvollur. n.d.*

In the proposal is suggested to keep green areas as themselves to emphasize their condition, while rethinking on the use of parking lots as densification areas for the east side. To work strongly on the identity, green areas will be connected in a single area, creating, as mentioned before, a Metropolitan Park that will work different on each zone. A single space, could work better putting together both sides of the city and giving a huge impact around the incorporation of nature to the city.

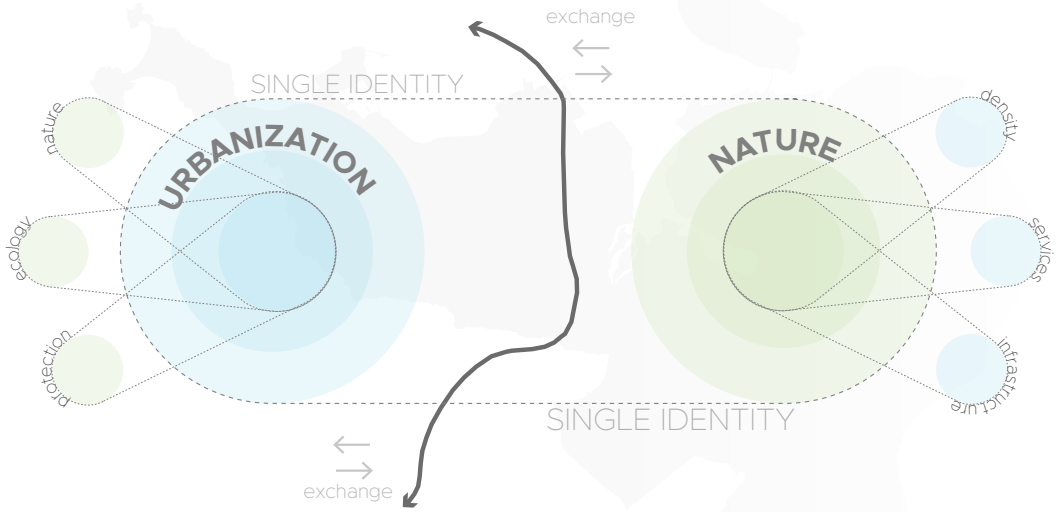
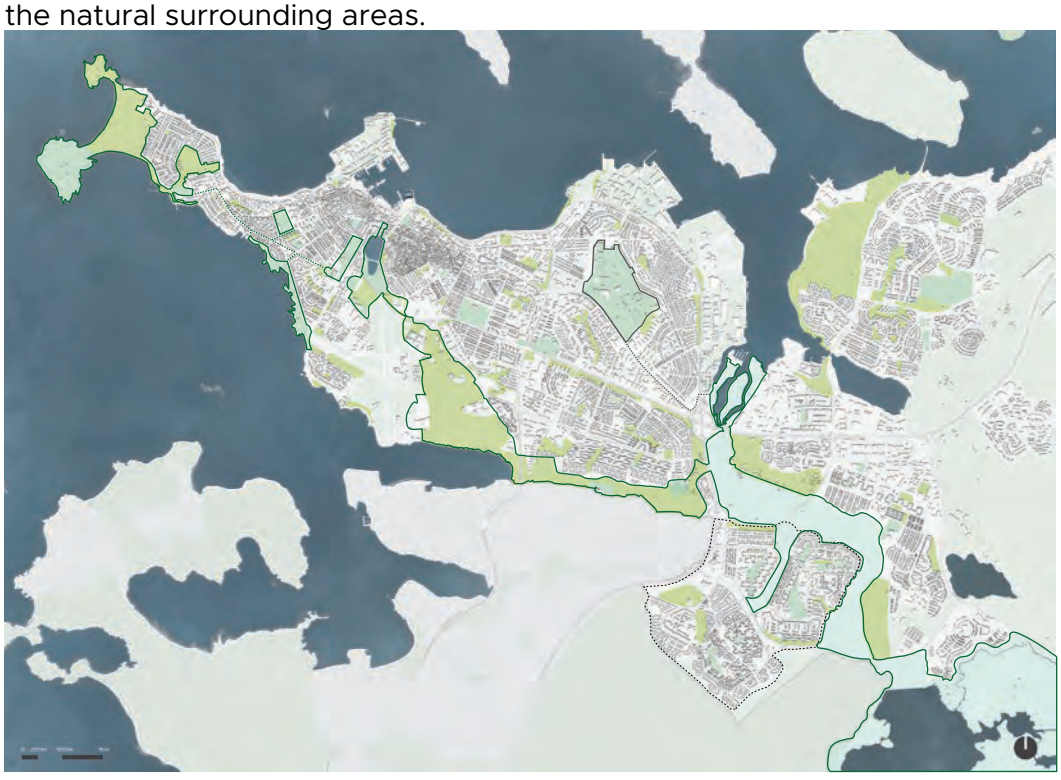


Figure 116: Urbanization - Nature Exchange.

In total, the proposal pretends to connect 8 of 10 districts of the city. Besides, it allows the project to develop a single bike path, pedestrian path and a new route for public transportation that will make this green corridor more visible, and that at the same time will allow users to easily move through it, reaching the extreme west of the city, the city center and the natural surrounding areas.



Green Corridor
Secondary Green Areas Incorporated
Streets Incorporated
Secondary Streets Incorporated

Figure 117: New Green Corridor.

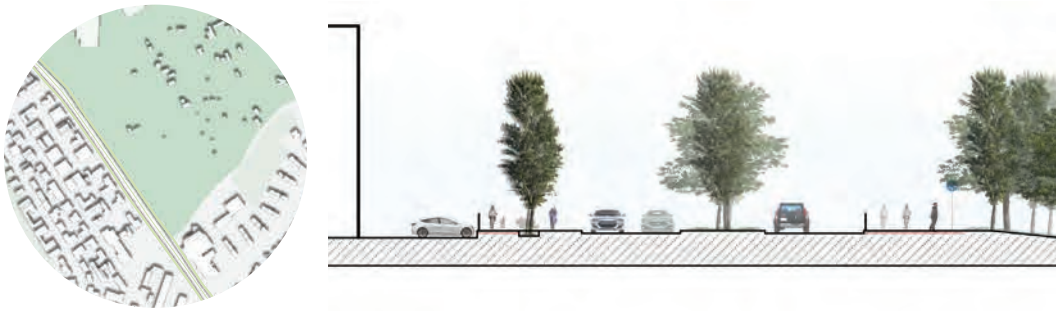
Figure 118: New Transportation Routes.

Due to the preexisting conditions of the city, some parts of this connections are done through interventions on the streets (Nesvegur, Sudurstrond, Neshaghi), incorporating the necessary elements up to link the different zones.

Nesghaghi - Nesvegur

Figure 119: Nesghaghi Street Section.

As an additional zone that is incorporated to the Green Corridor is the Reykjavik Park and Zoo, given its importance to the city and its location closer to the city center. For this an intervention on Netherlands street is also proposed, in order to emphasize the pedestrian usage.



Sudurlandsbraut

Figure 120: Sudurslandsbraut Street Section.

Breidholt in the Green Corridor, for its location, is a key part, it will work as the gate to the nature, and the breaking point from green developed areas with infrastructure dedicated for leisure, to green areas connected more with the nature and activities related to that, as hiking or the sustainable extraction of resources.

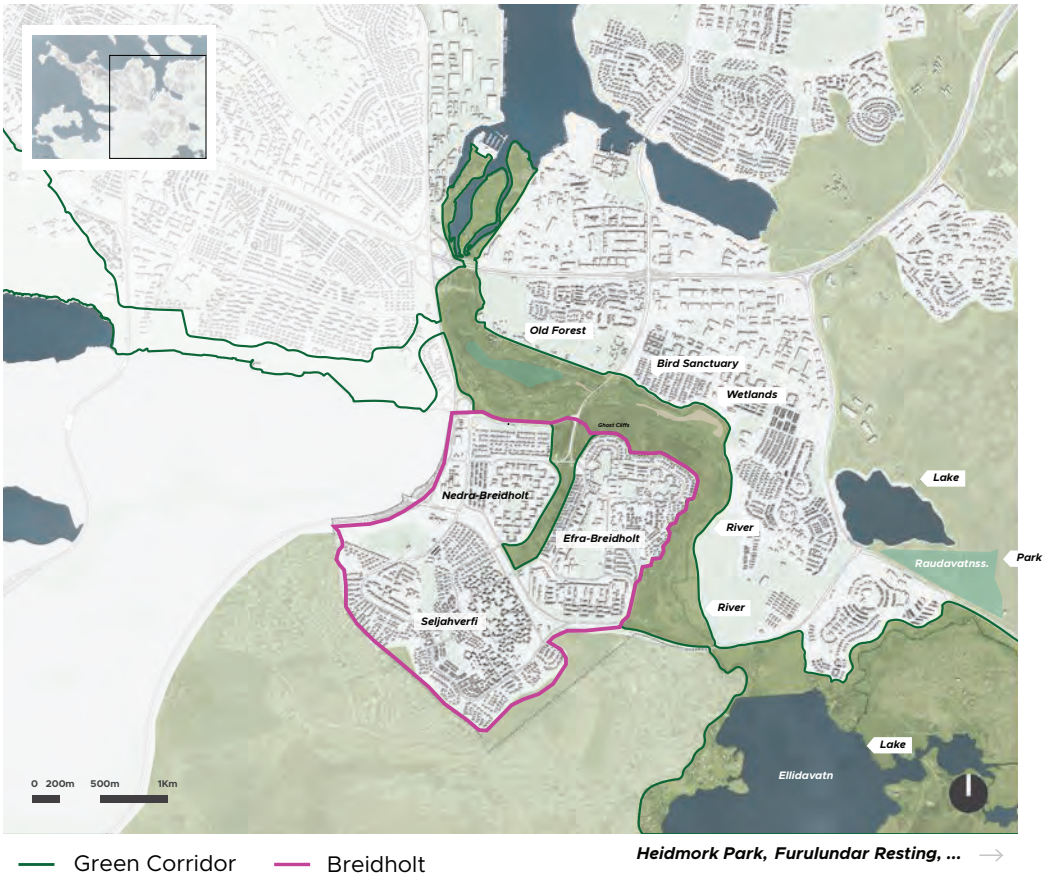


Figure 121: Breidholt Natural Surroundings.

Figure 122: Ellidaardalur. *Reprinted from Running in the Ellidaardalur Valley. 2017.*

To create link with the natural history of the area, and at the same time support the pursuit of the spatial Identity in Breidholt, the green corridors retake two main topics explored for centuries in Island, the farming and agriculture on one side and the aquaculture on the other.

As it is mentioned before, not only Breidholt has its beginnings on it, but also the whole city. So, work on these two elements allow the green corridor to be used not only as a leisure space but also as a productive and cultural one, with the inclusion of green houses, farms, ponds, and others, where people can rediscover their origins and get deep on contact which one of the main characteristics of the country.

Figure 123: New Corridors.

At the same time, to make this corridor able to adapt to each zone, the proposal will vary on each area according to the needs of the surroundings and the already established functions in the grouped green areas. Therefore 6 main structural directions for the development of the zones are proposed:

- The first one, is connected the sports facilities, due the presence of them in the area, which include diverse sports fields and the golf club.
- The following emphasizes the education and pretend to extend the university infrastructure, that is located in the green network.
- The third one, the cultural one, works with the museums that are in the area and pretends to incorporates more cultural and educational infrastructure.
- The fourth one, use the vast green open area that is getting away from the city center, and the presence of other agricultural areas, to implement more crops, and a reforestation area dedicated to the protection of the wind.
- The next one, located in Breidholt make use of the natural surroundings to propose activities related to the primary sector

(aquaculture, agriculture and farming), based on the historical origins of the area, and besides, it incorporates sportive activities related to the outdoors making the neighborhood as the gate to the nature.

- Finally, the last one, is completely immersed in the nature proposing activities that will merely relate to it as hiking, fishing, camping and so on.

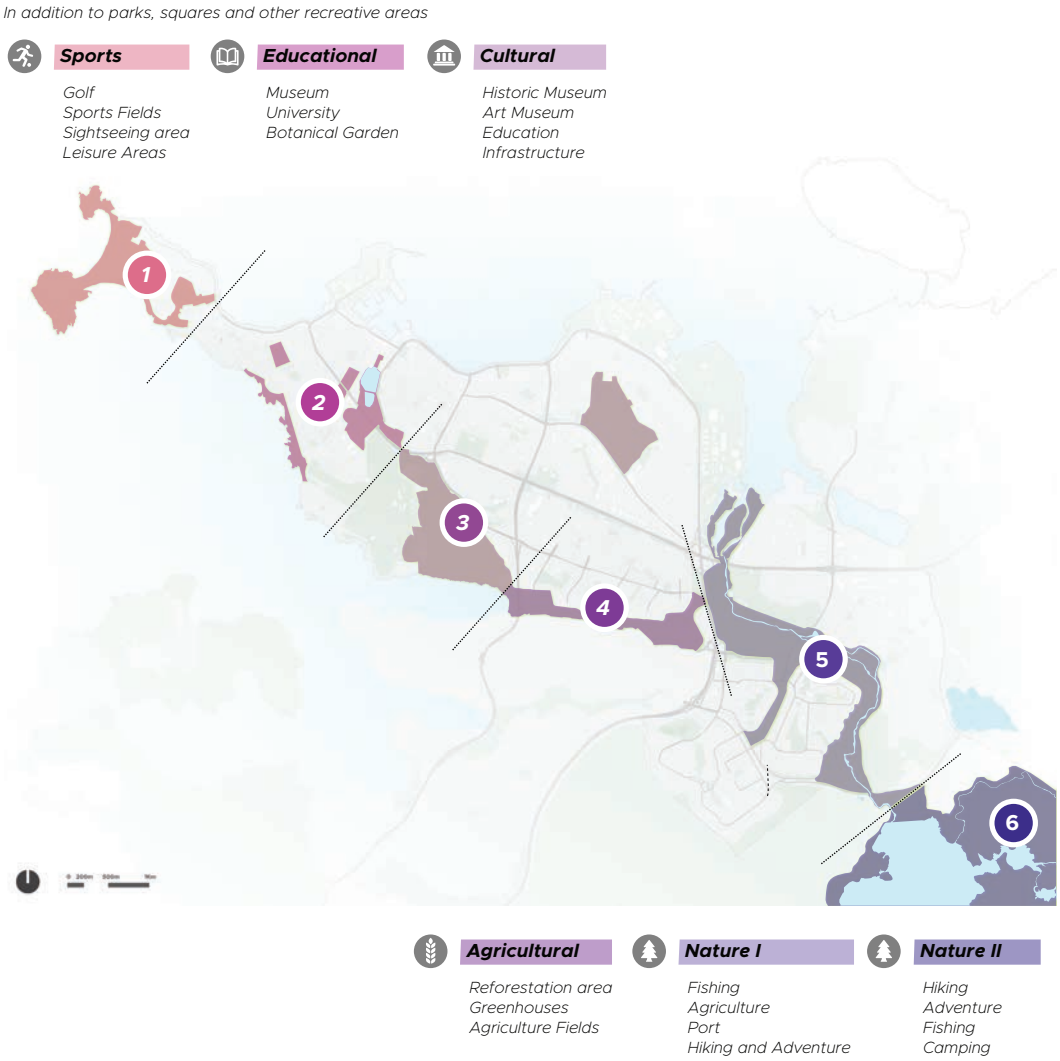


Figure 124: Subdivision in Green Corridor.

By walking, the proposed green corridor, which has around 15km long, can be done in around 3 hours, a timing that still being manageable if the purpose is to merely walk or practice a running sport. By the new bus route suggested, the time is reduced to 25 minutes, facilitating and encouraging the use of the path, and pretending to attract users to this touristic, ecological and cultural route, that try to represent Reykjavik in the city.

Collage

Figure 125: Reykjavik New Proposal.

Setting the Green Corridor as a proposal to improve the city has many benefits that besides integrating Breidholt as a key part in the city, allows Reykjavik to return to its own natural origins. Working in this idea, while taking into account its history and environmental condition make possible to improve the spatial identity of the place. The mix of activities proposed as the farming and agriculture or the sightseeing places enhance the meaning, the physical form and the life of the city.

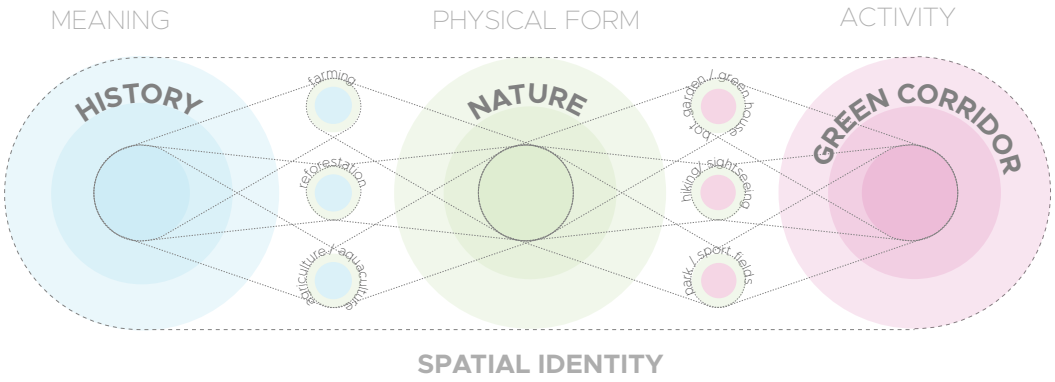


Figure 126: History, Nature, Green Corridor Exchange.

Before

After

Figure 127: Transformation on Sudurstrond Street, Zone 1.

The result is series of benefits that include:

- Establishing a natural protected area
- Recovering lost natural areas due to the urban expansion
- The protection of public spaces from the wind with the reforestation

- Tourism attraction with the well-maintained natural areas
- An Economic reactivation in the primary sector
- The improvement of public space with more open areas and more activities that call people to the public life in the streets
- The generation of new workplaces with activities as the farming, agriculture and aquaculture
- The connection of the city through a single green area

Before

After

Figure 128: Transformation on Varmahlid Street, Zone 3.

Before

After

Figure 129: Transformation on Zone 4.

The proposal can be considered as the begging of huge green recovering project that is able to integrate other areas as the northern border of the city with the sea and the city of Kopavogur. The Metropolitan Park or Green Corridor is just the first phase of the whole process were the city and the nature get a new visible connection, and Breidholt become the gate to the natural areas.

The second phase may include the improvement of northern border of the city, Saebraut avenue, and the transversal streets that connect directly with the corridor, thus incorporating other small green areas, and generating new public spaces that extend the natural condition of the project to the rest of the city.

Finally, a third phase could be developed to generate a new corridor with similar characteristics that connects Reykjavik with the city of Kapavogur and its natural surroundings. Once again, in this phase, Breidholt can still work as the gate to the natural areas that are in the east side closer to the lake Ellidavatn.

Before

Figure 130: Transformation on Geirsnef Street, Zone 5.

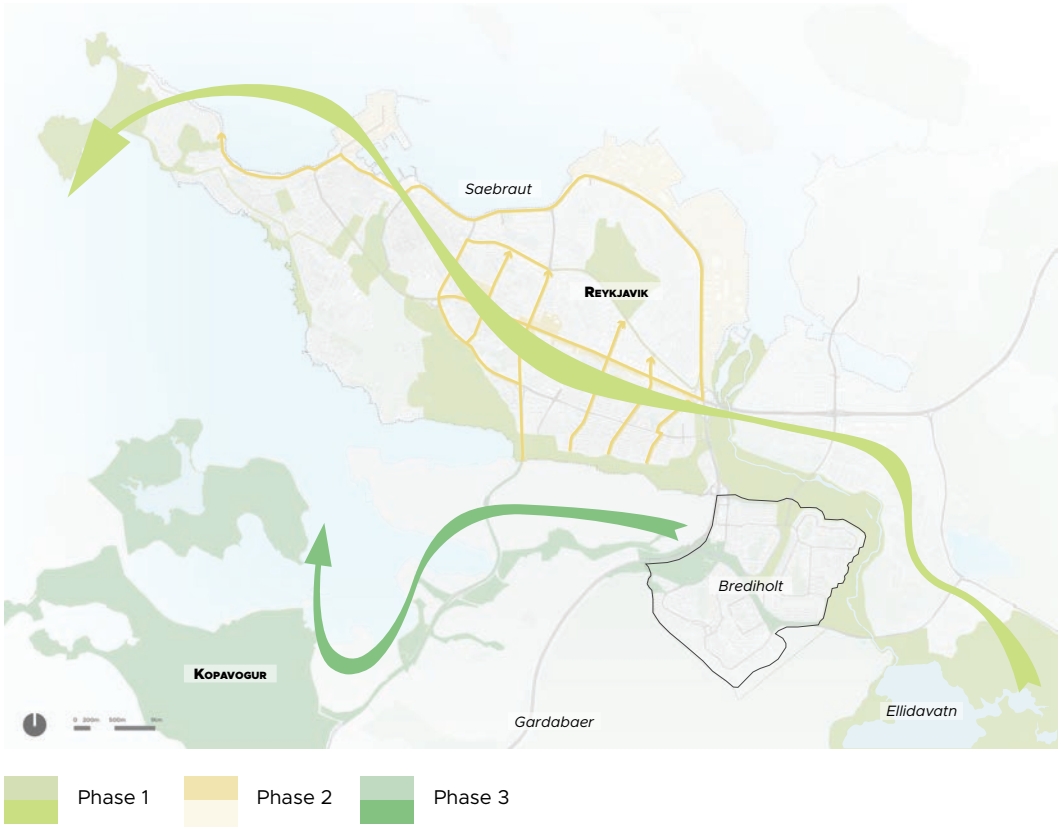


Figure 131: Implementation Phases.

Large Scale

The Large Scale intervention incorporates some guidelines for the development of an urban restructuration in the whole district of Breidholt, which includes Nedra Breidholt, Seljahverfi and Efra-Breidholt. Once again, as it was done before in the City Scale the purpose of this guidelines are to strengthen the urban interventions developed for Efra-Breidholt, through a connection with its surroundings and a global alignment with major scale proposals, thus benefiting and contributing to the intimidate context and the city.

Figure 132: Breidholt General View and Limits.

According to the investigation done before, it is of particular interest and importance a proposal at this scale, due to the condition of urban spaces and in this case neighborhoods, which are intertwined elements, that depended one form each other and have permanent fluxes and exchanges of people, services, natural elements, and so on. Rethinking at this scale, for Breidholt will mean to avoid more the presence separations that already can be seen physically.

The interventions for this scale continue with the alignments established in the City Scale, as it is: the densification of neighborhoods and the conversion of them into mix-used areas; the reinforcement of the public space, through the creation of new open spaces, the insertion of activities on them, and the incorporation of nature in the area; the reforestation of natural areas and the set of plots for farming, agriculture and aquaculture that links the place to its historical development.

Considering these elements, it is expected to improve the identity of the area, having, particularly, in mind the disconnection of the neighborhoods, lack of public space, diversity and attachment to nature, and historical background (agriculture, farming and fishing) as main problematics. And also the human scale, mixed-use and life in between buildings as main strategies to solve them. The final objective is to facilitate the incorporation of solutions in the following scale to be developed, which is smaller, without problems of connection with its surroundings and without taking into account the necessities of them too.

Therefore, the first strategy focuses in the reconnection of the three neighborhoods that are part of Breidholt, through the street connection (pedestrian, cars, and bike paths) and its shape adaptability.

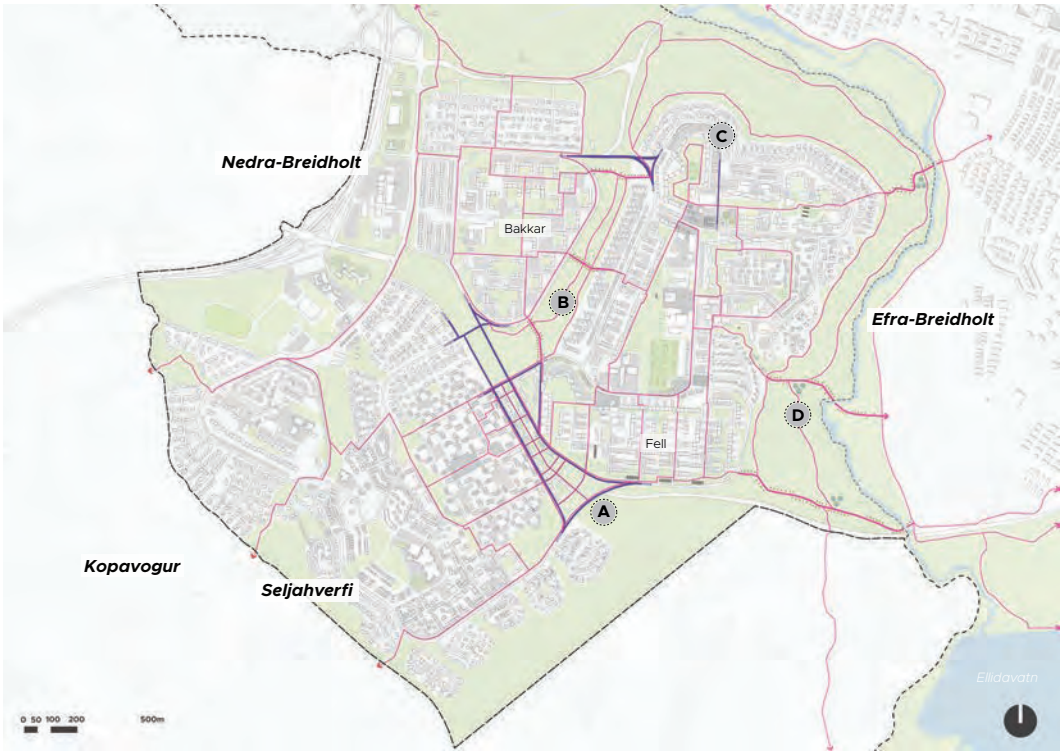


Figure 133: Streets Reconnection.

The first working area is in south part of Efra-Breidholt, in Fell zone. Here, the purpose is to extend the existing streets to arrive to the other neighborhood Seljahverfi. Their change on, at the same time, is pretending to break the “loop” that Efra has in this area.

For this, the first intervention consists in suppressing the main avenue that goes through the area, and plan it as an underpass. This allow the area to have more green areas and develop the transversal paths that will be able to reconnect both zones. The new planned streets follow the existing morphology of the neighborhood, so streets as Sudurfell, Seljabraut and also the transversal one as Yrsufell continue their direction.

The new proposed streets focus more on the people, so basically, all the transversal connections are only for pedestrian use. The proposed blocks, now have a smaller area than the developed before, in the original masterplan, so the walking distances can be perceived in a different way. In the following steps they will be potentiality with the development of new buildings and the set of mix-use in the whole area.

For the restructuration of the area, some of the new streets and its surrounding buildings used previous buffer areas.

Figure 134: Fell Restructuration Area. *Adapted from Breidholt, Icelandic Image Library, 2020.*

For the second working area which is between Nedra Breidholt and Efra-Breidholt, due to the topography conditions, the physical space available and the presence of trees, being this zone one of the only ones that have that kind of vegetation, the connections are done only at the

pedestrian level. To proceed with this, it was selected three main paths in Efra-Breidholt, one in Fell, one in Holar and one in the central part, Berg. These three paths have a stronger presence in the district, and allow the connection to Bakkar, which is in the center of Nedra.

Figure 135: Berg Restructuration Area. *Adapted Iceland-Breidholt, n.d.*

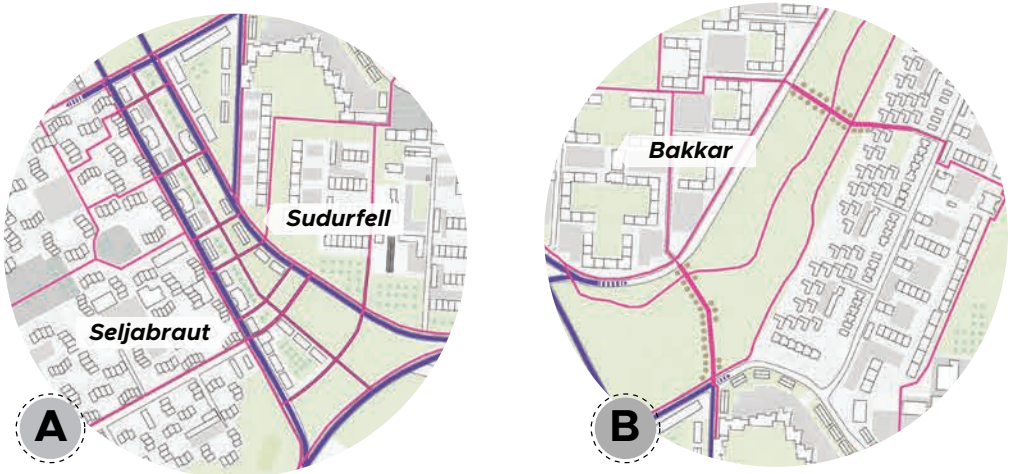


Figure 136: Zoom Connections.

The third area which is more a single intervention, consist more of the extension of a single street in Holar, Louholar. Once again, to break a huge block which has a particular loop.

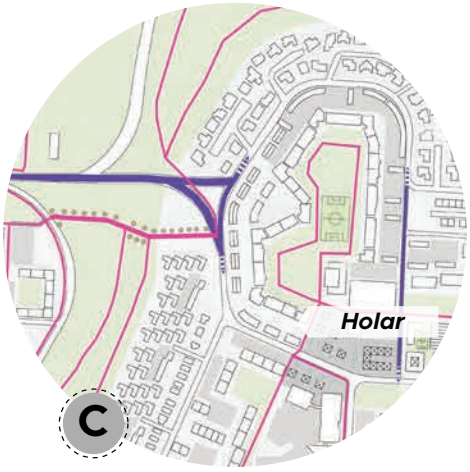


Figure 137: Zoom Connections II.

Finally, close to the river, it is planned three news pedestrian paths, that work closer to Efra Breidholt, and set horizontal paths, that later will be used as routes for the Urban Agriculture plan set for the neighborhood, which include, farming, agriculture and aquaculture areas, from the center of the neighborhood to the river.

Figure 138: Pedestrian Connections.

The rest of the pedestrian paths are reinforced through the connections between each other, and a further process of physical image change, incorporating the facilities for each one.

The second strategy, the one that focus on the densification of Breidholt and the development of mixed-use areas, departs from understanding the general numbers of new housing that should be built in order to provide enough living space for the population, that still growing in the city and the country, for the net 20 years. According to the analyzed numbers, Breidholt should have around 1.400 new housing units, with 350 non-profits. So, each year it should be built around 140/35 units. Therefore, each neighborhood of Breidholt (Nedra, Efra and Sel) should have around 460 housing units, 46 units developed each year.

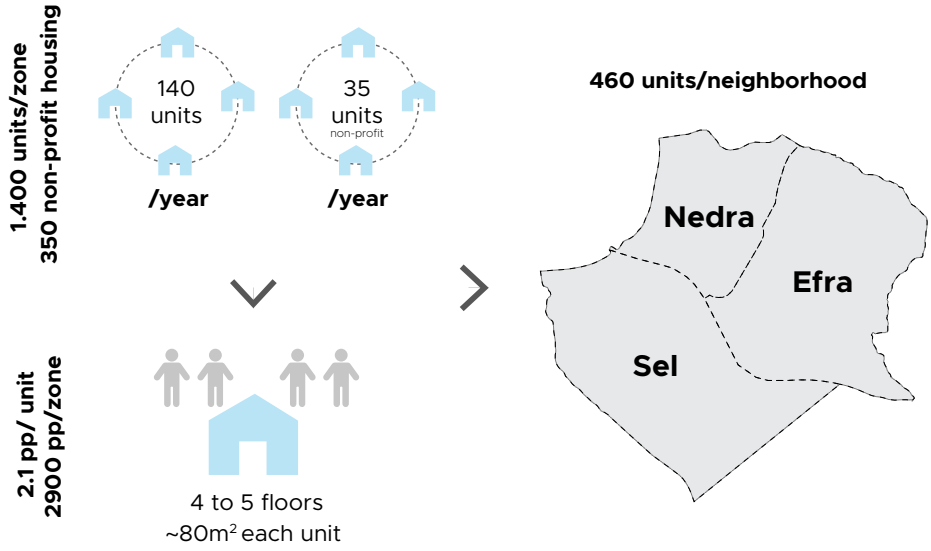


Figure 139: Densification Strategy Based on Number.

The main plan for densification, for obvious reasons, is the develop of new housing buildings. These new constructions, contrary to the ones developed before, in the 60's masterplan, will encourage the mix-use, incorporating multiple functions on it, as commerce and business in the lower floors, which will encourage the public space use.

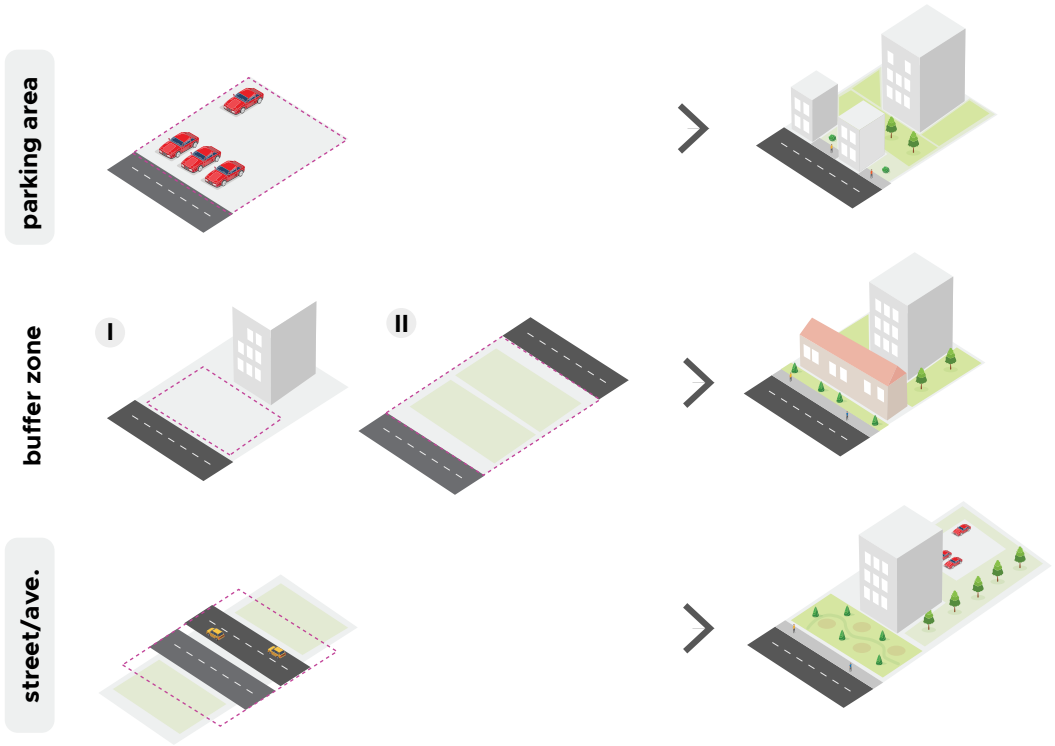


Figure 140: Voids Reuse.

The location of them are mainly three underused spaces with potential, as are parking lots, that in part will be relocated underground, buffer zones, between streets and buildings, and areas with streets that can be relocated.

The new position of the buildings will try to avoid the excess of buffer zones, and will promote the permeability in the ground floor. The size of the edifications is following the morphology of the previous ones, the same as its placement in the area, in order to adapt to the existing urban mesh.

For some cases as for Nedra Breidholt, it was taken in consideration the existing Reykjavik Municipal Plan 2010-2030, which already set some areas of growth and guidelines to increase the density, as it is the implementation of new floors over the existing builds. Or in Efra-Breidholt, the densification of the empty plots in Sudurholar and Hraunberg (central area).

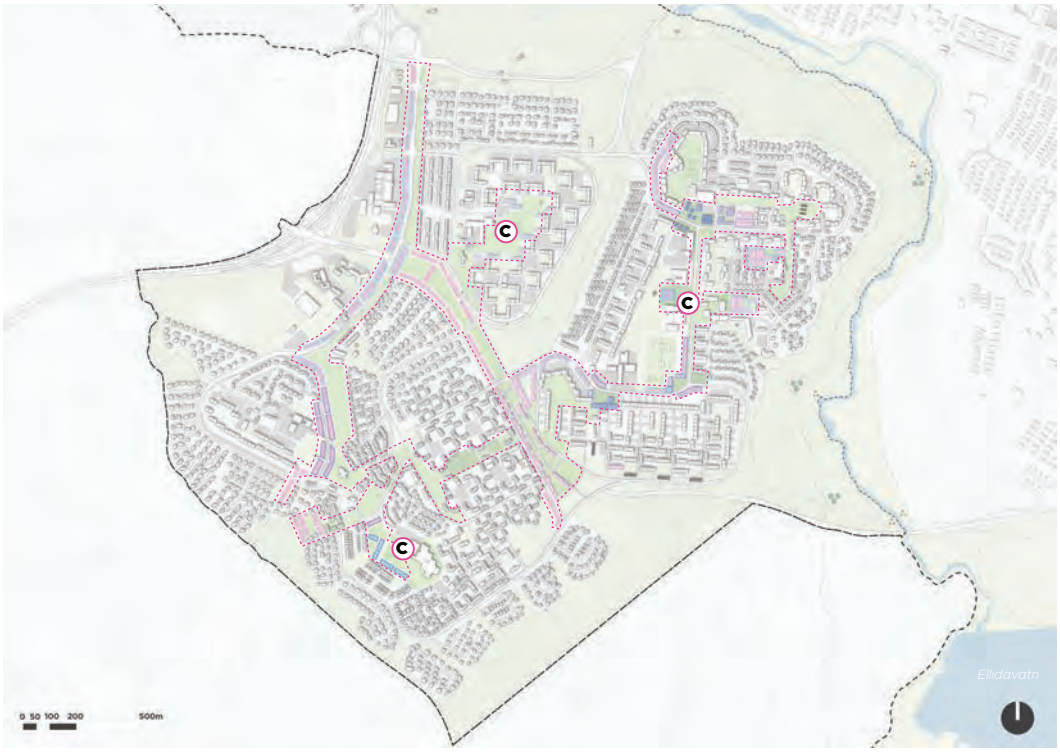


Figure 141: General Integration.

In reference, to the green areas, at this scale the purpose is to set a group of public spaces, reinforcing existing paths and green areas, that allow the three neighborhoods to connect, from center to center.

In detail in Nedra Breidholt and Seljahverfi, it is developed a main housing area with commerce and offices on the ground floor and lower levels along Skogarsel, due to the quantity of buffer zones on its surroundings and the possibility of making buildings with higher density without invading the space. Practically the space used, is the underused areas of the shopping center and sportive center zone.

Figure 142: Design Strategy. *Adapted from Breidholt, Icelandic Image Library, 2020.*

The proposal extends to the core of both neighborhoods, reinforcing its condition and creating a nodal point. In effect, bigger developed green areas are proposed, and commerce and offices buildings are set.

Seljahverfi

Figure 143: Densification Area in Saljahverfi.

Nedra-Breidholt

Figure 144: Densification Area in Nedra-Breidholt.

For the proposals in Breidholt, the direction of the interventions go in the same direction, but are developed in more detail, being able to know in deep the type of building that should be placed, and the quantity of housing units that are going to be developed. In order to promote the diversity in the neighborhood and spot solution the low-density areas, in most of the cases, the type of building that is developed is the one that is missing in the zone, that is: “if the area is full of uni-familiar houses, then a building with three or more floors is set in the zone’.

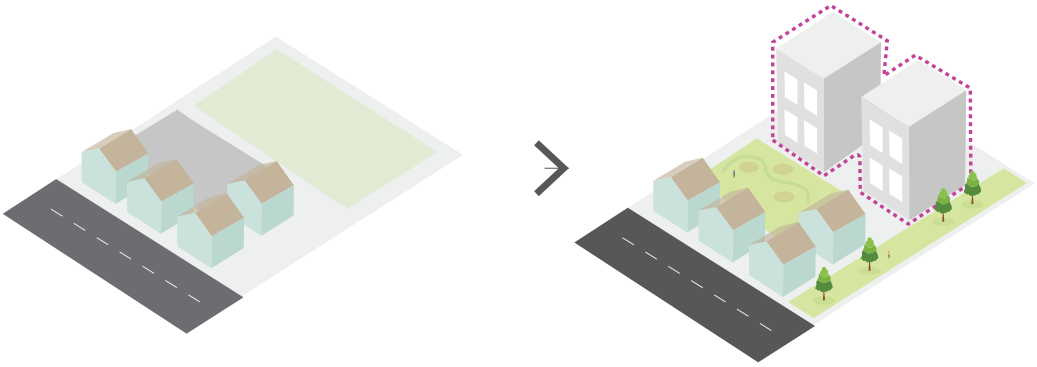


Figure 145: Densification Strategy.

To continue with the urban grid and the morphology of the neighborhood, buildings are not set as individual elements, to the contrary they conform small groups that recall the previous structure. Moreover, most of the buildings are mix-used, incorporating commerce and business areas, especially if they are located in the main streets (Austurberg, Nordurfell and Sudurholar), and in new nodal points.

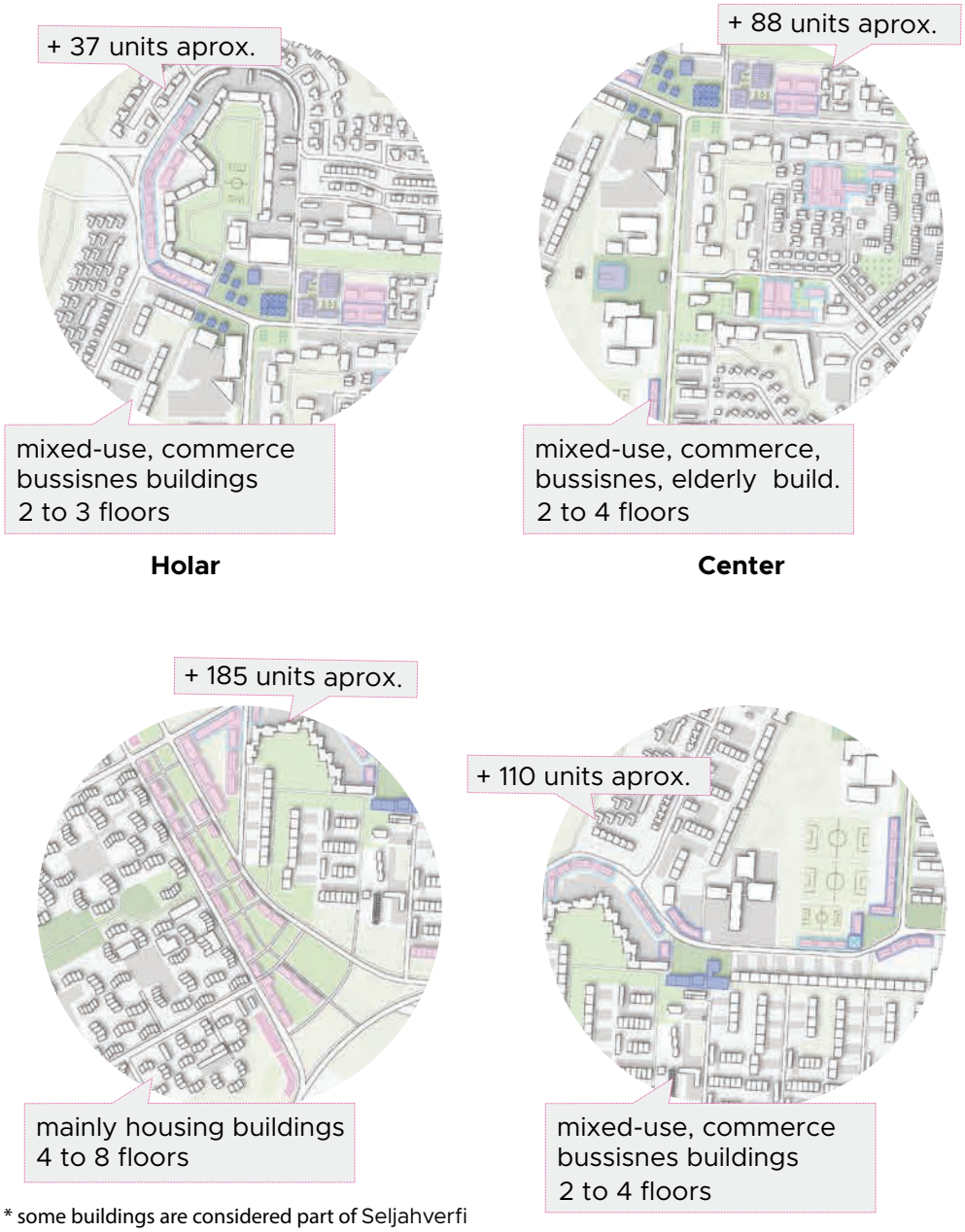


Figure 146: Densification Area in Efra-Breidholt.

Lastly but not less important, urban agriculture is used as a possible element that can contribute to the improvement of the urban space. The first reason is related to the "meaning" part of what is defined as "spatial identity", due to the capacity that the thematic has as itself to relink the with historical development of the neighborhood and the new proposals establish at the city scale. The second one is related to "activities" part,

where the urban agriculture as labor, task and duty, can push people to make a better use of land and the increase of outdoor activities, reactivating the public space. And the third one which comprise the "form" component, basically can make farming, fishing and harvesting change morphology of the neighborhood and shape it based on the activity.

At this scale what it is set, is the possible area of development for urban agriculture, taking into account the three main activities of it, which are farming, aquaculture and agriculture. For the first two, due to its physical requirements, they are placed more in the periphery of the district, in particular in the long east green area. The aquaculture, specifically, for ease it is only developed next to the river, where it will also be placed fishing pools, that will allow to develop the activity in the winter season.

It has to be mention that all of these activities follow the main paths established in the "City Scale" proposal, having farming and agriculture up to the city and fishing up the Port.

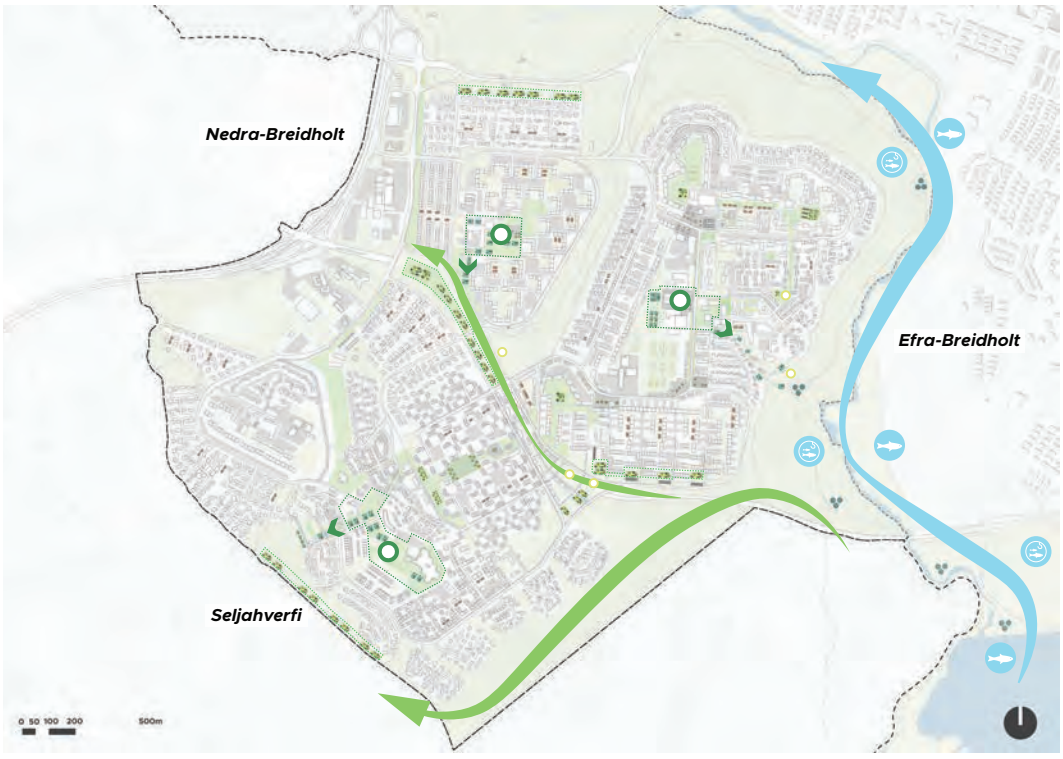


Figure 147: Urban Agriculture.

Figure 148: Breidholt Proposal.

Neighborhood Scale

The Neighborhood Scale works precisely in Efra-Breidholt. Unlike the other scales, this one focus more in physical shape of the space and its functions, giving especial attention to the “form”and “activities” components of Spatial Identity; without forgetting the nature, past development of the neighborhood and people’s confronts to improve the “meaning” part.

Even tough, the borders of the neighborhood are set, the proposals will focus in the central area, given its conditions. As it has been possible to notice, this area requires more attention, in relation with the other parts of Efra-Breidholt, it has a big concentration underused areas that can be improved and, moreover, it is, and it will continue being, the zone that structures the neighborhood, in terms of functions, physical form and position.

Figure 149: Efra-Breidholt General View and Limits.

Based in the problematic studied before, where it is possible to find the lack of public space, human scale, mix-used areas, hierarchy on streets and spaces and density; and the excess of parking lots and unused areas, and others. The proposals use the concepts explored before as mixed-use development, people as a driver for identity and local heritage exploration to improve the neighborhood. And, at the same time, the strategies developed in the other scales as the densification zones, the green corridor and the incorporation of agriculture, aquaculture and farming.

Nodal Development and Mixed Use

Based in the literature studied before, the first strategy adopted at this scale is the nodal development. For this, it was selected specific areas to focus in, all in which it is going to be set a group of urban interventions, which include its development as mixed-use areas, incorporating in the lower floor commerce activities, which were also suggested by people in the area and business zones. Since these points that are in the central zone of the neighborhood and they are going to become very important, diversifying them becomes an essential intervention.

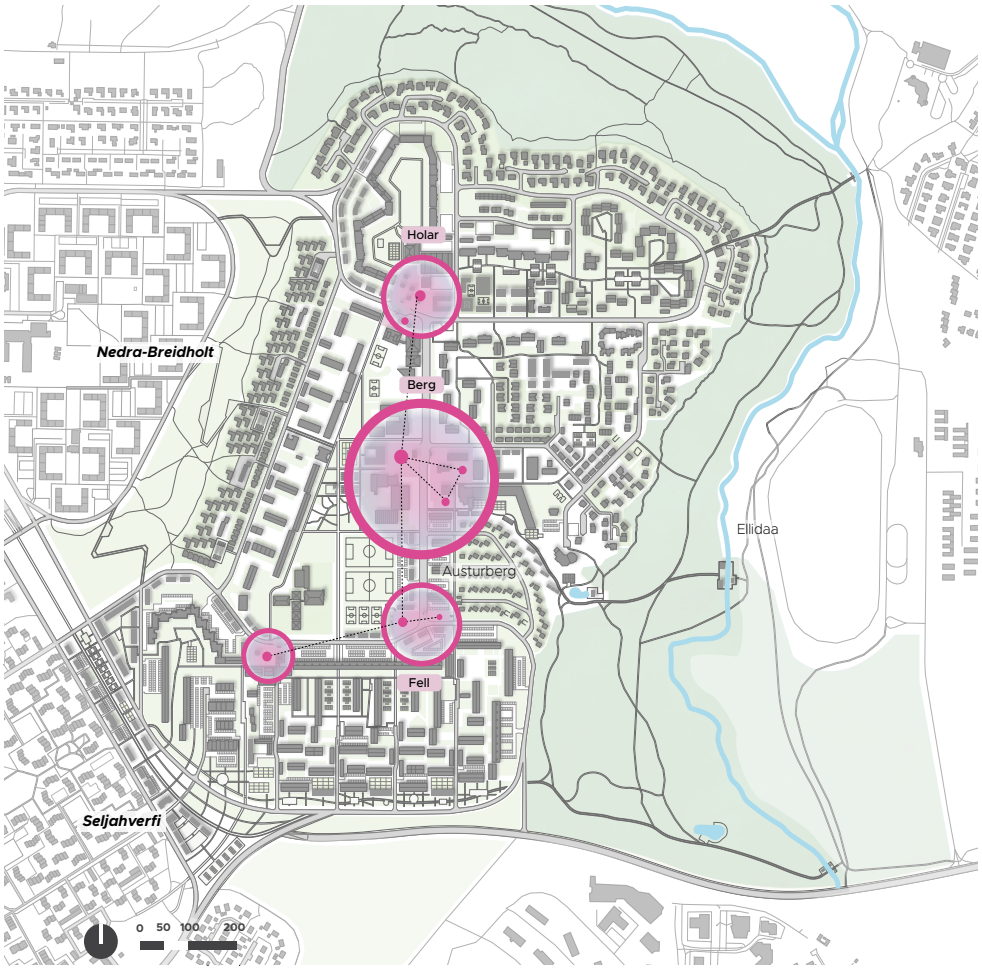


Figure 150: Nodal Development.

The first area selected, is the one located in the center of Efra-Breidholt, where it was most likely to see social life. Its physical location, which is basically at a similar distance to all the corners of the neighborhood, make it ideal to improve it. Besides the presence of commerce close to it, and the swimming pool, which as it was learned before, it is a very important social space in all Iceland make this point more important.

The main problems found on it, are pretty clear, since the area instead of being designed for people is designed for the cars, having the possibility to find a big parking lot in front of the school and the pool. While on the east side of Austurberg there is not any single open space, and sidewalks are not defined, so the library and commerce areas are around buffer zones and parking places.

The central node is joining both sides of Austurberg street with the implementation of re creative public spaces. Now, instead of a parking lot in front of the pool, is possible to find the main square of Efra-Breidholt which includes connections to the rear park, a bus station, access to buildings that are placed next to it and a new mixed-use edification that is mainly dedicated to the urban agriculture. It has to be taken into account, that for this area the street level has been elevated to the pedestrian one, creating, thus, a single platform.

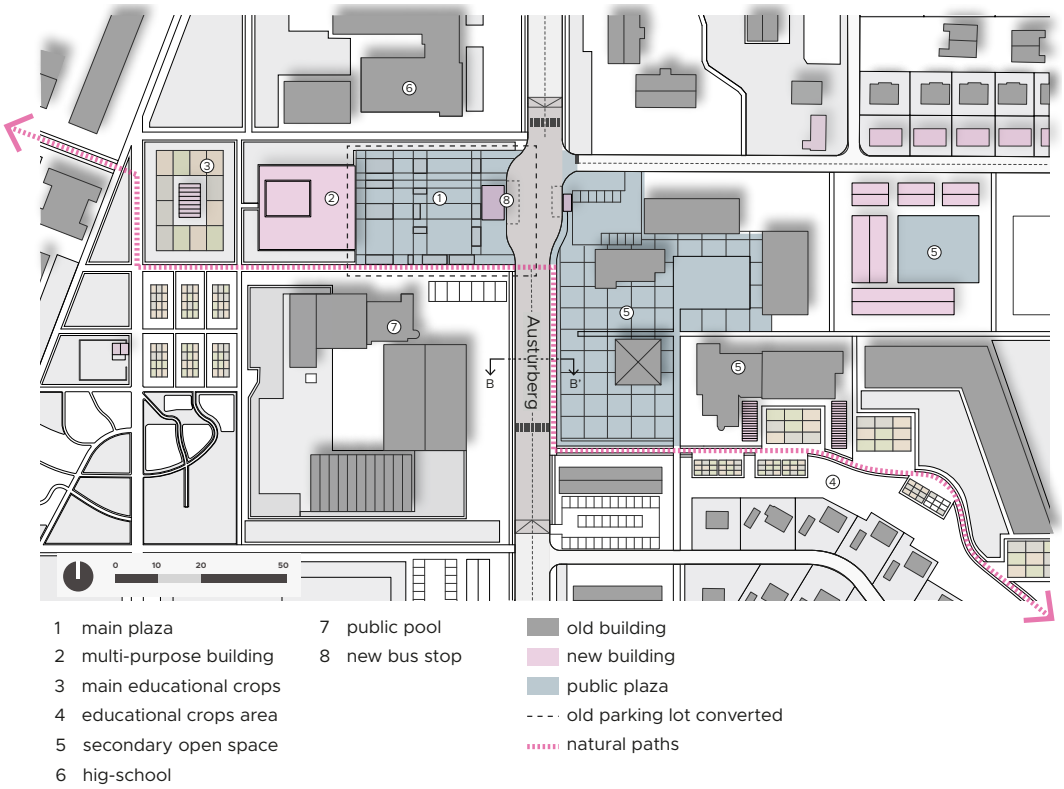


Figure 151: Central Node Intervention.

Figure 152: Austurberg Street Actual State.

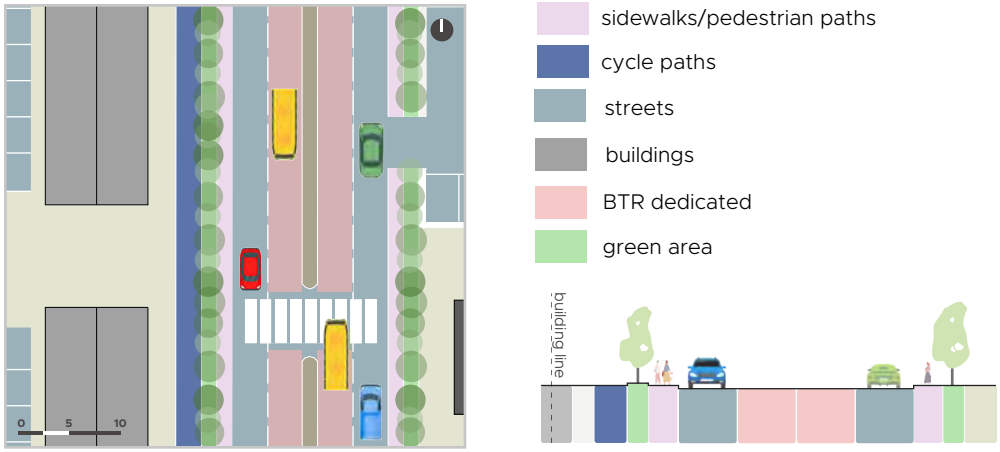


Figure 153: Central Node Street New Condition.

The second, the third and fourth areas are always close the main street, but distant to the central one with around a 8 minutes walks. Once again, the position is strategic since they are located in the second most important streets of Efra-Breidholt, and they become part of Holar in the north and Fell in the south, which are other subdivisions in the neighborhood, which required particularly public activation through the incorporation of mixed-use areas and public space.

In the north, in Holar, in the street Sudurholar, it is taken as an opportunity the most important supermarket in the area, to create a public space that can include exterior commerce and join the four angles of the street with the implementation of green areas. The main area to be used is a parking lot, which in the proposal is relocated.

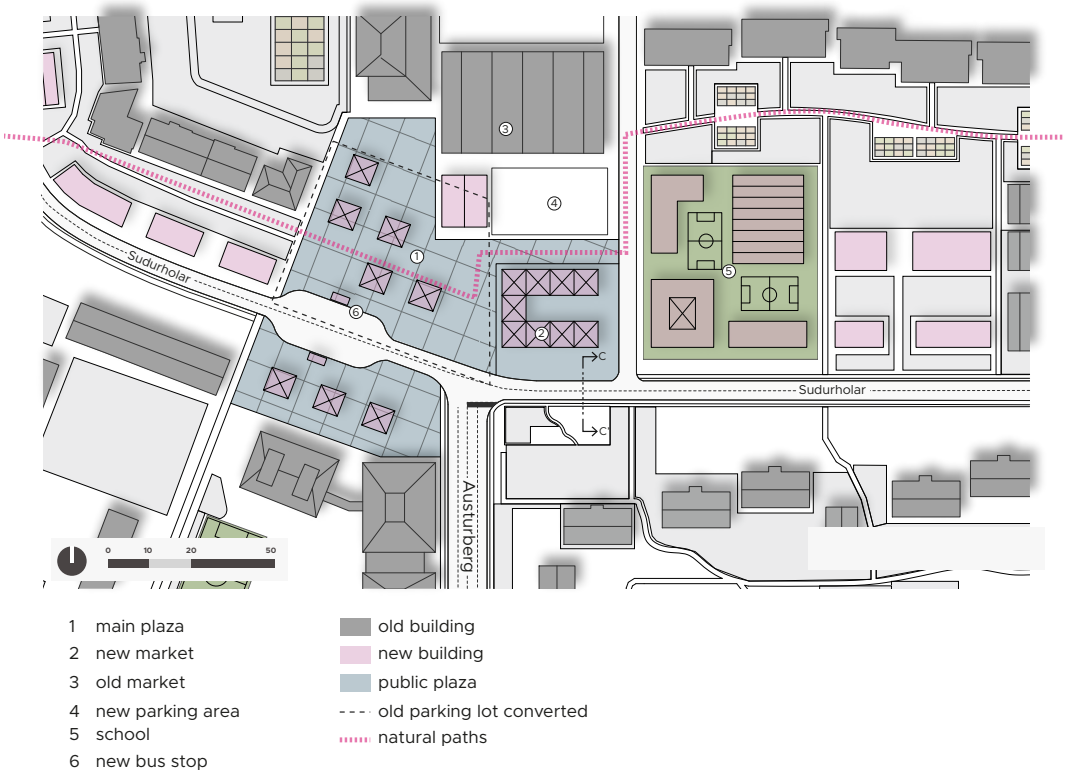


Figure 154: Holar Intervention.

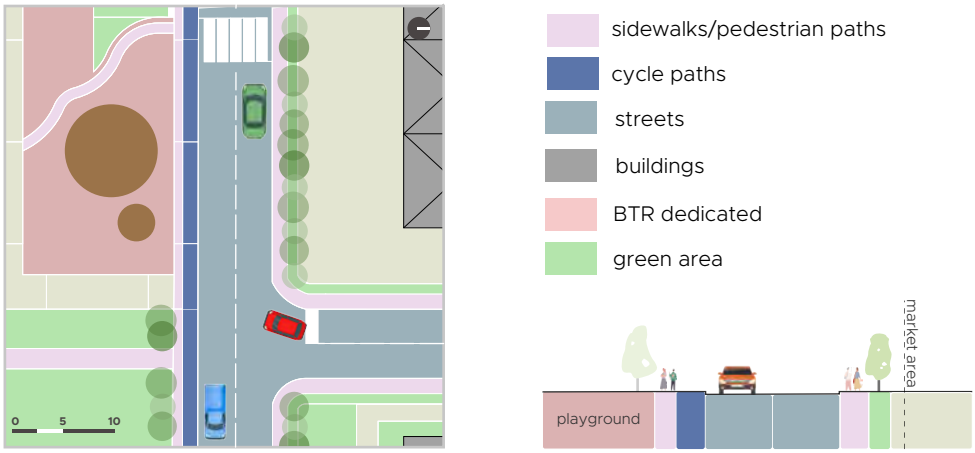
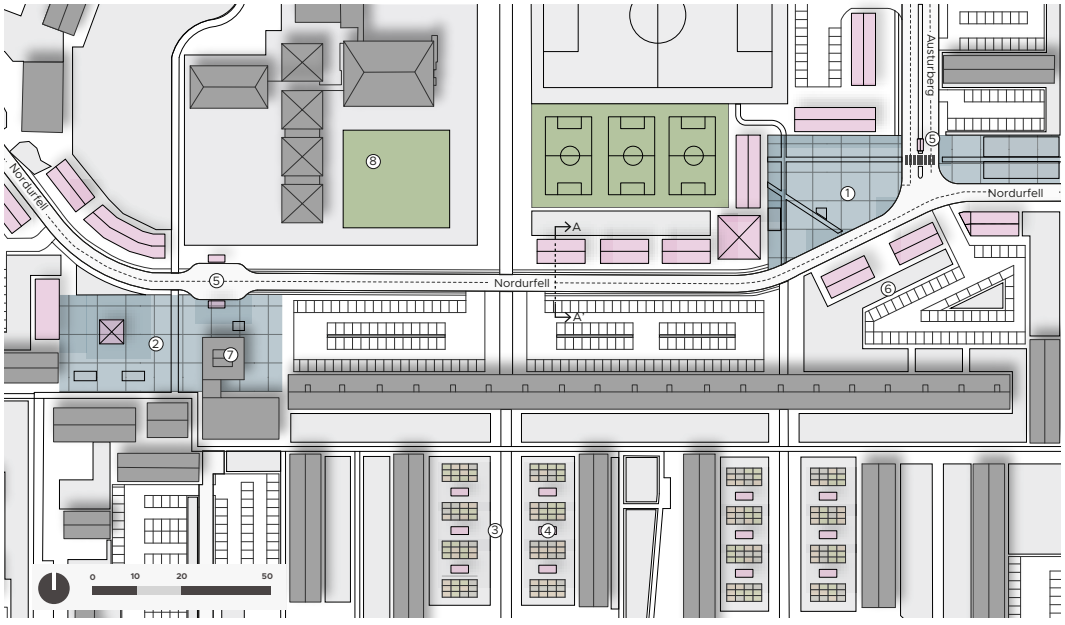


Figure 155: Holar Node, Sudurholar Street New Condition.

The intervention for this area, as for the others, include the restructuration of the street with the inclusion of sidewalks, bike lanes and strips of vegetation that will help the open spaces to protect from the wind. Here, two corners of the intersection include a commercial square with a group of small cover spaces for selling products outdoors, in order to activate the area and a bus station.

Figure 156: Sudurholar Street Actual State.

In the south, in Fell, in the street Nordufell, it was developed to two areas, one that works and the one in Holar, as a finish focal point of Austurberg and other that reactivate and existing public area. Both works in a different way and complement each other, having diverse facilities as commerce, offices and housing, and facilitating the access to the central main area with the soccer fields and the southern green area along Sudurfell.



1 main plaza
2 secondary open space
3 local crops
4 small greenhouse
5 new bus stop
6 new parking condition
7 old market
8 kindergarden

old building
new building
public plaza
old parking lot converted

Figure 157: Fell Intervention.

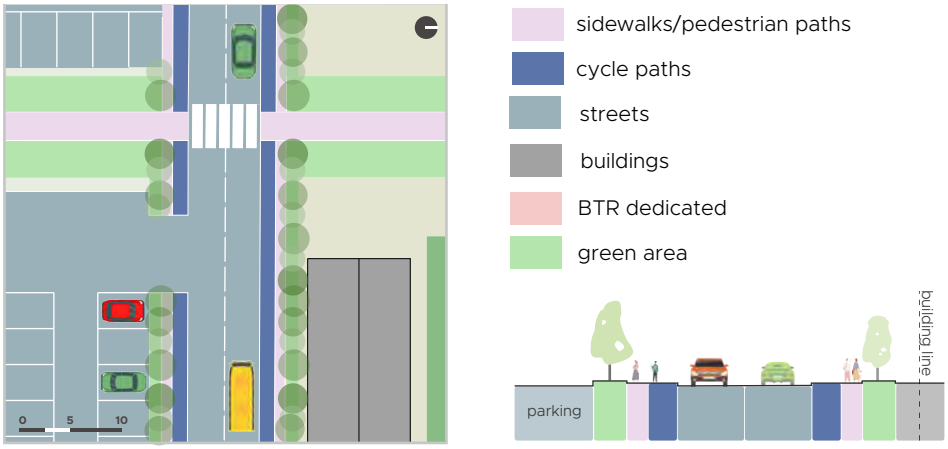


Figure 158: Holar Node, Nordurfell Street New Condition.

Figure 159: Nordurfell Street Actual State.

Once again, for this case it was used previous parking lots and some buffer zones that where existing between the street and the existing buildings. For the node located in the east side, in the part that belongs to the central core, it was relocated the soccer in the back part, creating a new facade with a square for the street. A similar strategy was adopted lower part, where the parking space moved back, being covered by new buildings.

Finally, around this focal points, it is established a new land-uses to create mixed use areas. It departs from this nodes but it extend along Austurberg and compliment it with two extra areas close to them, in Holar and Fell. With this strategy, it is avoided the mono-use areas in the neighborhood and is reduced the timing to reach different services, making it lower than 15 minutes as it was in the past.

The intervention is not only limited to the zones around the center,

it also takes the opportunity of empty plots in Efra-Breidholt where new buildings can be developed, and new spaces emerged from the connections established with Seljahverfi, that were shown in last scale proposals. So, in the central area, in Berg, at the east side of Austurberg it is also possible to find new mixed-use buildings with offices in the lower floors.

In conclusion, the mixed-use strategy extends from the urban space, to the buildings usage and also to its type, making possible to find single houses, attached houses and medium high buildings, in the same area. This last condition will be explained in detail later.

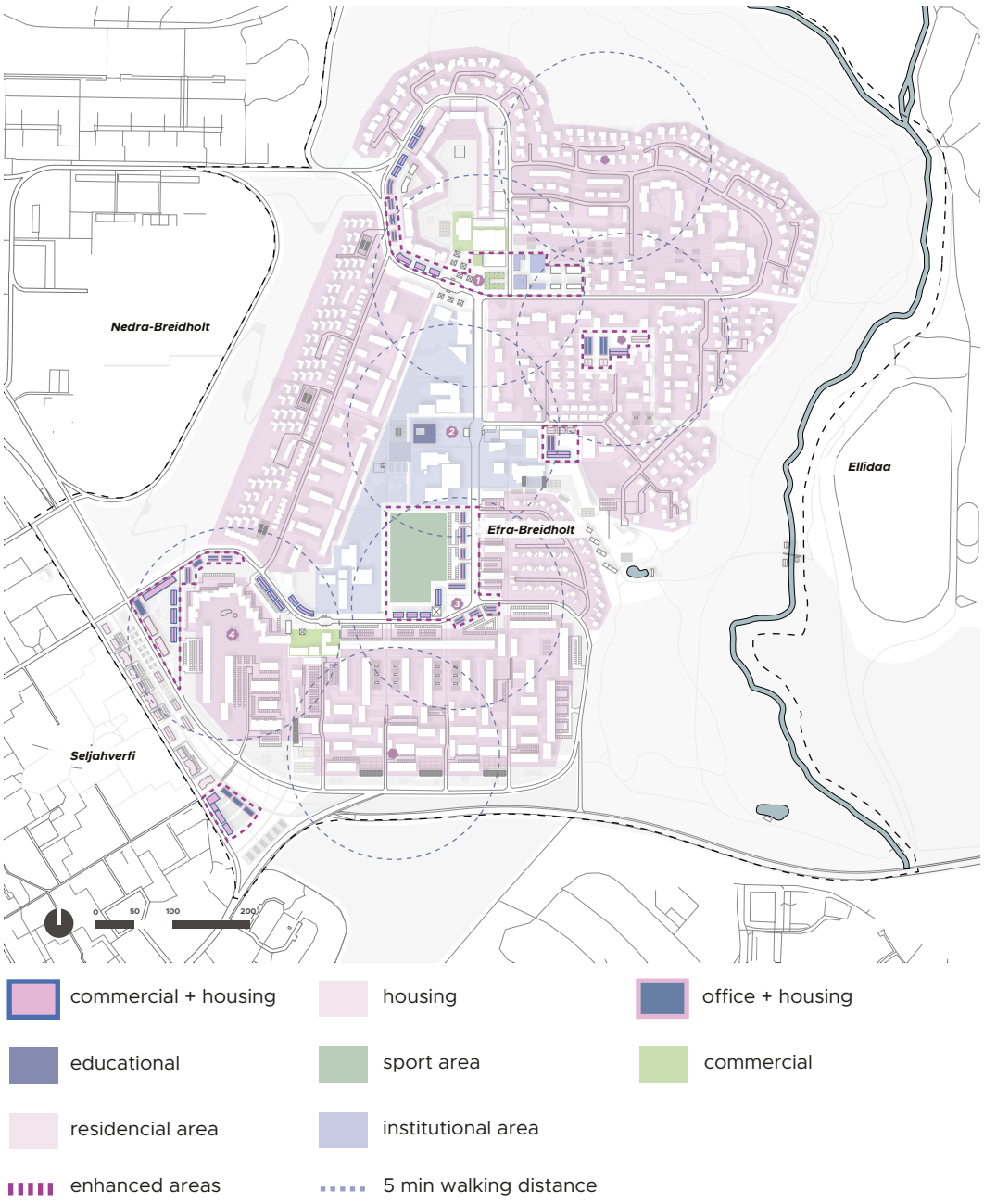


Figure 160: Map of New Land Uses.

Densification

Equal to the mixed-use strategy, it works mainly in the selected nodal points established before, and extends to the main streets. Both approaches were worked at the same time since they complement each other. Basically, to increment the density, it was reused the existing buffer zones and parking lots, that will be placed underground, to place new buildings. Taking into account the proper distance for the isolation of the buildings itself and the surrounding public spaces.

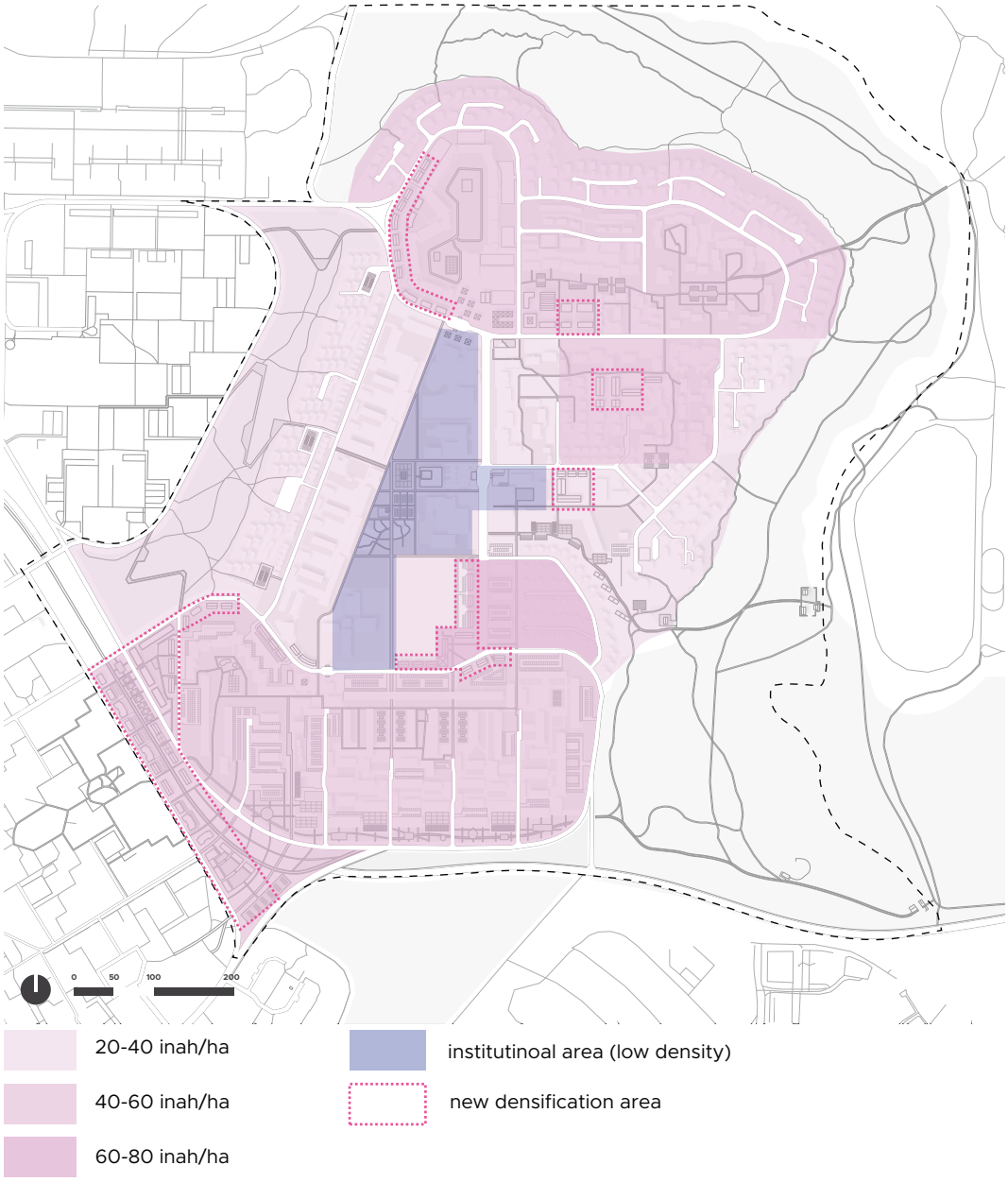


Figure 161: Densification Map.

As it was shown and explained before, the neighborhood should have

place for around 450 units that correspond to it, based in the masterplan. For this, the areas set before for the densification, will have 40 buildings of 4 floors in average, as it is shown in the map below.

The benefits of densification, beside the ones that concern to a more ecological development, in this case in specific are the development of "facade to the streets", which before were full of parking lots, and the distance from the street to the closer buildings was distant, creating a perception of "far distances" for people and affecting directly to the approach of human-scale in urban spaces.

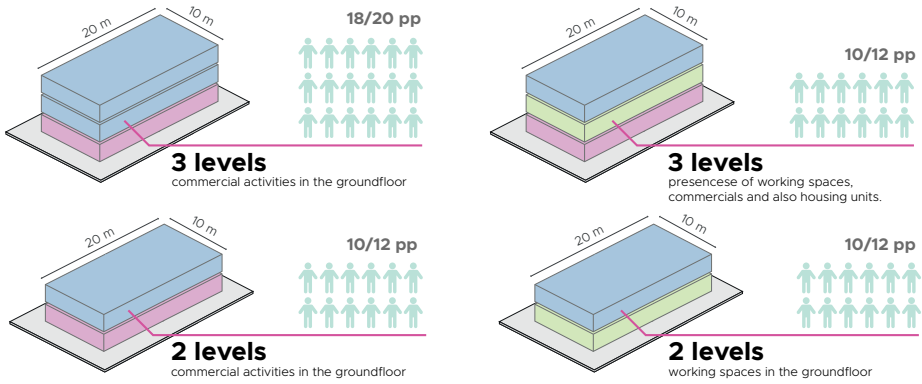


Figure 162: Densification

Buildings

To be able to set the position and the type of the buildings that should be placed in each zone the neighborhood was analyzed in two ways. The first one is based on an analysis of the urban tissue, which try to understand the main lines and distribution of Efra-Breidholt 60's masterplan, which in this case define a very particular pattern. Using this, it is extracted the buildings disposition to create a new pattern that can replicate the old one in a way, but also be distinguishable in another way; in the one that concerns the adaption of the buildings to the new functions and to the surroundings, considering that the edifications have mixed uses on them.

The buildings disposition follow previous grouping systems as are, attached houses or buildings joined to create an inner open space around them. The size of many buildings, is similar to the existing ones (proximate 10x25), and is also added other kind of proportions, where different functions will be developed, making at the same time new areas distinguishable. This is the case of the market in Holar, the office building in the square in the southern focal point of Austurberg, and the central multi-use buildings in the main square of the same street. Extremely long buildings are completely avoided, since they may cause disconnections, and also long distances

between streets and constructions, since they cause buffer zones and problems related to the space perception.

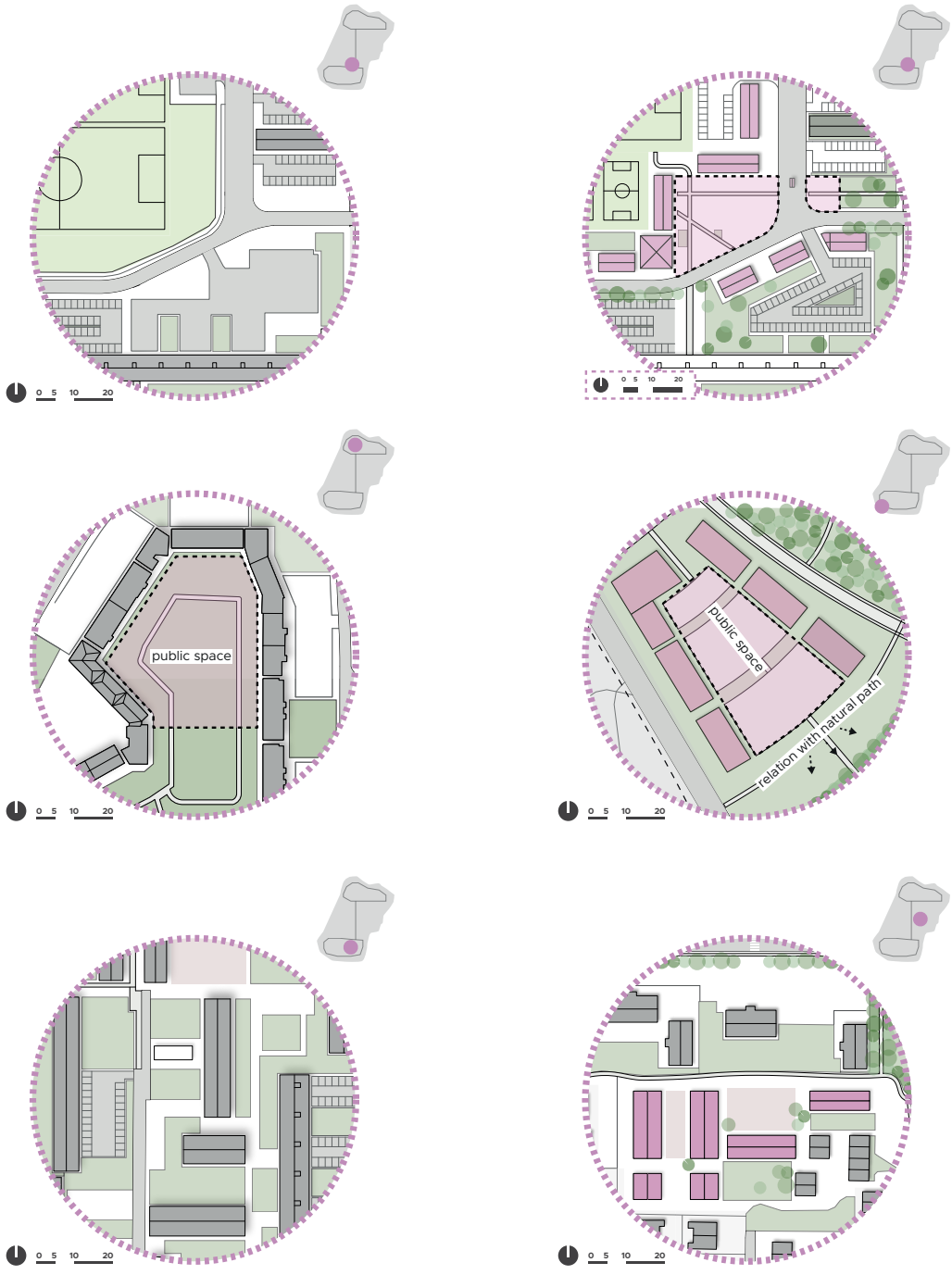


Figure 163: Urban Tissue.

The other developed analysis is about of the type of building that should be placed in a specific area, applying what it was learned from the book of Tachieva. Based on this, what is placed in built areas is the missing building type of building, which for this case is the opposite, having, for

example, lower buildings where there are tall buildings or vice versa.

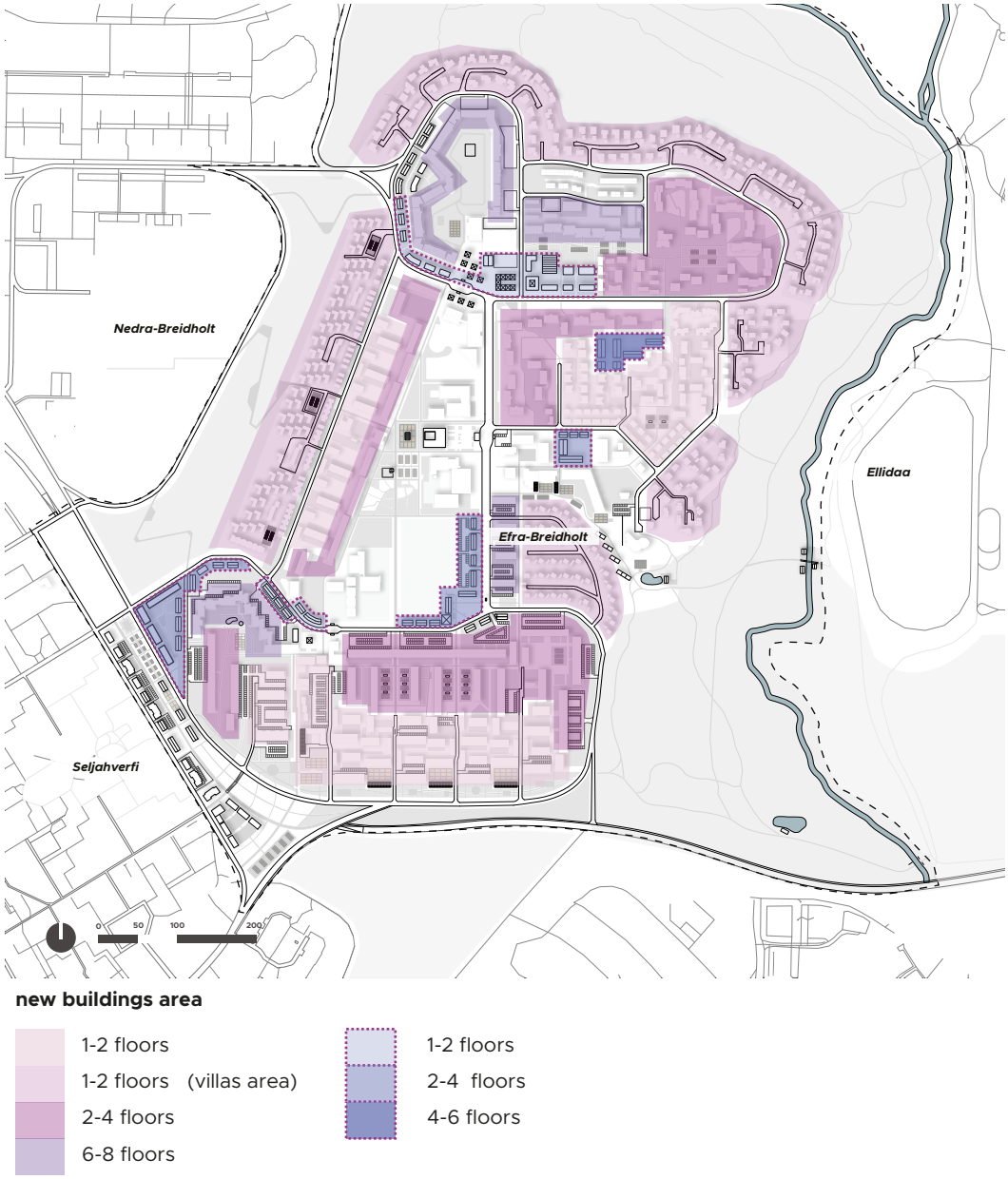


Figure 164: Type Of Buildings.

Below it is possible to see three areas where this strategy was applied. Basically, the space where the new buildings are developed are existing urban voids and parking lots. The result is a new facade for the street, reduced distances from the streets to the building, controlled public areas with smaller sizes, and physical diversity with the new implemented buildings.

The first case, located in Fell, is an example of adding, low height buildings next to an existing tall building. The second case, in Berg, is an example of the implementation of two and three floor buildings to create

diversity in a single-houses area. And the third one, also located in Fell, in the east side, is an example of the use of voids, to create new residence zones.

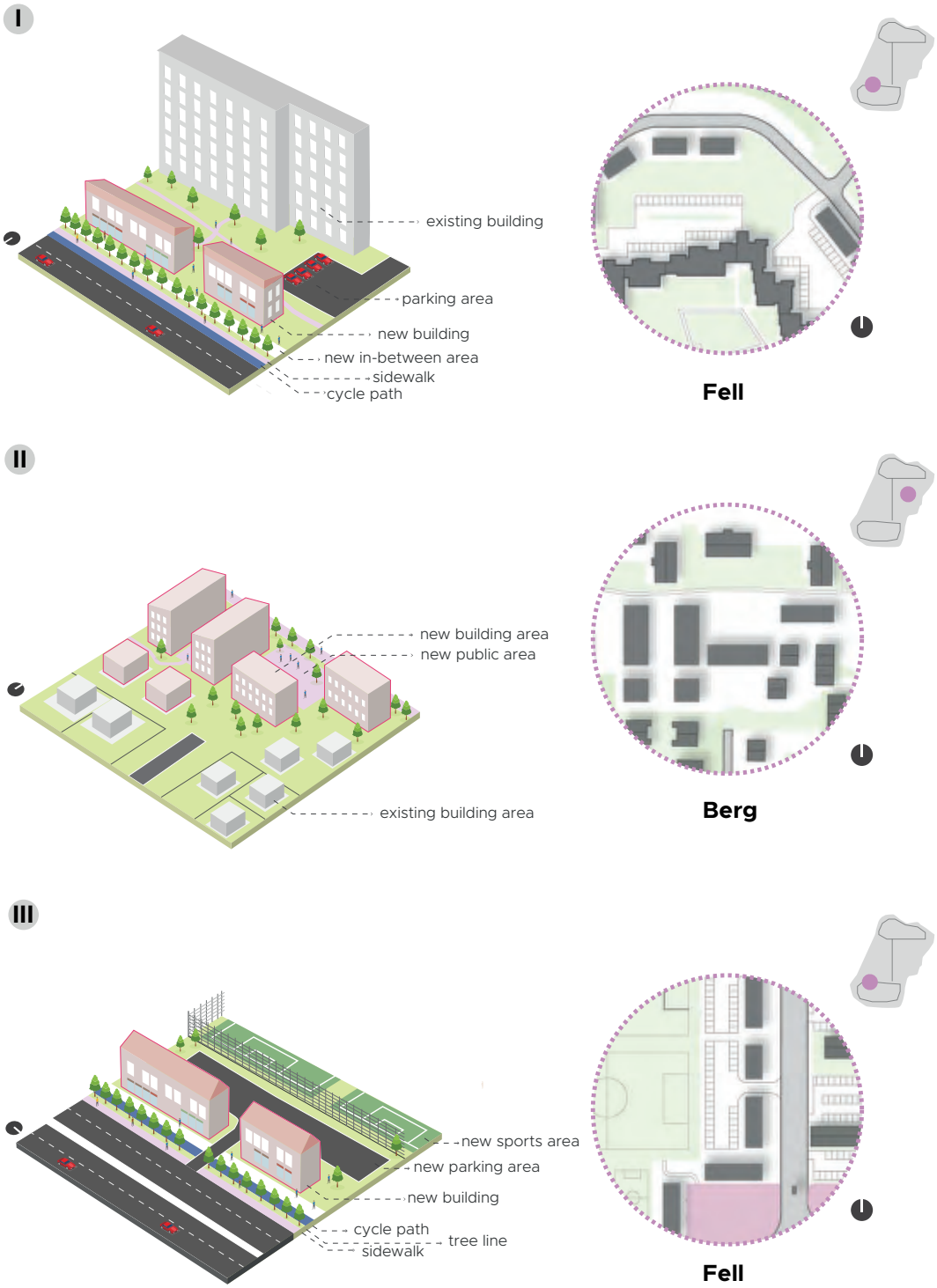


Figure 165: Buildings Implementation.

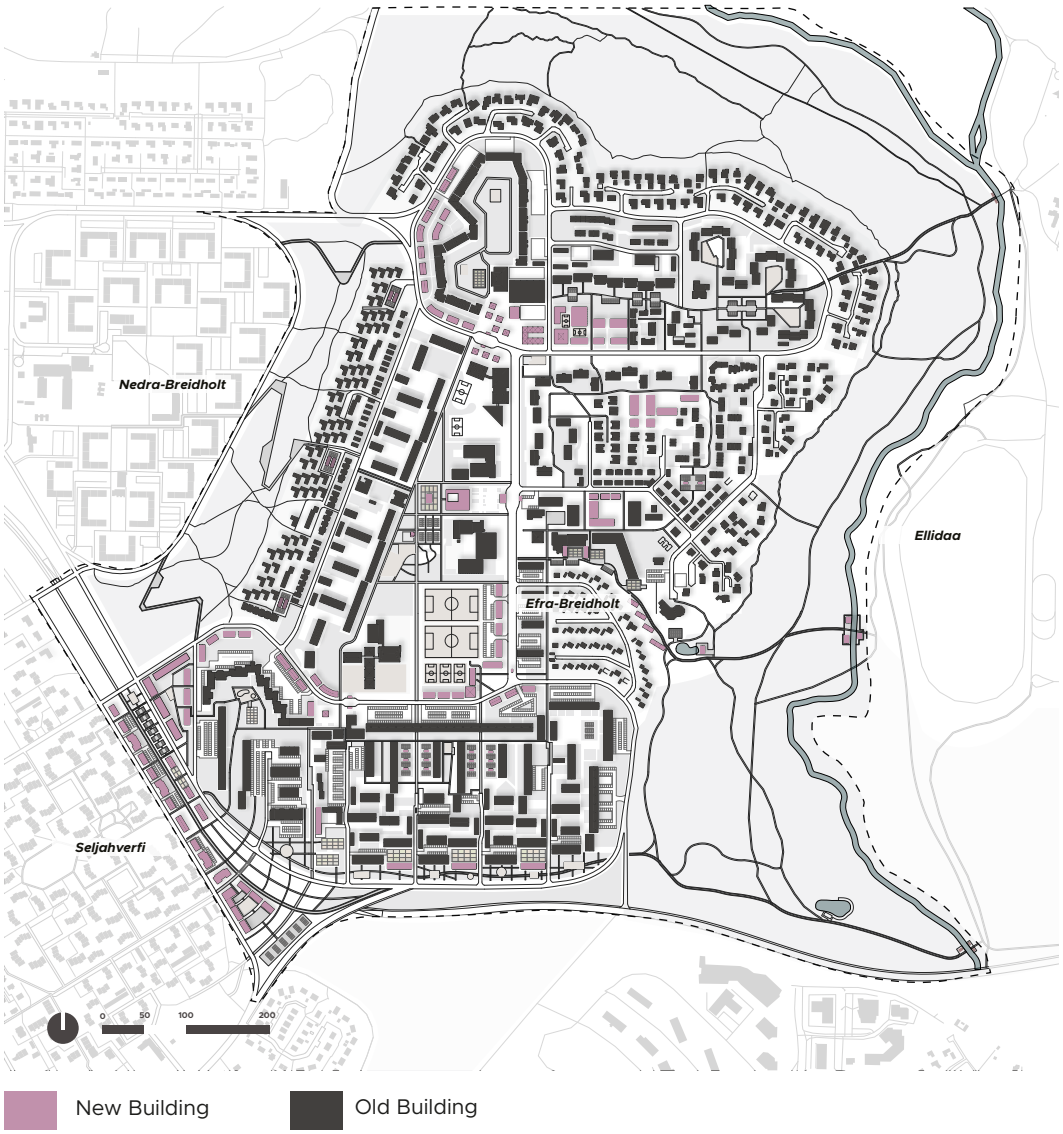


Figure 166: New Buildings.

Nature and Urban Agriculture

On the other side, focusing more on the roots of what Breidholt was before, on the history around the area and the intrinsic characteristics of Iceland in general, which orbit on nature, a second main proposal is established. This one, following the guides set before in the City Scale and Large Scale, incorporates the nature to the neighborhood center, and activate green areas and some buffer zones with the incorporation of urban agriculture, which includes farming, agriculture as itself and aquaculture.

At this is scale in specific, it is set three horizontal natural paths, one for each part of Efra-Breidholt: Holar, Berg and Fell. They come from the river on one side, where is set the Green Corridor that arrives to the city center,

as is proposed in the City Scale guidelines, pass through the neighborhood inner part and arrive to the Nedra Breidholt. The one set in the south, in Fell, in addition, follow the possible second Green Corridor that will arrive in a further stage to Kopavogur.

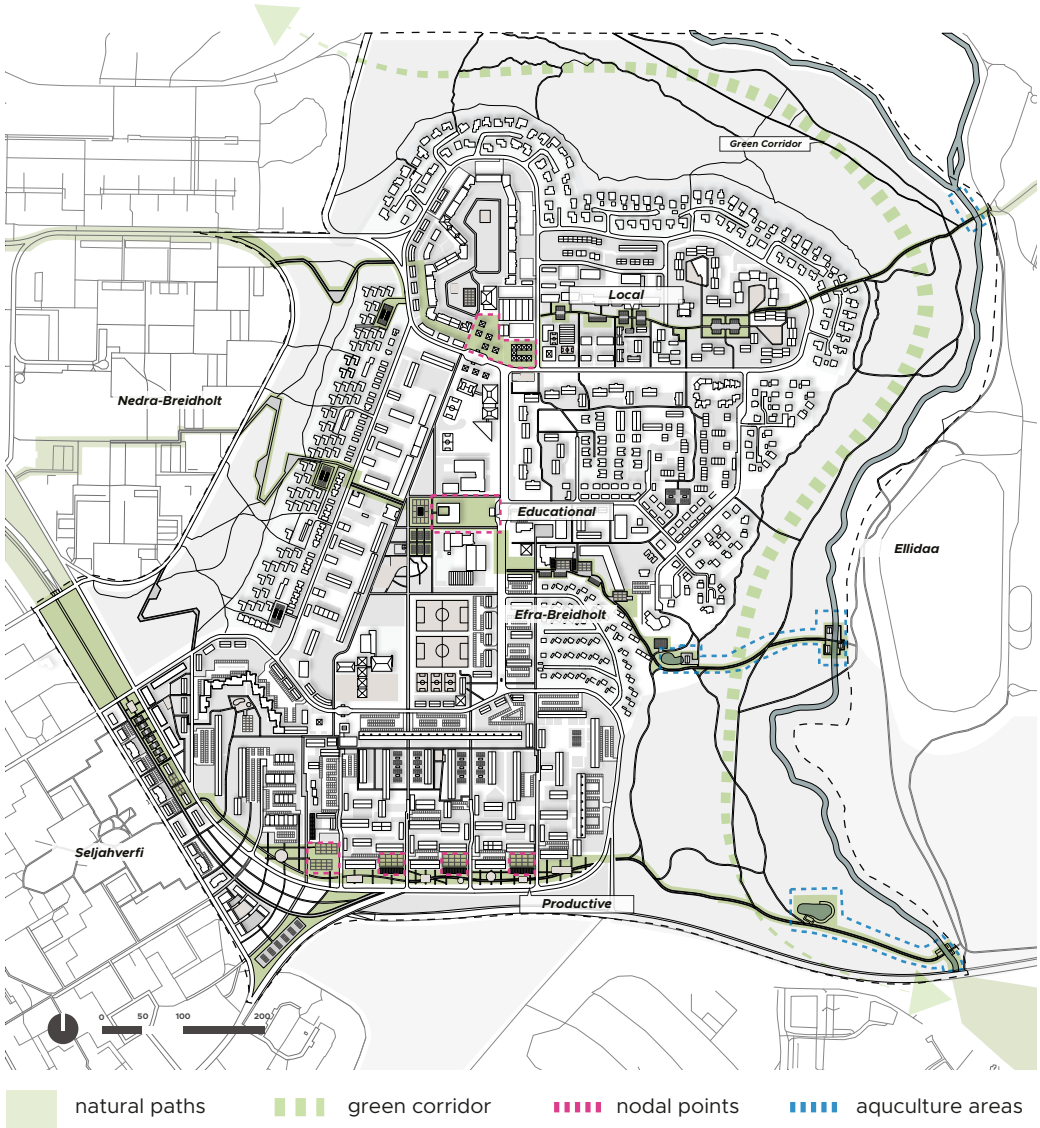


Figure 167: Natural Paths.

Each corridor has the aquaculture incorporated in one of the extremes and agriculture in the middle, but they also have particularities to make them differ from each other. In the north, the corridor integrates to the upper nodal point, where it was set the main market of the Breidholt. In the center, the path passes through the main square where it is going to be located a characteristic multi-purpose building around education and urban agriculture, and the library. Thus, it was though as an educational route, making possible to destinate the crops area and the set green houses to this ambit. Lastly, in the south, due to its characteristics, which make the area

wider, it is set a more natural path with a big productive, where it is present much more communitarian crops that can be shared among people, and can have a higher production. It can be said that crops get wider in the periphery and smaller in the center, for space reasons.

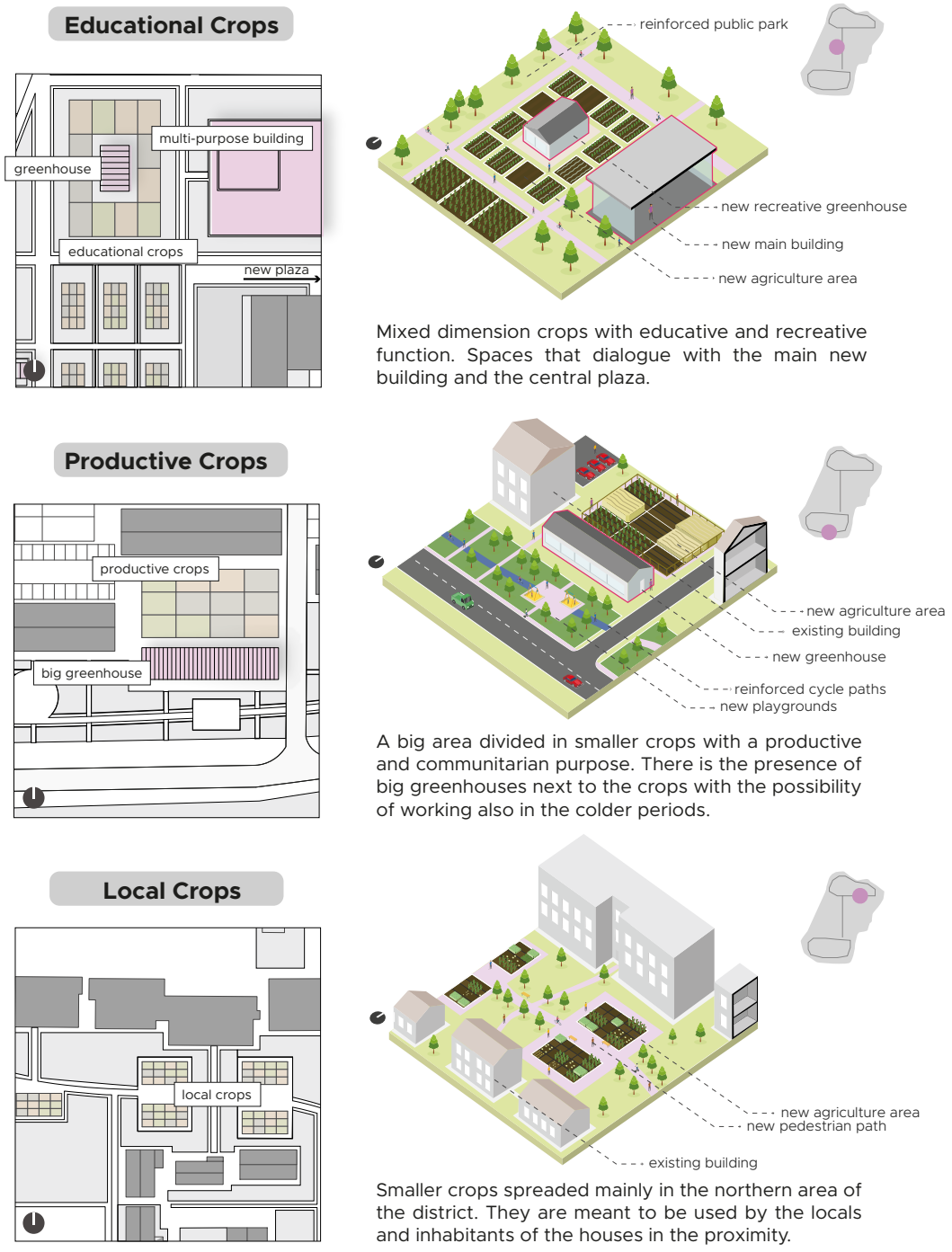


Figure 168: Cultivation Areas.

Taking the opportunity of the development of these paths, the pedestrian system gets enhanced, creating hierarchized path with solid

connections to the other neighborhoods and the center, through the main streets and the inclusion of sidewalks. In particular, to Sell, in the south, is set more than 8 single paths that allow a direct connection of both neighborhoods. And, to Nedra Breidholt, in the west, it is prioritized three paths, in which one takes users to the center of Efra-Breidholt.

Figure 169: Pedestrian Paths.

Before

After

Figure 170: New Condition of Pedestrian Path to Nedra Breidholt in Berg.

Before

After

Figure 171: New Condition of Pedestrian Path in southern area of Fell.

Finally, taking the advantage of the underused spaces, it is set some reforestation areas, that will help to protect the neighborhood form the wind, and also contribute to the general problematic in Iceland of lost of nature. This is proposed in addition to the several strips of trees that have been proposed for the main streets.

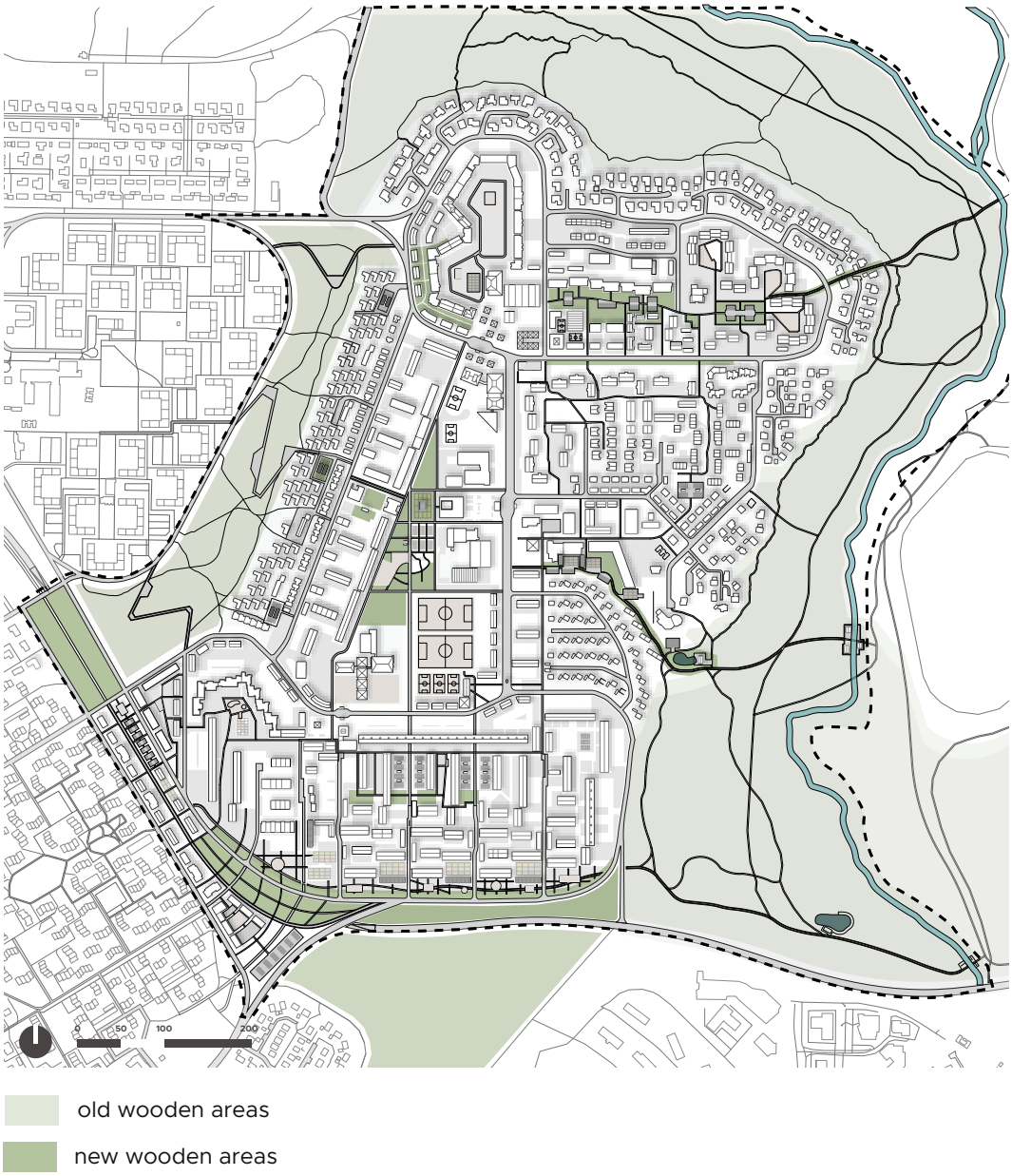


Figure 172: Reforestation.

Streets and Transportation

After setting the new connections between neighborhoods and breaking in some way the existing “loops”, at this scale it is changed the

physical condition of Austurberg, Sudurholar and Nordurfell, to potentiate the pedestrian use and give them the importance that they require, make them more usable and distinguishable.

The section of Austurberg is completely redone, adding sidewalks on its sides, a row for nature and some spaces for outdoor activities between the street and the front area of commerce shops, enhancing the be-called life in between buildings concept. The section for car usage remains the same, but is divided in more traffic lanes to give one dedicated for the BRT (Borgoline), keeping its importance. The result is a hierarchized street similar to what is called a boulevard. Working in these aspects and adding buildings immediately next to the street help to change its physical conditions, developing a new smaller scale that give the sense of safeness (Figure 153).

Figure 173: Austurberg General Section.

Figure 174: Sudurholar General Section.

Figure 175: Nordurfell General Section (East Side).

For Sudurholar and Nordurfell, the intervention is less complex, simply adding the proper sidewalks on its side and reinforcing its character with the presence of nodal points (Figure 155 and 158).

Finally, the mobilization is improved with the implementation of new bus stops in the nodal points and a route that goes through all the neighborhood centers in Breidholt, and that may have a frequency of less that one hour, so people use it, instead of using private motorization.

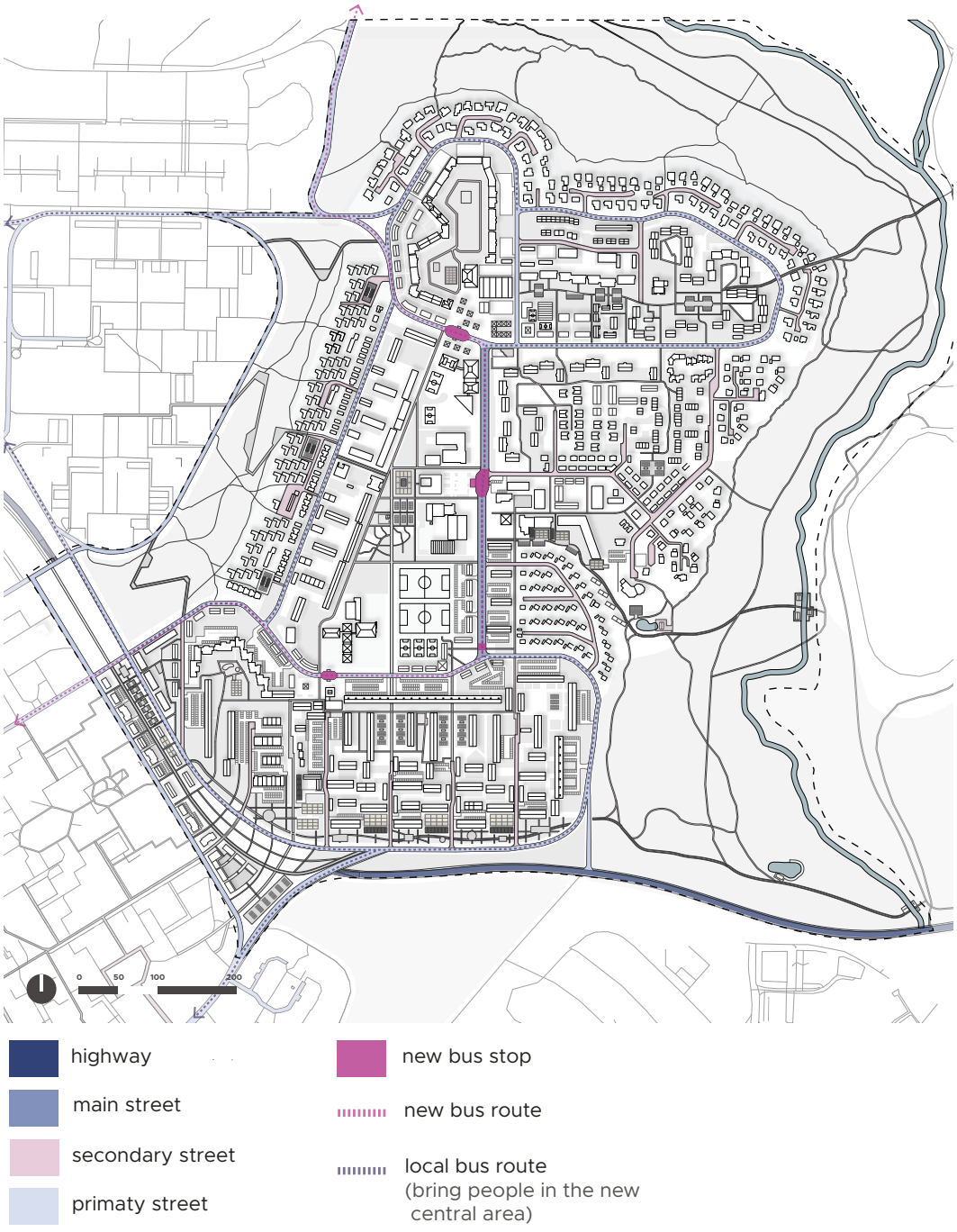


Figure 176: Transportation System.

New Public Spaces

Public spaces in general reutilizes empty plots, buffer zones and parking lots. They all consider the concepts studied before as life in between buildings, human scale, local heritage and so on, making them a unique piece to improve the spatial identity of Efra-Breidholt.

In addition, in order to be able to work in winter and summer seasons, they all work in relation with the immediate surrounding buildings, incorporating the possibility to have interior and exterior activities. For example, in Holar and Fell, spaces are activated through the commerce; and in Berg, the main square is activated with a new building, whereby mixed functions, place educational, commercial and cultural activities related to the nature and urban agriculture. Indeed, this building can be considered as representative iconic building for Efra-Breidholt, not because of its possible future architectonic shape, that later can be proposed, but for its position and more important its concept with its functions, that summarize what the neighborhood concentrates on its interior.

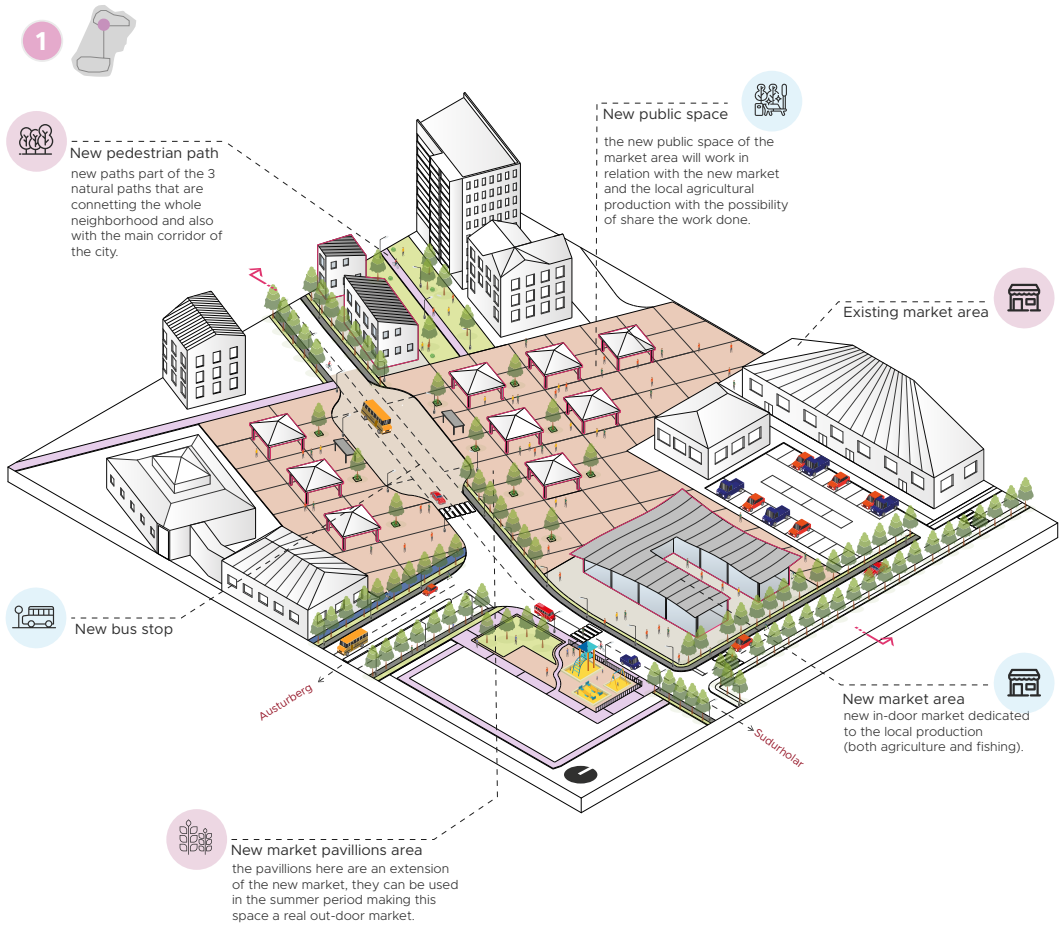


Figure 177: Holar Node General Axonometric View.

Figure 178: Holar Node General Section.

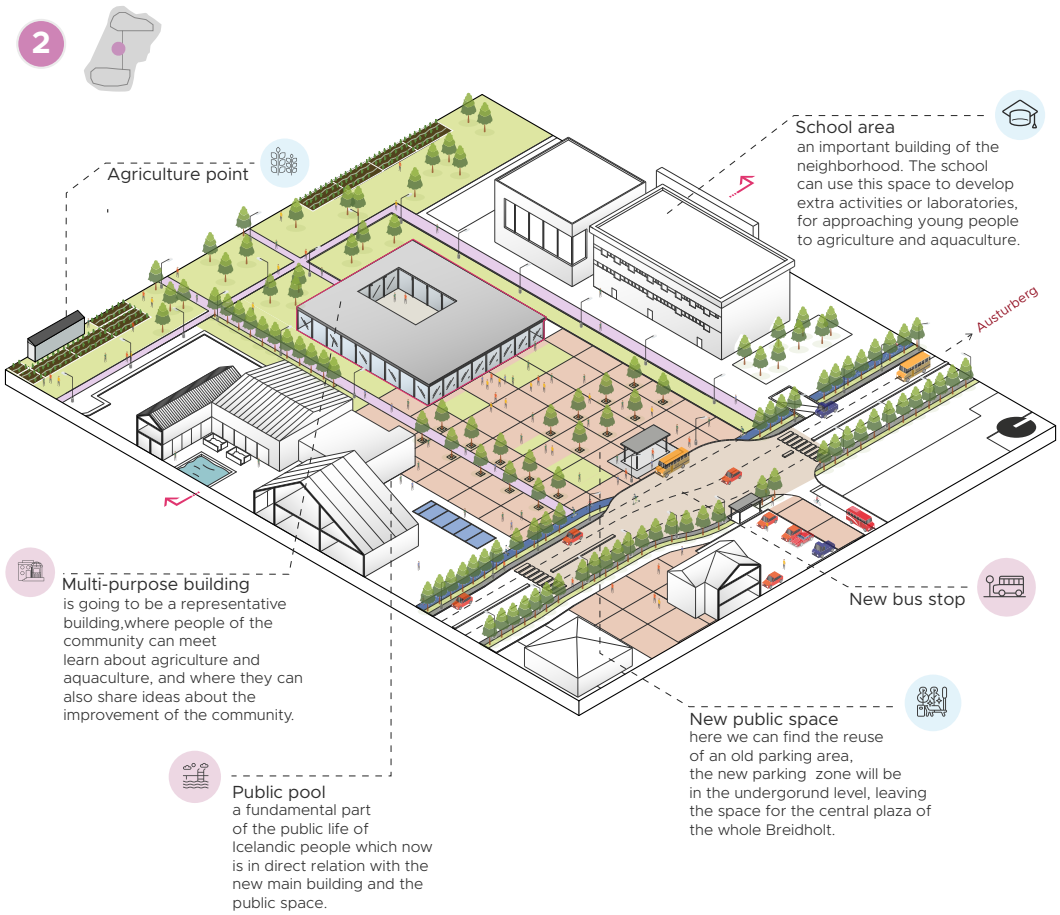


Figure 179: Central Node General Axonometric View (Austurberg).

Figure 180: Central Node General Section (Austurberg).

Before

After

Figure 181: Austurberg Street View (West Side).

Other interventions around public spaces that were developed followed users' suggestions got by the surveys, as the inclusion of a soccer field in the inner space between buildings in the west side of Holar, the incorporation of playgrounds all around neighborhood or the addition of elements that facilitate the accessibility for users as ramps, raised platforms and a lighting system.

Basically, all the new generated public spaces, with the mentioned elements and the applied strategies, have been changed. It has been added new activities on each one, as the outdoor market, playgrounds, leisure paths, which are part of the "secondary activities" that help people to

interact and remain for longer periods outside, changing the condition of transitional spaces.

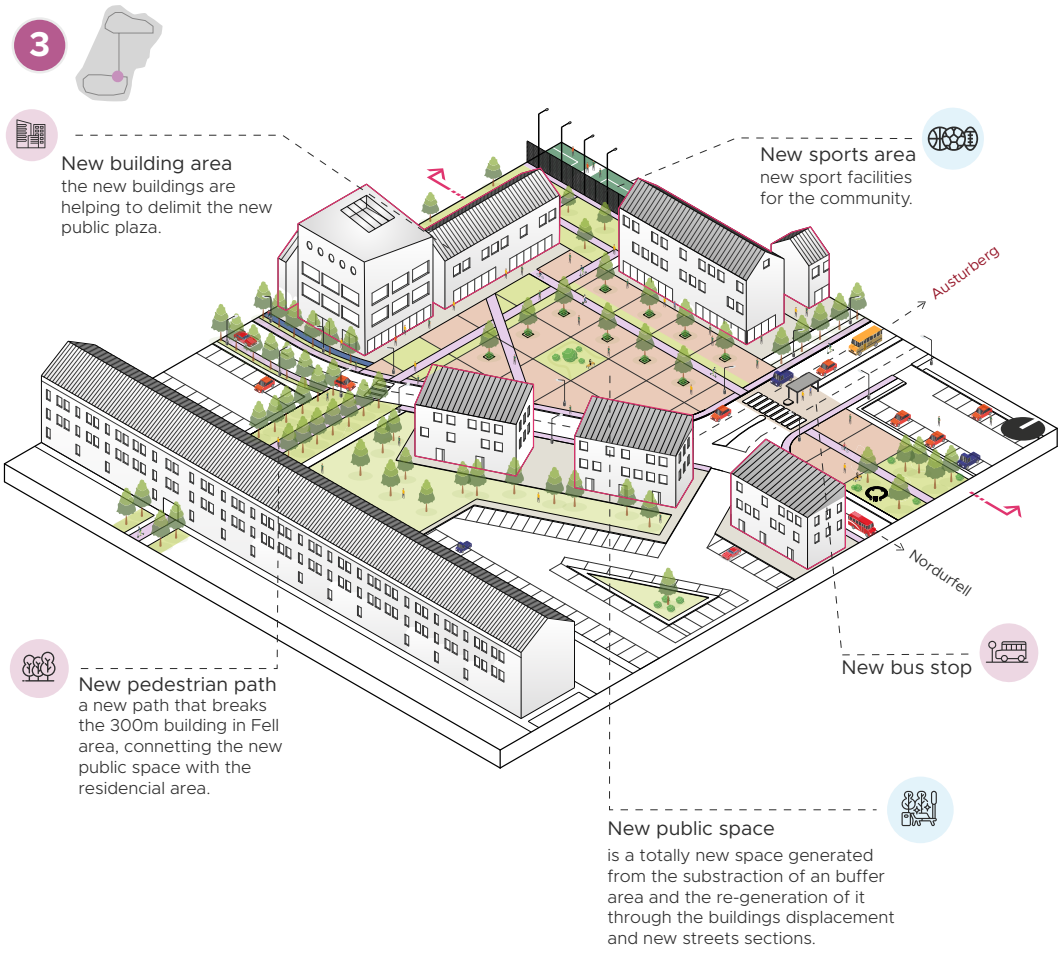


Figure 182: Fell Node General Axonometric View (East Side).

Figure 183: Austurberg General Section (South Side).

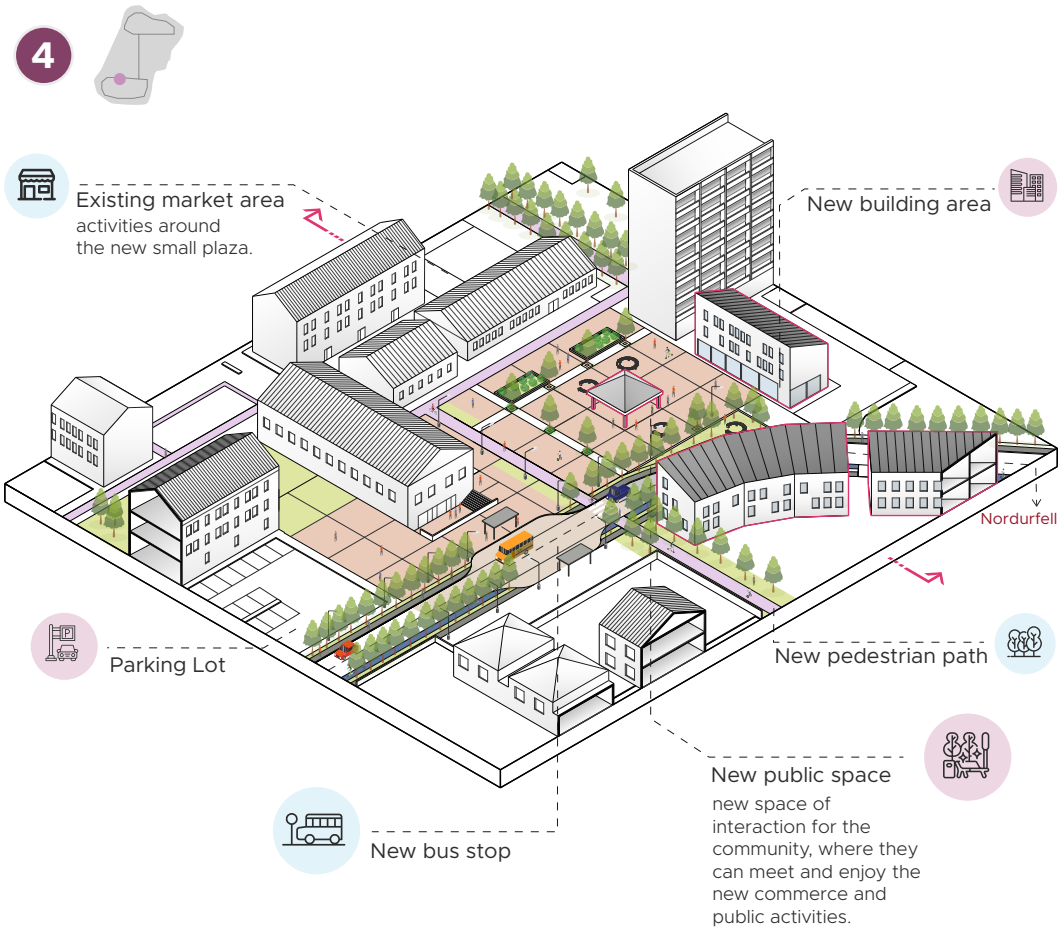


Figure 184: Fell Node General Axonometric View (West Side).

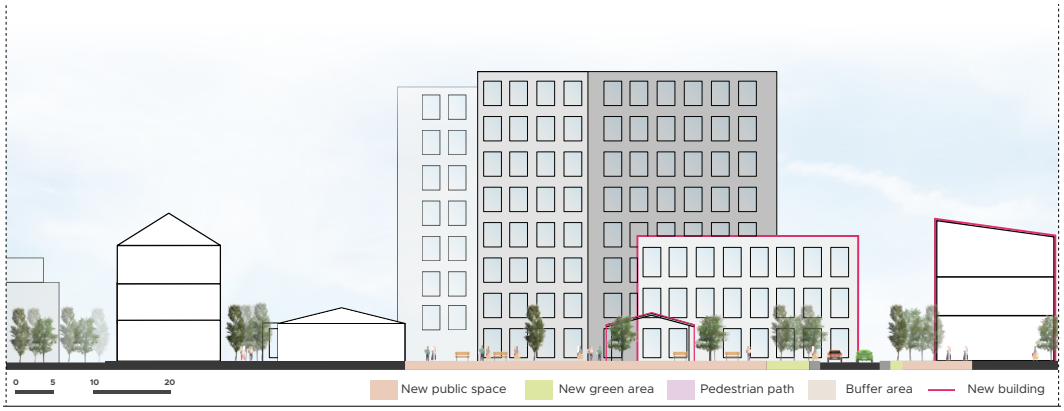
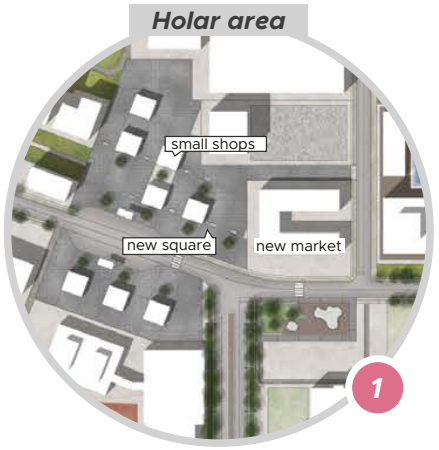
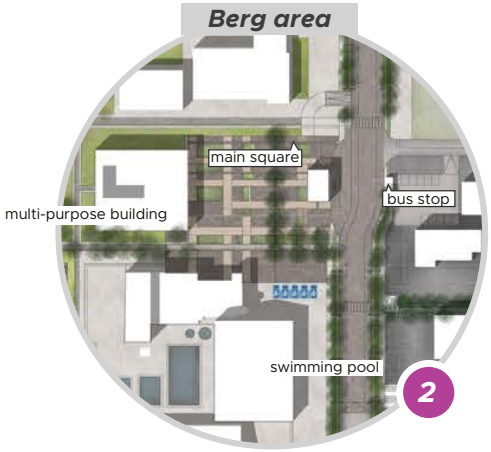


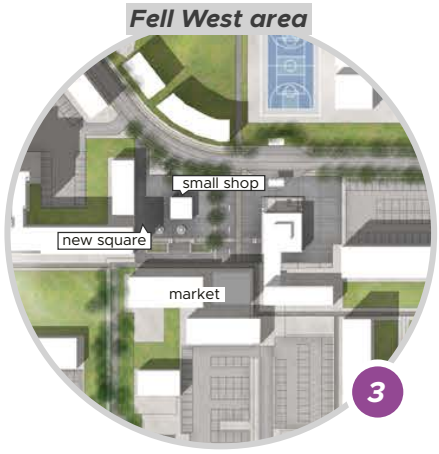
Figure 185: Nordurfell General Section (West Side).

Figure 186: Efra-Breidholt Proposal.


Ellidaa
0
50
100
200


Holar area
small shops
new square
new market
1


Berg area
main square
bus stop
multi-purpose building
swimming pool
2


Fell West area
small shop
new square
market
3

CONCLUSION

As it was learned before spatial identity deals with a complex relationship between natural, morphological, socio-economic and, cultural characteristics that make possible to individuals the acquisition of a sense of belonging to the geographical space. Its concept can be divided in three components: meaning, activities and the physical form, which are the key elements in this research process. Therefore, this thesis aimed to understand how urban scale design strategies, besides improving the public open space, influence on the construction of spatial identity and therefore, influence on the development of the social life.

On the base of the urban projects analyzed, as Urridaholt masterplan in Iceland or Orestad in Denmark, and the books read, were the benefits of concepts as densification, human-scale incorporation, life in between buildings were studied, it was possible to recognize different urban strategies that directly influence the improvement of the spatial identity.

After analyzing the site, it was clear for the investigation that the problematic of Efra-Breidholt around spatial identity it was not only in the neighborhood, but also in a larger scale which arrives to the whole city. A disconnection with the nature, the lack of public spaces, activities and density; and a city and neighborhood developed around the car, were s,ome of the most important problems found. With the information compiled about the project to be developed in Efra-Breidholt, it was evaluated the possible use of the studied urban strategies.

Examining the information, the research part converted into a list of strategies divided in how they respond to each of the components of spatial identity, and how much they could impact to each one. Having as the most important for this case of study the use of the local heritage, people as a driver for identity and mixed-use development. For our research, the most important element taken to potentiate the topic was the nature, which was an intrinsic characteristic of the area that could easily interact with the meaning, activity, and form of Efra-Breidholt. It was possible to understand, that the relation generated through this methodology, is unique for each case of study, since the prioritization of the strategies is based in the different strengths, weaknesses, opportunities, and threats of each case.

As it is argued elsewhere, it is found that working around the intangible elements of the locality, directly influence in the “meaning” of spatial identity, making hard to improve it without the use of them. In Efra-Breidholt the use of the nature and the underlay topic of urban agriculture influenced directly in the physical shape that the neighborhood adopted and the activities that emerged to activate the public space, simplifying the decision making.

At the same time, given the complexity of the urban space and its connection with the surroundings and the city as itself, it can be concluded that a different scale analysis was required to be get enough bases to propose integral solutions that follow the same path. Departing from the city scale, it was possible to simplify the acquirement of conceptual guidelines

that later, in the neighborhood interventions, will not allow the physical design to be generic.

For our case of study, at the city scale, it was set as main proposals the densification of the peripheral neighborhoods of the east side of the city where our case study is placed, and the reincorporation of the nature to the city center through the generation of a green corridor that activate several unused public spaces and propose Efra-Breidholt as a gate to the natural areas. Later in the large-scale proposal, it is reconnected the neighborhood with its immediate surroundings, and placed the further development areas according to its use, having mixed use zones with housing, commerce, business and public spaces as parks, squares and specific areas for agriculture. Finally, at the neighborhood scale, following a linear process, they were potentiated four nodal points with the inclusion of public space, mixed-use areas and the enhancements of them through the design; and, at the same time, it was proposed three natural paths that connected the neighborhood to the natural surroundings areas and facilitated the development of urban agriculture.

Based on these results a further proposal in the same neighborhood can contemplate a more in detail exploration in each topic to be implemented, as it can be, the study of the numbers around how many commerce units should be implemented, an exhaustive isolation analysis to get better conditions on the public space or how the reforestation plan should be carried out. It also could be added a development of the intervention in phases, so short-term objectives can be set and results can be analyzed, measured and improved for further stages, having also in mind that people's reaction with time is fundamental to understand if the sense of belonging to a place was improved. This process can be also applicable to other projects.

Nevertheless, the research, with the case of study of Efra-Breidholt and the studies done before was able to detect the importance of the recognition of the uniqueness of a place with its opportunities and weaknesses, and set a group of particular proposals that may be able to guide a neighborhood into a memorable place with a sustainable pedestrian friendly environment. Therefore, a possible methodology to be followed in the search of spatial identity has been established.

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Reynisfjara - Black Sand Beach
Iceland, 2022

Efra-Breidholt

A New Spatial Identity

People, places, cities, public spaces and so on are all closely related. Each and everyone have particular characteristics that allow them to differentiate from each other, thus developing a type of identity. An element that cannot be missing in urban development, and that undoubtedly has to be explored in order to propose proper solutions to the different types of public spaces.

Efra-Breidholt: A New Spatial Identity, explores the characteristics of an Icelandic suburb, and proposes a possible methodology to follow to rediscover the spatial identity of its inhabitants, expecting to be used in the future for other cases of study.