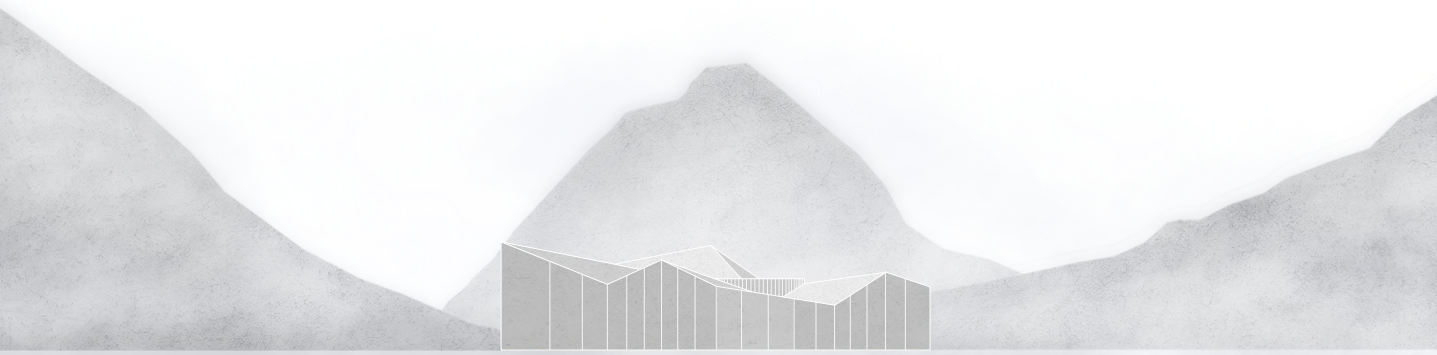

KLAKSVÍKAR BÓKASAVN

STRENGTHENING COMMUNITY, KNOWLEGDE & INNOVATION

TITLE PAGE

TITTULBLAÐ

AALBORG UNIVERSITY

ARCHITECTURE & DESIGN

MSc04 ARC

PROJECT TITLE	KLAKSVÍKAR BÓKASAVN
PROJECT GROUP	13
MAIN SUPERVISER	MARIE FRIER HVEJSEL
TECHNICAL SUPERVISER	CLAUS TOPP
PROJECT PERIOD	FEBRUARY 2ND - MAY 28TH
NUMBER OF PAGES	197

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ABSTRACT

SAMANDRÁTTUR

This Master's Thesis presents the design of a new library in the small community, Klaksvík, on the Faroe Islands as the final project of the master's programme of Architecture and Design at Aalborg University. The project takes a point of departure in Henning Larsen Architects' masterplan for a new city centre, which focusses on bringing the community closer together through cultural functions. Though not an integrated part of these plans, the proposal takes its basis in the need for a new and bigger library, which can both contribute to strengthening the sense of community and drive the development towards a sustainable way of life. These ideas are deeply rooted in the traditional culture of the islands, and so, the design of the library seeks to explore how a degrowth mindset can be implemented to strengthen the Faroese culture in a sustainable manner. Thus, the design focuses on gathering people around knowledge and knowledge sharing and encourages visitors to become inspired and innovate through a conscious design of the relation between social and contemplative spaces.

READING GUIDE

LESI LEIÐBEINING

This booklet is divided into five sections: the Introduction, the Programme, the Design Process, the Presentation and finally the Conclusion and Reflection. Through the Introduction and Programme, the basis of the project is described through methodologies, theories and analyses, where important aspects of the project are studied to further the understanding on the project topic and define the framework for the further design. These findings are developed architecturally in the following Design Process, which presents the steps taken on the way to reach the final proposal, first through the Sketching Phase and then through the Synthesis Phase, where the chosen concept is developed and detailed. Finally, the resulting design is presented and evaluated based on the vision of the project.

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1.0

INTRODUCTION

INNGANGUR

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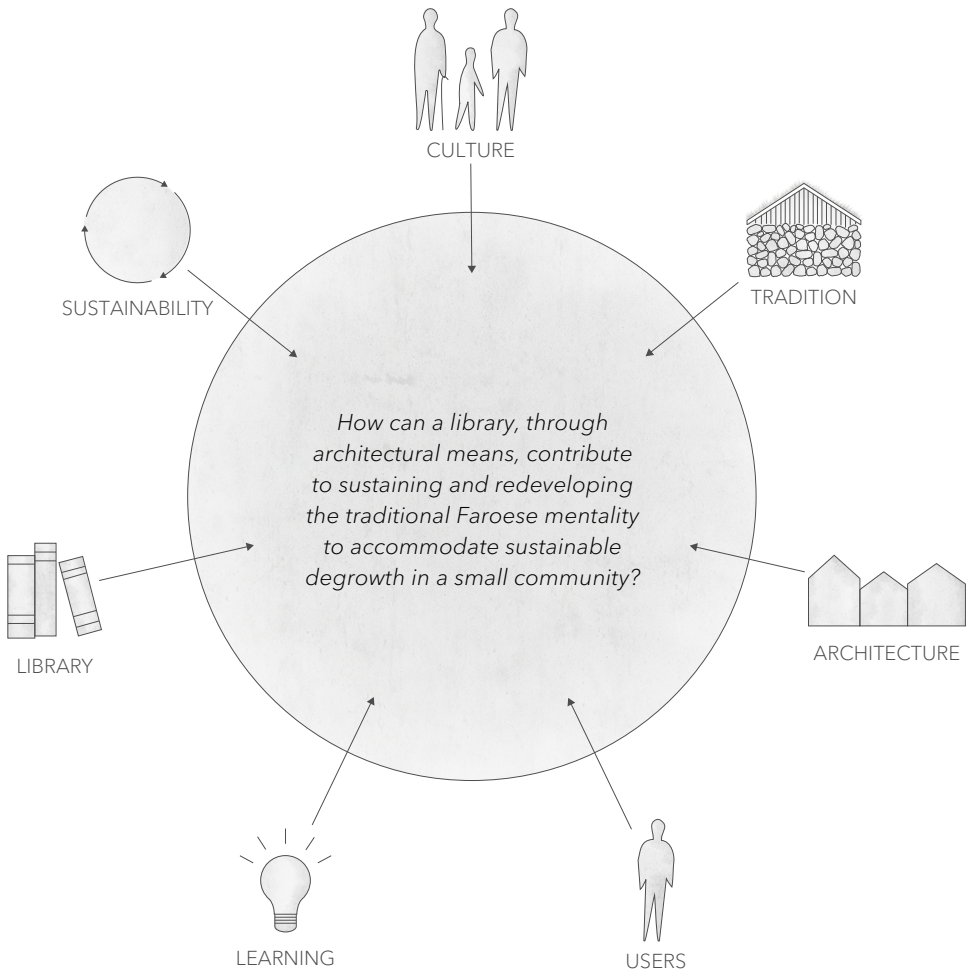
TILEGGJAN

In a time where everything is fast-paced, and where information and impressions are available anywhere and at any time, our society needs a reliable and nuanced place of knowledge and inspiration. Though the library is often seen as an outdated public service with the growing focus on technological advancements, many are, however, thriving more than ever. Several contemporary libraries have exemplified that they are much more than a collection of books. The library is a cultural meeting point available to all – a place to collect and share knowledge, to contemplate alone and socialise across cultures, as it provides the only fully accessible and public place for general education. It has potentials of taking root in the literary traditions, while still embracing innovation and multiplicity and thus has the potential of becoming a catalyst for the social development of society.

We have taken our point of departure in the Faroese village, Klaksvík, because of the potential effects of a library located in a small community. Having been an isolated society for centuries, a distinct Faroese culture has developed. They are proud of their history, nature and community, and while the Islands have undergone a large transformation into a modern well-fare society, their rootedness in tradition and cultural history is still intact. This is also evident in Klaksvík, a proud fishery village, which has grown sporadically due to the boom of the fishing industry. This has left the village without a well-functioning city centre, which a new masterplan seeks to rectify. In the plans for creating a new cultural city centre we see great potential in incorporating a library which can act as a catalyst for the local community and its culture to develop further.

In this unity of the library and the cultural mentality of the Faroe Islands we see an opportunity to create a synergy between the two, which can help promote knowledge and knowledge sharing in a sustainable manner throughout society. This brings light to the term '*degrowth*', which is a societal position that focusses on c*are, solidarity and cooperation*, by focussing on human and environmental well-being. This notion can assist in driving the sustainable development and through this, also strengthen the traditional Faroese mentality and culture. The following programme will thus focus on discovering how these aspects can translate the idea of degrowth into something architectural through the design of a library on the Faroe Islands.



ILLU. 1. ASPECTS CONCERNING THE FUTURE LIBRARY IN KLAKSVÍK

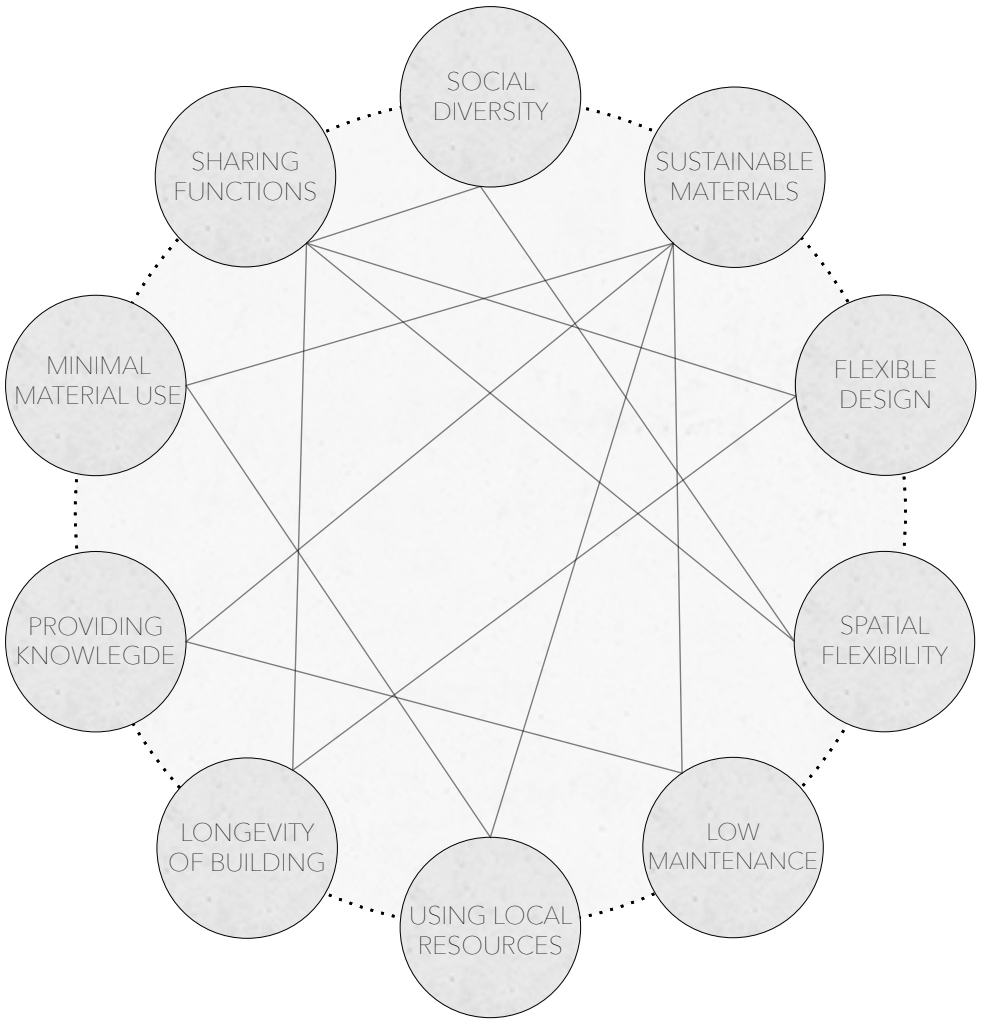
SUSTAINABILITY

BURÐARDYGD

With the aim of implementing the degrowth mentality in the library a sustainable approach to the design is vital. As sustainability seeks to create the best possible conditions for both the environment, the economy and for people now and in the future, it must be a vital part of the thoughts behind the library, as it should create value for many years to come. With the focus of degrowth in the project, sustainability must become a driver for the project and thus an understanding of the different aspects of sustainability, and how they influence each other, are required in order to establish how we can use them to create value in the design of this library. Additionally, looking at how the aspects of sustainability are naturally evident in the Faroese culture and mentality will allow the library's implementation of sustainability to happen in respect with their culture.

The 'Brundtland Report' of 1987 was first to divide sustainability into tree aspects when it articulated 'sustainable development' as linking social and economic development with environmental protection. At this point the world was beginning to notice the negative effect of the growing industrialisation in pursuit of endless prosperity, where critical factors were the worsening hunger and poverty, deteriorations of ecosystems and illiteracy. In the declaration, the UN made detailed descriptions of how to secure the living standards of those in need, protect the eco systems and give a prosperous future to all [United Nations, 1987].
Even with these goals being defined, the report still lacks an indication of the coexistence and interrelation of the three overall aspects. This lack of operational framework within the definition of sustainable development has led to the concept still being largely rooted in theory, where the interrelation of the three tends to be forgotten [Purvis, Mao and Robinson, 2019]. Many have tried to make the overall idea of sustainability measurable, to make it quantifiable and something we can work with and towards. Unfortunately, these tries have ended up either not working, or worse still, ended up measuring the things that could be measured, and not those which should be measured [Bell and Morse, 2012].

This dilemma becomes evident when looking at the ways we try to measure the sustainability of our buildings through different certification-systems. The DGNB-system, which is a well-known and used certification, is an objective assessment of the sustainability of buildings and urban districts. This divides the overall sustainability into 5



ILLU. 2. CONNECTIONS BETWEEN SUSTAINABLE INITIATIVES

criteria; the environmental, economic, socio-cultural and functional, the technical and the process quality, with more measurable factors under each of these. It relies on the environmental impact, life cycle assessment and cost, fire safety, deconstruction and disassembly, and in the social aspect, it measures thermal comfort, air quality, visual comfort, as well as user control, outside spaces and accessibility [Green Building Council Denmark, 2016].

DGNB, thus, measures sustainability on aspects that can be measured, but are these the aspects which drive the original idea of sustainability? Is our social welfare reliant mostly on factors like the temperature and the air around us, in the light streaming through the windows, and the fact that we can open and close a window as we wish? When placing these measurable aspects into Maslow's Hierarchy of Needs [1943], we only just reach the second tier, and thus only cover the basic needs of people. It is important, that while immeasurable, we still consider the rest of Maslow's tiers - that we consider the psychological needs of people as well. It is vital for our future, that we build on the local environments, and secure cultural traditions within both large and small communities, and ensure diversity, both of people and functions. While it is difficult to define the interrelation and coexistence of the three pillars of sustainability, we need to understand that neither of them will be possible without the others. We will never be able to secure the environmental sustainability without people to drive innovation and motivation and will never be able to do it without economic means.

With this project, we will strive to approach the aspects of sustainability through the library, with its focus on the gathering and sharing of knowledge, dialogue and education. This notion of knowledge and knowledge sharing will become the driver for sustainable initiatives within the library, where the project will seek to merge the tripartition of sustainability. Thus, the choices made in the design of the library should consider all three aspects and aim to drive the sustainable development of the community. As shown on ILLU. 2, this can become evident in the in design of the library by ensuring a flexibility in the use of the building, both now and in the future, which will lessen the economic and environmental burden, as well as ensuring social interaction and diversity.

Considering the idea of degrowth, the library has the potential of becoming a catalyst for the education of sustainable solutions and visions, both socially, environmentally, and economically, which can impact the local community. This suggests more of a focus on the social aspect of sustainability which can help foster the environmental protection and respect, as seen in the notion of degrowth and in the culture of the Faroe Islands.

DEGROWTH

MÓTVØKSTUR

Considering the tripartition of sustainability, it is evident that a societal focus on creating economic growth has had serious consequences for environmental and social health, with ecosystems being threatened, animals growing extinct due to mass-hunting for profit, and massive inequality amongst people around the world. The concept of degrowth intends to equalise the three aspects of sustainability by presenting the idea that our economic development should not be at the cost of our well-being or our planet, but instead a rewiring of society should create a focus on increasing the human well-being and enhancing our ecological conditions. Instead of finding fulfilment in material and economic dimensions, we should find fulfilment in *care, solidarity and cooperation*. In this way communities can aim towards downscaling production and consumption of resources to what we need for our survival and well-being. [Paulson, 2017]

Due to many years of isolation, the aspect of degrowth is very evident in Faroese culture. It lies in the unconscious way their culture and traditions have shaped a community with mutual aid, reciprocity, collaboration and inclusivity as dominating traits in their way of life [Ibid.]. Traditional activities like pilot whaling, cattle pasturing, sheep-rearing, knitting and subsistence agriculture are thus still a part of their everyday lives and continue to act as their rebellion against the industrialising forces of the outside world. These activities are not done for commercial value, but rather for a personal supply of resources, made within a community for the people of the community. This can be seen in the way they utilise available resources as well as how the community engages in the participation of gathering resources and how certain resources are distributed to the entire community independent of participation or any monetary system. [Bogadottír & Olsen, 2017]

As the degrowth mindset is already embedded in the Faroese culture, the notion of industrial economy co-existing with the traditional mentality leaves a contrast, as it has formed a dependency on resources from the outside world [Bogadottír & Olsen, 2017]. Although complete independence may prove impossible, the commitment to maintain natural and traditional qualities can encourage innovation on local and sustainable terms. With the social and cultural setting already established, the Faroe Islands are a unique place to experiment with retrieving the degrowth mentality. Here, a library could serve as the physical framework to foster thoughts and behaviours towards a more sustainable community. The library can thus work as a place to reconnect the community more closely and provide the knowledge required for them to continue innovation with the final intent of becoming more self-sustaining and aware of resources. However, as these values of engaging people to participate and contribute to the community and to sustain a healthy environment and economy are merely ideological for the time being, we need a methodology for translating them into architectural means that can be used in the future library.

METHODOLOGY

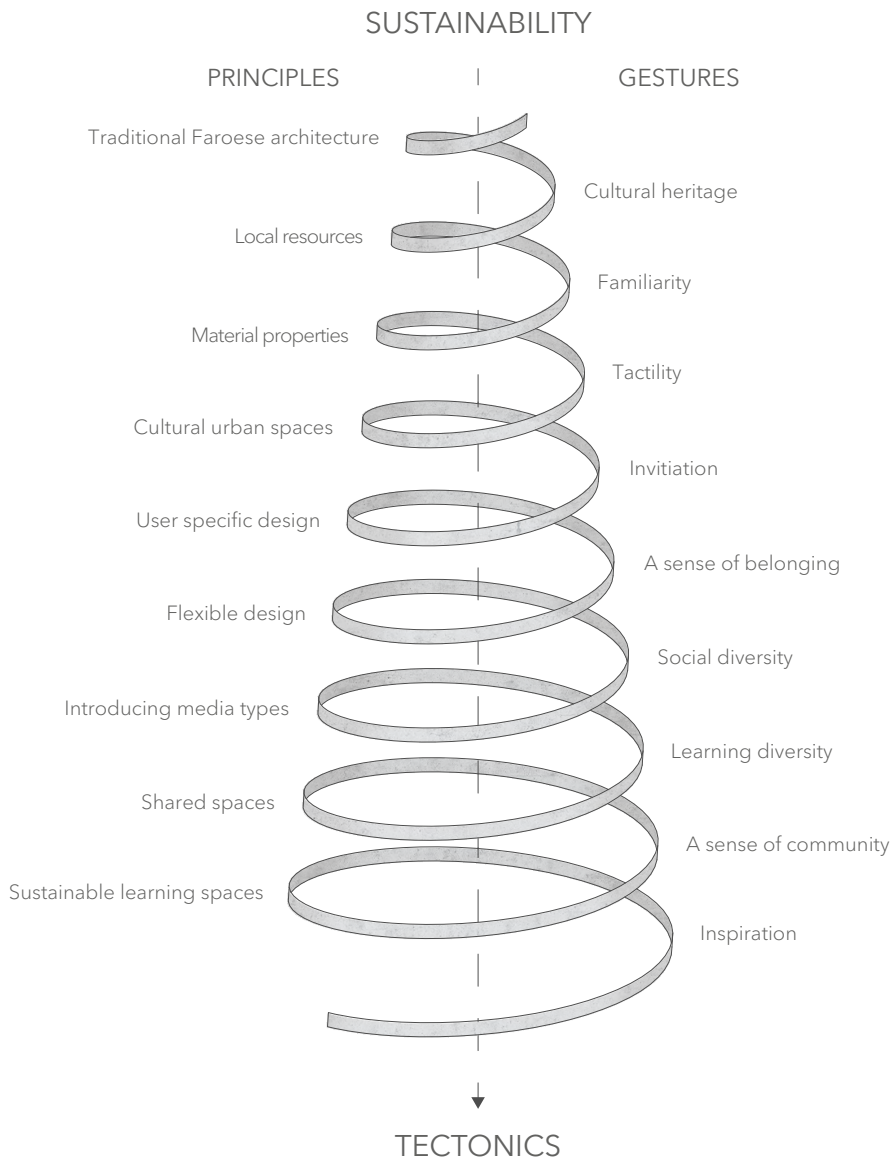
VÍSINDARLIG MANNAGOGD

The notion of strengthening the degrowth mentality in the small community with the library as means, requires a methodology for the process of translating socially, environmentally and economically sustainable initiatives into a meaningful and lasting architectural experience. Such integration of sustainable values should aim to make them a part of the inherent experience of the library by encouraging personal enlightenment, knowledge sharing and innovation on sustainable terms.

As an approach to integrate the notion of sustainability into the architectural experience of spaces, we will take a stance based in tectonic theory, which provides an approach for bringing aesthetics and technique together in a holistic architectural experience through the translation of the physical surroundings into experience through form, scale, tactility, and acoustics [Pallasmaa, 2012, p. 69]. With a basis in the substantial framework of abstract tectonic theory, Marie Frier Hvejsel has proposed an applicable method of working with tectonics in architectural design. Through the terms 'gestures' and 'principles' she outlines the importance of methodological and critical assessment in tectonic design in order to drive a meaningful development of architecture. With 'gesture' being the experienced quality of space, which explains what the space does, and 'principle' being the structural build-up of the spatial relation, which explains how it does it [Hvejsel, 2017], the relation between the two terms exemplify an awareness of how the architectural quality has been obtained. A tectonic approach to the construction of the library can thus provide a way of consciously working with the transformation of measurable principles into an unmeasurable spatial experience.

As the basis for the design we will through the initial programme explore the history and culture of the Faroe Islands and of the library in order to gain an understanding of how it relates to our notion of degrowth and sustainability, and thus how principles and gestures can be drawn from here. Furthermore, case studies, which we find to be rooted in the degrowth mentality, will provide knowledge of how they accomplish the social behaviour and thereby provide architectural principles for the design of the library. This will result in a vision of how the library and the community should be interwoven through sustainable measures.

In the following design process, we will use our knowledge as architectural engineers to experiment in the field between measurable and immeasurable aspects and thereby gain an awareness of how even small variations of principles can affect the formation of gestures. This will also entangle an understanding of how different aspects of the design affect each other, which should aim to impose a multidisciplinary integration of solutions. By continuously evaluating both the quantifiable and unquantifiable effects of different design solutions against the vision for the library, the resulting design shall through the holistic experience depict how the sustainable measures of degrowth have been achieved tectonically.



ILLU. 3. THE USE OF PRINCIPLES AND GESTURES TO TRANSFORM SUSTAINABLE MEASURES INTO ARCHITECTURAL EXPERIENCE

2.1

THE FAROE ISLANDS

FØROYAR

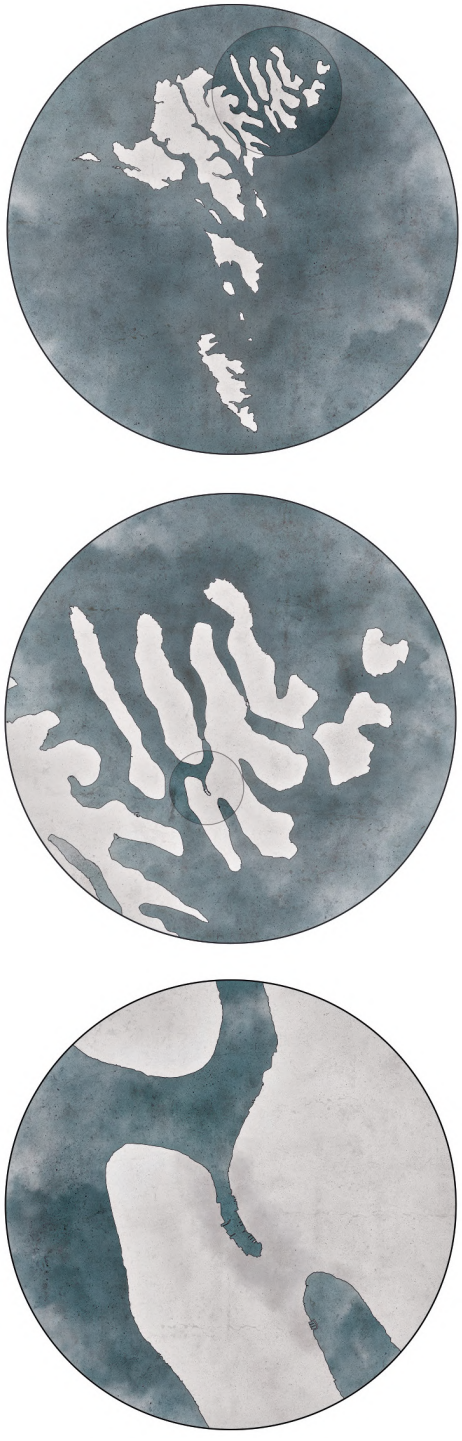
THE ISLANDS & THEIR CULTURE

OYGGJARNAR OG MENTAN TEIRRA

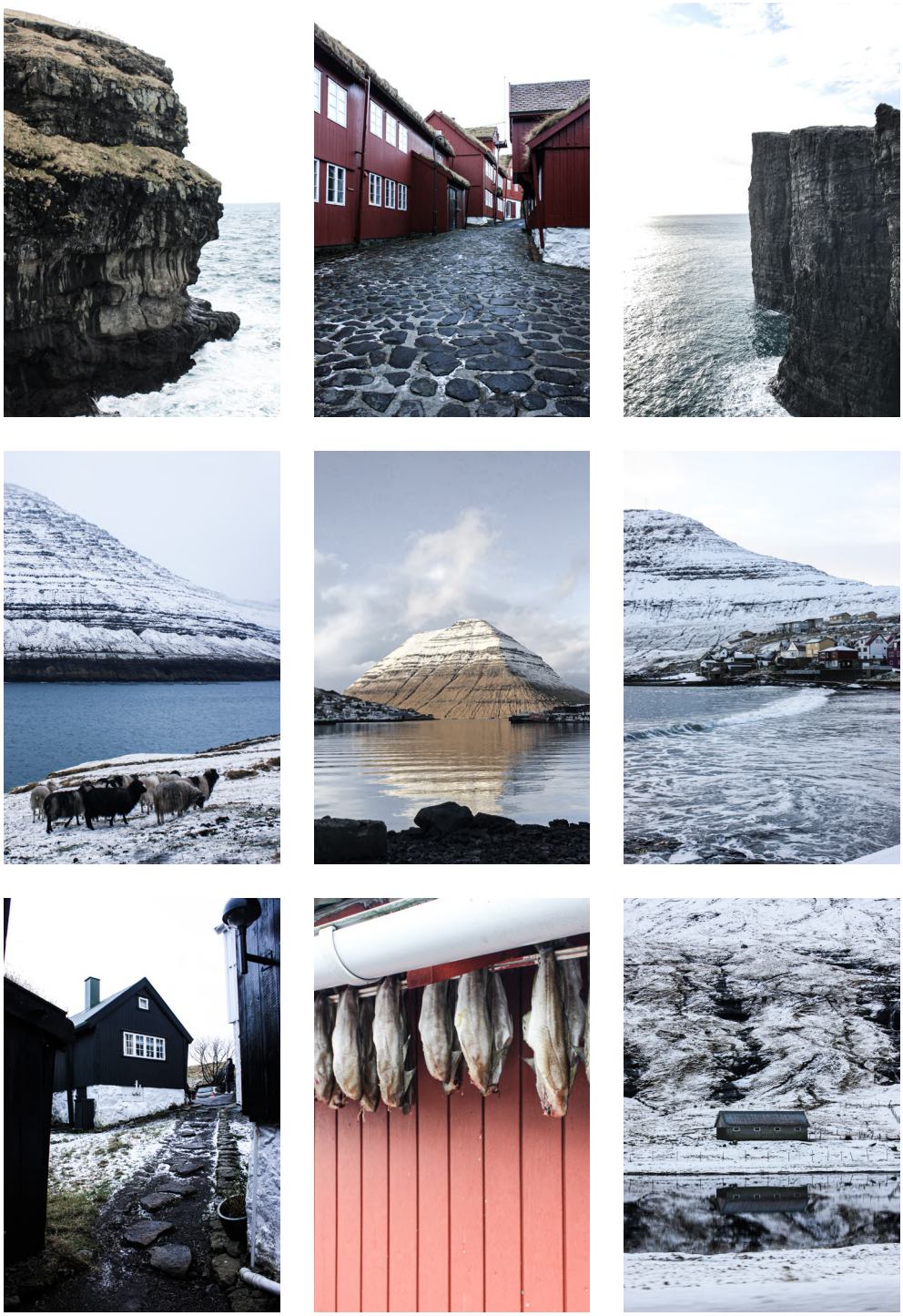
The Faroe Islands, located in the North East Atlantic Sea, consists of 18 islands, which were shaped by volcanic activity and glaciers of the ice age. This has created characteristic landscapes with large, grassy mountain slopes and almost perpendicular cliffs towards the sea. The islands were settled by Norsemen in the 800's, and the seclusion of the islands caused a dependency on utilising the resources available. This formed a respect for the powers and supply of nature, as people were forced to live in close connection to it. However, the connection with nature is still evident in the way they live today, and they are determined to keep their lands as a sacred and natural part of their culture, leaving large parts of the islands to remain untouched [Proctor, 2018]. Their focus on preserving nature is also evident in the way the country closes for tourists a single weekend each year to do maintenance and thereby ensure that buildings, attractions and nature stays as pristine and unspoiled as possible. This becomes an activity, where the Faroese community and international volunteers gather for the greater good of the country and for tourism [Ecott, 2019]. In this way, the strong connection with nature is not only an expression of how the Faroese mentality is environmentally sustainable, but also carries social traits.

The islands are characterised by a temperate island climate, and the weather can vary drastically over a short period of time. They lie within the stormiest part of the North Atlantic, which results in cloudy, wet and windy weather throughout the year. However, the temperature change throughout the year is mainly regulated by the proximity of the Gulf Stream, which causes steady temperatures, with an average of 11°C in the summer and 3 °C in the winter, and the highest recorded temperature being 22 °C [Proctor, 2018, pp. 3-4]. The unreliable and cold weather combined with the open landscape underlines the importance of buildings to provide shelter, which has helped to bring people closer together, and can continue doing so in the future.

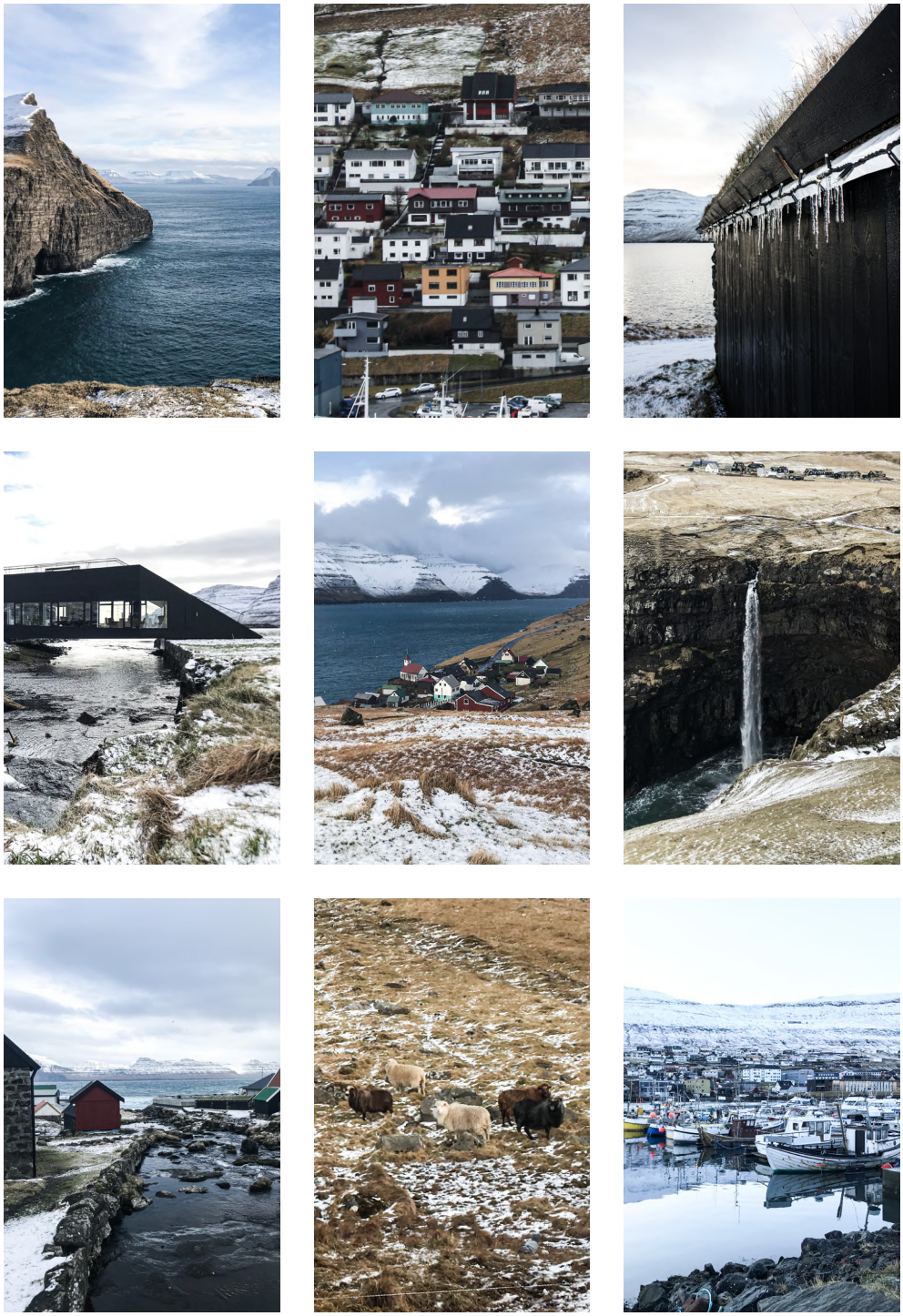
The many years of isolation combined with long indoor stays in small houses has caused a distinctive and rich culture, based on a strong vocal tradition of storytelling, ballads, poetry and singing, to form. This was for many years a way of sharing knowledge, and towards children it was a way of educating them in the local knowledge [Leonard, 2010]. However, as the islands eventually joined the industrial fisheries and became a part of the international trade, the days of isolation were over, and they have gradually become more industrial and internationally minded [Proctor, 2018.]. Thus, the unique traits of the Faroese degrowth mentality are starting to diminish, why it is important to know the tradition to be able to reembrace and reinterpret them architecturally through the library design.



ILLU. 4. LOCATION OF KLAKSVÍK ON THE FAROE ISLANDS



ILLU. 5. EXPERIENCES OF FAROESE NATURE AND CULTURE



ILLU. 6. EXPERIENCES OF FAROESE NATURE AND CULTURE

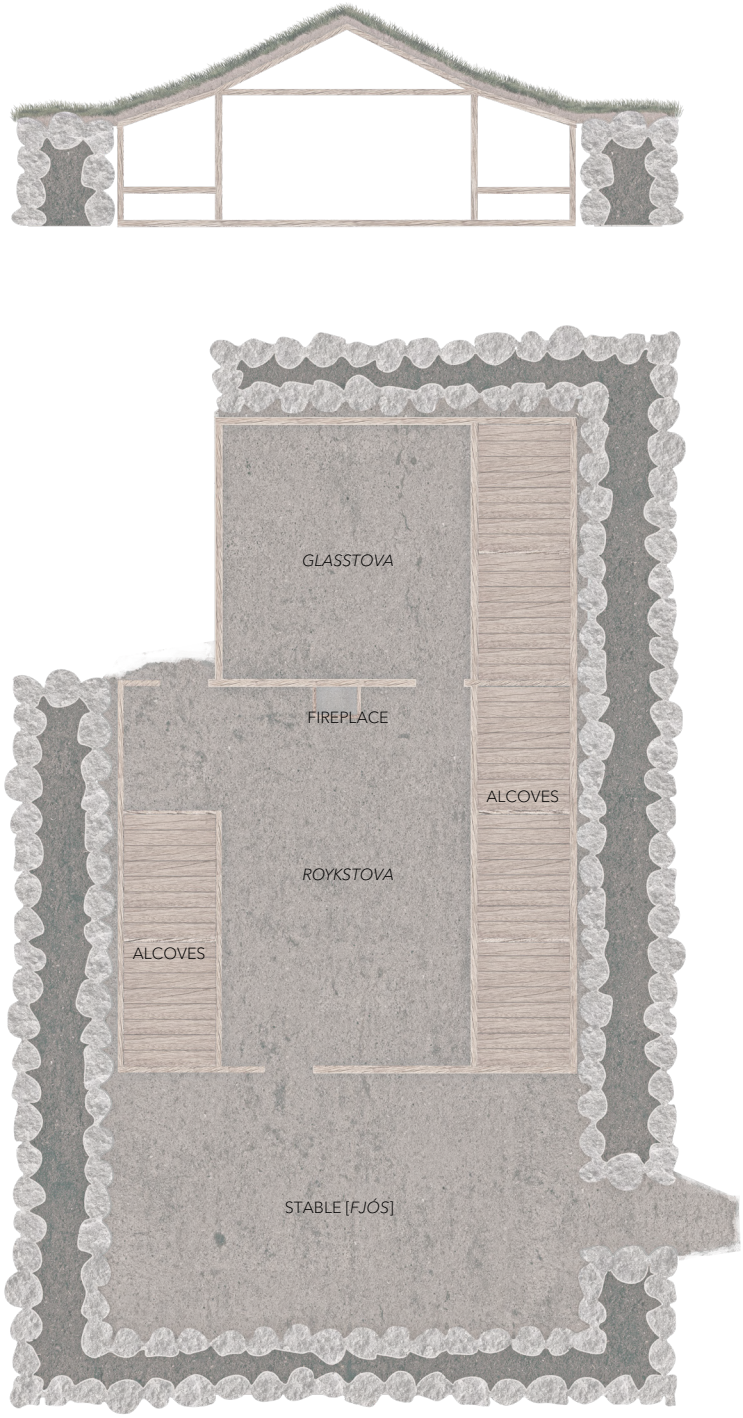
VERNACULAR ARCHITECTURE

STAÐBUNDIN BYGGILIST

Looking at vernacular Faroese architecture can give an insight into how the culture and climatic preconditions have shaped their building traditions. These are inevitably linked to both social and environmental aspects of degrowth, making them worth studying to investigate how they can be translated into a modern library through architectural means.

Traditionally, inhabitants were forced to use the materials available on the islands, thus imposing stone [*grót*], turf [*flag*] and driftwood [*viður*] as the main building materials. Walls were usually built of stone and sealed from the wind with turf, while a heavy grass roof made the houses appear like small hillocks in the landscape and helped weigh down the roofs to protect them from strong winds. Though wood was a scarce material, it started to become more frequently used for structural systems and wooden cladding to prevent soil from falling from the walls. However, it was customary to keep the wood in the interior to protect it from weathering [Stoklund, 1996, pp. 9-12]. The idea of utilising the natural materials based on the availability and their properties are inevitably still relevant today looking from a sustainable perspective. However, as the availability of driftwood is now almost non-existent, natural Faroese building materials are becoming less accessible. Instead, this indicates a dependency on resources from other countries [Rude, 2019], but it could also help to drive innovation and thereby form new building materials and techniques through non-traditional resources. The library could be a driver for such innovation – not only by implementing initiatives through the construction of the library but also by promoting such behaviours through its functions and facilities.

As shown on ILLU. 7, the first traditional Faroese houses consisted of a single room, a *roykstova*, which, thus, had the function of living room, workspace, kitchen and bedroom, where the beds were placed in alcoves in the walls. A fireplace was placed centrally in the house, where the smoke escaped through a hole in the ceiling, which also provided the only source of daylight. People spent the long, dark nights together spinning, knitting or singing in these spaces. In the wealthier houses, a more prestigious room, a *glasstova*, was later added, and was named so because it was often the only room in the house with a window. This room was typically used as the sleeping quarters, or for entertaining the guests [Ibid.]. The very simple spatial organisation can be said to symbolise the foundation of the strong Faroese sense of community, as it brought people together to focus on a collective activity. The organisation of the *roykstova* with a central space and peripheral alcoves can thus still prove relevant in a library, through an openness and central placement of social spaces to gather people around specific collective activities. Meanwhile, the smaller peripheral spaces can serve more contemplative functions, while still being close to social activities.



ILLU. 7. TRADITIONAL FAROESE BUILDING PRINCIPLE [INFORMATION FROM: STOKLUND, 1996]

KLAKSVÍK

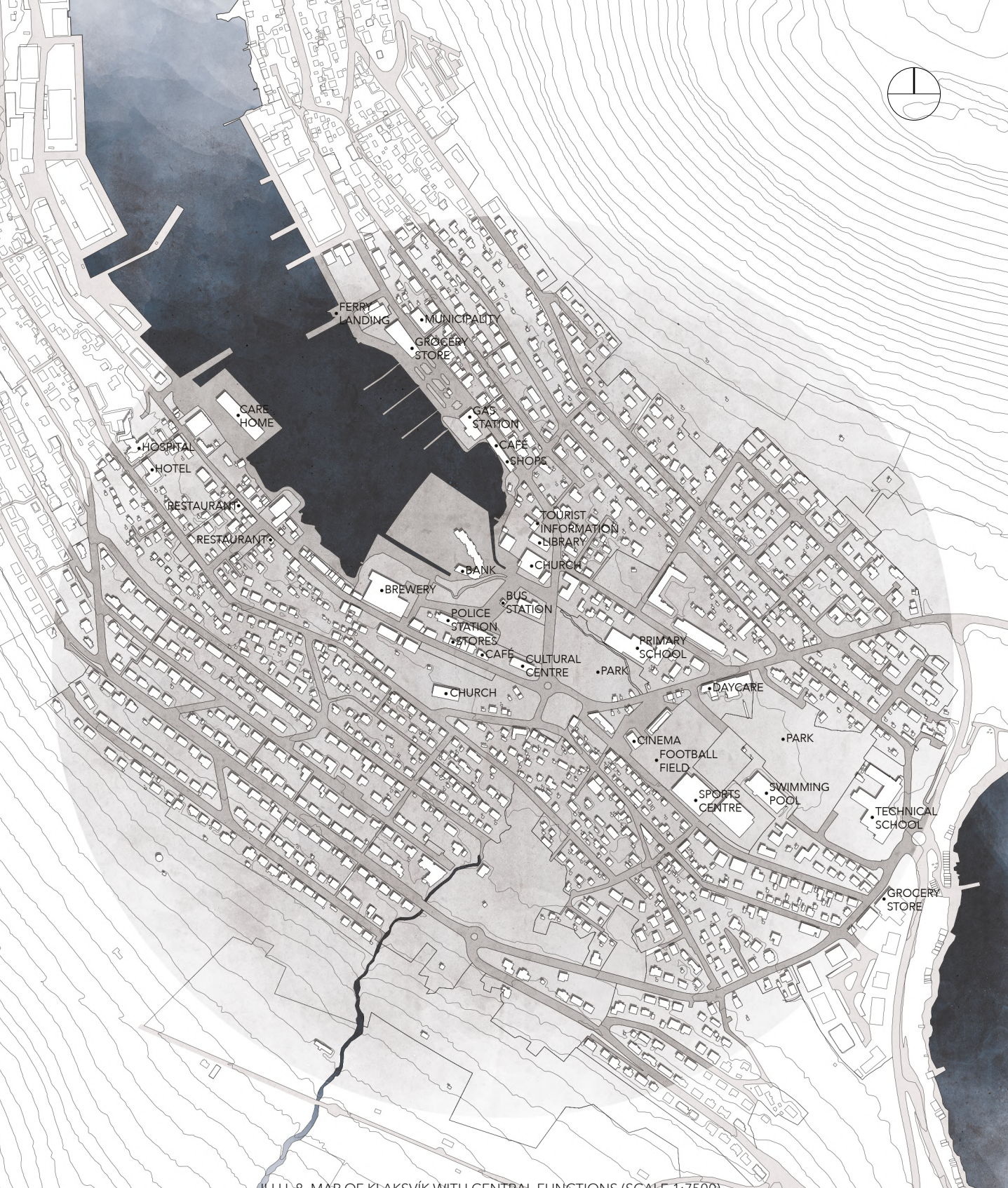
KLAKSVÍK

As a traditional fishery village, Klaksvík is bound in a history, which dates all the way back to the Viking age, where the northern isles were the home of the first settlers. Nestled in between two bays, the village lies at the foot of steep mountain sides, surrounded by beautiful and rough landscape [Proctor, 2008].

Originally, Klaksvík was more of a few scattered houses than a city, but the proximity to the sea, and the natural harbour, meant that the village eventually became the beacon for the fishing industry on the Faroe Islands. This growth in the business and industrial sector has led the increase of the population over the last 100 years. Although Klaksvík has become the second largest settlement on the Faroe Islands, it still has a modest population of approximately 5.000 people [Klaksvíkar Kommuna, 2017], which allows for a close bond between inhabitants, where all people are familiar with each other. However, the rapid development of the village has driven it to expand without any plans or guidelines, which has left it without a defined city centre, which is noticable on ILLU. 8. Thus, there are currently no intended spaces for gathering the people and strengthening the social bonds, which are crucial to encourage the degrowth mentality.

Klaksvík, has with its size become the capital of the northern part of the islands, and is thus the place where the entire population of the northern isles do their everyday chores, like shopping, going to the bank or the library. Additionally, a tunnel has replaced the former ferry routes between the northern and southern isles, which has made Klaksvík much more accessible and has led to a larger flow of people to and from the village. Combining visitors from the southern isles with the inhabitants of the northern isles causes around 7.000 regular visitors from outside the village. This, along with the growing population of the village and its functions means that they have outgrown their current public facilities.

The municipality has put a lot of effort into creating and upgrading cultural activities and facilities, in order to enrich the life of the people within the entire municipality. For instance, they host an annual Summer Festival, which brings in between 8.000 and 10.000 visitors to the city centre and plans of a new and united city centre are starting to flourish [Klaksvíkar Kommuna, 2017]. In such a development, a library has a unique potential, as its public character is minded for all, and thereby the library can work as a catalyst to strengthen social bonds within the community through cultural offers and knowledge sharing.



ILLU. 8. MAP OF KLAKSVÍK WITH CENTRAL FUNCTIONS (SCALE 1:7500)

THE NEW MASTERPLAN

NÝGGJA STØÐUMYNDIN

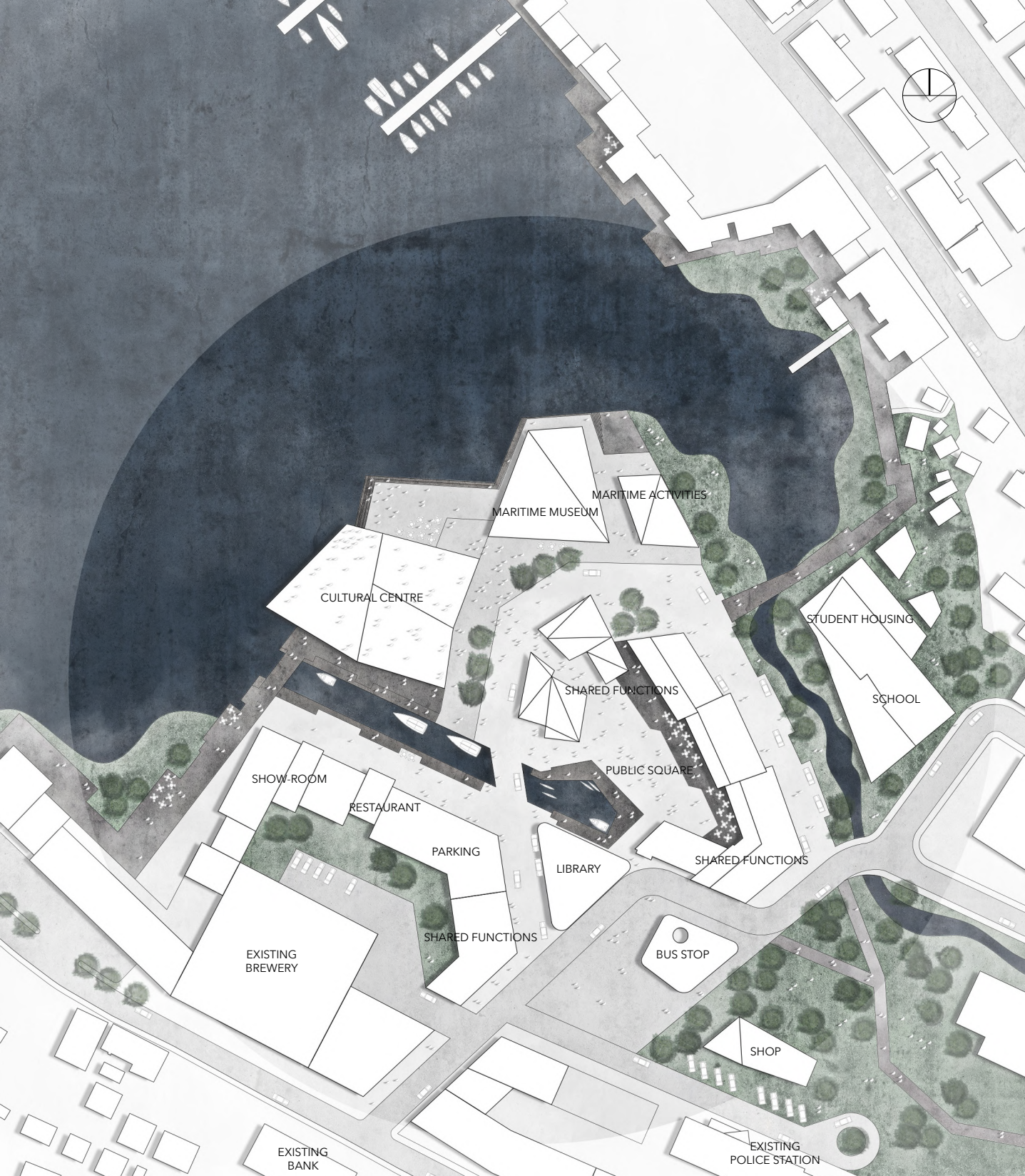
Plans have been underway for the last decade to revitalise the centre of Klaksvík to a new cultural heart of the Northern Isles, so we seek to gain an understanding of these plans to explore how a library fits into the visions for the area and how it can contribute to the life in the cultural centre.

In an international competition in 2012, Henning Larsen Architects won the competition of designing 150.000 m^2 in the city centre, on the northern shore of where the two bays meet. Their plan was designed to incorporate and strengthen the existing qualities and heritage of the village, while aiming to create a vibrant city centre with a sheltered square for activities and with views over the water, as seen on ILLU. 9-12 [Henning Larsen Architects, 2012]. The new development divides the centre into three different districts; a recreational area, an urban area with a unifying city square and shops, cafés, a library, offices, residences, etc., and a maritime district with the cultural centre, a maritime museum and a space for maritime activities. These three new districts are connected, both to each other and the rest of the village, by a new promenade running along the northern shore of the bay and branches out towards the southern shore. This helps to unify the village and enables both locals and tourists to walk easily around the village to experience both the new and the historic parts. The principles of the development have been to ensure that the scale of the new buildings fit that of the existing ones of between two and four stories, and that the architectural expressions are grounded in the Faroese traditions, but with a modern twist. [Ibid.]

With the intention of creating a vibrant cultural meeting place for a small village, the question of whether the plans have succeeded arises. We will explore this question with a basis in Jan Gehl's theories about welcoming urban spaces with the intent of discovering how the library can contribute to the good intentions.

Gehl divides outdoor activities into three categories; the necessary, the optional and the resulting social activities. While the necessary activities, such as everyday chores, are done no matter the conditions, the optional and social are much more dependent on the quality of the urban spaces [Gehl, 2017, pp. 7-10]. The nature of the functions in the new city centre suggest that most users should go there for personal enjoyment, making the quality of the urban spaces and the weather conditions vital for the creation of life. The plans focus a lot on stopping the heavy winds from the bay, but the density and height of buildings may block much of the scarce sunlight and many of the views towards the bay. In this way, few places will have optimal conditions for outdoor stays.

Gehl's theory about attracting or spreading people suggests a need for gathering people in some areas to experience and take part in events, while other areas need to be more



ILLU. 9. HENNING LARSEN MASTERPLAN FOR KLAKSVÍK CITY CENTRE (SCALE 1:1500) [IINFORMATION FROM HENNING LARSEN 2015]

peaceful as a contrast to the eventful [Ibid., p. 77]. This must be especially relevant in a village with a modest population of 5000 people, which makes the creation of the vibrant areas very dependent on the actual size of these areas. In this case, the main square seems to be of an appropriate size to gather around café tables in the summer and an ice rink in the winter, without the square feeling deserted. However, their intentions seem to go way beyond people gathering in the main square, but also on top of buildings, in the shared spaces and along the water line. We believe this to be unrealistic, so while the square should be a place to gather people, the rest of the masterplan should aim to gather more people in fewer spaces.

The use of urban spaces is also highly dependent on how to get there, making easy accessibility, direct connections and different means of transportation vital for inviting people into the urban space [Ibid., p. 109]. The masterplan covers an area, which is relatively easy to reach on foot, and with the new promenade, conditions for pedestrians are improved markedly. The accessibility by bus is likewise direct, and by car there will be plentiful parking facilities within a short distance. The character of the shared spaces, however, make pedestrians the main target group. The shared spaces surrounding the square also ensure that people do not intend to stay within these spaces for long, as the cars disturb the possibility of a quiet place to sit and rest, and thus driving people towards the social spaces rather than the shared spaces.

In the light of this critique of the masterplan, the position of the library will be able to draw on the good aspects of the plan and in the end add value to the area. The library, being somewhat of a mix between the necessary and optional activities, is thus more likely to draw people into the area outside the most popular hours, which can also benefit the rest of the functions. It is, however, important that there is a focus on spaces which offer both sun, shelter and views to the water and landscape. With pedestrians as the main target group for the area it will, likewise, be vital to invite and naturally lead them all the way into the building.

Since the masterplan was created in 2012, several changes has been made to the plan. One of them is that the cultural centre, the place to gather the community around cultural events, has been projected as a hotel, which, in contrast, is a function not meant for the local community. Where the cultural centre would add life to the city centre, the hotel will probably only have few guests outside of the summer months, and will thus end up adding an empty space to the city centre. With this in mind, we have chosen that the placement of the future library should take that of the hotel, to secure the cultural and vibrant city centre. This will enable the library to benefit from the focus on community and culture in the city centre.

ILLU. 10. VISUALISATION OF RECREATIONAL AREAS AROUND THE BAY [HENNING LARSEN, 2012]

ILLU. 11. VISUALISATION OF THE CANAL AND MAIN SQUARE [HENNING LARSEN, 2012]

ILLU. 12. VISUALISATION OF THE MAIN SQUARE [HENNING LARSEN, 2012]

THE SITE

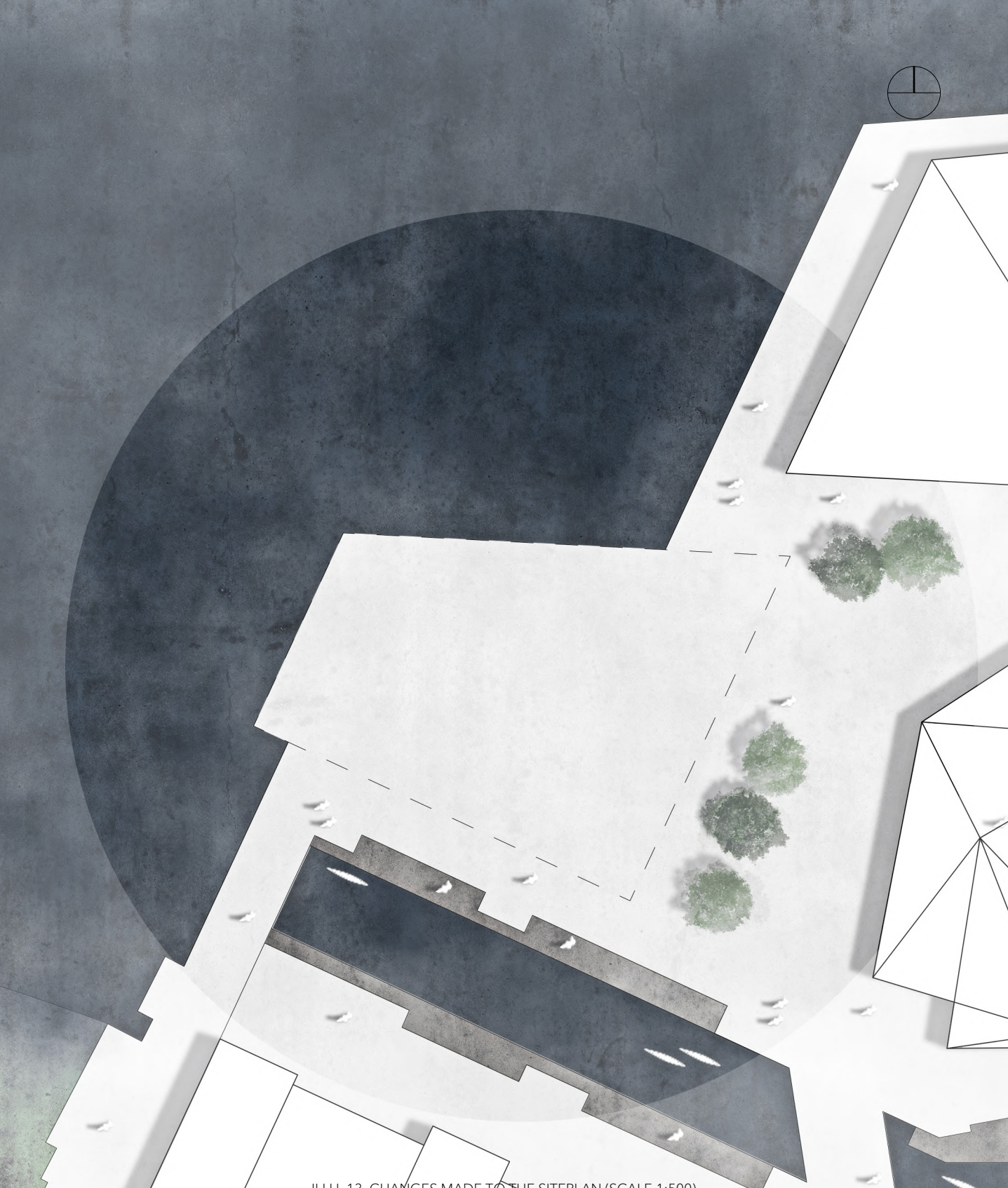
GRUNDØKIÐ

With the new and more central position of the library it becomes important how it relates itself to the masterplan's vision of driving cultural meetings and how it places itself both within the existing and future context. To accompany the prior critique of the masterplan, early modifications have thus been made to accommodate more realistic sizes of the socially minded urban spaces and improve the flows for pedestrians, as seen on ILLU. 13.

With the resulting site having two sides facing the more public character of the city centre and two sides facing the surrounding landscape, the placement of the library is ideal, as it allows for both social and individual learning and contemplation. Where the eastern side of the site will be visible to both pedestrians and cars in the shared spaces of the city centre, the southern side will only be visible to pedestrians lounging by the canal as seen on ILLU. 14. Thus, a close connection with the pedestrians can be established here, which the internal layout must consider, while the library must work to orient itself towards both pedestrians and cars, as a way of inviting people to visit the library and be inspired.

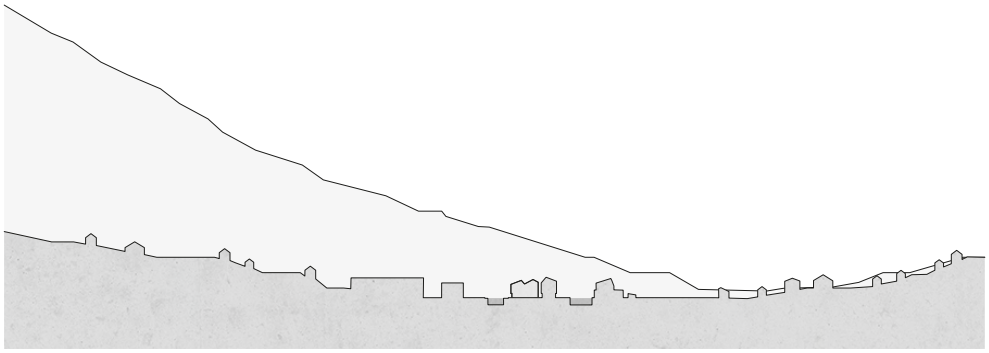
As shown on ILLU. 15-16, the buildings of the masterplan match the scale of the surrounding buildings, and so the library should aim to do the same, by relating itself to the human scale. The sections furthermore show that even though the library will have an exposed position at the edge of the water, it will remain situated in surroundings where everything is exposed due to the topography. The low position of the site also means that the risk of flooding needs to be considered, which in the masterplan has been accounted for by raising the ground to a climate proof height, as seen on ILLU. 17.

As the climate of the Faroe Islands is generally very cloudy, and is very sparse on sunlight hours, it is vital that the design of the library considers the aspects shown on ILLU. 18-22. Distances between buildings must thus allow the sun into the urban spaces and ensure that uncomfortable wind tunnels are not created between the buildings. As the surrounding mountains will provide shade in the morning and afternoon in the winter months, it is important that the design of the library considers the rare sunlight hours, both in terms of energy- and indoor environment, but also in the design of outdoor spaces.

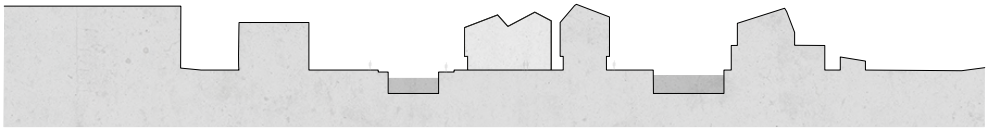


ILLU. 13. CHANGES MADE TO THE SITEPLAN (SCALE 1:500)

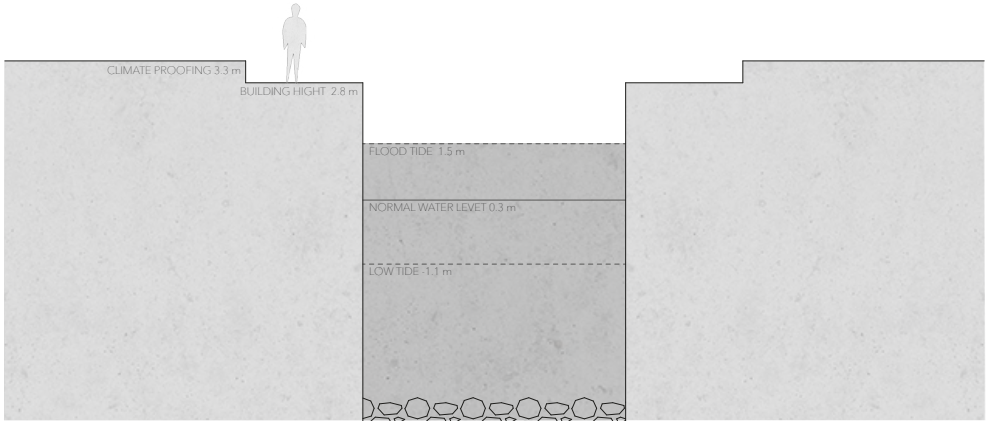
ILLU. 14. MAPPING OF FLOW IN THE CITY CENTRE



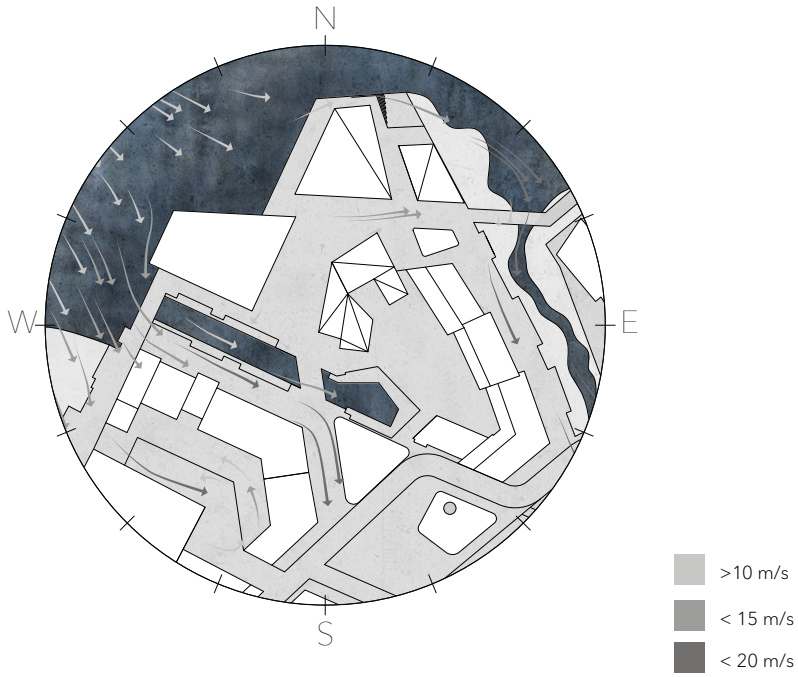
ILLU. 15. SECTION PRINCIPLE SHOWING THE TOPOGRAPHY OF KLAKSVÍK



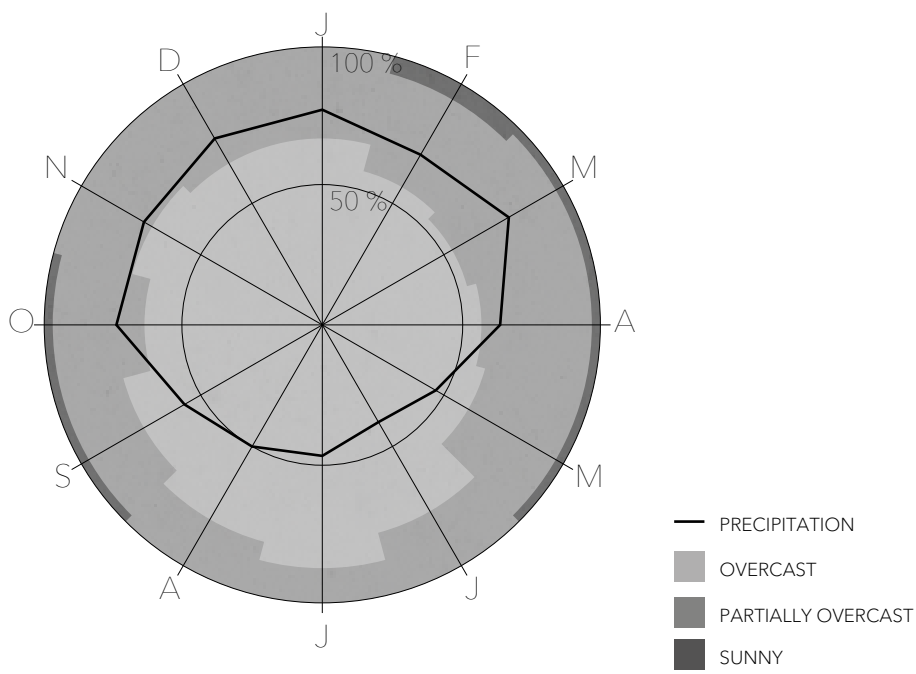
ILLU. 16. SECTION PRINCIPLE THROUGH THE CITY CENTRE



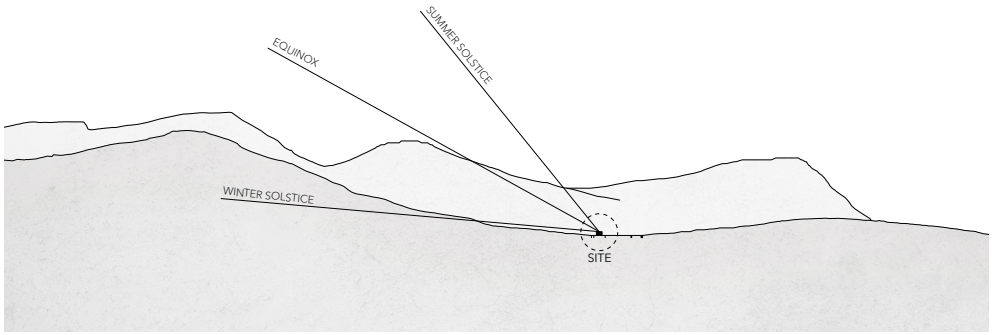
ILLU. 17. SECTION PRINCIPLE SHOWING THE DIFFERENT WATER LEVELS



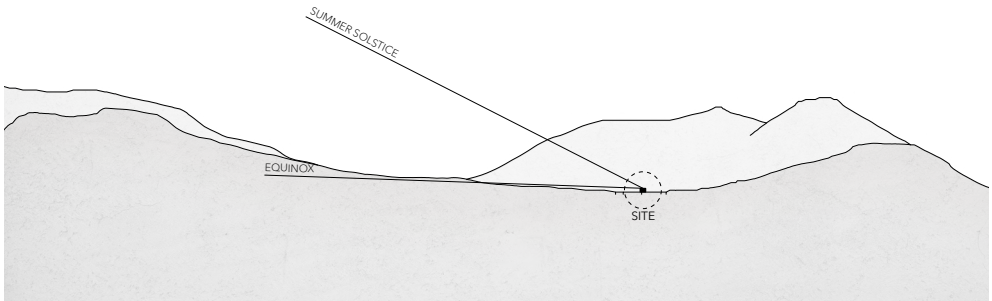
ILLU. 18. WIND SPEEDS AND MOVEMENT FOR WESTERN WINDS



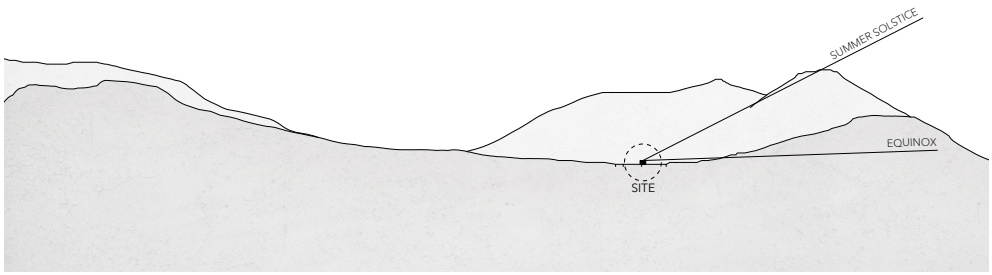
ILLU. 19. DAYS WITH SUN, OVERCAST & PERTICIPATION [INFORMATION FROM METEOBLUE, N.D.]



ILLU. 20. WEST SECTION SHOWING SUN PLACEMENT AT NOON



ILLU. 21. SOUTH SECTION SHOWING SUN PLACEMENT IN THE MORNING



ILLU. 22. SOUTH SECTION SHOWING SUN PLACEMENT IN THE AFTERNOON

THE CHARACTER OF PLACE

STAÐSINS EYÐKENNI

Being an artificial peninsula, the site and the surrounding city centre is not a natural part of the unique natural and built landscape, which characterises the Faroe Islands and Klaksvík. Instead, it adds another story and character to the village, which we will seek to understand. However, as the slowly emerging city centre has far from reached its full potential yet, we will try to uncover the potential character of the place as the sum of the existing environment and what is yet to come [see ILLU. 23-25].

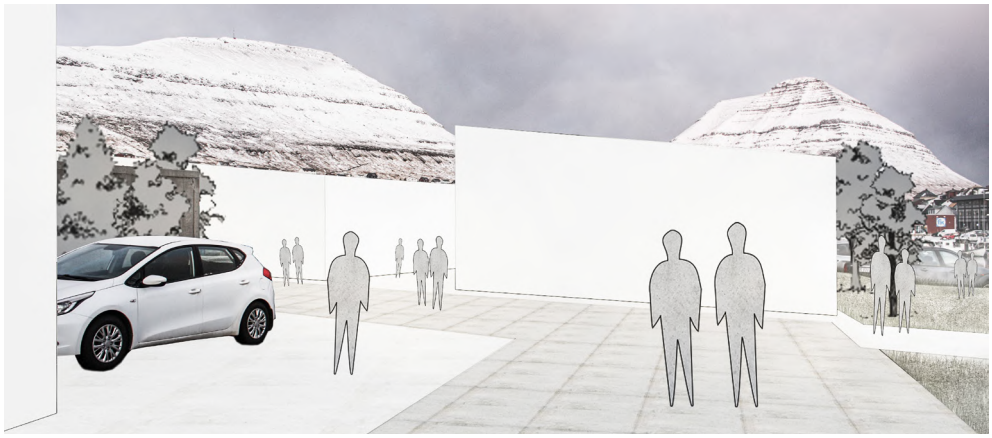
Moving into the city centre from the north, one meets a small naturelike channel, which gives the first glimpse of the proximity to the water. Contrarily to walking in the landscape, where the mountains are defining the flow, here the flow is determined by buildings, which lead the flow alongside the waterline. Its natural character invites one to explore through all the senses, and in the summer different kinds of maritime activities will create a social life. From here, the embracing charactwer of the surrounding landscape is emphasised, as the mountain slopes uncover all the terraced houses, which overlook one another. This embracing character emphasises the peninsula as a noticeable city centre – visible from everywhere in the village and overlooking the whole at once.

Continuing along the shared space, one becomes surrounded by buildings, and their scale indicate it as something different from the rest of the typology in the village - it becomes a clearly defined city centre. However, buildings remain a height which is appropriate to the human scale, and their closeness causes the shared space to feel intimate and embracing, while pavement clearly indicate it as a space for movement at a slower pace.

As one crosses to the western side of the peninsula, another canal appears – this one with a more urban and artificial character. While restaurants, cafés and showrooms in the ground floor can contribute to the social life around the canal from one side, the future library can support it on the other side of the canal by activating the outdoor space.

The overwhelming scale of the landscape causes it to remain omnipresent everywhere in city centre. Thereby, it becomes less overwhelming, as it falls into the background, but this effect only makes it even more powerful in the few places, where the entire landscape can be viewed at once.

ILLU. 23. LIFE IN THE MARITIME AREA



ILLU. 24. LIFE IN THE SHARED SPACES

ILLU. 25. LIFE BY THE CANAL

2.2

THE LIBRARY

BÓKASAVNIÐ

EVOLUTION OF THE LIBRARY

TILEVNINGIN AV BÓKSAVNINUM

In order to understand the magnitude of the societal role of the library, it is vital to look at how the library has evolved from the past to the present. This historical and contemporary insight will provide a guideline for how individuals and society can continue to benefit from the library and how the idea of degrowth can contribute to enhancing the effect of the library on a community.

For as long as humans have walked the earth, we have been dependent on sharing and obtaining knowledge, as valuable lessons have been passed on through generations. Books and literature developed as means to share knowledge far beyond the local communities which enabled people to learn more about other cultures and experiences, and thus enrich their own life. The original libraries were founded as a space for storing knowledge, and thus it came to embody the intellectual, literary and spiritual heritage of a community [Jacob, 2002]. Knowledge sharing can thus be seen as an inevitable part of our evolution and must be well-preserved and further developed for future generations.

'Everybody feels the need for change, to be inspired by new knowledge and information, and new experiences... By offering inspiration, social encounters and community activities, libraries help members of the general public to make changes in their own lives and move on from there to make changes in society.'
- Knud Schulz, 2015, in Kærup, 2015, p. 67

The idea of the public library grew out of the idea that the availability of knowledge should be universal, as the quote suggests, we all have the need to be inspired, and with this, the library grew from being an archive of past memories, to be a public domain available to all. It started with smaller reading groups in local communities, with few books circling between households and eventually became the public sanctuary for democracy, knowledge and culture. The role of the library in the past 100 years has been to secure knowledge for all by ensuring that the collected works are based on the idea of actuality, relevance and broadness [Weiss, 2020, pp. 8-9].

The role of the library is being challenged by society's entry into the digital age, where knowledge is now individually available for most people, and thus the need for a public library is no longer as big as it once was. This has forced the library organisations to rethink their role in modern society, in order to adapt to the needs of people today. They have deemed it necessary to find other ways of serving and educating people, and have tried to mix the library with other functions, like cultural centres or municipality functions to draw people in. Additionally, the libraries have opened up to different cultural events, which range from language-courses to knitting or cooking [Ibid.]. During the past years, this change has resulted in a decrease in the amount of borrowed books from the library, while the visitors of the libraries have increa-

sed [Tank, 2017]. Thus, the role of the library has evolved into being more about entertaining people, and they now play a big part in driving integration and in battling loneliness and inactivity. Where people would previously sit at home for longer periods of time, they now seem to go to the library to meet others and be a part of the public discourse [Niegaard, Lauridsen & Schulz, 2008]. In this way the library can be considered as a 'third-space'; a place that is not home nor work, but a place where you get challenged and learn and experience something new [Kiib & Marling, 2015, p. 158]. The importance of a third-space is deemed more important in smaller communities, where this also becomes a place where the locals can meet informally while everyone is running their own errands. This enables the locals to form weak social ties more easily, as there is more solidarity between the different social groups which enables them to easily find common ground [Granovetter, 1983].

This new focus of the library as a tool for social inclusion and meetings, and as a place where the use has become more about the activities and cultural events than the literature and knowledge, seems to be slowly replacing the traditional idea of the library as a place of education and enlightenment. Of course, the library needs to follow the tendencies of society, and needs to adapt to a world where information is more accessible. Libraries today might have less of a focus on knowledge, and even less on the physical book, however:

'Libraries can exist without enlightenment, but enlightenment cannot exist without libraries'
- Wayne Bivens-Tatum, n.d, in Weiss, 2020, p. 9

Thus, the present-day libraries are placed in this tension field between upholding the original tradition of knowledge sharing and general education, and the idea of embracing the new tendencies and being open to the unpredictability of their future. Instead of trying to adapt to this, we believe that the library should aim to help reshape its own role, and thus define how the library should be used in the future. There will inevitably always be a need for knowledge, and now, more than ever, we need a centre of knowledge with a certain credibility though still with a nuanced picture of the world. Thus, we argue that this vital role of the library must not be lost in the desire to attract and entertain more people, but must remain, at its core, a place of knowledge and learning. However, when implementing the teachings of degrowth in the role of the library, which has the local community at its centre, it shows that the role of the library as a social meeting place must not be forgotten. The essence will thus be to foster meetings between people of different ages and professions, and thereby start conversation across interests and through this drive the sustainable development of society through knowledge and knowledge sharing.

LEARNING SPACES

LÆRDÓMSØKI

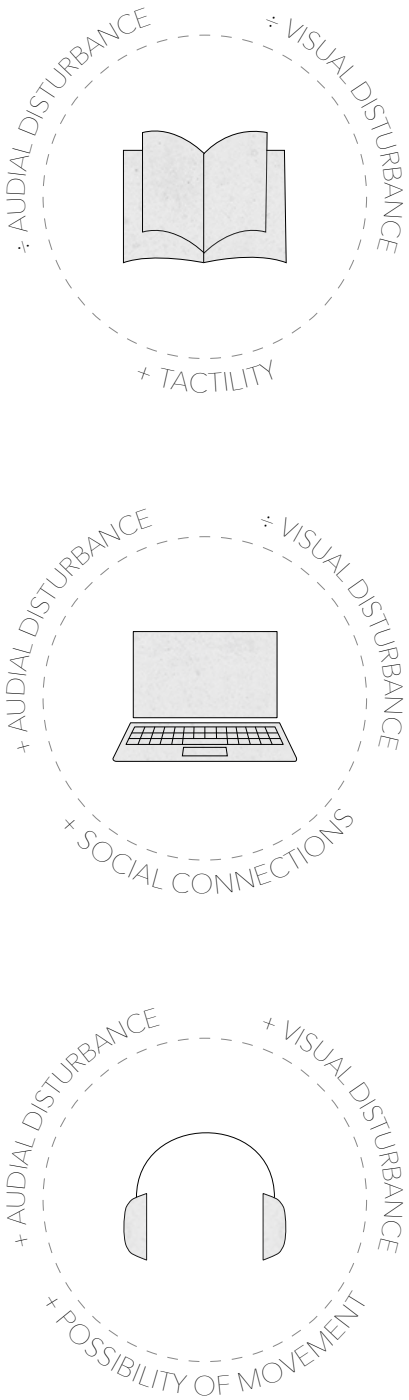
With the established role of the library as a place to gather knowledge, its physical appearance should, in the best possible way, support different ways of learning for all ages. This both entails an understanding of the potentials of using and promoting different media types through architecture, and how the architectural framework can support an individual search for knowledge while also fostering knowledge sharing.

MEDIA TYPES

The library has always been characterised by its selection of books, but the technological advancements have made an endless stream of knowledge available to us in different formats, each with their own potentials and limitations. Through an understanding of these, we seek to find guidelines for how different media types can be supported architecturally.

Studies investigating the difference in understanding when reading either digital or physical books highly prove the continuing importance of the physical medium, as it provides a markedly better understanding of the text. This increased understanding is a result of the physical book not interfering with the experience through distractions, which offers a unique sanctuary for contemplation. Combined with the haptic and kinaesthetic experience of feeling the weight, pages and materiality of the book to help the formation of mental pictures, the perceived text is more likely to be stored in the long term memory [Balling, 2017 & Mangen, Walgermo & Brønnick, 2012]. Although these are only few of the advantages of the physical books, they also suggest some important qualities, which can be translated into architectural means. When designing spaces for reading of physical books, it will thus be important to focus on minimising sensuous disturbances such as noise and visual activities from the physical environment, while a focus on creating a highly tactile spatial experience may help to further improve the memory of the new information.

Although physical books carry many advantages in the quality of knowledge communication, their main limitation is the amount of physical space they take up, and thereby limit the possible collection. Audio and electronic books are an efficient way of working around this problem and thereby contribute to a more nuanced collection of material, though the qualities of physical books suggest that the digital media should not stand alone. However, the use of electronic books can foster a sense of hyper attention, where the user can switch focus rapidly between different tasks, while audio books may provide a possible break for the focused mind [Balling, 2017], and thereby the different media types can be suitable for different tasks and states of mind. As digital researching may even be a social task for certain user groups and listening to audio books may be less sensitive to audible distractions, they may require quite different spatial qualities compared to physical books, see ILLU. 26.



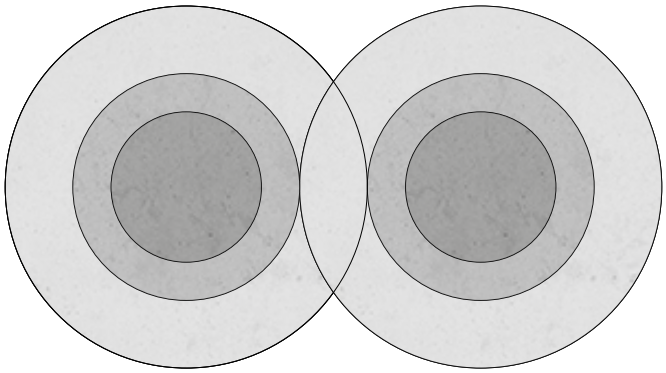
ILLU. 26. ARCHITECTURAL FACTORS AFFECTING THE PERCEPTION OF INFORMATION WHEN USING DIFFERENT MEDIA TYPES

CREATIVE LEARNING ENVIRONMENTS

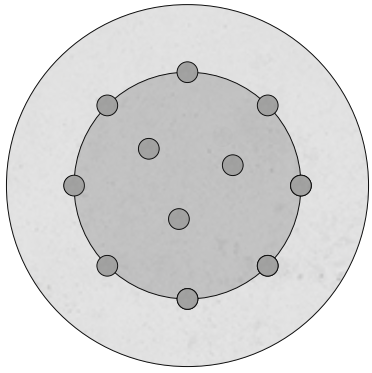
Schools, being a place for communication of knowledge, are a relevant place to look at inspiration for creative learning environments. Here, Winie Ricken, consultant of Architectural Learning Environments, suggests a differentiation of learning activities into 'collection, contemplation and deliberation' to support students' influence on the learning situation. While 'collection' provides a safe base, where children gather to take part in presentations and one-way teaching, 'contemplation' offers smaller spaces for studying knowledge, skills or practical work individually or in small groups. Contrarily, 'Deliberation' can be seen as the space in between, as it works as a marketplace, where new activities can be shaped in the process of going from 'collection' to 'contemplation' [Ricken, 2010, p. 39]. This division in functions underlines the importance of not only seeing knowledge gathering as a contemplative action, but also something which has a social dimension in the form of knowledge sharing. While 'collection' can provide the formal knowledge sharing, spaces of 'deliberation' can provide the more informal meetings, see ILLU. 27.

The fact that deliberation spaces are necessary also suggests that the contemplation situation is highly individual and thus requires a high degree of flexibility. However, Ricken notes that flexibility can be viewed from different perspectives; a multifunctional approach [see ILLU. 28], where a large open space can serve multiple functions through minor changes in the interior, and a differentiated approach [see ILLU. 29] where different smaller spaces each serve a specific function but in close connection to each other [Ibid., pp. 20-21]. These approaches suggest that a good learning environment requires a high level of co-determination, where people can choose the appropriate space for the task at hand. While moving of furniture may create disruptions in a library, where each person has their own agenda with the visit, the differentiated approach may thus be more appropriate in areas of contemplation. Meanwhile, the multifunctional approach may serve a better purpose in less intimate areas for 'collection' to help minimise the area of the library and at the same time foster more informal meetings between people.

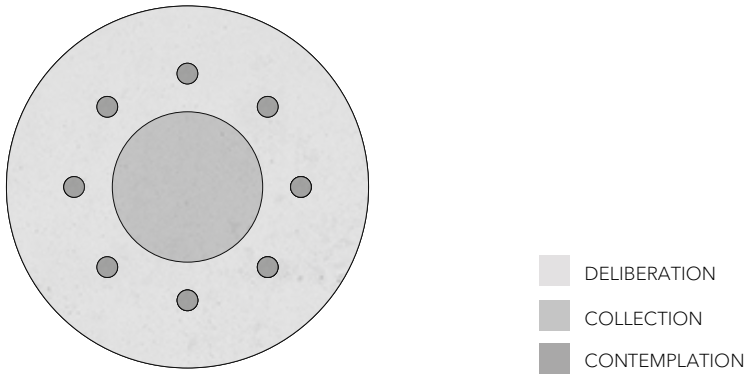
Learning has the potential to go way beyond the gain of knowledge, as it can essentially be translated into creative thinking, experimentation and innovation for the benefit of society. To support both individual and social creative behaviours, Alison Williams, researcher of Design and Communication, identifies 'affordances' (equipment to directly support the creative behaviour such as whiteboards, displays, meeting rooms, etc.) and 'properties' (sensory attributes such as air quality, temperature, acoustics, views, comfort, spaciousness, light and movement) of space; [Williams 2013, pp. 145-152]. While many of these attributes have proven to have a direct effect on our concentration and creativity, the endless variation of combinations of properties can give unique qualities to a space depending on the requirements of functions.



ILLU. 27. ZONES FOR FORMAL AND INFORMAL KNOWLEDGE SHARING



ILLU. 28. MULTIFUNCTIONAL APPROACH OF FLEXIBILITY



ILLU. 29. DIFFERENTIATED APPROACH OF FLEXIBILITY

USERS OF THE LIBRARY

BRÚKARAR Á BÓKASAVNINUM

The library is a place for everyone - a meeting place for people of different ages, professions and cultures, and thus the users of the library are very versatile. In order to ensure that the library in Klaksvík can facilitate the needs and wishes of its users, it is essential to understand how they use the current library, how a new library can improve the conditions for the different users, and how the degrowth mindset can be further pronounced through different functions.

An interview with a librarian at the current library in Klaksvík [see Appendix 1] gave an insight into the Faroese library users. Although small, the library serves a large variety of users throughout the day. From a very early age users are introduced to the library, as all five day-care centres in the town visit weekly to familiarise the children with books, reading and the possibilities of the library. They will usually gather for smaller events, where books are read aloud. Meanwhile, the library maintains an important role in the further upbringing of children, as it also serves the function of school library for the nearby primary school. The modest size thus forces the library to have separate opening hours for school and for the public, so the pupils can spread over a larger area and find space for book searching, playing and contemplating without disturbing other visitors. However, as school visits are focused on an educational purpose, it also encourages the children and adolescents to come by in their spare time for additional reading material. This well-established relationship between the library and the children also helps to attract families outside school hours.

Although not as distinct as for day care and primary school, visits to the library are also encouraged for students enrolled in the different youth education programmes in the town and surrounding villages or even university students who take online classes. Here, the library offers help with literature searching as well as a supplementary working station.

Adults and seniors are also frequent user types, who use the library for reading the daily newspapers or find inspiration for books to read. Especially in these relations, the librarians play an important role as the modest size of the society makes it possible for librarians to create a personal bond with the frequent visitors and thereby offer a social bond to those with a limited social circle or an extra service by predicting the wishes of the visitors. This suggests a need for a distinct and central placement of staff areas, to nurture this personal bond between librarians and the different types of visitors.

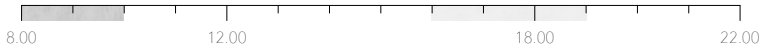
With the library being the only fully publicly accessible function in town, it also serves an important role in hosting events, which are available and relevant to the community. These can be in the form of presentations or discussions and usually hosted by local clubs, associations or businesses with the aim of involving or enlightening the community. Additionally, 'social clubs' are hosted for regular recurring groups with certain interests such as book discussions or knitting techniques.

Seen from the perspective of degrowth, many of the initiatives and functions in the current library already intend to encourage an educational and community-oriented behaviour. However, a gap between the two foci may be spotted, as they are targeted towards very different age groups. In order to link the two, it could be relevant to establish a physical place where visitors can come by and contribute with ideas or everyday problems, which can create relevant cases for student projects or small businesses to contribute to the community. Such work with concrete community-related tasks can also create a need for more hands-on work, where users can work with revitalisation of waste material from local businesses or early prototyping, which may require both knowledge from the library and tools and resources not available at school or home. A focus on such initiatives may also lead to inspire adults and businesses, who come to the library for other initial purposes.

Especially the relationship between librarians and visitors are well-established, but the current conditions complicate meetings between the different users, as only few spaces are well-suited for longer stays. To sustain the notion of the library as something connecting the community, this expresses a clear need for different places to stay – both for contemplative and social purposes to promote the degrowth mentality.

Looking at the collection of books, the selection seems adequate for a library covering a community of this size. Here, the Faroese heritage is especially valued, as all Faroese books and newspapers are stored to preserve their historical and cultural knowledge. However, a large portion of the books and newspapers are stored in the basement and attic, unavailable to the public and abstruse to the staff. Such obstacles may cause valuable knowledge to be neglected, and though a more dense storage of less requested books and newspapers may be relevant, their placement should still be accessible to the public. In this way, the historical knowledge unique to the place can be combined with new and more universal knowledge about sustainability, thereby suggesting a way for the contrasting media to support each other.

CHILD (0-10)



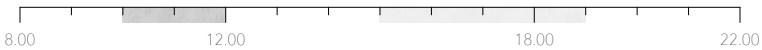
CONTEMPLATIVE ACTIVITIES

- Reading books
- Listening to audio books
- Book searching

SOCIAL ACTIVITIES

- Playing
- Reading aloud
- Book searching
- Education
- Socialising

ADOLESCENT (10-16)



CONTEMPLATIVE ACTIVITIES

- Reading books
- Book searching
- Internet searching
- Listening to audio books

SOCIAL ACTIVITIES

- Playing
- Book searching
- Internet searching
- Education
- Working in groups
- Working practically
- Socialising

STUDENT

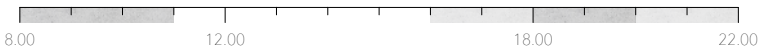
CONTEMPLATIVE ACTIVITIES

- Reading books
- Book searching
- Internet searching
- Listening to audio books
- Searching through news-papers

SOCIAL ACTIVITIES

- Working in groups
- Book searching
- Studying
- Internet searching
- Working practically
- Socialising
- Participating in community events

ADULT

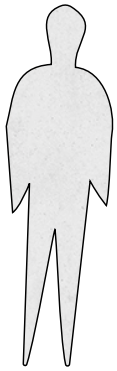


CONTEMPLATIVE ACTIVITIES

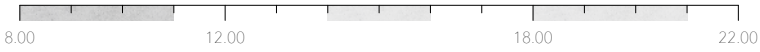
- Reading books
- Book searching
- Internet searching
- Listening to audio books
- Reading newspapers

SOCIAL ACTIVITIES

- Looking after the children
- Book searching
- Internet searching
- Socialising
- Participating in community events
- Working practically



SENIOR

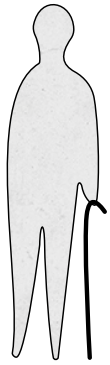


CONTEMPLATIVE ACTIVITIES

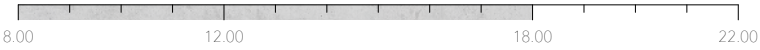
- Reading newspapers
- Internet searching
- Reading books
- Book searching
- Listening to audio books

SOCIAL ACTIVITIES

- Reading newspapers
- Internet searching
- Socialising
- Book searching
- Participating in community events



STAFF

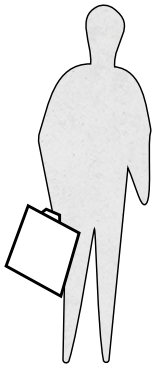


CONTEMPLATIVE ACTIVITIES

- Working at desk
- Organising books

SOCIAL ACTIVITIES

- Servicing the users
- Socialising with colleagues and visitors
- Hosting events
- Organising books



2.3

CASE STUDIES

BYGNINGSÍBLÁSTUR

SPINDERIHALLERNE

UNIFYING COMMUNITY AND INNOVATION

GENRAL INTRODUCTION TO CASES

The knowledge gained from our studies has led to an understanding of how values of degrowth can be implemented architecturally, and especially, values such as community, knowledge sharing and innovation have proved essential. However, this suggests that the emerging vision of the future library in Klaksvík is deviating from the traditional library typology, why it becomes relevant to look in different directions. The following case studies, all being different typologies, have a unique take on essential degrowth values and have thus been studied and evaluated on how the exterior appearance, spatial layout, materiality and scale have made them more or less successful in promoting a sense of community or fostering knowledge sharing and innovation.

SPINDERIHALLERNE

Spinderihallerne in Vejle, by Schmidt Hammer Lassen Architects, is a renovation project, which has transformed the former spinning mill facilities into a Mecca for innovation, entrepreneurship and knowledge sharing. The architectural incorporation and connection of these functions has made it an example of how architecture can work as a catalyst to drive the development of a city towards innovation and collaboration [Realdania, n.d.], why it also becomes relevant to explore in the context of degrowth.

Spinderihallerne has two main entrances at each end of one of the industrial halls, which both functions as the entry hall and a continuation of the urban space [Ibid.]. In connection with the exterior urban space at one of the entrances containing small kitchen gardens, seating areas and parking, this transition between exterior and interior creates an invitation to people passing by, both to use it as a shortcut and as a space to stay and get inspired by the many activities.

With the renovation of the industrial halls, room has been made to house offices for a variety of creative businesses and cultural institutions, while workshops, exhibition area, event space and meeting facilities are also available to the public [Ibid.]. In this way, the focus on creating a large community based on knowledge sharing becomes evident in the spatial planning, as the sharing and flexibility of facilities brings people closer together and fosters new meetings and thereby network. The social focus is also evident in the large degree of openness between spaces, which exemplifies the importance of breaking down the boundaries to foster knowledge sharing, which, however, also implies that the exposure of work is valued higher than privacy. Instead it provides businesses and even locals with a medium to exhibit, get inspired, experiment and share knowledge for the greater good of society.

The facilities of Spinderihallerne has to a great extent been kept at its original state, which has minimised the use of material. Thereby, the robust material surfaces have been left to tell the unique history of the space while leaving it open for people to continue leaving traces and thereby continuing the storytelling of the newly added functions [Ibid.]. This leaves a space which can also be used beneficially for more practical work, without the risk of harming the materials.

ILLU. 30. THE ENTRANCE OF SPINDERIHALLERNE [STAMP, N.D.]


ILLU. 31. CREATIVE WORKSPACES [STAMP, N.D.]


ILLU. 32. EXHIBITION SPACE AND OFFICE CUBES [REALDANIA, N.D.]

ILLU. 33. OPEN OFFICE LAYOUT [VISITVEJLE, N.D.]

THE LIBRARY

AN INVITATION TO STAY

The new library and renovated cultural centre placed in the multi-ethnic and -cultural area of Nordvest in Copenhagen, by Cobe, is a good example of how degrowth perspectives can be introduced in a library by making it more than a collection of books. It has the ability to gather the many different user groups under one roof, as it has become the 'living room' of the area - the place where people meet and have the freedom to either search for knowledge, focus on social interactions, personal contemplation or more practical work in the workshops [Kiib & Marling, 2015, p. 151]. Hereby, it attempts to unify the community through knowledge and innovation.

Where the old building has a polished grey façade, like many others in the area, the new building is covered in gilded expanded aluminium sheets, which makes it stand out within its environment, as a golden focus point in the middle of the dull and grey area of Nordvest. Both in form, materiality and colour the building stands out from its environment, and while appearing almost alien in the traditional townscape, the library becomes noticeable at a distance and draws people in [Ibid.]. The entrance to the library is clearly emphasised via the cantilevered first floor, which protects the underneath entrance and creates an inviting and transparent transition into the building. Here, a glass corridor works as a continuation of the urban space, as the exterior material is continued inside.

The new building is designed as four volumes stacked on top of each other, which each holds a specific function for the library, with the children at the bottom, the young people on 1st floor, the adults on 2nd floor and a multi-hall at the top. The culture house, containing a café, offices and a workshop, is connected to the library through the glass corridor [Ibid. p. 154], which clearly defines the flow of the building. While the separation of functions across floors makes the building easy to navigate, it does, however, prohibit natural meetings of different age groups. Instead this allows for each function to be designed specifically for the needs of the user group.

The scale and materiality of spaces has clearly been customised for the specific users, as an individual atmosphere is created for each age group. While the children's section is made as a landscape of pixelated green boxes, the youth section is a large open space with raw grey and white materials and the adult library is focused on contemplation with recesses upholstered chairs and wooden cladding [Ibid. p. 163-165]. This signifies the individual needs of the users, which need to be addressed through architectural means.

ILLU. 34. THE ENTRANCE OF THE LIBRARY [MØRK, N.D.]


ILLU. 35. READING NOOK IN THE ADULT SECTION [THEDESIGNCONCEPT, N.D.]


ILLU. 36. THE GLASS CORRIDOR [HJORTSHØJ, N.D.]


ILLU. 37. PLAYFUL LANDSCAPE IN THE CHILDREN'S SECTION [THEDESIGNCONCEPT, N.D.]

TINGGÅRDEN

THE CREATION OF A COMMUNITY

Tinggården, by Vandkunsten, is a co-housing project in Herfølge from 1978, which is an exemplary case showing how architecture can foster the creation of a community through sustainable measures. It was the first of its kind to experiment with the dense-low typology as a type of dwelling, and the social focus has served as an inspiration for decades [Glick, 2019, pp. 52-53], making it an ideal case to explore the architectural means used to strengthen the sense of community.

As the co-housing is not situated in an urban context, its focus is oriented towards the nature on one side and the internal street system on the other. The dwellings are the only private areas, which are organised in six small clusters or family groups, who share a green area and a common house, where the social life is promoted through shared facilities. A larger common house is shared by the entire co-housing, and in this way several different sizes of communities are created [Ibid., p. 52], and it is up to the individual to decide the level of participation. This organisation creates incentives to move out of the private dwellings and into the shared spaces, and the street layout secures that the possibility of meeting neighbours is almost inevitable.

The dwellings are kept small, and so the large common spaces are also likely to become more attractive to the residents. However, the co-housing does contain a variety of dwelling types, designed to meet the needs of people at different stages of life and thereby create a varied group of residents. This idea is further strengthened in the possible flexibility of the dwellings, as prefabricated elements secure that certain rooms can be exchanged between dwellings, as the needs of the residents change over time [Ibid., p. 56]. This potential is likely to prolong the residents' life in the dwellings, which can help to strengthen the sense of community without the need of unnecessary resources.

The dense-low structure is undoubtedly customised for the human scale, as it allows daylight in between the dwellings, secures a good micro-climate and at the same time ensures a good connection between interior and exterior, which is optimal to create random meetings between people. The materiality with wooden cladding and bricks was chosen to foster a do-it-yourself-mentality, which allows for a large degree of personalisation. This is likely to make people feel more at home, but as a large portion of the budget for maintenance and personalisation is shared between a family group, it creates incentives to be creative about the different solutions, collaborate and share the responsibilities [Ibid., pp. 52-53]. This does not only strengthen the sense of community, but also puts a clear focus on material consumption and maintenance.

ILLU. 38. LIMITED PRIVATE OUTDOOR SPACES [NIELSEN, N.D.]

ILLU. 39. DIRECT ACCESS TO PUBLIC OUTDOOR SPACES [FISCHER, N.D.]

ILLU. 40. LAYOUT IN CLUSTERS [TINGÅRDEN, N.D.]

ILLU. 41. SHARED OUTDOOR SPACES [ARMBJØRN, 2020]

CONCLUSIONS

TRANSLATING THE FINDINGS

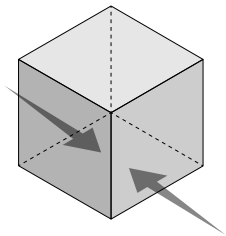
Although the presented case studies are very different both in typology, use and scale, they do show some convergence in the architectural means used to implement degrowth values. Looking at the exterior, the continuation of outdoor activities inside helps to blur the boundaries between inside and outside and thereby invites people in when they pass by. This will, however, mainly be relevant in the summer period, as the Faroese weather complicates many of the exterior activities a library could potentially offer.

Several of the cases show the importance of working with a variation of social and private spaces to create both smaller and larger social groups and thereby strengthen different social bonds and knowledge sharing. However, the nature of boundaries between functions seem to be crucial for the success or failure to create random meetings. If the boundaries are too defined, the likelihood of crossing them becomes smaller, while the opposite might open up to new and unexpected knowledge. However, several cases also present the importance of having more private and intimate spaces to contemplate without being gazed at or disturbed, which can be especially relevant in a library.

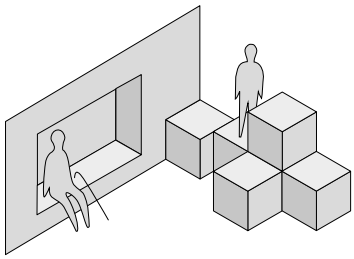
Wayfinding is an important aspect to secure efficient knowledge searching, which again suggests that there is an important balance when working with boundaries, as they need to be well-defined without being obstructive. The definition of spaces can be helped along by creating different atmospheres for the different types of users, which at the same time create a distinct focus on their different needs. However, several of the cases also present the possibility of having shared functions, which can be used by different people and for different functions at different times. Such initiatives can again help to break down clearly defined boundaries and thereby create meetings between people, while minimising the need to build extra space.

A certain degree of flexibility to allow for personalisation can also have a positive effect, as it can provide a sense of belonging. In the context of the library this could be relevant by making it possible to adapt seating spaces to personal needs and possibilities of exhibition spaces to help encourage innovation and creativity.

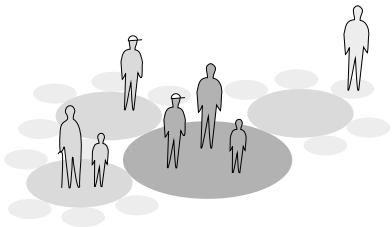
The case studies show that the choice of material can have an effect on the behaviour of the users of the building. A use of resistant materials, thus, becomes especially relevant in spaces where more practical work is carried out. However, this is not necessarily appropriate in places such as contemplative and social spaces, where the wearing down of materials will be slower and the need for softer and warmer materials may be more relevant to create an appropriate atmosphere. At the same time, the need for robust materials may also be decreased by a joint communal force towards maintaining the building, which can prolong the lifetime of the building while strengthening the sense of community.



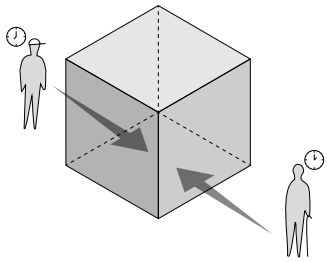
INTEGRATION OF
EXTERIOR & INTERIOR



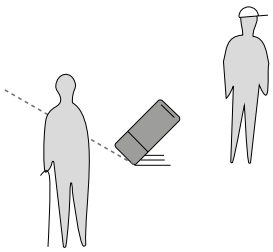
ATMOSHPERES CUSTOMISED
FOR USER TYPES



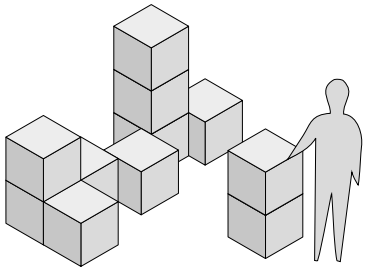
CONNECTING SOCIAL
& PRIVATE SPACES



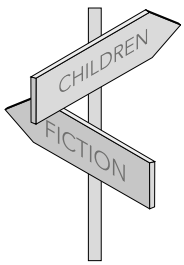
FLEXIBILITY OF SPACES
THROUGHOUT THE DAY



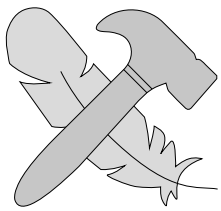
REMOVING BOUNDARIES
BETWEEN USERS



PERSONALISATION OF
WORKSPACE



CLEAR WAYFINDING



MATERIALITY TO SUPPORT
FUNCTIONS AND ATMOSPHERES

ILLU. 42. CONCLUSIONS OF FINDINGS IN CASE STUDIES

2.4

FRAMEWORK

INNRAMMAN

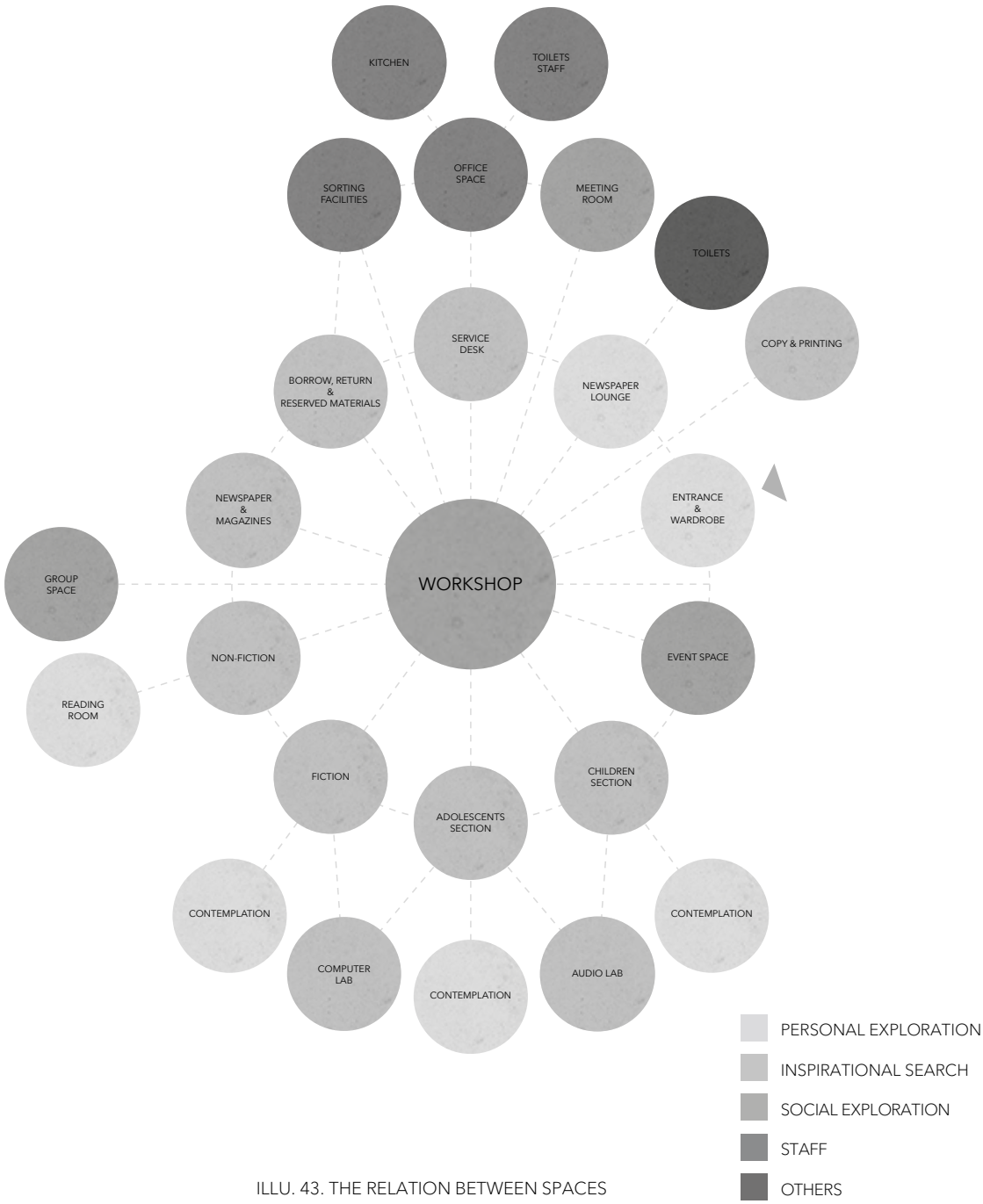
SPATIAL PROGRAMMING

VIRKISKRÁ

The studies of the current library in Klaksvík combined with the case studies has provided an understanding of the needed functions in the new library and how the placement and flow through these can affect the experience and behaviour within the library. This has resulted in an organisation that is centred around a workshop, which should be open and available for all to encourage innovation within the community. The different book and media sections should be directly connected to the workshop and still closely related to each other to foster meetings between groups. Meanwhile, more contemplative spaces should be less open and instead aimed at specific user types. Likewise, the staff area should provide the possibility for a certain degree of privacy although a close connection with the visitors is essential – especially from the service desk. The spatial connections and flows are shown on ILLU. 43.

In general, the spatial organisation is focused around the possibility of utilising spaces for different functions and for different user types. This is done by connecting functions or spaces, which may have an interest for several user groups. Thereby social meetings can be fostered, while minimising the area of the building.

Looking at the sizes of spaces (see room programme on pp. 64-65), we deem an upscaling of the current library facilities necessary in order to be able to fulfil the vision of the library becoming a social beacon of knowledge. This is not achievable with the current size, as the integration of social spaces would diminish the space for books even more and vice versa. Instead, we have in the sizing of book spaces focused on maintaining the current volume of shelving for the different sections, while also adding room for the books that are currently stored in the basement. Additionally, there will be a focus on adding more flexible storage in the different sections, so the stored books remain available to the public. Meanwhile social spaces have been sized according to the expected number of people, who will use them at the same time, while still allowing for flexibility throughout the day.



ILLU. 43. THE RELATION BETWEEN SPACES

ROOM PROGRAMME

RÚMSKRÁ

FUNCTION/SPACE		AREA [m^2]	CAPACITY [people]	SPATIAL PERCEPTION
PERSONAL EXPLORATION				
1.1	Entrance	55	-	Welcoming
1.2	Lounge	45	10	Cosy
1.3	Contemplation space - Fiction	15	5	Intimate
1.4	Contemplation Space - Adolescents	10	5	Intimate
1.5	Contemplation Space - Children	15	10	Intimate
1.6	Reading room	30	10	Focused
INSPIRATIONAL SEARCH				
2.1	Lounge	60	10	Inspiring
2.2	Service desk	25	4	Welcoming
2.3	Reserved, borrow & return	30	-	Practical
2.4	Fiction section	105	-	Inspiring
2.5	Children section	110	-	Playful
2.6	Adolescents section	65	-	Curious
2.7	Non-fiction section	210	-	Exploratory
2.8	Newspapers & magazines	50	-	Manageable
2.9	Audio book area	20	6	Focused

FUNCTION/SPACE		AREA [m^2]	CAPACITY [people]	SPATIAL PERCEPTION
2.10	Computer area	25	6	Focused
2.11	Copy and printing area	20	6	Focused
SOCIAL EXPLORATION			10	
3.1	Meeting room	20		Practical
3.2	Event space	75	75	Open
3.3	Workshop	60	15	Inspiring
3.4	Group spaces	40	20	Focused
STAFF				
4.1	Open-plan office	40	6	Focused
4.2	Kitchen	20	6	Practical
4.3	Toilets	15	2	Private
4.4	Sorting facilities	10	-	Practical
OTHERS				
5.1	Technical room	40	-	Practical
5.2	Toilets	15	3	Private
	Total	**1250**		

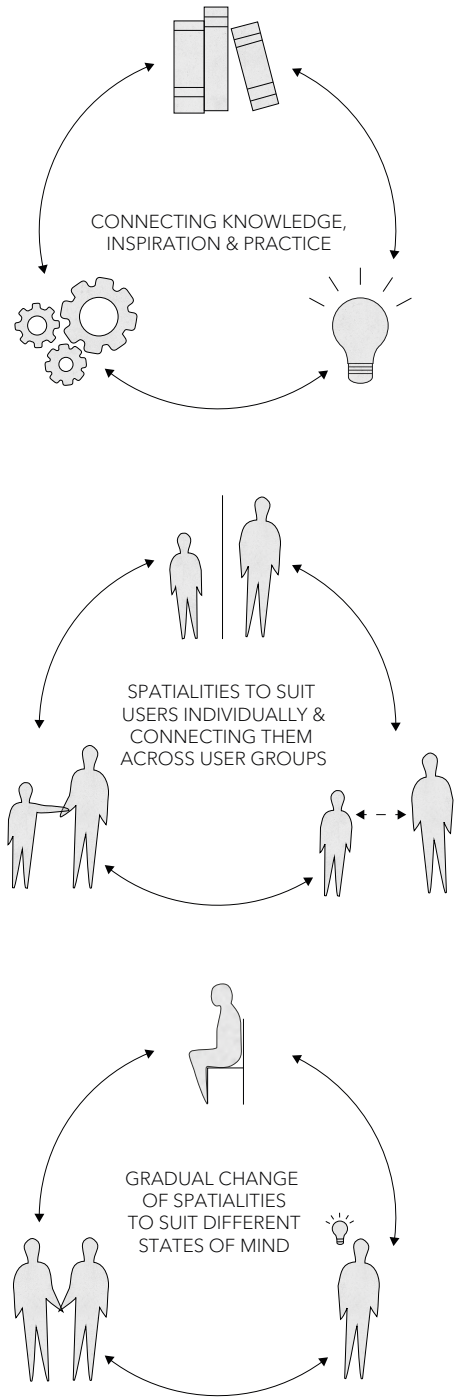
VISION

VISJÓN

With the new library in Klaksvík we envision a social beacon of knowledge, which through environmental and social initiatives can work as a catalyst to promote a sustainable behaviour of social sharing and helping as well as utilising available resources to drive innovation. This is already rooted in the traditional Faroese mentality, and so we strive to provide spaces which are to strengthen the sense of community while gathering around learning, knowledge sharing, inspiration and innovation. This also drives an intent to further encourage schools, businesses and the local community in general to participate in transforming theory into practice.

Being a place open and available to the entire community, the library should offer homely spaces for all user groups to be able to consciously choose their suitable spaces to contemplate, explore, create social bonds and share knowledge. This requires a distinct atmosphere of spaces to easily interpret the level of privacy through contrasts in materiality and openness.

Meanwhile, a gradual progression of spaces should provide an environment with few hard boundaries and thereby foster both physical and visual meetings between different user groups. Flexibility of spaces to accommodate different functions throughout the day should allow for a minimal use of space and material while promoting the idea of sharing and meetings beyond user groups.

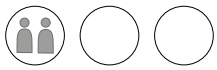


ILLU. 44. VISION

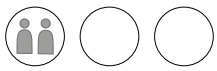
DESIGN PRINCIPLES

SNIÐGEVINGARFORTREYTIR

The design principles are rooted in the Faroese degrowth mentality and aimed at the merge of the tripartition of sustainability. Here, the social, environmental and economic initiatives come together to drive the sustainable development of the community.



Blurred boundaries between functions to foster meetings and inspire across user groups, thereby strengthening the sense of community

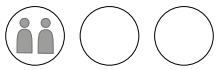


Progression of spaces to provide an open and inviting atmosphere towards the city centre and an intimate and contemplative atmosphere towards the water

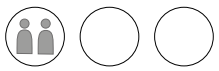
Reprogramming of spaces throughout the day to optimise the use of space, widen number of potential users and foster meetings

Visual highlighting of environmental initiatives to inform visitors and influence their behaviour

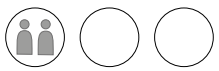
Flexibility of spaces to accommodate the changing needs of society over time



Variation of spatialities and atmospheres to create homely spaces for all users, for various states of minds and for different levels of privacy and togetherness



Usage of the principles of the *roykstova* to gather around the vocal traditions of storytelling and thereby strengthen mentality of knowledge sharing



Visibility and access to books and other information media to orient social behaviour towards exploration of knowledge

Usage of traditional materials available on the islands to the extent to minimise transport and support the local community

Conscious usage of materials to secure the building for generations to come

3.0

SKETCHING PHASE

SKITSUFASAN

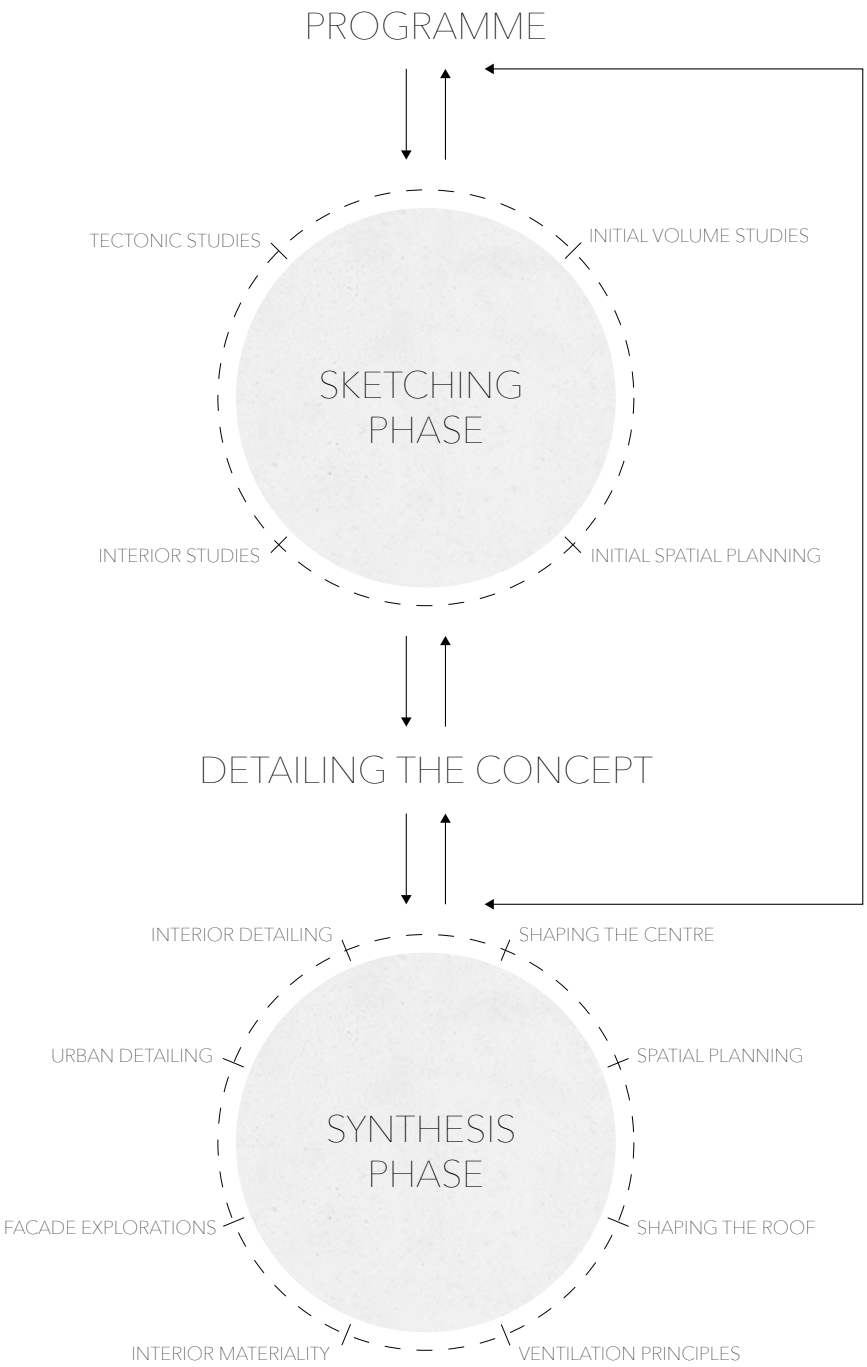
DESIGN PROCESS

SNIÐGEVINGAR TILGONGD

The design process is the phase where the project starts to take its form, and where theories, analyses and information gathered in the programme, slowly start to translate into architectural means. Several tools are utilised in order to develop the concept, where both physical and psychological factors are taken into consideration and evaluated equally. Here, guidelines have been set for every study, to ensure that every exploration was done with a purpose and direction.

As the design process is a dynamic and iterative process, it has been necessary to go back and forth between the programme and design to enable a broader spectrum of knowledge to be used in the design of the library. Thus, the programme and design process have been developed concurrently, where elements have been added to the programme to help improve the basis of the process, and in return, where elements of the design have helped define elements of the programme.

This means, that although the process of both programming and designing has happened concurrently, the phases are presented as linear. This is done to best showcase the basis of the project, and to best present the ideas and studies that have led to the final concept. This Design Process, thus, presents the development of the concept, first through the Sketching Phase, where the initial ideas are explored and culminate in the final concept, which is then developed further through the Synthesis Phase. Here, different elements of the concept are explored until it takes its final form.



ILLU. 45. WORK FLOW AND STRUCTURE DURING THE DESIGN PROCESS

INITIAL VOLUME STUDIES

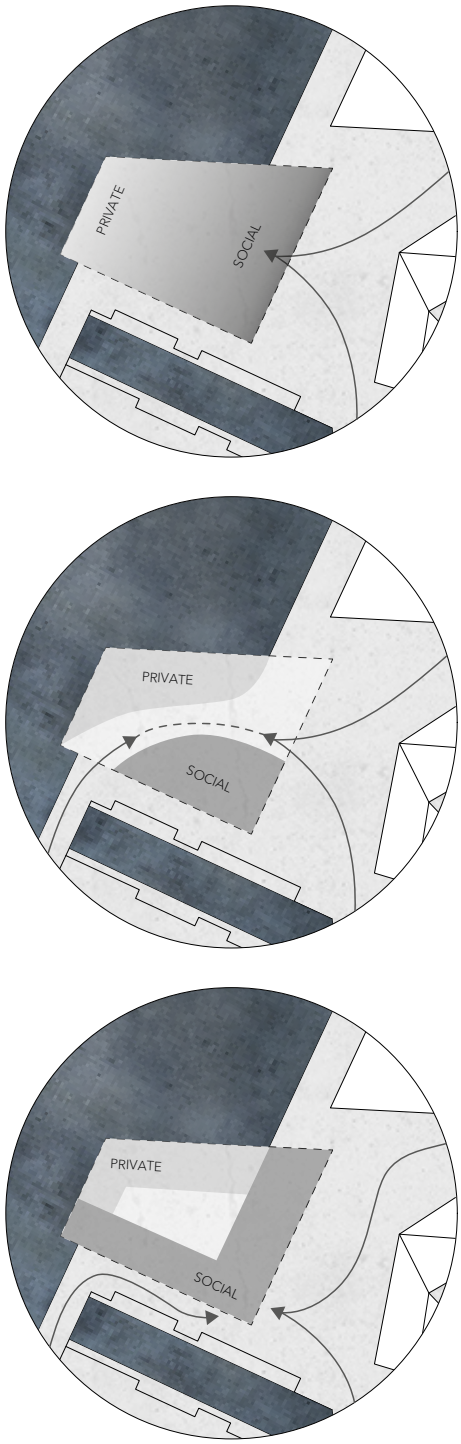
UPPRUNA RÚMLIGAR KANNINGAR

The design process was started at a scale in which we could familiarise with the proportions of the site and how the library should connect with or stand out from the surroundings. Here, we created smaller workshops, where we looked at parameters such as typology, shape, arrival, flow and urban spaces in connection to how the different functions could be distributed within the building.

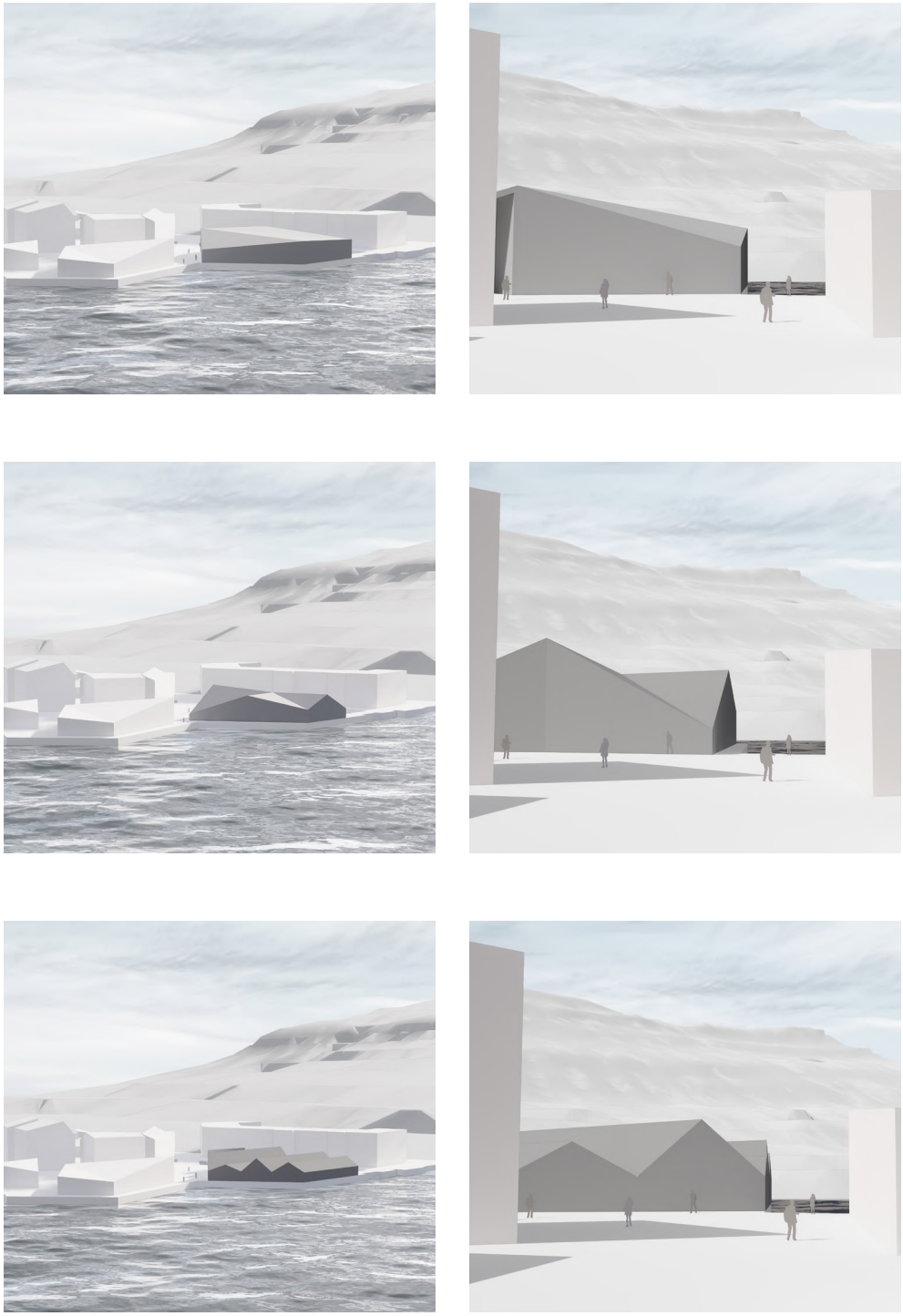
Looking at the natural flows [see ILLU. 46], the primary arrival should be towards the city centre, while a secondary entrance towards the promenade from the south could be relevant to invite pedestrians in. However, when looking at this from the interior of the building, this would cause a disrupting flow between the functions. Instead one main entrance towards southeast could accommodate visitors arriving from both sides. Here, it also became clear that the south façade should expose the more social functions, while the private functions could be retracted towards the north. However, to follow this division, it was necessary that outdoor spaces towards the northern façade were removed in order not to disrupt the more intimate library activities.

Volume studies were likewise used to explore how the building should relate to the rest of the masterplan, and here it became clear that a typology with large streamlined surfaces and sloping roofs were suited to blend in with the rest of the buildings [see ILLU. 47]. On the contrasting side, organic shapes and combinations of smaller units made the building stand out in the context and thereby more of a noticeable landmark [see ILLU. 48]. With the overall vision of the masterplan and the library in mind, a balance between the two contrasting approaches was needed, as the building should be noticeable in order to make people aware of the library as a landmark and thereby invite people in, but only to a degree, where it did not take all of the attention from the remaining functions of the masterplan. The site in itself, with its exposed placement, caused a natural landmark status, thereby suggesting that the shape should to a certain extent fit in with the existing lines and thus present the library as a united part of the city centre.

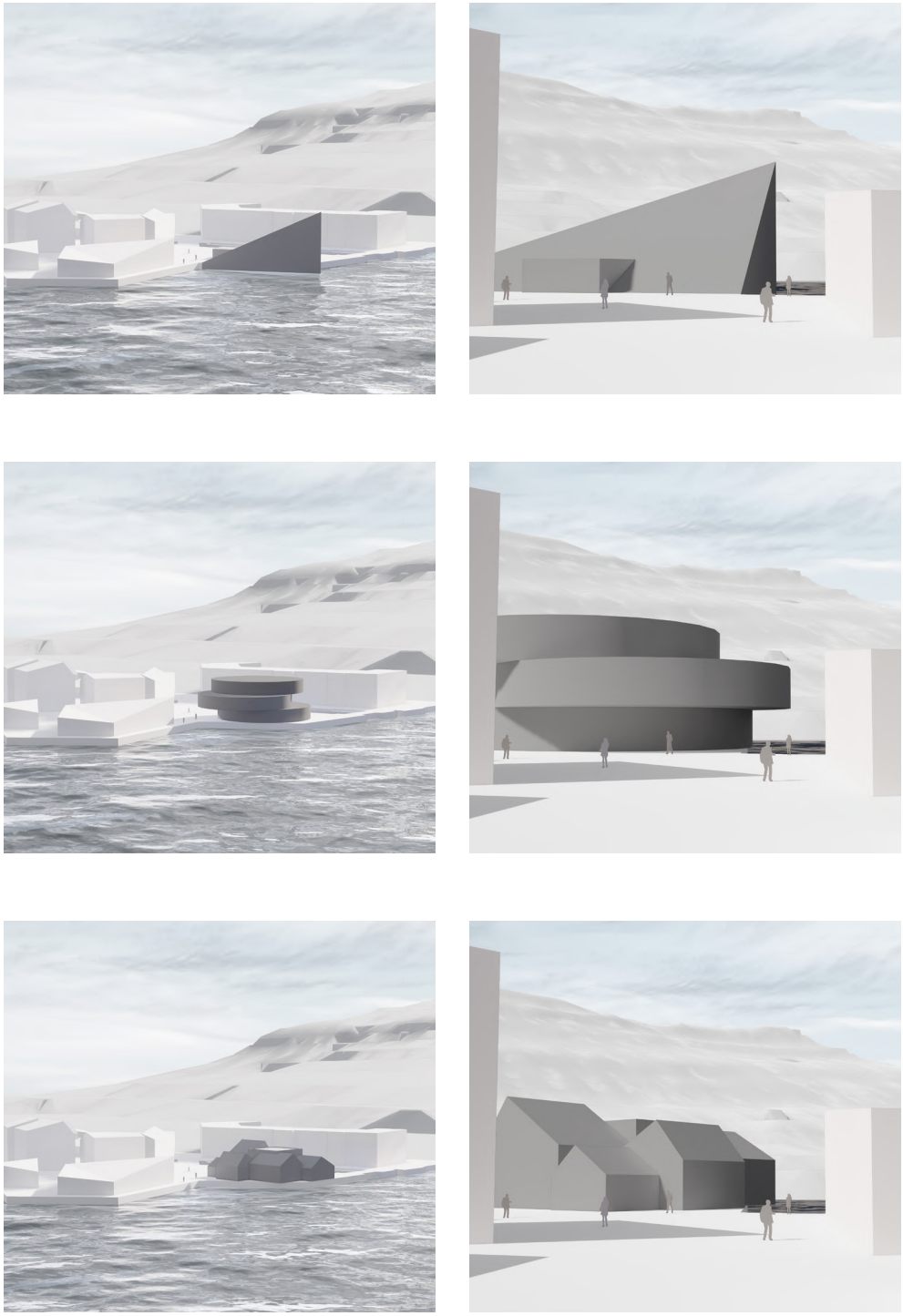
When merging the studies of flow and typology, it became clear that there was a need for a smaller scale, especially towards the entrance, to reinforce the invitation at a human level and at the same time establish the somewhat intimate character of the library functions. With the decision to eliminate urban spaces towards north and west, the smaller scale of the building would be less relevant here, which suggested that a possible first floor could be positioned towards the water, where the extraordinary view could at the same time become accessible to even more library functions.



ILLU. 46. STUDIES OF THE FLOW AND ZONING OF THE LIBRARY



ILLU. 47. VOLUME STUDIES FOLLOWING THE TYPOLOGY OF THE MASTERPLAN



ILLU. 48. VOLUME STUDIES CONSTRASTING THE TYPOLOGY OF THE MASTERPLAN

With the established understanding of the scale and orientation of the site, we could start to gain an understanding of how the library could utilise the climatic conditions and thereby establish the potentials for optimising the building according to energy and indoor environment already at an early stage. Hereby, the technical knowledge could be used when shaping the library architecturally in the further process.

As the basis for these studies, we modelled a simple and compact building of approximately 1500 m^2, corresponding to the estimated room programme, within the boundaries of the site. All other aspects than the building envelope has been kept to a minimum values to allow for the results to be solely dependent on the placement of windows. The floor area was divided, so that the western part of the building was covered by a first floor, as seen on ILLU. 50. With the modelled basis established, different orientations of windows were explored in order to estimate a ratio for an overall window orientation, which would be most beneficial when looking at the resulting energy demand of the building [see ILLU. 49]. These studies showed that there was a great need for windows towards the south as the main contributor to passive solar heating in the cold climate. This was well suited with the potentials of creating an open façade, exposing the more social functions. Contrarily, northern windows resulted in a need for more room heating, which suggested that they should be minimised. However, with the unique qualities of the northern diffuse light in connection with the view of the landscape, the need for northern windows had to be balanced architecturally as well.

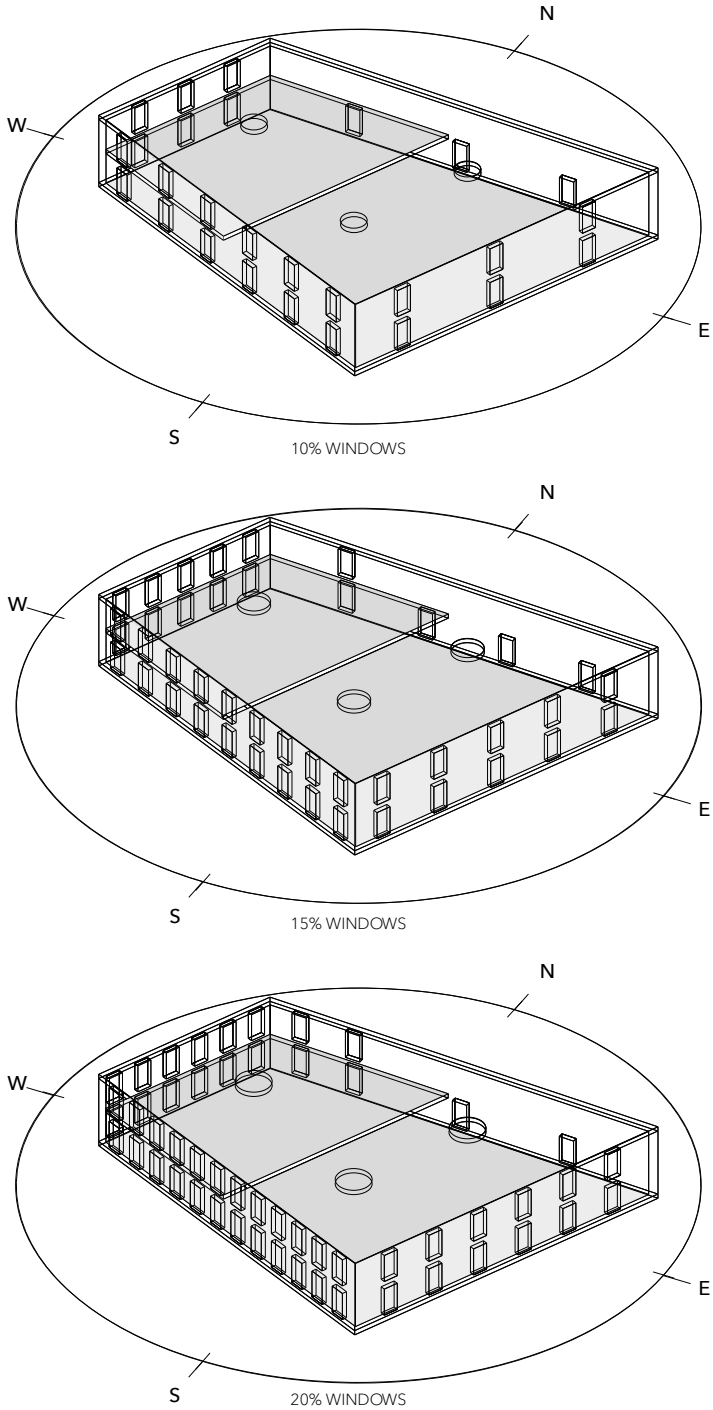
The use of skylights did not contribute substantially to solar heating, as the horizontal contribution of the low sun was at a minimum. Thus, the use of skylights could more beneficially be placed on a sloped roof, in order to lower the energy demand. However, with the quite deep volume, the skylights could be beneficial to contribute with daylight in the centre of the building.

With the overall ratio of window orientations established [see ILLU. 49], the specific area of windows on each façade could be estimated. These studies showed that windows corresponding to approximately 15% of the floor area was optimal to minimise the need for room heating, while preventing excessive temperatures. Looking at the resulting daylight factors of the space [see ILLU. 51], this distribution caused an appropriate level of daylight around the bounds of the building, while the floor area which was covered by a first floor, could not obtain adequate daylight levels. This could, however, present the possibility of creating a different and more intimate atmosphere by using artificial lighting in such spaces.

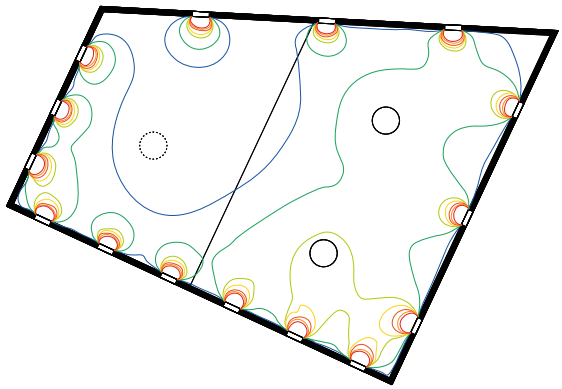
So, while these studies gave a good approximation of how the building could be optimised looking from an energy perspective, the consequences should always be weighed against the architectural implications.

WINDOW PLACEMENT [m^2]					MEAN TEMP. AUG. [°C]	ENERGY FRAME [kWh/m^2]	ROOM HEATING [kWh/m^2]	EXCESSIVE TEMP. [kWh/m^2]
NORTH	EAST	SOUTH	WEST	ROOF				
30	30	30	30	30	13.6	41.5	10.4	-
50	25	25	25	25	13.5	41.6	10.6	-
25	50	25	25	25	13.5	41.4	10.3	-
25	25	50	25	25	13.6	41.1	9.9	-
25	25	25	50	25	13.5	41.4	10.4	-
25	25	25	25	50	13.7	42.0	11.1	-
CONCLUSION - PERCENTAGE DISTRIBUTION ON FACADE								
10 %	20 %	40 %	20 %	10 %	-	-	-	-
WINDOWS EQUALLING 10 % OF FLOOR AREA								
15	30	60	30	15	13.5	40.7	9.5	-
WINDOWS EQUALLING 15 % OF FLOOR AREA								
25	50	90	50	25	14.1	40.1	8.8	-
WINDOWS EQUALLING 20 % OF FLOOR AREA								
30	60	120	60	30	14.5	42.8	9.8	1.9

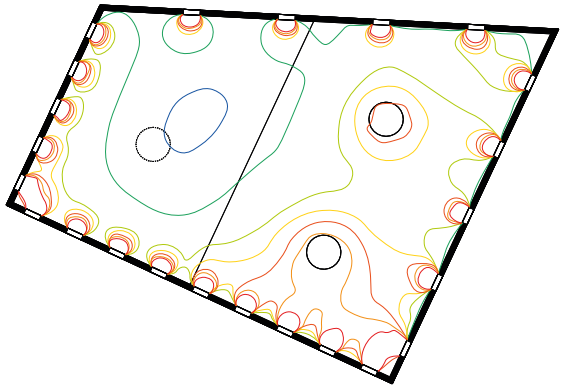
ILLU. 49. KEY NUMBERS OF WINDOW EXPLORATIONS



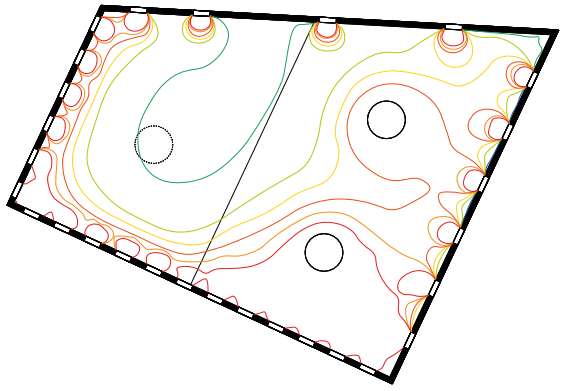
ILLU. 50. WINDOW PLACEMENTS FOR DAYLIGHT STUDIES



10% WINDOWS



15% WINDOWS



20% WINDOWS

DAYLIGHT FACTOR

8
7
6
5
4
3
2
1

ILLU. 51. DAYLIGHT STUDIES WITH DIFFERENT WINDOW RATIOS

INITIAL SPATIAL PLANNING

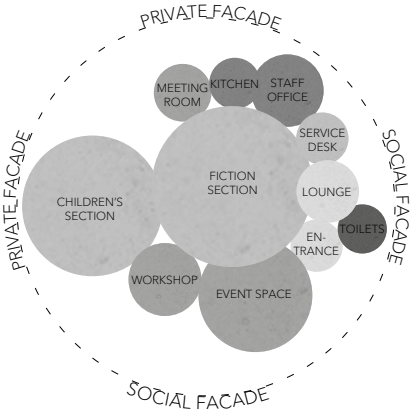
UPPRUNA VIRKISTILLEGGJAN

In order to gain an understanding of how the different library functions could be distributed to fit with the established social and private character of the different parts of the site, the different sizes of functions from the room programme were modelled. In this way, different studies could be made to establish connections in between functions and towards the site.

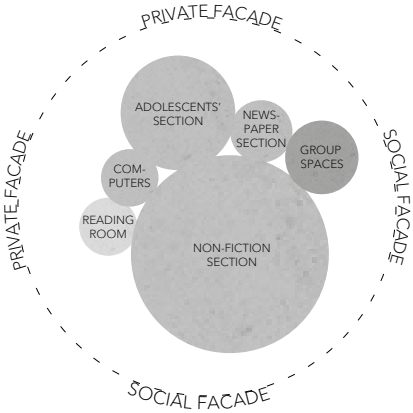
With the vision of linking the many functions of the library, it was first of all important to establish the central space, which was to merge all functions. This was tried both with book sections, event space and the workshop [see ILLU. 52], which due to their different sizes gave different opportunities to distribute functions around it. However, the effect of different central spaces was quickly established, as it would become somewhat of an intermediate space, where book sections would be disrupted by visitors moving through. Meanwhile, placing the workshop at the centre would make it available to all and at the same time expose the ongoing processes throughout the day, while the event space would only be activated at specific times during the day. Thus, the workshop could work as a natural centre for the library as a space to invite all visitors to transform their knowledge into practice.

The placement of functions around the workshop also caused a natural placement of many other functions. When connecting it to the social and private characters of the facades, it was thus natural to place the larger book sections towards north and west in order not to disrupt intimate contemplation activities, while the lounge and event space might even benefit from the social exposure as a place to show the less intimate parts of the library.

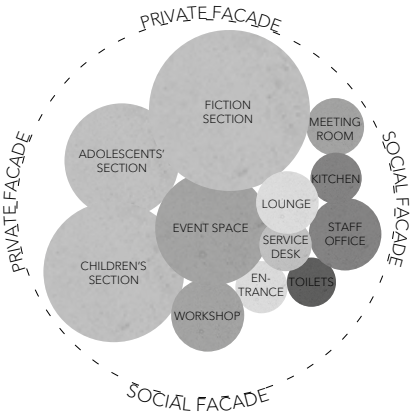
The studies of placing the room programme on the site also made it clear that having all functions on a single floor might not be possible. Thus, if a first floor was needed, the non-fiction section could be moved here, in order to create a less disrupted space for students working at the library for longer periods of time. Meanwhile an openness between the two floors was still essential as a way to create a visual connection between all functions.



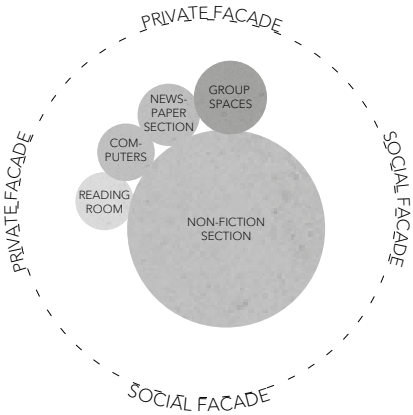
GROUND FLOOR



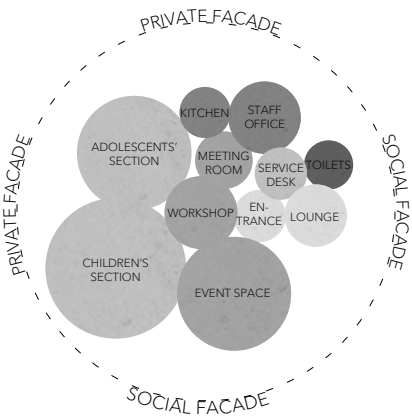
FIRST FLOOR



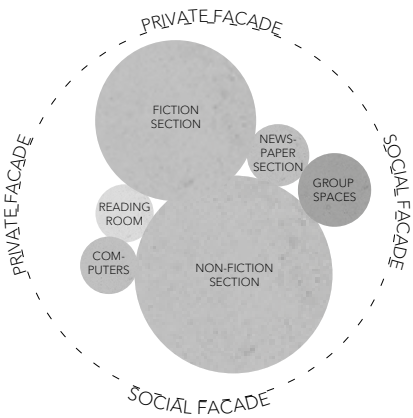
GROUND FLOOR



FIRST FLOOR



GROUND FLOOR



FIRST FLOOR

ILLU. 52. STUDIES OF THE SPATIAL ORGANISATION

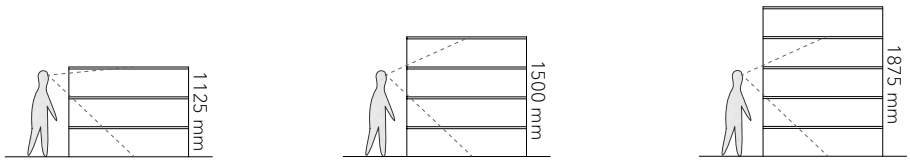
INTERIOR STUDIES

INNANDURA KANNINGAR

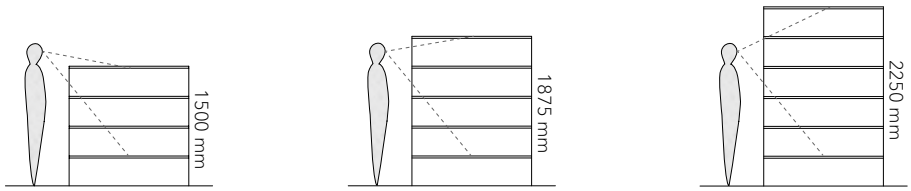
With books taking up much of the space in a library, it was relevant to look at their proportions at an early stage in the process, so the spatial planning could be adjusted to the need for bookshelves. The studies were carried out with the use of physical bookshelves in order to adjust them to the human scale and further on to the user groups.

Firstly, the appropriate height of bookshelves was determined for both adults and children, as seen on ILLU. 53. While adults could find trouble in seeing the books at the lowest level of the bookshelf, this would be no problem for children, which suggested a need for differentiation between the bookshelves for the different users. Similarly, children would not be able to reach books on high shelves, thereby suggesting a need for lower bookshelves in such spaces. Depending on their heights, the concentration of books could thus be higher in the adult sections of the library, as both their visual and physical range was wider, which meant that the children's books would take up more space, if they should all be placed at an easily accessible height. These parameters were used to define the specific need for bookshelves in the different library sections.

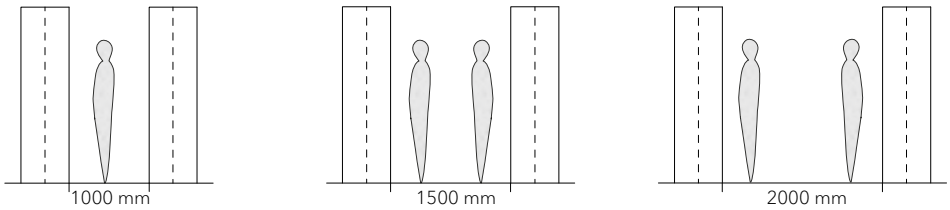
Meanwhile, the appropriate distance between bookshelves needed to be established, as people should be able to walk past each other in the aisles. Here, a minimum space of 1.5 m was determined to make this possible, while a further distance would be necessary in spaces with a high level of traffic. In this relation, it also became relevant to look at social distances, as suggested by Jan Gehl, [2017, p. 65], which meant that people would be able to walk past each other at a comfortable personal distance. However, when people were to walk past a person reading, the distance would have to be increased to a minimum of 2.3 m, in order not to invade their personal space while carrying out an intimate activity.



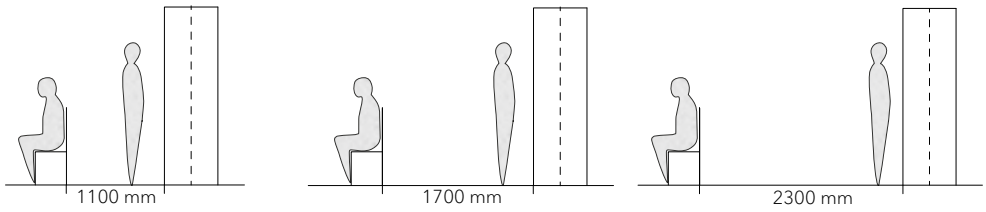
HEIGHT OF CHILDREN'S BOOKSHELVES



HEIGHT OF ADULT BOOKSHELVES



DISTANCE BETWEEN BOOKSHELVES



DISTANCE BETWEEN BOOKSHELVES AND SEATING AREAS

ILLU. 53. STUDIES OF DISTANCES AND HEIGHTS OF BOOK SHELVES

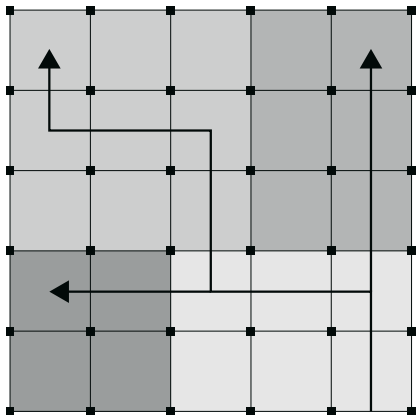
TECTONIC STUDIES

TEKTONISKAR KANNINGAR

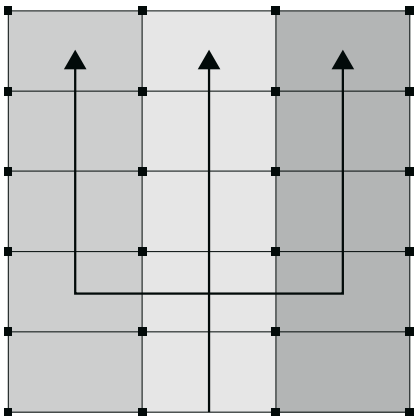
With the understanding of some basic parameters of the design at different scales, it was time to investigate a main concept, which could drive the design towards fulfilling the vision for the library. Here we decided to start the process by looking at how the structural system could contribute as a gesture to underline how the spaces of the library should be used.

With no natural construction materials available on the islands, it was quickly established that wood should form the main structural system because of its sustainable qualities and the large availability from Scandinavian countries. Here, especially two systems were investigated: a grid system and a frame system [see ILLU. 54], which both had good potentials of utilising prefabrication. While the grid-system had good qualities with its non-hierarchical character, which made it possible for spaces and functions to merge, it did not help to emphasise a directionality for the visitors to follow. Even though we worked with different ways of adding stabilising elements to strengthen the directionality and gesture of the system, the effects were barely visible. Meanwhile, the frame system had a clear directionality, which could lead visitors around the building. However, placing them parallel to each other would cause a one-sided directionality, where several individual flows would form, which prohibited functions and users to merge.

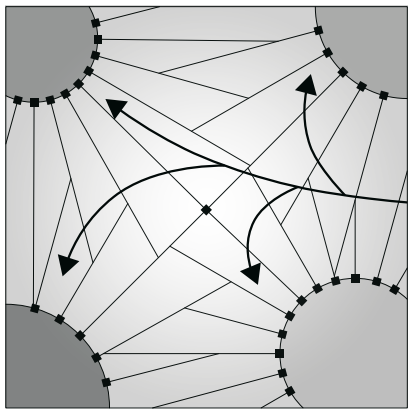
The inconclusive studies of the structural systems led to a need for a different take on the conceptual design. From here, an idea of functions evolving as ripples in the water was established. Hereby, all the sections of the library were divided into different levels of private and social spaces, as seen on ILLU. 55, which made it clear, where the 'ripples' and functions could start to interfere with each other to form meetings between different users. We worked with this idea alongside the studies of the structural system, and hereby we were able to investigate how pronounced the 'ripples' should be in the spatial planning, and how the structural system could support and strengthen the tale of the evolving functions, as seen on ILLU. 56. This approach led to a good understanding of the spatial planning, but the integration of different grid and frame systems did either become too complex or too rigid to support the complex spatial planning. Instead, we took all the knowledge we had gained from the many attempts and used it to form a final approach for conceptual design.



GRID STRUCTURE



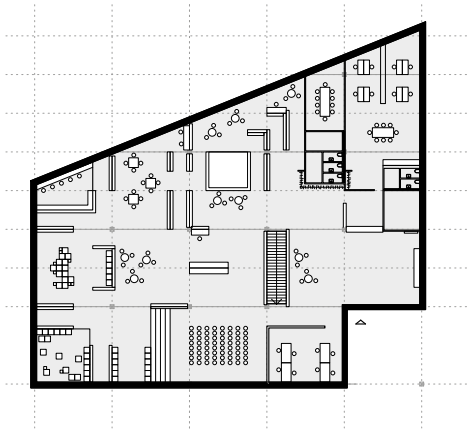
FRAME STRUCTURE



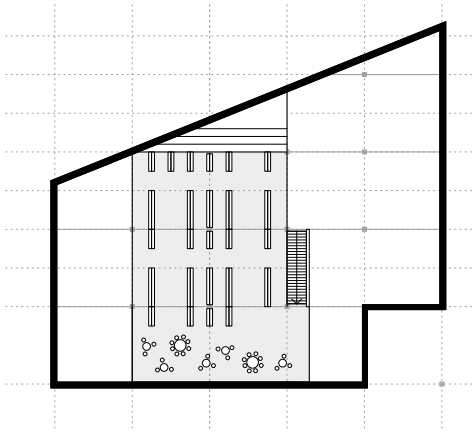
RIPPLE STRUCTURE

ILLU. 54. STUDIES OF STRUCTURAL SYSTEMS

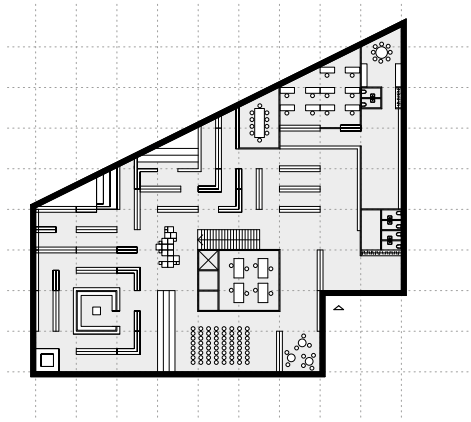
ILLU. 55. FUNCTIONS FORMING 'RIPPLES' THROUGH AN EVOLVEMENT FROM PRIVATE TO SOCIAL SPACES



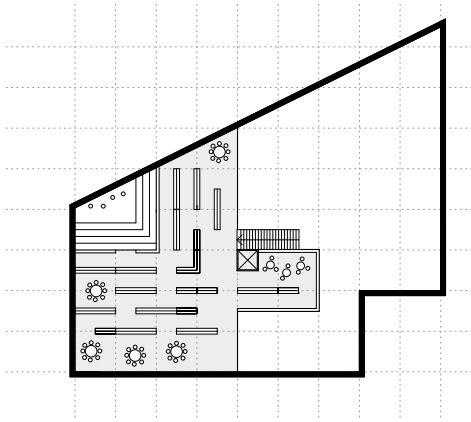
FRAME SYSTEM - GROUND FLOOR



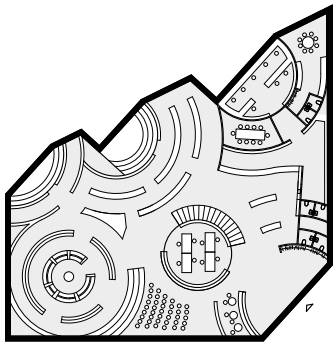
FRAME SYSTEM - FIRST FLOOR



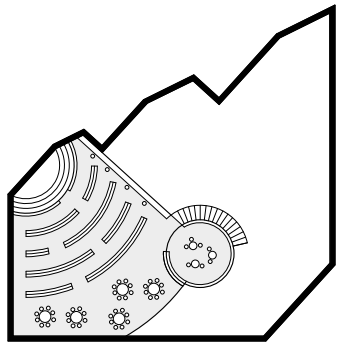
GRID SYSTEM - GROUND FLOOR



GRID SYSTEM - FIRST FLOOR



CIRCULAR SYSTEM - GROUND FLOOR



CIRCULAR SYSTEM - FIRST FLOOR

ILLU. 56. STUDIES TO INTEGRATE THE 'RIPPLING' EFFECT IN THE SPATIAL PLANNING THROUGH DIFFERENT STRUCTURAL SYSTEMS

DEFINING THE CONCEPT

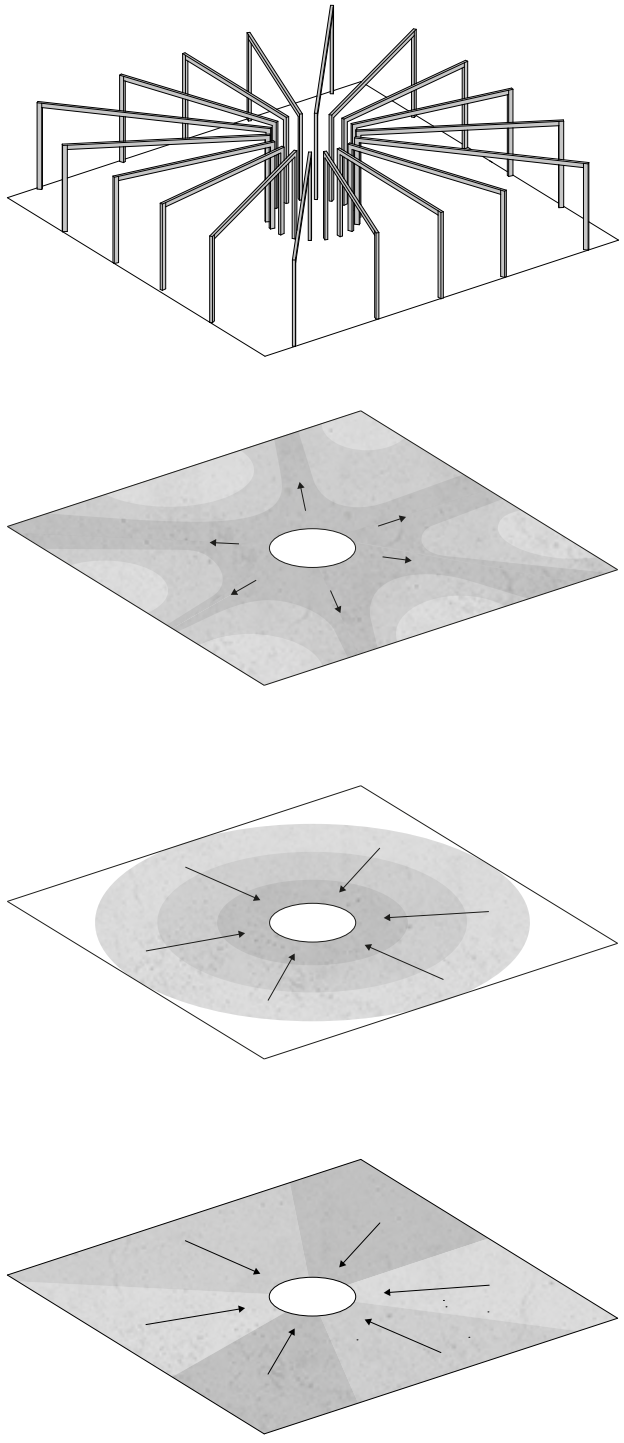
ALLÝSING AV HUGTAKINUM

The idea of the 'rippling' functions caused a large complexity, as it formed many centres within the building, which was not comprehensive with a simple structural system to guide one's way through the building. Instead, we took a step back and decided to work with a single centre of the building, from where all the remaining functions would emanate. From this idea, a simple frame with a shared centre was developed to accommodate and strengthen the directionality towards the different library sections.

At first, the centre was meant as a small courtyard, which was to bring light into the centre of the building. However, as an outdoor area it would mainly be able to contribute with diffuse light, and direct sunlight would be very scarce, which would minimise its use as a social area, while also being a major contributor to heat loss. Instead, we decided to go back to our prior studies, where the workshop had been the link between functions. In this concept, the workshop could become the centre of attention, from where it would be easily accessible to all, while exposing the activities and thereby inviting visitors to participate.

With the centre established, it was clear that the areas around the centre should have a more social character, while the more private spaces could retract towards the facades and thereby utilise the view as a part of the contemplative activities. However, in order not to divide the different sections with clear boundaries it was necessary to extend the social areas in-between the sections from where interaction between user groups could occur.

With the quite long sketching phase to find the right concept, many things had already been established and had thereby been integrated from an early stage. However, with the detailing of the concept, many of the elements needed to be explored more in depth, and from different angles to establish how the building could be optimised from different points of view. This process will be presented in the following synthesis phase.



ILLU. 57. EARLY CONCEPT DIAGRAM

3.1

SYNTHESIS PHASE

SYNTESUFASAN

SHAPING THE CENTRE

TILLAGING AV MIÐDEPLINUM

INTERIOR EXPRESSION **INTERNAL FLOWS & SPACES** EXTERIOR EXPRESSION

VENTILATION ACOUSTICS ENERGY PERFORMANCE DAYLIGHT

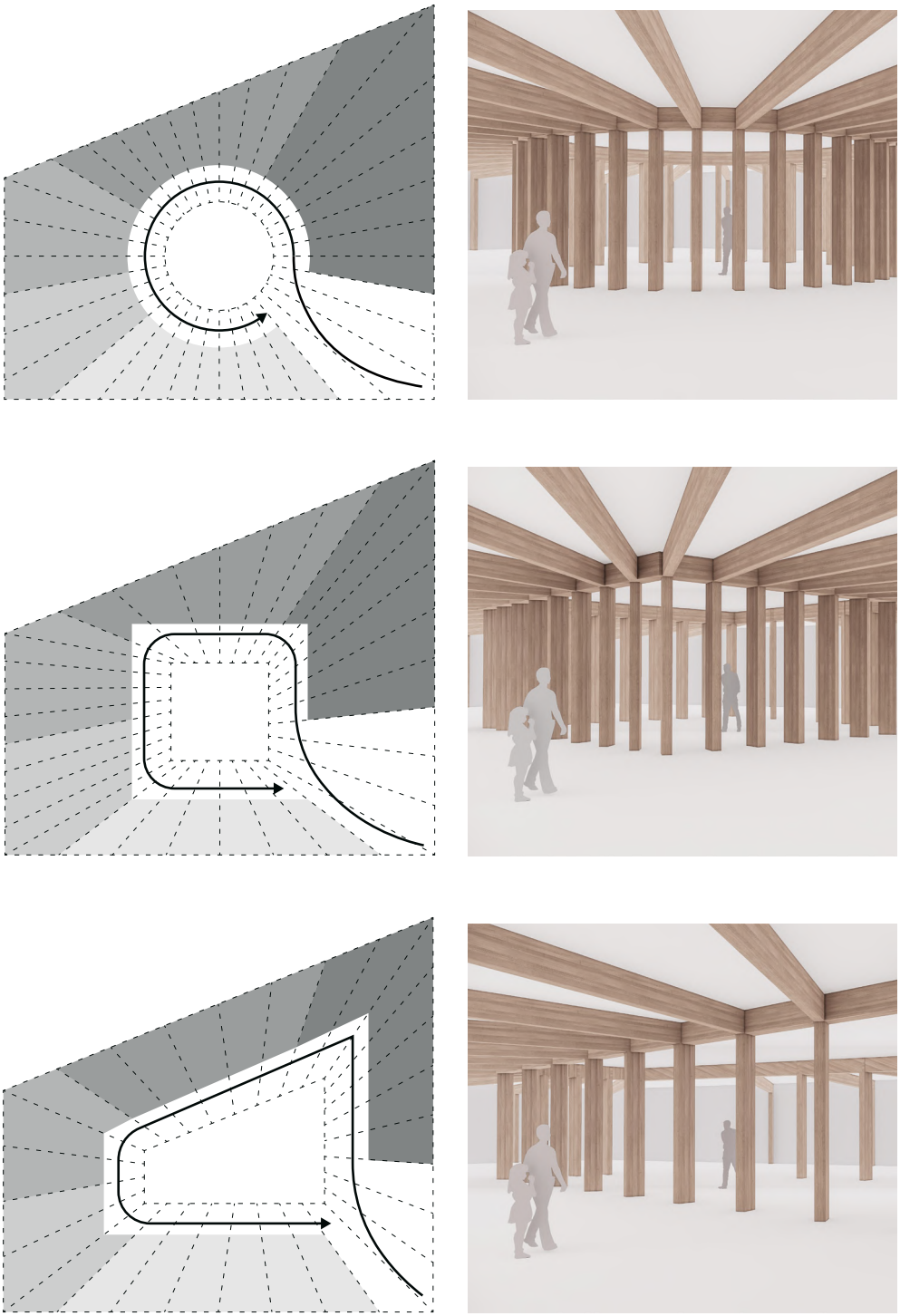
URBAN CONNECTIONS MATERIALS **STRUCTURAL EFFICIENCY**

With the overall concept established, we needed to experiment with the shape of the centre, as this would be where all the surrounding functions should emanate from and relate to. Thus, different studies were carried out to establish how different shapes would affect the visual perception as well as the flow around the centre and the division of library sections.

Overall, three shapes were studied: a circle, a square and a shape that followed the site and building, as seen on ILLU. 58. When looking at the flow created by the shapes, the round shape was most beneficial, as it was able to create a more fluid movement with no specific directions or views emphasised. This would indicate that all the different sections of the library would be of equal importance, while also minimising the necessary walking area compared to the other shapes.

The shorter distance between columns, created by the irregular site shape, was preferable when looking at the structural efficiency of the system, as it would require smaller beams and columns, and at the same time loads would be more equally distributed, due to the possibility of a greater distance between the columns in the centre. However, these qualities also made it very space consuming, which was not the intention of the workshop.

When looking at the aesthetic appearance of the centre, the round shape again proved beneficial, as the views towards the workshop would be the same, no matter where it was approached from, for which reason it was chosen as the best solution. However, the exploration also opened a discussion of how open or closed the appearance of the workshop should be, as a great deal of openness would be appreciated from the outside, as it would be possible to follow the work inside the workshop, while too much openness might make the users feel too exposed. So, this question was explored more in depth in connection with the spatial organisation.



ILLU. 58. STUDIES OF THE SHAPE OF THE CENTRE OF THE BUILDING

SPATIAL PLANNING

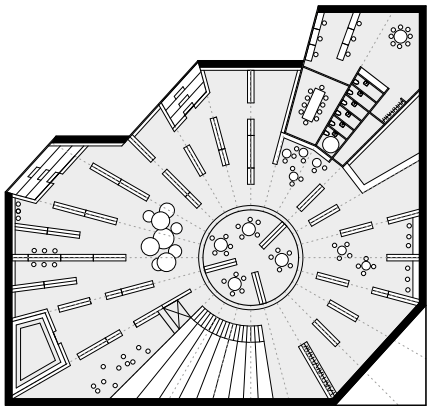
RÚMLIG TILEGGJAN

INTERIOR EXPRESSION **INTERNAL FLOWS & SPACES** EXTERIOR EXPRESSION
VENTILATION **ACOUSTICS** ENERGY PERFORMANCE **DAYLIGHT**
URBAN CONNECTIONS MATERIALS **STRUCTURAL EFFICIENCY**

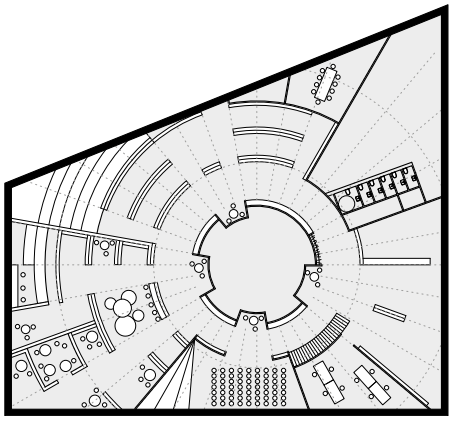
With the circular centre established, we needed to explore how the different functions should emanate from here: whether the interior should follow the lines of the structural frames, the circular shape of the centre or continue to form 'ripples' towards the centre, as seen on ILLU. 59. While the plan of using ripples continued to underline how functions evolved from private to social spaces, it also started to work against the lines of the structural system, which created a more blurred flow. At the same time, it became clear that this way of organising the spaces would cause the bookshelves to prevent much of the daylight from the façade to reach further into the building. Meanwhile, letting the interior follow the centre would cause the same problems with daylight, while the effects of the circle meeting the straight lines of the site caused an inefficient use of space. Even though we worked with the outer shape of the building to accommodate this problem it did not fit well with the exterior spaces. So, it was decided to let the interior follow the lines of the structural frames, which could be beneficial both for daylight, flow and visibility between functions.

With the initial studies of the interior planning, we started to look at the angles between the structural frames, as this would now both affect the interior expression, the structural efficiency of the system, and essentially also the spreading of sound in-between the bookshelves. Thus, three different angles were explored 10°, 12° and 15° [see ILLU. 60-61], to see which could accommodate the factors in the best way. The studies showed that an angle of 10° would cause the most efficient use of space in order not to create too much unused distance between bookshelves, which was a decisive factor. Meanwhile, raytracings also showed that the small angle between the frames caused sounds from the center to be spread less than it would for the larger angles, which was beneficial in order not to spread sounds unnecessarily from the social spaces to the private spaces.

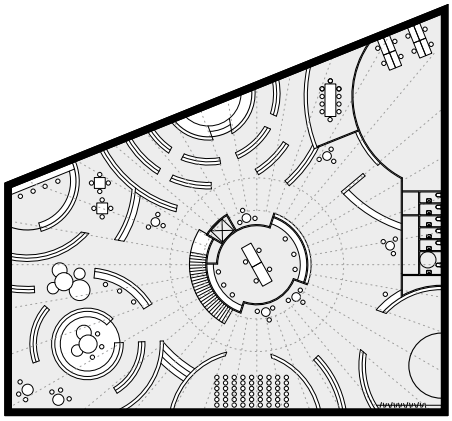
When looking at the space which was created in the centre, the angle of 10° made it possible to see the activities in the workshop without the users feeling very exposed [see ILLU. 61]. However, when looking at the structural efficiency, it was clear that the close distance between the columns caused an inefficient use of material. Thus, we started working with a beam connecting the frames, which would thereby be able to distribute forces into fewer columns. However, this caused the workshop to become very open, which suggested a need to work with other ways of partially shielding the visibility towards the workshop.



INTERIOR FOLLOWING THE FRAMES

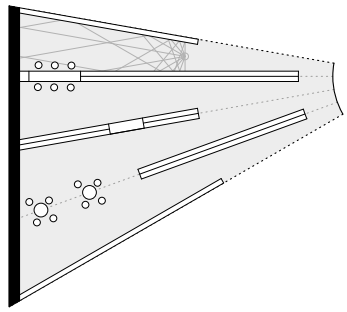


INTERIOR FOLLOWING THE CENTRE

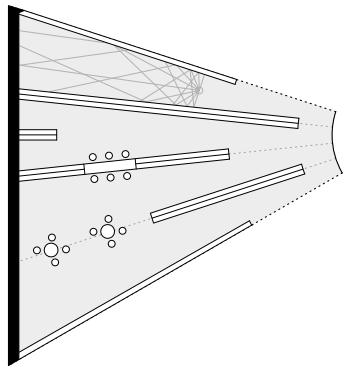


INTERIOR FOLLOWING THE 'RIPPLES'

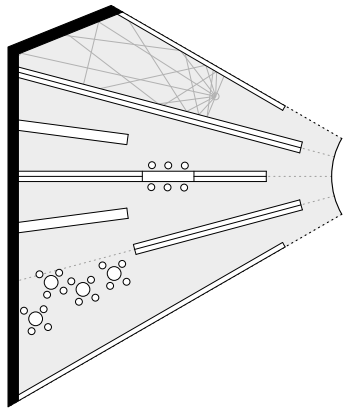
ILLU. 59. STUDIES OF HOW THE INTERIOR PLANNING AFFECT



10° ANGLE BETWEEN FRAMES

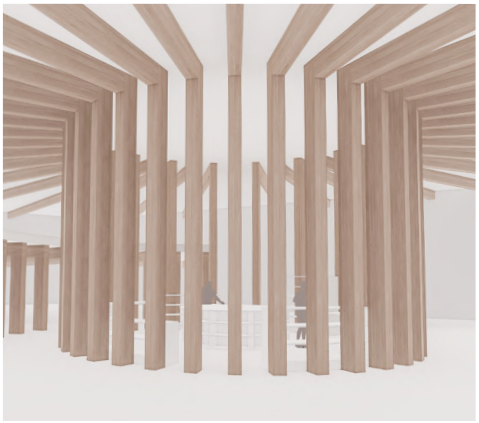


12° ANGLE BETWEEN FRAMES

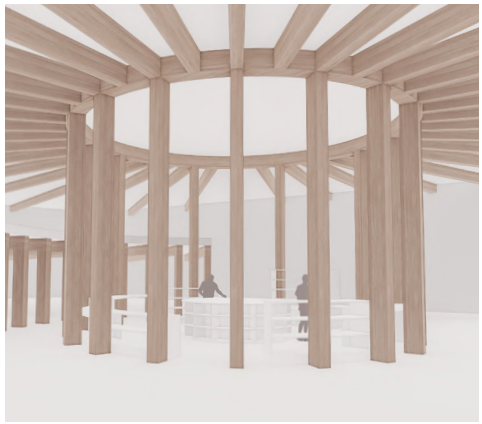


15° ANGLE BETWEEN FRAMES

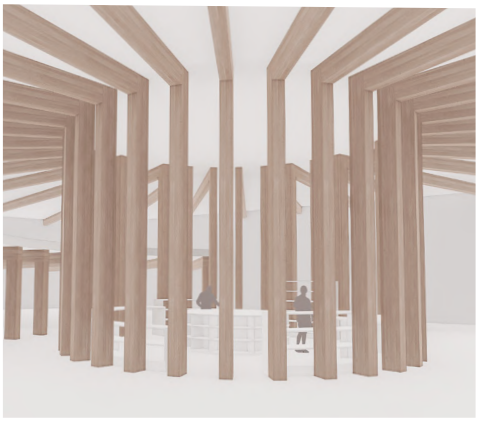
ILLU. 60. STUDIES OF HOW THE ANGLE BETWEEN FRAMES AFFECT THE INTERIOR & ACOUSTICS



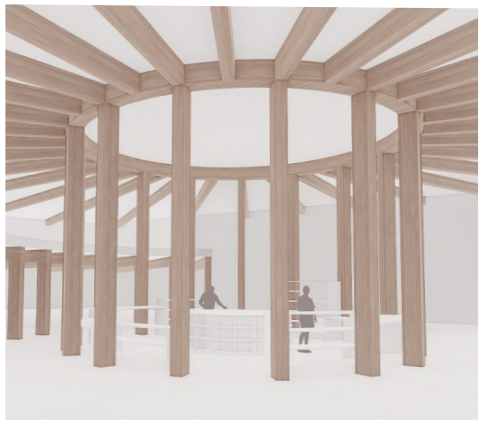
10° ANGLE BETWEEN FRAMES



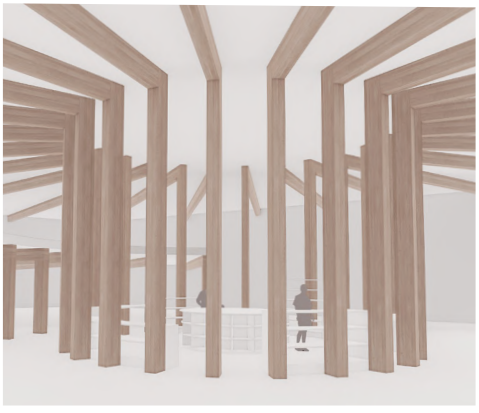
10° ANGLE BETWEEN FRAMES WITH BEAM



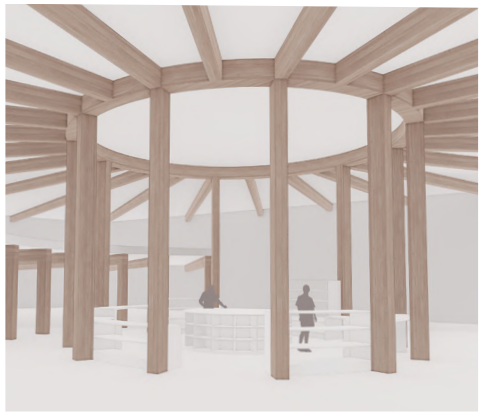
12° ANGLE BETWEEN FRAMES



12° ANGLE BETWEEN FRAMES WITH BEAM



15° ANGLE BETWEEN FRAMES



15° ANGLE BETWEEN FRAMES WITH BEAM

ILLU. 61. STUDIES OF HOW THE FRAMES MEET THE CENTRE WORKSHOP

SHAPING THE ROOF

TILLEGGJAN AV TEKJUNI

INTERIOR EXPRESSION **INTERNAL FLOWS & SPACES** **EXTERIOR EXPRESSION**

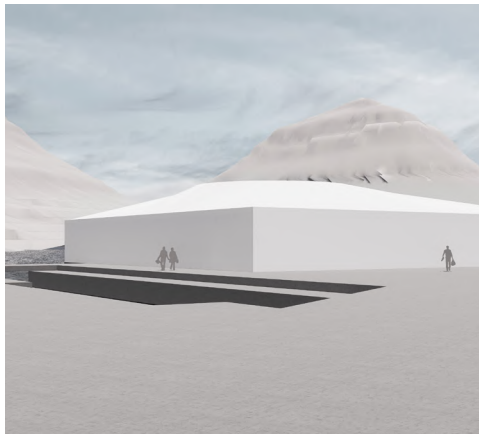
VENTILATION ACOUSTICS ENERGY PERFORMANCE DAYLIGHT

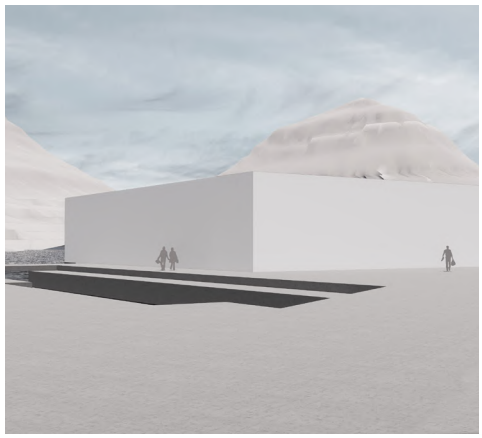
URBAN CONNECTIONS MATERIALS **STRUCTURAL EFFICIENCY**

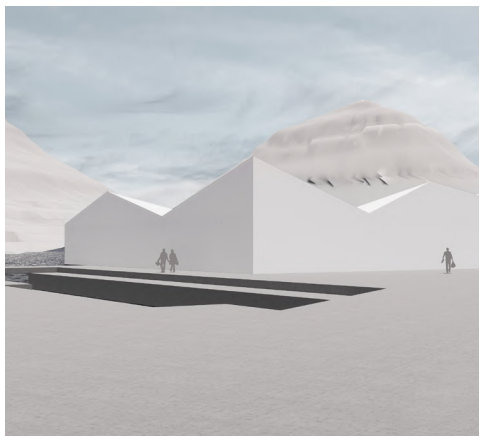
While the first iterations of the design had been made with a simple frame of a straight beam and equally long columns, there were potentials in modifying the structure to emphasise the relationship between social and private spaces, and at the same time this could impact the scale of the building towards the exterior and thereby also the use of the urban spaces around the library.

Several different experiments were made in this regard, as seen on ILLU. 62. The two first examples used columns of the same height respectively towards the interior and exterior, which caused the building to appear as a large volume without much relation to the human scale from the exterior. At the same time, they caused the highest point of the building to be towards the exterior or in the middle, which was not comprehensive with strengthening the flow or relationship between private and social spaces.

Meanwhile, the last example used unique frames for each section of the circle and were hereby able to divide the large area of the building into smaller volumes, both when viewing it from inside and outside. At the same time, this system could comprehend a variation between social and private spaces, as it would both be able to accommodate lower intimate spaces and more spacious social spaces towards the facade. This way of letting structure and functions follow each other could both help in the interpretation of spaces from the inside, while also making it readable from the outside. Likewise, the scale of the building would be broken down and related more to the human scale when seen from the outside. However, the consequence of the unique frames was that all elements would be of different length, and thereby the process of construction would not be standardised as it could have been with some of the other shapes. So, in order not to complicate the construction process even further, it became clear that we had to focus on how the different roof sections could meet the centre without causing double curved shapes.








ILLU. 62. STUDIES OF THE ROOF SHAPE

VENTILATION PRINCIPLES

VENTILATIÓNSPRINSIPPIR

INTERIOR EXPRESSION **INTERNAL FLOWS & SPACES** EXTERIOR EXPRESSION

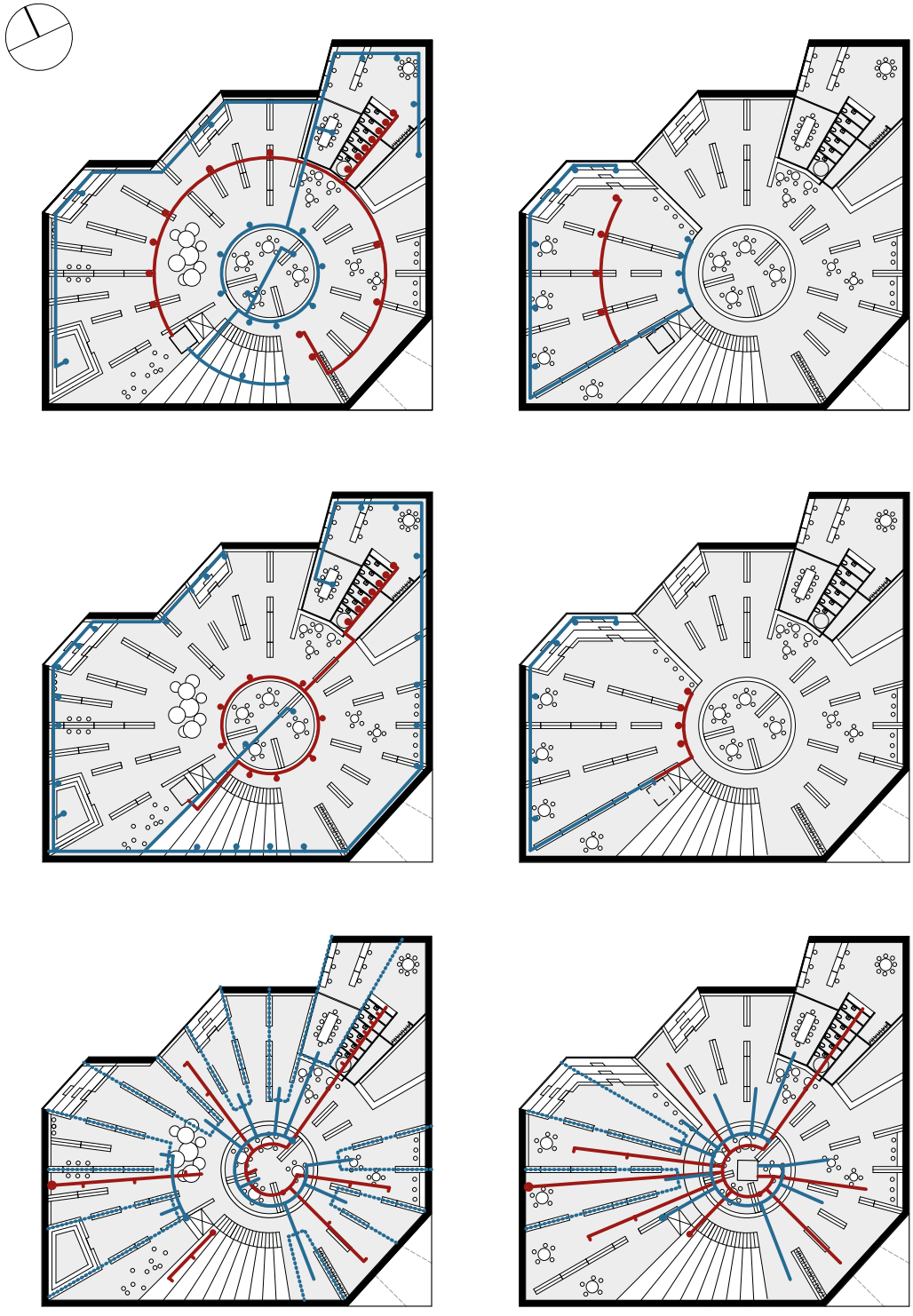
VENTILATION **ACOUSTICS** **ENERGY PERFORMANCE** DAYLIGHT

URBAN CONNECTIONS **MATERIALS** STRUCTURAL EFFICIENCY

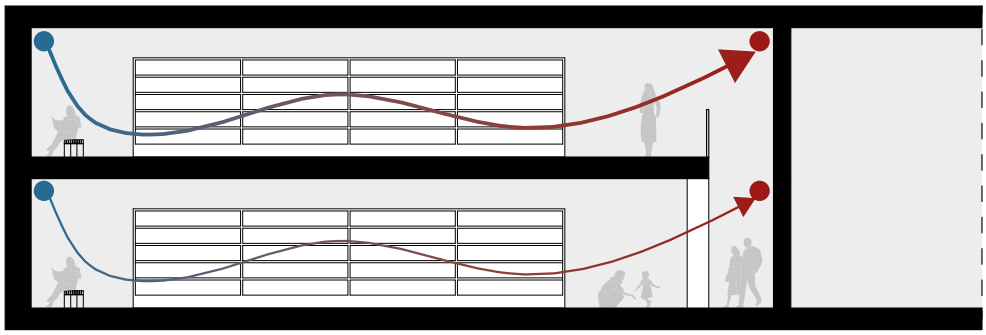
Early in the process it had been established that a primary use of natural ventilation would not be suitable to reach a good indoor environment due to the cold climate, so a mechanical ventilation system had to be established. The complex shape of the roof made it difficult to let the ventilation ducts run in the ceiling without having to cross each other or the structural frames, which our initial studies [see ILLU. 63] found to be necessary due to a non-central placement of the ventilation unit. As none of these solutions would be appropriate both when looking at the aesthetics and energy efficiency of the proposed systems, we tried to work with a central placement of the ventilation unit above the workshop, as it would be able to reach all sections of the library without having to cross the structural system. However, a consequence of this was that it would be difficult to gain a sufficient level of daylight into the workspace.

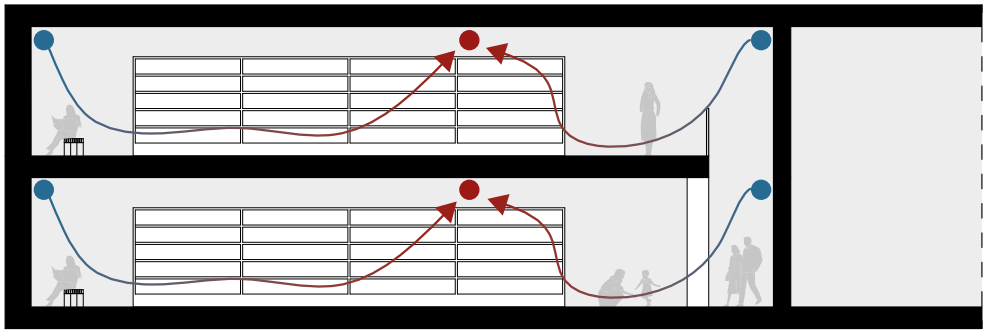
From the central placement, we started working both with minimising the length of ducts and how it could become an integrated part of the aesthetic appearance of the space. At first, we worked with keeping the ventilation visible by letting the ventilation ducts run in-between the frames and thereby use them to emphasise the directionality towards the different library sections. However, as it was impossible to avoid that ducts would have to shift directions in some points, this intention would be lost in certain places, and was thus not found suitable. Instead we started working with a suspended ceiling which would only keep the structural beams partially visible. This gave a more clear expression without disturbing elements running in the ceiling. With the suspended ceiling we were also able to cut down the use of ventilation ducts markedly by using principles of diffuse ceiling ventilation. By using this system, ducts would only have to be connected to a zone from where the air would be distributed across the entire zone through perforations in the suspended ceiling [see ILLU. 64].

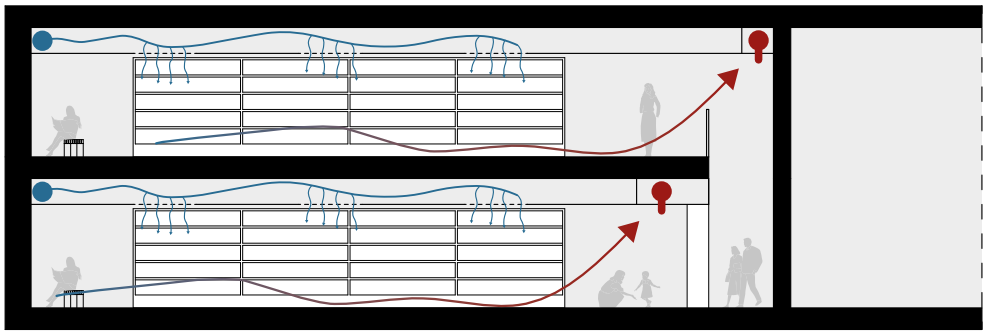
Although known suppliers had some well-tested materials to make suspended ceilings work as diffuser for the ventilation, they were all based on a modular system, which did not fit well in-between the angled frames, as seen on ILLU. 65. Instead, we decided to work with lamellas with a backing of acoustic felt, as this caused a close connection with the structural frames. The acoustic felt could in theory act as a diffuse material, while certain areas of the ceiling would also have to be covered by a passive material, where the air would not be able to penetrate, in order to gain the right distribution of air.



ILLU. 63. STUDIES OF VENTILATON PRINCIPLES IN RELATION TO THE SPATIAL PLANNING







ILLU. 64. PRINCIPLE SECTIONS OF DIFFERENT VENTILATON PRINCIPLES

ILLU. 65. STUDIES OF VENTILATON PRINCIPLES IN RELATION TO MATERIALS

INTERIOR MATERIALITY

INNANDURA TILFAR

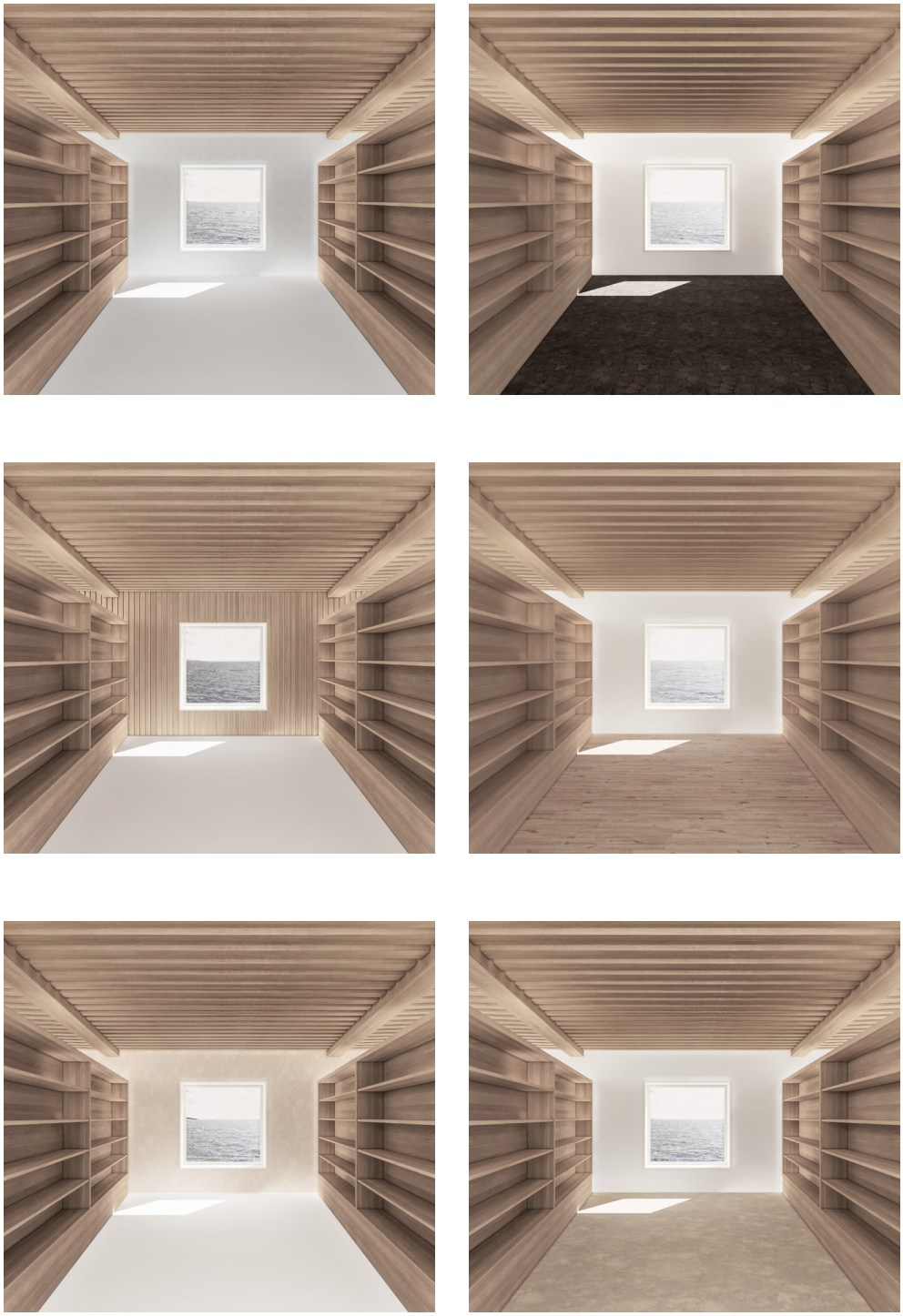
INTERIOR EXPRESSION INTERNAL FLOWS & SPACES EXTERIOR EXPRESSION
VENTILATION **ACOUSTICS** ENERGY PERFORMANCE **DAYLIGHT**
URBAN CONNECTIONS **MATERIALS** STRUCTURAL EFFICIENCY

While the choice of wooden lamellas for the ceiling had been largely based on the possibility of using it as a diffuser for ventilation, it had to be re-evaluated as a part of the overall expression of the room. Because the materiality influenced the aesthetics, acoustics and daylight of spaces, all of these needed to be considered together, while also thinking about sustainable measures of the different materials.

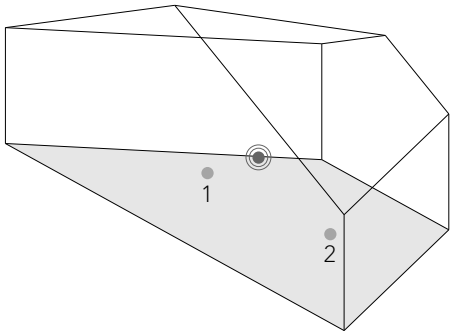
Overall, all considered materials were evaluated on their manufacturing process, the durability and the possible availability from the islands or Nordic countries. These evaluations can be found in Appendix 2. From these evaluations we started working with applying them on different surfaces to evaluate their aesthetic value [see ILLU. 66], acoustic properties [see acoustics studies based on a volume corresponding to the event space on ILLU. 67-70] and how well they would help to reflect daylight into the deep building.

Looking at materials for the walls, we mainly investigated gypsum, wood and clay, and here clay was chosen, as it was one of the few materials that would actually be available on Faroe Islands, which would minimise transportation. At the same time, the clay had a clean manufacturing process without any waste products and would be able to contribute to a good indoor environment, as it could absorb and release heat and moist [Bæredygtigt Byggeri, n.d.]. Looking at the aesthetics of the clay, its potentially light colour, when mixed with natural minerals, would also benefit the daylight conditions compared to a wooden surface. Seen from an acoustic perspective, only the wooden lamellas with an acoustic backing were effective for lowering the reverberation time and improving the definition, but as these could be used in the ceiling instead, this could effectively work as the main absorptive surface, and thereby create a good acoustic environment for the library spaces.

Different flooring types were likewise studied, and again clay was found to be a suitable material for much of the flooring, due the beforementioned qualities. However, as the clay flooring would be less resistant towards water and damages, a more resistant material would be suitable in the entrance, workshops and in the pathways with more traffic. Here, natural tiles were chosen as several types, such as basalt and slate, could be available on the islands, while it would also contribute as a contrast in-between the brown nuances. However, because of their dark colour, it would have consequences for the level of daylight in these areas.



ILLU. 66. STUDIES OF THE EFFECT OF MATERIALS ON SPATIAL PERCEPTION



FLOOR - NATURAL TILES

RECEIVER	REVERBERATION [62.5 - 8000 Hz]	DEFINITION [62.5 - 8000 Hz]
1	1.08 - 2.15 s	28 - 63 %
2	1.07 - 2.14 s	20 - 49 %

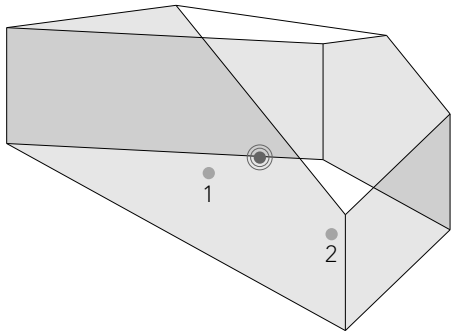
FLOOR - WOODEN

RECEIVER	REVERBERATION [62.5 - 8000 Hz]	DEFINITION [62.5 - 8000 Hz]
1	1.11 - 2.19 s	31 - 61 %
2	1.10 - 2.10 s	20 - 47 %

FLOOR - CLAY

RECEIVER	REVERBERATION [62.5 - 8000 Hz]	DEFINITION [62.5 - 8000 Hz]
1	1.01 - 2.08 s	32 - 63 %
2	1.01 - 2.04 s	21 - 51 %

ILLU. 67. ACOUSTIC STUDIES OF FLOORING MATERIALS



WALLS - GYPSUM

RECEIVER	REVERBERATION [62.5 - 8000 Hz]	DEFINITION [62.5 - 8000 Hz]
1	0.91 - 2.23 s	26 - 68 %
2	0,91 - 2.15 s	17 -55 %

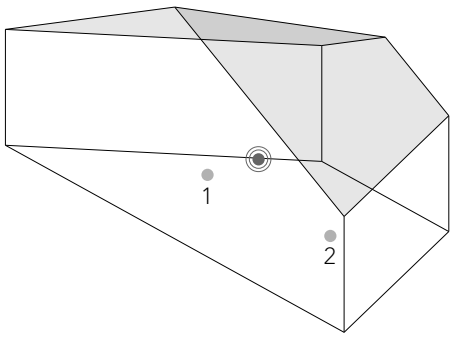
WALLS - WOODEN LAMELLAS

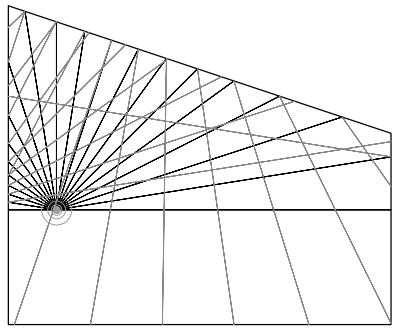
RECEIVER	REVERBERATION [62.5 - 8000 Hz]	DEFINITION [62.5 - 8000 Hz]
1	0,31 - 1.46 s	51-99 %
2	1.10 - 2.10 s	37 - 99 %

WALLS - CLAY

RECEIVER	REVERBERATION [62.5 - 8000 Hz]	DEFINITION [62.5 - 8000 Hz]
1	1.19 - 1.87 s	40 - 59 %
2	1.20 - 1.83 s	27 - 44 %

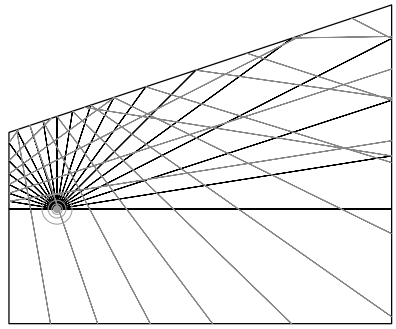
ILLU. 68. ACOUSTIC STUDIES OF WALL MATERIALS





CEILING - WOODEN BOARD

RECEIVER	REVERBERATION [62.5 - 8000 Hz]	DEFINITION [62.5 - 8000 Hz]
1	0.77 - 2.14 s	30 - 73 %
2	0.77 - 2.08 s	20 - 62 %



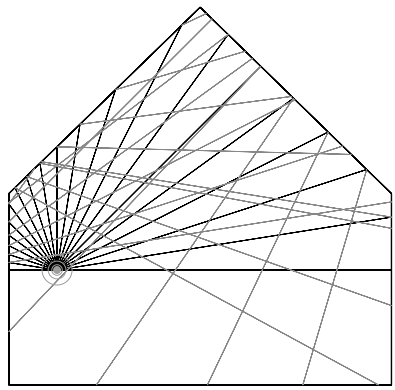
CEILING - TROLDTEKT

RECEIVER	REVERBERATION [62.5 - 8000 Hz]	DEFINITION [62.5 - 8000 Hz]
1	0.48 - 0.69 s	81- 89 %
2	0.55 - 0.76 s	67 - 84 %

CEILING - WOODEN LAMELLAS

RECEIVER	REVERBERATION [62.5 - 8000 Hz]	DEFINITION [62.5 - 8000 Hz]
1	0.73 - 1.13 s	61 - 87 %
2	0.60 - 1.12 s	45 - 75 %

ILLU. 69. ACOUSTIC STUDIES OF CEILING MATERIALS



ILLU. 70. RAYTRACING INVESTIGATING THE CONSEQUENCES OF ROOF SHAPE

FACADE EXPLORATIONS

GRANSKAN AV FRAMSÍÐUNUM

INTERIOR EXPRESSION INTERNAL FLOWS & SPACES **EXTERIOR EXPRESSION**

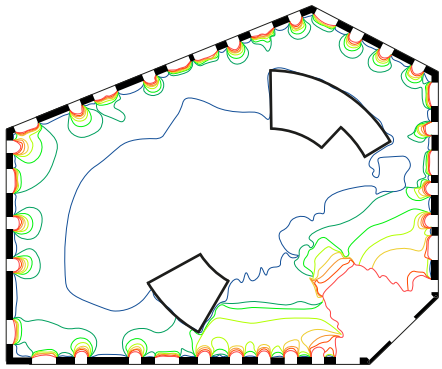
VENTILATION ACOUSTICS **ENERGY PERFORMANCE** **DAYLIGHT**

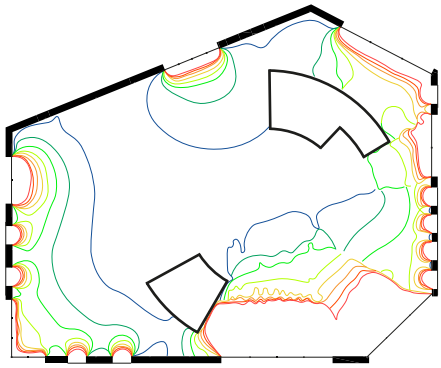
URBAN CONNECTIONS **MATERIALS** STRUCTURAL EFFICIENCY

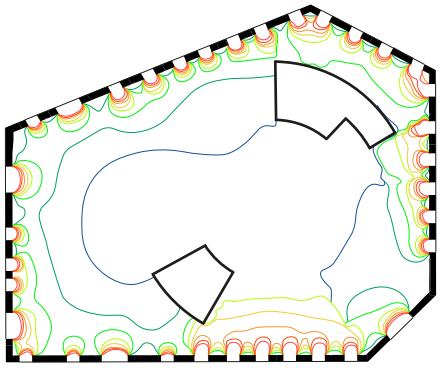
The facades, being the transition between interior and exterior, were a complex part of the design process, as they influenced the interior and exterior expression, daylight levels, energy and structural efficiency and the connections with the urban spaces around the building.

Firstly, different window layouts were explored, as seen on ILLU. 71. These were overall based on finding a good compromise between energy optimisation and creating good daylight levels for the relevant spaces. At the same time, the placement and scale of windows would define how the interior spaces would be perceived from the outside, and thereby it had to be investigated whether different types of spaces should have different types of windows. However, these studies created a fragmented building without an overall coherence. This problem was finally resolved through a modularity of windows, which could both create small recess windows and be combined to larger windows, when more openness was required towards the urban space or the landscape.

The window studies were made together with studies of the exterior cladding, which was, like the interior materials, evaluated on the manufacturing process, the durability and the possible availability from the islands or Nordic countries [see Appendix 2]. Likewise, they were studied in different combinations and forms to establish how the windows and cladding should present itself in relation to the surroundings. Slate was studied at first due to its durability, but it was ruled out at an early stage because it was not able to break down the scale of the building when viewed from a distance [see ILLU. 72-73]. Meanwhile, different wooden claddings could add an extra depth to the façade, which was necessary to relate the building to the human scale, when seen from a distance. Thus, a system of plywood panels forming oversized shingles was chosen, as this created a dynamic façade, while also adapting naturally into the idea of a modularity of windows.

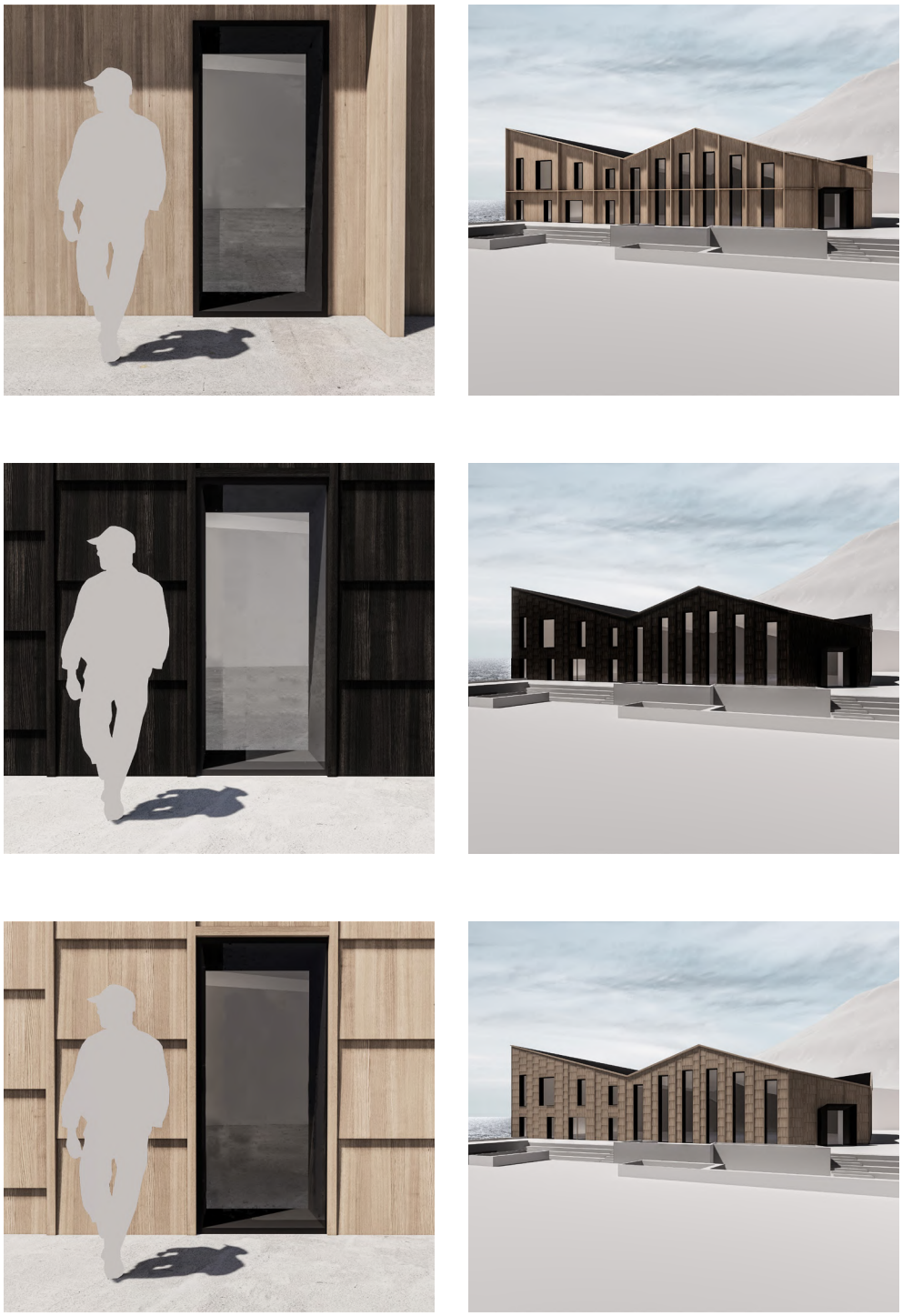






ILLU. 71. STUDIES OF THE RELATION BETWEEN FACADE EXPRESSION AND DAYLIGHT

ILLU. 72. STUDIES OF FACADE CLADDING

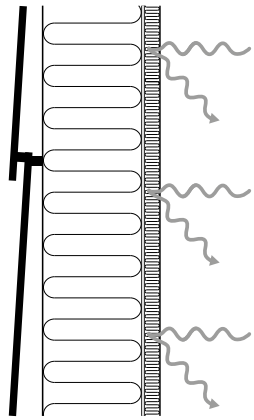


ILLU. 73. STUDIES OF FACADE CLADDING

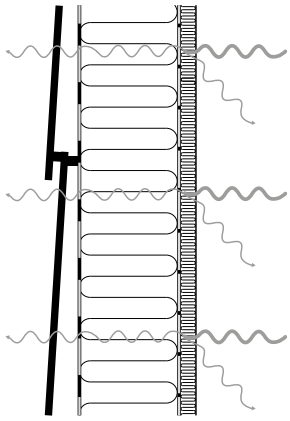
With the interior and exterior of the facades established, it was also relevant to look at how the rest of the building envelope could be built up. Several different insulation materials were studied [see Appendix 2], and here an insulation material made of seaweed was chosen due to its efficiency and sustainable properties. This was one of the places we found potentials in utilising a unused Faroese resource within the building industry, as a way of promoting sustainable solutions with Faroese resources. Along with the local availability of the material it is also a natural material, which in comparison to the industrialised production of mineral wool is produced naturally and thus rids the environment of unnecessary pollution from both CO_2 and toxins. Additionally, the batts are shown to have a longer longevity than traditional mineral wool, and can even be reused for other projects after the building is taken apart [Vugge til Vugge, 2017].

This insulation material also made it possible for us to look at a breathable building envelope, which would allow moisture to pass through without causing a build-up. This should help improve the air quality of the building as it allows excess moisture to pass through the construction and thus balances the humidity inside. In most buildings this would mean that the need for ventilation would lower, as there is less of a need for removing the excess moisture, as this happens naturally. However, in these studies we found a divergence between theory and practice [see different solutions on ILLU. 74]. Theory suggested that a material less open to diffusion should be placed towards the interior in order to prevent the majority of the moist from entering the construction, while a material more open to diffusion towards the exterior would allow the occurring moist to pass. Meanwhile, experiments had shown that material with an equal openness to diffusion showed the best results, as this better balances the moisture content of the air, and it allows it to flow freely through the construction [Miljøstyrelsen, 2019].

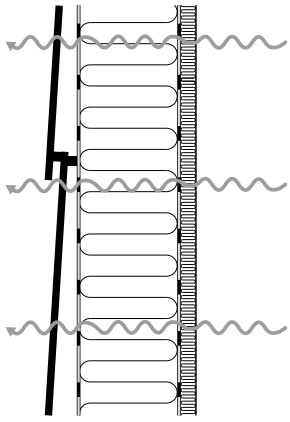
While these principles have shown to be effectful in smaller housing projects, where more moisture is produced from cooking, washing and plants, it is debatable whether a breathable envelope will have the same effect on the larger scale of the library. However, with the possible sustainable potentials of being able leave out the vapor barrier while lowering the mechanical ventilation through this principle, we have with the formerly presented arguments in mind decided to work with the breathable building envelope and use a material more open to diffusion towards the exterior to allow the occurring moisture to pass through the construction.



USE OF VAPOR BARRIER IN ENVELOPE



MORE CLOSED TO DIFFUSION ON THE INSIDE, AND OPEN ON THE OUTSIDE



EQUAL DIFFUSION OPENNESS ON THE INSIDE AND OUTSIDE

ILLU. 74. STUDIES OF THE PRINCIPLES OF A BREATHABLE BUILDING ENVELOPE

URBAN DETAILING

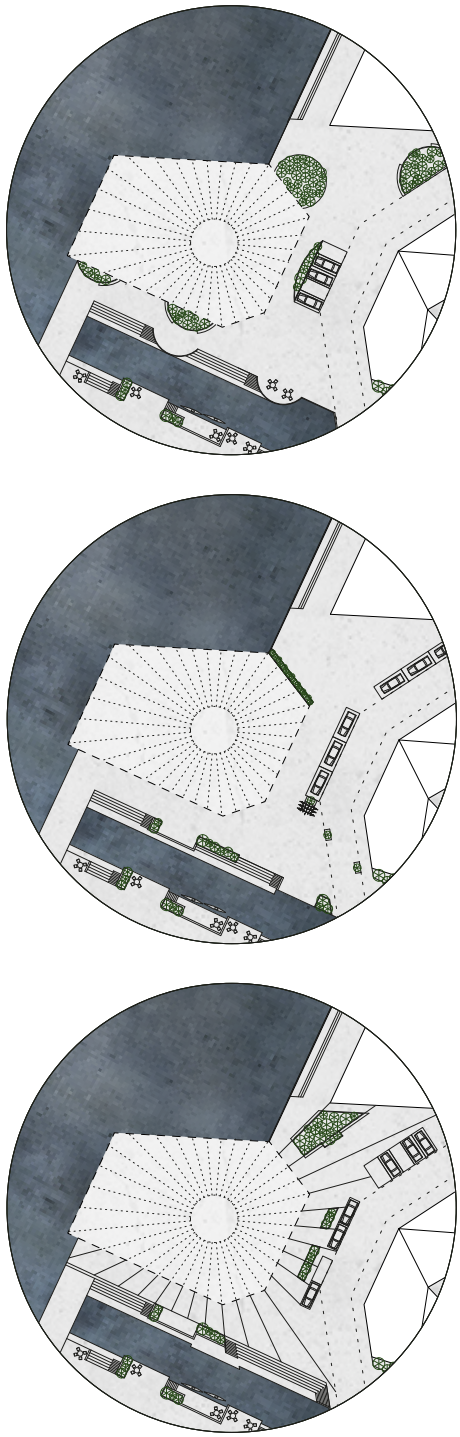
NÁGREINING AV UTTANDURA ØKINUM

INTERIOR EXPRESSION **INTERNAL FLOWS & SPACES** **EXTERIOR EXPRESSION**
VENTILATION ACOUSTICS ENERGY PERFORMANCE DAYLIGHT
URBAN CONNECTIONS **MATERIALS** STRUCTURAL EFFICIENCY

The urban spaces around the library had gotten an overall character at an early stage, where the area towards the southern façade should accommodate the majority of the social life, which could occur in the outdoor spaces. The area towards the canal would thus not only be meant for the library users but for all the people passing by, where the proximity and openness of the library façade could attract the visitors of the area. The explorations around this space [see ILLU. 75] were thus focused on creating a variety of seating spaces partially shielded from the wind without obstructing the social life around the canal, the views towards the landscape or the sunlight.

Meanwhile, the outdoor space towards the east should accommodate the qualities of the shared space and should thus to a large extent be open to multiple uses. While a few parking spaces would be necessary to allow quick visits to the library, the rest of the space should be kept relatively open, thus not blocking one of the main facades of the library. However, a social distance should still be created to the facade in order to not obstruct the partially exposed lounge area. Thus, we experimented with passing on the idea of flexible spaces to allow for different outdoor activities to occur in connection with the library, such as urban gardening for the school children and stalls for the annual summer festival. These ideas were also tried for the small area towards the north. However, as this was more retracted from the traffic of people and cars, it could still act as an attractive seating space with the main view directed towards the landscape. However, as this space could potentially create a wind tunnel, it was also important to use elements which could block some of the wind.

An idea of drawing out the lines from the structural system inside both to define the exterior planning and the directionality of the pavement, was able to create a focus towards the library as the natural gathering point for the area. Hereby, the exterior activities could beneficially be connected to the library, while emphasising the transition between exterior and interior more naturally.



ILLU. 75. STUDIES OF THE URBAN SPACES SURROUNDING THE LIBRARY

INTERIOR DETAILING

NÁGREINING AV INNANDURA ØKINUM

INTERIOR EXPRESSION INTERNAL FLOWS & SPACES EXTERIOR EXPRESSION
VENTILATION ACOUSTICS ENERGY PERFORMANCE **DAYLIGHT**
URBAN CONNECTIONS **MATERIALS** **STRUCTURAL EFFICIENCY**

With books taking up a large part of the area in the library, it became a natural part of the process to look at how the storage of the books could be designed both to fit with the interior planning, the structural system and how the same system could be flexible both to suit multiple users and the gradual increase of books with time.

Wood was used as the main material for all design solutions in order to make them an integrated part of the natural expression of the spaces, while emphasising the appearance of the books as the main priority. Several different modular designs were made [see ILLU. 76] and evaluated based on their flexibility to accommodate different shelf heights, the utilisation of material and their openness to let daylight pass when the bookshelves were unused.

Through the studies of the bookshelves, it became clear that they should be able to utilise the height of the room, by making it possible to add extra shelves for storage, thereby allowing a larger amount of books to be available to the public without building extra square meters. In this way the more current books could be available to the users in a height where they could be viewed clearly, while stored books would also be nearby and accessible with a ladder. However, this also meant that the appearance of space would change over time, and as the shelves would gradually become more full, there would be less openness between spaces. Thus, the bookshelves needed to be placed in ways that would not prohibit the social interactions intended. However, daylight simulations suggested that the vertical build-up of books would only have a minimal effect on the distribution of daylight, thereby not reducing the quality of spaces.

The chosen design ended up being a frame of lamellas with closely spaced metal rods to accommodate different shelf heights. This would give a light expression of the bookshelves, while providing a high degree of flexibility and strength of the bookshelves.

ILLU. 76. STUDIES OF THE EFFECT OF MATERIALS ON SPATIAL PERCEPTION

4.0

PRESENTATION

FRAMLØGA

CONCEPT

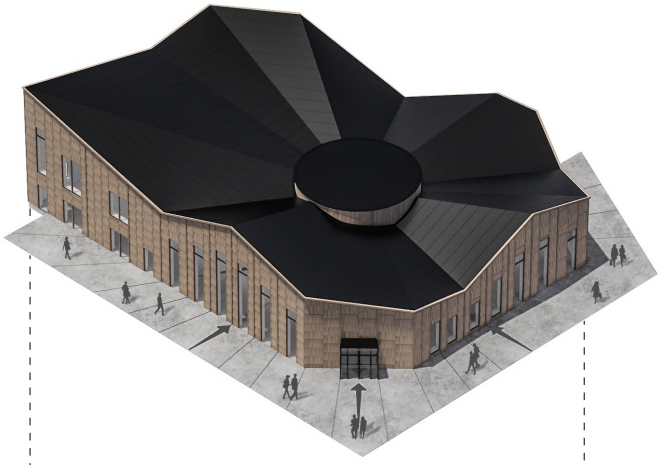
HUGTAK

Klaksvíkar Bókasavn is a contemporary take on the traditional Faroese *roykstova* as a gathering place to connect the community through knowledge sharing, individual learning and innovation. In this way the library becomes bounded in the traditional mentality of the Faroe Islands, where *care, cooperation and solidarity* is encouraged as a way of driving the community towards a sustainable development.

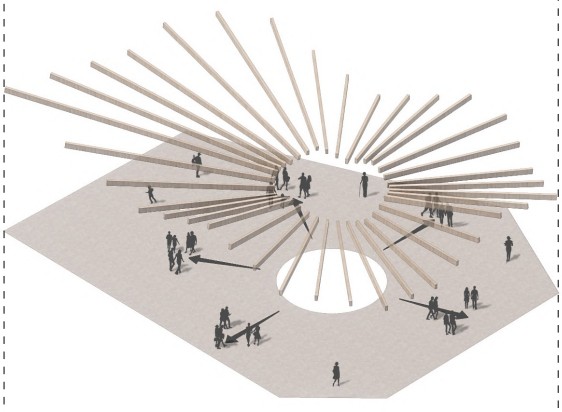
Deriving from the traditional Faroese roykstova, where people would gather around the fireplace to share stories and knowledge, the creative workshop becomes the central place where visitors can inspire each other through innovation. From here knowlegde radiates around this centre, where the structural beams and bookcases help drive this directionality and lead people outwards in search of new information.

To help foster the individual's desire for knowledge, the library plays on the duality of both quiet contemplation and social interaction. This is evident in the layering of the zones, where contemplation spaces are located furthest from the centre, as a place of intimacy and calm. Contrarily, social spaces break down boundries to foster meetings between different users, and thus strengthens the sense of community. This duality enables each person to best enrich their own life in the way they see fit, which in return enables them to enrich the community.

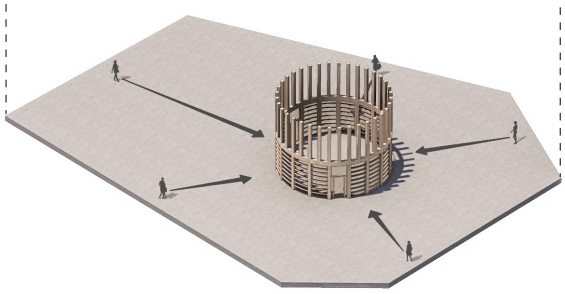
The shape of the roof helps enhance this duality, where lower parts create more intimate spaces for contemplation, and where the taller parts create bigger and more open spaces for people to meet. This underlines the aim of these spaces to accommodate a diversity of users and to foster knowledge sharing between them. In addition, this sloped shape of the roof acts as a reflection of the surrounding Faroese landscapes, with the steep and dynamic mountain sides. This shape lands the building within its context, as a noticable landmark that stays unified with the surrounding city centre as a public gathering place for the community. Thus the library depicts the merge between the Faroese mentality, the surrounding landscape and the knowlegde at the centre of it all.



THE LIBRARY AS A GATHERING PLACE



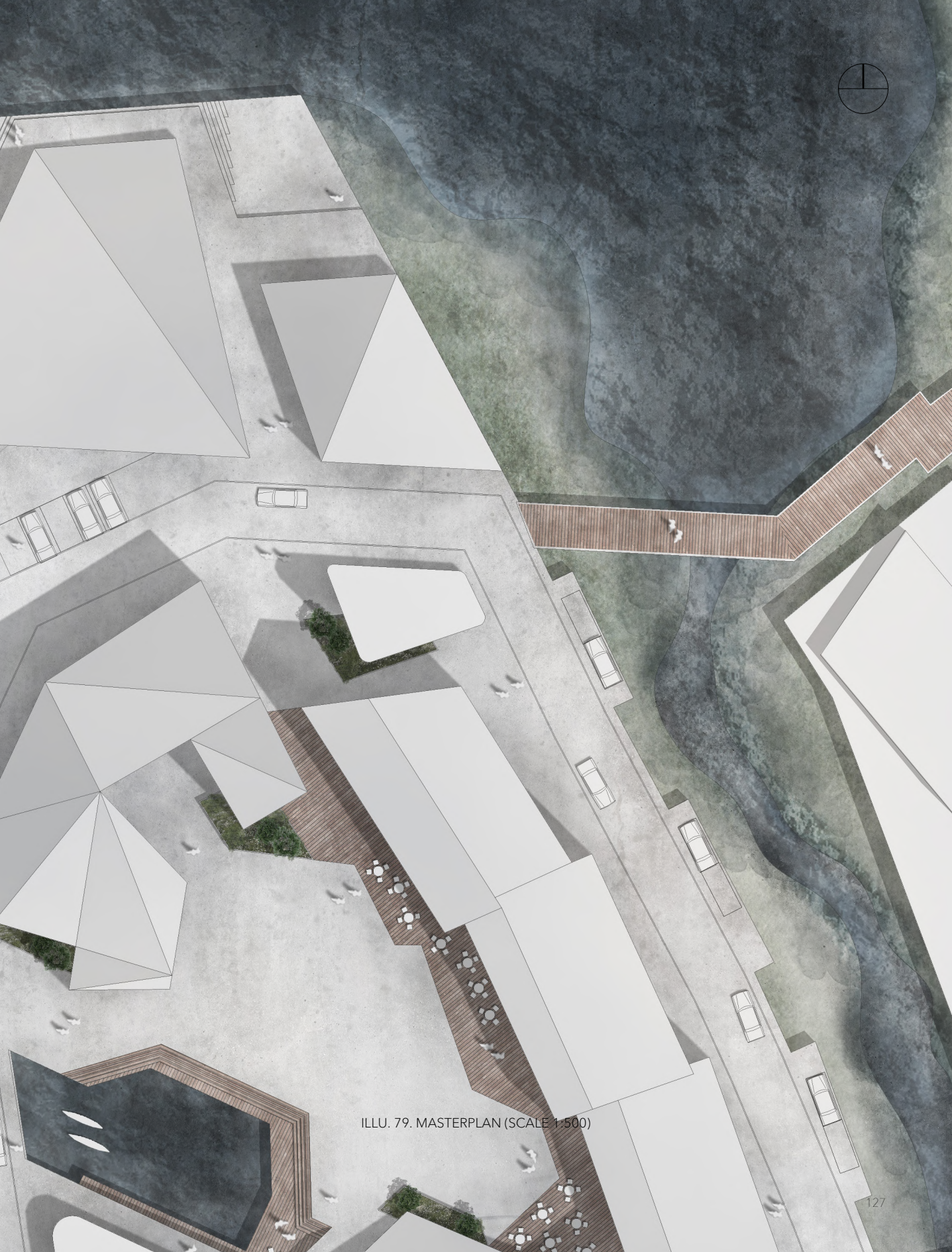
THE LIBRARY AS A PLACE FOR
PERSONAL & SOCIAL EXPLORATION



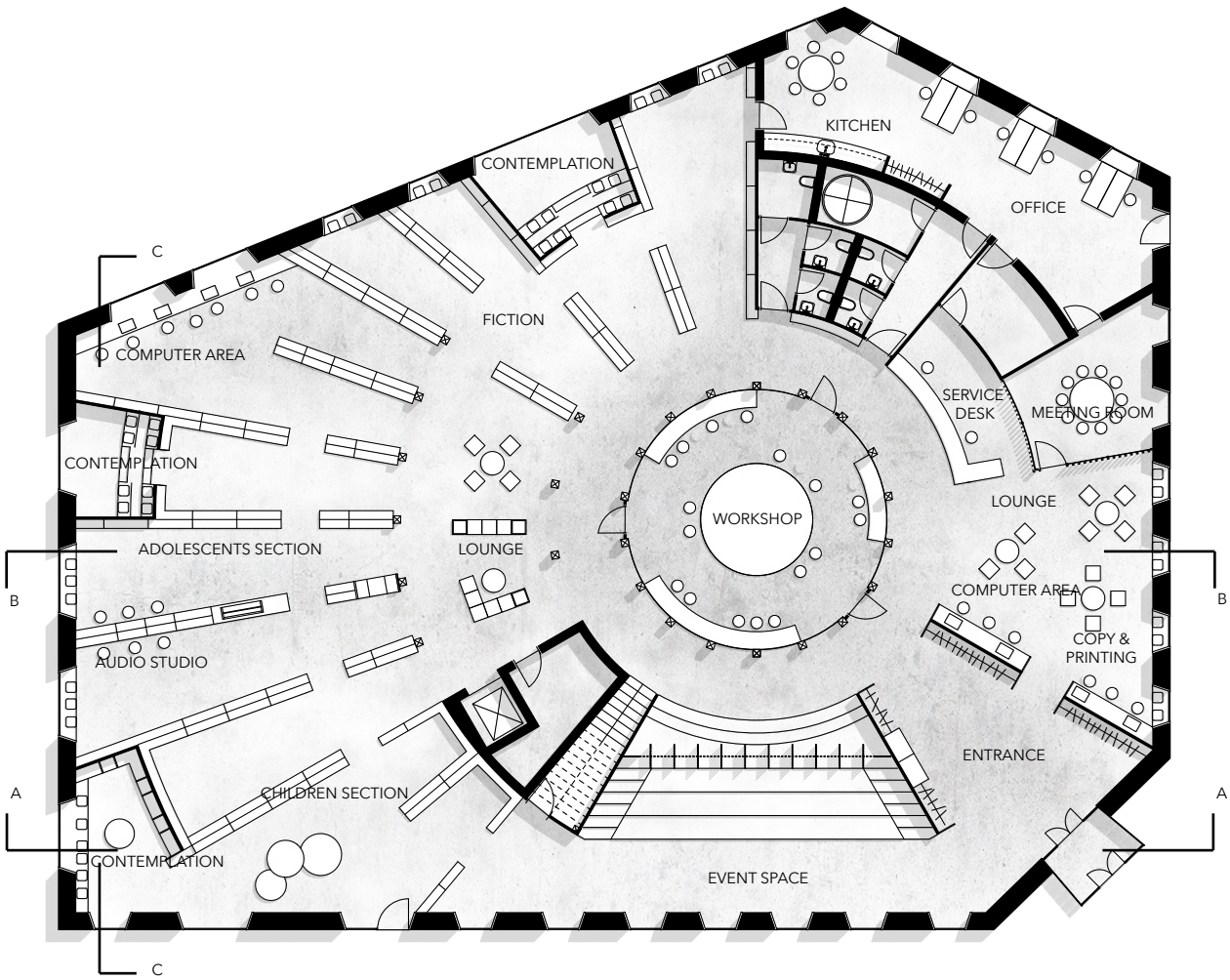
THE LIBRARY AS AN INSPIRATIONAL SOURCE

ILLU. 77. KLAKSVÍKAR BÓKASAVN

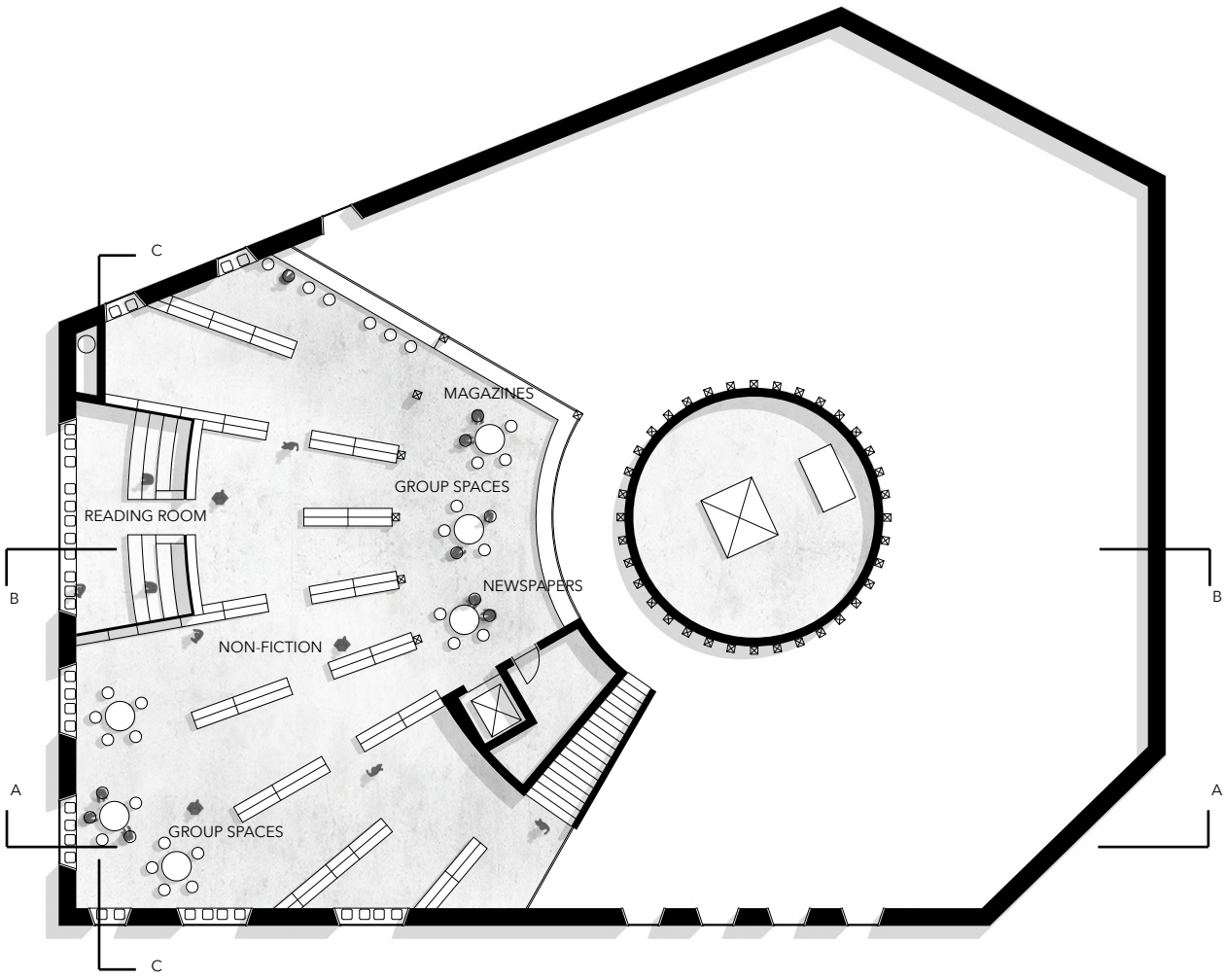
ILLU. 78. THE LIBRARY AS AN ILLUMINATED LANDMARK IN THE CITY CENTRE



ILLU. 79. MASTERPLAN (SCALE 1:500)



ILLU. 80. GROUND FLOOR PLAN (SCALE 1:250)



ILLU. 81. FIRST FLOOR PLAN (SCALE 1:250)

ENTERING THE LIBRARY

INNKOMAN Í BÓKASAVNIÐ

One enters the library through the weather porch, which acts as a portal from the outside and into a world of literature and knowledge. The design of the entrance is made to inspire the visitor to explore, by offering views of central parts of the library, as well as giving them the opportunity to hang their coats, for longer stays.

The entrance has walls on both sides, which tapers inwards, and thus focuses the view directly on the creative workshop. The radiating beams lands softly on the central structure, which further emphasises the importance of the creative workshop, where the exhibition shelves work both as a means to shelter the space, but also as an inspiration to the visitor. From the entrance one can get a good overview of all the library sections through a walk around the central workshop. This overview of the building along with the special flooring around the centre, acts as an invitation to further explore the library, and enables easier wayfinding by differentiating between areas of flow and social meetings, and areas of focus and contemplation.

A selection of books is displayed in the entrance, which should portray a wide selection of books to catch the eye of the visitor and hopefully inspire them to borrow one or to sit down to read. The lounge at the entrance is an essential place to do this, as it is designed to be a space that is both social and contemplative. The proximity to the service desk means that the person who comes to the library to read the newspaper and for social interactions can sit down and either talk to another visitor in the same situation or talk to the staff. This closeness strengthens the bond between the staff and the recurring visitors, but also allows newcomers to take part in the discussion.

ILLU. 82. THE CREATIVE WORKSHOP AS AN INSPIRATIONAL CENTRE


THE JESUS HOME

ILLU. 83. THE OVERVIEW FROM THE INVITING ENTRANCE

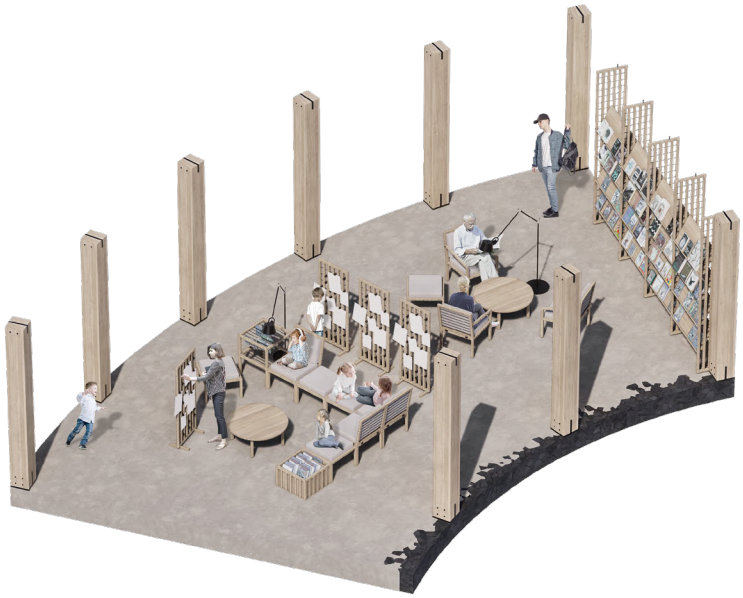
SOCIAL SPACES

SOSIAL ØKI

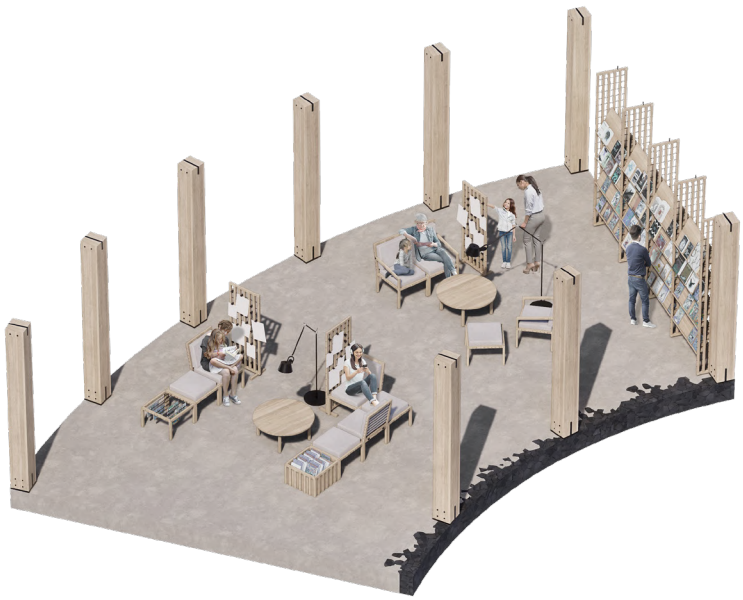
To enhance the interaction between different user groups, and to foster social meetings, an important aspect of the design of the library has been on designing the social spaces to enable these activities. Where contemplation spaces are designed for contemplation of a single user group, the social spaces are designed to enable people to meet and share knowledge, and thus are designed to accommodate more user groups.

Deriving from the traditional Faroese houses, the social spaces act as roykstovas; the places where knowledge sharing and social interaction are in focus, and which act as social meeting points between smaller areas of focus. A lounge is placed in proximity to both children, adolescents and fiction, which enables meetings between these users, and creates a space where families, groups of children or adolescents can interact. Due to the wide array of use of the lounge, the space is designed to be open, and with flexible furnishing that can be moved to accommodate different users at different times of the day. This can be done both by the staff, but also by the users themselves, which enables them to adjust the space to best fit their needs.

The other social spaces of the library are placed in the spaces where one zone graduates into another, and thus becomes the meeting point of these user groups, which is seen as the merging of the functions. Between the children and adolescent area, a bookcase has been designed to hold more playful and social activities, which can foster interaction between both sides. Between the adolescent and fiction zones the social space is more focused on the gathering of knowledge through different media, where computers and tables offer a place to sit and research and enables social interaction between the two users. In the non-fiction department the edges of the first floor become more social as furnishing allows for groups to work together, and for interaction between users, to discuss and share knowledge. Meanwhile, the event space can accomodate a diverse array of activities, ranging from educational purposes to public meetings and exhibitions of innovative solutions.



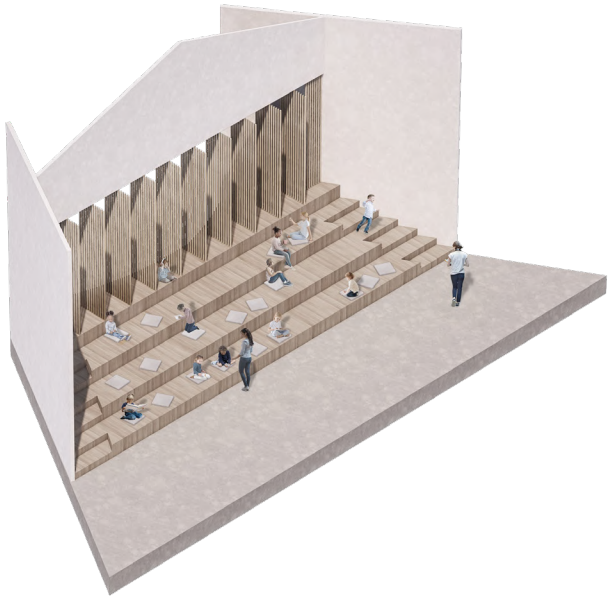
ILLU. 84. LOUNGE ACCOMODATING SOCIAL AND INDIVIDUAL ACTIVITIES



ILLU. 85. LOUNGE ACCOMODATING ACTIVITIES FOR SMALLER GROUPS

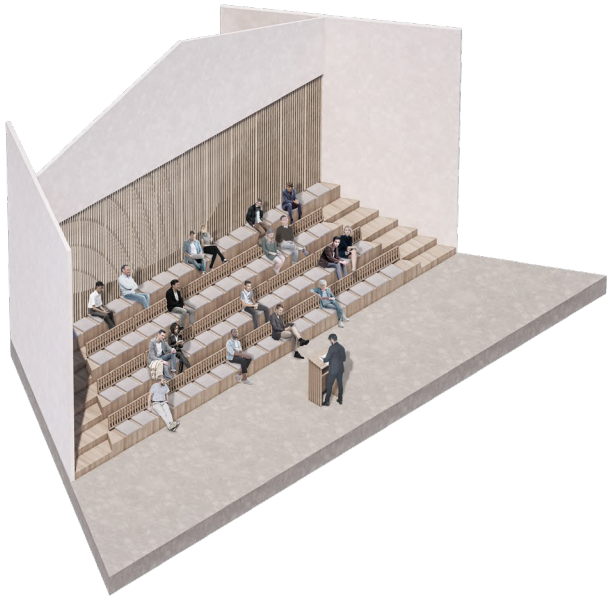

G-H V
R-T V

ILLU. 86. THE CENTRAL LOUNGE AS A MEETING PLACE BETWEEN USER GROUPS

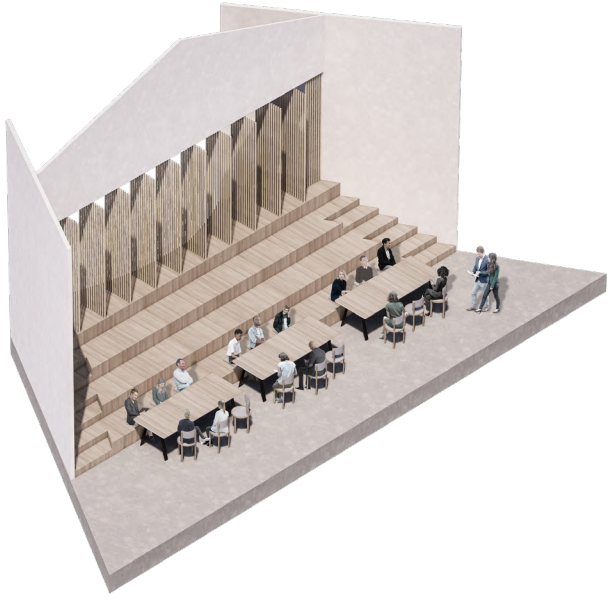


ILLU. 87. EDUCATIONAL ACTIVITIES FOR CHILDREN IN THE EVENT SPACE

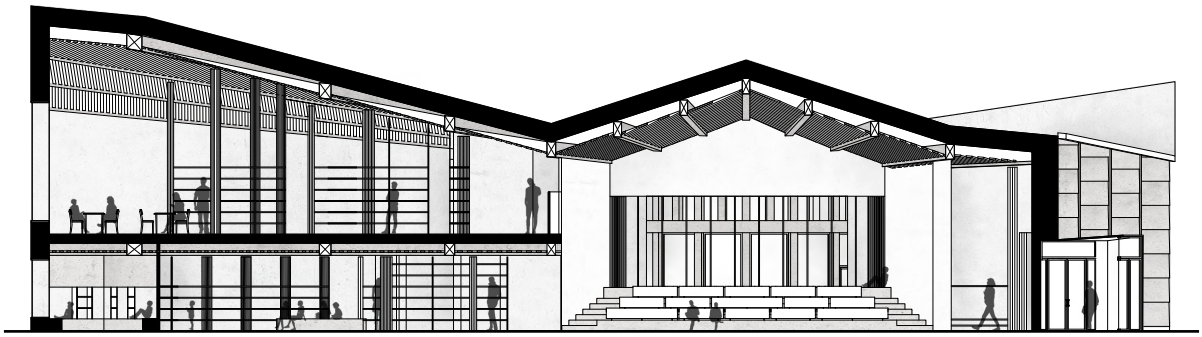
ILLU. 88. CONFERENCE ACTIVITIES IN THE EVENT SPACE



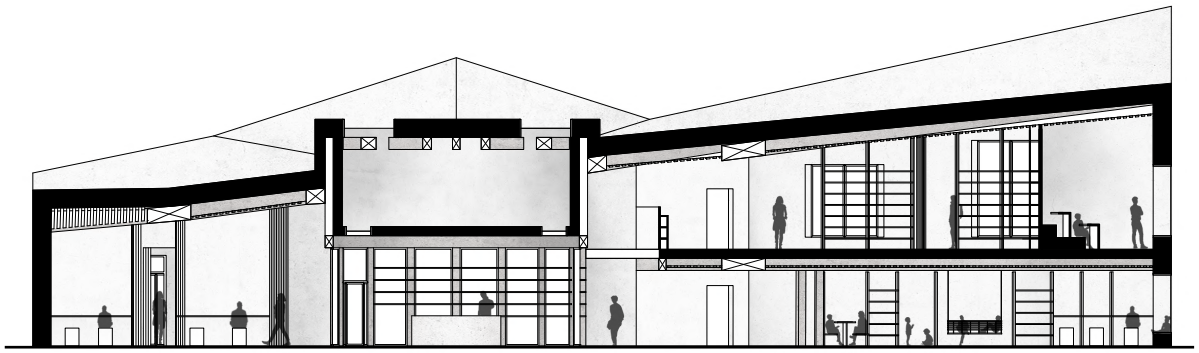
ILLU. 89. LECTURE FOR THE COMMUNITY IN THE EVENT SPACE



ILLU. 90. USE OF THE EVENT SPACE FOR COMMUNAL MEETINGS



ILLU. 91. SECTION AA (SCALE 1:250)



ILLU. 92. SECTION BB (SCALE 1:250)

CONTEMPLATION SPACES

HUGLEIÐINGARØKI

In all sections of the library, a contemplation space has been designed for visitors to be able to pull away from social activities and instead focus on individual contemplative activities, such as reading or studying. These spaces all stand out from the remaining library functions, as they are the only activities shielded from any other activities, thereby creating a smaller and more intimate space, which the lower ceiling emphasises. Thus, these spaces have, as the only ones, been designed to inhibit social meetings as a way of clarifying the more individualised and focused character.

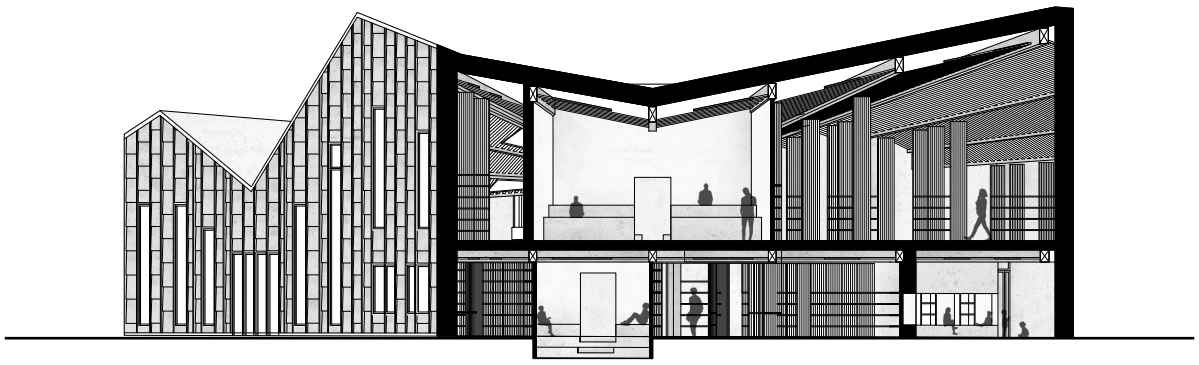
With the different users in mind, spaces have been designed specifically to fit the differing needs in each library section. For the majority of the spaces this means that seating is targeted towards the extraordinary views of Klaksvík and thereby away from each other. In the adolescents' and fiction sections of the library there is a focus on comfortable and relaxed seating to primarily accommodate reading, while a desk in the reading room allows for different activities while studying. Contrarily, the children's contemplative space is centred around a shared point from where books can be read aloud during school hours, while clearly defined recesses also allow for children and parents to submerge in the books more individually. While the contemplation spaces have been designed to accommodate the individual activities of the visitors, a similar intimate character has been established for the staff office as a space shielded from the visitors, where the staff can carry out their individual daily activities.

ILLU. 93. SOCIAL CONTEMPLATION IN THE CHILDREN'S CONTEMPLATION SPACE

ILLU. 94. INDIVIDUAL CONTEMPLATION ACTIVITIES IN THE CHILDREN'S CONTEMPLATION SPACE

ILLU. 95. INSPIRING VIEW FROM THE READING ROOM

ILLU. 96. RECESS FOR CONTEMPLATION



ILLU. 97. SECTION CC (SCALE 1:250)

OUTDOOR SPACES

UTTANDURA ØKINI

The outdoor spaces have been designed with an intent similar to the interior spaces, thus aiming to accommodate different activities throughout the year. With the shared space character, none of the outdoor spaces are designed merely for the library users, but instead they can be used by all the people passing by the area. Hereby, the outdoor spaces act as natural extension to the library as a way of inviting people into the building.

With the changeable weather of the Faroe Islands, longer outdoor stays will be limited, and thus primary seating spaces have been focused around the canal towards the south, where the social life from the library can be connected with the activities around the restaurants and shops on the other side. In general, spaces are kept open to allow for a flexibility of use throughout the year. This is especially emphasised around the eastern façade, which leaves room for car parking for quick library visits, while also being able to accommodate educational activities for the children to explore plants during the summer. Meanwhile the space can also accommodate extra seating spaces and market stalls for the yearly summer festival, where the activities from the library can potentially be exhibited. Plant beds help to create an extra shield and protection from the occasional cars driving by, and thereby also creates a natural social distance to the façade, where the windows allow people to get a glimpse of the activities in the library without exposing the users.

The smaller area towards the north is shared with the maritime museum and could potentially accommodate collaborative educational activities between the library and museum. However, in order to prevent a wind tunnel in this area, much of the space has been designed with plants to shield some of the wind, while also creating a more undisturbed recess with seating spaces towards the water.

ILLU. 99. EDUCATIONAL GARDENS FOR SCHOOL CHILDREN IN THE SUMMER

ILLU. 98. MARKET STANDS AND SEATING PLACES DURING THE ANNUAL SUMMER FESTIVAL


BÓKASAVN

ILLU. 100. ARRIVAL AT THE NEW LIBRARY IN KLAKSVÍK

ILLU. 102. EASTERN FACADE (SCALE 1:250)

ILLU. 101. SOUTHERN FACADE (SCALE 1:250)

ILLU. 104. WESTERN FACADE (SCALE 1:250)

ILLU. 103. NORTHERN FACADE (SCALE 1:250)

MATERIALS

TILFAR

The materials of the library have a large effect on the architectural expression and experience of spaces. Thus, it is an important factor to consider when designing spaces of different foci and using the materials to help tell the story of the building. In the new library of Klaksvík focus has been on choosing natural materials with little environmental impact and materials that help improve the indoor climate and experience of space.

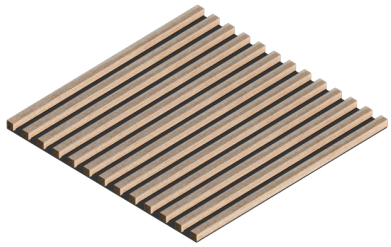
On most internal faces clay plaster is used. It is one of the only materials that is locally available on the Faroe Islands, and a material that is shown to have a good impact on the indoor climate, both in terms of air quality and acoustics. On the walls of the library a lighter shade of clay is used, which enables more reflection of light into the spaces between bookshelves, where a darker shade is chosen for the floor as this is more practical. The warm shade of the clay reflects a warmth of the light, which additionally compliments the wood, which is used both for the structural elements, where laminated timber is used for both beams and columns. Also the suspended ceiling is made of wooden lamellas which ties together the construction and emhasises the shape of the roof. The use of wood on the ceiling also helps tie together the room with the bookcases, where the sides are made of wooden lamellas as well. All wood used in the building is Norwegian Spruce to minimise transportation.

To differentiate between spaces of flow and social interaction, and spaces of focus, another flooring is used for the centre of the building, also to ensure a higher durability of the floor in these spaces. Here, a flatstone floor of slate is used, which has a high level of tactility and roughness in its shapes, which contrasts the relatively rigid construction, and adds an element of non-directionality to the spaces. It also enables the flooring to graduate slightly into the zones, to emphasise the focus of blurring the lines between social and contemplative spaces.

The external materials used on the building are heat treated wooden panels on the façade, and metal plates on the roof. The metal roof is made up of reused steel plates from deconstruction of other buildings. As the Faroe Islands are very windy, the use of these plates adds a sturdiness to the roof, where tiles would be unfit for the Faroese climate. The plates also enables them to follow the shape of the roof and emphasise the geometric appearance hereof.

For the construction of the building envelope, the choice of insulation material was an important aspect in terms of choosing a material that would be locally available and naturally produced on the islands. Therefore, batts of seaweed were chosen, as the material has great potentials to be grown in the surrounding oceans and thus a local production will have less of an environmental impact. It also enables the construction to be breathable, which should improve the indoor climate, as it helps even the moisture level of the room, and creates the experience of a cleaner and more fresh air.

CLAY PLASTER

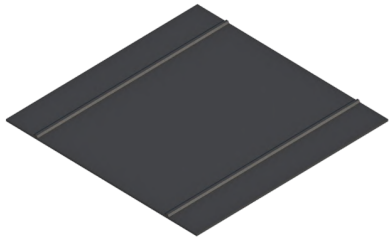


WOODEN CEILING

LAMINATED TIMBER

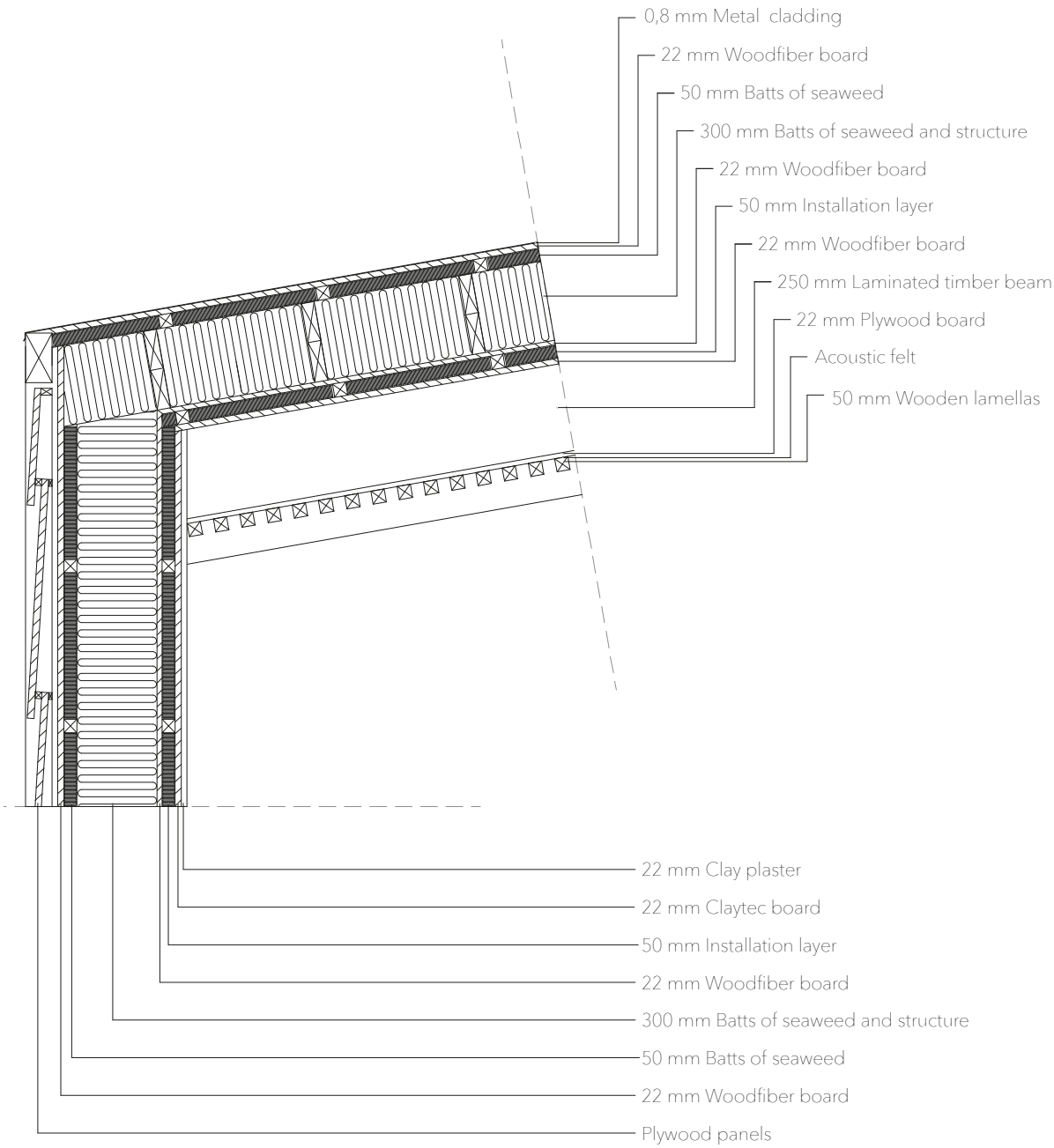
SLATE FLOORING

SEAWEED INSULATION



METAL ROOFING

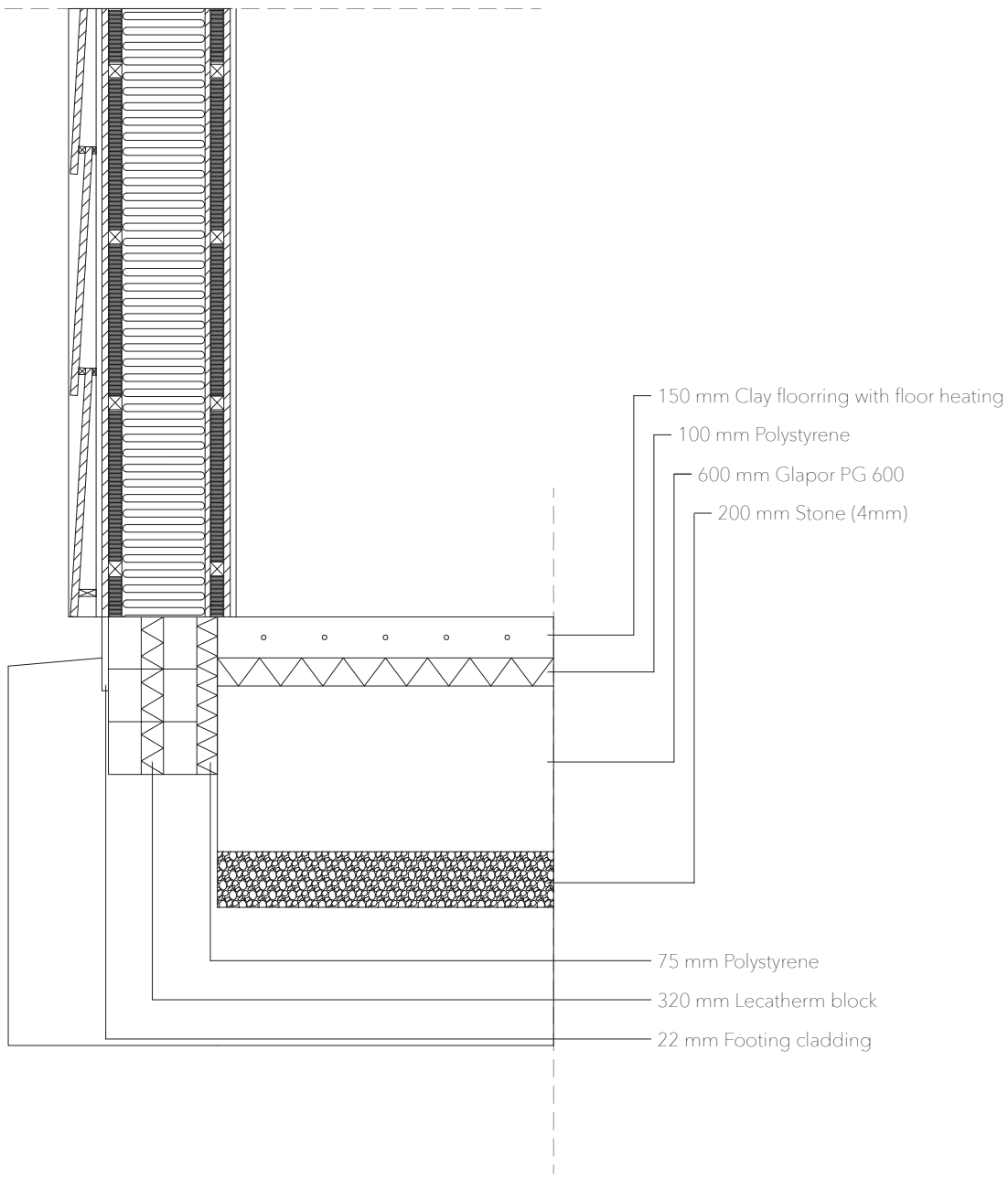
ILLU. 105. MATERIALS OF THE LIBRARY



U-VALUE OF ROOF: 0,099 W/m² K [see Appendix 3]

U-VALUE OF EXTERIOR WALL: 0,106 W/m² K [see Appendix 3]

ILLU. 106. DETAIL OF FACADE AND ROOF (SCALE 1:25)



U-VALUE OF GROUND DECK: 0,073 W/m^2 K [see Appendix 3]

ILLU. 107. DETAIL OF FACADE AND GROUND DECK (SCALE 1:25)

VENTILATION

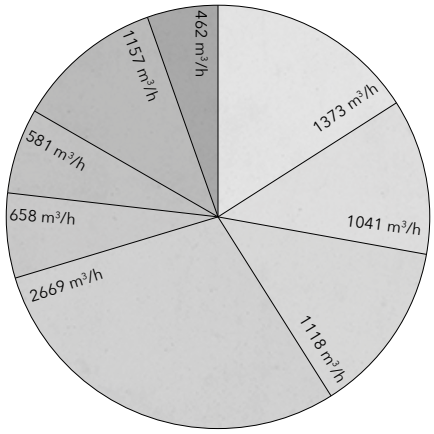
VENTILATIÓN

In the colder Faroese climate it is deemed necessary to rely primarily on mechanical ventilation to ensure a good atmospheric indoor climate, where the heat recovery system can help lower the use of energy to heat the building. As with most buildings, ventilation is needed to remove internal pollutants from moisture, CO_2 and excessive temperature, and thus it is necessary to look at how the occupancy changes throughout the day to understand how the varying people load effects the need for ventilation in a building where books also pose a large pollutant.

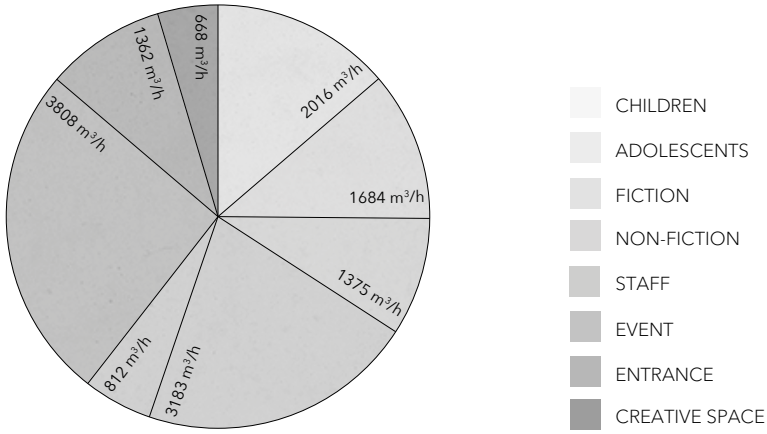
Based on a day profile of the library [see Appendix 4], the ventilation rates for each hour of the day have been calculated and have given an idea of how much the need changes throughout the day as seen on ILLU. 108-110. With a varying need, both in the entire building, as well as in the different zones, a VAV system is deemed beneficial in order to accommodate this change in airflow. Here, the use of diffuse ceiling ventilation allows for the air to be distributed more evenly throughout each zone, and additionally lessens the need for ventilation ducts, as only a connecter to each diffusion zone is necessary. While several companies have designed these types of ceiling, we have used the principle rather than a specific system. Our system is made up of wooden lamellas with a backing of acoustic felt which acts as the areas open to diffusion, where a plywood board is used to block the air in the passive areas, as seen on ILLU. 113-114.

With the ventilation system being placed in the centre of the building it allows for the ducts to radiate around the centre, following the structure of the roof, and thus allows for the room between the beams to be used as a diffusion zone. The extraction is done in a traditional manner, where the ducts are placed within the suspended ceiling between the beams with grills attached along the length of the duct. In the area around the toilets and staff kitchen, where it is necessary to have more extraction points, the ceiling has been suspended further to allow for the ducts to both cross the beams and each other, which also enables a single supply duct and a single extraction duct to reach this zone, as seen on ILLU. 111-112.

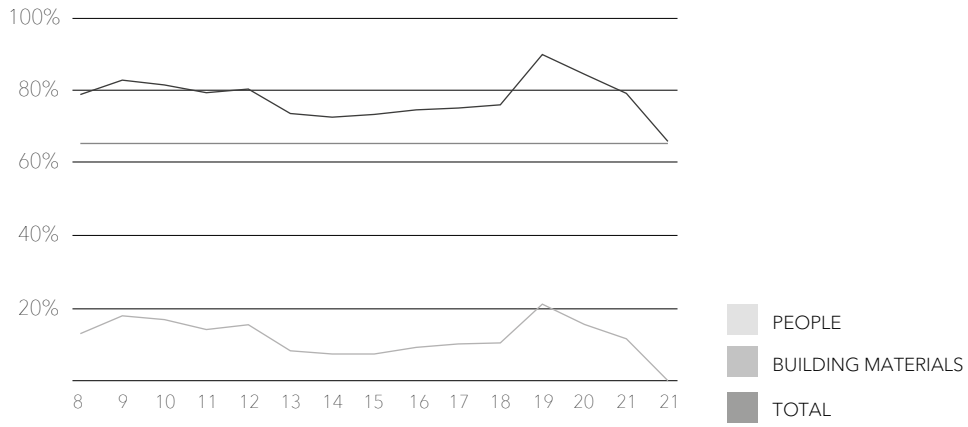
With the envelope being open to diffusion it should be able to lessen the need for ventilation, as part of the moisture is ventilated naturally through the façade. As it is uncertain what exact effect it will have on the need for mechanical ventilation, the system has been designed to accommodate for the entire needed air change. Each zone of the library is thus designed to uphold the maximum air change needed within the zone, where the ventilation unit is sized to accommodate the maximum occurring air change in the building, which is at 87 % of the maximum, as seen on ILLU.110.



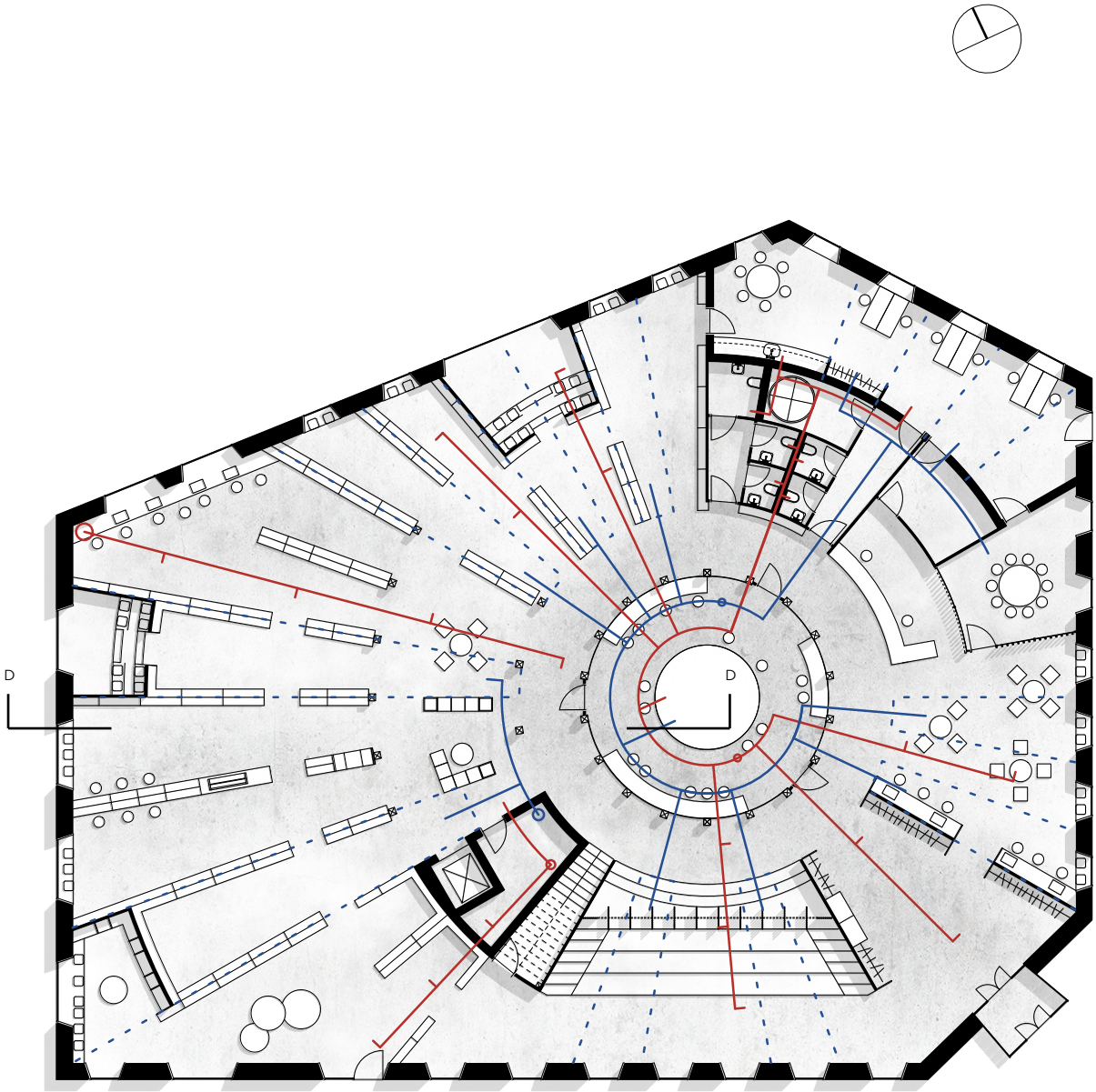
ILLU. 108. DIVISION OF THE MINIM UM VENTILATION RATES [TOTAL: 9.059 m³/h]



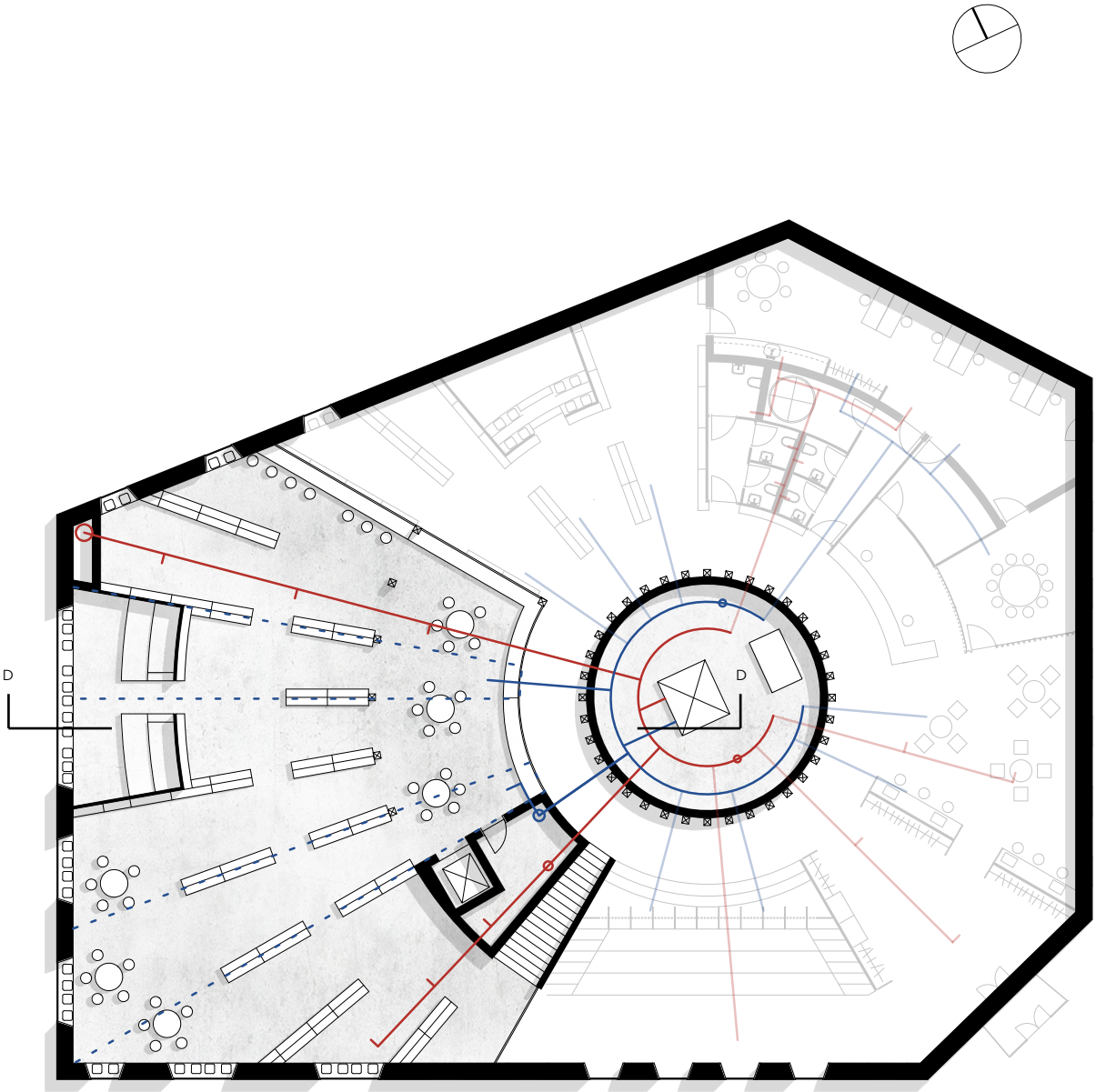
ILLU. 109. DIVISION OF THE MAXIMUM VENTILATION RATES [TOTAL: 14.908 m³/h]



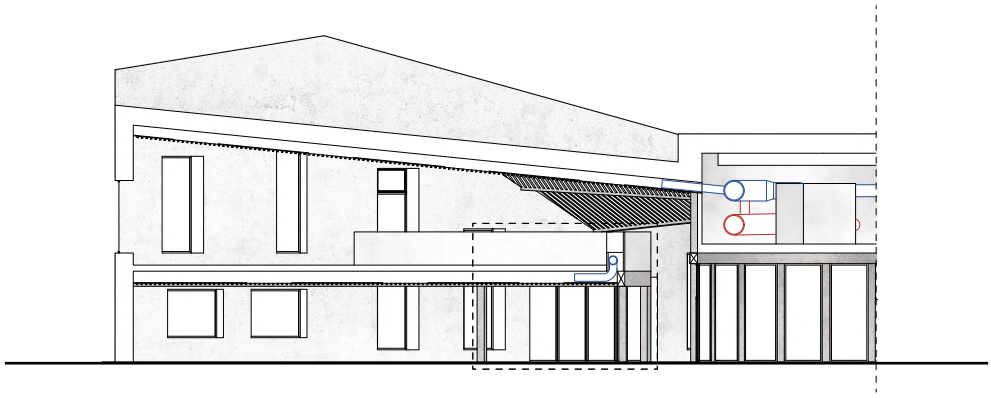
ILLU. 110. RELATION BETWEEN THE CONTAMINATION FROM MATERIALS AND PEOPLE



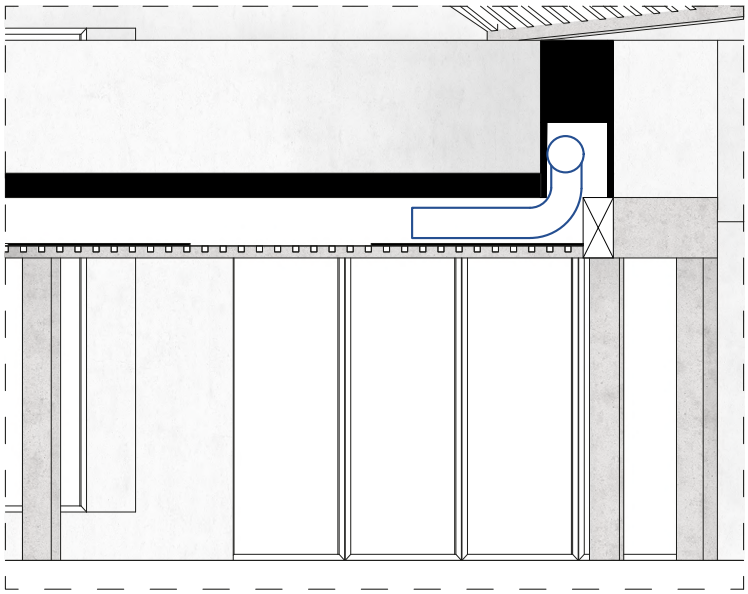
ILLU. 111. GROUND FLOOR VENTILATION PLAN (SCALE 1:250)



ILLU. 112. FIRST FLOOR VENTILATION PLAN (SCALE 1:250)



ILLU. 113. VENTILATION SECTION DD (SCALE 1:250)



ILLU. 114. ZOOM-IN OF VENTILATION SECTION DD (SCALE 1:50)

INDOOR ENVIRONMENT

INNILUFT

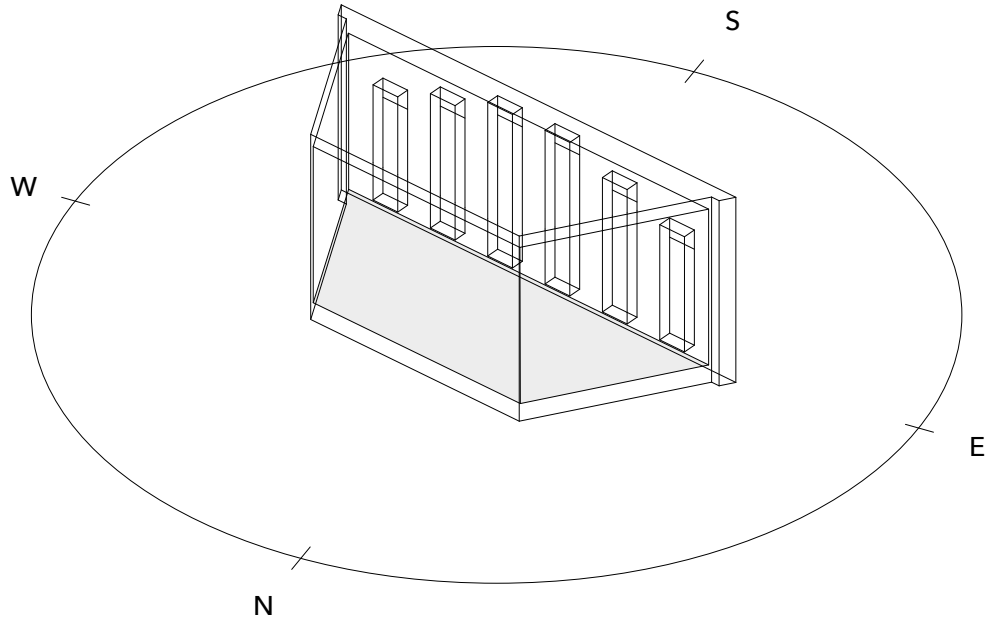
While the ventilation system is a crucial parameter for securing the air quality in the library, the other factors of the indoor environment have also been a focus in order to give the users the best possible conditions for exploring and learning in the library.

The thermal and atmospheric comfort has been documented through BSim, where two critical spaces have been examined. Firstly, the event space has been examined due to its orientation towards the south and the large variation of people using the space. The simulation showed that this was a critical room regarding overheating, as the mechanical ventilation required to secure the atmospheric comfort [which aimed to follow category II in the Danish standard DS 15251, meaning that the CO_2 level cannot surpass 500 ppm above outdoor levels] was not enough to prevent excess temperatures. However, when introducing natural ventilation at peak hours the number of hours above 26 °C could be minimised, as seen on ILLU. 117-119.

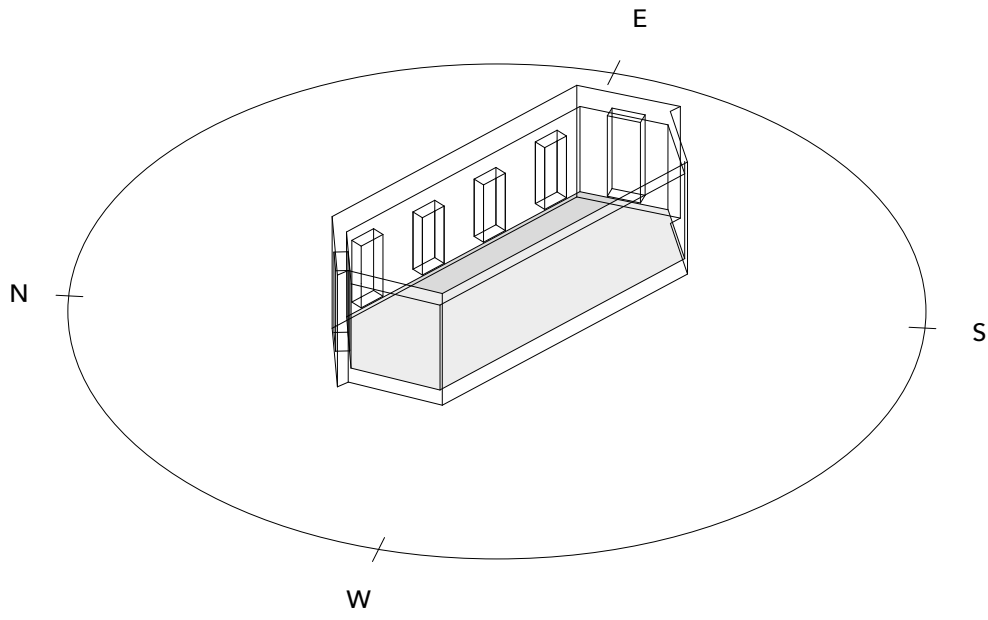
The staff area, being one of the only fully enclosed spaces, was the second space examined as the quality of the indoor environment in this more permanent workspace needed to be secured. However, due to the orientation towards north-east and the relatively low people load, a good indoor environment could be established with the mechanical ventilation system, as seen ILLU. 120-122.

In general, the acoustic quality of spaces has been secured though a conscious use of materials, where especially the wooden lamellas in the ceiling help to lower the reverberation time of spaces and improve the definition of speech markedly. The resulting acoustic performance of the event space and children's contemplation space has been documented as seen on ILLU. 123-128, where the reverberation time and intelligibility of speech has been evaluated. Both spaces are within an acceptable range for a good definition, mainly above 50 %, although lower frequencies in the event space can still be problematic, due to the wooden lamellas, which have higher absorption coefficients for higher frequencies. Meanwhile, the children's contemplation space shows a low reverberation time and high intelligibility due to its small size and use of fabric as an additional acoustic absorber.

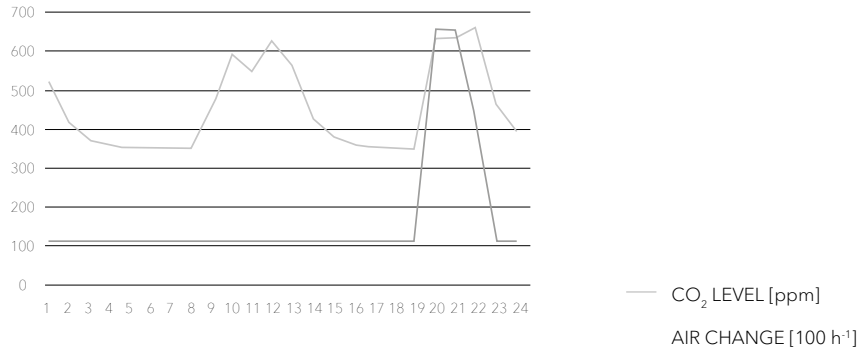
Adequate daylight levels have been established in all areas intended for longer stays, where a minimum daylight factor of 3% has been secured, while also ensuring a good view from the workplaces, as seen on ILLU. 129-130. Thus, the daylight explorations have been focused especially on the contemplative spaces and workspaces, while the remaining spaces have been a compromise between lowering the energy demand and securing daylight levels. Here, angled window jambs have been used to reflect the light further into the building, while acting as a further invitation to sit in the window recesses. The only workspace without inadequate daylight levels is the workshop. However, here a more focused artificial lighting can contribute to improve concentration at the workstations.



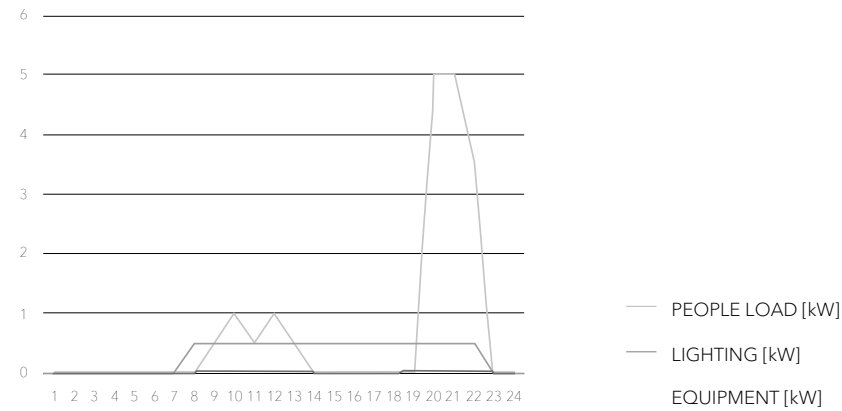
ILLU. 115. MODEL OF THE EVENT SPACE



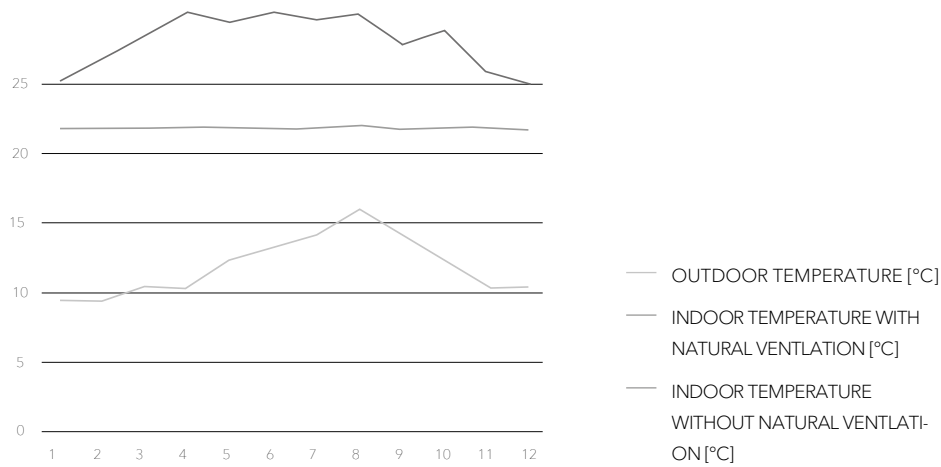
ILLU. 116. MODEL OF THE OPEN-PLAN OFFICE



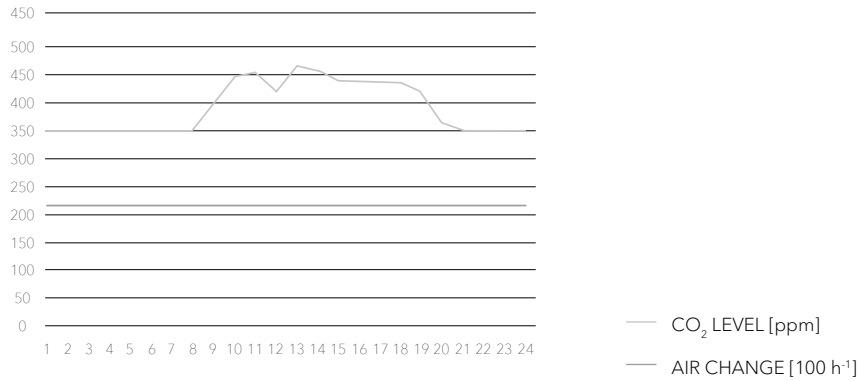
ILLU. 117. DEVELOPMENT OF CO_2 LEVELS IN THE EVENT SPACE THROUGHOUT THE DAY



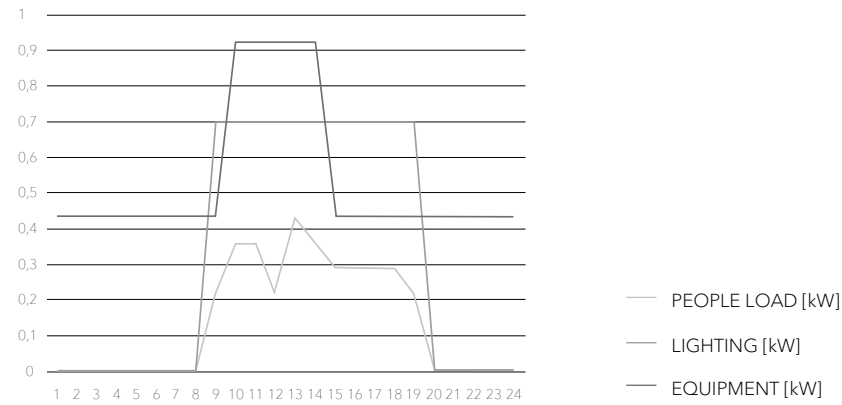
ILLU. 118. HEAT CONTRIBUTION THROUGHOUT THE DAY IN THE EVENT SPACE



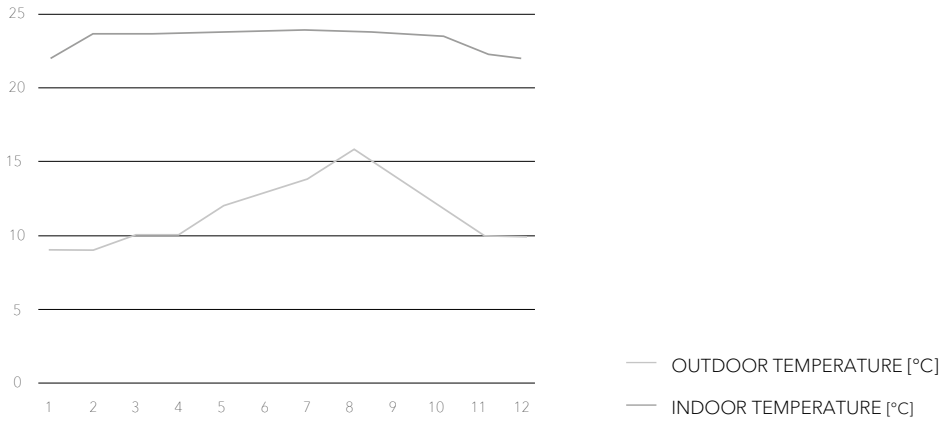
ILLU. 119. DEVELOPMENT IN MAXIMUM TEMPERATURES IN THE EVENT ROOM THROUGHOUT THE YEAR



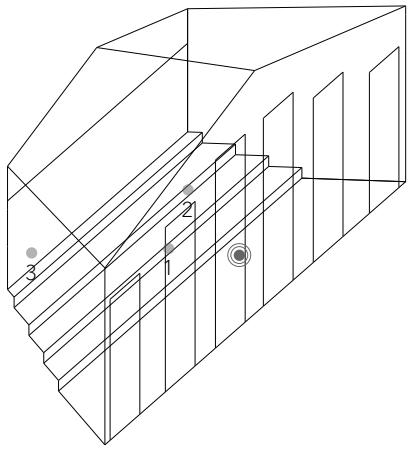
ILLU. 120. DEVELOPMENT OF CO_2 LEVELS IN THE OFFICE THROUGHOUT THE DAY



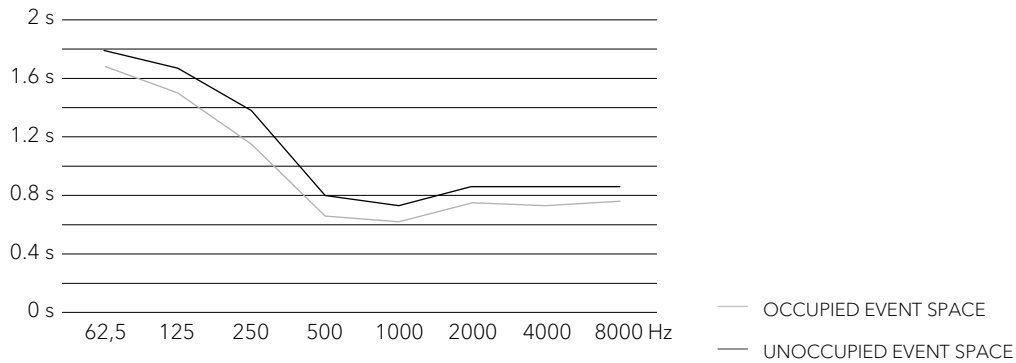
ILLU. 121. HEAT CONTRIBUTION THROUGHOUT THE DAY IN THE OFFICE



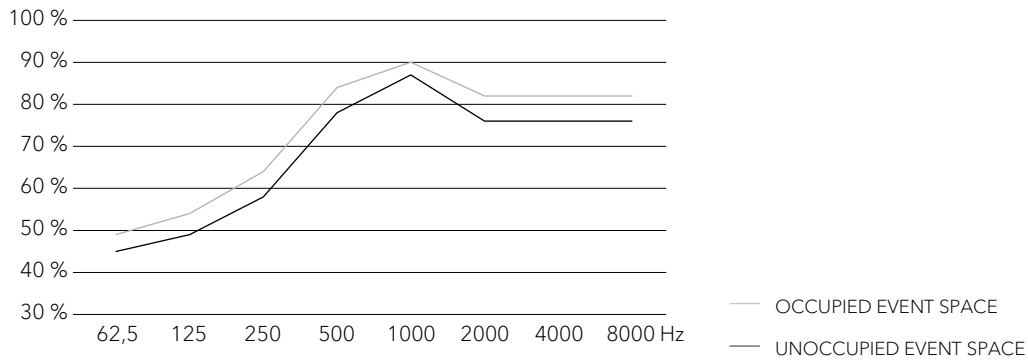
ILLU. 122. DEVELOPMENT IN MAXIMUM TEMPERATURES IN THE OFFICE THROUGHOUT THE YEAR



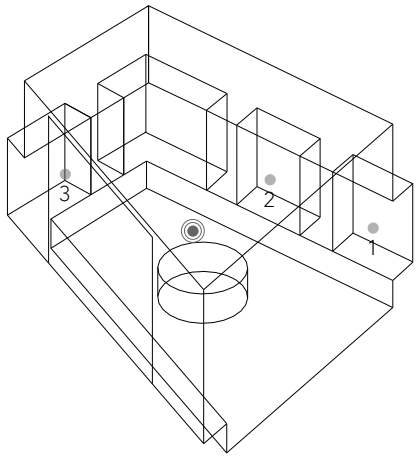
ILLU. 123. SIMULATION MODEL OF THE EVENT SPACE



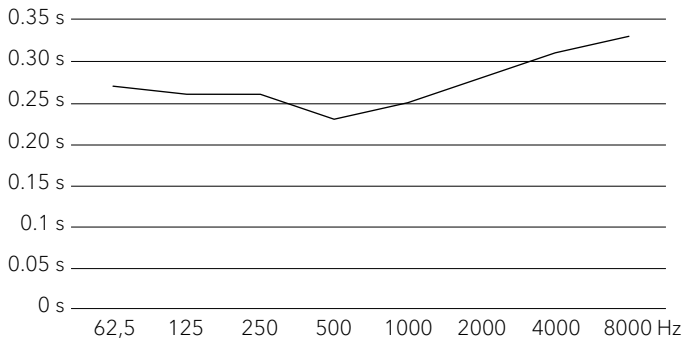
ILLU. 124. AVERAGE REVERBERATION TIME OF THE EVENT SPACE



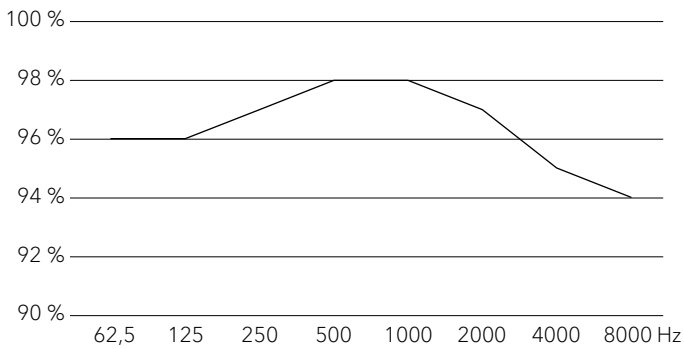
ILLU. 125. AVERAGE ACOUSTIC DEFINITION IN THE EVENT SPACE



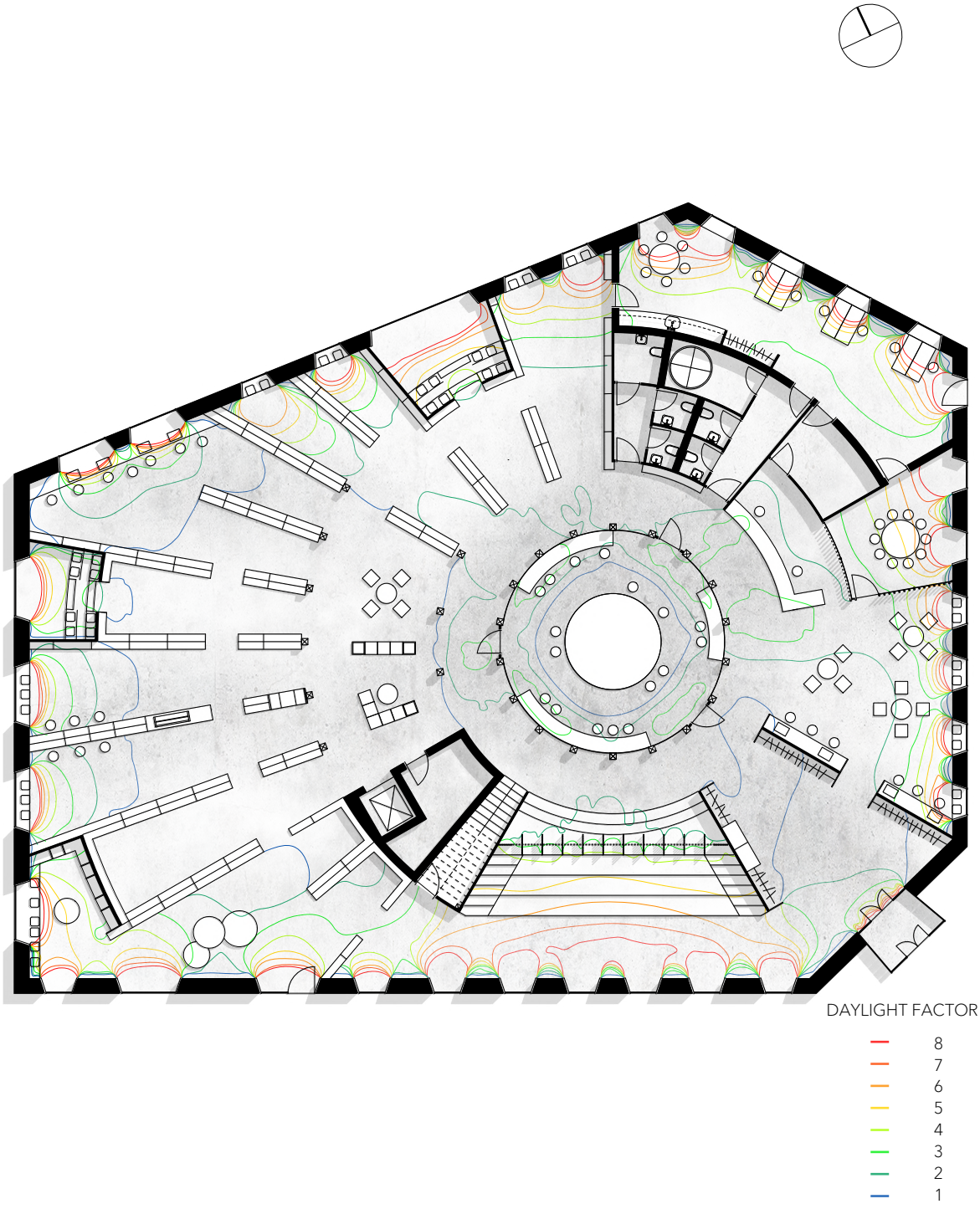
ILLU. 126. SIMULATION MODEL OF THE CHILDREN'S CONTEMPLATION SPACE



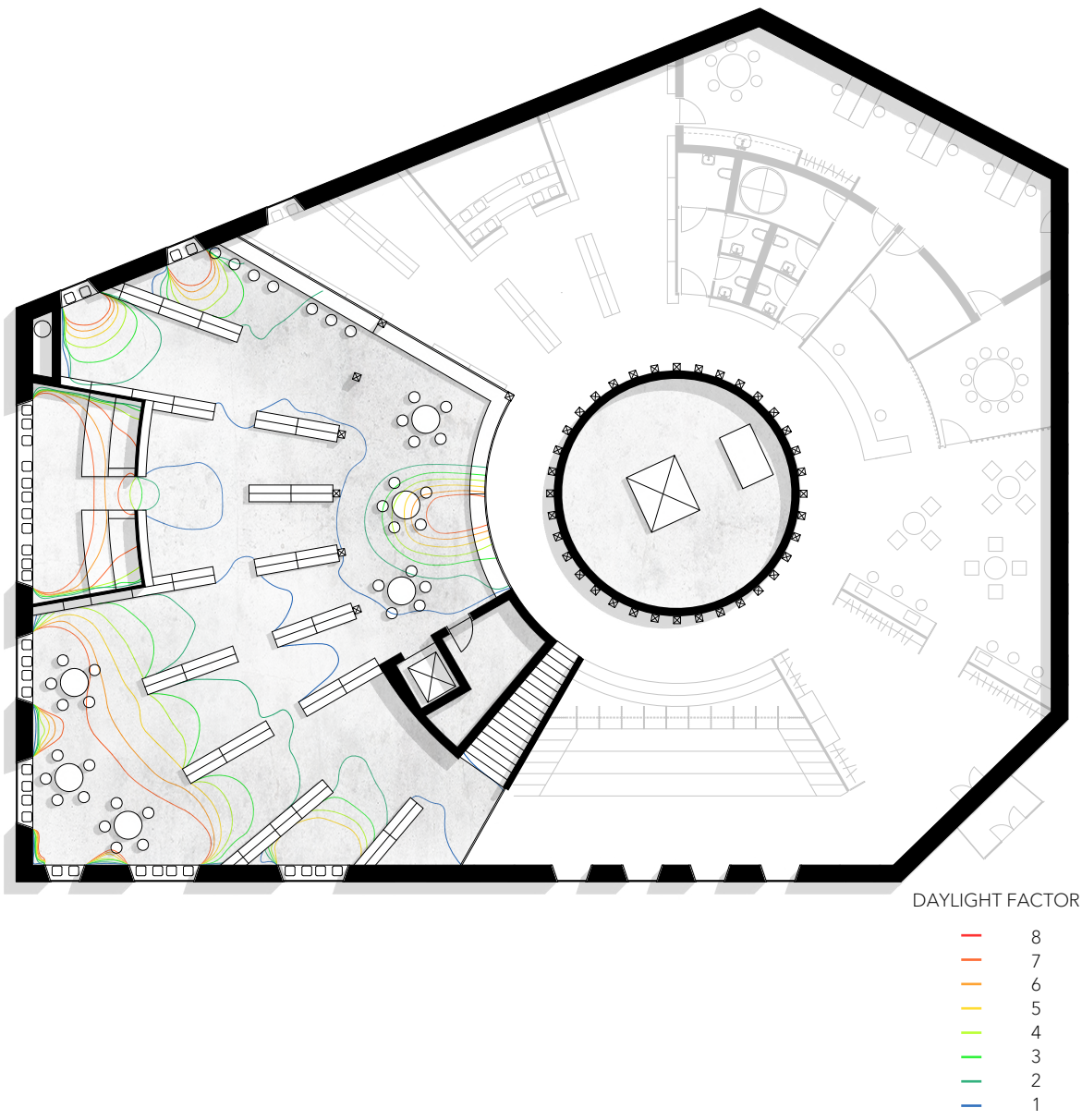
ILLU. 127. AVERAGE REVERBERATION TIME OF THE CHILDREN'S CONTEMPLATION SPACE



ILLU. 128. AVERAGE ACOUSTIC DEFINITION IN THE CHILDREN'S CONTEMPLATION SPACE



ILLU. 129. DAYLIGHT LEVELS OF GROUND FLOOR



ILLU. 130. DAYLIGHT LEVELS OF FIRST FLOOR

ENERGY PERFORMANCE

ORKURAMMA

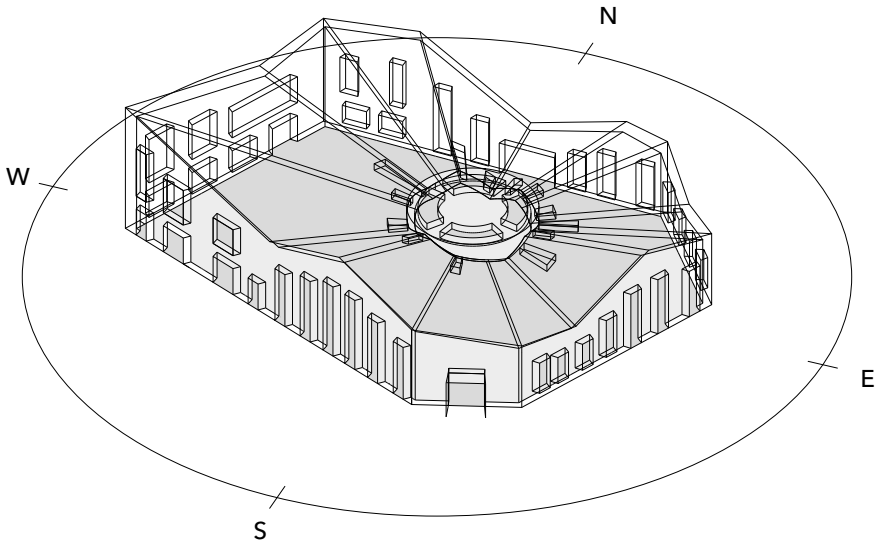
With the increasing focus on limiting the effect of buildings on the environment, the requirements for especially the energy consumptions of buildings are forced lower to ensure that buildings do not require unnecessary energy in its use.

With the library in Klaksvík, measures have been taken to lessen the energy requirement of the building, where, for instance, the building envelope has been optimised in terms of securing a low heat loss through the façade. Another important aspect of securing a low energy consumption in the cold weather of the Faroe Islands, has been to optimise the placement and area of windows to find the balance between maximising heat gain from the sun, minimising heat loss through the windows, while still ensuring good daylight conditions.

As the climate of the Faroe Islands is colder than the Danish, the requirements for the energy frame of buildings differ, where the current requirements of Denmark are 41,8 kWh/m^2/year for a building of this size and the low energy frame 2020 is 33 kWh/m^2/year for a building with district heating. In relation, the Faroese energy frame is 70 kWh/m^2/year. While the Faroese climate is colder, this requirement is still considered unambitious, and additionally has not been updated since 2013 [Aggerholm, 2013].

This unambitious goal for the energy requirement sparked the wish to use the building as framework of how to build more sustainably on the Faroe Islands, and thus aimed to fulfill the current energy frame of Denmark. With the use of the strategies to lower the heating requirement of the building, this goal was realised. With the wish of using the building as a medium for teaching sustainable solutions to the populations, studies were done to implement active strategies within the building, where solar cells either integrated into the façade or placed on the roof could additionally help lower the energy consumption of the buildings.

However, in the Faroese climate where sun is seldom, the implementation of solar cells has little effect in relation to the environmental impact of creating the panels. When filling all southern faces of the roof with solar cells, it only contributes with 5,2 kWh/m^2/year, and when replacing 30 % of the southern, western and eastern facades with solar cells, it only contributes with 1,8 kWh/m^2/year. Thus, the production of the cells, and their contribution to the energy frame is minimal and thus the use of solar cells on the Faroe Islands is not an optimal solution, and thus not a sustainable solution that would widely benefit the population.



HEAT BALANCE

TRANSMISSION LOSS	9,6 W/m²
VENTILATION LOSS	11,9 W/m²
TOTAL HEAT LOSS	82,6 kWh/m²/year
SOLAR RADIATION	38,1 kWh/m²/year
INTERNAL SUPPLEMENT	72,2 kWh/m²/year
HEATING	14,7 kWh/m²/year

ELECTRICITY REQUIREMENTS

LIGHTING	6,1 kWh/m²/year
VENTILATORS	8,0 kWh/m²/year

ENERGY FRAME

ENERGY FRAME ON THE FAROE ISLANDS	70 kWh/m²/year
ENERGY FRAME BR 2018	41,8 kWh/m²/year
LOW ENERGY FRAME 2020 WITH DISTRICT HEATING	33 kWh/m²/year
TOTAL ENERGY REQUIREMENT	**39,4 kWh/m²/year**

ILLU. 131. RESULTS FROM BE18

5.0

EPILOGUE

EFTIRMÆLI

CONCLUSION

NIÐURSTØÐA

The proposal of the new library in the Faroese town, Klaksvík, has been designed with a large focus on the needs and wishes of the user, with the Faroese culture in mind, and with a degrowth mentality at the centre. The holistic approach of the design has resulted in a proposal that considers both physical and psychological elements of design, where a focus has been on joining the tripartition of sustainability in the design, and thus finding a way to connect social sustainability to both economic and environmental sustainability. Here, the vision of the library becoming a catalyst for the sustainable development of the community has driven the entire process and has shaped the final design of the library, where the Faroese traditions of environmental protection and respect has led to the exploration of sustainable solutions. This has shaped the building in terms of materiality, indoor environment and energy consumption, which in return becomes an innate part of the overall experience for the user.

With a point of departure in the Faroese culture, the library has been shaped to enhance the traditional focus of the Faroese people on storytelling and on care for their natural environment. It has been designed as a place for the community, which can gather them around knowledge, inspiration and innovation. The layout of the library underlines this, in the way that different functions flow together to foster meetings between different users, and where the flexibility in furnishing means that a single space can accommodate different users at different times. Deriving from the Faroese mentality, the idea of degrowth has helped pave the way for the library to become more than just a collection of books, but instead a place where people can use their knowledge actively. In this way, it can help foster ideas and innovation within the community, which in return can help strenghten the society in a sustainable manner. The creative workshop in the centre of the library becomes the pinnacle of this use of knowledge and knowledge sharing in the library, which promotes it from an archive of information to an active beacon of knowledge.

In order to fully reach this potential of the library becoming a catalyst for the development of the community, it has been a driving factor to enable the library to be a place for all. Here, users of different cultures, professions and ages will have the opportunity to enrich their own life, and thus help enrich the community. This aspect has been implemented in the way that the library seeks to accommodate both different users, but also different states of mind, where it allows for both quiet contemplation and social interaction. Here, a diversity in architectural expression, openness and materiality creates distinctions between functions and experiences, where the layout, along with the external expression acts as an invitation to enter the library and immerse oneself within its knowledge.

REFLECTION

HUGLEIÐING

In this present day and age, the definition of a library has changed drastically from being a place of storing knowledge, to being a place for the community, of activities and play. This brings on the discussion of what a library is in its essence, and how to balance the two definitions to best fit the cultural and historical context. In the project, this discussion has come to light in the framing of the library and in the development of functions, where a focus that is too one-sided might diminish its effect on the community. In order for the library to become the envisioned catalyst for the sustainable development for both the local community and for the grander society, it relies on people visiting the library and becoming inspired to help make this change. This has meant that the design of the new library in Klaksvík has been designed to accomodate and merge the two types of library, which accepts that the library needs to be more than just a collection of knowledge, but also refrains from being the playground of the community. This discussion has thus led to the library being designed to fit all users and their different needs for both social and contemplative spaces. However, with the ambition of embracing all, comes a degree of ambiguousness, where the focus on all users means less focus on the single user. However, instead of just accepting this degree of ambiguousness, we have tried to implement it actively within the design, where overlapping functions instead try to enhance the experience of the single visitor, while also allowing for knowledge sharing between different users.

This framing of the project resulted in an enhanced focus on social sustainability, which has been present throughout the entire project. While aiming to merge the three aspects of sustainability, the reality of designing a library with this focus, has been much more on ensuring the well-being of the users, and on designing spaces that could inspire them. This has meant that the other two aspects of sustainability have become secondary in the process, and thus that the idea of the library becoming the physical framework for sustainable solutions and behaviour has not been implemented to the degree we had wished. More work could have been done to implement passive and active strategies within the design and the design of the building could have been made to reflect these aspects more. This is also evident in our work with natural materials, where the properties and qualities could have been studied more in depth to utilise them in the best way. An example of this is our work with a breathable building envelope, which has formed discussions of whether the theory will be applicable in a library of this scale as opposed to the smaller housing projects where it has primarily been used. Here, further studies and calculations could have helped the understanding of whether the princip-

les could in our case have a positive effect on lowering the ventilation and energy demand of the building.

Within the process of the design we aimed to structure and evaluate on our process to ensure that all studies were done with a specific aim and with specific guidelines, which meant that we always had a direction for the design, which enabled every solution to be evaluated equally. While this, for the most part, was positive in terms of always having some guidelines to work from and towards, it also sometimes acted as a barrier towards new ideas.
In the process of designing the new library in Klaksvík, many concepts were formed and many studies done in order to seek the best solution for this library. The fact of designing in an unbuilt context deemed difficult, in terms of deciding how much of the masterplan we could change, and how much we should seek to fit into the unrealised centre of the city. While we were given a 3D model of the plans for the city centre, the plans were still underway for the final expression, and thus we had to find the balance between accepting the masterplan and changing aspects of the plan to further our own ideas. This dilemma caused a lot of going back and forth in the concept development phase, where we spent a lot of time seeking new ideas and studying different approaches to the project. This meant that the search for the final concept was prioritised over the final detailing of the project, which resulted in solutions that could have been optimised to improve the quality of the overall concept. However, we do believe that the the proposal for the new library in Klaksvík could benefit the community, where the focus of knowledge and innovation can help reembrace their traditions of social sharing and their focus on human and environmental well-being.

ILLU. 132. KLAKSVÍKAR BÓKASAVN

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ILLUSTRATIONS

MYNDALÝSINGAR

All illustrations, that are not presented in this list, belong to the group.

ILLU. 7: Information from: Stoklund, B., 1996. *Det færøske hus i kulturhistorisk belysning*. Copenhagen: C.A. Reitzel. pp. 58+70

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