A church in Argir, Faroe Islands

18 islands
53090 people
1399 sqkm

MSc04 ARC
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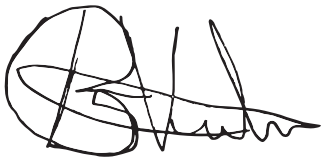
Fig.01 // Faroese Coastline



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Abstract

The following thesis presents the program, the design process and the resulting final design proposal of a church located on the Faroe Islands. The thesis investigates how architecture and religion corelates and how this can and will function in the place and culture of the Faroe Islands - more specifically the city of Argir.

Religion is an important aspect of the Faroese culture and is to this day one of the main common denominators that brings the community together. This has served as one of the main design drivers and have been an important part of the justification of certain elements within the process.

With the isolated location of the islands, the selection of materials is to some extend limited but this has however led to a precise and interesting vernicular architecture that has been used as references and inspiration through the process.

Through studies, investigations and on-site registrations, the physical form of a constellation of relevant buildings - a church, a community house and a chapel - have come to light. The iterative process has led to many different iterations and proposals that are build upon emperical knowledge stemming from these investigations.

The architecture has been designed with a special focus on the lighting conditions, the acoustics and the structural system and of course the impact of the surrounding nature on site.

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Prologue

Fig.02 // Faroese Coastline

Introduction

Located in the North Atlantic Ocean, the Faroe Islands stand as a testament to nature's raw beauty and cultural resilience. At this place where landscapes meet ancient traditions, the need for sacred spaces takes on a unique significance.

As the Faroese people navigate the challenges of isolation, ever-changing weather, and a deep-rooted connection to their surroundings, the design of a church becomes an opportunity to harmonize with the landscape, culture, and spirituality.

This thesis seeks to address the evolving role of religious architecture, blending tradition with modernity, and addressing the distinct contextual challenges presented by the Faroese environment and its adhering materials - or lack of.

Through an in-depth examination of local history, cultural practices, vernacular architecture, and climatic conditions, the thesis aims to formulate a design philosophy that not only caters to the spiritual needs of the community but also becomes a symbol of unity and resilience for the people of Argir. By exploring architectural solutions, sustainable practices, and a profound understanding of the Faroese way of life, this project seeks to contribute to the evolution of church design in a manner that is both respectful of tradition and responsive to the dynamic forces shaping the Faroe Islands in the 21st century.

Fig.03 // The City of Argir

Existing Project Brief

In 2015, the church council of Argir published an architectural competition, proposing a new church in Argir. The municipality of Tórshavn has sponsored a section of land for the location of the church and in collaboration with the Architectural Union of the Faroe Islands announced the brief (appendix 01). The original project brief focuses on traditional as well as existing elements of the Faroese churches and other events related to worship.

Locating the project site

The debate on where to locate the new church of Argir has since its initial competition program been substantial. The land is currently owned by the municipality and is not under private ownership.

The site of the competition brief was originally given to the municipality of Tórshavn by a local family – the Müller family – who owned the original piece of land. The only condition of the family was that the site, tying together Argir and Tórshavn should preserve its nature and its associated qualities (Mortensen, 2022).

In 2021, a local group of people interested in the preservation of the site's natural elements and landscape, started to oppose the placement of a forthcoming building. Due to this resistance, the location was once again brought up for debate (Mortensen, 2022b). However, it was decided once more to permit construction on the site, with the caveat that the church's expression or placement would not disturb or dishonor the area or its nature. Then in 2022, the debate was relived again by a local town council member (Bertholdsen, 2022). This led to having the town-planning committee present a new possible proposal for locating the church.

Method // Approach

The design process can be explained as an appraisal of systematic methods (Gregory, 1966). This system is composed of a generalized recipe encompassing different gradually evolving stages of the design. The stages of the process has their respective indicative features which characterizes the progression of the design.

The Markus/Maver map is a simplified explanation of the process with four distinguished stages; **Analysis, Synthesis, Appraisal** and **Decision** (Lawson, 2005).

What sets this apart from other explanations in this category of processes, is the inclusion of the increased level of detail that is progressively embedded in the steps of the process: **Outline Proposals, Scheme Design and Detail Design**.

The communication of the methodology is up for discussion since the Markus/Maver map is a wide embracement of the process not explaining further details and procedures that encompasses the different four stages.

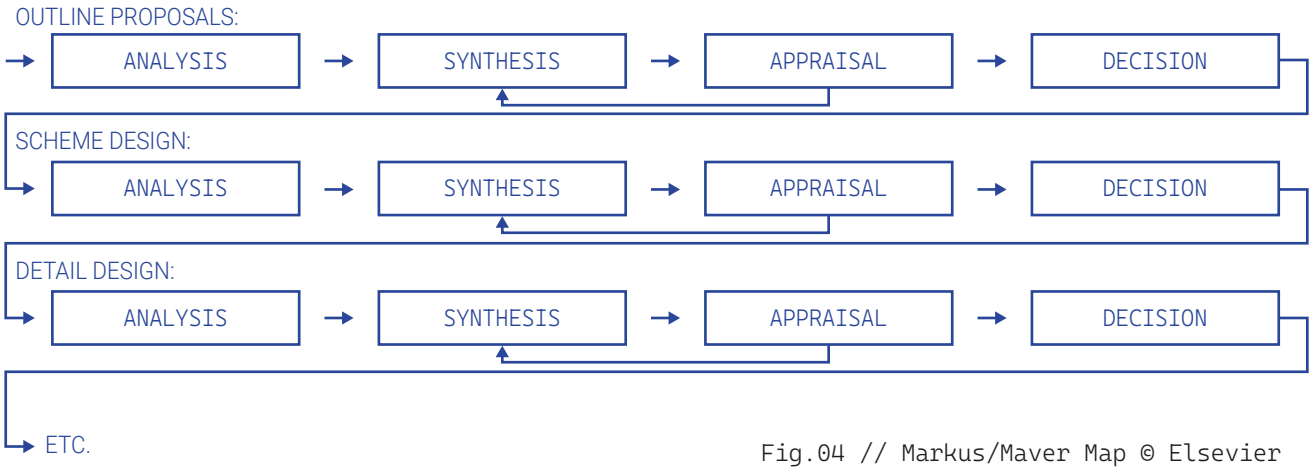


Fig.04 // Markus/Maver Map © Elsevier

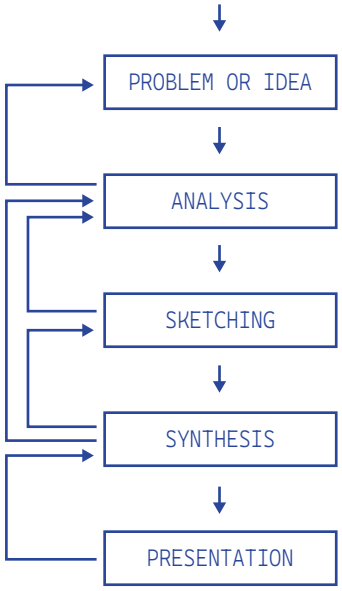


Fig.05 // IDP - Mary Ann Knudstrup © Factum Books

A differentiation between the design process of the Markus/ Maver map and the design process of Mary-Ann Knudstrup is the integrated architect's position embracing interdisciplinary approaches and tools in an iterative process.

What makes the **Integrated Design Process** by Knudstrup unique is the holistic explanation of an interdisciplinary architect-engineer.

Fig. 05, illustrates that the process is problem based which is maintained throughout the five phases. The Synthesis phase of the IDP is characteristic due to its interdisciplinary considerations which is integrated in a multifaceted way.

It is definitive that the design process is to be explained in various ways. An attempt is made to communicate the process of this thesis in a more accurate way through five iterative stages explaining what, how and why.

The methodical section of this project roots in a more specific explanation of the applied methods of this project in relation to a general iterative pattern of five steps/stages.

For this specific design process the preliminary investigations - qualitative and quantitative, have been the foundation for the forthcoming design proposal. Through sketching, modelling and simulations a variety of suggestions has flourished and has then been evaluvated and discussed with the aim of creating something holistic and sacral that utilizes the technologies and ideologies of today and the future.

The theoretical aspects of this project has especially focused on the importance of sacral gestures, light and accustics. The knowledge gained from these specific topics has provided inspiration for the design in a way that seeks to accommodate the obtained empiri.

1 Predesign // Insights

“Problem solving behaviour employed in finding out the nature of what exists” (Gregory, 1966).

Originally referring to the scientific methodical approach but appears similar to this stage of the design process with the investigations based on what already occurs.

The identity of this phase lies within the name, pre-design. The reasoning is to understand the framework of the project, this includes the contextual conditions both qualitative and quantitative in various scales. The conclusions of the analysis and insights scopes out the main design driver of the project, also known as the problem.

Thematics:

- **History and origin**
- **Geology**
- **Geographics and availability**
- **Demographics**
- **Rules and rituals**

Methods and Tools:

- **Mapping (Quantitative)**
- **GIS**
- **Registrations (Quantitave)**
- **Modelling**

2 Schematic Outline (Position and Skin)

“The design method is a pattern of behaviour employed in inventing things of value which do not yet exist” (Gregory, 1966).

Taking it a step further, this stage of the process encompasses the objective of the morphological character and outline of the architecture based on the conditions and requirements from the previous stage. Specifically for this project, the focus is on how the physical manifestation of the building program is situated within its environment.

The conceptual character of this stage eventually leads to several iterations of options to be selected and evaluated based on interdisciplinary performance.
A catalyst for this assignment is to engage with the nature of the context, more specifically to activate and frame the natural through the built.

Thematics:

- **Volumetric studies**
- **Feasability studies**
- **Axonometric relationships**
- **Reference studies**

Methods of Evaluation:

- **Relation of function (Quantitative)**
- **Relation to the environment**
- **Relation to the goals of the project (Both Quantitative and Qualitative)**

3 Integrated Synthesis (Body and Bones)

This stage encompasses the evaluation of the different design options based on performance. The design of the selected option is to be iterated based on the requirements of technical elements and how the symbiose of different disciplines can result in certain tectonic atmospheres and spatial qualities.

Thematics:

- **Acoustic comfort**
- **Visual comfort**
- **Structural affordances**
- **Materiality**
- **Thermal conditions**
- **Flexibility of use**

Methods of Evaluation:

- **Digital, Enscape/Rhino 3D**
- **Environmental performance software, CS + TREBLE (Quantitave)**
- **Sensorial, VR experience (Qualitative)**
- **Structural evaluation, Karamba (GH) (Quantitave)**

4 Detailing (The Joints)

The fourth process is all about the details. This process informs about the various building systems and their interrelations on a detailed level. Working on such a detailed level unveils eventual thematic problems which may not have been discovered in earlier stages.

An example of this could be the buildability of the architecture, explaining how the kit of parts is assembled on site. Another example could be the joints of the different materials, both structural and constructural.

Thematics:

- **Joints of external and internal parts**
- **Modularity and flexibility**
- **Materiality in small scale**
- **Construction/execution**

Methods and Tools:

- **Building physics calculator,**
- **Ubakus**
- **Supply options**

5 Presentation (The Final Product)

The last phase of the project is the presentation of the architecture. The aim of the presentation stage is to communicate the final option and its interdisciplinary performance.

Thematical and Theoretical Investigations

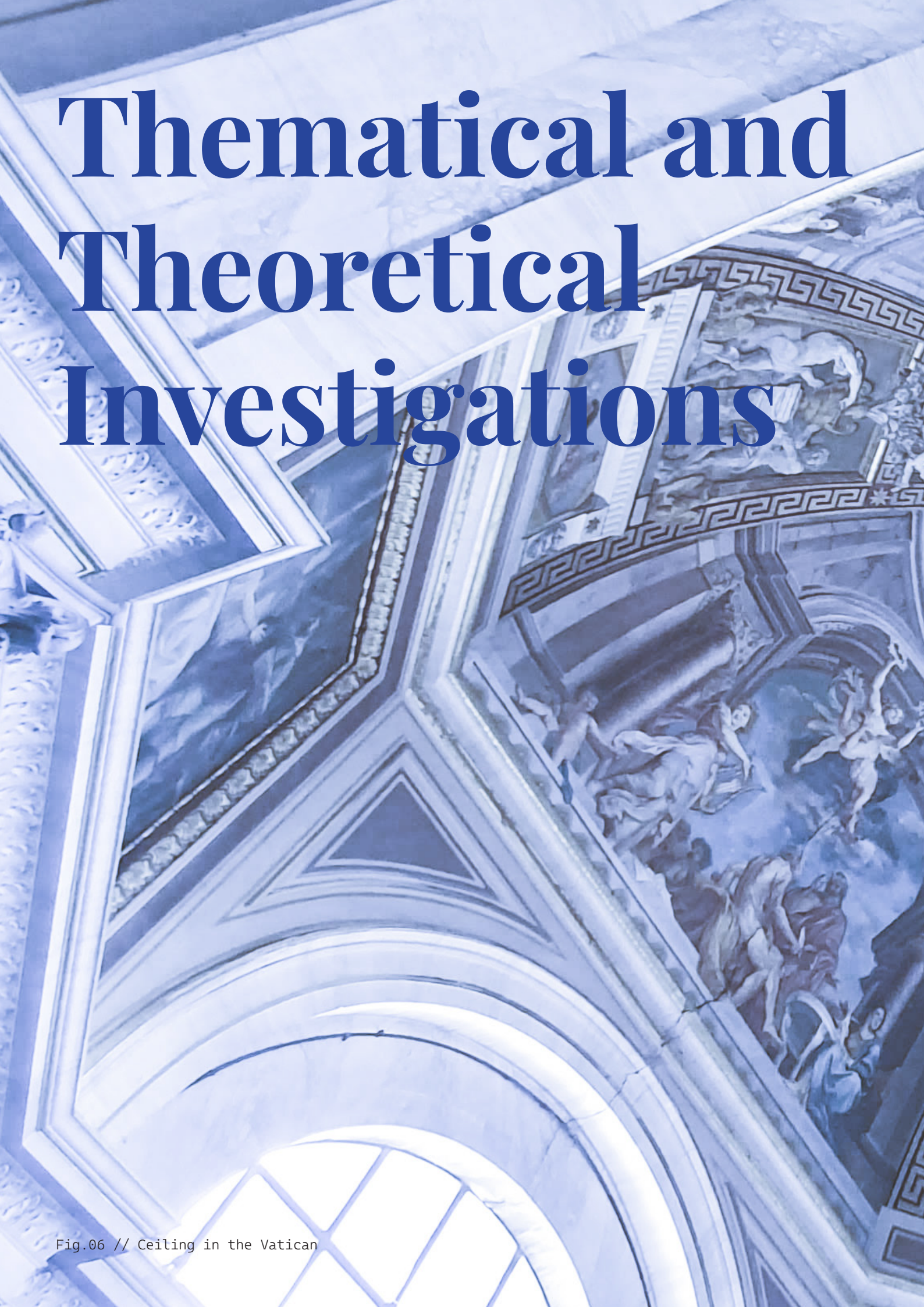


Fig.06 // Ceiling in the Vatican

Religion and the Church

The Relevance of Religion in Present Times

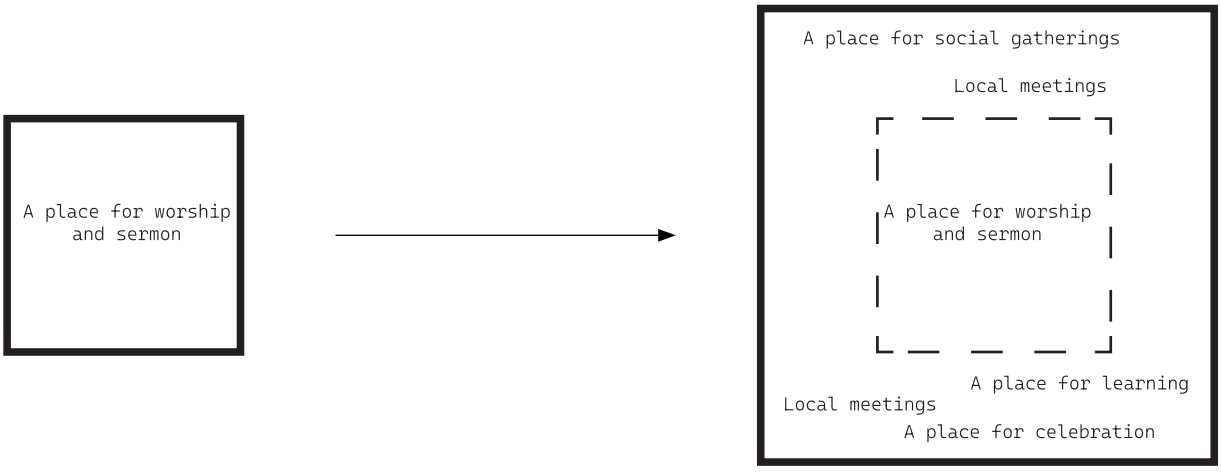


Fig.07

The Faroe Islands have a unique cultural and historical context that significantly influences the relevance of religion in the present day. The predominant religion is Christianity, with the majority of the population adhering to the Evangelical Lutheran Church of the Faroe Islands (Hagstova.fo, 2024). The role of religion in the Faroe Islands holds both traditional and contemporary significance, shaping various aspects of daily life, social dynamics, and cultural identity.

Religion plays a central role in the lives of many Faroese people, providing a framework for moral values, community engagement, and rites of passage. The church is not only a place of worship but also a focal point for social gatherings and cultural events. The Faroese society is deeply rooted in its Christian heritage, influencing celebrations, festivals, and even the Faroese' approach to ethical and moral dilemmas.

However, like many regions globally, the Faroe Islands are not immune to the broader tendencies of secularization.

While Christianity remains an integral part of the cultural fabric on the Faroe Islands, there is an increasing diversity of beliefs and worldviews, reflecting a more pluralistic and open-minded society. Modern challenges, such as globalization, technological advancements, and evolving social norms, have prompted a reevaluation of the role of religion in the lives of the Faroese people.

Despite these changes, religion continues to provide a sense of community and identity in the Faroe Islands. It serves as a source of comfort and guidance, especially in times of crisis or uncertainty. The shift from

”Religion has played a profound and enduring role in shaping the fabric of human societies throughout history. Its influence extends across cultural, ethical, and political dimensions, moulding the collective consciousness of communities and individuals. As societies evolve, so too does the intricate relationship between religion and the various facets of contemporary life.”

- Rivis-Tipei, I. (2023)

Farmer-community to Fishing-community also added to a certain “need” for higher powers to give meaning to some of the harsh conditions and challenges life on such remote islands offer (Hanscomb, M.L., 2023).

The interplay between tradition and modernity in the Faroe Islands creates a unique landscape where religious practices coexist with a growing acceptance of diverse perspectives.

In conclusion, the relevance of religion in the Faroe Islands in the present day is a nuanced and evolving phenomenon. While Christianity remains deeply ingrained in the cultural tapestry, the Faroese society is also adapting to the changing times, embracing a more pluralistic and inclusive approach to spirituality and worldview. This delicate balance between tradition and modernity shapes the Faroese’ identity and contributes to the rich cultural mosaic of the Faroe Islands and adds precedence in the creation of designing a new church in Argir.

Duality of the Christian rituals; celebrating the sacrifice of Jesus and encompasses communion in word and the receipt of bread and wine.

08a

The History of Churches

The Christian rituals exhibit a dual nature, generating tension between the central elements of the spatial structure: the pulpit, representing the spoken word, and the altar, symbolizing consecration, within the church sanctuary.

The architectural design is mostly structured around axial and radial arrangements, juxtaposing the longitudinal nave with the transverse rectangle, while incorporating shapes such as oval, circle, octagon, hexagon, pentagon, square, and triangle.

For the purpose of this thesis the focus will be laid upon what has happened after the Reformation especially in the adhering Nordic countries.

0-232/233AD: "House churches" was a phenomenon used before having actual churches for worship, celebrating the communinon in their private residences. Small gatherings enhanced a small fellowship for the worship of the Christianity (Finger, R., 2007).

Larger built structures, categorized with a long hall, including a raised piedestal, an initial pulpit become the prefered option for bishops to preach in.

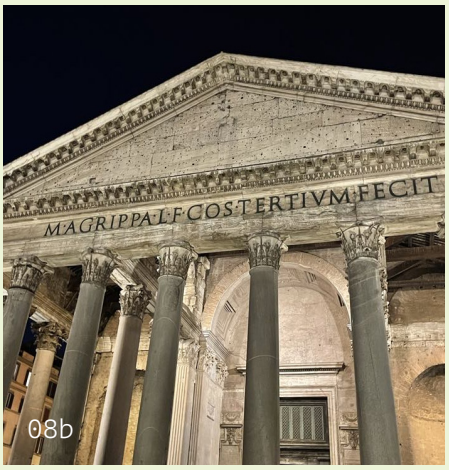
312AD (4th Century): Roman Emperor Constantine ended the persecution of Christianity which ended the secret Christian gatherings.

The Christian community grew at a fast pace which caused a need for larger churches. The larger churches were introduced throughout the Roman Empire.

Architectural typologies began to rise, in the shape of a longitudinal hall or a basilica. The basilica is characterized by a tall central nave with aisles on the left and right side. Before it was used for religious purposes, it served as market halls, courthouses and in general gatherings (Tikkanen, A.,n.d). The nave and aisles are differentiated by a row of columns or other physical manifestations.

The new architectural arrangements were popular because they did not draw inspiration from older pagan religions.

08a. Example of Basilica
08b. Pantheon, Rome, Italy
08c. Saint Stephan's Cathedral, Vienna, Austria
08d.,08e. Saint Peter's Basilica



08b

440AD: Four Roman basilicas were built – devoted to the Apostles; John, Peter, Paul and Holy Mary. These architectural pieces represent the power of the emperors and claim to eternity in a physical matter.

Simultaneously this period marks a shift from the longitudinal hall composition to a circular arrangement. A characteristic for the circular buildings were the centripetal focal and energy of the space. Some of the circular buildings were not used for worship but rather as mausoleum or baptistery.

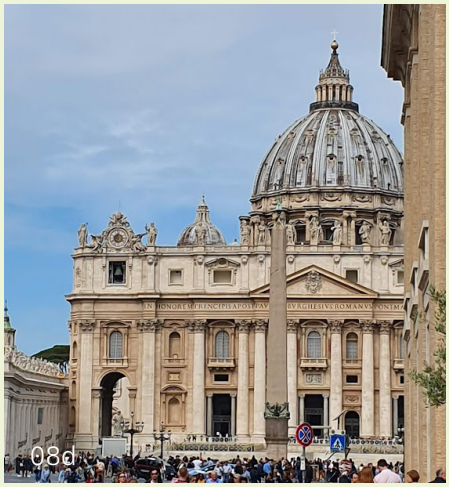
6th Century: Byzantine Empire
A centralized plan layout distinguished the Eastern Roman or Byzantine Empire. The culture rooted in the Greek traditions rather than the Latin traditions. Several of the old churches are constructed from an equalized, symmetrical crucifix – meaning the "arms" are the same dimension in both the y- and the x-axis. The midpoint of the plan were crowned with an extruded dome manifesting the hierarchy.


08c

11th-12th Century: Romanesque and Gothic - Early/High Medieval
The Romanesque era flourished in Europe in the 10-12th century, during the medieval times. The essence of the style was the influence of the Roman architectural traditions. The style could be characterized from the use of round arches present in entrances, windows and halls. Due to the use of stone as material for vaults and roofs, an increased thickness of walls were needed for extra load bearing.

Transepts became more prominent and integrated as a fixed element in the church design. The cruciform plan arrangement were characteristic for the Romanesque churches with the transept crossing the nave. The addition of a transept afforded a wider facilitation in different axis.

The Gothic era originated in France around the 12th century and is recognized by its intricate and complex geometries of great size. Architectural elements such as arches and high towers are an indicative part of such. The intricacy and time consuming buildings were seen as a tribute to God (von Simson, O., 1988).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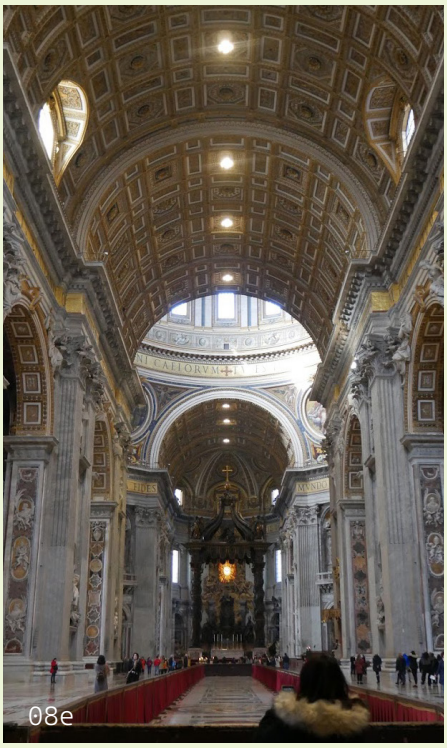

08e

14th-17th Century: Renaissance
The characteristics of the renaissance period is the revival of the Roman art, literature and architecture. The human centered rational were a central figure also visible within the creative disciplines.

The revival included influcne of the ancient Roman and Greek ideas of geometry and symmetry. The inspiration is visible within the columns where doric, ionic, tuscan and corinthian styles were incorporated in the churches. The integration of domes is a prepotent feature of this period symbolizing the physical representation of heaven and the divine order (Stegers, R., 2008).

08f

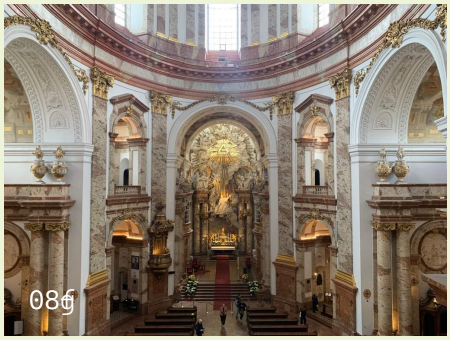
16th Century (Part of Renaissance): During the Renaissance era of the 16th century, there was a broader conflict on whether to have an axial or a radial arrangement in church architecture. The rationality and classical principles were a catalyst for the axial arrangements whereas the intimate presence argumented for the radial.

The axial arrangements were characteristic for the ancient Roman basilicas with a direct axis going from the entrance to the altar. The radial plans were used in the Roman period and Byzantine structures and could appear as both circular and polygonal.

The axial arrangement had different appearances as well, both as a representation of a crucifix, with building structures perpendicular to one another, as a symmetrical cross.

1544: The first Lutheran designed church.

1555: The Lutherans started to inhabit the available churches as initially designed with decorative changes.

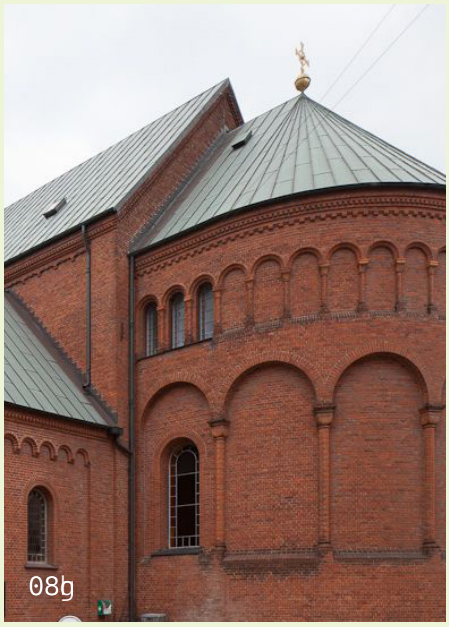

08g

17th Century: The Baroque: The introduction of the Protestant high altar. The Protestant high altar was a tendency where the altar was placed in a lower position than the pulpit. Some churches had an arrangement of altar, pulpit, font and organ on the same axis (wikipedia.org, n.d).

Due to an increased popularity, a raised gallery was implemented to house a higher capacity.

The Lutheran churches aimed for a balance between the pulpit and altar to lay focus on the important, the sermon. Other Prothestantic religions like Calvanism had a stricter hierarchal structure, where the pulpit was the absolute priority.

The Baroque style of churches was characterized by oppulent detailing, large scale decorations and brighter colors. All to showcase the power and significance of the Roman Catholic Church.


08h

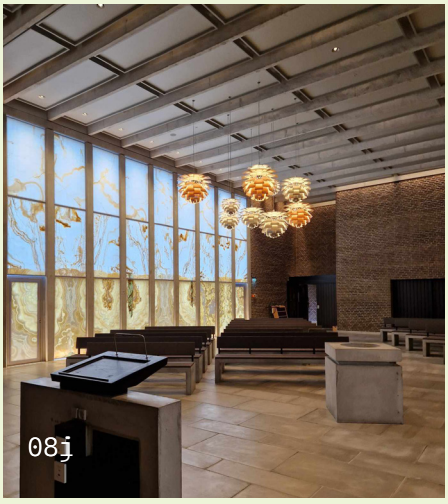
19th Century: Neo-Romanesque and Neo-Gothic: A discussion between the two architectural styles – some prefered the regular arch as dominating geometry and some the ogival arch.

During this time period, society was changing rapidly creating a social hierarchy of different social classes. The technology was progressively developing with insecure prospects. Not everyone were equally excited for the new societal changes which caused some people to yearn for what there had been in the past, therefore neo-romanesque and neo-gothic (Stegers, R.,2008).

08f. Church of Saint Charles, Vienna, Austria
08g. Church of our Lady, Aalborg, Denmark
08h. Corpus Christi Church, Aachen, Germany (Cred. X .Jaureguiberry)
08i. Billund Church, Billund, Denmark

20th Century: The Gradual Abondonment of the Historicistic Genres: The Liturgical movement was formed, with the aim to revive the experience of communion in word and Erucharist. The influence of an architectural manifesto of 1922 adressed that the architecture and architect should serve the cause. This meaning that the altar should be the focal point of the church – centrally placed with the spatial layout evolving that point.

Dividing objects, pillars and columns, were to be removed from the nave in order to use the aisle space as additional access ways to the pews. The dimension of the choir was redimensioned in a wider but shorter format. The altar was also moved forward from the end wall.



21st Century: The architectural characteristics of a Catholic and a Protestant church are almost invisible this day. An inventory consistency of an altar, a pulpit and a baptistry are seen as whole in both scenarios.

The composition of the church comes in various versions – a distinguish between the unified and the partinioned are defined as a distinguish between what is perceived as a holistic experience and what is pereceived as a divided space with a spatial hierarchy. These contradictions are illustrating the principles behind the longitudinal and the circular configuration.

The Communio Concept: Another deviation from the classical arrangements is the Communio Concept. This concept embraces the bipolarity of the spoken and the Eucharist through an elliptical plan layout that allows a direct confrontation between the priest and the congregation through a shared experience of space. The pulpit and baptistry are places on the long-central axis of the ellipse, one on each focal point. (Stegers, R.,2008)

The Core Principles of the Church

When searching for the definition of a church the answer states “a building used for public Christian worship” (Oxford Languages, 2024). But the church is not just a building. It is a powerful piece of architecture which has a traditional set of rules according to the physical structure and hierarchy of the religious space.

The church as an institution

The church used to include the legislative, executive and judicial functions. Today many countries have a secularized structure with the religion and the state being two separated institutions which serve their individual purposes.

The physical manifestation of the church authority was translated into architectural monuments like the Saint Peter’s Church in Rome which of course were not free. These expenses were again redeemed through the price of God’s approval, easily accessible for the average citizen (dac.dk, 2024).

The church as a societal constellation

Is the church to be considered as much of a social institution as a religious space? As much as the church is a space that mediates the clerical and the secular, it is a space for the people in society to gather and connect. The church of today can be categorized as a multifunctional space both housing religious ceremonies and social events like concerts.

The church often serves as a space where people seek peace and a moment of solitude from their otherwise hectic everyday life.

The church as a spatial phenomenon

The architect’s job of designing a church was to create a tangible and physical space, functioning as a physical mediator between man and God. The architecture should be a physical representation of the beauty of God’s work. Operational experiments with light and acoustics enables a more sensible atmosphere which highlights the holy experience of the physical matter.

Composition

There are two spatial compositions of churches, the central church and the longitudinal church (denstoredanske.dk, 2024).

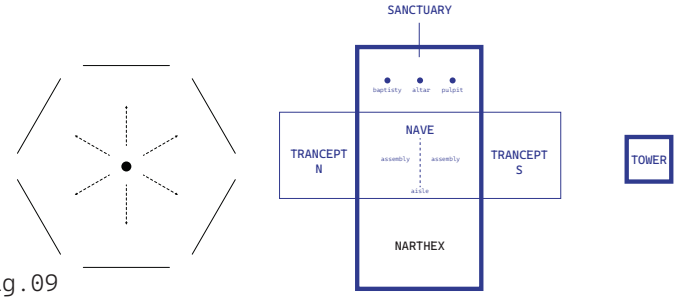


Fig.09

The central church composition is based on a simple geometrical principle of a symmetrical construction with origin in a centered focal point. This affords a functional hierarchy with one leading function that obtains the “main” space.

The longitudinal church has a clear hierarchical composition with the longitudinal nave going from west to east and the crossing trancepts from north to south. The long hall goes from west to east and starts with the entrance, the narthex which continues into the nave and is the main space which houses the congregation. By placing the sanctuary at the east end of the long hall, the congregation faces the east which is known as the holy orientation.

The geometry of the longitudinal nave and the crossing trancepts creates a cruciform plan which is rooted in the crucifix of Christ.

The longitudinal part, the nave, of the traditional church is often accompanied by a vestibule or narthex, a sacristy, side trancepts, a chapel, a tower and an alter (denstoredanske.dk, 2024).

The different functions require designated inventory to facilitate the specific solemnities.

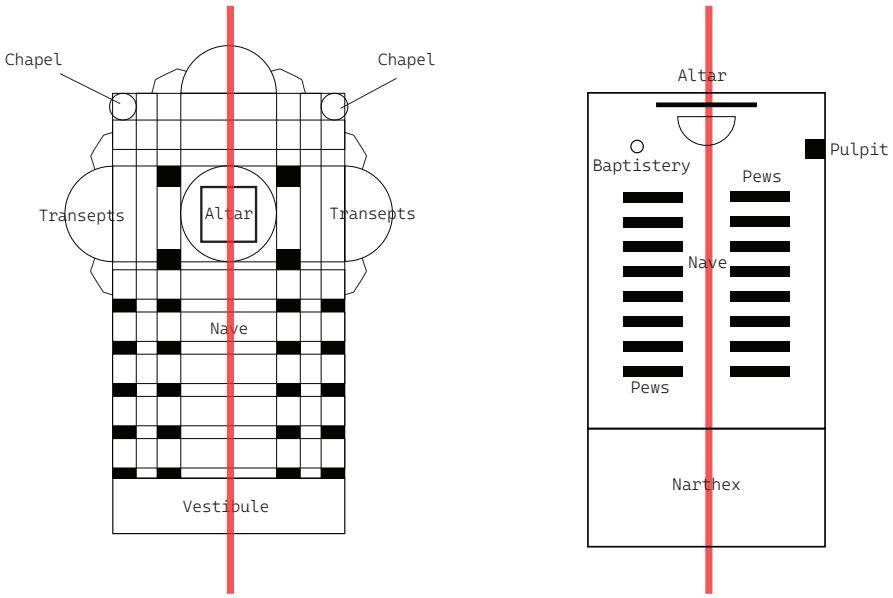
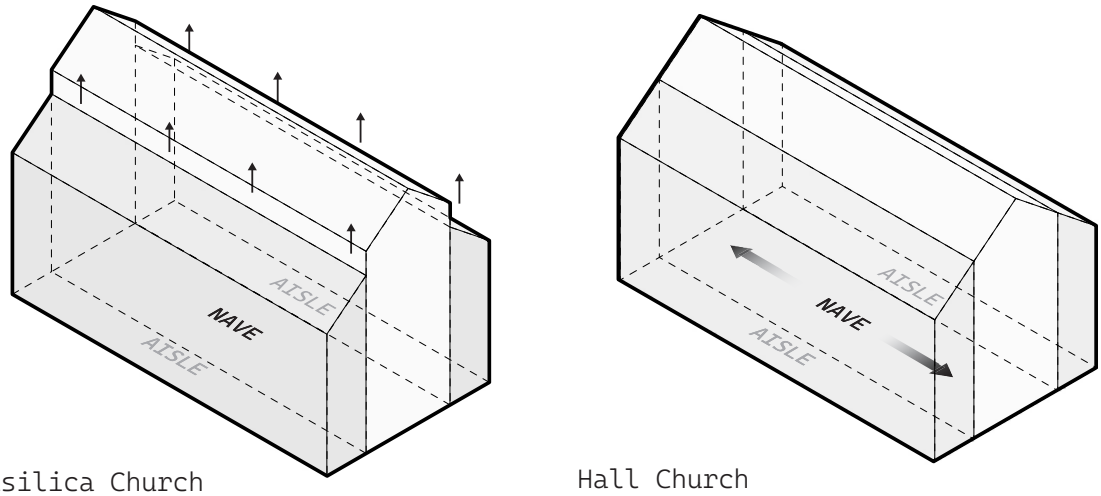


Fig.10 // Orientation of Churches



Basilica Church

Hall Church

Fig.11 // Basilica and Hall Churches

Hierarchy

Architectural hierarchy is used throughout different time periods to highlight the different functions of the church. A typical hierarchal structure is differentiated between a basilica and a hall church.

The basilika has a defined hierarchy within the height difference between the nave and the sides seen through a cross section. This building typology was very common in Ancient Rome and roots back to the Middle East (denstoredanske.dk, 2024).

The extrution of the middle part of the building allowed space for clerestory windows which created a certain light experience. The compose of the basilika was the most common arrangement throughout the 19th century.

The hall church is a typology where the nave and the aisles are “gathered” under the same roof and approximately the same height. A structure can also be categorized as a hall church when there are no aisles on the sides but rather one combined space. This is often found in older Nordic churches.

Hybrid options are to be found within these two categories, where the aisles and central nave have different ceiling heights but are still connected under the same exterior roof.

Fig.12 // Pews at Mykines Church

The Inventory

The inventory of churches is understood as the physical furnishing of the spaces. It is both the practical elements such as seating, but also purely religiously based elements one would not find elsewhere, such as an altar.

The nave is a space, housing strict and scheduled activities with prevalent organization of inventory. The main purpose of the nave is to serve as a space for liturgy. A typical service is structured of an entrance prayer and hymn, occasionally a collection, readings from the bible, the creed, prayer and eucharist (Kreiner-Møller, J., 2022).

It is a typical requirement for a church to include a specific inventory, the altar, the altar rail, baptistery, the pulpit, the organ, the pews and chairs.

The organization of these fundamental furniture is not redundant. The service is a liturgical activity worshipping the faith, a liturgical notion “versus populum”, meaning towards the people, has acted as a catalyst for the organization of pews and chairs in Evangelist Lutheran churches.

The Latin phrase “ad orientem” refers “to the east” meaning, both the priest and the congregation is oriented towards the same direction to the east. This orientation was commonly used in the Roman Catholic church which was an element differentiating the Catholic from the Lutheran.

The chancel including the alter, the pulpit and the baptistery is commonly known to be placed towards east reflecting the messianic expectation of the return of Jesus from the east.

“For as the lightning comes from the east and shines as far as the west, so will be the coming of the Son of Man.”

– Matthew 24:27.

The sacred atmosphere is not solely achieved by the use of light, acoustics and materials but also by how the congregation interacts within the space. The interaction is facilitated by how the inventory is arranged which sets the theatrical foundation of the ceremony.

Functions in the Modern Church

Modern society has affected the social hierarchy of the church. The value of the members within the church has increased – meaning the congregation puts in more energy in order to facilitate the Christian knowledge through various activities adjusted for the modern society's needs – the congregation seeks out new ways of teaching the words of God through present day activities, such as concerts and by working together with the school system.

The church has become a part of a unity of institutions, meaning different collaborations with other social institutions like schools and recreational clubs. This initiative has been applied in order to attract and include the youth (Thusgård.E, 2018).

These principles of the modern church have been applied in many of the modern Faroese churches. As mentioned, religion fulfills a larger role on the Islands compared to a country like Denmark. Many hold on to their beliefs do to tradition and some because of faith – nonetheless, the church is used frequently for Christian events like Easter and Christmas (appendix 02). The church is used as an additional institution on Sundays for the Faroese children – where they attend Sunday-School which includes different activities that teach about Christianity in a pedagogical way. The Sunday-School also facilitates traditional non-church activities like parties, games and theatrical plays. The main user for this is kids aging from 2-14.

The new facilities of the modern functions require a rethinking of the physical space of a church. Multifunctionality is a key word for many of the Faroese churches, an example being Hoyvik Church. The church was built to accommodate large social events, ceremonies, and children's activities alongside with a learning space. Besides the religious spaces there is also a need for accommodating the staff and volunteers involved in the church. Nowadays the church provides meeting rooms, changing rooms and other large rooms which are neccessary for the daily church service.

Some of the classic ceremonies the church also facilitates are: baptisms, confirmations, weddings, funeral services, and regular church services. Additionally the choir and the organist uses the church facilities for practicing in preparation for the religion-based ceremony.

Argir Church


13a. Kitchen


13b. Storage


13c. Wardrobe


13d. Learning

Hoyvík Church


13e. Kitchen


13f. Social


13g. Wardrobe


13h. Storage

Fig.13a–h

Fig.14 // Strategy 01

01 // *strategy*
Respect the Elements of Religion

What

We aim to develop a design that accommodates, enhances, and honors the intended functions of a sacred place.

Why

The Faroese are traditionalists, which minimizes the significance of new facilitations of rituals, but rather a new atmospheric experience of those rituals.

How

By programming direct and clear paths, aisles and position of functions.

To apply architectural mechanisms such as acoustics and light to enhance the essense of a divine atmosphere.

02 // *strategy*
Design with Temporality in Mind

What

We strive to activate the social time of a space by considering the evolving needs of the occupants and the various chronous of the site, relating to the function.

Why

To design a church which is representing its period of time.

To make a resilient church which can be used for social purposes all year around and many years to come.

How

By exploding and scattering the functionalities of the church to exist both independently and coherently.

By ensuring further flexibility within the scattered functions to minimize the neccessary square meters.

Fig.15 // Strategy 02

Sacred Spaces

Atmospheres

“The bulldozing of an irregular topography into a flat site is clearly a technocratic gesture which aspires to a condition of absolute placelessness, whereas the terracing of the same site to receive the stepped form of a building is an engagement in the act of “cultivating” the site”

(K. Frampton, 1983, p.26)

Fig.16 // Landscape

The concept of critical regionalism targets the paradox of wanting to relate and function in the framework of modernism whilst drawing relations to the past, the vernacular of the given place. It targets the thoughts of how to become modernized with a great importance of the sensitivity of a place.

The principles of this strategy is described by Frampton as something that finds inspiration of the local, peculiar conditions (Frampton. K, 1983).

The phenomenon must not be confused with the attempt to revive some of the lost traditions in the vernacular architecture. The adressing of architecture as something that blends with the nature, that somehow embodies the nature in a man-made construction which expresses the prehistory of the place (Frampton. K, 1983).

Frampton adresses the importance of tactile affiliation with the context. The tactility is a sense that expands the experience of the architecture beyond the visual.
The architecture may visually conceil itself within the landscape, but does it camouflage within all the senses?

Atmospheres // Tectonics

In architectural theory, the intertwining concepts of tectonics and atmospheres, influenced by the principles of phenomenology and vernacular architecture, profoundly shape the design process, culminating in spaces that resonate deeply with human experience. E. Sekler's exploration of tectonics underscores the importance of structural integrity and material authenticity, highlighting the inherent logic of construction and the craftsmanship of assembly.

This approach not only establishes a tangible connection between occupants and their surroundings but also contributes to a sense of place and rootedness. In parallel, the notion of atmospheres, as described by Sekler and Zumptor, delves into the experiential qualities of architecture, emphasizing the impact of light, sound, and spatial sequencing on human perception and emotion.

By harnessing elements such as tactility, lighting and spatial composition architects can craft atmospheres that evoke specific moods and sensations, fostering a profound engagement with the built environment. Furthermore, the influence of vernacular architecture, with its deep-rooted connection to local culture, climate, and materials, enriches the design process by filling spaces with a sense of authenticity and belonging. By drawing upon vernacular precedents and integrating regional building traditions, architects can create environments that resonate with the cultural and environmental context, enriching the human experience and fostering a sense of continuity with the past. Thus, the convergence of tectonics, atmospheres, phenomenology, and vernacular architecture becomes a dynamic force in architectural design, guiding architects in their pursuit of spaces that not only function effectively but also inspire and elevate the human spirit.

When looking for tectonics in architecture, one should according to Sekler's definition look for the expressive qualities that come to light, when structural forces along with the space and components that surrounds them happen. It is when structure, space and construction become an art within itself, that needs nothing else to speak for it, but can tell its own story by simply existing.

Tectonics revolves around the idea of what takes place in the intersection of materiality, structure, and form and how it becomes interpreted by its users. It is about how the structural and constructional elements afford the architectural aspects and become an integrated part of the design element. It instigates an understanding of gesture and principles through architectural means.

According to Sekler, tectonics should be distinguished from construction and structure. To him, tectonics can be seen as a spatial statement of experiential architectural value, derived from an active transformation of structure and construction. The

Tectonics is happening in architecture. It is the result of an axiomatic confrontation between three basic parameters: Material, Technique and Form. If these three parameters precisely constitute each other, in such a way that no one parameter can be replaced without decisive consequences for the remaining two parameters and all three are equally important parts of a whole - then tectonics is happening.

- Christiansen, 2015, Foged, I.W. and Hvejsel, F.M. (2018), p.345.

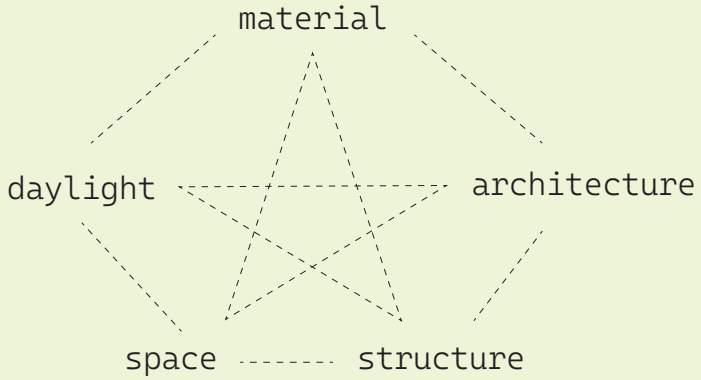


Fig.17 // Tectonic Relations

architect's role of 'achieving' tectonics can be tricky, since tectonics is not a physical thing, but something that appears between and as part of the physical and fathomable parts of architecture. It relates to the perception of a space and or a structure and how the implicit and explicit elements tell a narrative. As Sekler puts it:

"*when a structural concept has found its complementation through construction, the visual result will affect us through certain expressive qualities which clearly have something to do with the play of forces and corresponding arrangement of parts in the building yet cannot be described in terms of construction and structure alone. For those qualities, which are expressive of a relation of form to force, the term tectonic should be reserved.*" Foged, I.W. and Hvejsel, F.M. (2018) p.72.

Through applied tectonics one can direct the beholder's mind (spiritually) upwards, as a play of forces is enacted most dramatically and appeals directly through what goes on behind the scenes, may be different from what we are left to believe.

Even though Sekler distinguishes construction, structure and tectonics as different elements, he concludes that

"*to speak of architecture in terms of tectonics alone would be as one-sided as to speak of it in terms of space alone.*" Foged, I.W. and Hvejsel, F.M. (2018) p.81.

This notion instigates the dependency of the different elements (fig.17). Architectural felt space will and can not take place without the principles of materiality, structure, daylight and architecture being present. All five aspects are connected, not always evenly shared, however intertwined to create the concept of tectonics.

Mortensrud Church

Deconstruction of nature

Architects: Børre Skodvin, Jan Olav Jensen
Location: Oslo, Norway
Year: 2002
Area: 460 sqm

Mortensrud Church in Norway is a special case because of its relation to its natural surroundings. Since the Norwegian geology is quite similar to the Faroese, elements of this case can be transfered to the design. The architecture is an addition to the existing environment and did not require any explosions or excavation of the nature to be built, leaving it preserved in its natural condition.

The preservation of the nature is present in the rock formations breaking the concrete floor. The same principle is repeated in the outside courtyards surrounding the existing trees of the location.

The gesture of the stone-piled walls is seen from the “missing” mortar which creates small gaps in the structure, in which light can penetrate through. By using fragmented elements of nature in the construction, the church appears to be ”recreated” by nature. The stone “bricks” are remains of a quarry which in their rough appearance brings out a sense of the untouched (Francesc Z. Mola, 2011).

An element to take from this case is the qualities it takes from the natural surroundings and the value it provides in return. When building with, in or on nature it is an exchange, a dialogue with the regional qualities and resources. The Faroese nature has its own qualities and spirit, which may not be rejected but used as a tool to collaborate with. The camouflage of the architecture is not neccesarily equal to an incarnated piece of the landscape, it is about activitating and expressing all the quality of the nature to create a sensorical and atmospheric experience within the built environment.

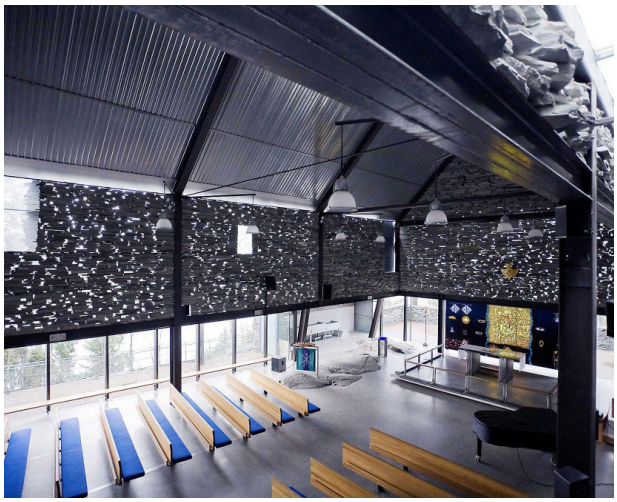


Fig.18 // Cred. jsa.no

Fig.19 // Cred. jsa.no

Fig.20 // Cred. jsa.no

“To plan the building as a pure mass of shadow then, afterwards, to put in light as if you were hollowing out the darkness, as the light were a new mass seeping in”

- (Zumthor. P, 2020)

The Divinity of Light

One can look at light in a quantitive or a qualitative way. The quantitive way is often the way lighting conditions in offices or institutions is being measured upon where as qualitive light can be understood as more emotional. In general light has a fundamental effect in the way spaces are created and percieved. Especially when looking at sacral spaces where light has the unique ability to create special focuses or intentional direction. Light is a powerful tool when illuminating sacred spaces because of it’s unique ability to depicture certain spiritualities and divine senses in a spatial entity.

There are two topics of conversation when talking about light, artificial and natural. Daylight serves as a constant variable and indicates form, color, materiality and texture. Daylight also has a crucial effect on a room’s character through for instance shadows that creates depth. To obtain this natural light windows serves as the main element where something stationary can tell the story of something dynamic and constantly changing. Artificial light contains some of the same proporties as natural light, but is more controllable from a human perspective. The mood or atmosphere can be controlled through how many Kelvin the source puts out. It is interesting to study its presence and how it induces sensibility through the absorption or reflection on different materials.

The light can act as an active contributor to the room through direct, natural light which moves with the solar path. It can also act as a more passive element through diffuse elements with the main focus as a source of light.

Fig.21 // Light

The Science of Light

Light in architecture is a visible element that affects how we experience a space through shapes, contrasts and more.

To design with light, the architect must know the underlying scientific circumstances of the natural phenomenon. The quantity of light can be measured by how much of the emitted light that lands on a given surface measured in Lux. Light is energy, more specifically electromagnetic rays with various wavelengths defining the visible spectrum, the imperceptible infrared and ultra violet spectrum.

Light can be absorbed, reflected or transmitted through different materials and matter. When the light hits the material, some of the light is reflected and some are absorbed. The reflected light is known as luminance which is the light perceptible of the human eye.

The perceived brightness of light will act differently depending on the material properties of the surface being hit. These properties influence the directions of the reflected light (Descottes, H. & Ramos, C.E., 2013).

In an architectural context, the color of the material plays a big role regarding the reflected light. Darker colors reflect a smaller percantage of the emitted light whereas a brighter color reflects a larger percentage. The perceived brightness on a dark versus light material will cause different levels of luminance, because the brighter surface reflects a greater percentage whereas the dark surface absorbs a greater portion.

The texture of a material matters as well, depending of the level of gloss or matte.

By being aware of the properties of emitted light and materials, one could create or manipulate with the light sources and thereby create a secondary light source from the primary, which could take form in light shelves, walls and more (Descottes, H. & Ramos, C.E., 2013).

It is also important to consider the color temperature from the light source. The natural light coming from the sun, can emit different levels of Kelvin depending on the weather conditions.

As shown on fig. 22, different time slots provide different color temperatures and thereby creates different atmospheres within the built space.

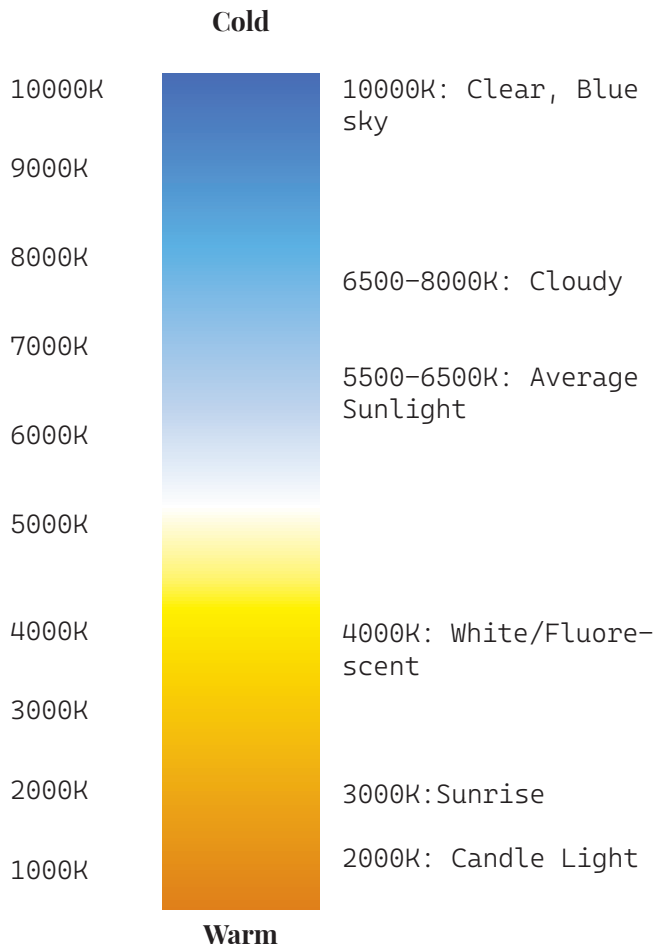


Fig.22 // Ref. Autodesk Colors

”Light is not so much something that reveals, as it is itself the revelation.”

- James Turrell

A small visualization is showcasing the importance of knowing the material properties in terms of the light being cast on the surface of the object.

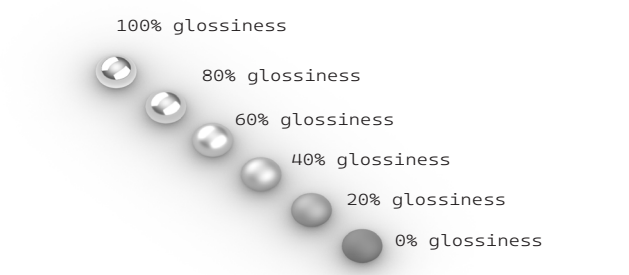


Fig.23 // Material Property

When looking at spatial daylight performances, the choice of material has a large impact on the daylight factors.
The absorption coefficient define the amount of light energy of a partifular wavelength absorbed within a material.

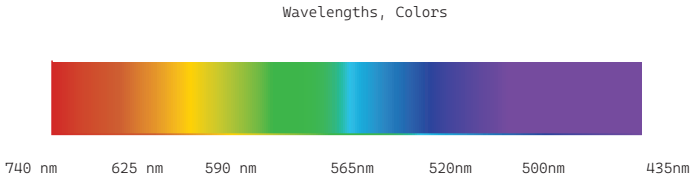


Fig.24 // Wavelength, Colors

Another aspect is the type of reflection returned from the illuminated surface.
There are different types of reflections known as specular and diffuse.

Specular has mirror-like properties, which is appearing on some glazing, mirrors and water. Fig.25 depicts this example.
The diffuse reflection is scattered in many directions, which is applicable in many materialities of the everyday life.

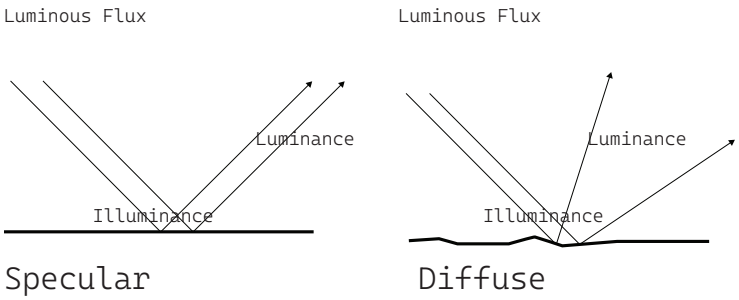


Fig.25 // Flux

In conclusion, light is a crucial element in architecture, profoundly impacting how spaces are experienced through various shapes and materialities. As architects, we must understand the scientific principles behind the light phenomenon, including its nature as electromagnetic energy.

The light is a tool, we must learn to master within the built.

Architect: Le Corbusier
Location: Ronchamp,
Haute-Saône, France
Year: 1954
Area: 350 sqm

Notre Dame du Haut

Le Corbusier did nok seek religion because of faith but found interest in the spiritual element of religion which is to be seen in his chapel, Notre Dame du Haut.

The structure consists of deep walls creating a funnel accessing the natural light. The opening space of the windows is varying which generates different tranculent figures onto the congregation. The diversity of semi-transparent figures changes the perception of the gaps as windows, but more towards a spiritual element.

With the orientation of the majority of the window gaps towards south, the natural path of the sun moves the position and sizes of the tranculent figures, again highlighting the vividness of the architecture. A mesmerizing utilization of the sun path is activated through the illuminance of the colored glass elements, placed within the light funnels. The intensity of the uplit color shifts along with the solar path.

Clerestory windows are circulating beneath the roof creating an illusion of a floating ceiling. The small light cracks are to be seen throughout several components of the church.

The communication of sacred light in the Notre Dame du Haut is interpreted through the morphological ability to control the light. The church is brought to life through the movement of sun light that changes the spirituality of the light through a changing intensity of shapes and colors.

Fig.26 // © Fondation Le Corbusier (Cred. P. Kozlowski)

Fig.27 // Bruder Klaus Chapel (Cred. R. Hjortshøj)

In the meadow, towards the tower, through the gate, into the darkness.

Bruder Klaus Chapel

Architect: Peter Zumthor
Location: Mechernich, Germany
Year: 2007
Area: 18 sqm

Fig.28 // Cred. R. Hjortshøj

Fig.29 // Cred. R. Hjortshøj

The Bruder Klaus Chapel is located in a semi-remote agricultural environment, only accessible by foot.

When accessing the chapel, the gate will slowly close behind the visitors, increasingly adjusting the sight to the darkness. A slith of light will remain visible when captured in the space truly enhanced through the contrasts of light and darkness.

The entrance of the chapel starts in a spiral plan, gradually narrowing towards the ceiling. The geometry of the spiral provides an experience of unveiling the further you access.

The height of the space increases towards the nave which is higlighted through the oculus. By implementing the oculus as a skylight, it enhances the sense of proximity from the grounded human to the spiritual, the eye connecting the level-headed to the divine. The funnel shape of the nave expands the visible spectrum of light, in combination with the vertical gills, making the light almost fall down the walls towards the ground.

The secondary light source is the circular penetrations of the wall through pipes. An illusion of the density of the perforated light seem to increase when reaching the oculus, making holes appear to be particles elevating towards the sky.

The nakedness of the space isolates the visitors from the outside, bringing them solitude and allows them to be in touch with the sensibility of the interior and themselves.

Bruder Klaus chapel is an example of how contrasts are being used to create a divine and sacred experience through the manipulation of illuminance.

Architect: Tadao Ando Architects
& Associates
Location: Ibaraki, Osaka, Japan
Year: 1999
Area: 113 sqm

Church of the Light

A more literal depiction of the sacred is found in the Church of Light by Tadao Ando. The architecture sets the scene for the function of worship through a simplistic use of concrete. The concrete creates a darkness within the space, which contrastly calls attention to the light entering the room. What makes this example legible is the one-to-one depiction of a crucifix through narrow slithers of light consuming the eastern rear wall. The light simply becomes an integrated part of the iconography.

The middle part of the cruciform slits lands on the mid-aisle evenly fixed between the pews. The crucifix can be seen to move throughout the day which can assimilate the sense of being drawn towards the receiver.

One of the special aspects of this church is the utilization of the concrete's reflective proporties. The light that shines through the gaps of the wall gain new life once it hits the perpendicalur walls where it illuminates the surfaces.

Fig.30 // Church of the Light (Cred. A. Friedberg)

In Summary

The three examples are highlighted because of their individual approach to integrate light as an active element when creating a sacred space.

The element of light is made into an embedded part of the architecture, which is neccesary for activating the spaces. It is not for the functionality of lighting up the space, but rather a gesture to the divine.

The openings of which the light penetrates are catalysts for the tranculent figures transmitted through. To draw attention to the use of contrasts, lightness and darkness, the materials have been chosen based on their light attributes, and their ability to reflect or absorb the natural light.

A repetitive pattern for the use of light in sacred spaces, is to orient the sacred light towards the solar path to utilize the movement to obtain a sense of divinity and understand the presence of light as the presence of something greater.

Light is an important part of religion as it is the most used metaphor for God. God is the light and light is what brings one out from darker times. Additionaly light in liturgy is derived from a mix of ceremonial customs, practical necessities and symbolism. Lights (lamps and candles) would be placed by tombs or statues of saints as a mean of honoring them.
In a more metaphorical and interprative way, light often symbolises joy, optimism, purity, dignity and life, where darkness signifies things as ignorance, sadness, evil and death.

Therefore the careful consideration of how light will shape and take part in the architecture of the church is of emence importance.

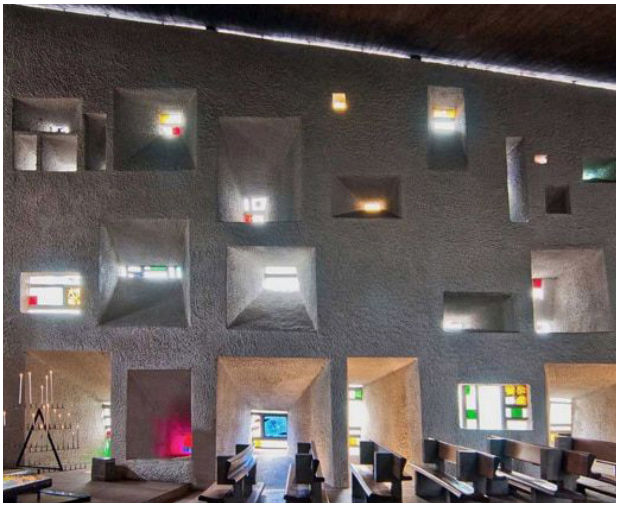


Fig.31 // Cred. P. Kozlowski

Fig.32 // Cred. R. Hjortshøj

Fig.33 // Cred. A. Friedberg

”This is the message we have heard from him and declare to you: God is light; in him there is no darkness at all.”

- 1 John 1:5

The Acoustics

Sound consists of waves created by a vibrating object, that then travels through a medium to be percieved in space. Sound can vary in pitch and decibel, depending on the frequencies of the soundwaves. When bouncing from surface to surface, the soundwaves lose energy. If the space is large, with long distances between the surfaces, it takes longer time for the soundwaves to travel from surface to surface, and thereby the sound stays longer in the space. When it is a smaller space, the results are reversed. The amount of time the sound stays in a space is called reverberation time (Gould, A., 2021).

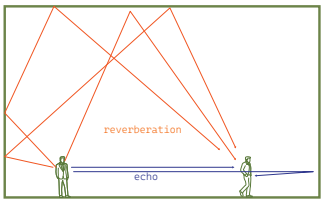


Fig.34

Reverbaration is the scattering and diffusing of soundwaves. Ecco on the other hand is the distinct feedback or response returned to a source. Reverb is what is desired in a church, not ecco.

Besides the volume of the space, other elements such as angles, materials, the resulting surfaces with textures and instillations also affect the space:

Depending on how the sound should be distributed in the space, the angles can be adjusted, to obtain the intended reflection of sound. Right angles reflect the transmission evenly where obtuse angles gather the reflections along the wall. Acute angels trap the reflections. The use of concave and convex surfaces can be used, depending on whether the intention is to have a focal point, or if it is to distribute the sound.

A surface with irregularities or perforated installations, can be used to spread the sound waves in different frequencies, or reduce echo and hard reverberations between parallel surfaces.

Acoustic in sacred spaces

The acoustics of a church is part of how we experience the space. With an increased reverberation time, the experience of the acoustics can be divine, as if the walls are singing, making the church part of something greater than oneself.

However, the different functions of a church have different acoustic needs, and therefore need to be designed carefully. When the priest preaches, the resonance needs to be low, in order for the words to be clear for the audience to hear and understand. Whereas, when there is singing and worshipping, the resonance needs to be higher, in order to achieve the full experience (Stegers, R., 2008).

Bagsværd Church

Bagsværd Church, known for its organically shaped interiors, is a prime example of how sound can be manipulated through curved edges, by leading the sound in a certain direction. The shapable concrete walls enable the organic shapes in the interior, whilst the exterior simultaneously secures a modern industrial expression of the church (dac.dk, n.d.).

It is especially in the roof construction that the composition between light and acoustic is expressed, with the architect's engineering perspectives and knowledge of how sound waves are being transferred. The small pockets' purpose is to obtain the sound, while the curved surfaces direct the soundwaves towards the receivers. The use of lamellas and perforated walls in the interior, combined with wooden seating and installations, is also reducing the reverberation time.

Architect: Jørn Utzon
Location: Bagsværd, Denmark
Year: 1976

Fig.35 // Bagsværd Church Interior (Cred. SEIER+SEIER)

In Summary

The acoustics in a given space depends significantly on the desired reverberation time, whether high or low. Several factors contribute to this optimization, including the shape, volume, and material of the space.

Shape: The geometric configuration of a space can significantly influence the directionality of sound waves. Specific shapes can be utilized to direct sound waves in a desired manner, enhancing the acoustic experience.

Volume: The volume of a space determines the traveling distance of sound waves. In larger volumes, sound waves have a longer distance to travel before reflecting off surfaces, potentially increasing the reverberation time. As these waves encounter surfaces and lose energy, the reverberation diminishes.

Material: The choice of materials within a space is crucial in defining its acoustic properties. Hard, flat surfaces reflect sound waves effectively, whereas perforated or absorptive materials can diffuse or absorb sound waves, reducing reverberation and enhancing clarity.

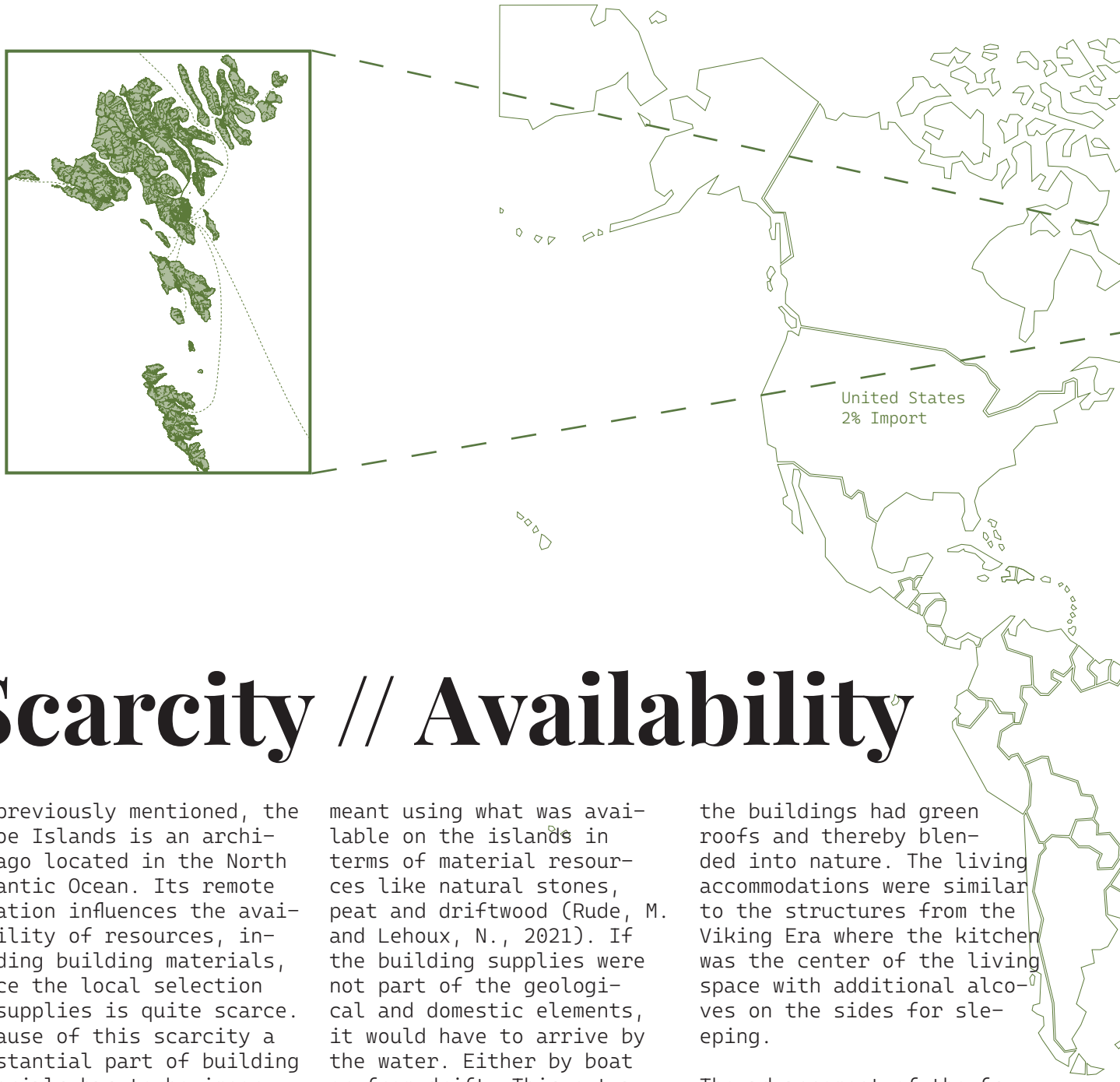
The example with Bagsværd Church, where architectural design optimizes acoustics by shaping and directing sound. The church features a higher ceiling at the preacher's position, effectively orienting sound waves towards the audience. This not only improves acoustic quality but also enhances the spatial experience.

The Faroe Islands is an autonomous territory within the Kingdom of Denmark. The country consists of 18 islands located in the North Atlantic Ocean. There is about 50.000 people living across the islands, with approximately 14.000 living in the capital of Tórshavn. The culture is deeply rooted in its fishing and sheep farming community, with it being the prime source of income for the national economy.

A place of belonging

The Faroe Islands

Fig.36 // Site Scape at Argir



Scarcity // Availability

As previously mentioned, the Faroe Islands is an archipelago located in the North Atlantic Ocean. Its remote location influences the availability of resources, including building materials, since the local selection of supplies is quite scarce. Because of this scarcity a substantial part of building materials has to be imported. The quantity of imported resources has increased 12% from 2019 to 2020 (hagstova.fo, 2022).

The Faroese architect, Osbjørn Jacobsen, stated that it is important to learn from the vernacular architecture, the traditional principles of building on the Faroe Islands, to build efficiently and respectively without adding unnecessary strains on the climate.

The history of architectural availability

The traditional building principles and techniques meant using what was available on the islands in terms of material resources like natural stones, peat and driftwood (Rude, M. and Lehoux, N., 2021). If the building supplies were not part of the geological and domestic elements, it would have to arrive by the water. Either by boat or from drift. This put a lot of limitations on what and quantities that could be imported. Being a remote location with limited connectivity to other countries, the builders had to use the available materials and resources of the island's nature. This principle had a huge impact on the national building traditions.

The traditional dwellings were made up of smaller clusters including a stall, a house for drying meat which consisted of stone walls and a wall of wooden bars for wind curing and living accommodations. Inspired by the physical environment, the buildings had green roofs and thereby blended into nature. The living accommodations were similar to the structures from the Viking Era where the kitchen was the center of the living space with additional alcoves on the sides for sleeping.

The advancement of the fishing industry changed the economical possibilities for the individual and therefore the buildings. The farmers became fishermen which created a higher demand for a new typology of buildings; fishing houses which were characterized by black painted wood, white window frames and a turf roof and a much closer relation to the sea.

Import and trades of resources

Raw materials are scarce in remote locations, a prime example being the lack of wood. Wood and timber are a renewable and beneficial

Fig.37 // Map of Import

resource in the building industry but a nonexistent resource on the Faroe Islands due to the unique geological layers preventing natural growth. Today, many of the modern Faroese housings are coated in a wood cladding – inspired by the old building traditions and principles.

The limited domestic resources are resulting in the building sector relying on imported materials like wood, steel and concrete. Most of the wood, including wood charcoal, is imported from adjacent countries like Sweden with Denmark and Norway as secondary wood suppliers (Trading Economics, 2024).

The materials are available to the individual builders through local suppliers which provide most of the construction materials and then sell it on.

Cultural preservation and limiting the import

Modern architectural tendencies on the Isles are inspired by the traditional Faroese way of constructing and utilizing materials. Preserving the cultural heritage through building traditions is a way of maintaining a strong relation to the past as well as the natural surroundings.

The challenge when building a church on the Faroe Islands is to utilize the domestic resources as much as possible to preserve the cultural heritage and to mitigate the import. It is a matter of defining the building traditions that are complying with the requirements of today's society and physical conditions alongside the new functionalities of the building.

Fig.38 // Traditional fishing huts

Fig.39 // Stone detail by door

Vernacular Architecture

The modern Faroe Islands are rooted in the heritage from the old vikings. The vikings introduced the building practices of using stone, driftwood and turf roof, the available materials. They were highly inspired by nature and tried to integrate and camouflate their constructions in the nature.

In general the houses consisted of a number of outbuildings with different purposes, suited for the homeowners' specific needs. The buildings were mostly low and tucked in to the ground to protect them from the often harsh and violent weather conditions. The houses were built of stone, turf, and timber constructions of driftwood with grass roofs (visitfaroeislands.com, n.d.).

In the 19th century, the structure of the housing clusters was based on the scarce way of living and the expanding fishing communty – meaning the food resources were limited so they had to find a way to store and preserve the food in order to elongate the expiration date. This lead to a certain architectural layout facilitating these requirements. The houses began "rising" from the ground, by adding storeys and using sheeting and cladding to protect against the weather but also giving them individuality through different visual expressions in the paint and coating (visitfaroeislands.com, n.d.). When looking at the characteristic three-story fishermen housings with the wooden tar-coated cladding and white painted windows, the bottom floor is dedicated for the animals, both as a shed and as a place for butchering. The two other floors are suited for living including kitchen, rooms and bath facilities.

Fig.40 // Turf roof

Fig.41 // Traditional Shet

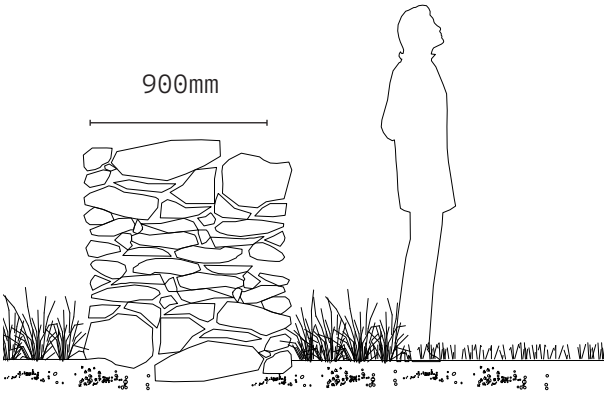


Fig.42 // Section of wall thickness

Roof Constructions

An old technology of leading water away from the roof construction was to use birch as flashing. The birch however, is not an adhering building material to the islands. The roofs was made of grass and turf.

External Walls

The vernacular way of constructing walls were based on the available materials and tools. The traditional stone, turf-roofed housings were built up by carved stone that were strategically placed on each other. This also adds to the thermal mass of the structure that needed to be very resilient.

Foundation

The foundations were based on the land structure. The stone housings usually had no underlaying material but used the bare landscape as a “foundation” and floor.

Vernacular Mimicry

The multiple-storey housing principle is still intact and practiced in the modern houses being built today. Due to the maintenance of the agriculture, the basement still function as non-heated storage or butchery build of either stone and mortar or concrete.

The upper stories of wooden cladding have a similar construction to the Danish external wall construction – the main difference is the amount of insulation due to lower requirements in the Faroese building code.

Because of the globalization and the development of building technologies and techniques the newer buildings resemble the ”old” ones. However they have been adapted to fit into the needs of the people living there today.

Roof Constructions

The aspect of mimicring the old principle of ”building with nature” is seen in many modern cases one example being the roof. Today some use sedum instead of turf.

External Walls

The traditional walls were built up by carved stone that were strategically placed on each other. Today the stone is mostly more of a cladding-element as oppose to a structural element.

Foundation

The foundation of modern architecture has progressed based on the technological evolution. This allowed people to build in more reluctant parts of the islands, like the mountains and hills.

To place a house, the basalt layer must be exploded in order to make a planar surface for foundation. Here, a layer of gravel is placed beneath a concrete foundation.

Fig.43 // Window detail

Fig.44 // New Architecture

Fig.45 // Stone Wall

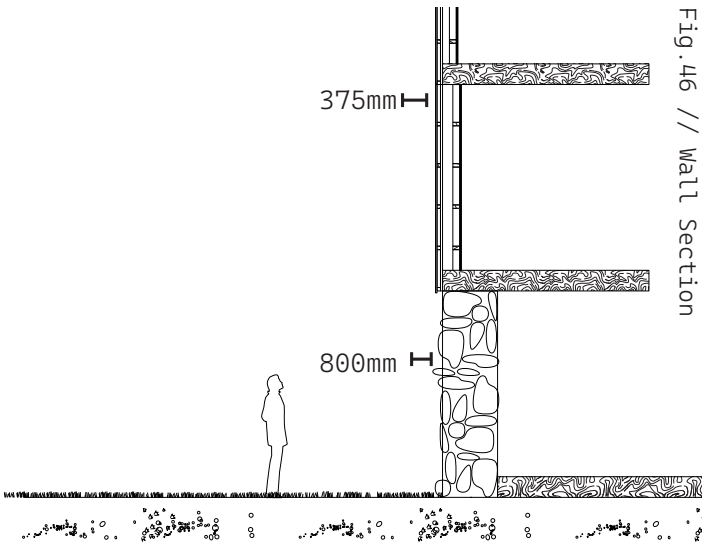


Fig.46 // Wall Section

Fig.47 // Glasir (Cred. R. Hjortshøj)

Fig.48 // SKÚLIN VIÐ STREYMIN (Cred. BRIM.FO)

Fig.49 // SKÚLIN A FLOTUM (Cred. BRIM.FO)

Vernacular Deviation

As the population encreases the needs of the houses and buildings of the Faroe Islands needs to expand in parrallel. These needs and modern city-planning has resulted in some deviating buildings, that do not match up with the traditional vernacular structures (visitfaroeislands.com, n.d.). Because of this, more pragmatic and special buildings have risen around the isles. The new buildings do not cultivate the materiality and or building practices of the older buildings, but showcase the technological principles of modern building practices. The opportunities for material import has enabled a new scale of architecture and its possibilities. The function of the building however is often the catalyst for this way of building. The newer and bigger structures often function as a public building, i.e. a school or a retirement home, whereas private housing is more disposed to imitate the principles of the past.

Some of the materials introduced to the architecture are; Cembrit plates, glass, steel, aluminium and concrete.

Religion on the Faroe Islands
Past, Present and Future

The Faroese people is a significantly religious society and has been that for quite some time. The history of religion on the Faroe Islands is highly intertwined with the Faroese cultural and social fabric. The predominant religion is Christianity, more specifically the Evangelical Lutheran Church. The development of religious practices can be traced back to around the 10th century where the pre-Christian era took place.

Pre-Christian Era:
Before Christianity took its place in the Faroese community, the people adhered to Norse pagan beliefs. As Christianity began to develop throughout Europe, it eventually also made it to the secluded islands.

Christianization:
As the first churches started to be established, Christianity started to take over and became the frontrunner of religion in the religious landscape. The dioceses integrated the Faroese people and made way for a new way of practicing religion.

Reformation:
The Reformation of the 16th-century had a profound impact on the Faroese religion. The islands transitioned from Catholicism to Lutheranism Christianity during this time. By changing the language preached in the churches to Faroese, the teachings of the Bible became much accessible for the people and religion became an evident part of peoples' lives.

Isolation and Practice:
From the 16th-century to the 19th-century the Faroe Islands were kept isolated which only led to the Lutheran traditional practices being sustained. This is also where the institutionalization of the church truly became embedded in the Faroese culture (Folkakjirkan.fo, n.d.).

Modern Era and Secularization:
The 20th-century up until present day sees a significant shift in approaching religion because of secularization – something that takes place globally as well. However, unlike a lot of other western countries, religion remains an important part of the Faroese peoples' identity and culture. Currently, about 80% of the Faroese people are enrolled in the National Church (Folkakjirkan.fo, n.d.).

The distribution of people who find that religion is significant or somewhat significant in their lives in the Nordic countries is as follows (Hanscomb, M.L., 2023):

The Faroe Islands: 60%
Iceland: 40%
Norway: 35%
Finland: 32%
Sweden: 28%
Denmark: 19%

Overview of Churches on the Faroe Islands

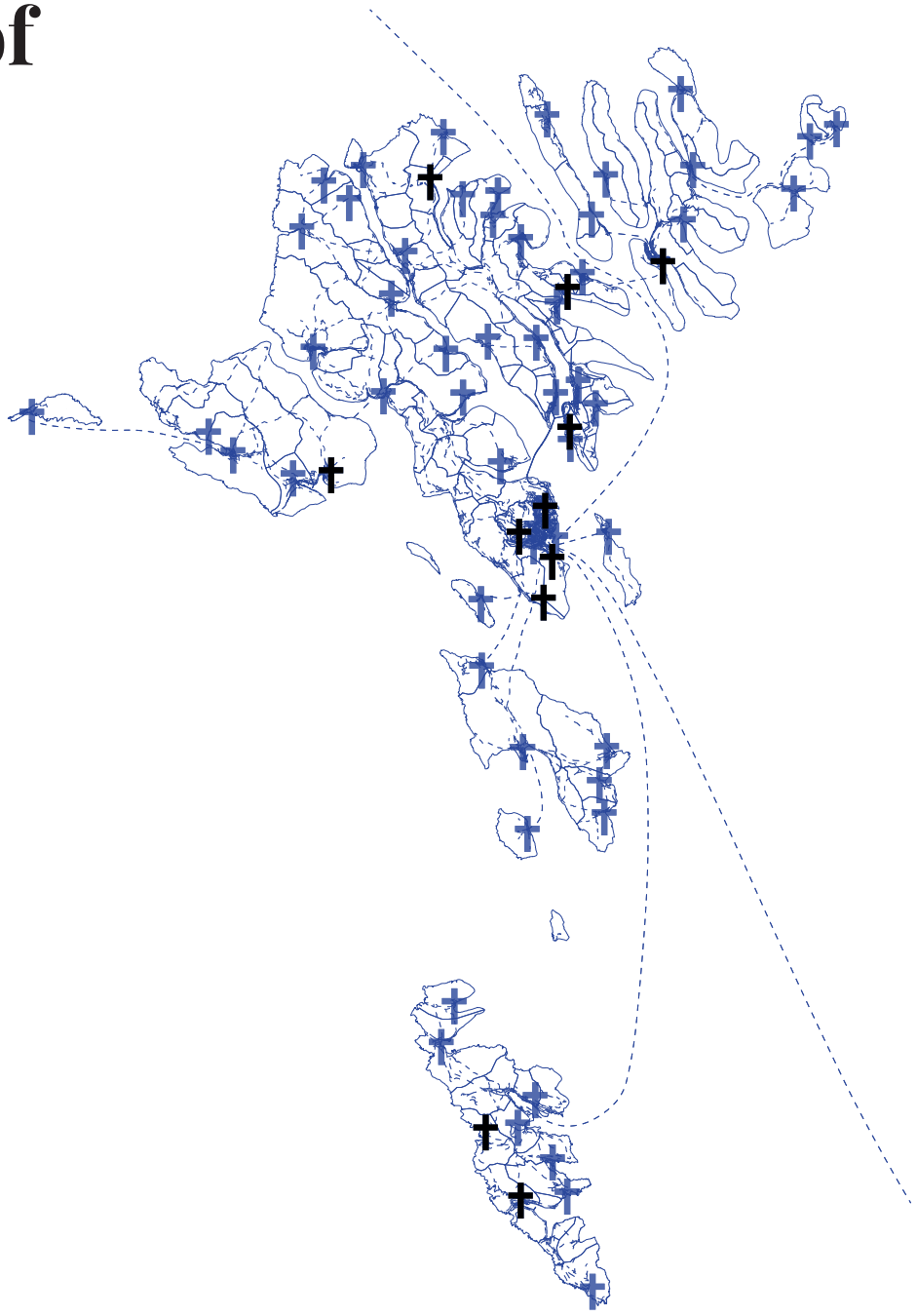


Fig.50 // Map of Churches

The highlighted churches are significant because of their historical impact and or their architectural importance.

Argja kirkja
Árnafjaðar kirkja
Bíggjar kirkja
Christianskirkjan
Dals kirkja
Eiðis kirkja
Eldivíkar kirkja
Fámjins kirkja
Fríðrikskirkjan
Fuglafjarðar kirkja
Funnings kirkja
Gjáar kirkja
Glyvra kirkja
Nýggja Gøta kirkja
Gamla Gøta kirkja
Haldarsvíkar kirkja
Hattarvíkar kirkja
Havnar kirkja
Hests kirkja
Hósvíkar kirkja
Hovs kirkja
Húsa kirkja
Húsavíkar kirkja
Hvalvíkar kirkja
Hvannasunds kirkja
Kaldbaks kirkja
Kirkju kirkja
Kollafjarðar kirkja
Kvívíkar kirkja
Leirvíkar kirkja
Magnus Cathedral
Mariukirkjan
Miðvágs kirkja
Mikladals kirkja
Mykinesar kirkja
Nólsoyar kirkja
Norðskála kirkja
Ólavskirkjan
Oyndarfjarðar kirkja
Porkeris kirkja
Rituvíkar kirkja
Saksunar kirkja
Sandavágs kirkja
Sands kirkja
Sandvíkar kirkja
Selatraðar kirkja
Sjóvar kirkja
Skála kirkja
Skálavíkar kirkja
Skopunar kirkja
Skúvoyar kirkja
Sumbiar kirkja
Svínoyar kirkja
Sørvágs kirkja
Tjørnuvíkar kirkja
Tvøroyrar kirkja
Vesturkirkjan
Vágs kirkja
Vestmanna kirkja
Viðareiðis kirkja

Timeline of Religion in the Faroe Islands

The information of the timeline is based on sources from the Faroese sagas, the eldest known source to the history of the Faroe Islands - also describing the period of Vikings on the Islands. The Saga is allegedly covering a time interval from year 825-1035AD.

625AD

The history of Faroese religion can be traced back to 625AD where Irish monks inhabited the islands for a solitary way of living.

The monks established a life of sheep breeding and began an agricultural foundation.

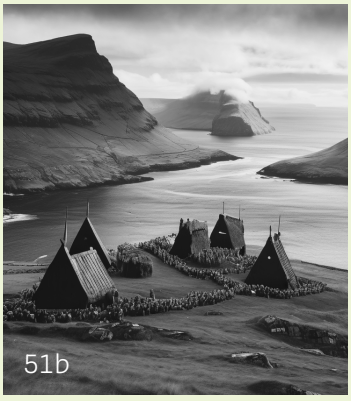
51a

825AD

The monks stayed on the Faroe Islands for around twohundred years until newcomers, Vikings, forced them to relocate to Iceland.

The Vikings invaded the islands around 825AD.
Old sagas tells of the settlements lasting around two hundred years until the year 1035AD.

Leif Øssursson took reign of the Faroe Islands for a while, after receiving the land from Norway.

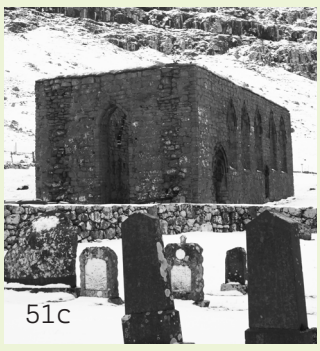


51b

999AD

In 999AD the Norwegian king sent one of their chief vikings to the islands followed by a group of priests - with the purpose of doing missionary work.

The Faroese people were a subject to many different dioceses, including the Norwegian Bjørgvin diocese.



51c

1111AD

In 1111AD the islands became an independent diocese, known as the Kirkjubøur diocese, which lasted till the reformation.

The diocese was catholic, and encompassed all of the Faroe Islands. The main center of the diocese was located in Kirkjubøur.

51d

Fig.55a // AI-generated

Fig.55b // AI-generated

Fig.55c // Kirkjabøur Cathedral

Fig.55d // Kirkjabøur Cathedral

Fig.55e // Kirkjabøur Church Gate

Fig.55f // Church of Saint Mary

Fig.55g // Altar, Mykines Church

Fig.55h // Havnar Church

1537AD

The reformation of Christianity in northern Europe forced the catholic diocese in Kirkjubøur to end.

During the reformation the language of the church was changed from latin to danish and remained the main language of the church services for many years.

51e

1931AD

The Faroese church was a part of the Lutheran Danish-Norwegian common church.

The Lutheran church was a branch of the Prothestantism based on Martin Luther's principles.

The Faroe Islands acted as a solitary diocese but was transformed into a deanery.

51f

1939AD

In year 1939AD, the language of the church was subsequently changed to Faroese, making it more accessible for the people of the Islands.

51g

2007AD–

In 1990 the Faroe Islands were transformed once again into a solitary diocese known as "Fólkjakirkjan" under the Danish Common church.

In 2007, the Faroe Islands received autonomy status.
The Faroese Common church is similar to the Danish and holds about 80% of the Faroese as members of the church.

51h

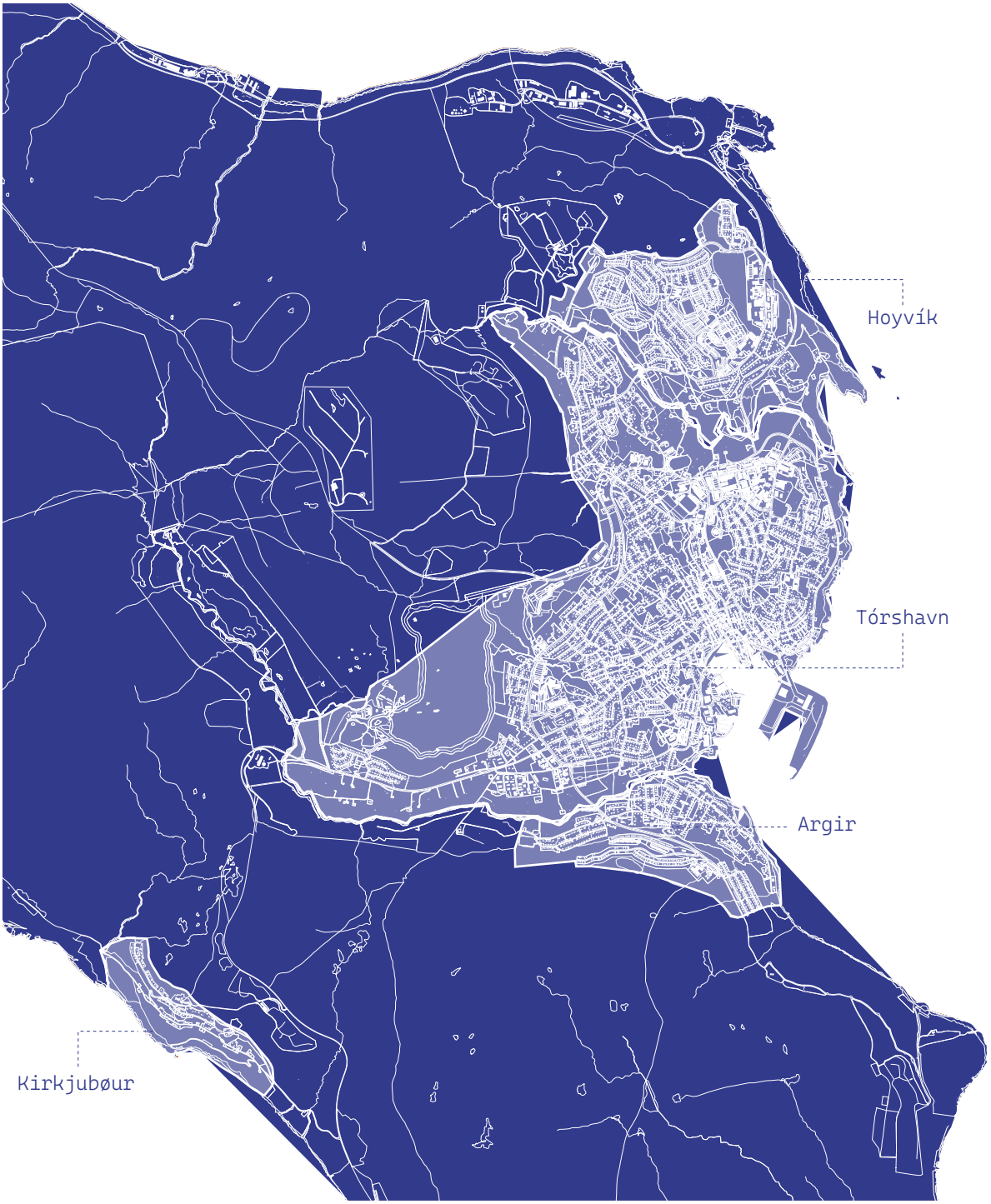


Fig.52 // Tórshavn 1:50000

The Site

The site is located in Argir, right on the cusp of the southern part of Tórshavn. Tórshavn is the capital city as well as the biggest municipality. Argir is part of this municipality but functions as an individual part of the city.

Tórshavn and Argir is divided by a creek made from mountain water runoff with the current running from west to east. The existing church of Argir is located southeast from the site. About 100 meters from the project site, the biggest and newest cemetery in Tórshavn can be found.

Fig.53 // Tórshavn 1:10000

Argir

Argir was once a settlement located south of Tórshavn but has now succumbed to the expansion of the capital city and has become more of an integrated part of that city even though it still holds its own identity. It became part of Tórshavn Municipality in 1997 (faroeislands.dk, n.d.). As of February 2024, there are 2530 people living in Argir (hagstova.fo, 2024) and with the development of new residential areas, this is expected to expand further over the next few years. Argir has been able to attract a lot of younger demographics because of its associated cultural, educational and sports attractions. Towards the west the football team Argja Bóltfelag, resides. The stadium is accessible for everyone, with an adhering club house that can be rented for events. By the harbor towards the east, the rowing club Argja Róðrarfelag is located. Rowing is the national sport of the Faroe Islands and is therefore very important for the various cities. In 2011, a new elementary school “Skúlin á Argjahamri” was built and it currently houses 403 students from 1st to 9th grade (sah.fo, 2023). The school’s gymnasium is also being used as the location for the local handball team Ítrottarfelagð Argir. The majority of Argir’s buildings are single family houses where there towards the south up the mountain side has been a rise in multistorey rowhouses to accommodate the need for the rise in population.

Fig.54 // Argir 1:10000

From around the year 1500, there was a hospital which mainly housed patients with leprosy. In 1744 when leprosy no longer existed in the Faroe Islands, the hospital became more of a workhouse for the poor and invalid. By 1828 it was no longer in use and was shut down, leaving a majority of the land eligible for purchase. This meant that in the following year of 1829, the land was bought by a local man and his family where they then settled down. His descendants have since been a big part of the city’s history and are the reason for its present function of being a residential area.

Connectivity between Tórshavn and Argir

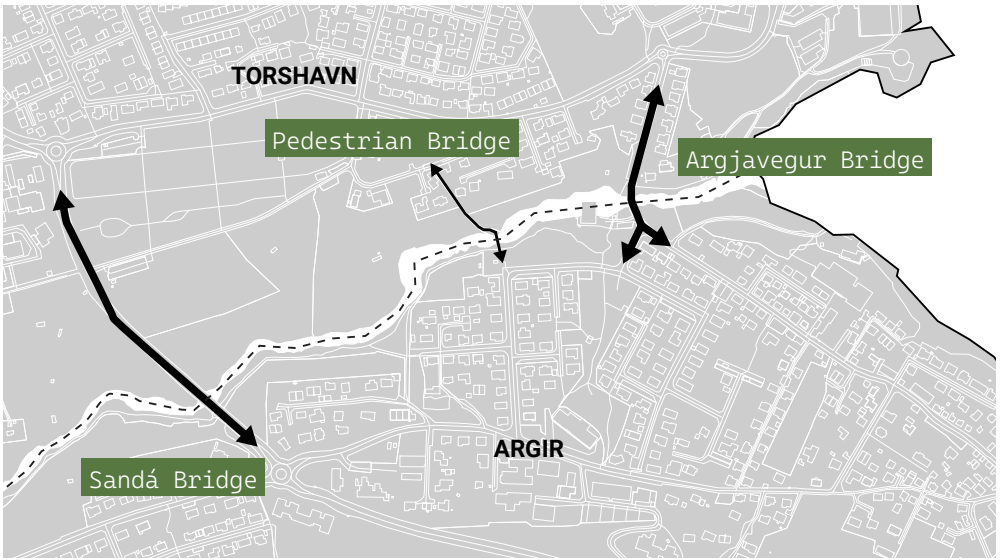


Fig.55 // Connections between Argir and Tórshavn

Demographics // The Users

Over the last 10 years, the population of Argir has risen from 1967 to 2532 persons, evenly spread between male and female. There has been significant growth, especially in the age group 28-43, indicating that more young families settle down in the area. The municipality of Torshavn has during the last years afforded this development by making vacant plots for people to build their own houses, and or build houses or apartments with the intend of renting, in order to increase the density of the neighborhood (Hagstova, 2024).

The number of Faroese people that are members of the National Church is (by 2023) 41.729 which is about 77%. When looking at the percentages a decline in members is obvious. However, when comparing the numbers with other European countries the Faroese people are still one of the most engaged people of their national church.

The programming of the church should cater to the present as well as the expected future demography of the site and include appropriate functions (besides those of religious importance): event spaces that can be utilized across agegroups as well as areas to entertain the kids from an early age. By adding functions that are not sacred places, the church can afford more presence in the cityscape and furthermore work as a mediator for the community and add additional functional and architectural quality to the users. Because of the high affiliation with the church, there should be enough space and functions to accommodate and facilitate the appropriate number of churchgoers.

Some of the appropriate functions and activities that relates to the church's wish to appeal to the local demography whilst still relating to worship are: Church meetings, Sunday School, education, recreational activities, youthwork and events. The traditional activities will be: baptisms, confirmation, weddings, funerals and services.

The user of the church and its adhering functions can be split into the following categories:

Those who work and volunteer at the church:
- The priest and the parish clerk needs private space to prepare for the sermons and ceremonie.

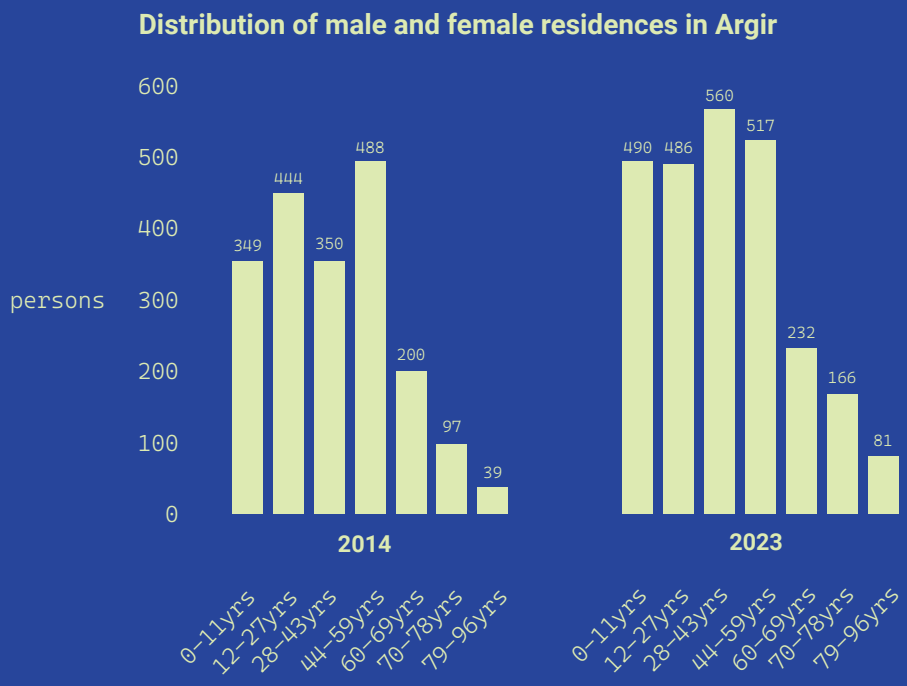
Those who visit and take part in the church and the community center for the held events:
- Families who attend services as part of their weekly routines
- Guests from other parishes, who come to attend weddings and funerals held in Argir.
- Kids and young adults who attend the educational activities.

Those who very briefly, or for short amounts of time, seek to use the church for a moment of quiet and contemplation despite of their personal beliefs.

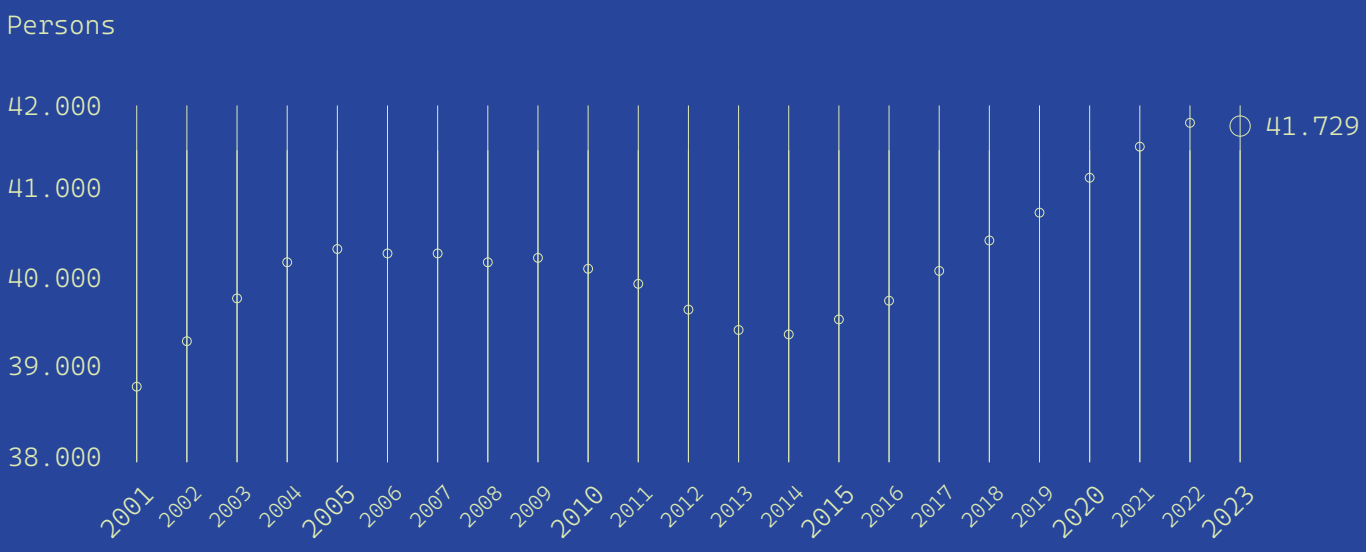
Fig.56 // Male and female residents // Hagstova.fo

Fig.57 // Members of the national church - Persons // Hagstova.fo

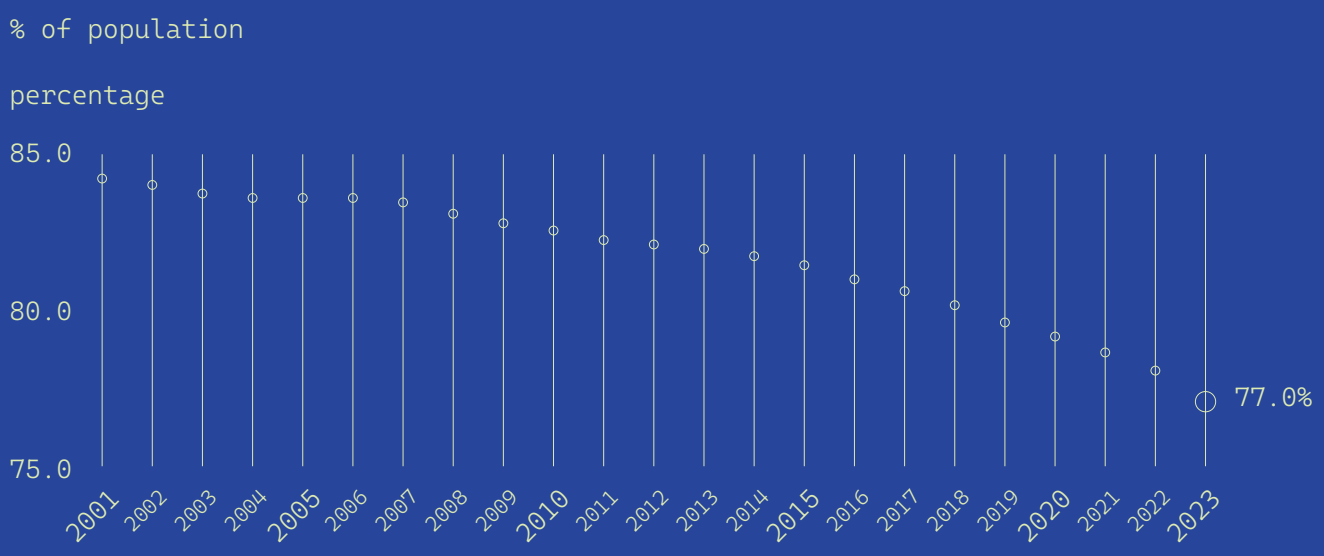
Fig.58 // Members of the national church - percentage // Hagstova.fo



Members of the National Church



Members of the National Church



03 // *strategy*
Facilitating the Engaging Environment on Site

What

We aim to establish a sense of belonging by centering our design around the local community, acknowledging them as essential pillars for development, design, and functionality.

Why

To create a positive space that mediates two opponent locations (Argir, Tórshavn) and two opponent user groups (the naturalists and the Christians).

How

To operate as little as possible on the existing natural environment by working with the topography.

To ensure a maintenance of the existing recreational functions by stepping back from the site boundary.

To activate land on both sides of the dividing creek.

Fig.59 // Strategy 03

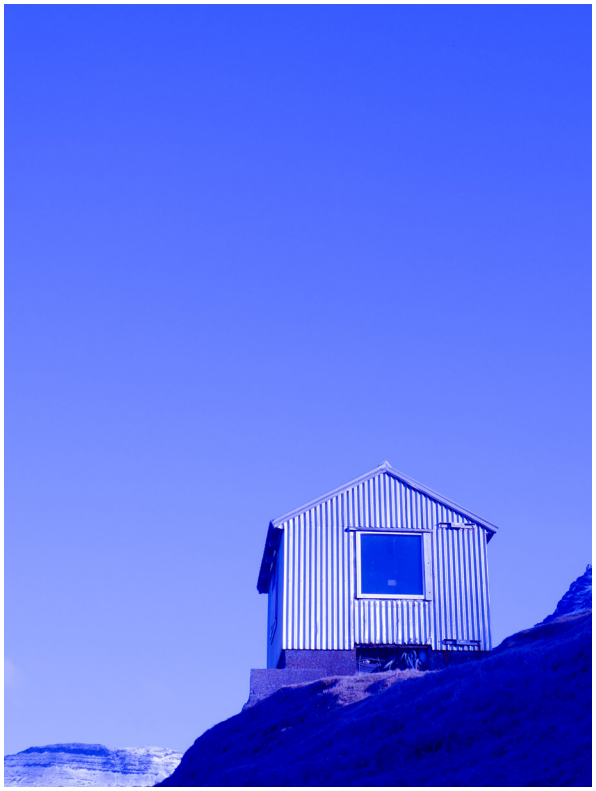


Fig.60 // Strategy 04

04 // *strategy*
Signify Materials

What

By utilizing materials, textures, and atmospheres in harmony with the local landscape, we aim to design and cultivate a sense of identity and belonging.

Why

To design with physical, contextual awareness by making a vernacular reference to the unique architectural identity of the Faroe Islands.

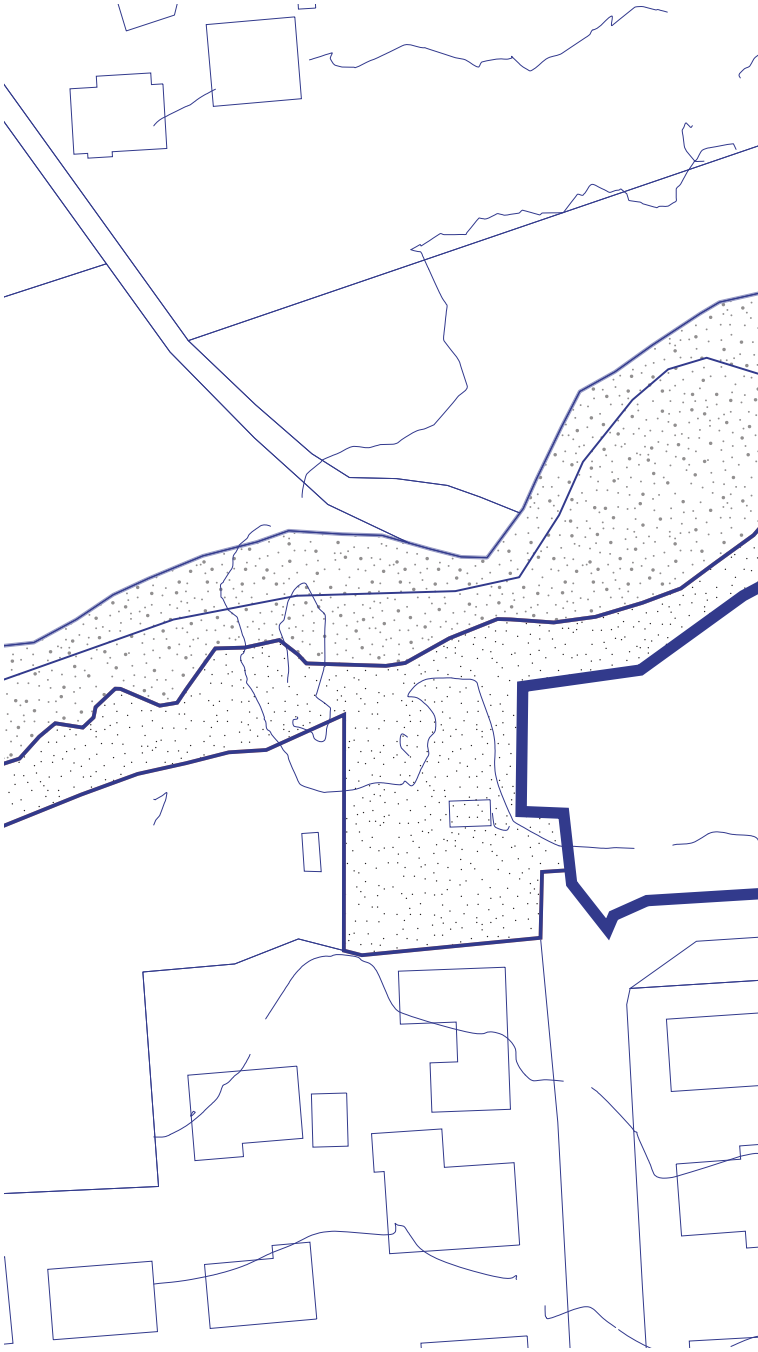
How

To use materials and modules in which are already available in the supply chain of the Faroese building industry.

The Project Site

Fig.61 // Creek on Site

The project site given by the original brief (appendix 01) is split into two parts - site owned by the church and site owned by the public. However, for the purpose of this thesis, the boundaries between the two will not be as set, to investigate the gestures that can appear by expanding the area. The site is nestled between residential areas towards north and south, open nature towards west and the harbour and the sea towards east.



Views from the project site

Fig.63 // North View

Fig.64 // West View

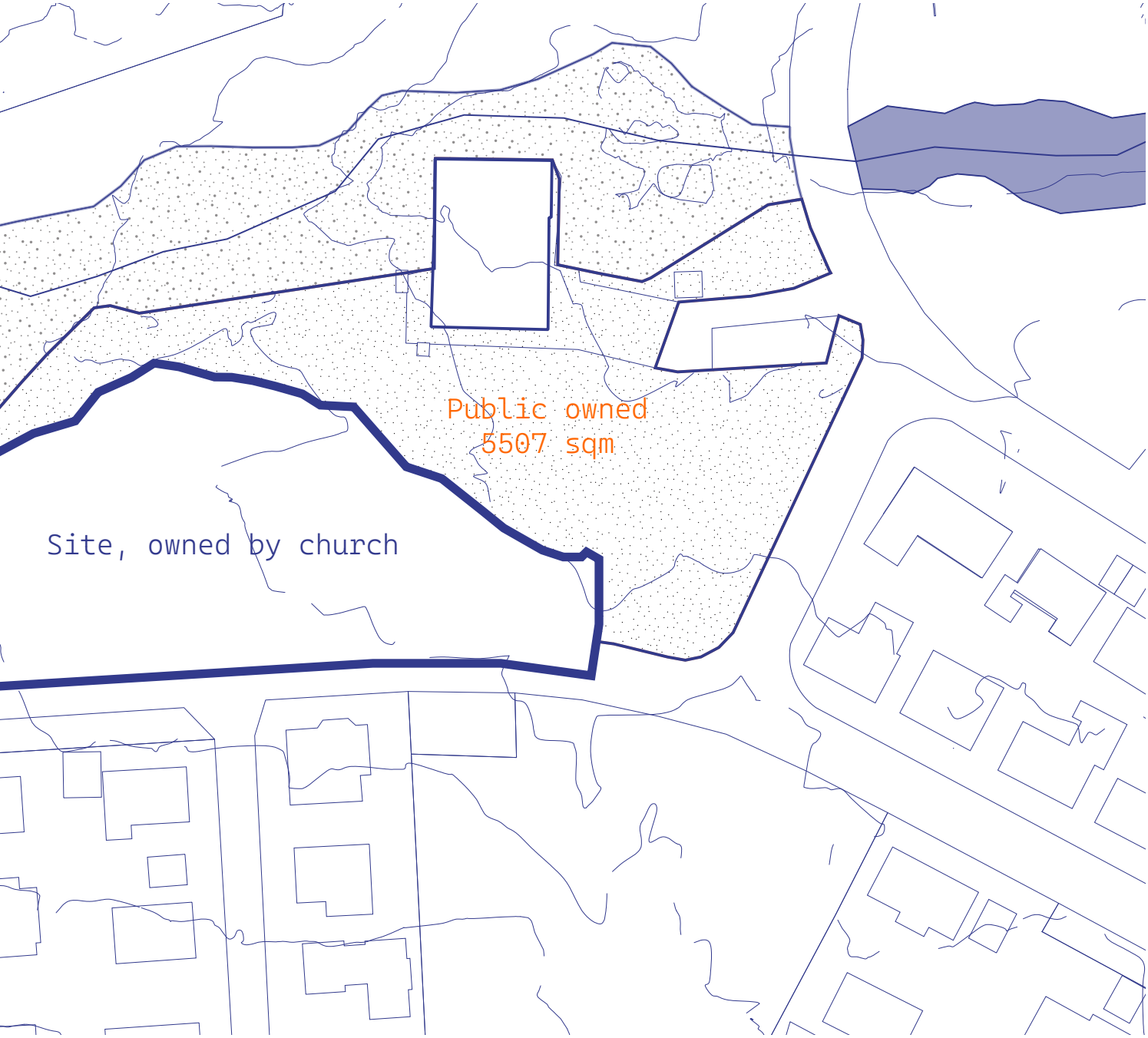


Fig.62 // Project Site 1:1000

Fig.65 // East View

Fig.66 // South View

Fig.67 // Map of Projecct Site

Fig. 68 // Recreational Activities

06

05

01

04

scan me!

1:3000

Site Characteristics

The site is not only characterized by its dividing location between Tórshavn and Argir, it is also a commonly used area for recreational activities.

It is a flow of nature stretching about 2 kilometers from west to east. There are very few recreational parks within the built environment of the Faroe Islands, making this site unique within that dimension.

The creek is defining the flow of the park. When visiting the site, the sound of running water varies depending on the position. The power of water is increasing towards the mill located on the east of the site.

There is a clear difference between what imitates the natural and rocky structures and what ignores it.

Some of the land of the project site is privately owned - therefore the natural structure appear more raffined and touched.

Fig. 69 // Local Landmark: The Mill

Fig. 70 // A Mix of Vegetation

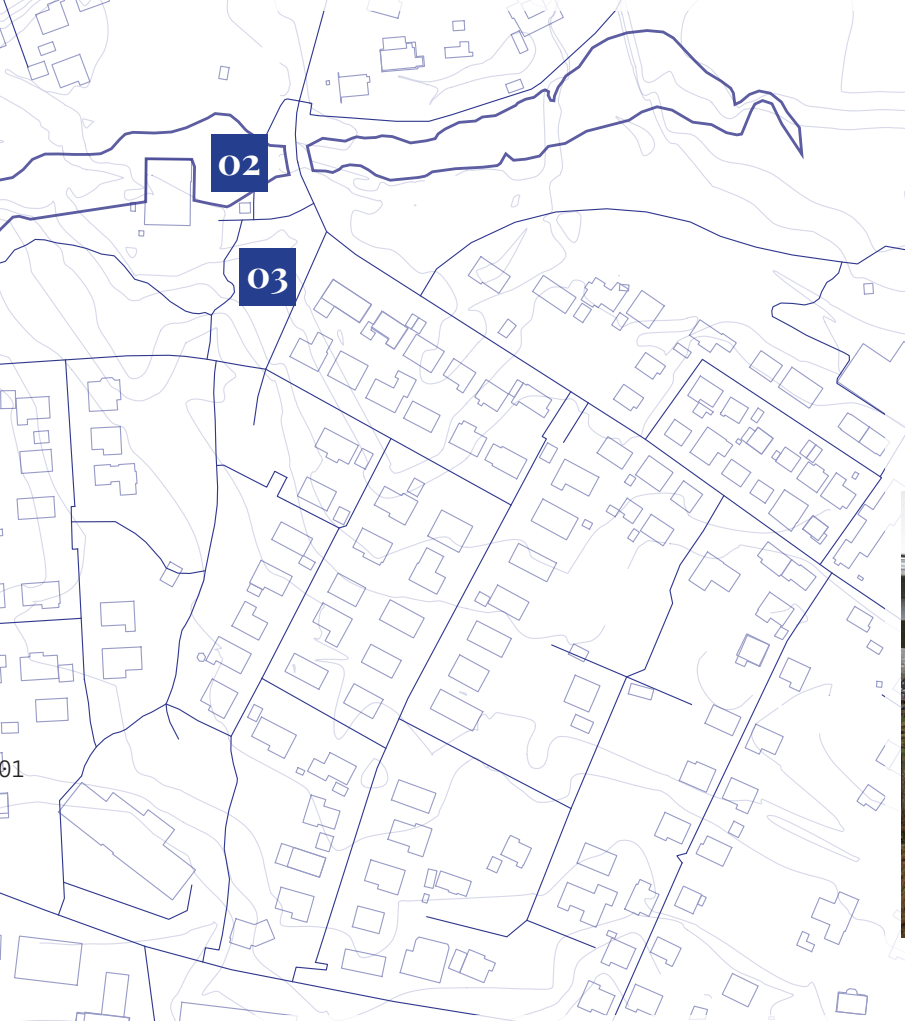


Fig. 71 // Larger Infrastructure

Fig. 72 // Private Micro Farming

Fig. 73 //: Vibrant Nature

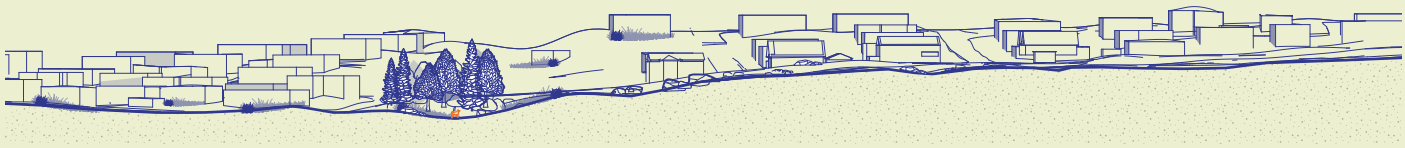


Fig.74 // Section East-West 1:2000

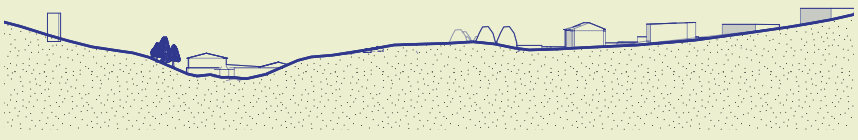


Fig.75 // Section South-North 1:2000

Topography

The terrain of the site is quite varying. A lot of the hilly terrain is constructed of old excavated earth, now vegetated with different sorts of flora and rocks. The site is located at the foot of a hill going south towards a new housing area of Argir.

The general slope is higher towards west and flows towards east into the sea. This also adds great views towards the bay and the cityscape of both Tórshavn and Argir.

The topography generates some challenges when it comes to placing a foundation for a building, but since most of the toplayer of the site consists of manplaced soil, the need for drastic intervention is not as prominent.

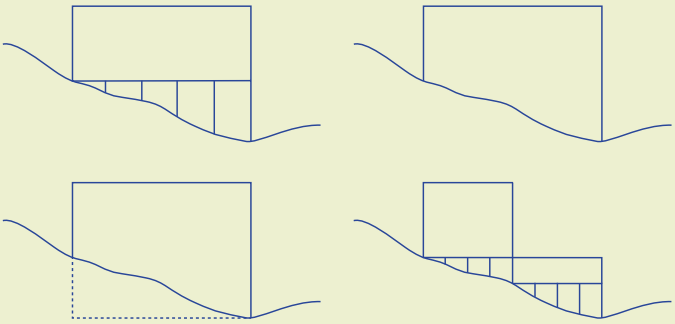


Fig.76 // Topography on site 1:1000

Fig.77 // Designing on a slope

1m
5m

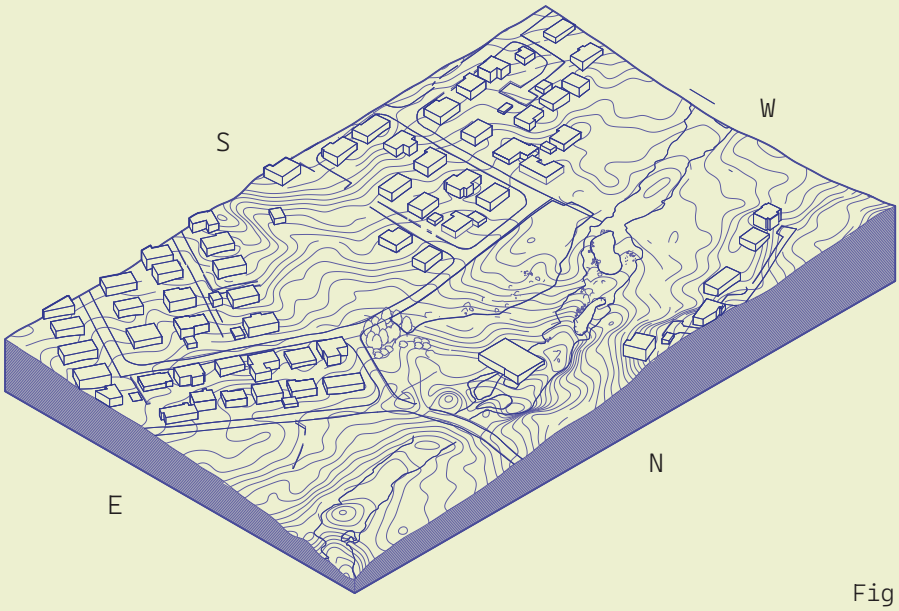


Fig.78 // Axo of site

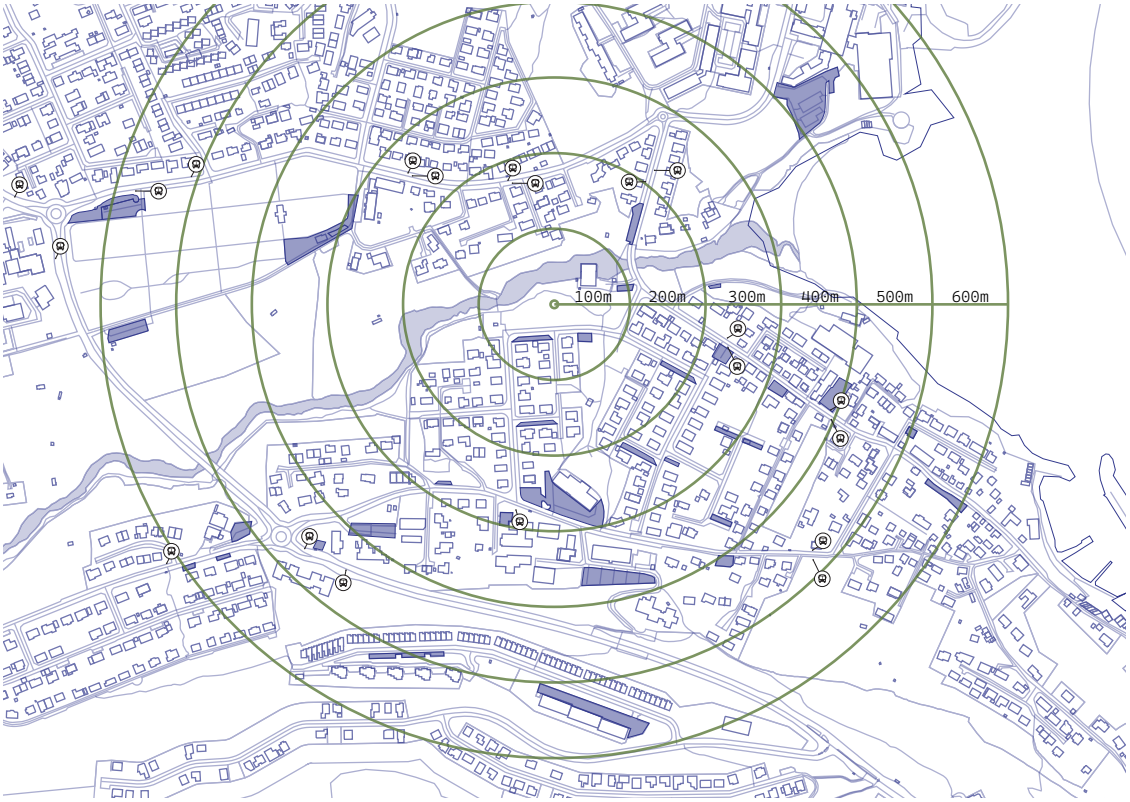


Fig.79 // Infrastructure 1:2000

Infrastructure and Parking Conditions

Because of the weather conditions and the very undulating terrain of the Faroe Islands, the people living there primarily use their cars or busses as the main way of getting around the cities and isles.

The site is easily accessible by road and also well connected through a series of footpaths catering to the pedestrians of the area. The site is well connected to other cities via a public bus route, that stops within 200 meters of the area.

The map shows that within the radiuses of 100m, 200m, 300m, 400m, 500m, and 600m of the site, is approximately 800 parking lots, without counting the private driveways adjacent to private houses. This means that we can avoid placing a large parking lot on site and thereby bring down the footprint of structure on site and therefore preserve the nature of the site.

Fig.80 // Path on Site

Fig.81 // Zoning of rocks on site

Mapping of Rocks on Site

The terrain of the site is highly impacted by a mix of rock formations in different sizes and constellations. They add an undulating element, which affords different flora and usage of the place. The bigger rocks almost penetrates the terrain by breaking through the greenary. When sunlight hits the terrain a dance of shadows and lit surfaces appear adding movement and dynamism to an otherwise static area.

Whilst some of the boulders protude the terrain, some also appear to be almost placed on site by something or someone external. The hint of boulders in the terrain adds to the mystery of what lies beneath and how much we may or may not see of the stone.

All of the stones have a unique disposition of ”skin”, depending on the growth of algae, moss and other plants. Some of them appear to be almost white whereas some have achieved an almost spotted appearence. Both rock mos and lichen creates a contrasting, stained texture as well as add tactile elements to the cold hard surfaces.

The clusters of rocks create little pathway between them, inviting people to move in certain ways on the site. Some also have flat surfaces, that afford stays and standing on them as oppose to those, that appear to have sharp corners and angels.

The stones around zone 3 and 4 should be kept as undisturbed as possible. The rocks and boulders are so charactistic for the site, that to accommodate the qualities and history of the location, they must be implemented in the design of the church to some extend. To achieve a connection between to rocks and the sacred space of the church, rocks can be physically integrated within the structure or the inventory, i.e. as the baptismal basin or as part of the altar. Another principle to work with is framing and thereby preserving the connection to the nature through visual aspects. Furthermore there can be found a symbolic reference in the rocks, in relation the Christian beliefs and preachings of the Bible;

“[Jesus said]... on this rock I will build my church”

- Matthew 16-18

Fig.82a-t // Specific rocks on site

Catalogue of Flora on Site

Seed Grass

Covering the smaller hills on the site, it is one of the main layers of vegetation.

Pilosella

Spread all over the site, laying beneath the seed grass.

Common Dogwood

The staged forest has a variety of tree sorts.

Arctic Willow

Low lying structure, thrives in low-nutrient locations.

Mountain Crowberry

Low growing, originated from mountain environments.

Pine

Different pine trees are placed in the east corner.

Spruce

A diversity of sorts creates a more natural feeling.

Reindeer Lichen

To be found in low-nutrient areas with moss and in moors-like areas.

Common Sorrell

Also known as Rumex acetosa.
To be found in grass environments.

Weed

Small weed vegetation to be found within the heather and seed, scattered around the site.

Heather

Heath vegetation, very characteristic for the Faroese flora.

Polytrichum juniperinum

To be found in moss, thrives in low-nutrient areas.

Mountain Crowberry

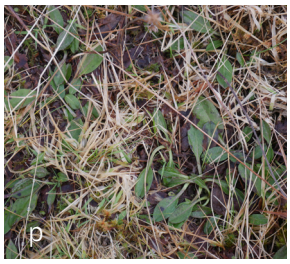
Low growing, originated from mountain environments.

Jon Doe

Unknown bush/tree leftovers.A few scattered around in the seed. Does not look happy during winter season.

Heather

Heath vegetation, very characteristic for the Faroese flora.



Sheep's Sorrel

Known as a common perennial weed. Often found in heaths and grassland.

Moss

Low growing, taking up most of the surface of the site, along with heath and seed.

Carex buchananii red

Red Carex Buchananii, red seed grass.

Peltigera Hymenina

Heath vegetation, very characteristic for the Faroese flora.

Grass

Grass are like moss, one of the natural vegetation on the Faroe Islands. Winter appearance seem to be very dry.

Fringed Willowherb

To be found in moisty areas, ponds, stream sides and more.

Carex

Thrives in shaded areas, at the bottom of the environment.

Lichen

Originated from alges, known as a composite organism. To be found on all of the rocks on site.

Common Heather

The heather have different characteristics, some are taller, some are at a later blossom stage - like this one.

Fig.83a-x // Specific Flora on site

Climate summary*:
Location: Tórshavn FRO
Longitude: -6.7647
Latitude: 62.0231
Elevation above sea level: 61m
Köppen-Geiger climate zone, marine west coast, cool summer
Average yearly temperature: 7.1°C
Hottest yearly temperature: 13.0°C
Coldest yearly temperature: -1.2°C
Annual cumulative horizontal solar radiation: 798.88 kWh/m2
*Data from CBE Climate Tool (2024)

Weather Conditions

The weather in the Faroe Islands can change very quickly and the locals often say that you can experience all four seasons within the same day. The harsh and changeable weather gives precedence for the natural and dramatic landscape and continues to shape the land to this day.

Because of the surrounding sea, the climate is regulated by the conditionds of that. The Gulf Stream is the main contributor to bringing in cold and harsh winds to the islands which also regulates the temperatures, giving the islands mild temperatures in winter and cool temperatures in summer.
v
The church will mainly be in use during the daytime between 10:00 and 13:00 depending on the activity. With the limited amount of sunlight, it is crucial for the design to utilize as much of the natural light as possible without facilitating glare and disturbing lighting conditions.

Furthermore the weather conditions will have a big impact on the resiliency the structure and materials must obtain. The structural system must be able to withstand the strong winds as well as carry large snowloads for the structure to not collapse. The materials used for the exterior especially, must be able to withstand the same aspects whilst having efficient thermal properties.

Pros when designing at this location by Torshavn:

- Mild temperatures: The climate does not fluctuate throughout the year, meaning that they experience cool summers and mild winters - the average temperature from winter to summer varies from about 3°C to about 11°C.
- Abundant rainfall: Can be advantageous for water collection systems or landscaping that requires regular irrigation.
- Renewable energy potential: The frequent wind and rainfall provide great conditions for renewable energy generation, such as wind turbines and hydroelectric power.

Cons when designing at this location by Torshavn:

- High humidity: This can lead to moisture-related issues such as mold, mildew and corrosion.
- Strong winds: The wind can impact the building stability and requires resilient structures.
- Limited sunlight: Because of the long periods of overcast skies and limited sunlight, it can affect the natural light in buildings as well as the potential for generating solar energy.
- Salt spray: The coastal location exposes buildings to salt spray from the ocean, leading to corrosion of building materials and potential maintenance problems.

Fig.84 // Typical weather on the Faroe Islands

Wind

The windrose provides an overview of wind speed and wind direction frequency distribution at a given location.

In building design, the wind is addressed in several forms:

- Assessing pedestrian and outdoor comfort
- Lawson Wind Comfort Criteria – by looking at this means of measuring; we obtain an idea of the appropriate activity for the given wind speed (Simscale.com, 2023).
- Mean of assessing comfort. Strong winds and wind gusts can negatively impact the pedestrian experience and may even pose a safety risk
- Design for wind-driven natural ventilation
- Understanding pollution dispersal and outdoor air quality
- In structural analysis, wind load considerably influences the design of roofs, sheds, or overhanging elements

The spring wind reaches the level of <17,1 m/s from west and east. This exceeds the stage of ”comfortable” on the Lawson Comfort scale, which limits the potential for outdoor activities. The largest frequence of wind speed is the 5,5-10,7 m/s which still allow some outdoor activities to happen. The windspeeds are lower during the summer with a common frequency of 1,5-7,9 m/s. The summer wind has the lowest mean wind speed of approximately 4-5 m/s. The windrose in Fall shows that the wind direction is most frequent to West/South west. Fall is one of the most intense in terms of wind speed, reaching above >20,7 m/s which does not afford outdoor stays. Shielding for the wind is indeed neccessary to secure the safety of the people around the building. The winter wind is less excentric from the east side but increases towards the west. The site is not shielded from the west side, which affords frugal choice of material due to a requirement for a high resistance towards weather tear. Luckily, the extreme wind speed is happening at a low frequence.

As the weather and the wind can shift in a matter of minutes it will be important to integrate means of shielding in the architecture to make, when being outside, as comfortable as possible. This can also be achieved by orienting the buildings so that the structure itself serves as the wind barrier.

Annual Windrose

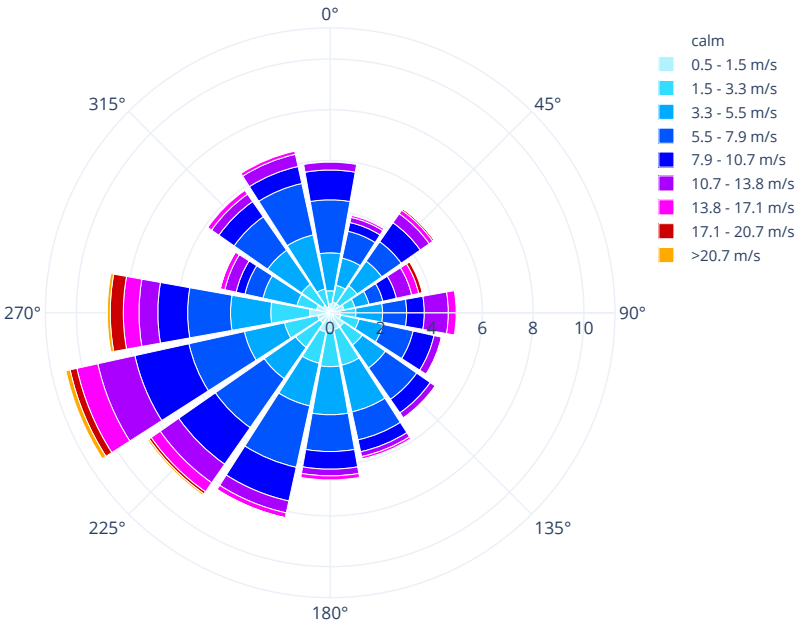


Fig.85 // Annual windrose // CBE Climate Tool

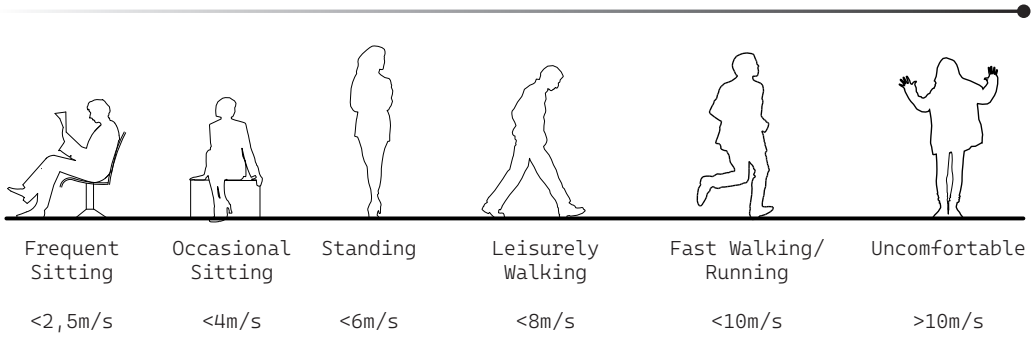


Fig.86 // Lawson Wind Comfort Critera

Fig.87 // Winter Windrose // CBE Climate Tool

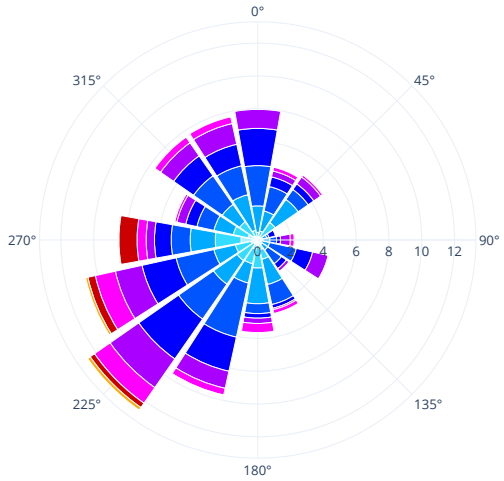


Fig.88 // Spring Windrose // CBE Climate Tool

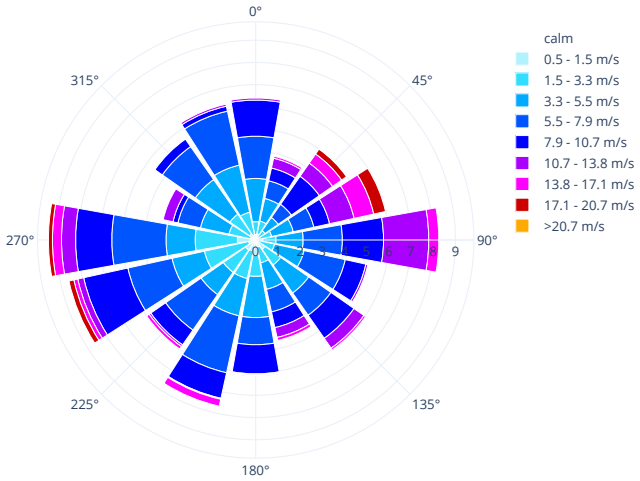


Fig.89 // Summer Windrose // CBE Climate Tool

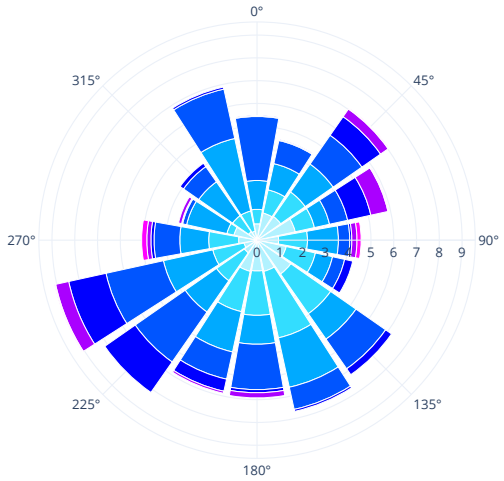
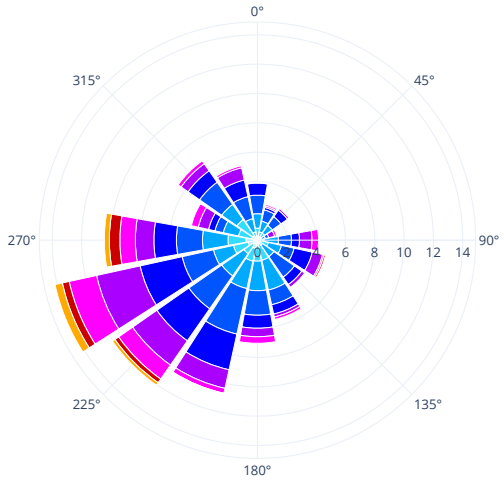


Fig.90 // Fall Windrose // CBE Climate Tool



Yearly Relative Humidity

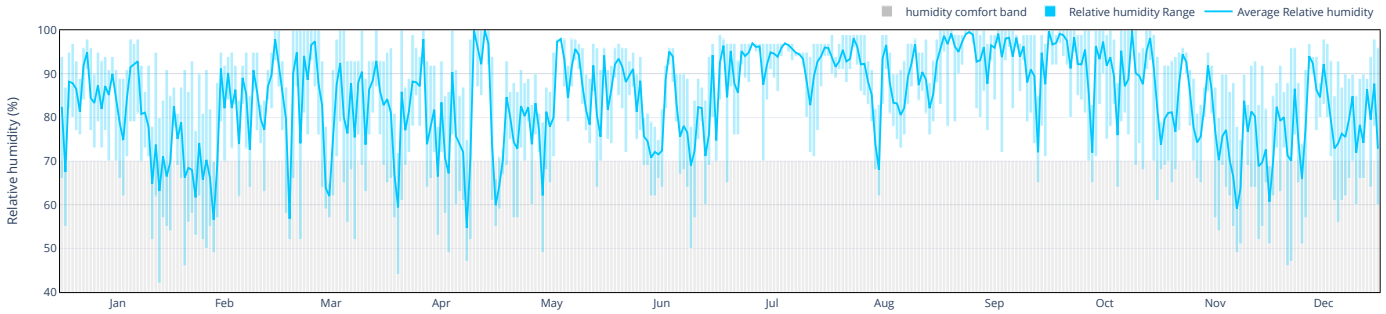


Fig.91 // Yearly Relative Humidity // CBE Climate Tool

Yearly Dry-Bulb Temperature

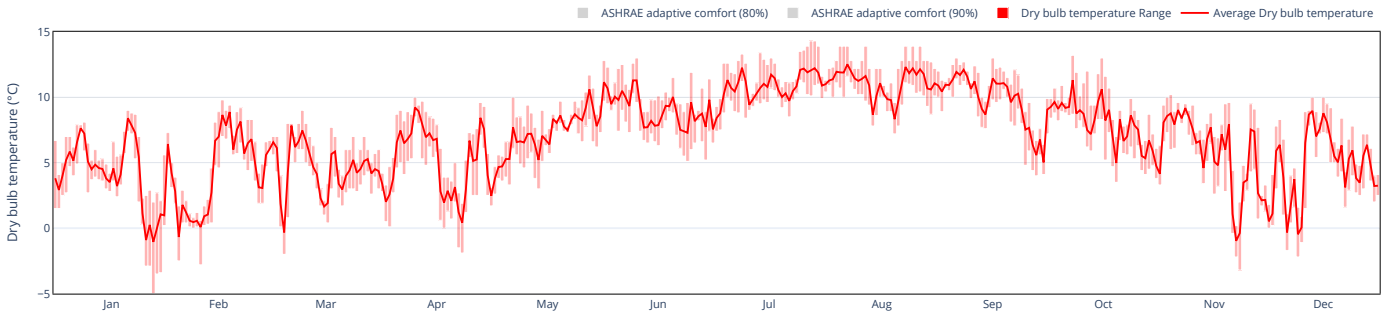


Fig.92 // Yearly Dry-Bulb Temperature // CBE Climate Tool

Dry-Bulb Temperature and Relative Humidity

The daily dry-bulb temperature chart shows us temperatures that are variable from summer to winter with a margin of about 30°C, from -5°C to 25°C.

The heatmap for temperature shows how the temperature fluctuates throughout the year, with both hot and cold days in all seasons, but despite this, there is a clear gradient between the summer and winter months.

Outdoor relative humidity varies greatly depending on the amount of rainfall. We can read the variability of rainfall in a given location, from the variable patterns on the chart (fig.93) Daily sunshine decreases the relative humidity, and since daily sunshine is not a given, we see a lot of humidity appearing. This means that the choice of material must be able to stop the humidity from entering the construction and making the indoor climate poor.

Fig. 93-96., show that when the wind direction is from west, the wind speed is lower, but the humidity is higher. Contrary when the wind comes from west, the windspeed is higher, the temperature and the humidity is lower.

Relative Humidity Heatmap

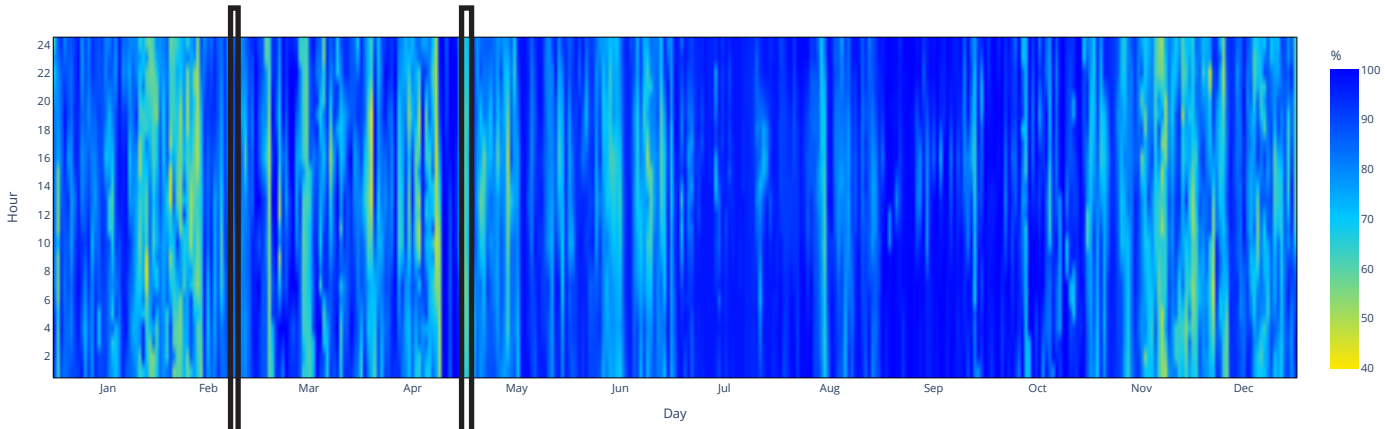


Fig.93 // Relative Humidity Heatmap // CBE Climate Tool

Dry-Bulb Temperature Heatmap

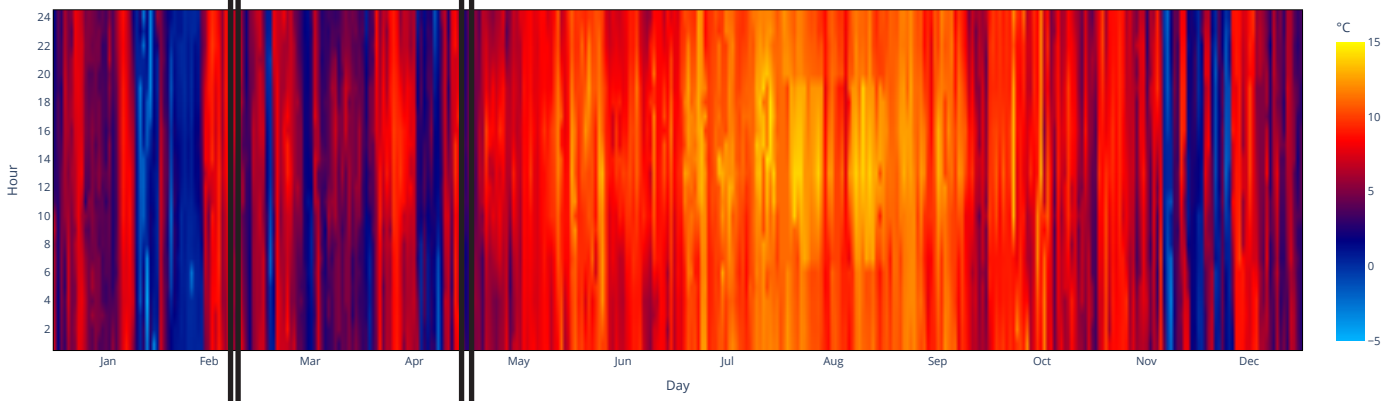


Fig.94 // Dry-Bulb Temp. Heatmap // CBE Climate Tool

Wind Direction

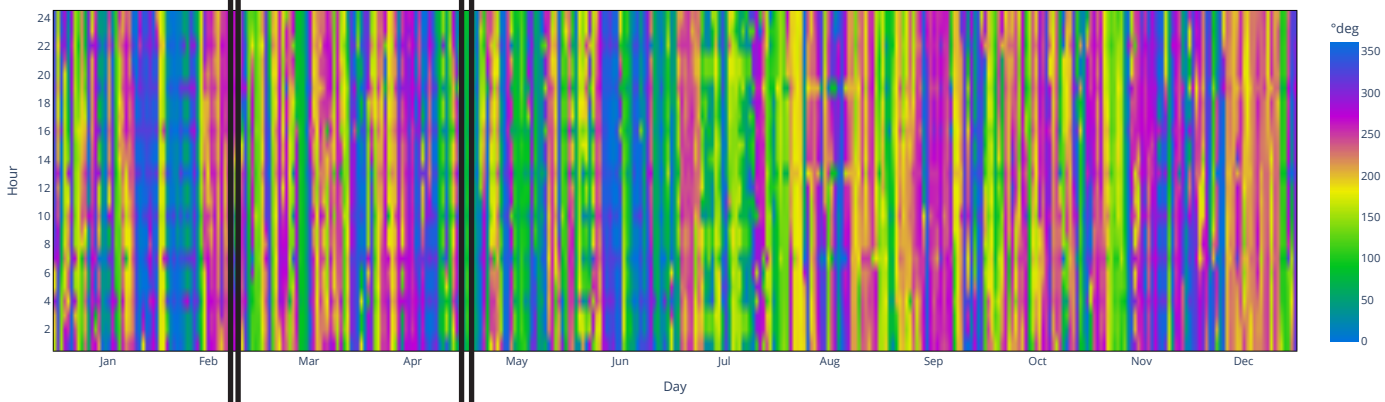


Fig.95 // Wind Direction // CBE Climate Tool

Wind Speed

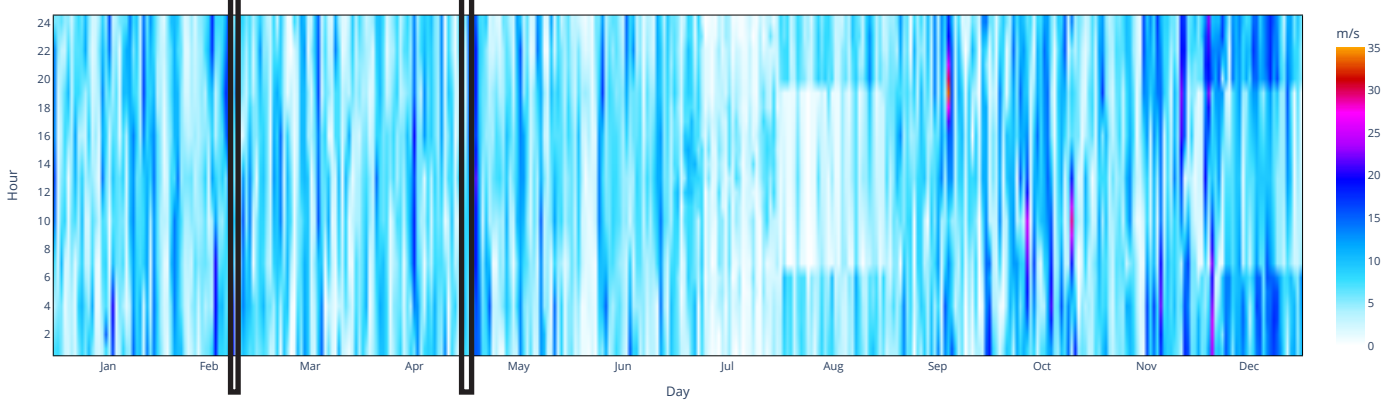


Fig.96 // Wind Speed // CBE Climate Tool

Fig.97 // Overcast Sky

Cloud Coverage

With the sky often being covered or partially covered the site will in the majority of the year not experience direct sunlight but rather be lit by the diffuse light coming from the cloudy sky.

With the element of light being such an important aspect of religion, when reaching for the divine and God bringing light to his followers, this diffuse light will have an impact on the design, since direct light will happen more rarely.

Additionally regarding the thermal conditions in terms of overheating of the buildings will not be an issue and therefore does not need be taking highly into consideration.

The diagram (fig.x) reports for every month of the year the frequency of “clear”, “cloudy” and “intermediate” conditions.

As the cloud cover is reported in tenths of coverage (i.e. 0 is 0/10 total coverage) for the purpose of this graph we have simplified the scale as per the table below:

Categorization	Color	Tenth of Coverage
Clear (BELOW range)		0
Clear (BELOW range)		1
Clear (BELOW range)		2
Clear (BELOW range)		3
Intermediate (IN range)		4
Intermediate (IN range)		5
Intermediate (IN range)		6
Intermediate (IN range)		7
Cloudy (ABOVE range)		8
Cloudy (ABOVE range)		9
Cloudy (ABOVE range)		10

Yearly Sky Coverage

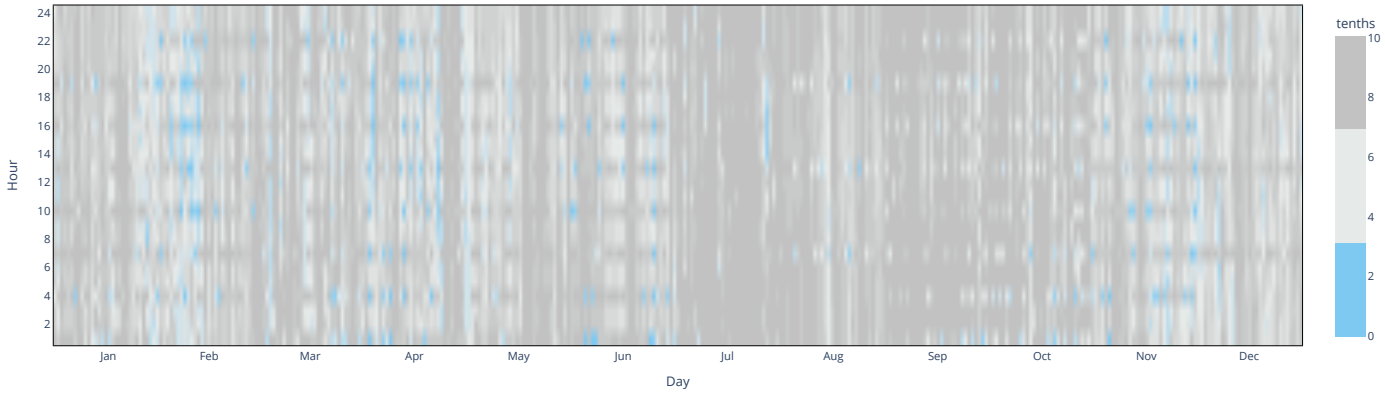


Fig.95 // Yearly Sky Coverage // CBE Climate Tool

Cloud Coverage in Percentages

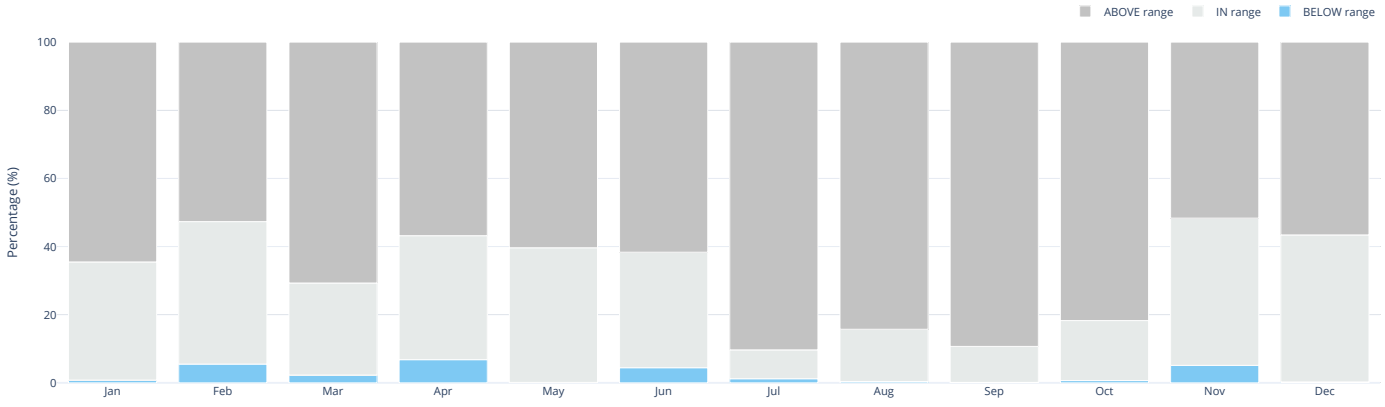


Fig.96 // Cloud Coverage // CBE Climate Tool

Global Horizontal Radiation Heatmap

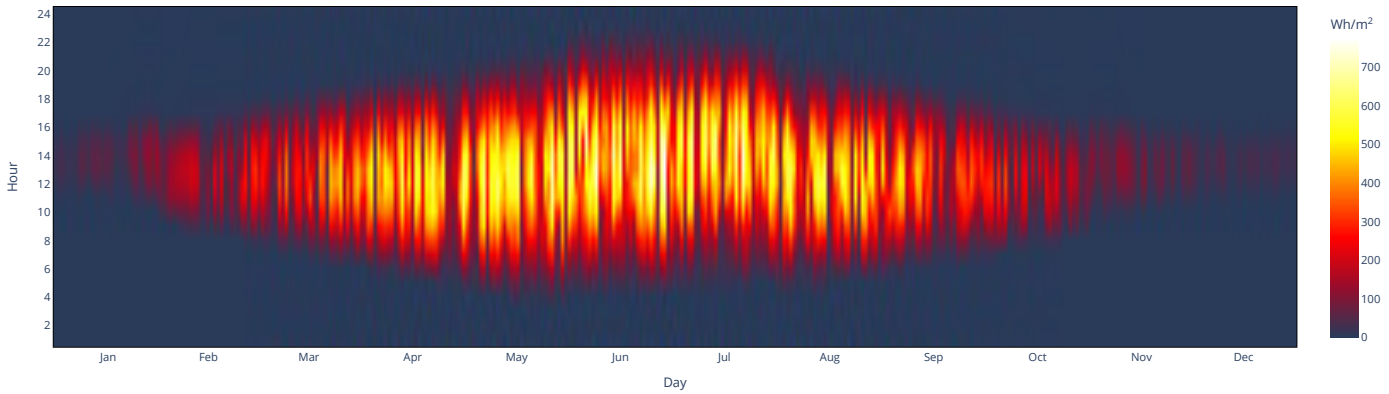


Fig.97 // Radiation Heatmap // CBE Climate Tool

Global and Diffuse Solar Radiation

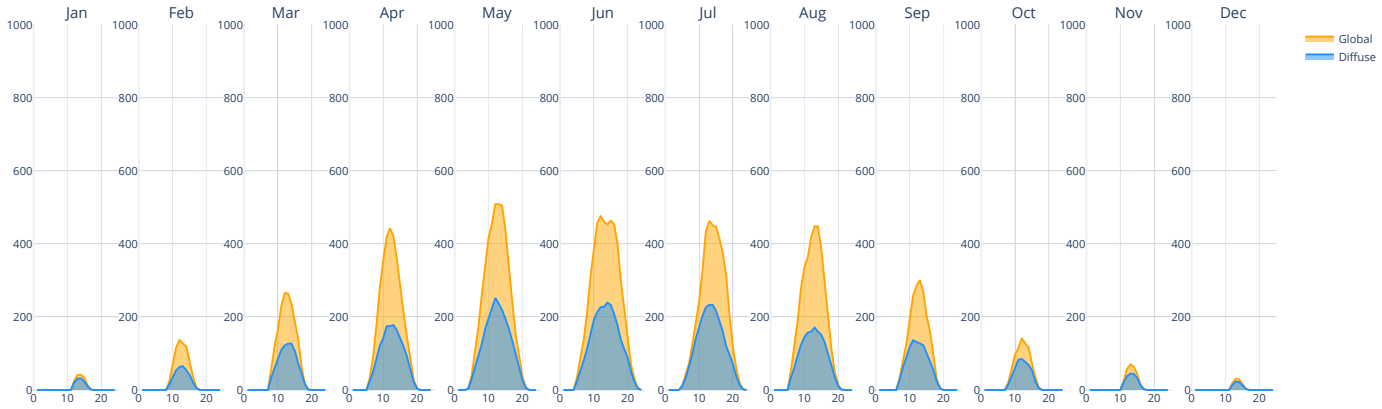


Fig.98 // Radiation Heatmap // CBE Climate Tool

Global and Diffuse Solar Radiation

When looking at the solar radiation, we gain an understanding of how much radiation we obtain in a given place at a given time. The radiation is measured in kWh/m².

Knowing the amount of energy gained from the sun can be utilized as such:

- To design a building with a passive approach, to control solar gains and reduce the energy consumption.
- To manage the direct solar gain through the glass, to evaluate solar shading devices.
- To manage the indirect solar gain transfer by exploiting thermal mass or implimenting certain buffer spaces.
- To evaluate sustainable renewable energy solutions such as photovoltaic panels.

Most of the villages in the Faroe Islands are located near the ocean. The mountains surrounding each village combined with the altitude of the sun, therefor limits the amount of direct sunlight accessing the locations - depending on the seasons.

Summer:
During the summer the amount of direct sunlight is high on site, due to the sun's high position. The possibility for glare can be an issue.

Winter:
During the winter, there are almost no hours of direct sunlight on site. This is due to the mountain (height of approximately 350 meters), where Argir is built upon (south of the site), combined with the sun's low position during the winter.

Equinox:
The analysis of the equinox, shows good amounts of direct sunlight on site, with certain "pockets", that gain more daylight than others.

The different results of the simulations showcases clear contrasts based on the season, which must be considered when designing and programming the church.

The sun direction is important for the atmospheric experience coming from the light of the windows. Since the altar must be located towards the east because of religous tradition, it is of high significance to avoid unneccessary glare from east in the morning/midday hours, where most of the services and ceremonies take place.

Winter

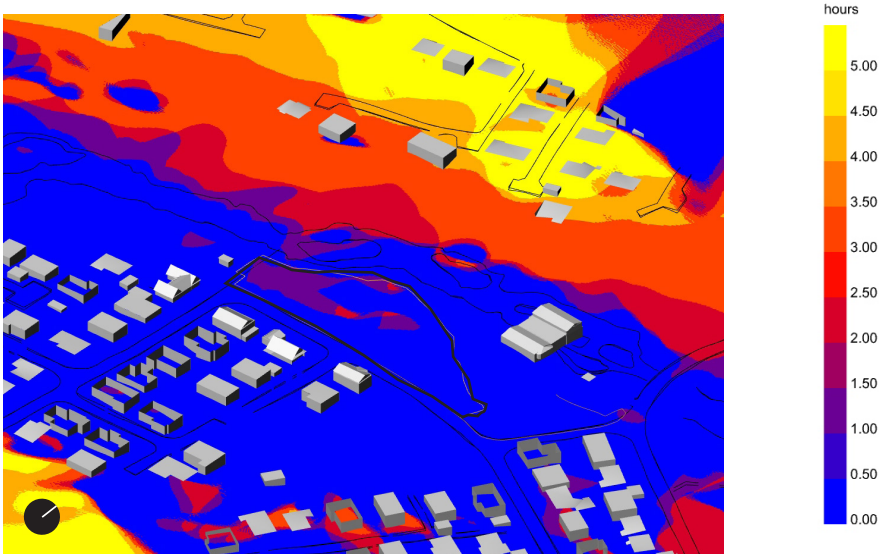


Fig.99

Summer

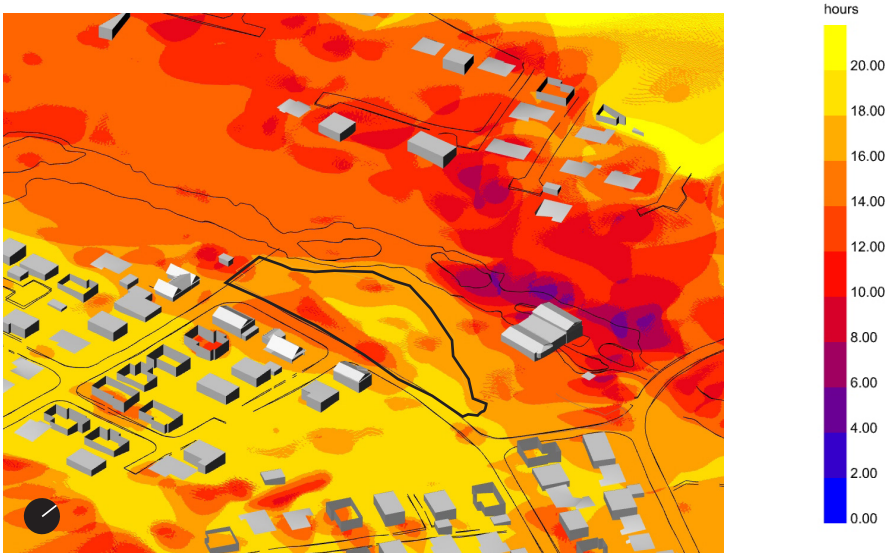


Fig.100

Equinox

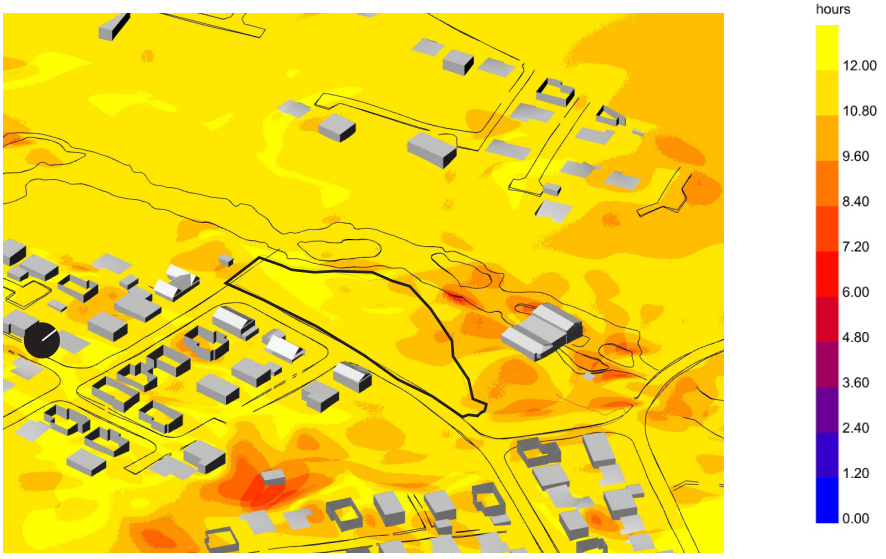


Fig.101

05// *strategy*
Climate Based Resiliency

What

We are aiming to design a tectonic character which are representing the culture, the climate and the religious gestures.

Why

To elongate the life span of the building while ensuring an indoor environment fitting the actualities of the Faroese weather.

How

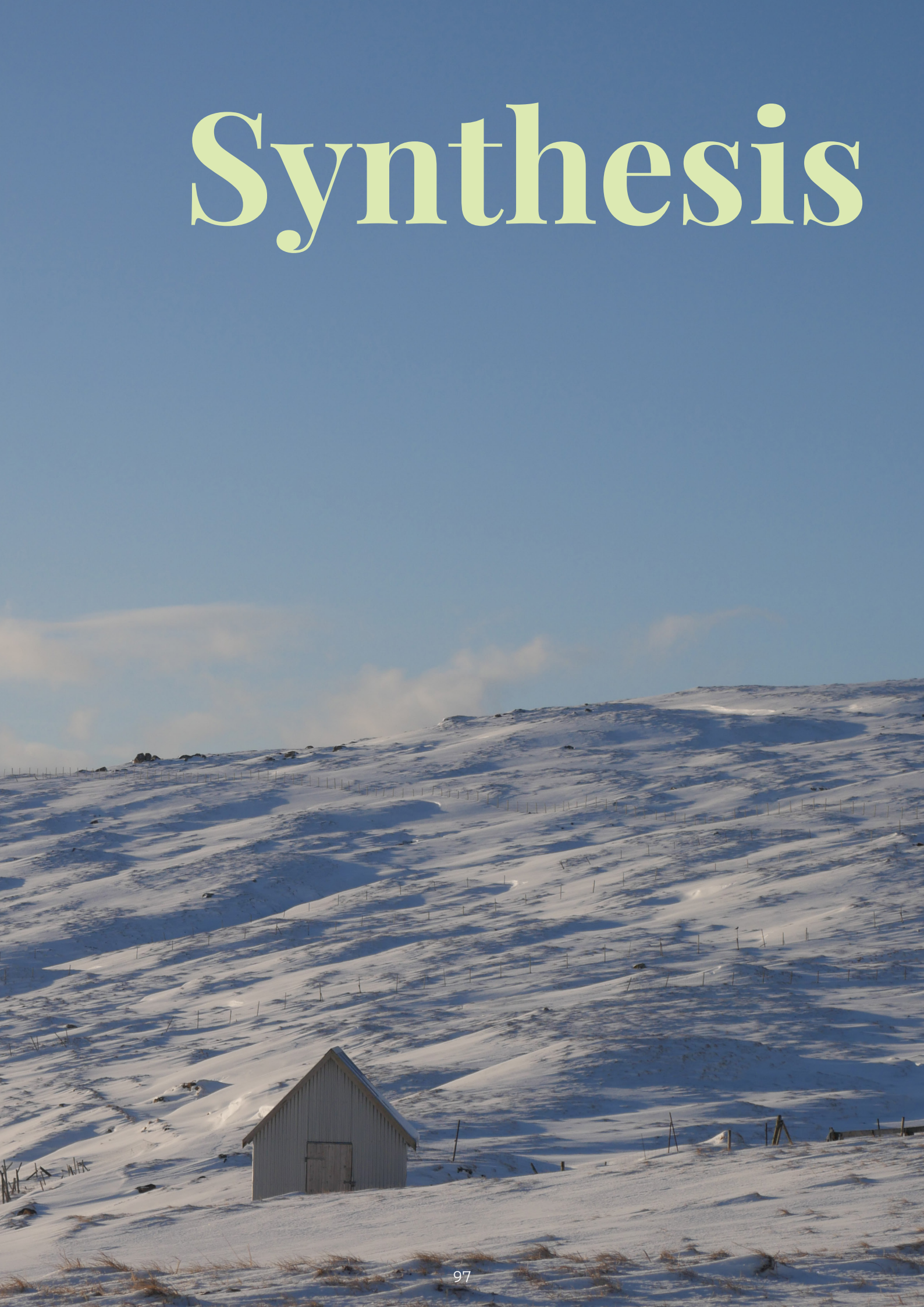
By using computational software to evaluate the structure and environmental performance as an integrated part of the design process.

Fig.102 // Strategy 05

Through the preliminary investigations and analysis, the work has led to a synthesis of the programmatic content. It presents the strategies and design drivers that have been decided based on results and evaluations of the quantitative and qualitative explorations.

Fig.103 // Lonely Cabin In the Snow

Synthesis



Room Program Fig.104

CHURCH

ROOM	NET AREA	QUANTITY	HEIGHT	TOTAL AREA	PEOPLE	FUNCTION
	SQM		M (MINIMUM)	SQM		
LOUNGE	60	1	3	60	60	Space for greetings etc.
NARTHEX	95	1	3	95	100	Transit before entering sacred space
STAIRCASE	–	1	–	–	–	Access for balcony
WARDROBE	–	1	3	10	–	Storage for winter clothing, jackets, etc.
RESTROOM	3	3	2,5	9	1	Two regular + one disabled
WAITING ROOM	10	1	3	10	10	Space for users to prepare/wait before ceremonies; ie. getting kids ready for baptism
BALCONY	125	1	3	125	100	Space for organ + singing choir + additional seating
NAVE	400	1	10	400	280	Space for religious ceremonies
CHANCEL	125	1	–	125	–	Raised platform for preaching
SACRISTY	30	1	3	20	1	Private room for priests for changing and altar ware
OFFICE	45	1	3	45	5	Personal studies and preparation for services, ceremonies, etc.
CHURCH TOWER (BELL TOWER)	–	1	–	–	1	Structure for bell, to ring in the services
Coolingroom	10	1	3	10	–	Space for cpreserving the dead

COMMUNITY CENTER

FLEXIBLE SPACE	115	1	3	115	100	Events, social activities, meetings, Sunday School, educational purposes, etc.
STORAGE	15	1	2,5	15	–	Storage for supplies and cleaning
KITCHEN	30	1	3	30	5	Space for cooking and preparing food and catering for adhering events
CHILDREN'S AREA	50	1	3	50	40	Space for creativity, playing and drawing
SOCIAL SPACE	65	1	3	65	60	Space for informal hang outs, conversations, post ceremonial coffee
LOUNGE	50	1	3	50	40	Entrance area, welcoming and casual space for greetings etc.
WARDROBE	10	1	3	10		Storage for winter clothing, jackets, etc.
RESTROOM	3	3	2,5	9	1	Two regular + one disabled
TECH. ROOM	15	1		15	–	Mechanical, equipment, plumming
STORAGE FOR CHAIRS	15	1	2,5	15	–	Storage for extra chairs for big ceremonies/ services
PRINTING SPACE	5	1	2,5	5	2	Printing and copying
OFFICE/MEETING ROOM	10	2	3	20	3	Room for priests, and affiliated people to do business, planning, etc.

CHAPEL

Chapel	25	1	2,5	25	4	Place for praying or worshipping for everyone

CHURCH

AFFINITY	ACOUSTICS	LIGHT AESTHETIC VALUE	ATMOSPHERE	RELIGIOUS CONSIDERATION
		KELVIN		
Entrance, part of narthex	>2 sec	Friendly, Inviting (3500K)	Inviting	-
Precursory to nave	>2 sec	Friendly, Inviting (3500K)	Practical	-
Part of nave	-	-	-	-
Integrated in narthex	-	Calm, Warm (3000K)	-	-
Clean	-	Friendly, Inviting (3500K)	-	-
Part of narthex	>2 sec	Calm, Warm (3000K)	Calming	-
Integrated in the nave, located towards west, opposite of chancel	Singing: <2 sec Preaching: >2 sec	Calm, Warm (3000K)	Prospect	-
	Singing: <2 sec Preaching: >2 sec	Friendly, Inviting (3500K)	Open	Serving space for liturgy
Integrated in the nave, located towards east, by altar	Singing: <2 sec Preaching: >2 sec	Friendly, Inviting (3500K)	Sacred	Must contain altar and crucifix
Next to chancel, direct access to altar	>2 sec	Calm, Warm (3000K)	Private	Only accesible for servers
Next to sacristy, acces through nave	>2 sec	Vibrant, Daylight (5000K)	Practical	-
Access through, ingerated with sacristy	-	-	-	-
Accessible from narthex	-	Ambient, Intimate (2700K)	Practical	Last place before funeral ceremony

COMMUNITY CENTER

"Overlaying" functions	>2 sec	Friendly, Inviting (3500K)	Inviting	-
Accesible from eventspace	-	-	-	-
Connected to flexible space for easy accessibility	>2 sec	Vibrant, Daylight (5000K)	-	-
Integrated in the flexible space	>2 sec	Friendly, Inviting (3500K)	Inviting	-
Integrated in flexible spave	>2 sec	Friendly, Inviting (3500K)	Inviting	-
Antecedent for the flexible space	>2 sec	Friendly, Inviting (3500K)	Inviting	-
Integrated in the lobby	-	-	-	-
Clean	-	Friendly, Inviting (3500K)	-	-
Combined with storage	-	Vibrant, Daylight (5000K)	-	-
Accesible from eventspace	-	-	-	-
Close proximety to office and meeting room	-	-	-	-
Directly accisble from lobby	>2 sec	Vibrant, Daylight (5000K)	Practical	-

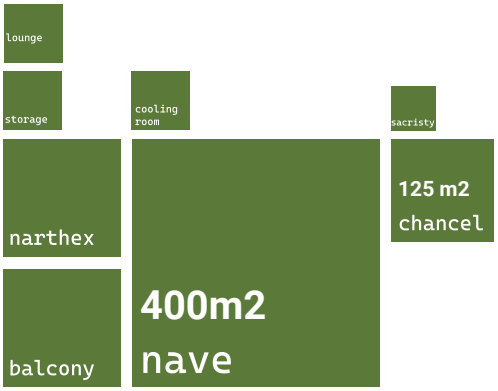
CHAPEL

Open for everyone	-	Ambient, intimate (2700K)	Sacred	-

Diagram of Functions

CHAPEL

CHURCH



COMMUNITY CENTER

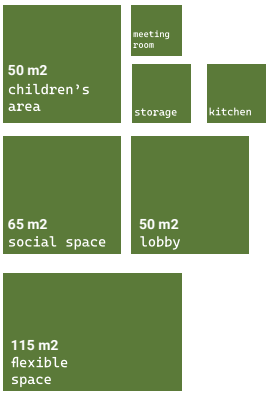


Fig.105 // Diagram of Functions

Problem Statement

How can a modern church in the Faroe Islands be designed to effectively integrate natural daylight, acoustic conditions, materiality and atmospheric elements to enhance and preserve its sacred space within a contemporary religious context?

Design Drivers // Strategies

RESPECT THE ELEMENTS OF RELIGION

We aim to develop a design that accommodates, enhances, and honors the intended functions of a sacred place.

DESIGN WITH TEMPORALITY IN MIND

We strive to activate the social time of a space by considering the evolving needs of the occupants and the various chronous of the site, relating to the function.

FACILITATE THE ENGAGING ENVIRONMENT ON SITE

We aim to establish a sense of belonging by centering our design around the local community, acknowledging them as essential pillars for development, design, and functionality.

SIGNIFY MATERIALS

By utilizing materials, textures, and atmospheres in harmony with the local landscape, we aim to design and cultivate a sense of identity and belonging.

CLIMATE BASED RESILIENCY

We are aiming to design a tectonic character which are representing the culture, the climate and the religious gestures.

DISTURBANCE OF THE UNTOUCHED

Visionary thoughts

The new church of Argir, is based on an idea, a wish, to unite two contradicting parts fighting over a piece of land. The activists are fighting for an undisturbed, peaceful recreational area while the municipality and the architects are answering with a thorough architectural project vision in the center of the area. But is this the correct approach to handle this debate?

A belief that this church can mediate the two parties by building with the available, natural materials, the natural light and acoustic possibilities and thereby reach a character of the untouched within the city. The religious dedication of the common people affords a church, that not only serves the solely purpose of a sacred place, but also acts as an active part of the local community.

Design Process

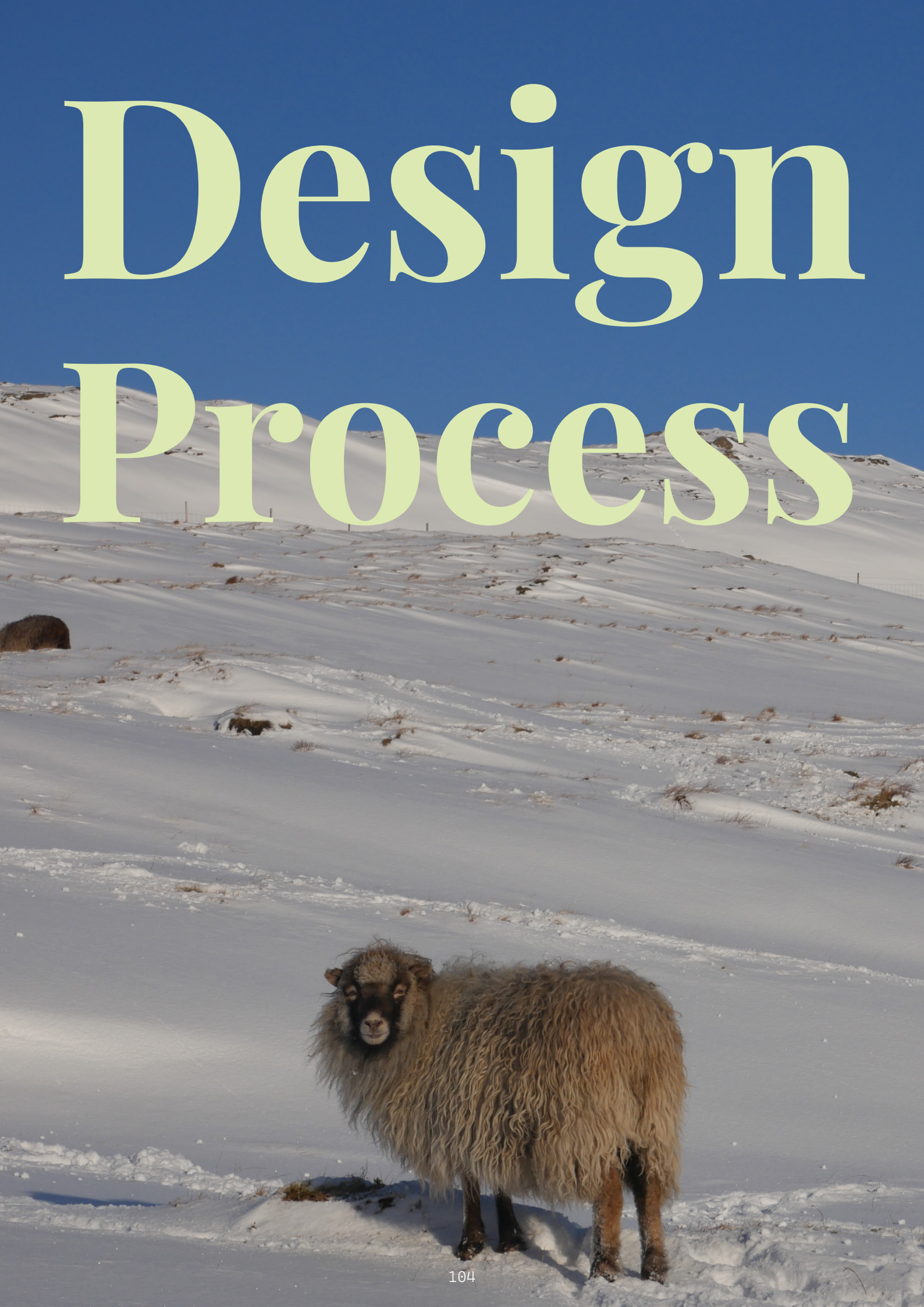


Fig.106 // Local Residents

Morphological // Volumetric Studies

Based on the preliminary investigations and the interpretation of the given brief, three main volumetric studies were explored. All three came to fluation as a product of the principal division of functions in to three; “office, event and church. The Trinity looks into the relationship between built and the site whilst seperating the functions on to three differnet locations on the site. The seperation of functions meant that a large obstructive building could be avoided. The Unit is also based upon the idea of seperating the function, however this time through buildings places closer to ensure a tight relation to each other. Additionally a solid roof structure was added to give the impression of it being one single “unit”. The Bridge contains all functions in on massing but has been placed over the creek as a mean to create a special gesture to the water on site. It was decided to further investigate the concept of The Trinity because of the internal relationship of the massings as well as how they integrated themselves in the topography.

”The Trinity”

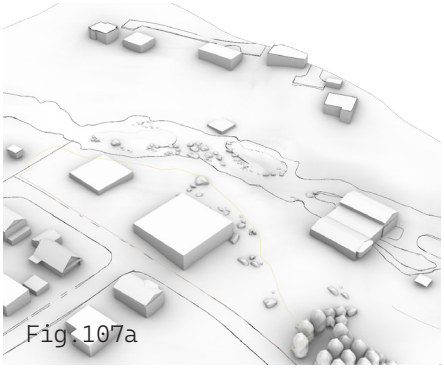


Fig.107a

”The Unit”

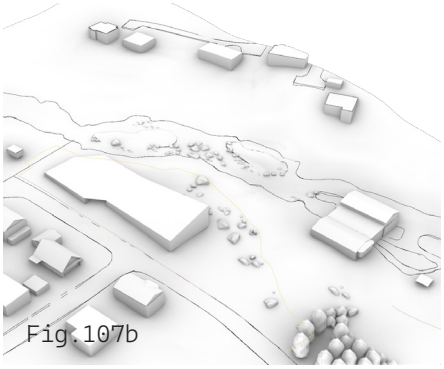


Fig.107b

”The Bridge”

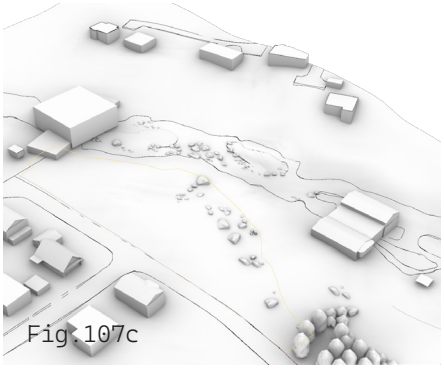


Fig.107c

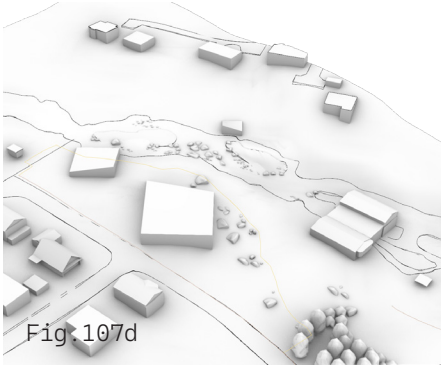


Fig.107d

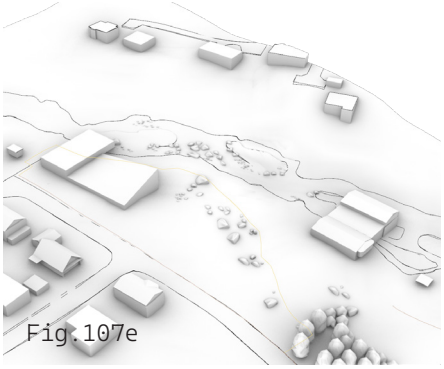


Fig.107e

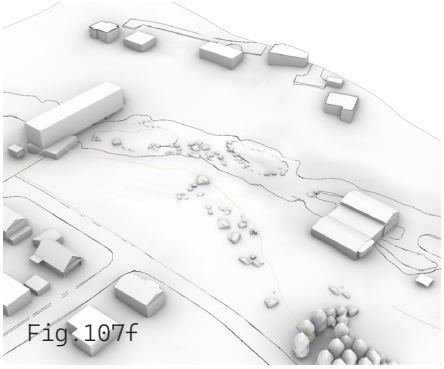


Fig.107f

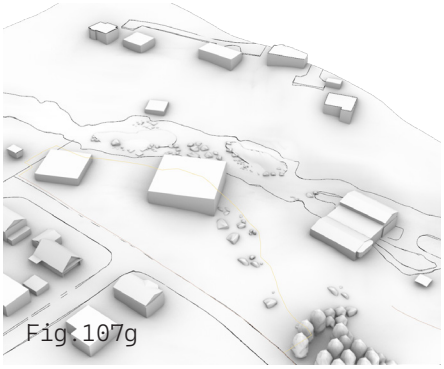


Fig.107g

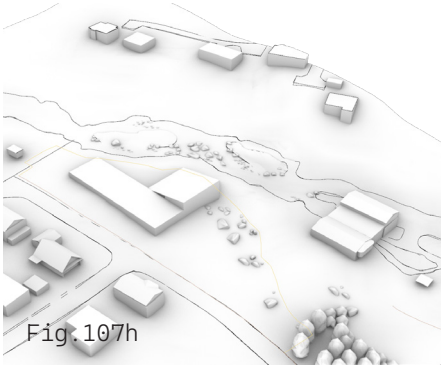


Fig.107h

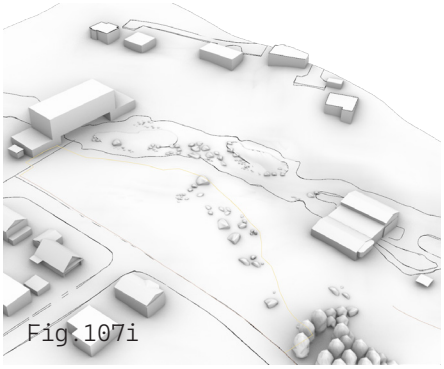


Fig.107i

Creating a physical relation between volumes.

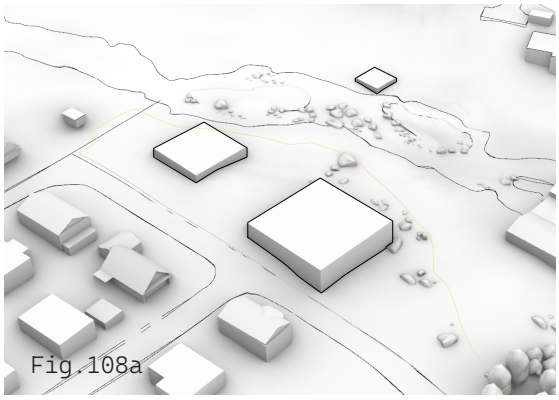


Fig.108a

Twisting to create even more relation.

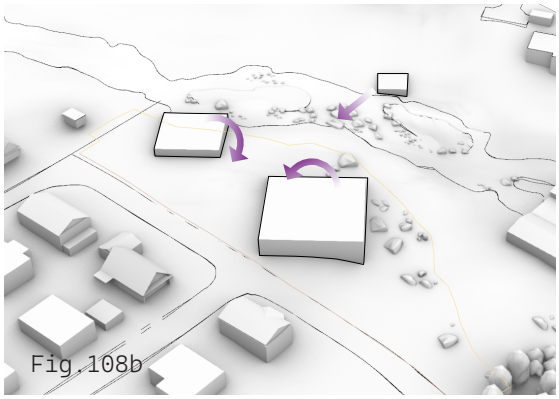


Fig.108b

Lifting up one corner of volumes creates height and visual interest.

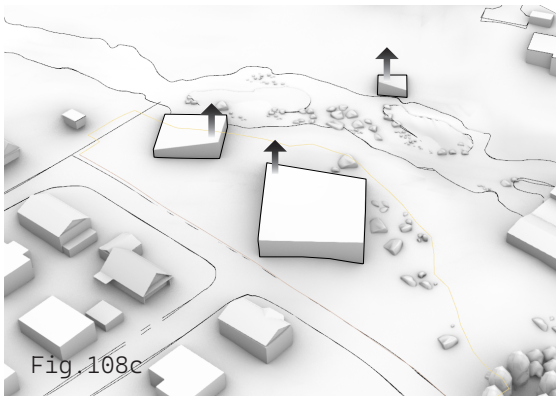


Fig.108c

Internal courtyard appears and creates sheltered outdoor spaces.

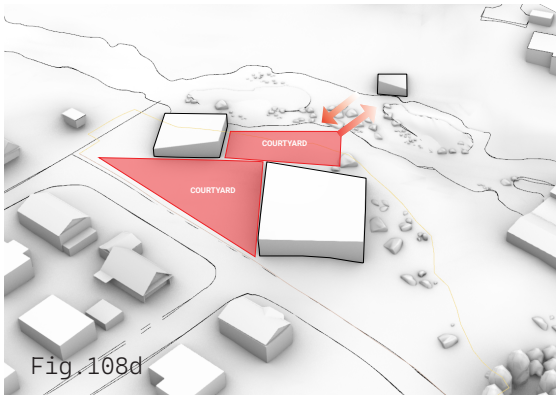


Fig.108d

Implicit sight lines between volumes creates the trinity.

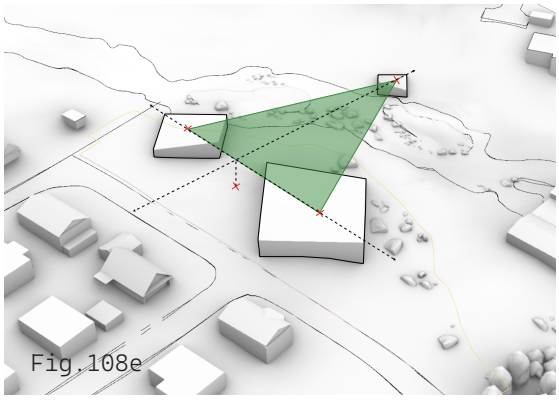


Fig.108e

Framing of the Baptistry

One of the key elements of the inventory of the church is the baptistry and therefore it was investigated how the baptistry could be integrated within the architecture.

Firstly the aesthetic aspect of the framing was investigated through a variation of window sizes in the northeast corner. Because of the ritual of having the altar and its adhering functions towards the east, there was a definite need for checking the lighting conditions in terms of glare and luminance.

To cater to the idea of integrating the rocks found on site, it was early on decided to use them as inventory in the church - this also serves as a gesture and reference to the sturdiness and resilience of both Christianity and the Faroe Islands.

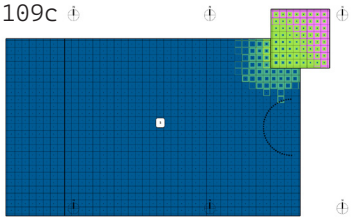
By having tall windows, it allowed for more view towards the sky which gave a nice gesture, but would not be good in relation to glare issues.

The conclusion of the study was to emphasize the baptistry in the final design proposal, but to not have the height of the window exceed three meters.


Fig.109a


Fig.109b

Fig.109c

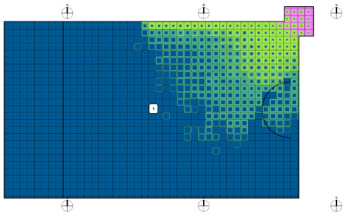


UDIa 3,4%
sDA 5,9%
ASE 3,0%
avg lux 151


Fig.109d


Fig.109e

Fig.109f

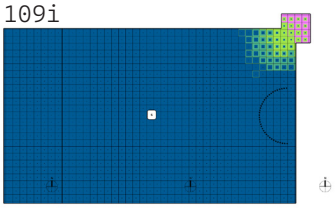


UDIa 5,0%
sDA 5,6%
ASE 0,8%
avg lux 118


Fig.109g


Fig.109h

Fig.109i

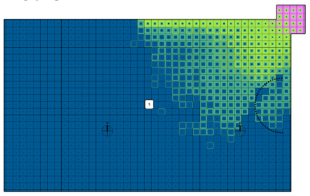


UDIa 1,0%
sDA 1,6%
ASE 0,8%
avg lux 49


Fig.109j


Fig.109k

Fig.109l



UDIa 5,0%
sDA 5,6%
ASE 0,8%
avg lux 118


Fig.110a

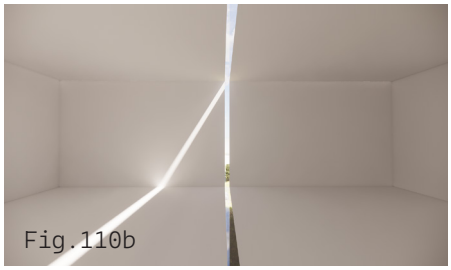


Fig.110b


Fig.110c


Fig.110d


Fig.110e


Fig.110f


Fig.110g

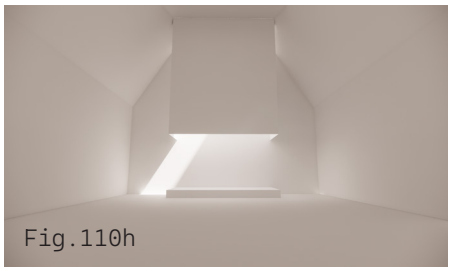


Fig.110h


Fig.110i


Fig.110j


Fig.110k


Fig.110l

Internal Lighting of the Eastern Wall

Since lighting is such a crucial part of creating sacral spaces the form of light was tested on the eastern back wall. The considerations for the study was first and forth most how light would penetrate the space and add value and a religious gesture to the space during the ceremonies and sermons without causing unneccassary glare for the congregation sitting opposite of the wall. Another aspect of the investigation was the visual connection with the context and how it would accommodate the usage of the space.

The options with large window areas gave great lighting and connection with the outsides, however were not optimal considering the low light that would enter the space in the morning hours, where services and sermons would take part.

The lighting served as a potent symbolic gesture, emphasizing the religious significance. The interplay between the altar, considered the most sacred space, and the form of the light enhanced the symbolic resonance.

Organization of Functions

In order to gain an understanding of the distribution of functions needed, different layouts was produced. Because of the desire to accommodate the needs of the users and the congregation's wish to offer the space for social events that can be used outside of the sacred spaces the relation between the two was investigated.

By placing functions such as meeting rooms, event space or kitchen right by the sacred space, disturbance of the two might appear. This would not be ideal when taking part in ceremonies where quiteness often take place. Vice versa, singing in the church, could disturb activities taking place in the community center.

Hybrid

A programmatic composition where the north wall created an illusion of clamped rocks which seen from above would increase towards the altar.

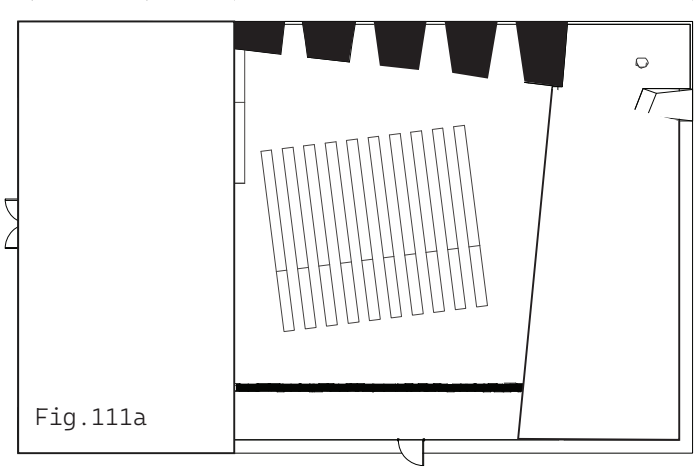


Fig.111a

Babushka

The Babushka is rooted from the concept of repetition of the same shape.
This iteration were centered around the same clamping idea as the one from the ”Hybrid” but mirrored on the south side as well.

The east wall gets highlighted even further when pointing towards the altar on both sides.

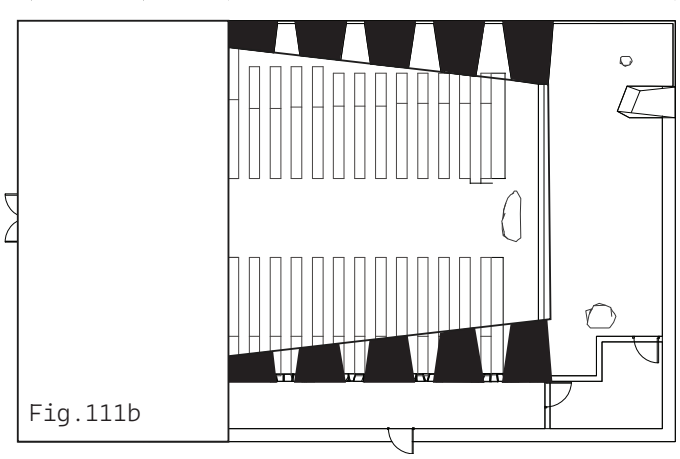


Fig.111b

The Hallways

The last iteration is based upon flow to create an internal hierarchy within the sermon space, the nave.

The hallways were a reference to the programming of the basilicas that included two loggias on the north and south side of the nave.

From this idea, the concept of lightwashing emerged.

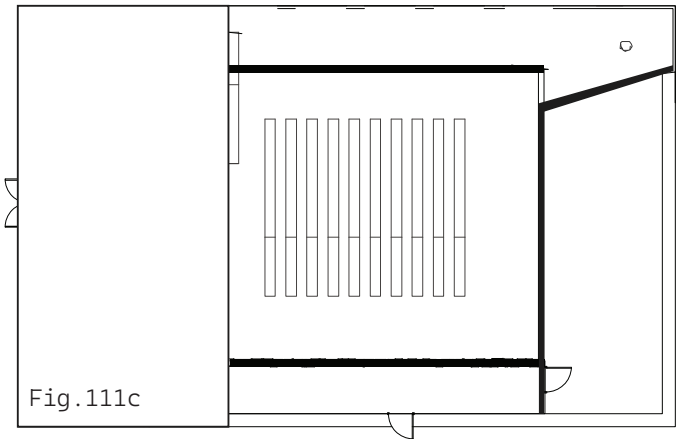
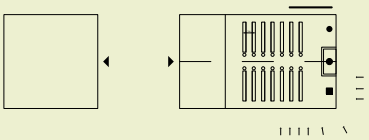


Fig.111c

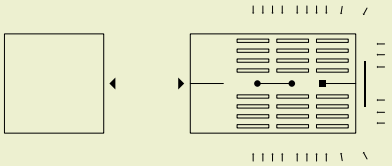
Organization of the Sacred Place

To understand how the compositions of historical layouts of naves would work, when being applied in a set volume, the following iterations were made.



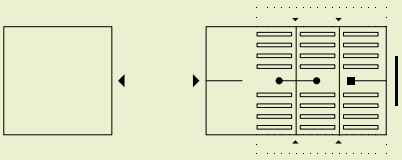
seats approx: 140

Fig.112a // Longitudinal Composition

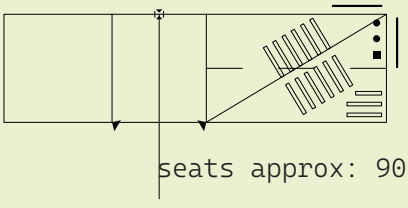


seats approx: 120

Fig.112b // Adapted Communio Concept

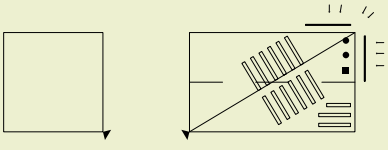


seats approx: 120



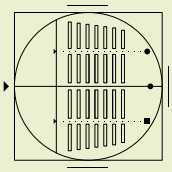
seats approx: 90

Fig.112c // Diagonal Composition



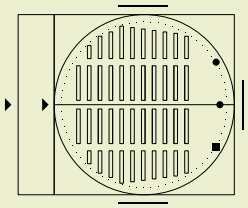
seats approx: 90

Fig.112d // “Round” Longitudinal Composition



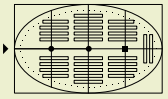
seats approx: 192

Fig.112e // “Round” Longitudinal Composition

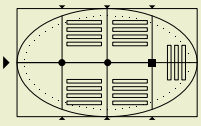


seats approx: 256

Fig.112f // Communio Concept



seats approx: 216



seats approx: 152

The Roof

The initial investigations of vernacular architecture gave great presidence for working with a pitched roof. A pitched roof works well in conditions where weather often provides challenges especially regarding snowloads and rain. Additionally by being able to have internal room heights that can go all the way to the ridge of the ceiling, it is possible to create spatial elements that caters to the need for a high space for the function of the church. By ”pulling” on of the points, a slope appears, giving reference to the divine in religion. By slicing the building into smaller parts, the opportunity for clerestory windows towards to west appear, allowing for more natural light within the sacral space.

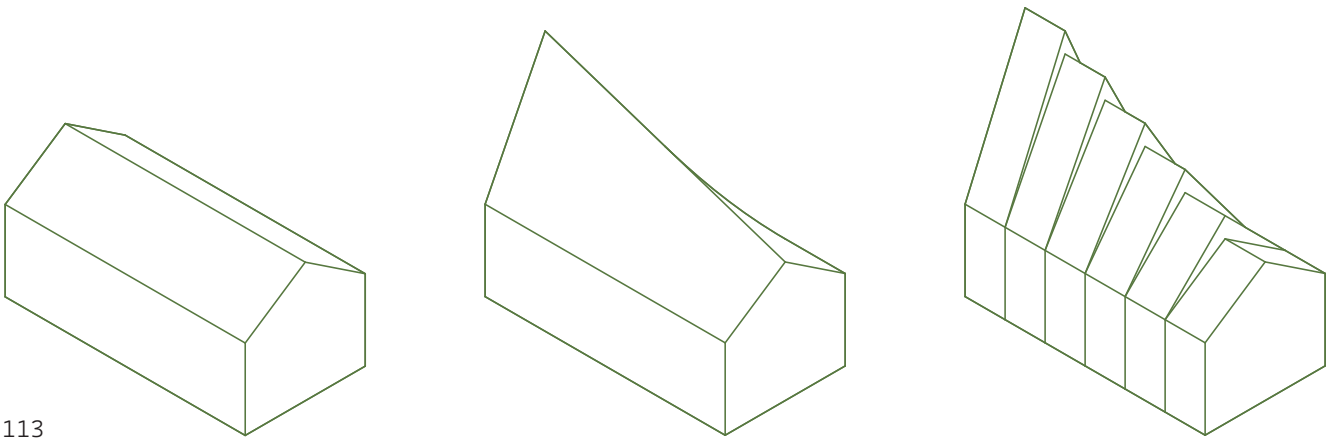


Fig.113

The Northern Wall and the Eastern Wall


Fig.114a


Fig.114b


Fig.114c


Fig.114d

The internal hierarchy inside the church has played a significant role when deciding on the altar wall towards East and the North wall.

Earlier options (xx - xx) suggested an illusion of stone walls clamping the wooden trusses of the ceiling. These stone walls created a heavy atmosphere on the North side which afforded a less competitive atmosphere to be designed on the East wall.

Small moves were made on the East wall in order to make it more appearent when looking from West.

A later option (xx) was focusing on creating a large view towards the surrounding nature on the North side.
The priority of this option was to enhance the amount of daylight entering the nave. The idea was to highlight the natural light sources as the main character of the scene and thereby let the materials step aside in a more neutral matter.

Clerestory Windows

The clerestory windows came to existence through the development of the roof. The windows allow for more natural light to enter the space whilst creating a gesture as if the proximity to the heavenly is closer.

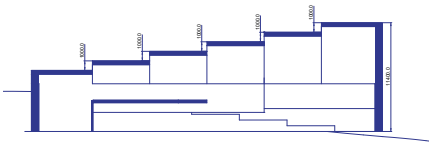
It was decided to further develop the design based off of option 1C.

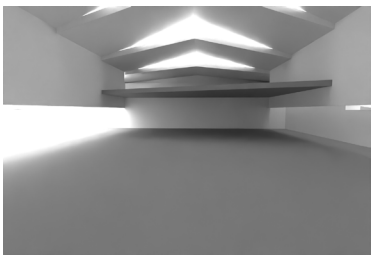
Sections

Climate Studio Render

OPTION 1A Fig.115a

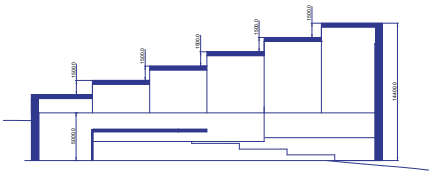
Equally sized stepping of a 1000 mm.

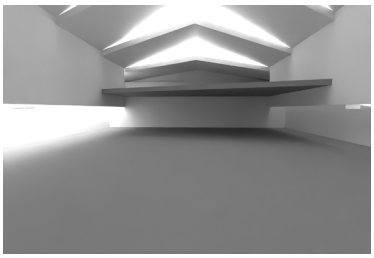




OPTION 1B Fig.115b

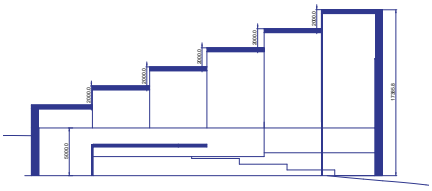
Equally sized stepping of a 1500 mm.

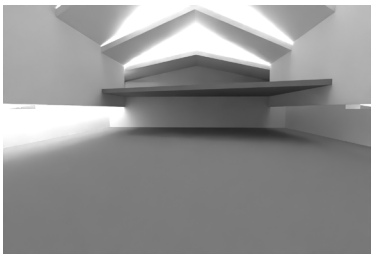




OPTION 1C Fig.115c

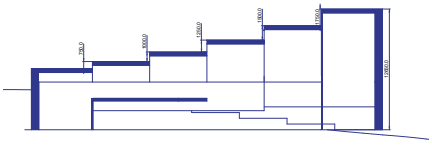
Equally sized stepping of a 2000 mm.

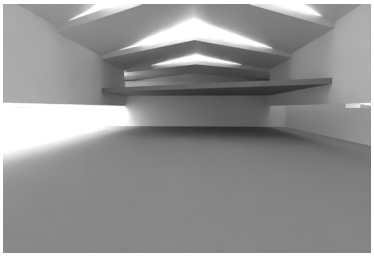




OPTION 2A Fig.115d

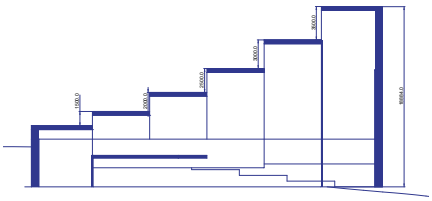
Increasing steps with 250mm, having a starting point at 500mm

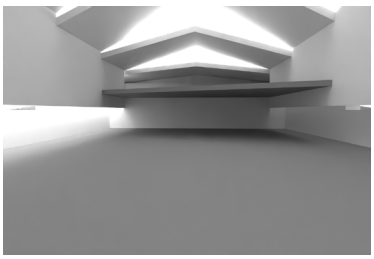


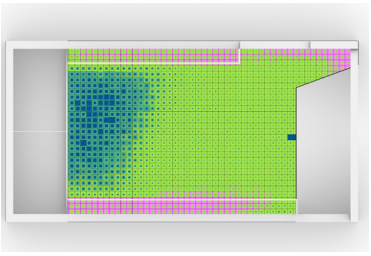
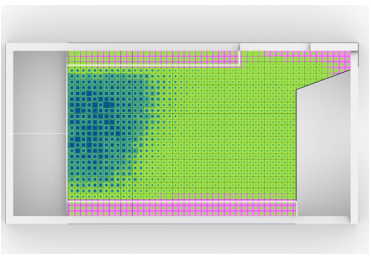
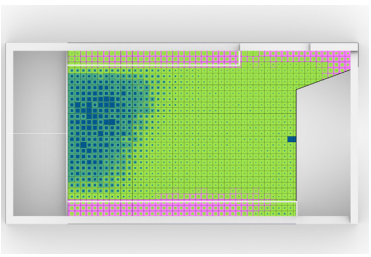
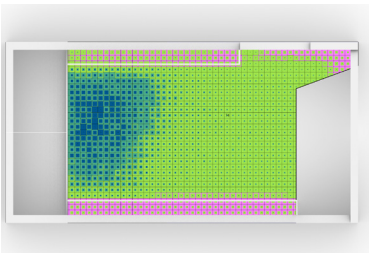
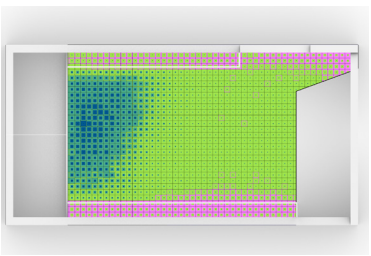


OPTION 2B Fig.115e

Increasing steps with 500mm, having a starting point at 500mm





Enscape Render	Daylight Availability	Impressions
	 avg UDIA: 46,4% sDA300/50%: 67,7%	Giving an impression of the windows as light cracks rather than light sources.
	 avg UDIA: 50,5% sDA300/50%: 71%	Larger opening, but could face problems depending on the profiles of the trusses.
	 avg UDIA: 53,2% sDA300/50%: 71,6%	Larger opening with enough space to provide vision towards the sky while accommodating for structural profiles.
	 avg UDIA: 48,6% sDA300/50%: 69,3%	The first steps of the church barely get an opening, which causes 50% of the roof stepping to be non of functional use.
	 avg UDIA: 53,5% sDA300/50%: 73,3%	Large openings, similar to 1C when looking from the inside. The inside has a rapid increase, which also increases the overall height of the church-

Acoustic Studies

The acoustics has been a topic of interest regarding the shape of the roof and ceiling.

Early design principles have been modelled for simulation in the program TREBLE in order to get a glimpse of the perceived acoustics from a specific sound source.

The five options are presented in a graph (fig 116) showcasing the individual performance regarding to T20. T20 is a linear estimation of the reverberation time based on the amount of seconds it takes to decrease 20dB (docs.treble.tech, 2024).

Achieving an appropriate reverberation time in the church is crucial, particularly due to the function of the choir. As they arise to higher notes, there's a sense of divine interpretation, enhanced by an increased reverberation time. Further more, it is important to think about both the sound coming from the choir in the back of the church, but also the clarity of the speech from the priest's point of view.
The results are highlighting the effect of using steps or breaks within the roof/ceiling surface to distribute and diffuse the sound waves which causes a lower reverberation time.

From the existing brief it is proclaimed, that the acoustics should accommodate the following:

- Church ceremonies, including sermons and hymn singing.
- Concerts with acoustic choir and organ.
- Gospel concerts with drums and electronic instruments.

The church should not have:

- Echo.
- Flutter echo.
- Sound focusing in certain places.
- Acoustic shadow.
- Sound mislocation.
- Too much background noise (e.g. from ventilation systems, outside traffic, rain on the roof, etc.).

Materials used for the simulations:

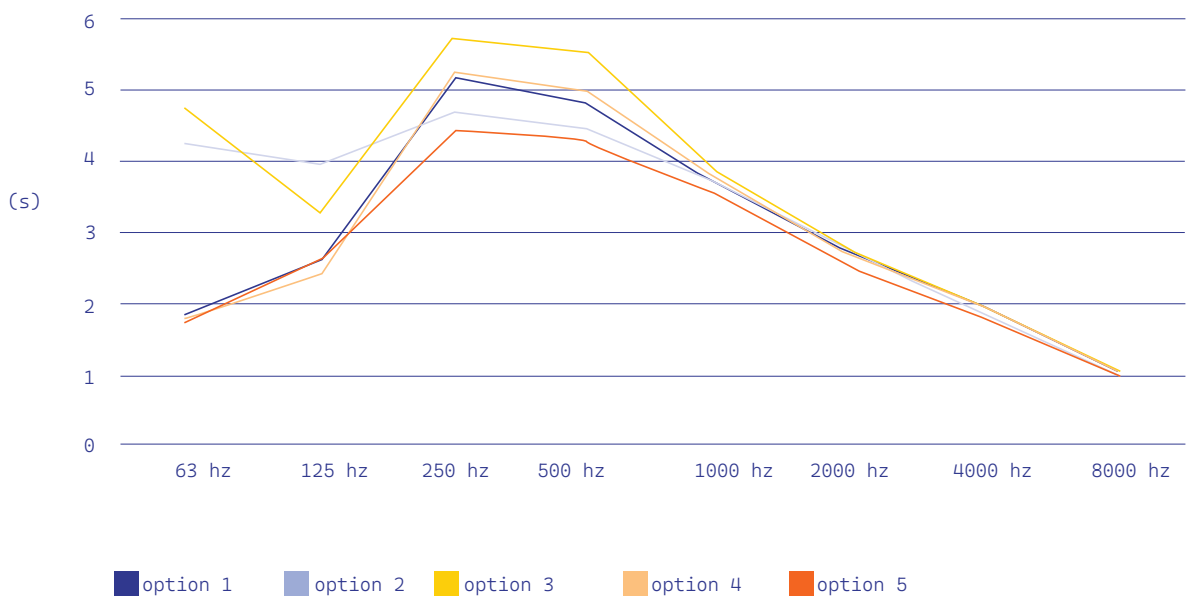
Walls: Gypsum, μ = 0,29–0,07

Floor: Concrete μ = 0,01–0,08

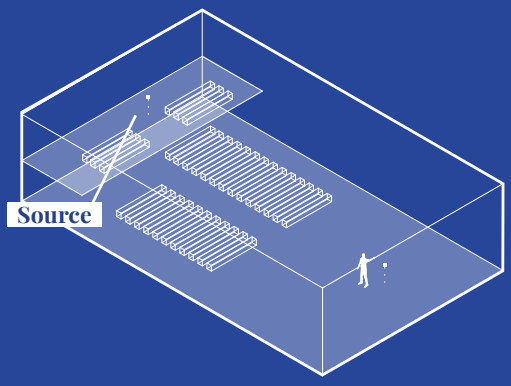
Ceiling: Wood μ = 0,42–0,06

From tables (Acoustic-supplies.com, 2024)

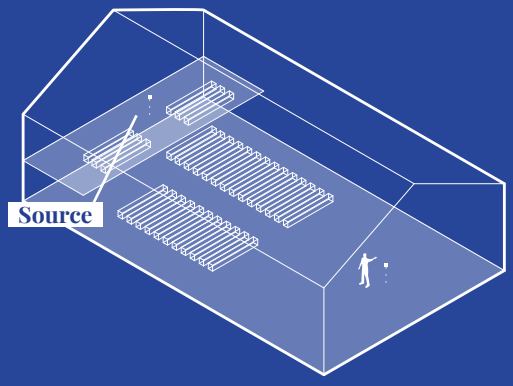
Fig.116 // REVERBERATION T20



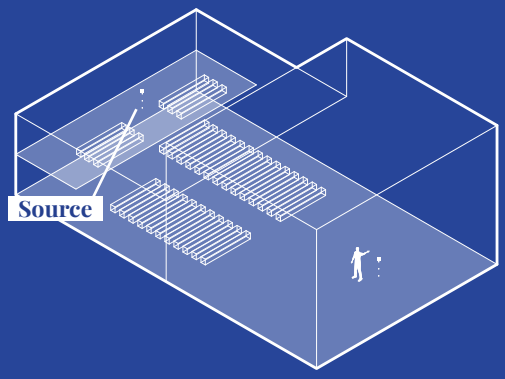
1 Flat Roof



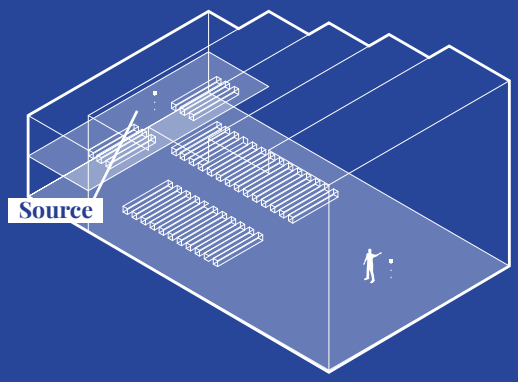
2 Pitched Roof



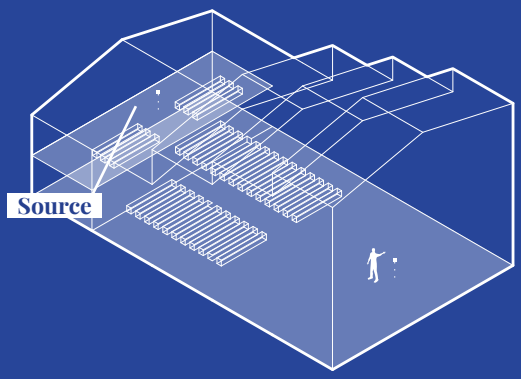
3 Raised Roof



4 Multi Stepped Roof



5 Pitched//Stepped Roof



Receivers; The assembly

Sound source; Choir/Priest

Fig.117 // Acoustic Studies

Building Envelope and Construction

Explorations has been made to check the feasability, aesthetics and possible thermal bridges that appear between the meeting of the structure and the building envelope.

The options made to inform the final proposal:

01: Structure integrated in the building envelope.

02: Building envelope attached to the strucure, and the structure attached to the lower wall, with insulation.

03: Building envelope attached to the structure, and the structure offset from the building envelope, creating a hallway.

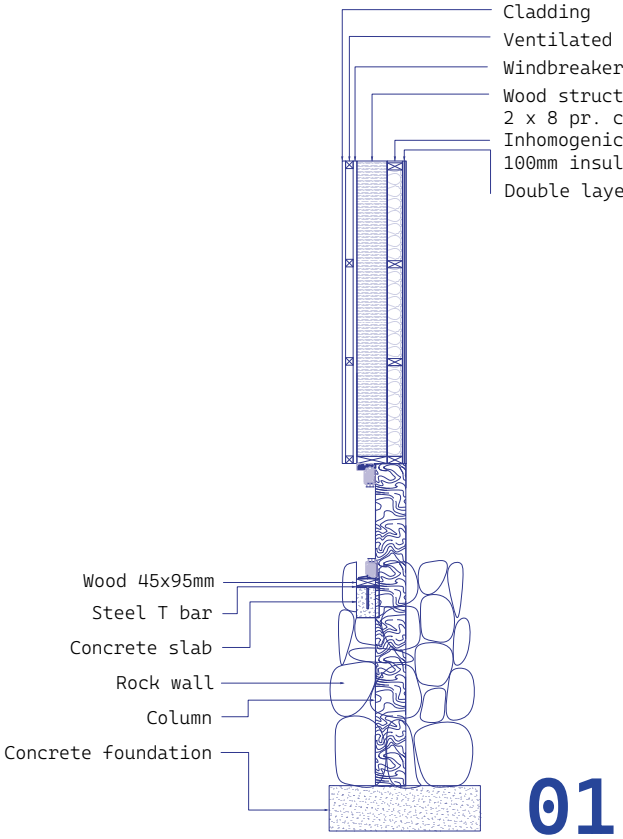
04: Building envelope attached to the structure, and the structure attached to the lower wall, without insulation.

05: Building envelope attached to the structure, and the structure attached to the lower wall, with concrete columns integrated
06: Building envelope attached to the structure, and the structure attached to the lower wall, with concrete columns integrated, where the lower wall only consists of stacked rocks.

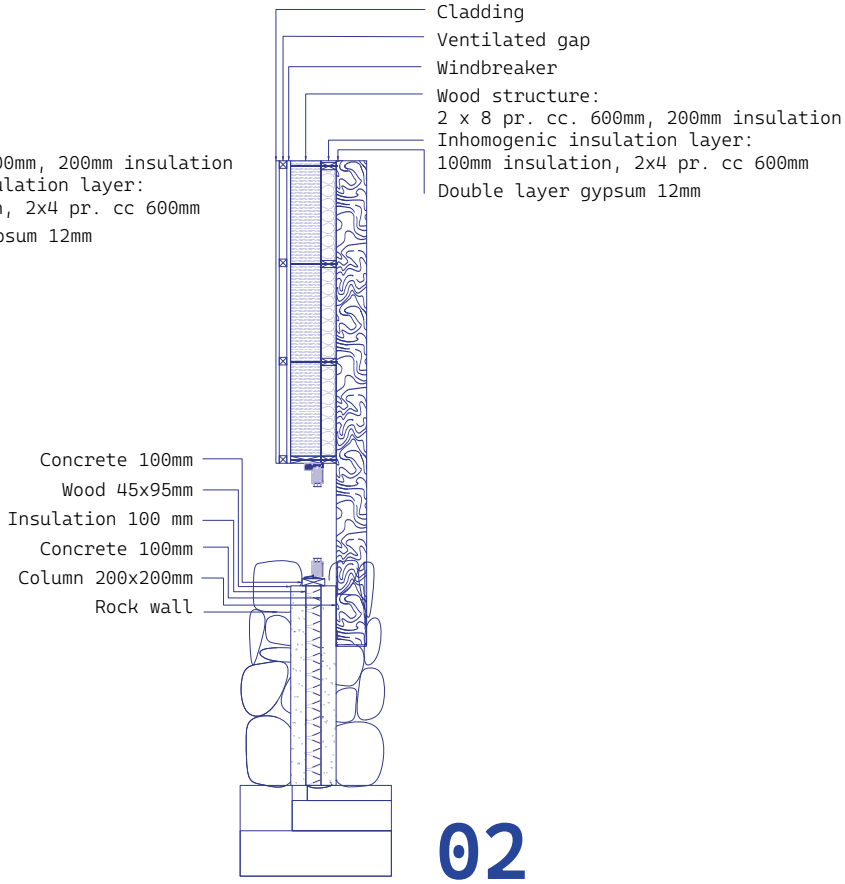
Option 03 is interesting because of the expressive possibilities of the external facade. The idea is to create an illusion of something floating, which requires the structure to be offset from the facade and therefore not an integrated part. Simultaneously it will create a reference to the colonnades of old basilicas.

The foundation is to be an interpretation of something strong and resilient that carries the church.

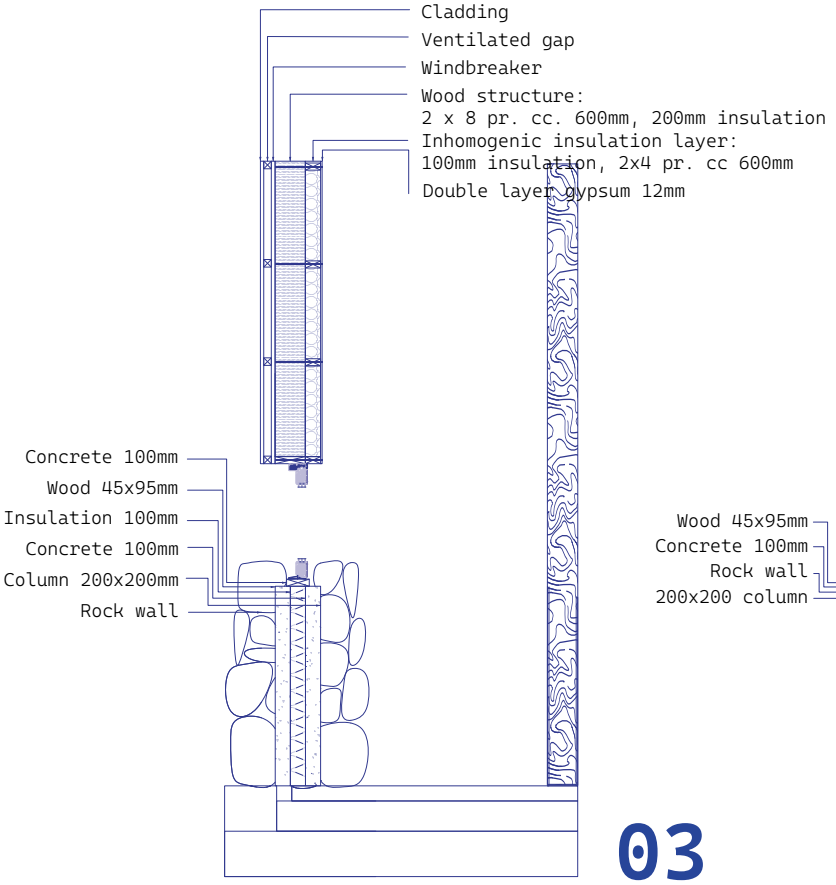
To prevent thermal bridges, the foundation must include a middle layer of insulation which causes the stone foundation to be a cladding rather than solid boulders.



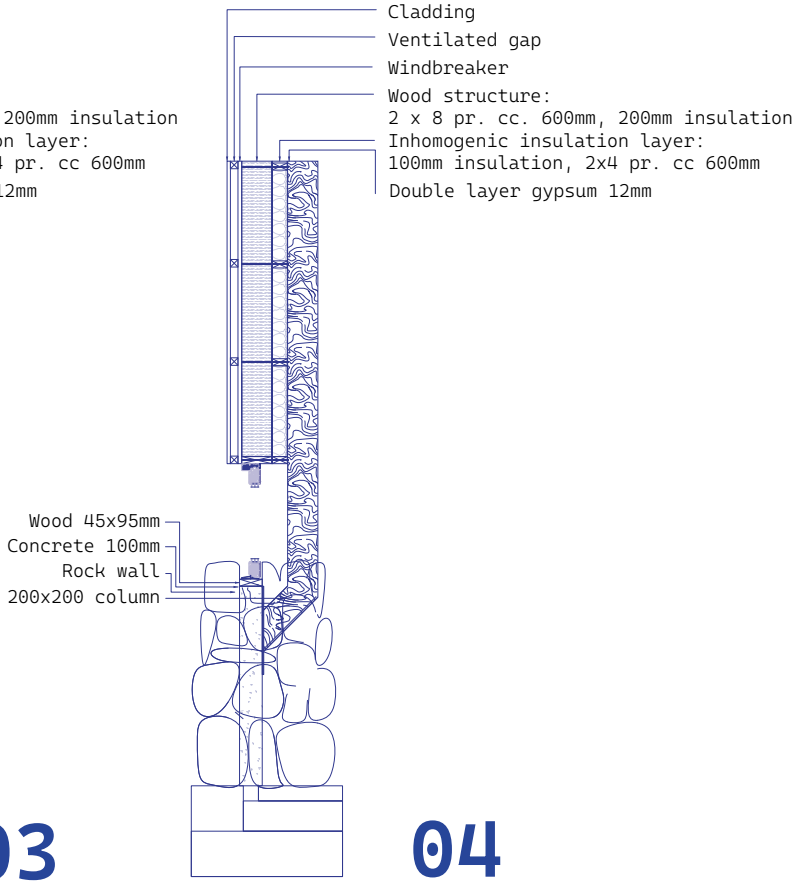
01



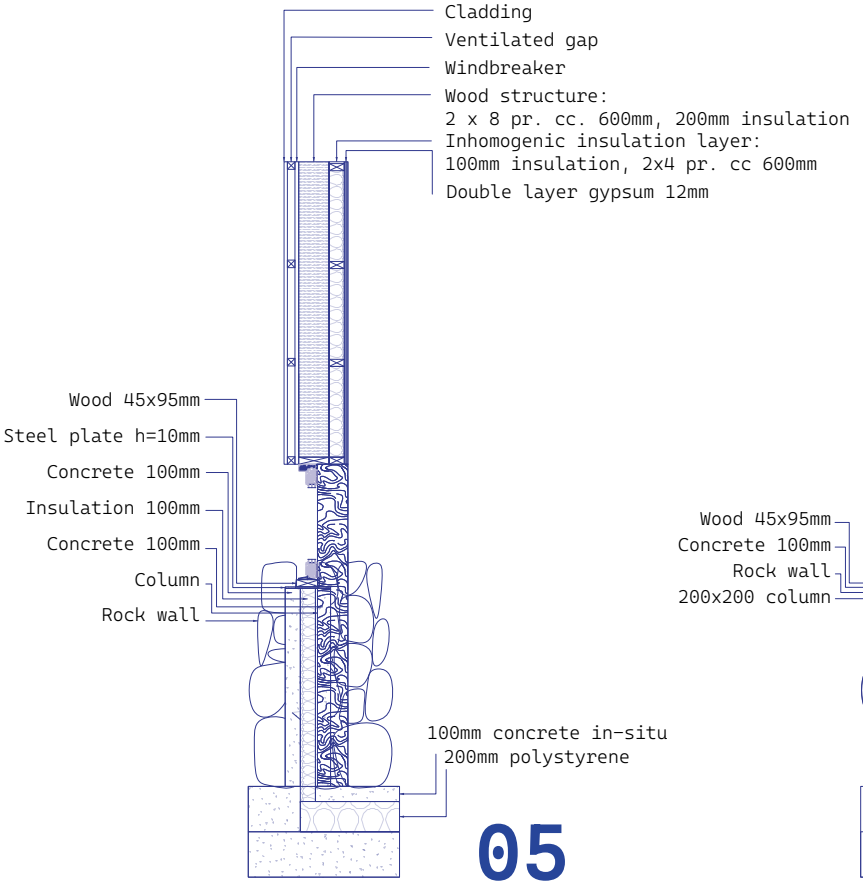
02



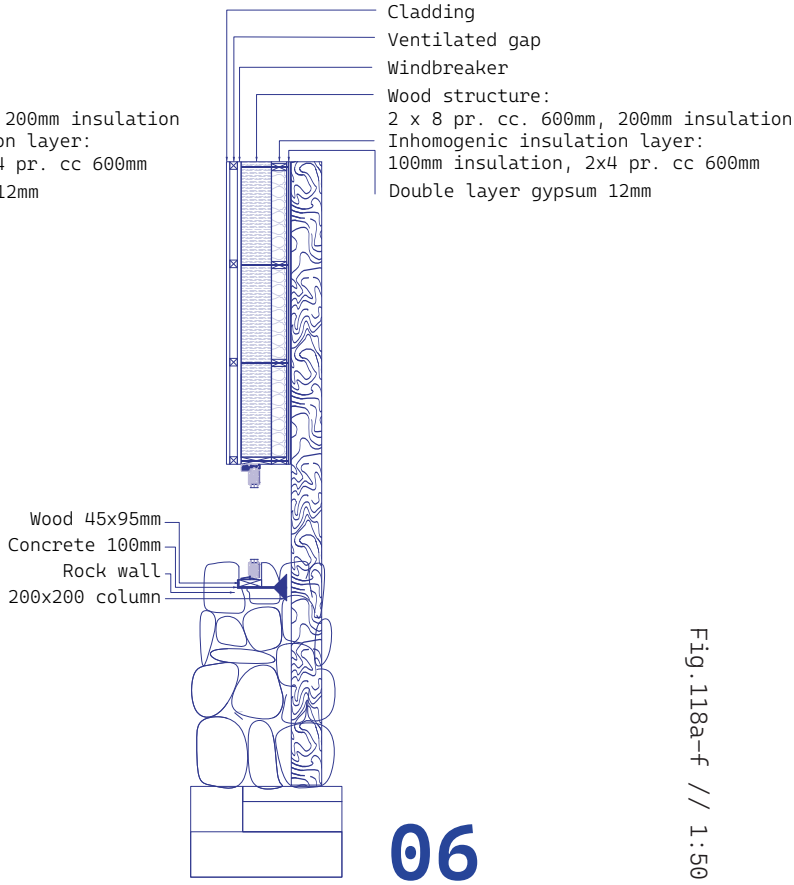
03



04



05



06

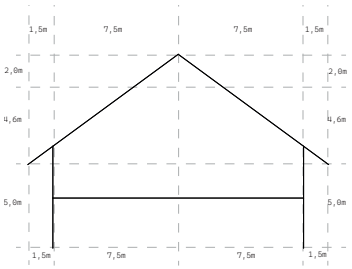
Fig.118a–f // 1:50

Defining the Structure

Following the definition of the volumetric expression and interior spaces of the church, an investigation was conducted to determine how the structural system should be integrated. Three examples were examined to explore potential structural developments. The first example features a simple frame structure; however, the utilization factor was found to be unacceptable, indicating the need for stronger materials. Additionally, the analysis revealed insufficient daylight, prompting further investigation into a truss system that could incorporate openings for natural light. Despite this, the truss system also had a utilization factor exceeding 1, indicating structural inadequacy. The horizontal beam, positioned only 5 meters above the floor, disrupted the intended spatial atmosphere by interrupting the desired ceiling height. In contrast, the scissor truss demonstrated a utilization factor below 1, meeting structural requirements while preserving the intended spatial experience, with a fixed distance between the top and bottom beams of the truss.

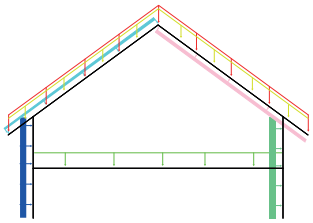
The calculations have been made via Karamba, an example can be found in appendix 03.

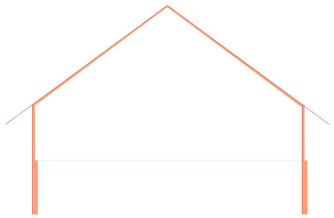
Frame



Legend, Loads

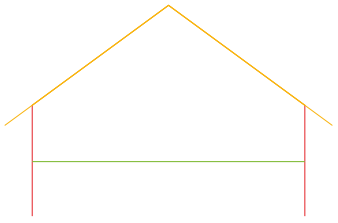
Loadtype	Force	Graphic
Snowload	0,52 kN/m2	
Windload facade	0,90/-0,54 kN/m2	
Windload roof	0,48/-0,12 kN/m2	
Selfload	0,50 kN/m2	
Liveload	2,00 kN/m2	





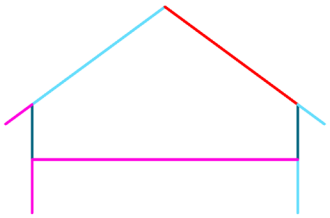
Legend, Elements

Type	Cross section	Grapics
GL32c	333x115mm	
GL36h	400x180mm	
GL36c	633x115mm	
C30	45x115mm	



Legend, Utilization

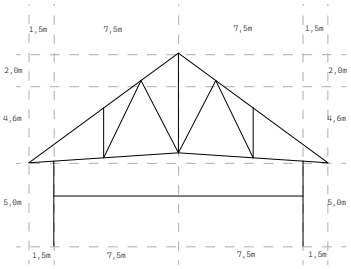
- 0 %
- 0<25 %
- 25<50 %
- 50<80 %
- 80<90 %
- 90<100 %
- 100<120 %
- >120 %

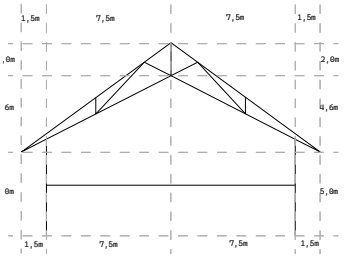


Truss

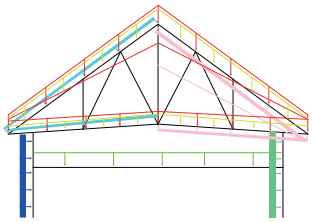
Scissor Truss

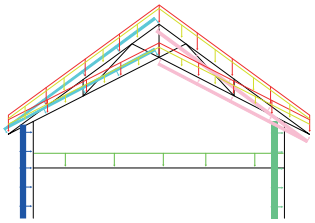
Geometry



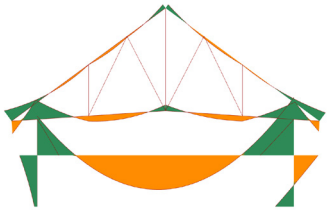


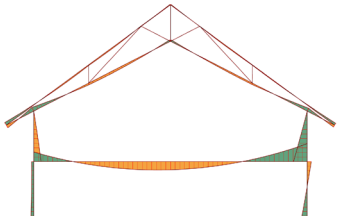
Loads



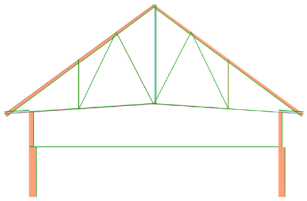


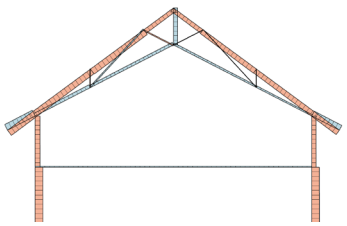
Moment



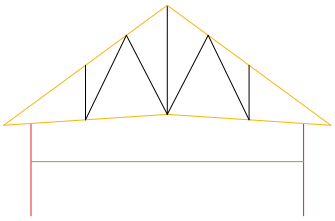


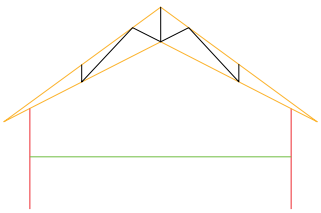
Shear



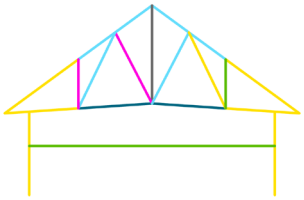


Elements





Utilization



Cladding: Patinated Cedar

Roof: Patinated Cedar

Cladding: Patinated Cedar

Roof: Turf

Cladding: Patinated Cedar

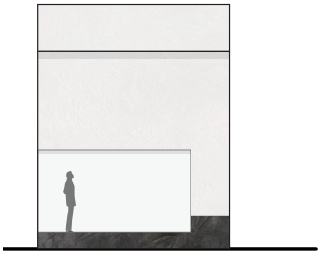
Roof: Copper

Cladding: Pine

Roof: Pine

Cladding: Dark Pine

Roof: Dark Pine



Cladding: White Chalk

Roof: White Chalk

Exterior Expression

The materiality of the facades has been studied to gain an understanding of what aesthetic properties they obtain.

Vertical wooden cladding is often seen on the Faroe Islands and works great in directing rainwater away from the construction. The wood can also obtain different visual characters depending on the treatment as well as the patina. When the materials in roof and wall are the same, it creates a uniform expression in the exterior.

Turf roof creates a nice gesture to the local building traditions, however it would require a very large structure to accommodate the added weight of the turf which would influence the amount of materials.

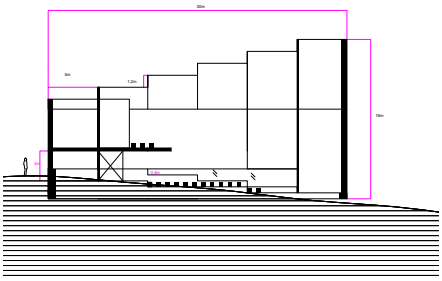
None of the exterior materials investigated are local to the Faroe Islands, and would have to be imported from elsewhere. The various materials can be important from other Nordic countries.

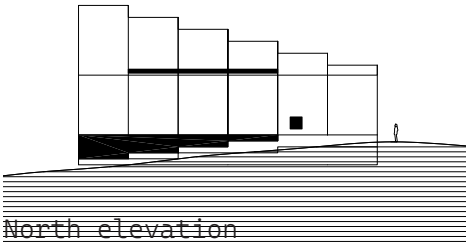
Subsequently it was decided to carry on with wooden cladding on the exterior walls as well as the roof to make especially the church building appear as one cohesive unit.

Cladding: Concrete

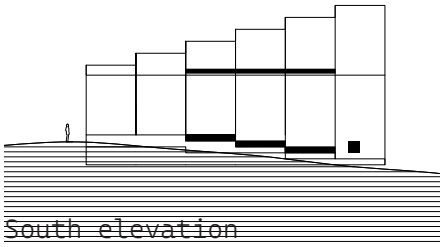
Roof: Concrete

Fig. 120a-g

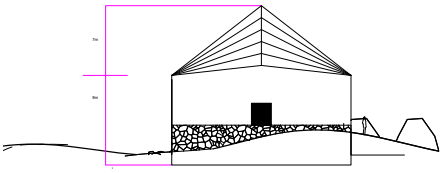




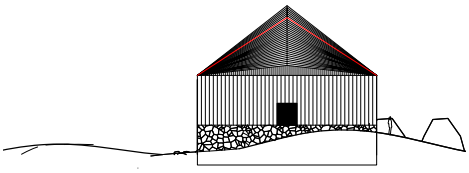
North elevation



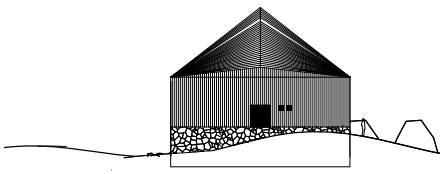
South elevation



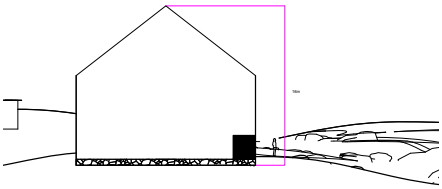
bare



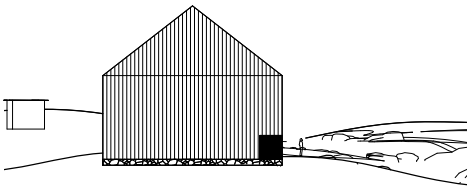
70mmm width



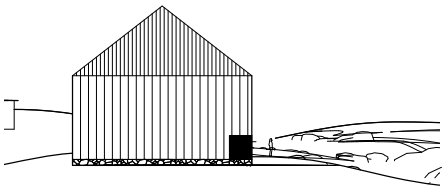
140mmm width



bare



70mmm width



140mmm width

Fig.121a-i

The louvers:

The wood louvers is a modern reference to the vernacular private residences that were cladded with a wooden louver finish that rested on top of a rock foundation.

Various dimensions of the slats was tested to see how they would differentiate the expression in rhythm of the facade.

The rythm of the louvers could amplify the stepping of the roof by creating variation within the alignment.

On the contrary, a linear alignment of louvers could express a more homogeneous meeting between the roof and the facade walls.

Daylight and Interior Materiality

The purpose of this study is to assess the daylight performance of a light washing wall with varying materials and wall sizes. The three evaluated materials have all been actively discussed during the design process.

The study shows a high risk of glare and overlit areas when using only bright/white materials. It also shows a decrease of luminance when increasing the size of diving wall.

If using bright materials, one must consider the reflectancy of the material due to glare.

Sky: Perez

Time of render:
22/6 11.30am

Height of surface: 1000mm

Size of Volume

WxDxH: 9mx9mx6m

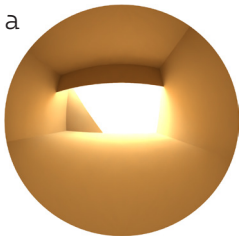
Size of Window

WxD: 9mx2m
Location:
In roof

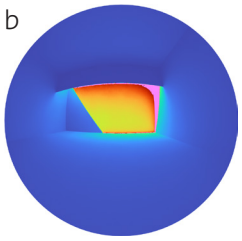
Distance from light source: 5m

Wood Fig.122a-f

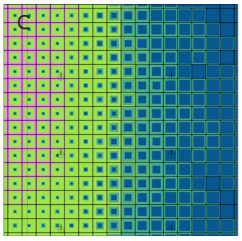
a



b



c



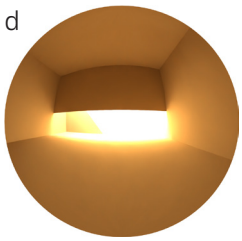
UDIA: 29,7%
sDA: 43%
ASE: 0
avg LUX: 679

Glare: 1,7%,
Imperceptible.

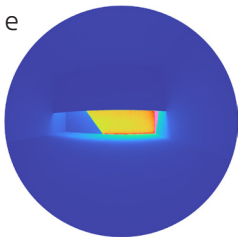
Lightwash test

Height: 1000mm
Material: wood

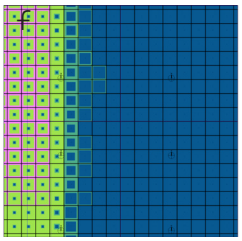
d



e



f



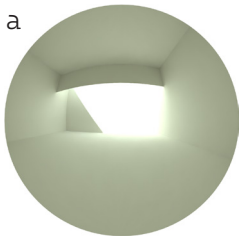
UDIA: 15%
sDA: 25%
ASE: 0
avg LUX: 450
Glare: 1,4%,
Imperceptible.

Lightwash test

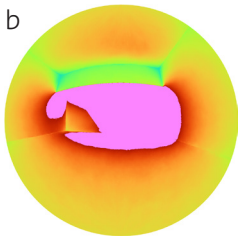
Height: 2000mm
Material: wood

Plaster, White Fig.123a-f

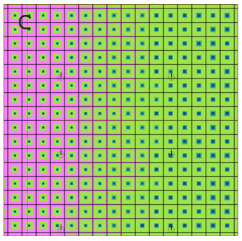
a



b



c



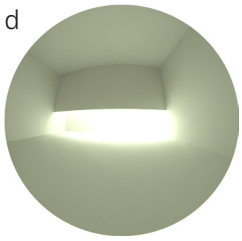
UDIA: 52,7%
sDA: 100%
ASE: 0
avg LUX: 1836

Glare: 50,8%,
Intolerable.

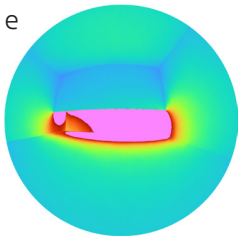
Lightwash test

Height: 1000mm
Material: White plaster

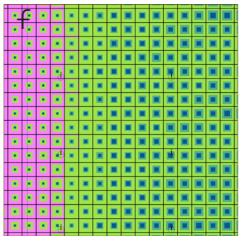
d



e



f



UDIA: 44,1%
sDA: 52%
ASE: 0
avg LUX: 1243

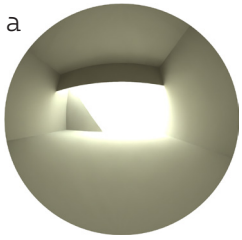
Glare: 27,1%,
Disturbing.

Lightwash test

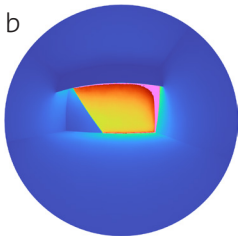
Height: 2000mm
Material: White plaster

Concrete, Grey Fig.124a-f

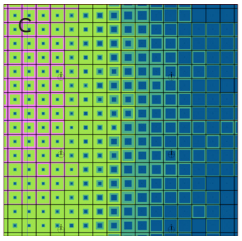
a



b



c



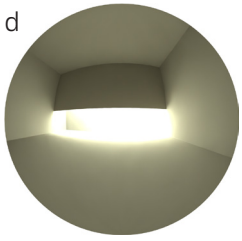
UDIA: 29,5%
sDA: 42,3%
ASE: 0
avg LUX: 672

Glare: 1,9%,
Imperceptible.

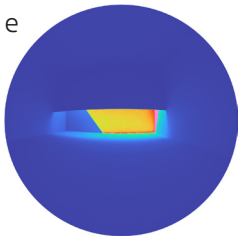
Lightwash test

Height: 1000mm
Material: Grey Concrete.

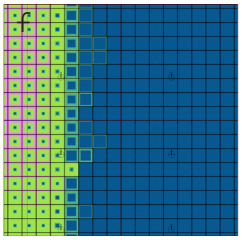
d



e



f



UDIA: 15,1%
sDA: 25,1%
ASE: 0
avg LUX: 461

Glare: 1,5%,
Imperceptible.

Lightwash test

Height: 2000mm
Material: Grey Concrete.

Presen-tation

Fig.125 // Faroese Waterfall

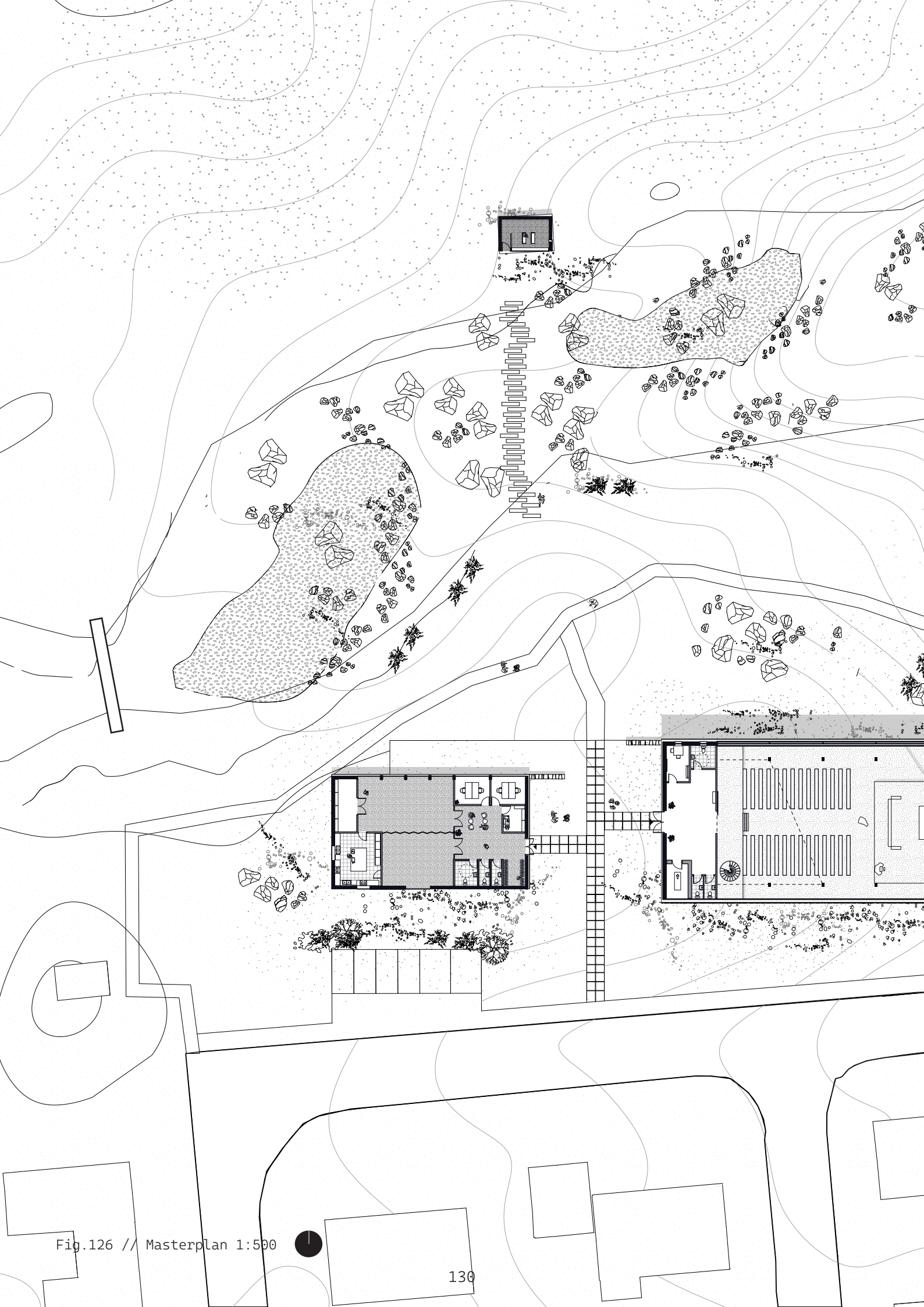


Fig.126 // Masterplan 1:500

Masterplan

To access the site, you enter through the main entrance placed towards the southern perimeter of the project site. The main entrance evolves into a trident splitting its directions towards the different buildings whilst still being connected to one another. Parking on site is limited to the bare minimum because of the many parking opportunities in the near proximity and to minimize nonpermeable surfaces on the actual site to prevent unnecessary harm to the nature. The existing paths around the site allow pedestrians to gain easy access when attending services and activities.

The Concept

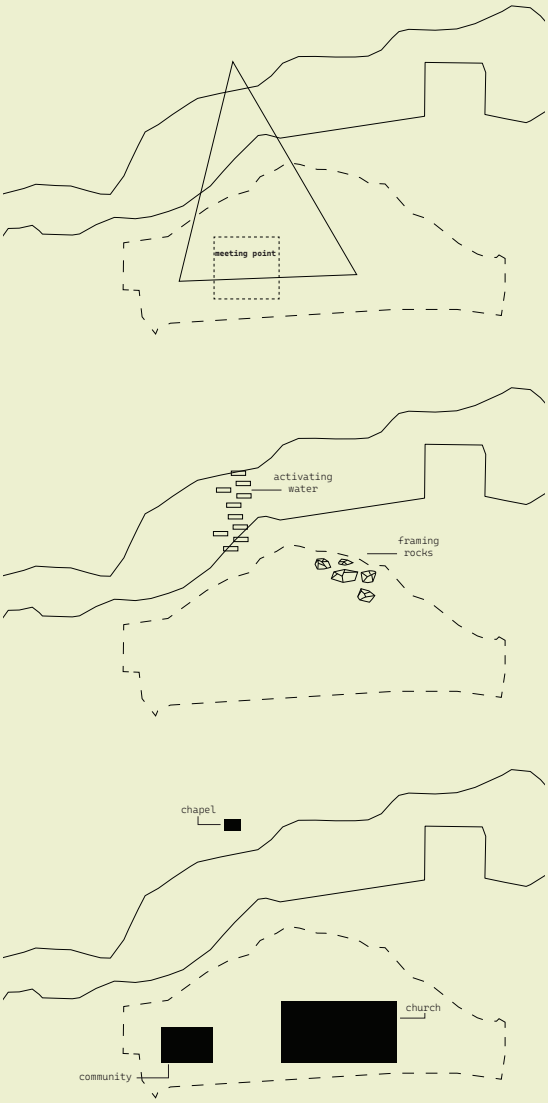


Fig.127 // Concept

The design for the Church of Argir is a confluence of contrasts. Sited on the cusp of city, mountains, and the sea, between land and sky, past and future, it will play a crucial role in unifying the residents of Argir with their beliefs as well as one another, allowing for reconciliation, tranquility, exchange of knowledge and community. The buildings are a physical manifestation of the Faroese values and the epidemy of sacred places. Through awareness of materiality, construction and the local residents, the church, the community center and the chapel all seek to unify religion and community by providing the framework for such things. The programming of the three structures is works as a reference to The Holy Trinity known from Christianity.

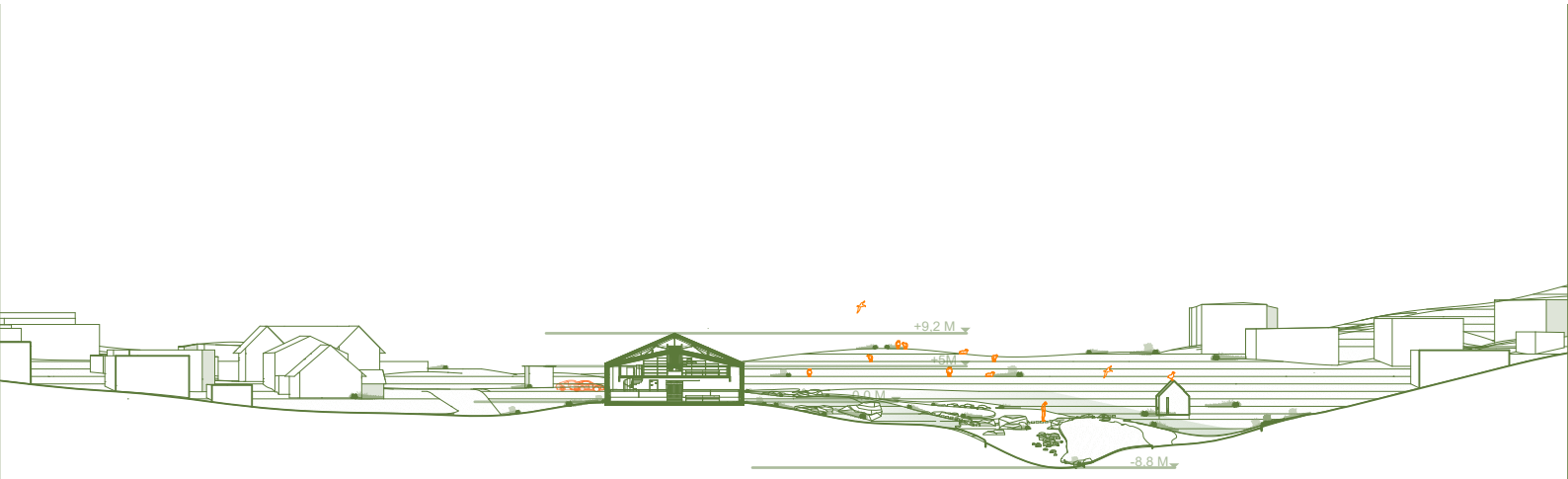


Fig.128 // Cross Section through Site 1:1000

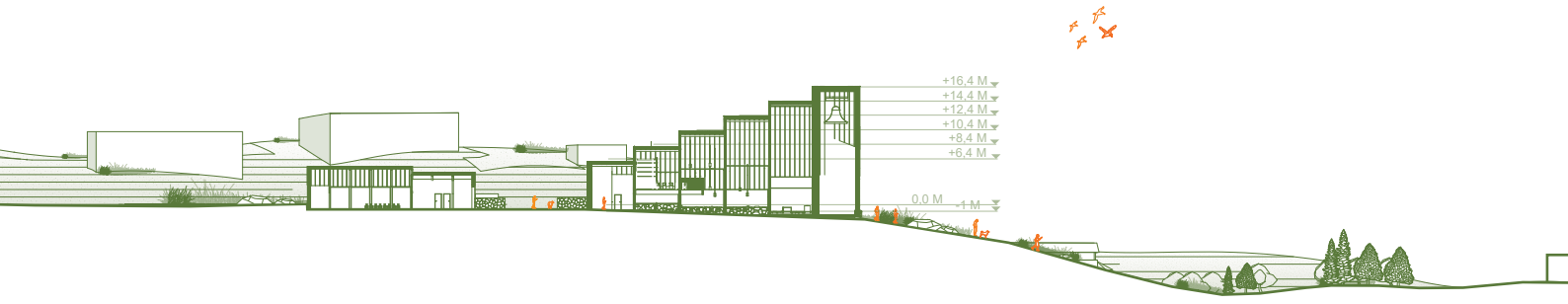
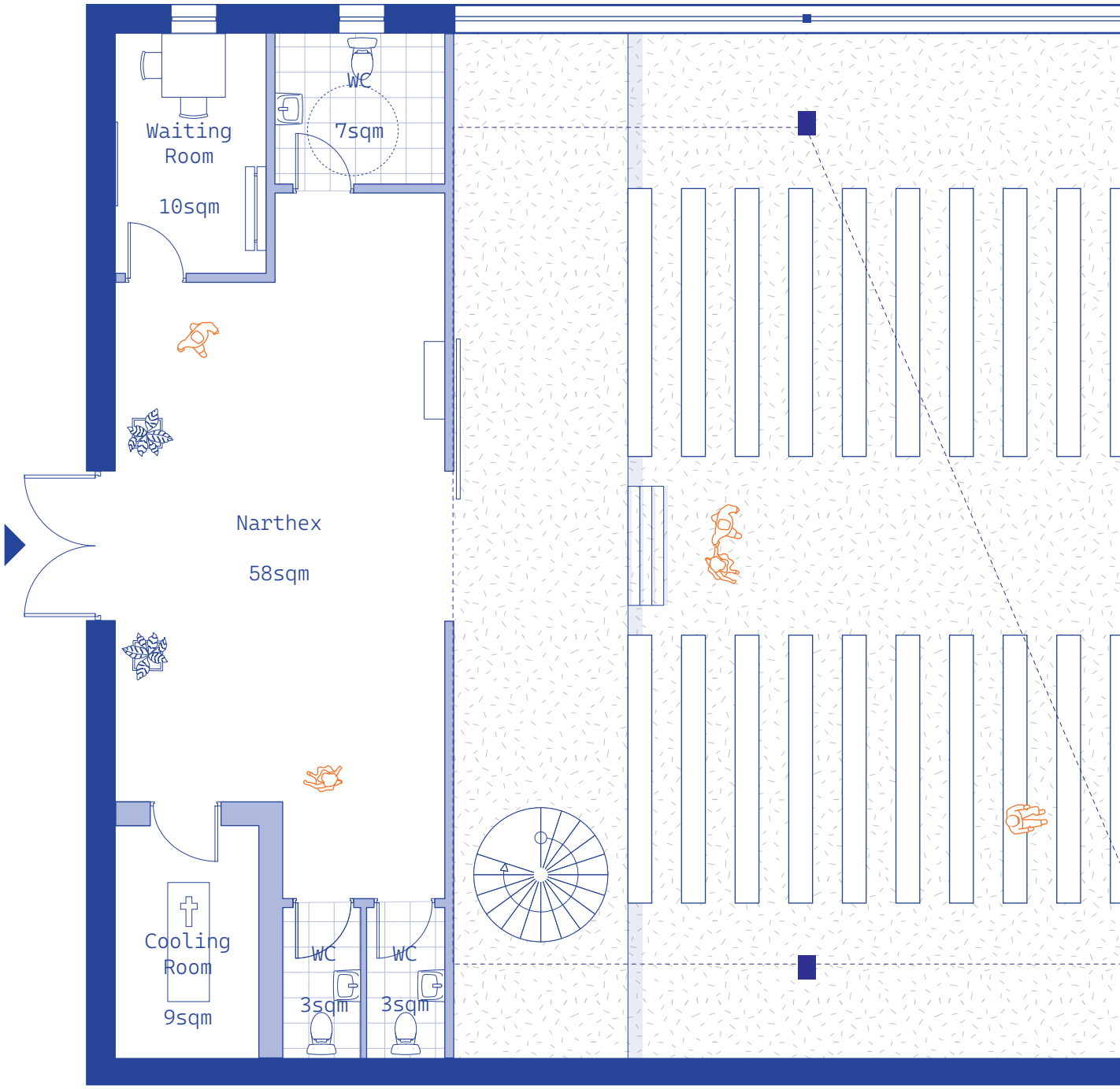


Fig.129 // Longitudinal Section through Site

The Church

Fig.130 // Looking from the Chapel towards the Church and Community House



Upon entering the nave from the narthex, you experience the contrast in spaciousness by moving from a smaller to a grand space. On both the northern and southern walls, wall elements serve as light-washing walls to ensure proper lighting conditions without causing glare when the church is in use. Furthermore, they imply the corridors creating the gesture of colonnades from old basilica.

The inventory is kept in organic and sleek materials to emphasize the materiality of the place and create the appropriate sacral atmosphere.

The exterior stepping in the roof-structure is visible from the inside, bringing in the tectonic gesture, whilst lifting the eastern wall and the integrated altar up and into the sky signifying the gloriousness of God and his divinity.

The overall distribution of the space is shaped from working off of a concept with an axis running through a rectangular building block, derived from the golden ratio.

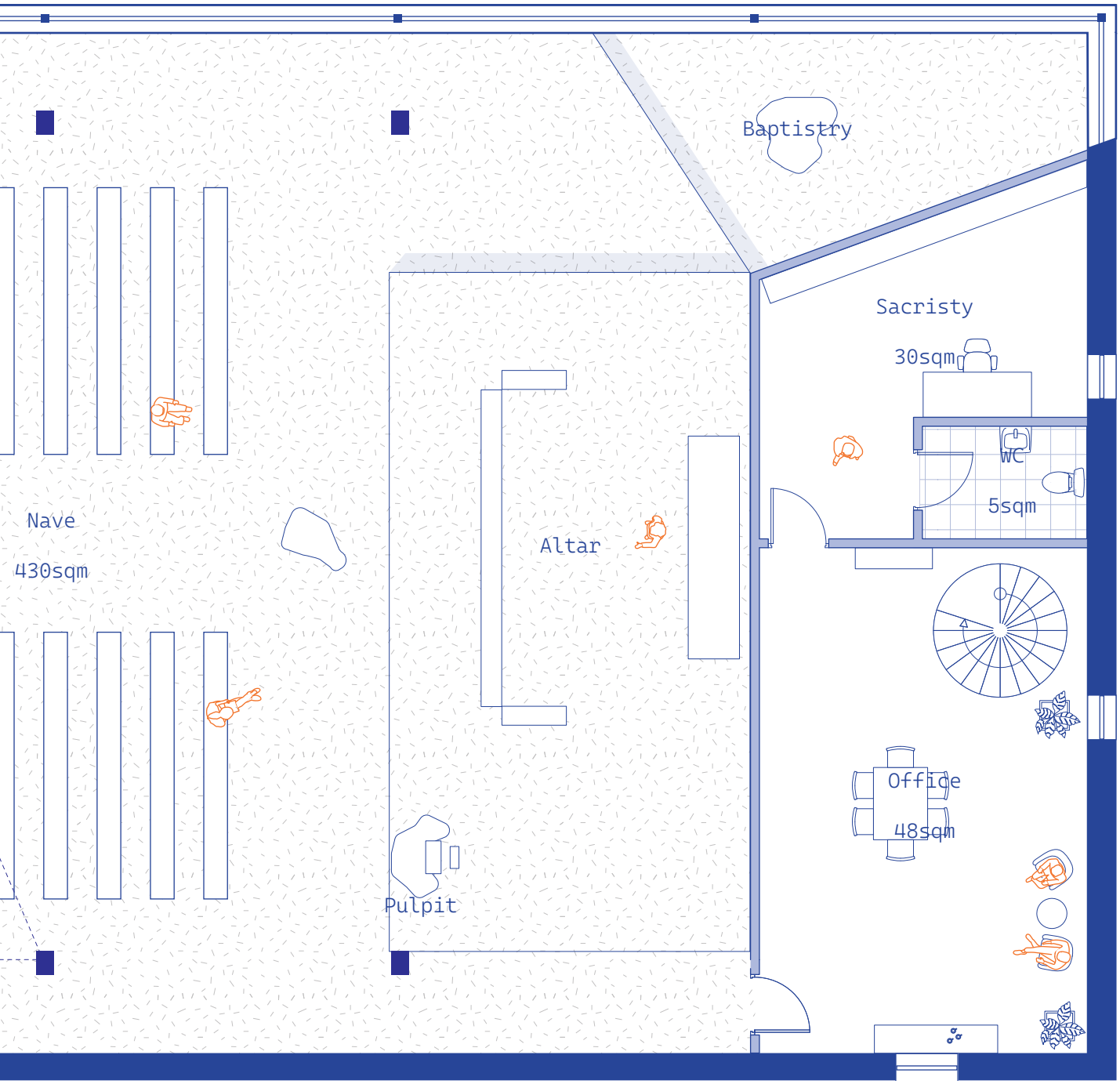


Fig.131 // Plan // Ground Floor 1:100

List of Functions:

Narthex

Restrooms

Waiting/Preparation Room

Coffin/Cooling Room

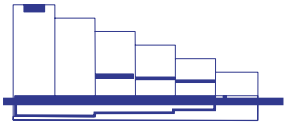
Balcony (Choir)

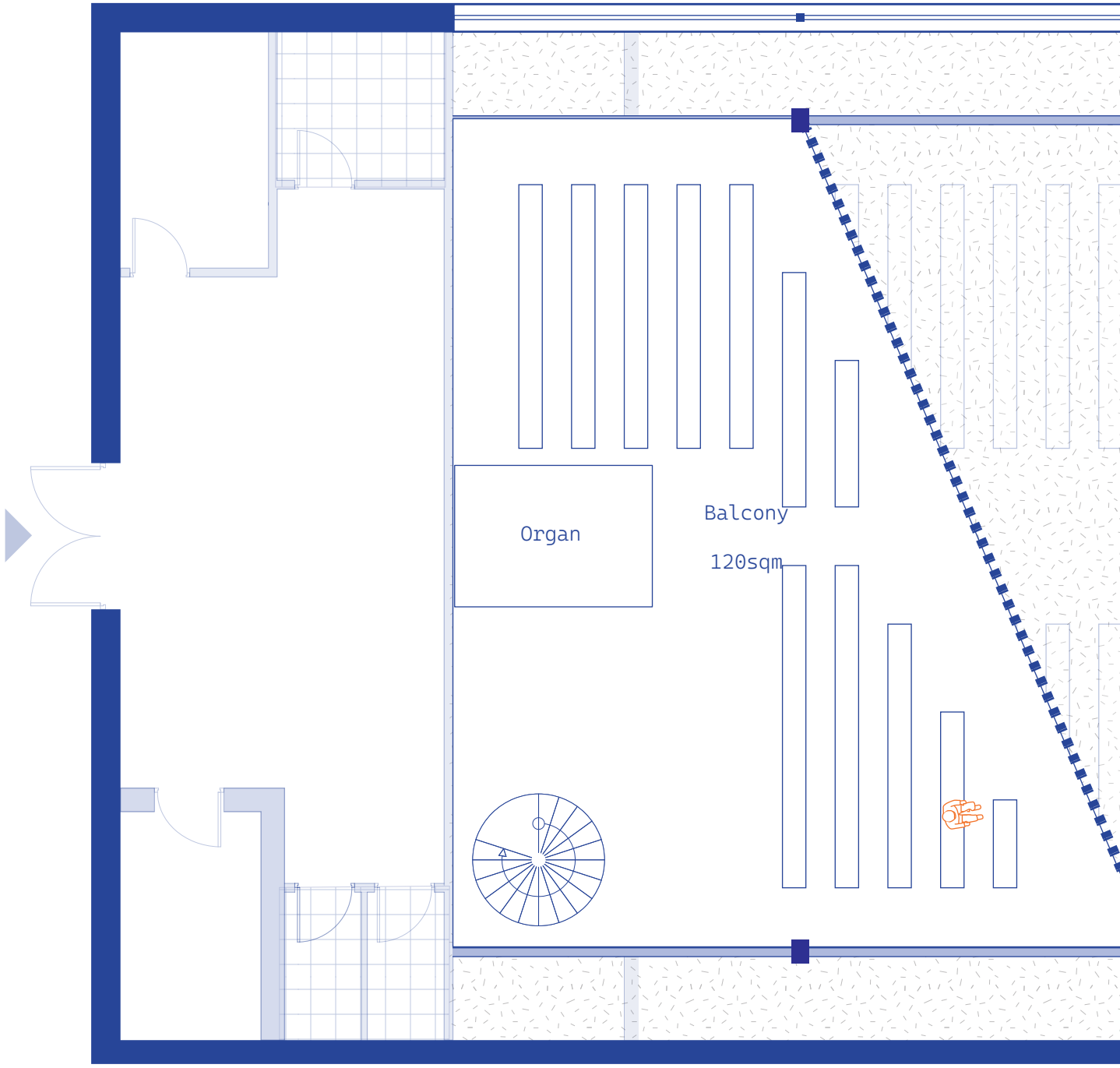
Nave

Sacristy

Office Space

Storage





The balcony serves as the main space for the organ and the choir. By raising the two, it is possible to create the idea of the music and the hymns as if they were coming from a divine space above.

Additionally the balcony expands the seating capacity and allows for a heigthened sight of the altar.

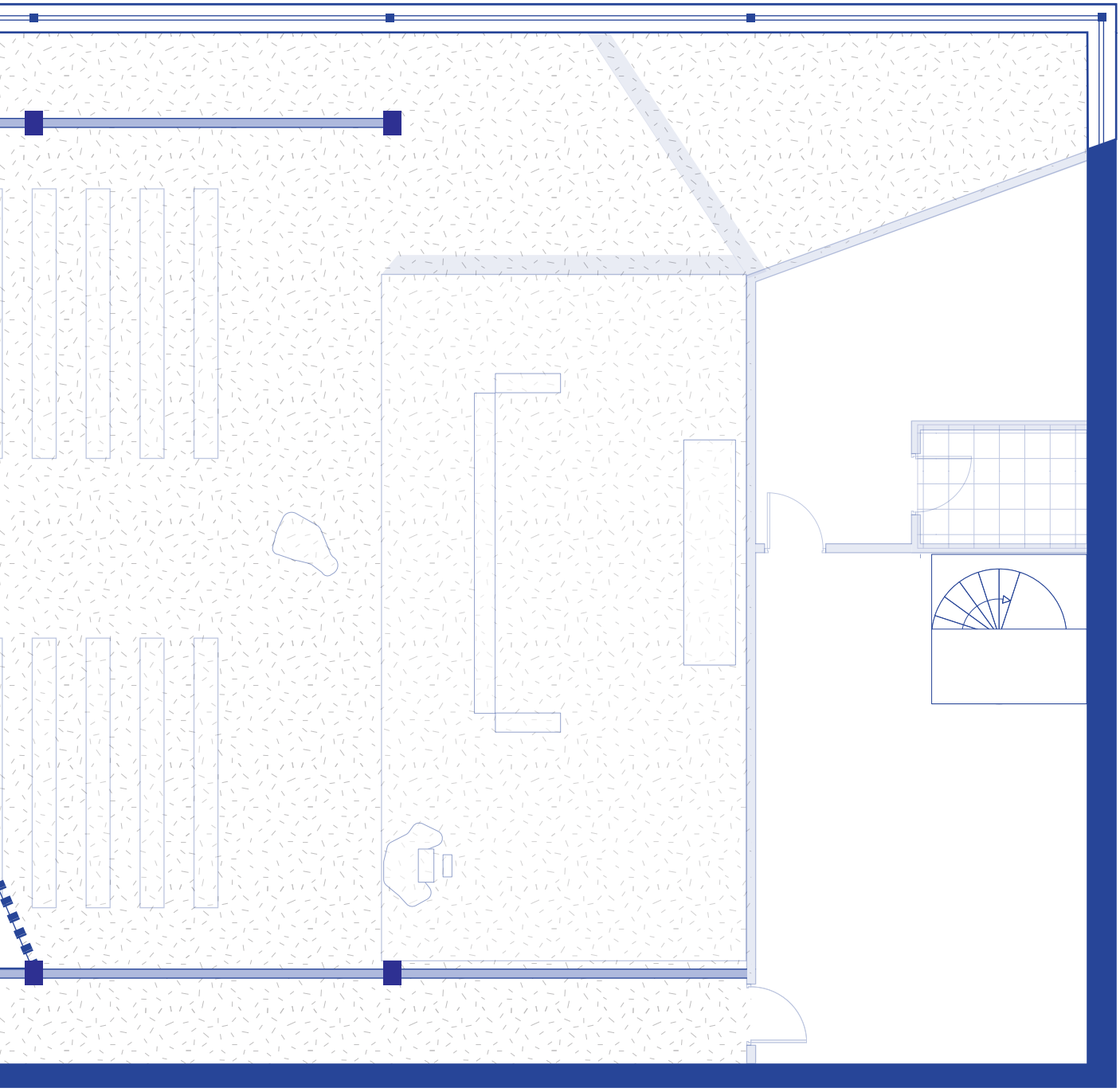


Fig.132 // Plan // Balcony 1:100

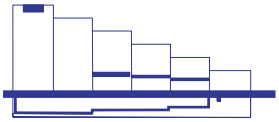
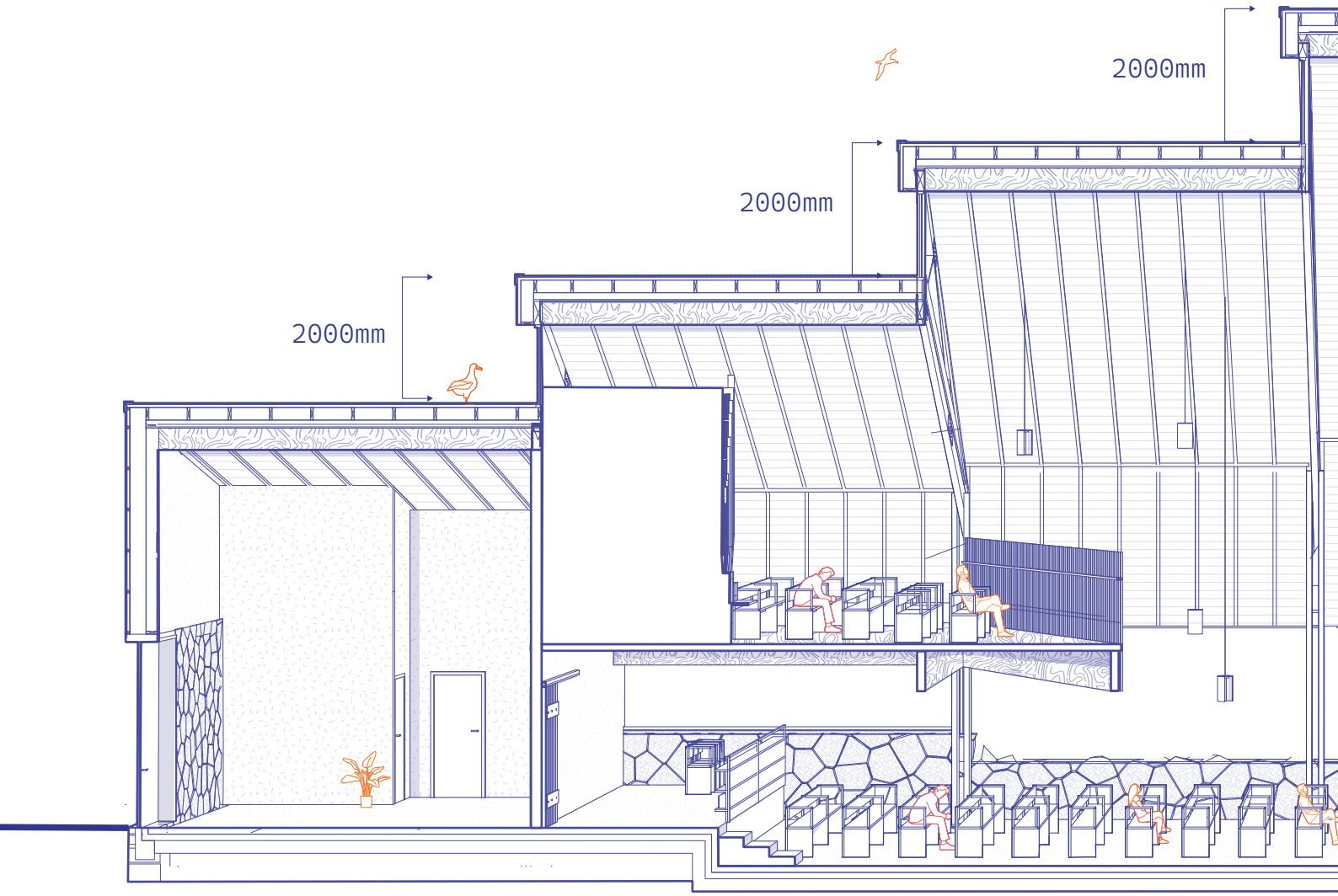


Fig.133 // Looking towards the Congregation


2000mm
2000mm
2000mm

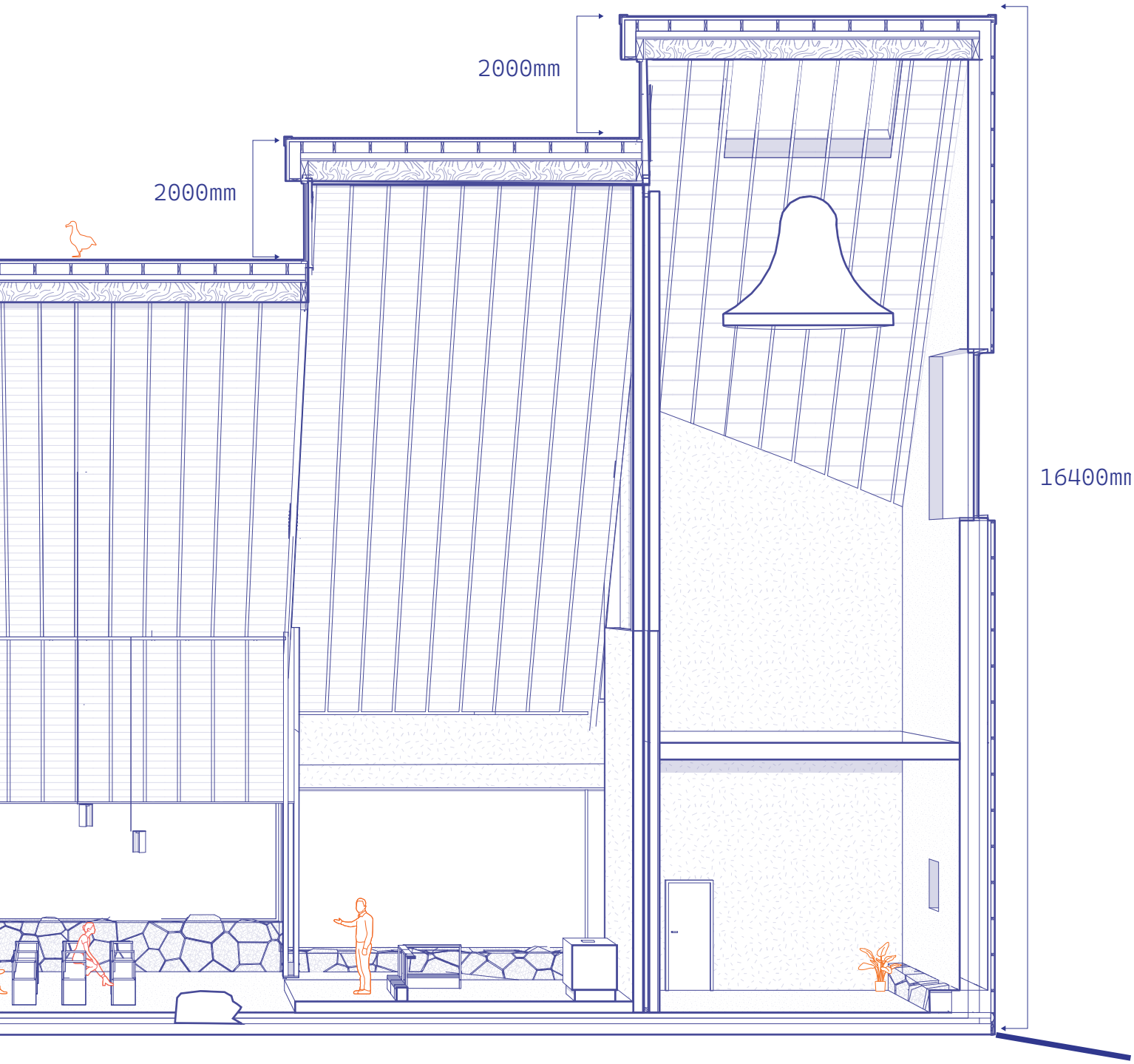


Fig.134 // Longitudinal section through the church 1:100

A slice through the church allows a deeper understanding of the depth and the material layers in between. The skeleton of the loadbearing elements is emphasized through a repition of columns and material contrasts.

The wood elements of the light washing walls and ceiling are a modern representation of the old norse constructing traditions, embracing the meeting between the vertical wooden trusses and the horizontal ceiling rafters.

The structural wood is of darker color than the rafters to enhance the warmness of the ceiling while maintaining a differentiation between the load bearing and the finishing elements.

The increased roof steppings are creating an implified spire towards the eastern sky.

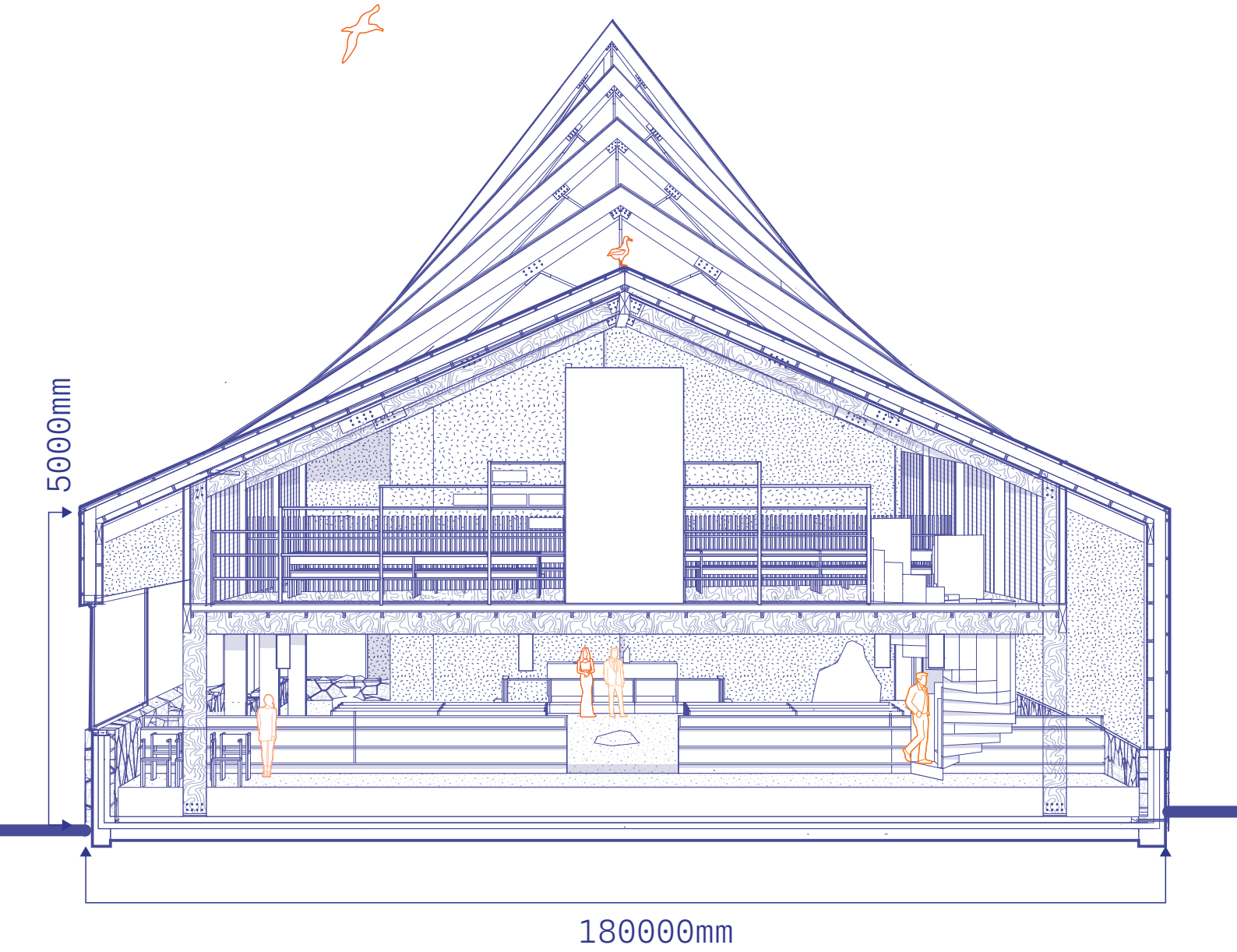


Fig.135 // Cross section through the church 1:100

Fig.136 // The baptistry

A unique moment is captured in the baptistry located in the North-East corner of the church. The northern window is continuing its stripe of glazing on the East wall which captures a panoramic view of the near harbour while allowing light to enter.

The corner is an architectural differentiation from the symmetrical planning because of its pointed alignment to the water.

The baptistry bowl is supported by a locally collected basalt boulder to symbolize the surrounding nature within the built.

Fig.137 // Looking towards the altar.

The Façades // Elevations

Fig.138 // Elevation North 1:200

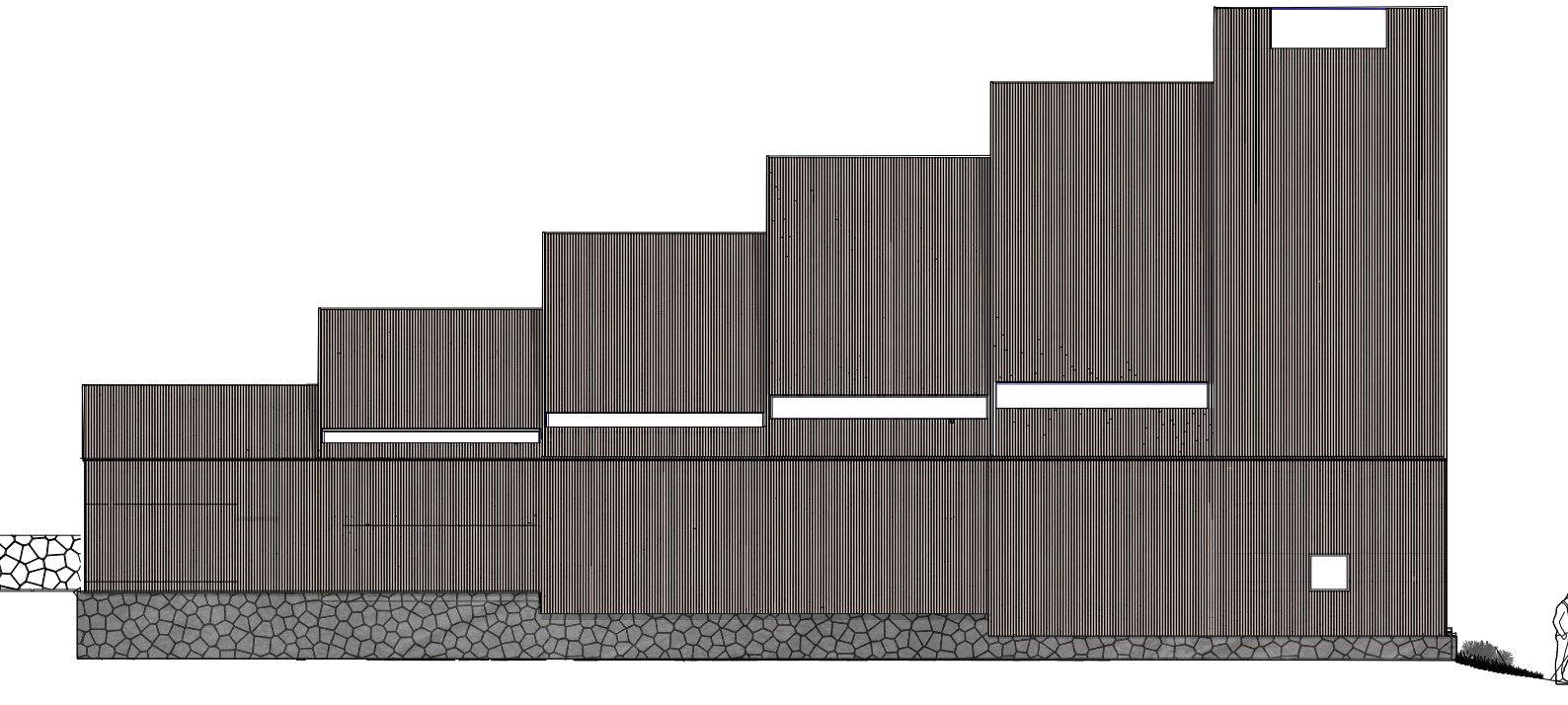


Fig.139 // Elevation South 1:200

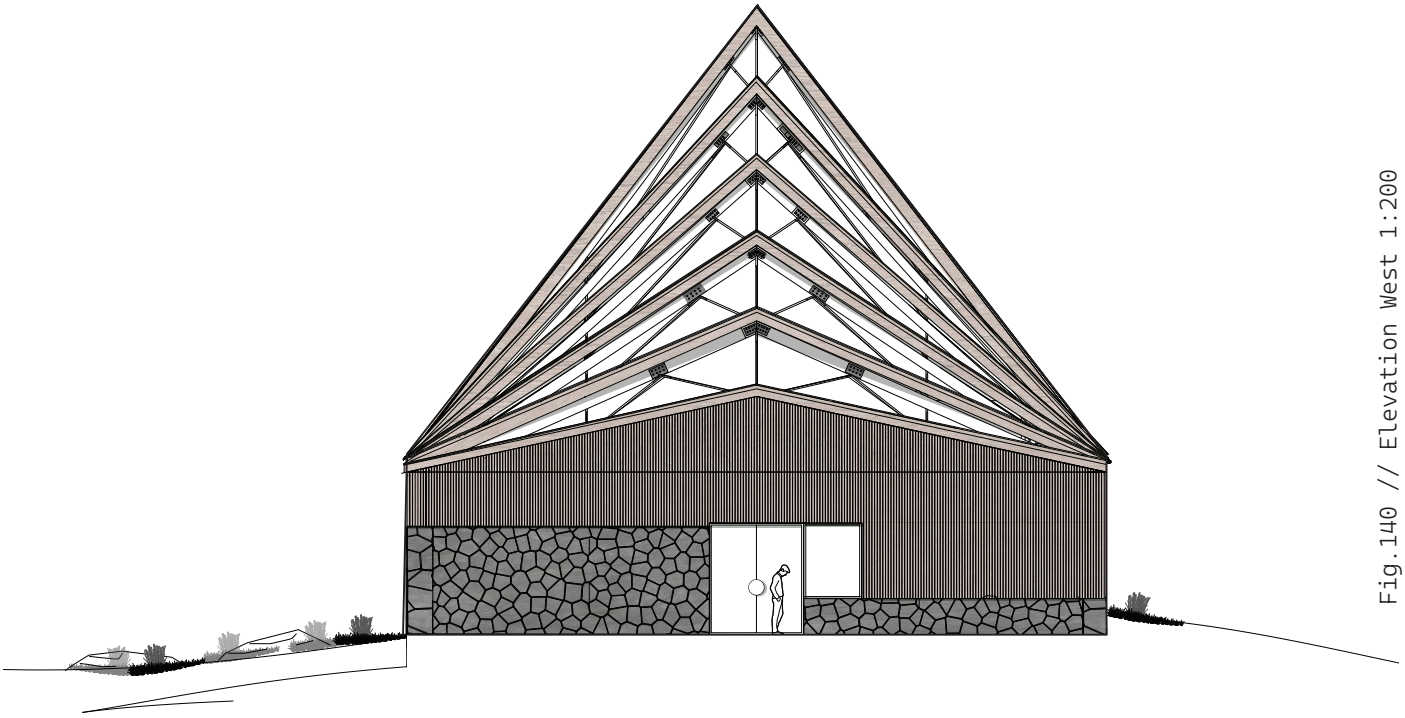


Fig.140 // Elevation West 1:200

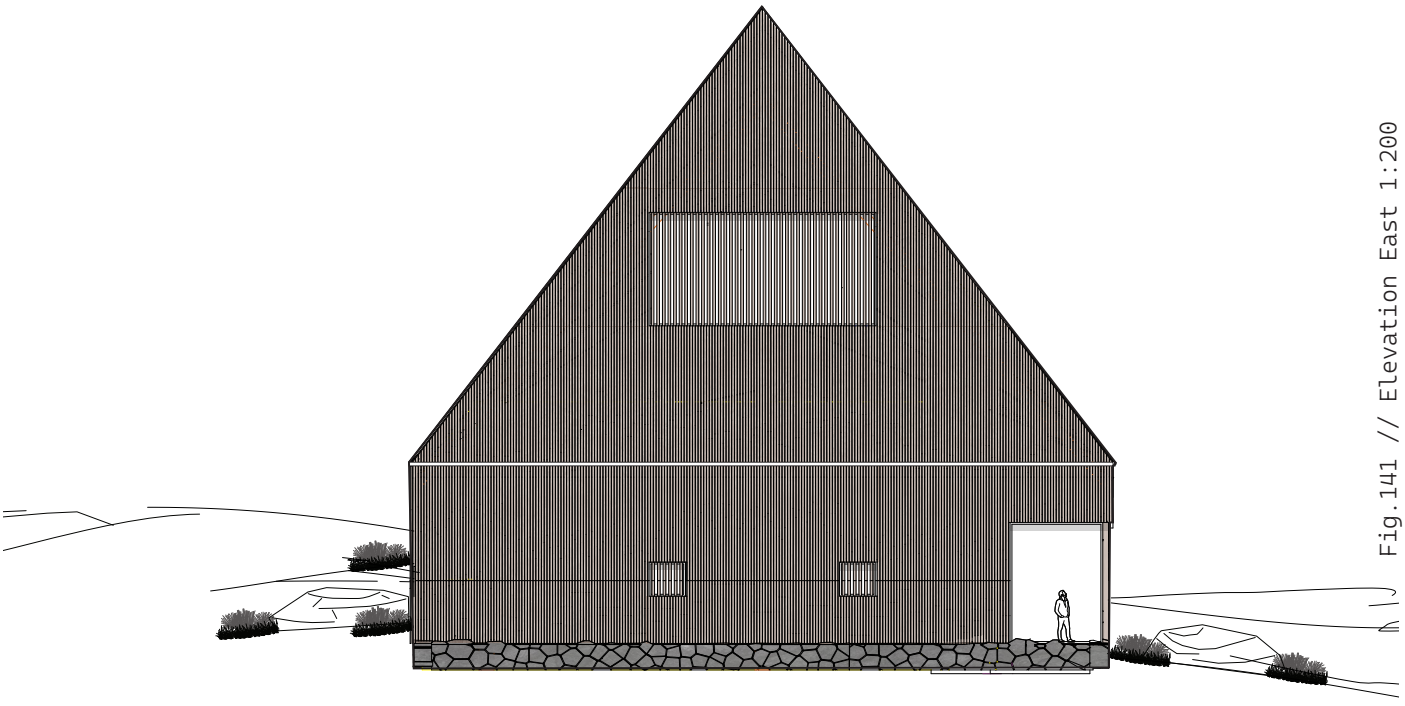


Fig.141 // Elevation East 1:200

The foundation is made up of heavy basalt rock to interpretate the resilience and sturdiness of religion amongst the Faroese people. The heavy foundation makes the rest of the building appear to be protruding through the ground and almost float. It is also an homage to vernacular architecture of the Faroe Islands. The windows ensure visual connection to the site and allow for natural light to enter the sacred space. The vertical wooden cladding continues up into the roofscape and makes the roof and the walls appear integrated as one. The vertical cladding can be seen throughout the more modern houses on the Isles and enhances the aesthetic appeal of the buildings by infusing it with warmth, texture and a connection to nature. The narrative of the place is being told through the materiality of the building.

The slope of the roof structure rises from the west to the east signifying the building “rising” towards the sacred.

Construction

The building’s structure comprises a combination of hybrid frames, including columns and scissor trusses, as well as concrete wall discs to ensure structural stability. Fig.142 and fig.143 highlight both the frames and the discs. Additionally, they demonstrate how the column in the eastern wall is embedded within the wall to allow light to penetrate through the gaps, which are secured by the cracks.

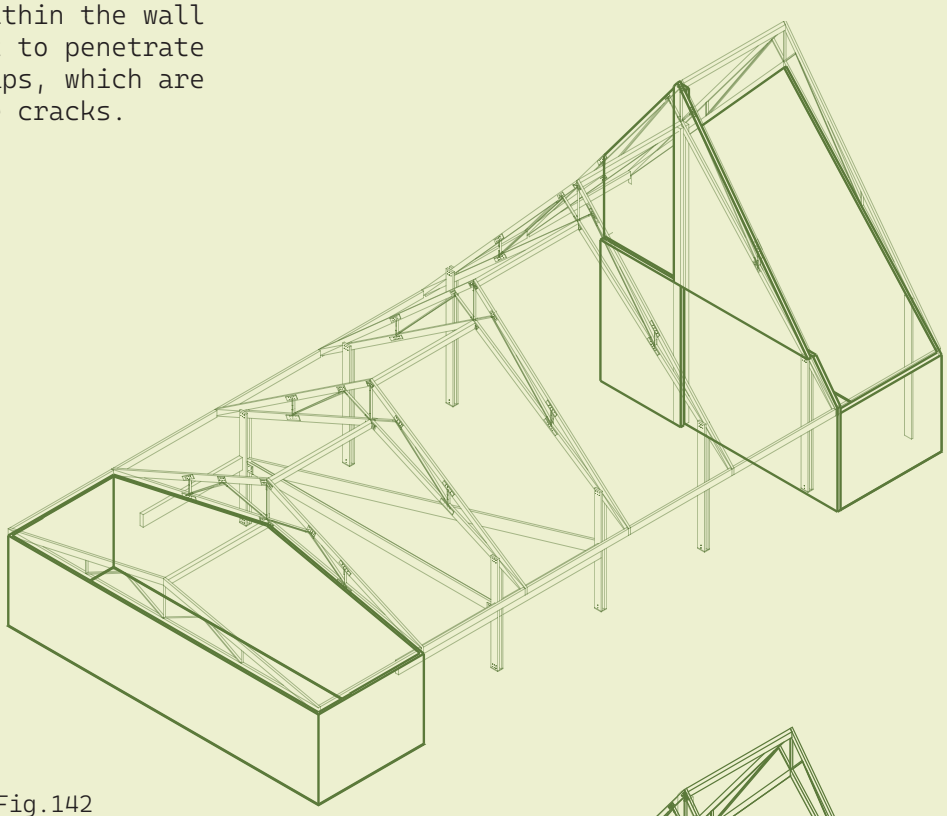


Fig.142

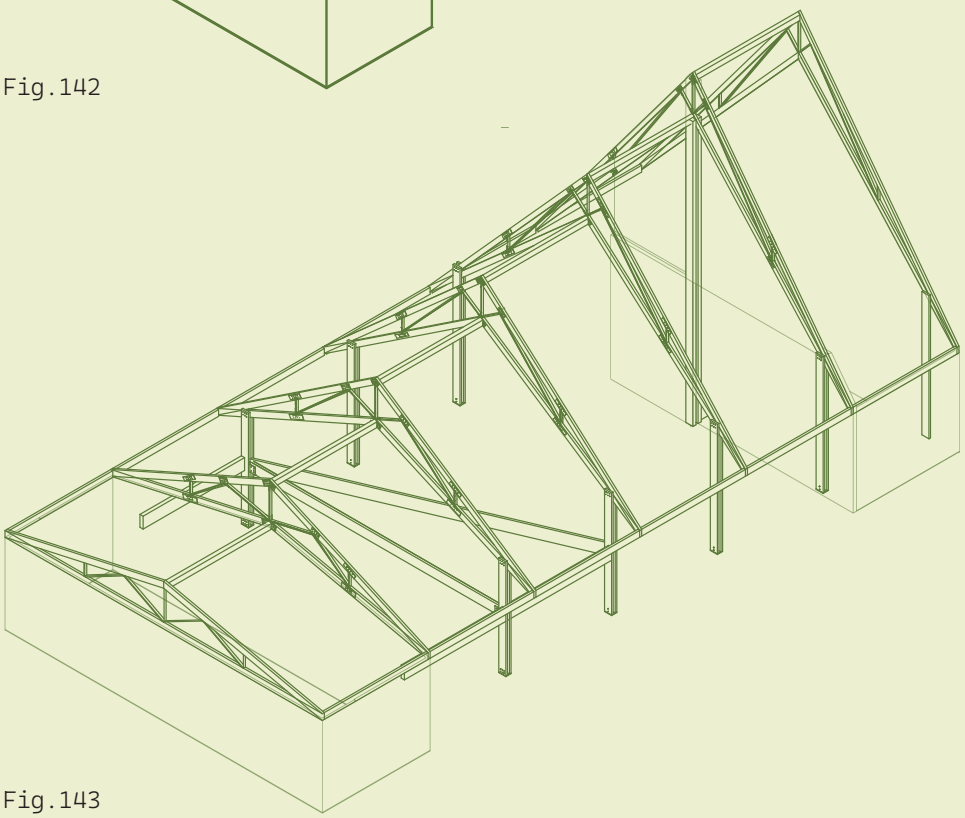


Fig.143

Fig. 144–148 shows how the trusses are assembled with metal fittings to add contrast to the warm wooden construction, and thereby adds more depth to the visible structural elements. The columns are fixed to the post foot, that is cast in-situ to the finished flooring, in order to secure stability to the structure.

Fig.144

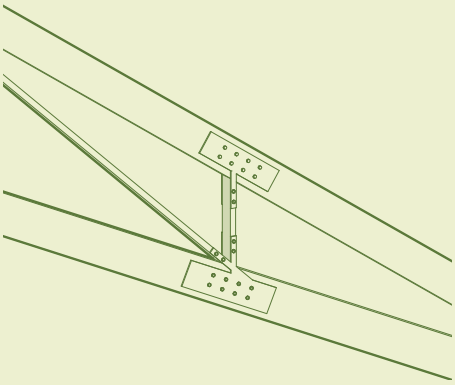


Fig.145

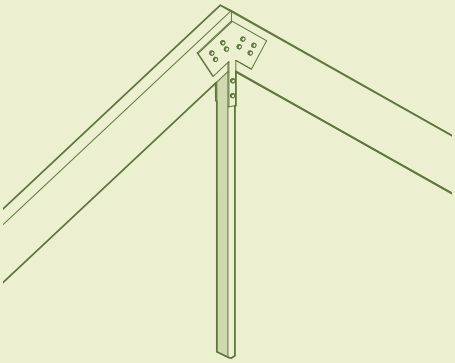
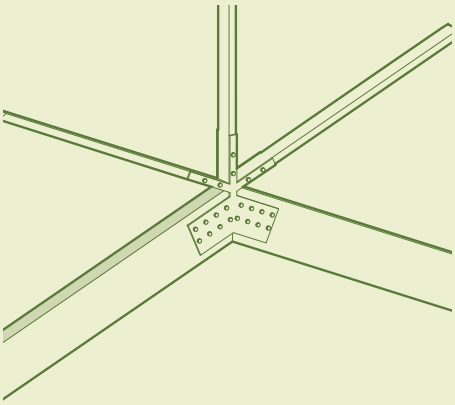


Fig.146



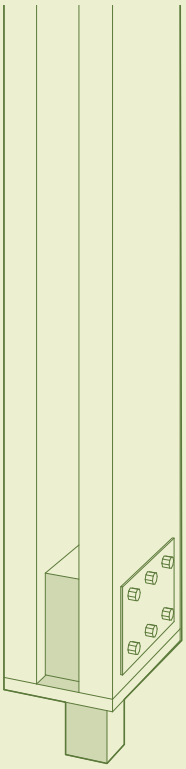


Fig.147

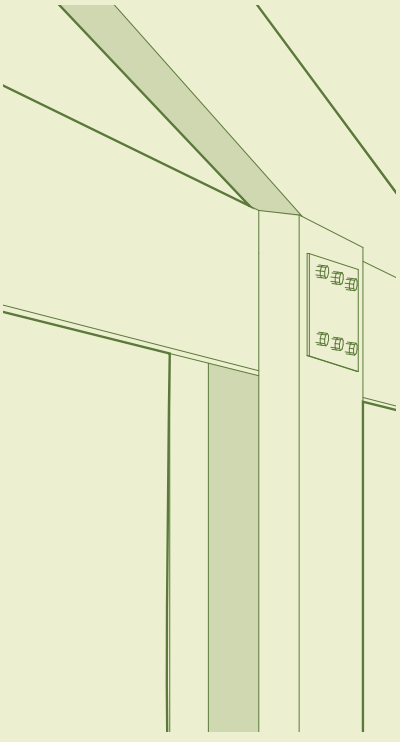
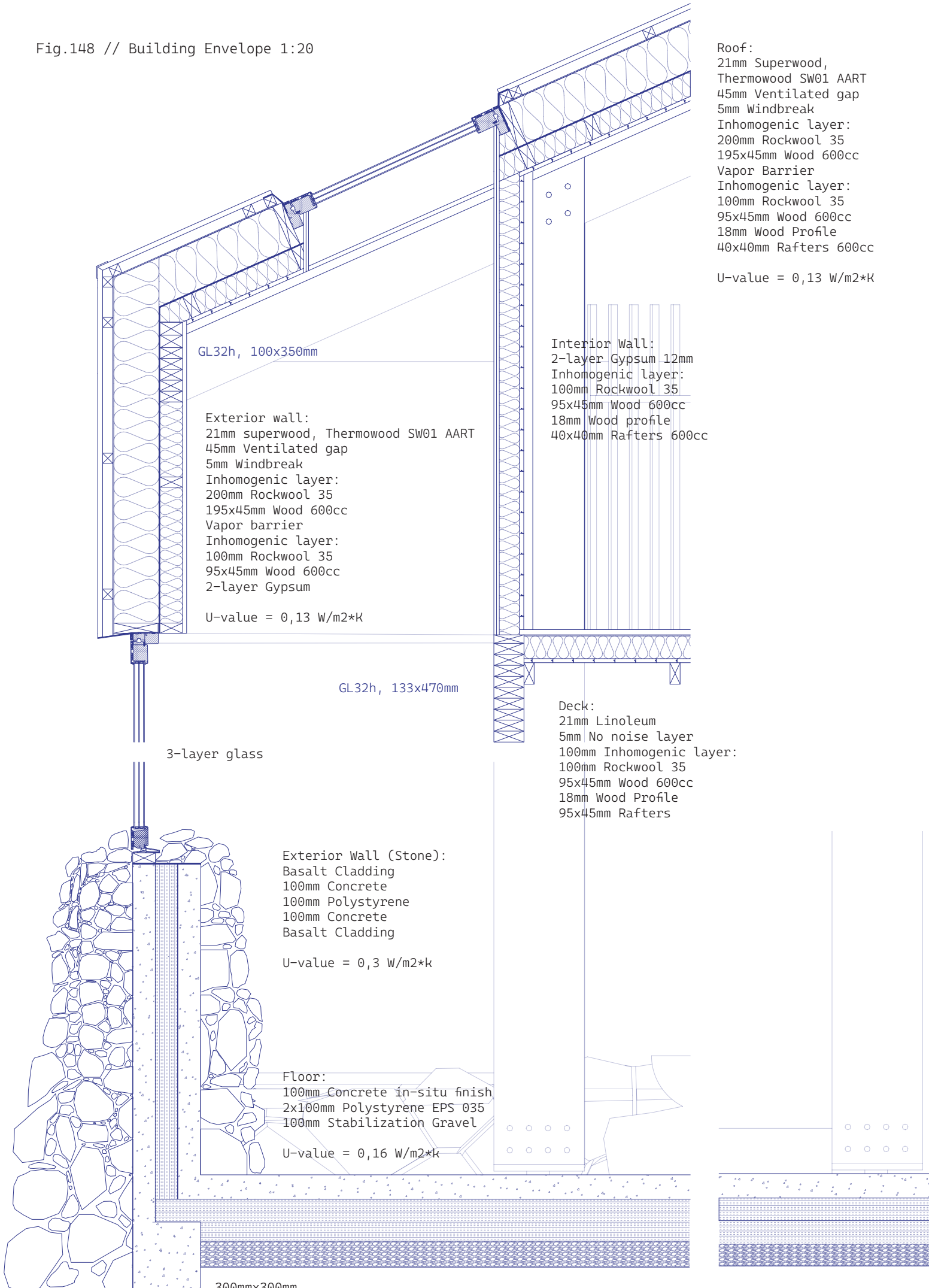
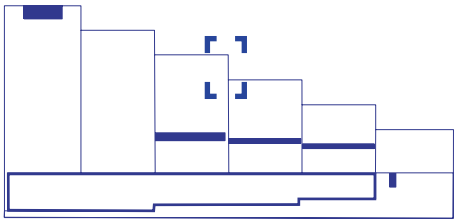
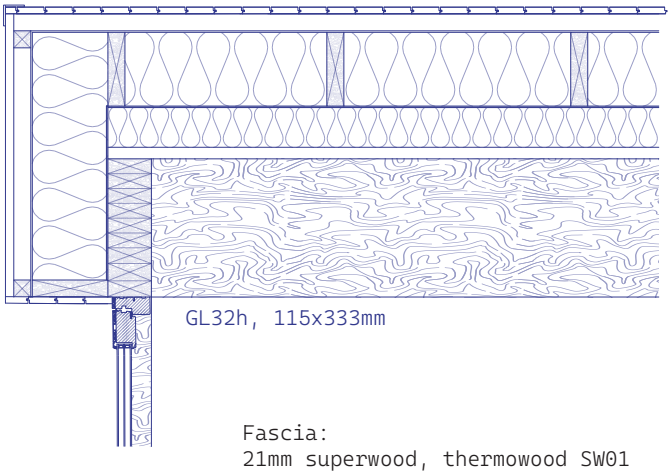


Fig.148

Fig.148 // Building Envelope 1:20







Fascia:
21mm superwood, thermowood SW01
AART
45mm ventilated gap
5mm windbreak
200mm inhomogenic layer:
200mm Rockwool 35
195x45mm wood 600cc
Vapor barrier

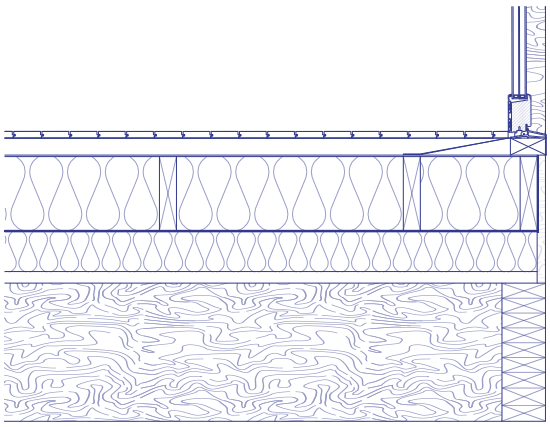
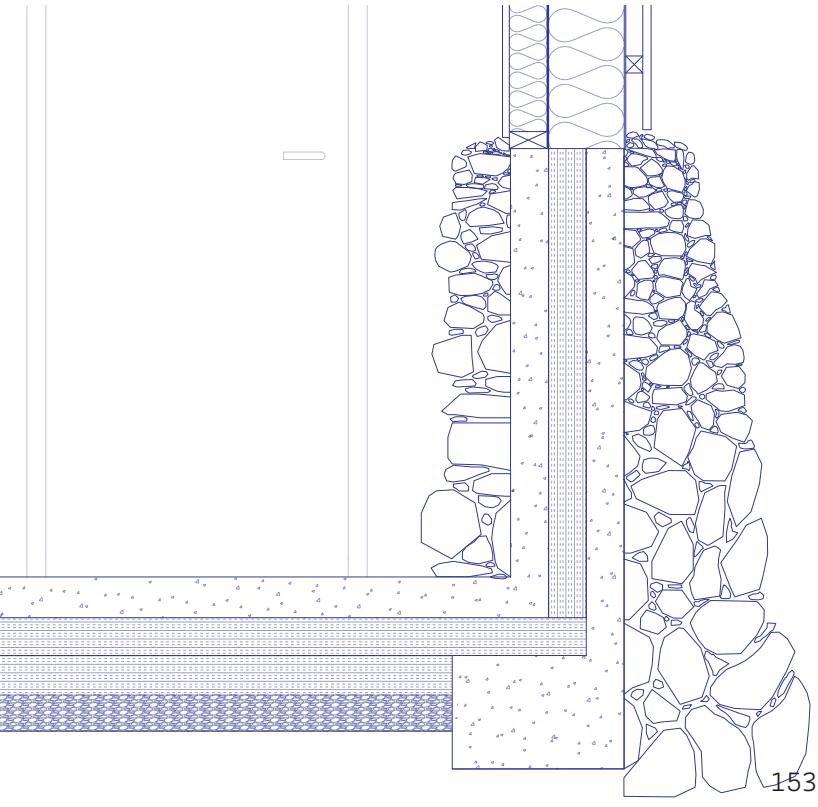


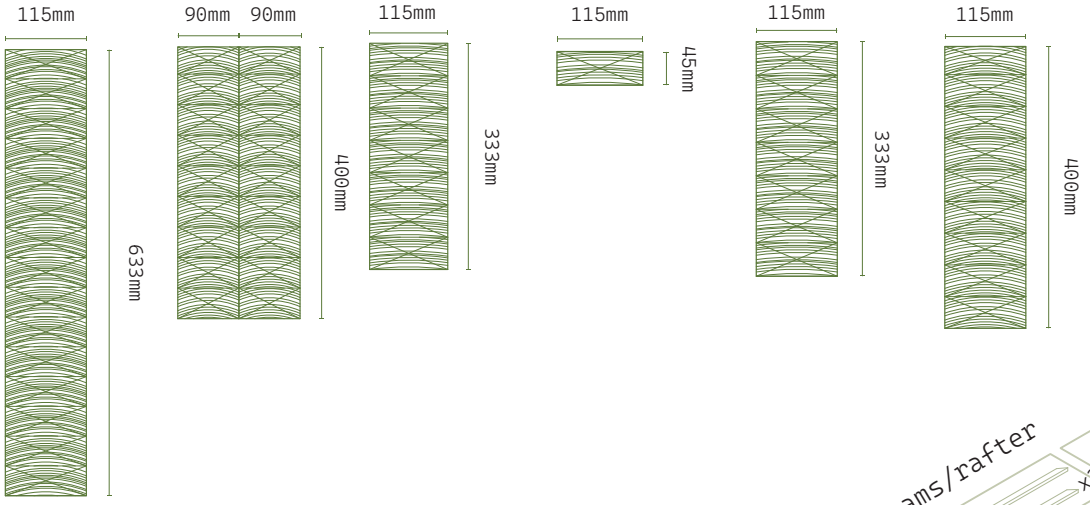
Fig.149 // Building Envelope 1:20



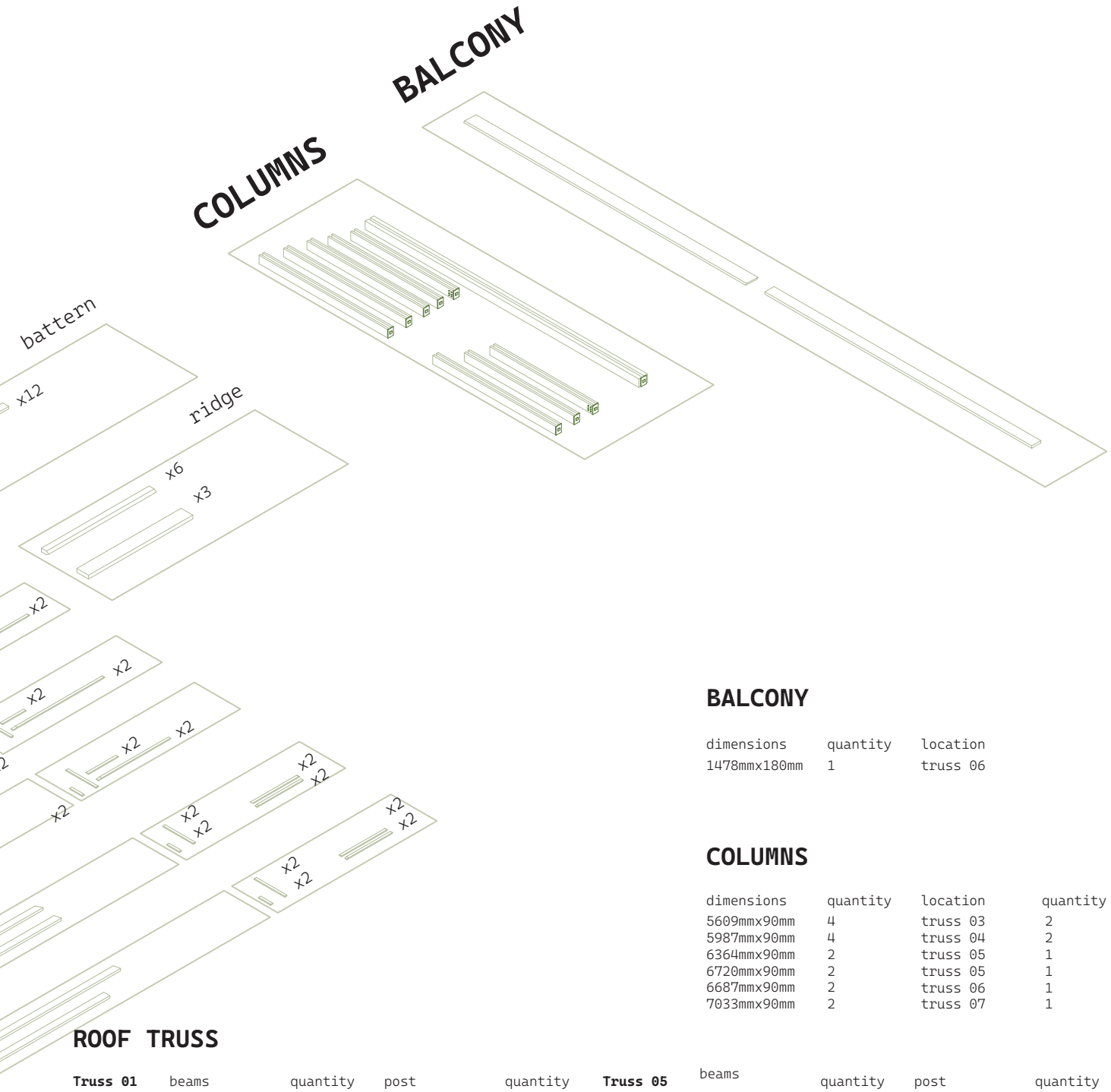
Building Envelope

Structural Components (Timber)

Beam (balcony)	Columns	Rafter (truss)	Posts	Battern	Rafter
GL36c	GL36h	GL32c	C30 (parallel)	GL32c	GL32c



The cross section of each element is optimized in order to increase the utilization factor and thereby reduce the use of material.



BALCONY

dimensions	quantity	location
1478mmx180mm	1	truss 06

COLUMNS

dimensions	quantity	location	quantity
5609mmx90mm	4	truss 03	2
5987mmx90mm	4	truss 04	2
6364mmx90mm	2	truss 05	1
6720mmx90mm	2	truss 05	1
6687mmx90mm	2	truss 06	1
7033mmx90mm	2	truss 07	1

ROOF TRUSS

Truss 01

beams	quantity	post	quantity
15266mmx333mm	2	722mmx115mm	2
13701mmx333mm	2	1027mmx115mm	1
		1667mmx115mm	2
		6850mmx115mm	2

Truss 02

beams	quantity	post	quantity
15266mmx333mm	2	722mmx115mm	2
13701mmx333mm	2	1027mmx115mm	1
		1667mmx115mm	2
		6834mmx115mm	2

Truss 03

beams	quantity	post	quantity
13701mmx333mm	2	712mmx115mm	2
12263mmx333mm	2	1115mmx115mm	1
		1667mmx115mm	2
		5925mmx115mm	2

Truss 04

beams	quantity	post	quantity
12263mmx333mm	2	712mmx115mm	2
11001mmx333mm	2	1300mmx115mm	1
		1667mmx115mm	2
		5005mmx115mm	2

Truss 05

beams	quantity	post	quantity
11001mmx333mm	2	712mmx115mm	2
9984mmx333mm	2	1670mmx115mm	1
		1667mmx115mm	2
		3977mmx115mm	2

Truss 06

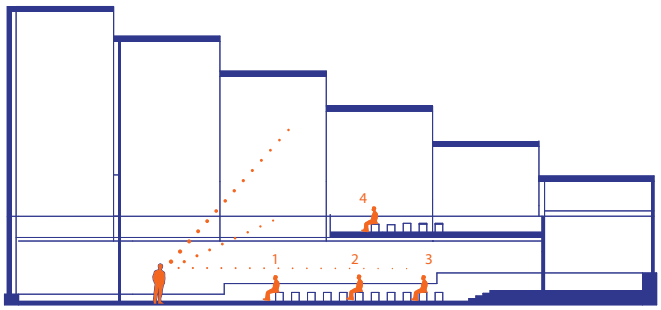
beams	quantity	post	quantity
9984mmx333mm	2	682mmx115mm	2
9292mmx333mm	2	1692mmx115mm	1
		2520mmx115mm	2
		2598mmx115mm	2

Truss 07

beams	quantity	post	quantity
9292mmx333mm	2	672mmx115mm	2
18000mmx333mm	1	1662mmx115mm	1
		2497mmx115mm	2
		2529mmx115mm	2

battern	quantity	ridge	quantity
5885mmx333mm	12	5885mmx400mm	6
		5765mmx633mm	3

Speech: Priest to Assembly

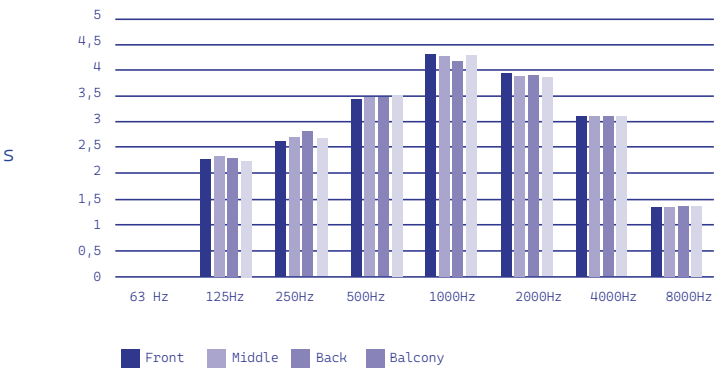


The acoustics is an important factor within the church.
A goal is to create an experience of the divine and angelic through the aural sense.

Due to the division of the three functions, the church remains at a functionally static level. Therefore, it is relevant to look into the perception of sound when sitting in different positions.

Reverberation T20

listen to this!

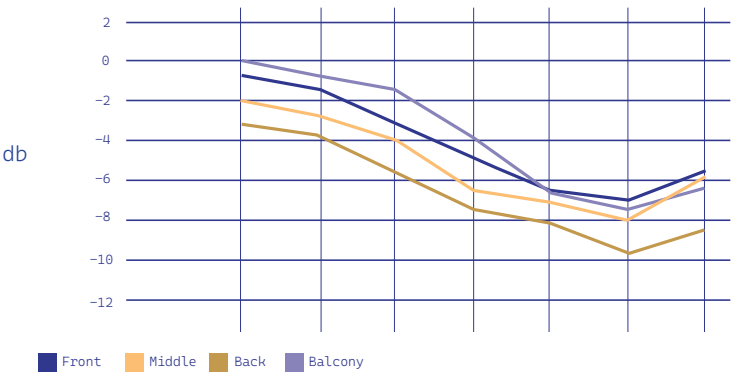


It is interesting to check how the reverberation of sound differentiates depending on location of the receivers.

The results are showing a similar reverberation time despite the different receiving locations.

The source (Priest) is at one of the spatially largest voluminous locations of the building, which increases the reverberation but may reduce the clarity.

Clarity C50



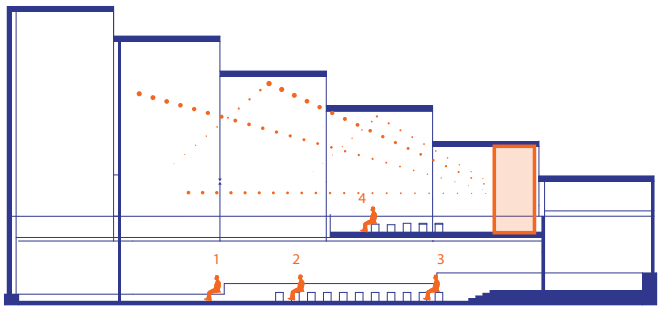
Clarity C50 is measuring the clarity of speech with the priest as sound source.
The clarity is appearing to be lowest when sitting at the back row of the assembly.

The clarity levels are low, but there seem to be a coherence between a high reverberation time and a low level of clarity (Griesinger, 2010).

A separate sound system can be installed to accommodate the clarity.

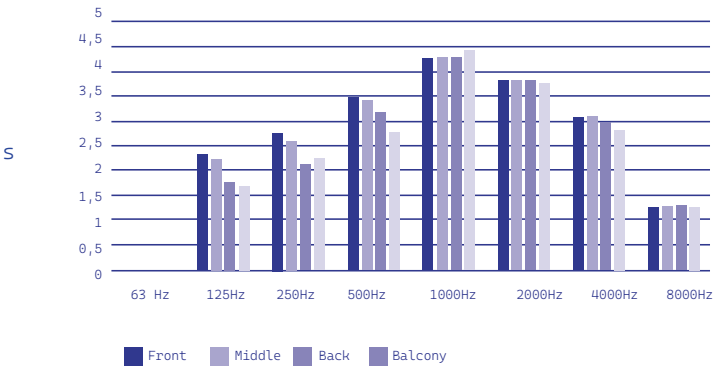
Fig.151a-c // Priest to Assembly

Choir/Organ to Assembly



The choir and the organ is raised 3,5m since placed on the balcony. This may cause some acoustic possibilities but also some constraints because of the physical barrier between the pews in the back and the choir.

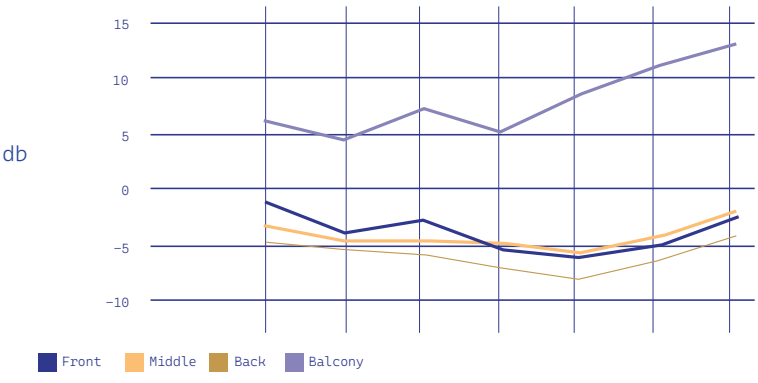
Reverberation T20



It is important that the reverberation time for the organ/choir is high to achieve the angelic experience of the hymns.

The reverberation time are highest at a frequency of 1000 Hz which are correpsonding to the frequency of a Soprano wihtin a choir (Fuadah et al, 2022).

Clarity C50



The clarity of the choir/organ sound source is experienced the clearest when sitting at the balcony positions.

Naturally, the sound is experienced less clear sitting beneath the balcony, at the back pews.

The clarity is similar, only differentiating 0,5 db between the front row and the middle row at a frequency of 1000Hz.

Fig.152a-c // Choir/Organ to Assembly

Daylight Performances

UDIA:

The Useful Daylight Illuminance describes how the areas are illuminated whether it is failing, supplemental, autonomous and excessive (Solemma, xxx).

The “failing” areas are located beneath the balcony which is intentionally designed as a darker space compared to the church room in order to achieve a contrasting experience between lightness and darkness.

The most concerning areas are the ones located towards the North/East window. Due to the integration of lightwashed hallways, the pews are offset 1,5 meter from the glazing surface which do not cause any glare on the seating area facing East.

Mean Illuminance:

On a mean annual basis (from 8am to 6 pm), the church is illuminated by 619 lux. The church will be supplemented with artificial light for atmospherical purposes as well as supplemental.

ASE:

The Annual Sunlight Exposure is telling us about the overexposed areas of the church. In this case, there is only 0,3% of the area that are exceeding 1000 lux for more than 250 occupied hours.
This area is the eastern corner of the baptistry which is not occupied in most of the scenarios.

sDA:

The Spatial Daylight Autonomy is showing that almost half of the area are meeting the “daylit” condition, meaning it achieves minimum 300 lux in 50% of the occupied hours.

Since this project involves a church and not an office space, the daylight requirements are not as strict and can be translated into a phenomenological aspect as well as a data performative aspect.

sDG:

The Spatial Disturbing Glare is showing that 8,6% of the building is exceeding a DGP of 38% for at least 5% of the occupied hours (Solemma,xxx).

There seem to be no glare towards the assembly that is orientated towards East/the altar.

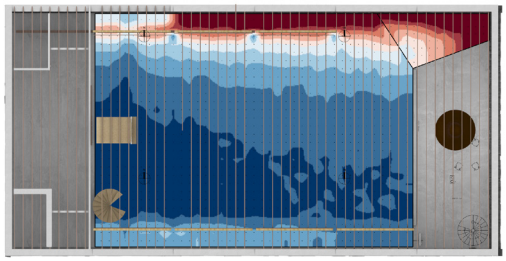
To double check the perception of the critical areas, an analysis of the respective positions has been made showing the perceptied luminated light in the most critical time period, the summer.

Equinox

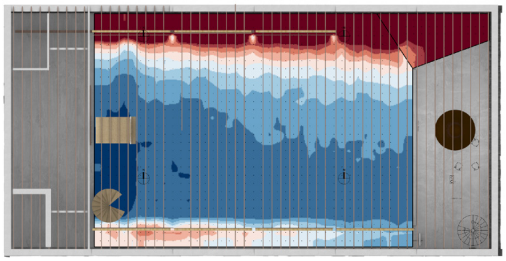
Summer Solstice

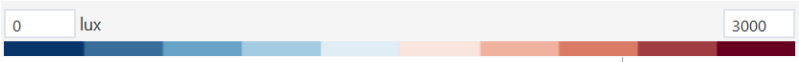
Mean Illuminance

a



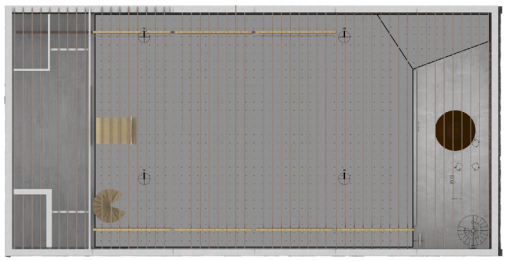
b





ASE

c



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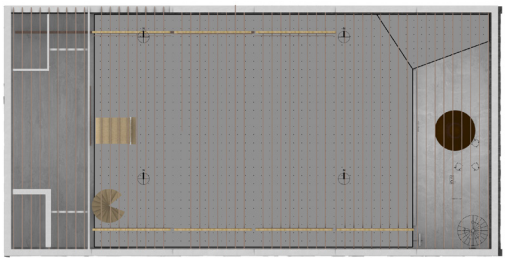
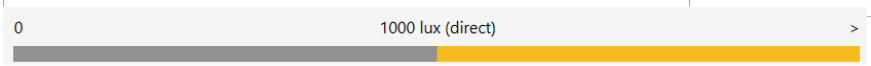
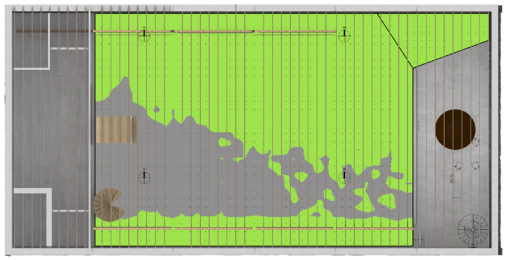


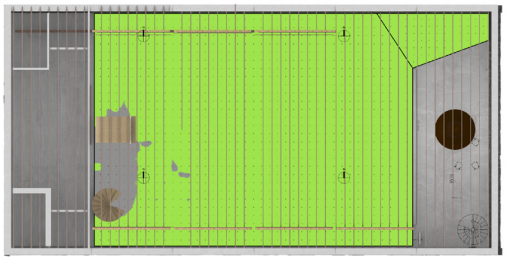


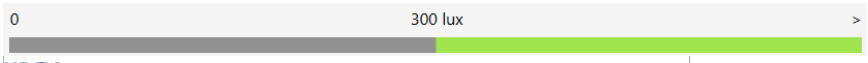
SDA

e



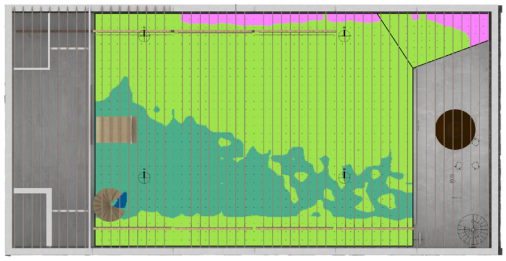
f





UDIA

g



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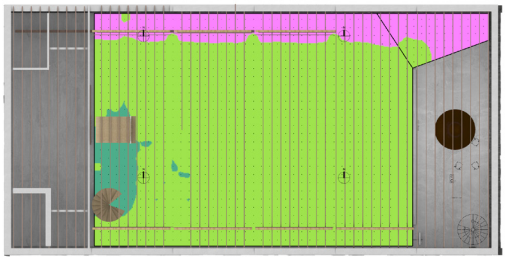
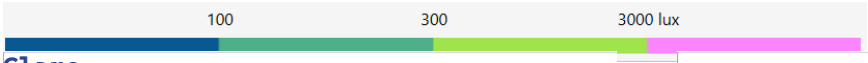
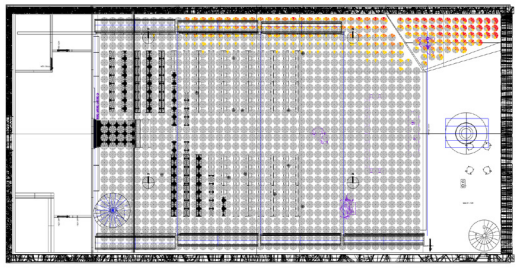


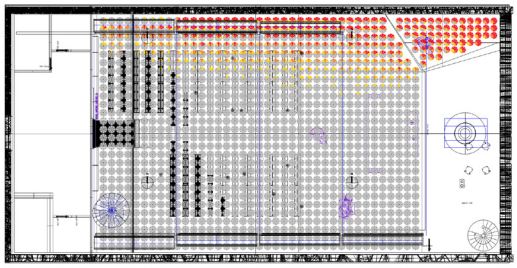


Glare

i



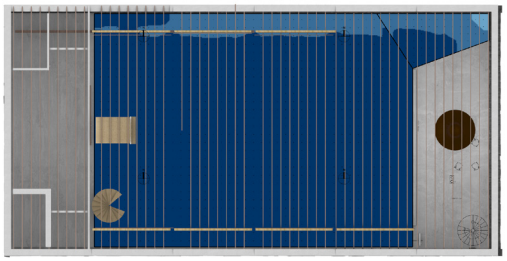
j



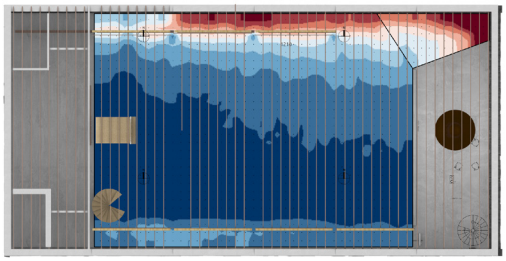
Winter Solstice

Annual

k

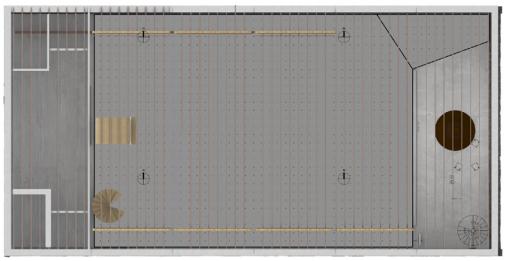


l

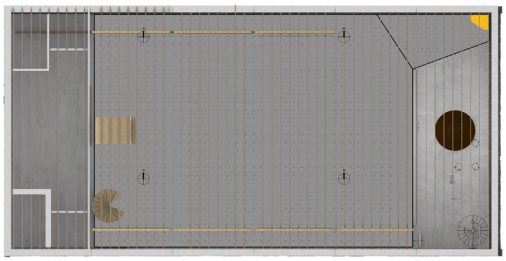


11:30 Annual: avg_LUX = 619 LUX

m

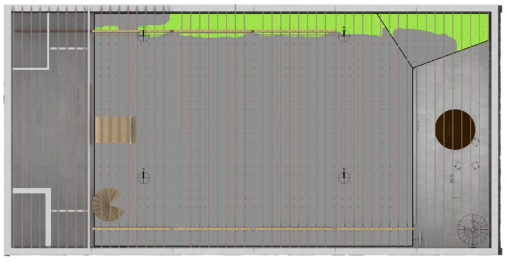


n

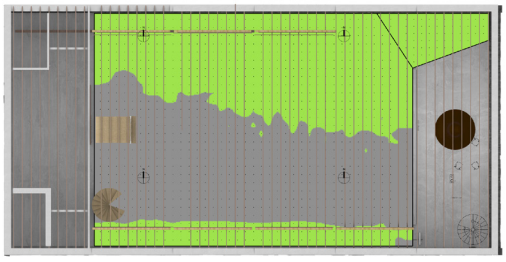


Annual: ASE 1000_250 = 0,3%

o

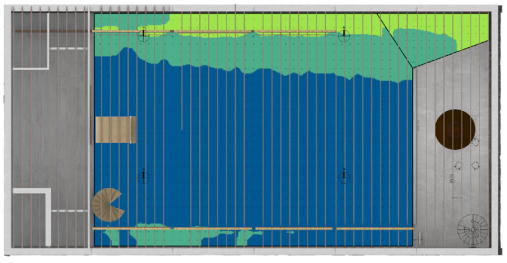


p

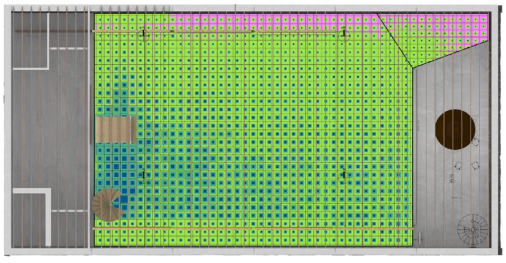


Annual: sDA 300/5 = 53,9%

q

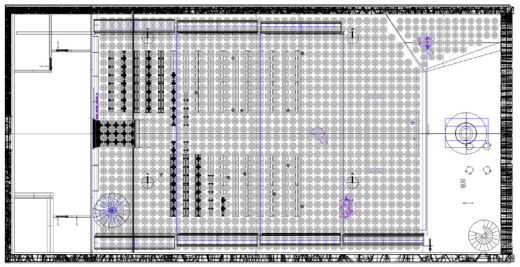


r

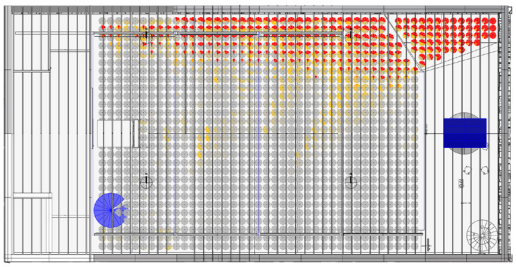


Annual: UDIA: 46%

s



t



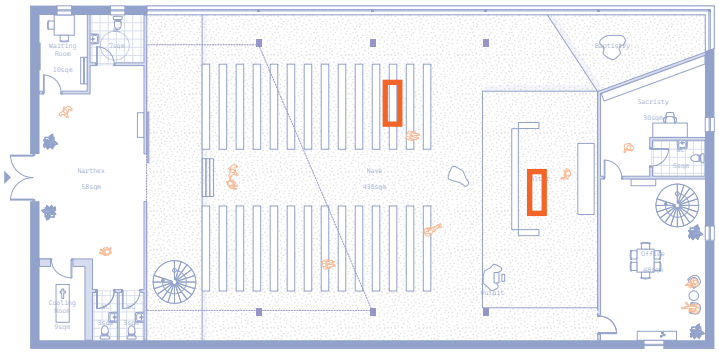
Annual: Glare: 8,6%

Fig.153a-t

Luminance at 11:30

Due to a glare percentage of 8,6%, a perceptive analysis was made to assess the experienced glare probabilities from a priest perspective and from a seating perspective.
The settings used are Perez Sky calculated during a typical service at 11.30am.

Fig.154

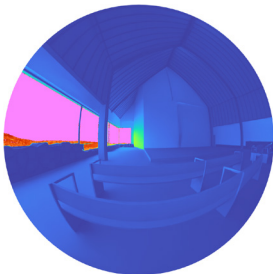


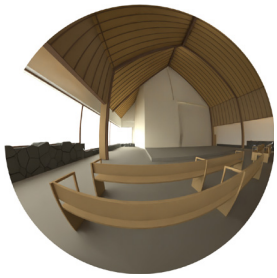
Assembly

Priest

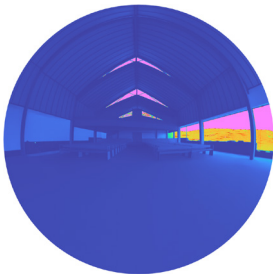
21st of June

Imperceptible Glare
Ev = 1703 lux
DGP = 0,29



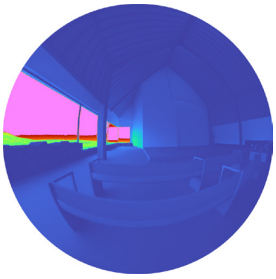


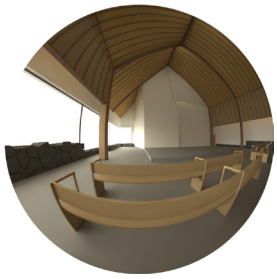
Imperceptible Glare
Ev = 730 lux
DGP = 0,24



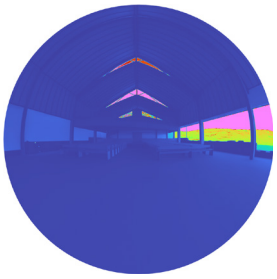
21st of March

Imperceptible Glare
Ev = 1156 lux
DGP = 0,26



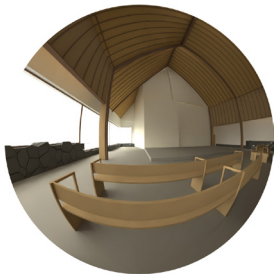


Imperceptible Glare
Ev = 497 lux
DGP = 0,23



21st of December

Imperceptible Glare
Ev = 119 lux
DGP = 0,04



Imperceptible Glare
Ev = 51 lux
DGP = 0,01

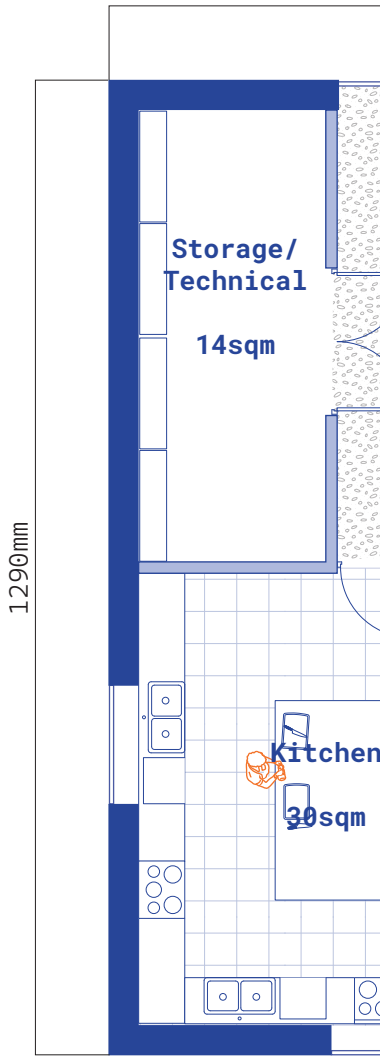
Fig.155a-l

0 cd/m2

3000>

Ev = Exposure value
DGP = Daylight Glare Probability

Fig.156 // Collonade through the church



The Community Center

The Community House provides the surroundings for physical gatherings for the people of Argir and Tórshavn as well as a place to socialize after visiting the adjacent church. The simple layout of the building allows for various uses depending on the event and activities take place. The big flexible space can function as one large room, catering to bigger events, where, by using the folding wall, the space can be split into two individual rooms, that can then be fitted to the appropriate setting. The building can host cultural events, art exhibitions, concerts, performances, and other public gatherings that enrich the community's cultural life and promote a sense of unity and belonging. The Community House serves as the center for activities, community services, and religious practices for the congregation. It is a place where people can meet, socialize, and build community outside of religious services. The congregation offers religious education and learning opportunities for children, youth, and adults. This includes Sunday school, Bible studies, confirmation classes, and seminars.

The big windows towards the north allow for natural light to enter the building whilst offering great views toward the creek, the chapel and the beautiful nature that constitutes the site. The form and materiality of the building relates to the church and contributes to creating cohesion between the physical spaces.

Overall, the Community House serves as a hub of spiritual, social, and cultural activity that serves to strengthen both the congregation and the local community as a whole.

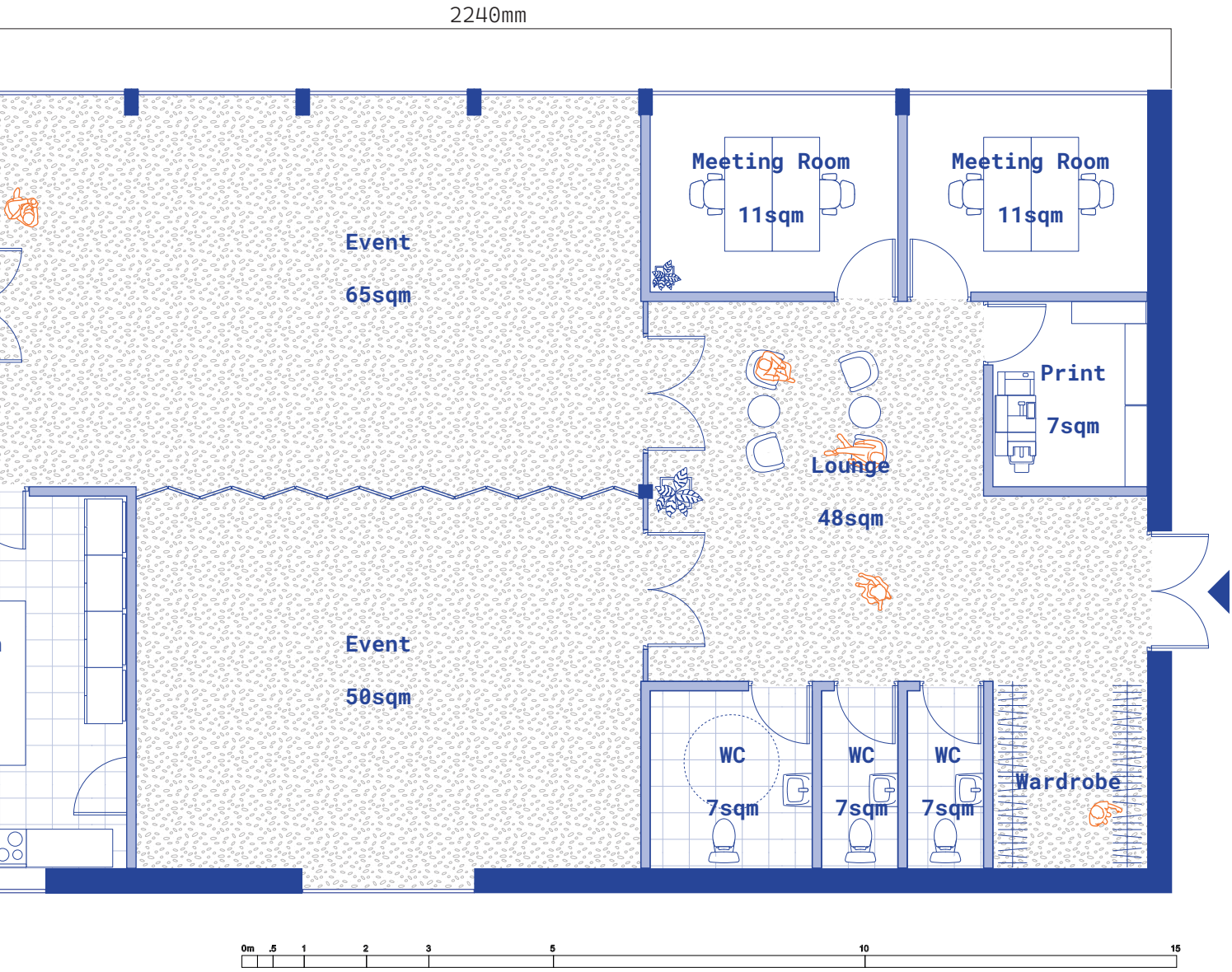
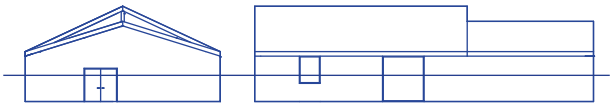


Fig.157 // Plan // Community Center 1:100



List of functions:

Lobby

Restroom

Kitchen

Flexible Event Space

Meeting Room

Storage

Wardrobe

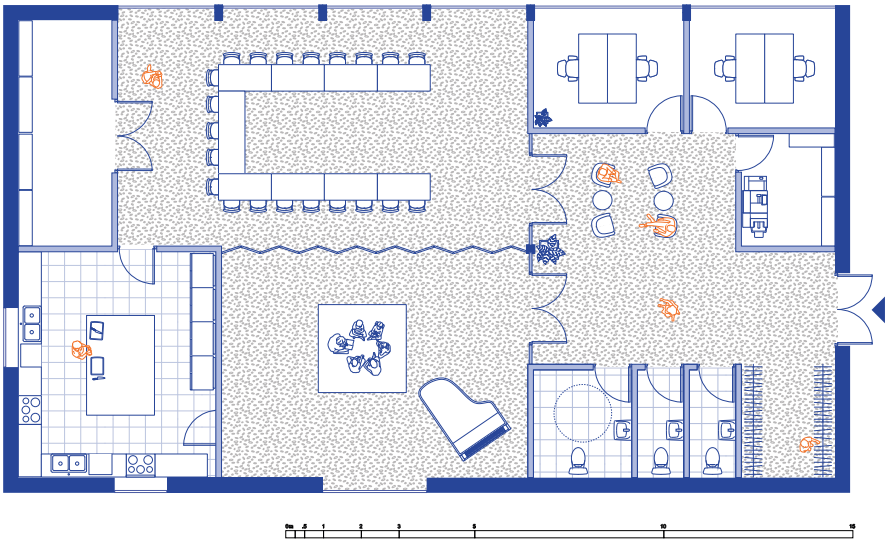


Fig.160 // Divided Event Space 1:200

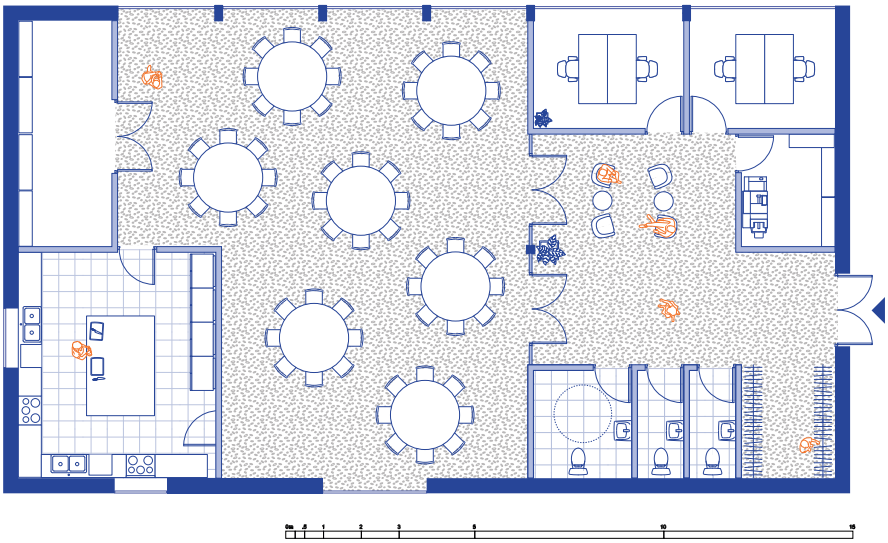


Fig.161 // Set Up for Celebration 1:200

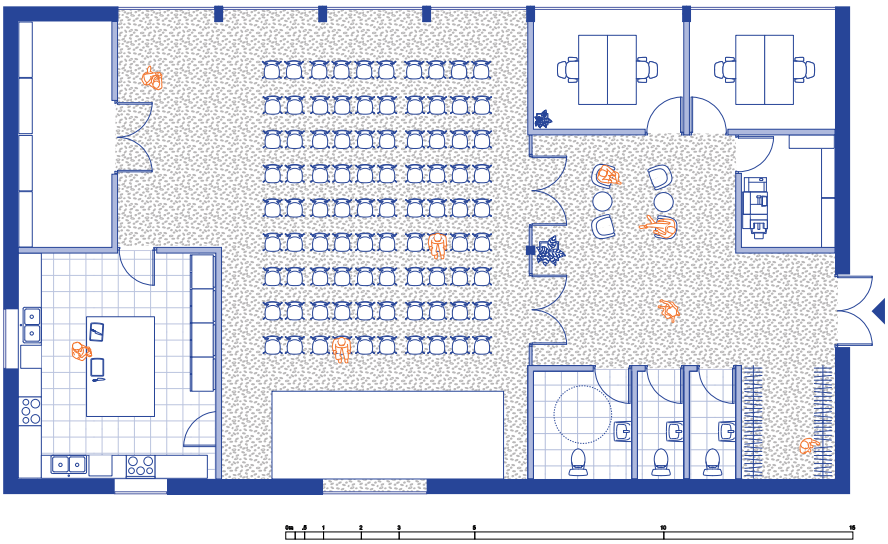


Fig.162 // Concert assembly 1:200

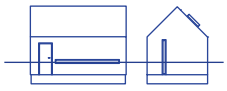
Fig.163 // Different activities taking place

Fig.164 // Concert assembly

The Chapel

The Chapel is a space for contemplation, a quiet moment, and tranquility, not led by a certain religion. It is a welcoming space where one can come as needed and pray, think or what is needed for the individual. The chapel serves as a sacred space where individuals can connect with their spirituality, express their faith, and find support and fellowship within their religious community. The smallness of the chapel affords a tranquil environment for individuals to seek solace, guidance, or contemplation away from the distractions of daily life through meditation and prayer. The building resembles the traditional local huts seen around the Faroe Island, in terms of form and materiality. There can be found only one room with nothing more than two benches, emphazing the usage of the space.

The inner walls consists of a mix of wooden panels and local rocks as cladding to add a warmth to the space as well as different tactile surfaces. As a gesture to the vernacular, the chapel is made up of a turf roof, stone walls and a visible wooden frame.



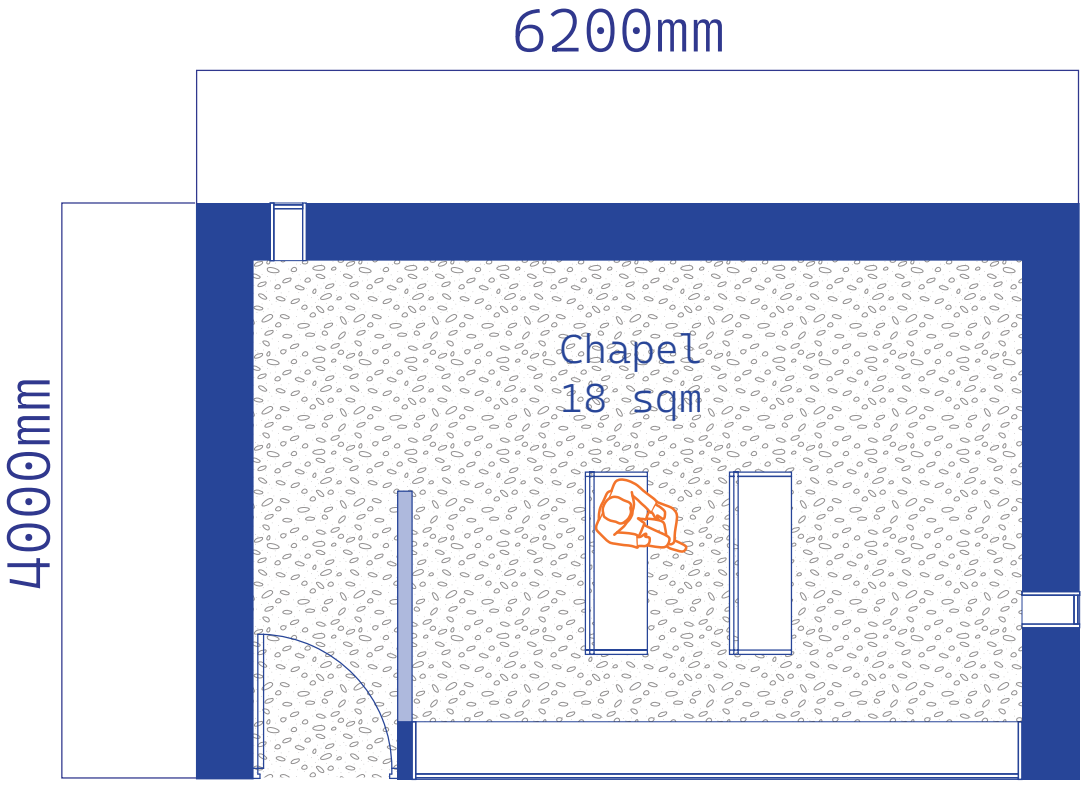


Fig.165 // Plan // Chapel 1:50

Fig.166 // Having a quiet moment

The Urban Strategy

The strategy for the urban space is to keep it as rural and untouched as fairly possible within the periphery borders of the site. Nestled in between the church and the community house, a courtyard appears as a physical mediator between the two. The courtyard serves as an outdoor space, sheltered from the harsh winds. By leveling out the terrain the area becomes more accessible for those who struggle with the hilly terrain.

A path of stepping stones carefully placed across the creek, connects the church and the community center with the chapel. The subtle path serves as a discret intervention in the terrain and pays homage to several Christian elements. The narrative of crossing the water relates to the stories of Moses splitting the sea and John the Baptist. The stepping stones have lighting elements integrated to make the path safe and visible in the darker times of the day and year.

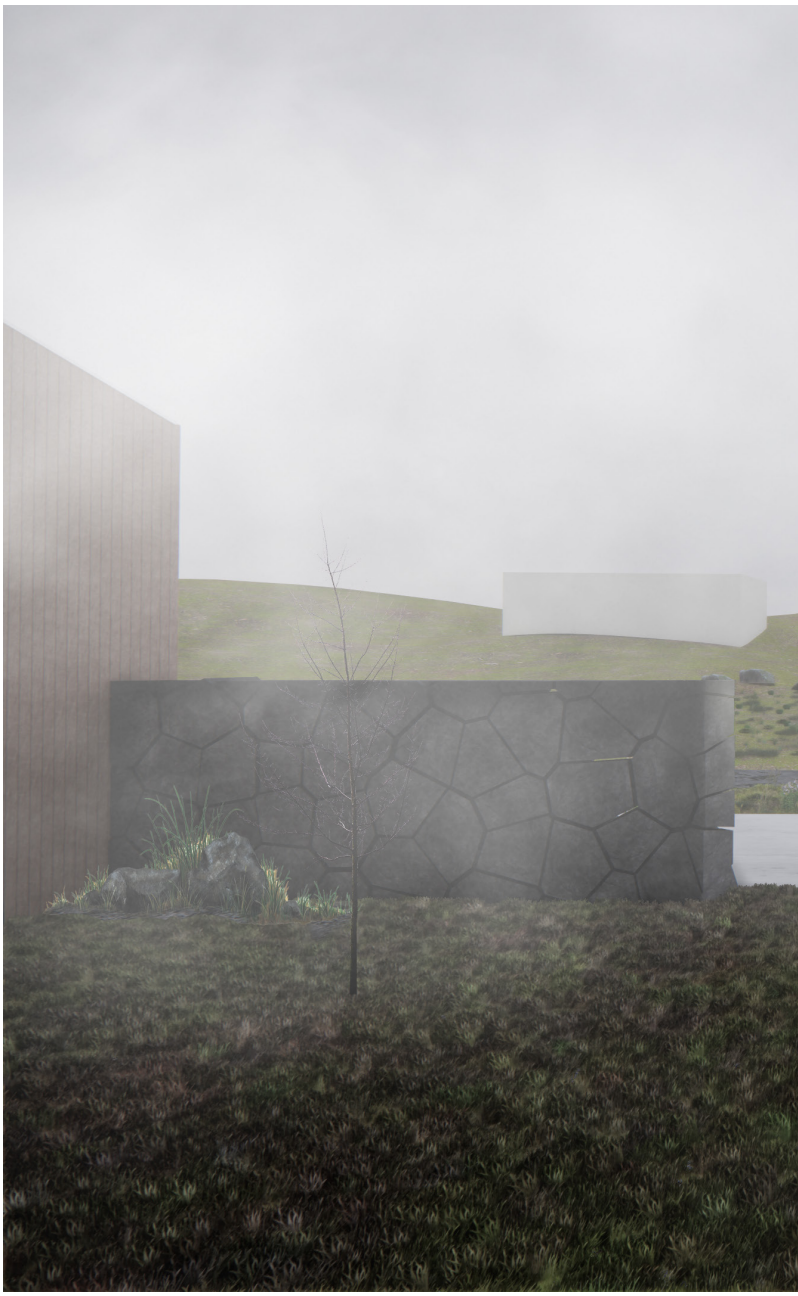


Fig.167 // The Courtyard between the Church and the Community Center

Outro

Fig.168 // A Faroese Town

Conclusion

The utilization of church spaces has evolved from serving primarily as venues for sermons to functioning as centers for social gatherings, fostering community around shared values. Despite these changes, religion remains highly significant in the Faroe Islands, where it continues to play an integral role in the daily lives of its inhabitants.

The new church in Argir seeks to merge social and religious functions, ensuring its continued relevance in a dynamic manner. The church's design is inspired by the surrounding natural beauty, reflecting the Faroese identity, which is deeply intertwined with nature. The building also adheres to traditional Faroese construction methods, featuring wooden cladding atop a substantial stone foundation, thereby preserving vernacular architectural principles.

The church achieved a sacred atmosphere through the elements of light, sound and tectonic composition which have been thoroughly evaluated throughout the design process.

In addition to the space designated for worship services, the community center offers a welcoming and social environment for events that occur post-service. The community center includes a versatile area that maximizes functionality within a limited square meterage, allowing for a wide range of activities and gatherings.

Moreover, the chapel, a modest yet significant addition to the larger worship space, provides an intimate setting for individual prayer and reflection.

Reflection

The topics selected for reflection were chosen based on critical elements that define the role of an architectural engineer.

When designing an architectural project, it is essential to incorporate various technical features to achieve a comprehensive and holistic outcome. Given the time constraints of the thesis, it seems unfeasible to address all technical requirements comprehensively. Consequently, certain aspects were prioritized, while others were deferred for subsequent reflection.

Integration of the surrounding nature, regional relationship.

The initial objective of the project was to create a space that respected and minimally disturbed the natural surroundings. However, the final outcome deviated from this initial vision, resulting in a much larger footprint than originally intended. To mitigate this, a complementary strategy was employed to integrate the natural environment within the interior space through visibility and sensitivity to the surrounding landscape.

The church presents an ambiguous case in this regard. On one hand, the footprint of the parking area, chapel, and community center was reduced to preserve the existing natural qualities. On the other hand, the church division expanded to achieve higher programmatic quality, thus consuming more square meters.

Adhering to the design approach of minimizing built structures within the natural environment could have been beneficial. This would address the concerns of local nature activists while preserving the recreational character of the area.

Building sustainable – the most ethical thing to practice.

While the church serves as a welcoming space fostering the right ethical mindset, it also functions as a significant consumer of resources. This project's primary focus has been to achieve high-quality performance in lighting, acoustics, and atmosphere through various strategies, including material selection and tectonic gestures. By centering the assignment around these aspects, other pertinent topics, such as sustainable performance and environmental impact, have been set aside.

Sustainability – Circularity

There are several nuances of sustainability within architecture, but one particularly relevant topic is the assessment of a building's life cycle. This issue was initially considered but subsequently deprioritized due to the challenges posed by the import and export conditions in the Faroe Islands.

The project's strategy involved utilizing materials already present within the Faroese supply chain, thereby aligning with the existing import schedules of the building industry and avoiding additional environmental trade impact beyond what is currently experienced.

An alternative approach could have focused on maximizing the use of materials already available on the islands, thereby minimizing the need for new resources—a circular approach. This would require a more comprehensive investigation and mapping of available resources in the already limited environment. Such an approach could potentially influence the architectural design by necessitating the use of a more restricted catalog of materials.

Sustainability - Energy consumption

Another nuance is the consumption of energy on the operational aspect.

To accommodate this, the project iterated on the best possible construction method regarding to the meeting between the building envelope and the structural components. Most of the materials are chosen to provide a vernacular gesture, but may cause thermal issues.

The project has purposely not been evaluated on energy demand and the technical performance of the indoor thermal comfort.
The large glazing area on the northside is contradicting to the principles of passive strategies but frames the surrounding nature.
If the goal was to exceed the requirements of the Danish building codes, the atmospheric experience would have had another outcome.

The structure of the thesis assignment (neglecting the framework of the tender).

The original reasoning for the thesis topic was found in a common interest for an old already- closed architectural competition which has not been initiated to be built due to preservative controversies.

The competition was described through a brief including a building program, which was followed in the beginning of the project but reinterpreted later on in adaptation to our concept and visions.

The mediation of the demands of the municipality and the wishes of the local natural activists, required a larger user insight including interviews to understand the argumentation from both sides.
Both parties were contacted but did not manage to get back to us, which lead to a more shallow support base of the problems stated by the interests.

Adhering strictly to the competition's original framework would have led to a different project outcome. For instance, the chapel's position on the Torshavn site extends beyond the site boundaries specified in the brief. The tripartite composition of the project, encompassing the Community Center, the Chapel, and the Church, aimed to fragment the overall footprint into smaller units. This approach minimized the perceived environmental impact and simultaneously served as a "bridge" between the districts of Argir and Torshavn.

In retrospect, it may not have been necessary to construct a "bridge" or a physical mediator between the two districts. The natural area situated between Argir and Torshavn inherently serves as a natural separator, facilitating smaller, informal interactions through its recreational functions rather than requiring a built structure to fulfill this role.

List of Figures

All illustrations and photos are the group's own, unless otherwise credited.

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Miscellanous

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