SEASONAL ATMOSPHERES

A Sensorial Journey through the Seasons Within Architecture

Alicia Opland

Chalmers University of Technology
Department of Architecture and Civil Engineering
Master's Program of Achitecture and Urban Design
Within the direction of Building Design and Transformation

Supervisor: Mikael Ekegren
Examiner: Björn Gross

Published in 2024

CHALMERS
UNIVERSITY OF TECHNOLOGY

SEASONAL ATMOSPHERES

A Sensorial Journey through the Seasons Within Architecture

Alicia Opland

Chalmers University of Technology
Department of Architecture and Civil Engineering
Master's Program of Achitecture and Urban Design
Within the direction of Building Design and Transformation

Supervisor: Mikael Ekegren
Examiner: Björn Gross

Published in 2024

ABOUT THE AUTHOR

EDUCATION

2022–2024 Master of Science, Architecture and Urban design *94,5 hp*
Chalmers University of Technology

2023 Exchange semester, Architecture *30 hp*
Graduate School of Engineering, The University of Tokyo

2019–2022 Bachelor of Science, Architecture *180 hp + 3 hp extra curricular*
Chalmers University of Technology

2020 Course, Buisness Administration I - Marketing *7,5 hp*
Linnaeus University

2019 Course, Project Management *7,5 hp*
University of Skövde

2018-2019 First year, Architecture *60 hp*
Umeå University

ABSTRACT

In Sweden, many find themselves indoors during the cold and dark months while longing for the warm and brighter seasons. Similarly, some types of weather are often preferred over others. The inside spaces, which one occupies most of their life, often offer little experience of the surrounding environment. As most spaces exclude the surroundings, it might contribute to the unequal values of the different seasons and weather conditions. By utilizing architectural interventions, a year-round engagement and positive experience of all seasons and weather conditions might be increased. Thus, the purpose is to explore the potential of architecture that fosters a deeper connection and appreciation between architectural spaces and the seasons by creating nuance integrations and immersive experiences. This paper provides insights, inspiration, and practical solutions to create dynamic spaces in which the seasons, weather conditions, and changes of the day may be experienced. The findings are exemplified through the design of a farm-to-table restaurant, as such a project is also directly affected by the natural cycles of the seasons. The objective of the exemplification is not to include all findings but to explore to which extent they can be utilized and the experiential effect they create together. The solutions are based on the principles of atmospheric architecture and sensory design. It is chosen for its ability to create enriched spaces that engage multiple senses and thus foster a deeper connection with the space. Furthermore, it can promote mindfulness and be used as a tool to evoke specific experiences and emotions. All seasons and selected weather conditions have been evaluated through those principles with diagrammatic methods and sketches. The findings thus far suggest that there are multiple ways to design for different weather conditions. It is, however, easier to design for some, such as rain and sunshine, as the conditions have a more physical effect than others, such as a cloudy sky. As all seasons have varying weather conditions, it is also proven challenging to create a holistic experience that differs one season from the other to a more significant extent.

Keywords: architecture, seasons, weather, experiential, atmosphere, sensory design, spatial experience, farm-to-table, restaurant

TABLE OF CONTENT

FRAMEWORK
INTRODUCTION TO THE RESEARCH FRAMEORK

PURPOSE
There is great knowledge of how to build to protect ourselves from the climate. To build an architecture that responds to the seasons by diverting what comes at it - whether it be cold, heat, rain, wind, or any other aspect that characterizes our changing seasons - in order to create a somewhat neutral all-year-round climate. By doing so, we strive further from our natural world and become ever more disconnected from what it has to offer.

The purpose is to explore the potential of architecture and its dynamic connection to the changing seasons through a farm-to-table dining experience. It seeks to inspire sensory-rich experiences that celebrate the seasonal variations. To challenge the relation between outside and inside. To examine. To explore. It will focus on how architectural elements, materials, and spatial arrangements can respond to seasonal nuances.

AIM
The aim of this thesis is to investigate and conceptualize how the seasons can be experienced, framed, and change architecture. To not only see architecture as a means of creating thermal comfort that protects us from the climate, but as a means to also connect and immerse with the seasonal changes within that safe space.

It will be conducted in relation to the program of a restaurant with a farm-to-table concept that likewise shall offer a narrative of the seasons thanks to its effect on the food cycle, which determines the seasonal menus. It seeks to create a dining environment where the guests can immerse themselves in the evolving landscape emphasized by the seasons, thus fostering a deeper connection between architecture, nature, and the seasons.

THESIS QUESTION
How can the seasons of southern Sweden be experienced through architecture, both physically and experientially, while creating a narrative within a restaurant's program that embodies the seasonal changes?

DELIMITATIONS

Thesis
This master's thesis is limited to the spring term of 2024 á 30 credits / 20 weeks, with preparation during the autumn semester of 2023 á 15 credits / 10 weeks.

Generalizability
The theoretical background is based on sources of general applicability. The theory is then exemplified in a project in relation to its selected site in southern Sweden, its context, and the defined scope.

Seasons
The project aims to enhance the seasons of the selected site. It includes all season: winter, spring, summer, and autumn. The thesis will focus on subjective perceptions of the seasons and objective data.

Datatrends
The data collected on the climate and seasons is historical. Therefore, the project will not account for any possible long-term changes or trends.

Sustainability
The thesis acknowledges the close relationship between the seasons, architecture, the restaurant's program, and sustainability. However, it will not delve beyond established norms more than what the concept itself suggests.

Material + resources
No constrain in terms of the chosen material or resources, nor how they are processed, is taken into account.

Economy
Economic aspects are acknowledged in terms of the feasibility of the chosen site, business aspects of the program, and strategic planning of the space. However, it will not affect the selection of materials or building techniques.

Interdisciplinary
The nature of this thesis is, in some sense, interdisciplinary. The architectural field is combined with knowledge of business, specifically of restaurants. It is also closely related to farming, as the concept of "farm to table" heavily affects the spaces. Though this thesis is conducted in that interdisciplinary scope, aspects other than architecture will not be exhaustive.

Fictive
This thesis is a fictive scenario with no actual client to work with or to determine directions. However, the project aimed to be conducted as realistically as possible within the chosen delimitations.

TERMINOLOGY

Farm-to-Table
Refers to the use of ingredients grown or produced not far from where they are eaten (Cambridge Dictionary). In this thesis, the term describes the restaurant practice of serving food grown, forged, or produced by themselves or nearby producers.

Fine-dinging
In this project, the concept will refer to a style of restaurant that offers a unique experience than the average restaurant. It is distinguished for its high level of hospitality and precise execution in every detail, from food to environment, extending over multiple hours as the guests are served a multi-course dining experience.

The following chapter is meant to give an understanding of the reasoning behind the choices made throughout this paper. It explains why the topic is perceived as relevant, what principles it's based on, and why the particular program for the exemplified project was chosen.

INTRODUCTION

BACKGROUND

TO BE SECLUDED OR TO FEEL

In the past years, more research has established the importance of human connection to nature and greenery. Not only is nature of great importance for climate change and biodiversity, but it also has a significant impact on the health and well-being of humans (e.g., Nordström, 1994; Aries et al., 2010). At the same time, more research is done on climate control, which allows us to build more efficient and sustainable buildings where the indoor climate becomes less affected by the outdoor climate. Although the knowledge of nature's importance is increasing, the development of our built environment may be seen as an increased seclusion from the experience of the outside. It becomes a paradox that opens to explore how future architecture can maintain and increase sustainable solutions while balancing the human need for nature. This paper attempts to address the paradox by focusing on the experience of nature. More specifically, the seasons and different weather conditions, as it is the change and experience of nature that becomes excluding, not the view of it. The idea is that creating spaces that change and become enhanced by natural phenomena makes one feel more connected to them, even without a physical connection. The reconnection to nature is approached with the principles of neuro architecture, sensory design, and primarily atmospheric architecture. The aim is to combine the principles with the seasons and interpret them into architectural solutions.

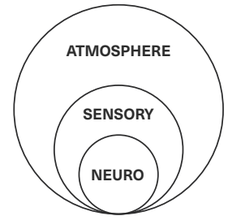
THE SWEDISH SEASONS

A season marks a period of a year that is distinguished by special climate conditions. Each condition comes with its own experiences and effects, both physical, experiential, and mental. This paper focuses on the four seasons present in Sweden: winter, spring, summer, and autumn. The general perception is that as the surrounding environment changes with the four seasons, so does how humans interact with it and experience it—thus, it opens a position for altering the built environment in accordance.

A resembling of how humans may experience and utilize the change of season is the lake. *During the summer, humans gather by the lake's free-flowing water to swim, fish, do water sports, and more. The foliage later changes to a range of orange and yellow colours as the temperature drops. Walking along the lake becomes the primary activity, while raindrops might fall on one's skin ever so often. As the seasons change to winter, the water freezes to ice, and a new set of activities takes place – humans now gather to ice skate, drill holes to fish, and play with the snow. Finally, the snow melts, and the greenery sprouts as one may go there to catch the warming sun rays on the face of the new year.* The example is embracing and adopting each season in nature - which is often less extensive in the built environment and, therefore, a place for improvement.

EXPERIENCE ARCHITECTURE

In order to bring the seasons, and thereby nature, closer to humans within architecture, the work is framed around experiences. Humans' experience of space is not directly related to the real world – e.g., *one could feel like they are immersed in rain without rain falling on them*. By working with modifiers, the seasons, and architectural solutions in this case, the aim is to make humans feel more connected to the outside than they might be - hence being able to keep the climate control within the building. Therefore, the work is, as mentioned, based on three principles: atmospheric architecture, sensory design, and neuro architecture. The principles intersect and relate to each other as layers upon the other (see Figure 1). Neuro architecture investigates the neuro and physiological aspects of architecture, sensory design investigates the relation between what one senses (which is what is sent to our neuro network) and how that is interpreted, atmospheric architecture is then the conceptual understanding of a space (based on how we interpret the sensory signal sent to our neuro network).

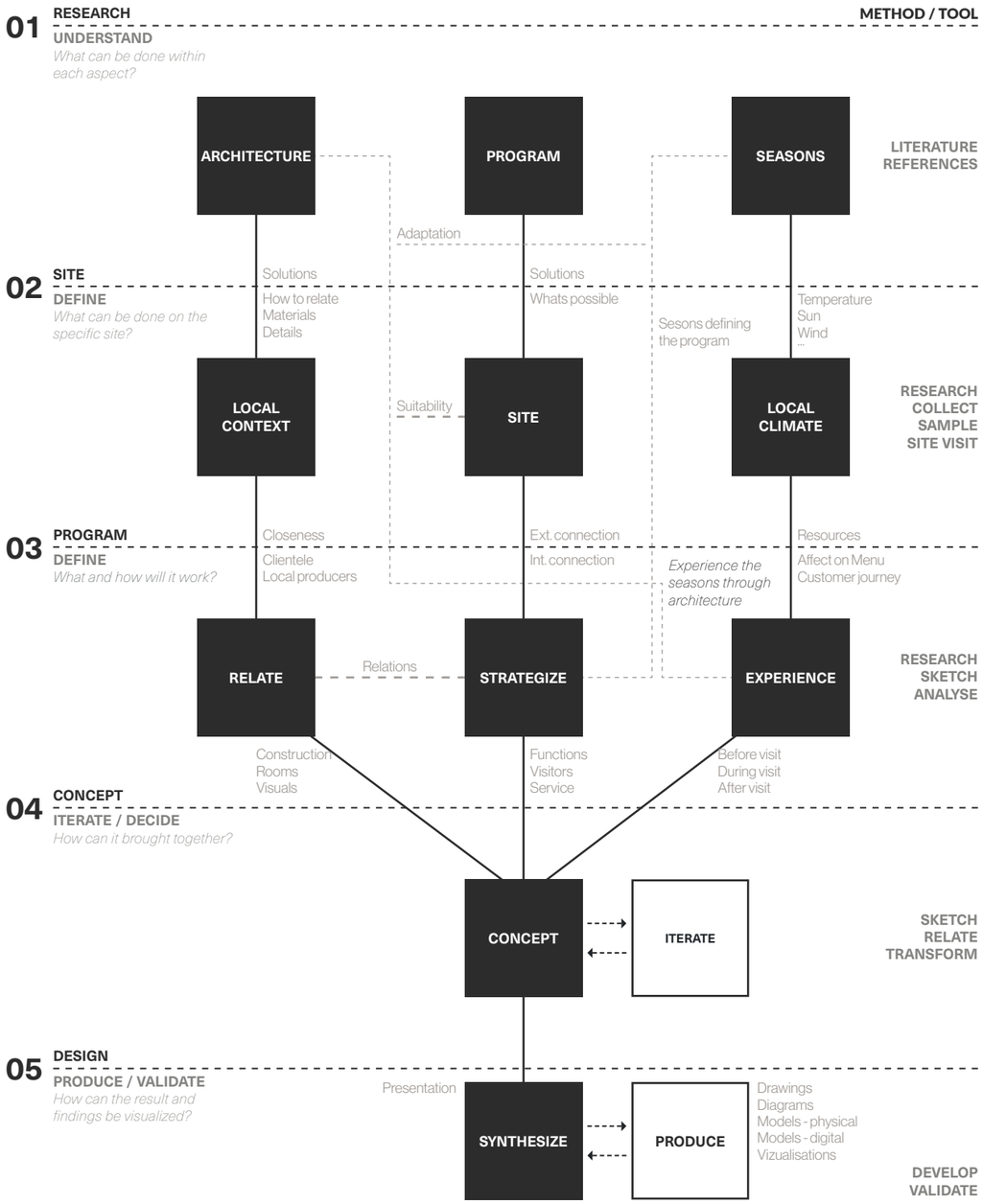


Figur 1: The relation between neuro-, sensory-, and atmospheric architecture

Part 2: Based on the framework and introduction

WORKFLOW

METHODOLOGY - FROM RESEARCH TO PROJECT



Figur 2: Graphical illustration of Methodogy - from research to project

PHASE DESCRIPTION

RESEARCH

The research was conducted with two aims. The first research was to gain knowledge of the seasons and how space can be altered for different experiences. The second research was for the upcoming exemplification of the research. The aim of the second part was to gain knowledge of the site-specific conditions and the program's needs. The thesis was primarily based on the research by design methodology, though the beginning was conducted as research for design.

SITE

The second phase linked the research to a specific site. It aimed to define and understand the boundaries and opportunities linked to it. It framed what weather data to analyze, what seasonal perception to work with, and how the program could be adapted to the site-specific conditions.

PROGRAM

The third phase took one deeper step to define what and how the different aspects work in relation to the program. The program defined what architectural spaces would be present, how people would use them, the spaces' relation to the site, and lastly, their opportunities for seasonal experiences.

CONCEPT

With the research done and a site and program defined, it was time to conceptualize the project and bring the aspects together in the fourth phase. The work shifted to research by design. The different aspects came together in many iterations for a functional approach. All aspects were transformed into the shape of a building housing the program of a restaurant, with spaces defined by the seasons to experience them the most.

DESIGN

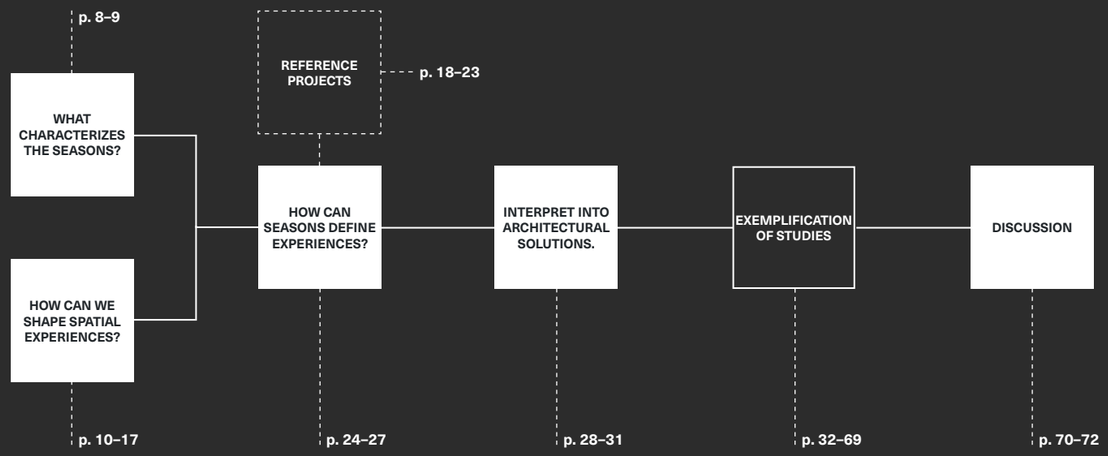
As all the aspects were defined and decided upon, the fifth phase took place for production, development, and finalization. It was about validating the thesis and presenting the results and findings in a visualized way so that many may understand it. Several different methods were used to synthesize the project.

CONCLUSION

Each aspect of the program shall be deeply rooted in its influence from the seasons. Each aspect shall create experiences and memories for all senses in relation to the seasons. Though, each aspect shall be realistically developed in terms of economy, feasibility, and reasoning. Together they shall showcase of all the seasons can be experiences to its edge within the form of architecture.

THESIS STRUCTURE

The paper was developed in specific steps. It started with two theoretical and analytical parts, which laid the foundation of: 1. what the seasons are; 2. how we can alter how space is experienced. The parts were then combined into a review of how seasons can define the experiences of space. Later, the analysis was interpreted into architectural solutions to guide future projects. An analysis of reference projects also backed and guided the solutions. After that, the solutions were exemplified in a project. Lastly, the thesis and outcome of the exemplification were discussed.



Figur 3: Graphical illustration of reading instructions

In order to create architecture in which the seasons can be experienced, one must first understand two things: what the seasonal characteristics are and what shapes how one experiences space.

Part 3: Based on literature

THEORY

SEASONAL CHARACTERISTICS

A season marks a period of a year that is distinguished by special climate conditions such as light, temperature, and weather patterns due to the earth's tilt on its axis and orbit of the sun. The seasons repeat yearly and are categorized by the four periods: spring, summer, autumn, and winter (National Geographic, 2023).

Our surroundings change with the seasons, and so does how we interact with them and experience them. The human senses will receive different information (environmental messages) during each season (*see Figure 5, p. 17*). The combined interpretation of that information can be understood as a subjective understanding of the season. Thus, there is a need to understand both the objective and subjective aspects of the seasons. *Table 1: Seasonal characteristics*, depicts several aspects for each season. The chosen aspects are firstly *temperature*, light, *sun position* and *general weather conditions*. Those aspects are objective characteristics based on seasonal data of the site selected for the examplification of this pappers theory (*see chapter Weather and Climate data, p. 38*). Later, the aspects *sound*, *feeling*, *colour*, *texture*, *movement* and *smell* are chosen to depict a rather experiental and subjective experience of the season. Those aspects are based on the authurs personal experiens and subjective thoughts.

The idea is that to create architecture in which the seasons are felt within, one must understand both the objective aspects of the seasons as well as what one might regard the season as.
Table 1 will later be combined with *Table 2: Atmospheric aspects within architecture*, to understand how the seasons can be experienced within architecutre.

Table 1: Seasonal characteristics. Description of each seasons, both factual and experiential

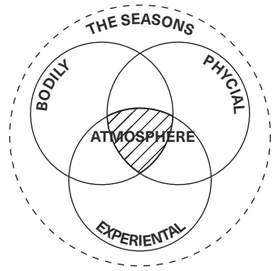
SEASON	WINTER	SPRING	SUMMER	AUTUMN
TEMPERATUR	0 °C	+6 °C	+16 °C	+9 °C
LIGHT	DARK	INCREASED LIGHT	BRIGHT	DECREASED LIGH
SUN	LOW	MID	HIGH	MID
WEATHER	SNOWY, ICY	FRESH, MILD	PLEASENT, WARM	CRISP, RAINY
SOUND	MUFFLED, HUSHED	BIRDS RETURN, CREEKS	FULL SONG, GATHERINGS	FALLING LEAVES, WIND
FEELING	TRANQUILITY	RENEWAL, GROWTH	ENERGY, VIBRANCY	CHANGE, COSY
COLOUR	DARK, HIGH SATURATION, COOL TONES, CONTRAS-TING	BRIGH, LOW SATURATION, PASTEL TINTS	BRIGH, HIGH SATURATION, WRM TINTS	DARK, LOW SATURATION, WARM SHADE
TEXTURE	CRYSTALINE, SHINY, GLISTE-RING, SMOOTH	SOFT, DEWY, LUSH, AIRY, CRISP, TRANSLUCENT	RADIANT, VIVID, FLUIDITY, MOVEMENT	ROUGH, KNITS, RUSTIC
MOVEMENT	STILL, CALM, GLIDING	FLOWING, HECTIC, POUR-LING, SWIRLING	FLOWING, GENTLE, SWAY-ING, BIG MOVEMENTS	HARSH MOVEMENT, BACK AND FORTH, SLOW
SMELL	PINE, CRIPS AIR	LILAC	FRESH CUT GRASS, BLOSSOM, SWEET	RAIN, PETRICHOR

Table 2: Amospheric building blocks within architecture

DIMENSION	ELEMENT	COMPONENTS	SPECIFICATION
PHYSICAL	SPATIAL	STRUCTURE	VISIBLE
			HIDDEN
		WALLS	ENCLOSED
			SEMI-COVERING
			MOVABLE
		CURTAINS / ROOM DIVIDERS	TRANSARENT
			OPAQUE
		FURNITURE	MOVABLE
			FASTENED
			AS DEVIDER
	OPENINGS	VISUAL CONNECTION	BETWEEN TWO SPACES
			BETWEEN SEVRAL SPACES
			STATIC
			CHANGEBLE
		PHYSICAL CONNECTION	BETWEEN TWO SPACES
			BETWEEN SEVRAL SPACES
			STATIC
			CHANGEBLE
	PATHS	AS PREPERATION	VISIBLE END
			HIDDEN END
		AS CONNECTION	ONE CONNECTION
			MANY CONNECTIONS
		THRESHOLD	TRANSITIONARY
			BOUNDARY DEFINING
	THERMAL	TEMPERATURE	HOT
			MID
			COLD
		SURROUNDING	OUTDOOR
			SEMI-OUTDOOR
			INDOOR
		MATERIAL	PHYSICAL TEMPERATURE
			SPATIAL TEMPERATURE
	MATERIAL + COLOUR	APPERANCE	COLOUR
			REFLECTIVENESS
			OPACITY
		FUNCTION	STRUCTURE
			WEIGHT
		TACTILITY	SMOOTH
			ROUGH
			FLEXABILITY
		COMPATIBILITY	DIFFERENCES
			SIMIARITIES
	DECORATION	STATIC	INTEGRATED
		CHANGEBLE	MOVEBLE
EXPERIENTAL	LIGHT	NATURAL	SUN
			FIRE
		ARTIFICIAL	COLOUR
			BRILLIANCE
			FLICKERING
			DULLNESS
			RADIANCE
			IRIDESCENCE
			FLUORESCENE
	VIEW	INTO	FOCUSED
		OUTWARDS	EXPANSIVE
		SIGHT LINES	UNOBSTRUCTED
		PROXIMITY	IMMEDIACY
	ACOUSTIC	NATURAL	WIND
			BIRDS
			LEAVES
		MANMADE	VOICES
			MUSIC
			MASHINES
	SMELL	AROMA	AROMA
		ODOR	ODOR
	MOVEMENT	STILL	STAYING
		MOVING	PASSING
			SEDUCE
			DIRECTING
			GUIDING
			LETTING GO
		TEMPO	SLOW
			FAST
	COMPLEXITY	ELEMENTS	PATTERNS
			SHAPE
			AMOUNTS
	MYSTERY	KNOWN	VISIBLE
			UNDERSTANING
		UNKNOWN	NOT YET FULLY VISIBLE
		COHERENCE	LEGIBILITY

Part 4: Based on literature

CREATING AN ATMOSPHERE



Figur 4: What makes an atmosphere

A building is a static object. Some minor aspects make it dynamic, like the possibility of opening a door or a window; some might even have contractable walls or roofs to change the space. The seasons, however, are far from static. They reappear after a whole year, seemingly weaving from one to the next, but each season is different from the other. Each season brings different kinds of tangible things, like the amount of rain or the presence of snow, and a change in the experience of them, such as how the sun feels differently, how the air one breaths feel different in the lungs, or which colour and smells we associate with the changing nature.

To create a building in harmony with the seasons, one must first understand the season itself (thus the chapter *Seasonal Characteristics*). Secondly, one must understand the possibility of how a building can be altered and the effect of it (thus *this chapter*). By understanding the two, they can be combined to create the sought experiences and atmosphere in which a building becomes as dynamic as the seasons (thus the following chapters: *Seasonal Experiences* and *Seasonal Solutions*).

ATMOSPHERE

To begin, one must first understand what's meant by atmosphere. Originally, and fittingly for this thesis, the term originated in meteorology, where it designates the totality of the earth's aerial envelope. The term has, however, been used for centuries in most European languages to refer to the emotional tone of a space or spatial constellation. Some, such as Böhme (2018), might define atmosphere as *tuned spaces*. Much like instruments can be tuned to give a specific characteristic sound; spaces can be designed to create certain atmospheres, thus the resemblance of tuning. Another, Dan Hellemar (2019), explains the same concept with the term's *ambiance and sensorial*, and continues to explain the importance of, in the context of a restaurant, to not only smell, taste and see the space and dishes but also to feel and hear as it too affects the dining experience. It writes about how the physical space affects us emotionally and the kind of setting and relation that is created at certain places and times between architecture, space, design, and humans. Peter Zumthor (2006) described atmosphere as *something that is immediately felt*. He wrote,"I enter a building, see a room, and - in the fraction of a second - have a feeling about it" (Zumthor, 2006, p. 13). He follows up by describing the act of taking in and experiencing an atmosphere as a form of perception.

Going back to the origin of the term atmosphere, the relation is still evident today. Böhme (2018) gives examples such as "there is an autumn chill in the air", "the atmosphere is very homely", "There is a threatening thunderstorm" and "it is a cheerful morning". Weather and feelings are seemingly closely related as both are atmospheres. One, the weather, may be regarded as objective, though it can be described subjectively. The other, the feelings, is quasi-objective as it suggests an emotionally tinged space. Regardless, both weather and feelings affect our bodily understanding and feelings for a given space. Atmosphere is fundamental to one being's relationship to an environment, other people, things, and more. Even though the perception of an atmosphere is unique to a particular moment (as the atmosphere is created by various factors and is no entity) and by the observer (as the subject of feelings and interpreter), the atmosphere can still be seen as commonly understood.n An example is the setting of theatres. For each scene, planning is done to set a tone and create a desired atmosphere for the audience to experience the show and to deliver the intended feelings. One can consequently construct a particular atmosphere if one knows how (Böhme, 2018).

By knowing how, as for theatrics, one can tune a space to create a desired atmosphere. This paper is about creating atmospheres of the dynamic seasons within the built environment of a restaurant. Continuing, examples will be studied on how to break down some of the aspects that create an atmosphere. By understanding the building blocks, one can understand the relation between them and how each block can be manipulated to recreate a desired effect. See *Table 2* for an overview of the mentioned aspects of atmospheric architecture.

PHYSICAL AND EXPERIENTAL

The building blocks of an atmosphere can first be divided into two blocks: the physical, which is tangible objects in space, things that make up the space or occur in it, and then the experiential, which arise feelings or an effect rather than being something tangible though some may still be objectively possible to measure or define.

Firstly, the physical aspects can be understood as the spatial arrangement. The physical is more than the common interpretation of what can define a certain space: walls, roof, and ceiling or the lack thereof. The physical space is also defined by the things in it. Böhme (2018) describes spaces as something that are determined by things as they create a relation to location and distance. They articulate orientation, movement, impression, markings, and more, and by doing so, they create direction and constellation, which one can interpret as space. All spaces might not be concrete, but by being in the otherwise void, they create a space nonetheless. Atmosphere in relation to physical space is, furthermore, by Peter Zumthor (2006), described as the body of architecture, as material that by their presence creates space, or frames, as if they were the anatomy of a building.

Secondly, the experienced space may, compared to the physical, have an even more significant role on the body and experiences of the person sensing the atmosphere. The non-tangible is, hence, equally fundamental to the human perception of atmospheres (Böhme, 2018).

SPATIAL

The physical space is part of the foundation where the atmospheric qualities can be added and thus felt. Continuing on Zumthor's (2006) description of architecture's physical space as the body of architecture, he describes it as "The material presence of things in a piece of architecture, its frame" (p. 21). The architectural resembling of a body is created from the construction, the materials covering the structure, the finishings on top of that, and so on. They are all the layers of architectural space. Together, they form a collection of materials, order, scale, design, etc. By Zumthor, it's what resembles the body, the anatomy - both the skeleton and all other things we cannot see and the skin that covers it and all other things that are visible to us - the physical body.

OPENINGS

Openings, whether physical or experiential, serve as connectors between different spaces. While commonly associated with windows or doors that bridge the interior and exterior, openings can exist between any given number of spaces, offering a versatile potential for spatial interaction.

With openings, a particular space has the potential to interfere with another space on the other side of the opening. The number of openings can be unlimited, and thus, the number of spaces it interferes with, too. The opening can be static or changeable (it can change with manual interference or due to automatics). It can allow for light, smell, sounds, and more to travel between the spaces and thus be experienced differently than if the opening were not there or if the atmosphere were only experienced in the space of its source rather than through the layer of spaces.

Kuo (2003) studied farm-to-table events in conduction with sensory marketing. In the study, they found that the integration of culture and natural elements is what differentiates such events from traditional indoor events, which leads them to achieve a more integrated sensory experience.

Openings, as suggested by Coburn (2019), can help people navigate a space more easily. Together with other visual reference points, openings, and views of the exterior, help with navigation compared to homogeneous visual spaces, where navigation can be hindered.

Furthermore, openings to the exterior possess a perception of thermal control, even if the control is not actual. Studies, as concluded by Coburn (2019), suggest that humans ' tolerance for broader temperature ranges increases with the perception of control. As a result, openings are more than a visual and physical connector; they have the potential to change how humans perceive the comfort of space. That can, for example, be highly relevant to the experiences of the seasons indoors.

PATHS

Paths can often be the extension of openings that connect spaces. As mentioned, openings are more than the outside-inside connection. They simultaneously connect spaces of any sort, which can be coordinated with paths. Thus, the path is another layer of the experience of one or several spaces.

Yu (2009) explains that paths function as a preparation for one's arrival to space. Mitana (T. Mitani, persona communication, June 19, 2023) suggests the same function as he exemplifies the paths in Japanese tea gardens, explaining that the visitor will follow a trail leading up to the tearoom. However, the path is not straight; it turns as one moves forward and passes different layers of the connected garden. Due to this, the small scale of the path is perceived as long and becomes a procedure to release any concerns of daily life and prepare for the entering of the upcoming space, the tearoom - the path becomes a spiritual cleaning.

With a path and its relation to entering, exiting, and being in a space, Zumthor (2006) explains an essential tension between interior and exterior: to go from the open to the enclosed, the public to the private. That tension can be configured with the design of the path. With the addition of thresholds, crossings, and transitions, one can create an act and control how one will experience the path from one space to another (Zumthor 2006). The same logic can be applied to paths connecting interior to exterior, interior to interior, exterior to exterior, or any other configuration.

THERMAL

The temperature of a space relates to the thermal comfort of the surrounding air and the materials, and both are affected by each other. Zumthor (2006) exemplifies thermals in materials with steel, which is known to often feel cold to the touch and can bring the temperature down. He further writes about touch, which one can feel with the whole body, even with the feet.

Yu (2009), however, exemplifies heat with the warmth of a fireplace. The fire gives a warm thermal feeling and also contributes to intimacy and comfort.

Consequently, thermals in spaces are dictated by both materials and the air itself, their thermal characteristics, and the temperature of the surroundings, whether outside, inside, or somewhere in between.

LIGHT

Light can either come from a natural source, such as the sun or fire, or from an artificial source, such as light. To some extent, it can be a combination of both, where technology works with natural light and creates what would be "unnatural." An example of that is fiber optics, where the sun can be used to lighten a room without any windows or direct openings to the sun.

There are more differences between natural and artificial light other than their sources. The different types of light affect humans' psychology and health. Yu (2009) concluded studies by Maas, Jayson, and Kleiber (1974), which showed that artificial light, which approximates the spectral quality of natural sunlight, showed a similar effect on people as natural light. In the same compilation, another study by Fritz Hollwich (1979) shows that high-intensity light from an artificial source can induce a stressful reaction in humans, while the same was not true for high intensity of natural sunlight, where the humans instead adapted the levels without difficulty.

In relation to restaurants, light usually serves two purposes—ambient and function. Functional light is important for the staff, where enough sunlight is needed to enhance concentration and cooperation and to avoid illness caused by the absence of enough light (Yu, 2009). Ambient light, however, is more for aesthetic and atmospheric purposes. It can, for example, be about creating enough contrast by leaving large parts of the space dimmed but illuminating the tabletops well to stress the presented dishes (Yu, 2009).

Following up on ambient lightening, which is highly relevant for atmospheres, Böhme (2018) claims that light itself has the potential to create spaces of their own type and character. He suggests that light can create atmospheres that can be serene, gloomy, festive, homely, and more. Zumthor (2006) suggests that atmospheres and spaces are created with light by how and where it falls, where shadows are created, and the surfaces on which the light shines, which may change their appearance. Furthermore, Böhme (2018) writes about how things appear in light. Things will still exist without light, but it is with the light that they appear to the eye. Due to light, the space can appear with contours, contrasts, and a visual understanding.

According to Böhme (2018), light can have a variety of characteristics, such as different colors, brilliance, flickering, dullness, radiance, iridescence, fluorescence, and more. As the light shines on different materials and shapes, another layer of possible characteristics comes to life. Böhme also describes how certain light characteristics can relate to weather, too, such as how one can understand the light of autumnal lightning and dusk. The light, therefore, has the ability to tune humans in a particular way to make us experience space in a certain way, depending on its characteristics.

MATERIAL + COLOUR

> *Take a stone: you can saw it, grind it, drill into it, split is, or polish it – it will become different thing each time. Then take tiny amounts of the same stone, or huge amounts, and it will turn into something else again. Then hold it up to the light – different again. There are a thousand different possibilities in one material alone. (Zumthor, 2004, p. 25)*

To the citation of Zumthor, one could also add time as manipulation of material as time has the ability to change material - its appearance, functionality, perceived value, and atmospheric contribution. The time could be understood as the rhythm of the day, the weaving of the seasons or as long as years of influences and impacts. Furthermore, Yu (2009) writes about material compatibility too. Materials are not only endless in their usage in themself but will react to other materials. They could, for example, radiate colours, thus changing the appearance of others, or they could, by their mere presence, create contrast between brightness, tactility, and so on.

Much like Zumthor, Yu (2009) describes that it is not only about the appearance of the materials and colours but also about their tactility and structure, which will react to people's sensations. Yu (2009) explains that people generally disregard the ground when walking. However, if the floor were to be uneven, the perception might be awakened. The unevenness compels people to pay attention to it and be aware of the surface. One could, therefore, consciously work with material and colour to draw attention or not where it is wanted.

DECORATION

Architectural Digest (n.d.) writes in one article that a restaurant's success in today's social program era could depend just as much on its decor as on the quality of the food it serves. The best, however, is when both work in tandem, for when food and the environment work together, the whole experience is elevated.

Decoration can relate to both the physical and experiential aspects of atmospheres. It is physical in regards to it objectively taking place in space and shaping the understanding of space. It is also thanks to decoration that other things, such as light, can transform the space, as decoration is the things that shape the shadows while the material and color of it reflect or absorb the light. It is, however, also experiential as it sets a tone, suggests a place, and suggests feelings, much like the props at a theatre or movie.

VIEW

Architecture can be seen as a tiny construction of a box on our globe, as described by Zumthor (2006). With the creation of the box, we have an outside and an inside — an exterior and an interior in which one can position oneself and relate to the other. A view is such a relation, whether one is looking into a space or out to another.

Looking through a window is often the act of looking out to another space from where one is standing. Looking into another space can, however, in the context of restaurants, be exemplified by a guest being able to view the kitchen space where the chefs prepare the dishes. The type of view someone is offered has the potential to change one's perception. In terms of restaurants, Levin (2009) (as cited in Yu, 2009) suggests that the ability to view the food being prepared gives a sense of freshness and a sense that it is prepared just for them. It is explained as sensory communication. How much one can view the food being prepared can be altered. Baraban (1992) writes that a display kitchen (a kitchen that is open to the guest) has become a hallmark of many fine restaurants. It is explained that the display kitchen can be the kitchen where all the food is created from the very first preparation, or it can be nothing but a finishing station or anything in between (Baraban, 1992). It is, however, important to consider the sightlines from the customer's point of view, as a display kitchen puts harder pressure on having every item neatly ordered. Thus, under-counter storage is better opted for in a full-view kitchen, while an open shelving system can be more practically incorporated in a partial-view kitchen (Baraban, 1992). Thus, depending on the amount of view, the guest will receive more or less sensory cues, which will affect how immersive the experience is and their perception of it.

Furthermore, views also have to do with proximity and distance - of one's relation to what he is viewing. According to Baraban (1992), distances can be divided into 4 levels: personal-, social-, public-, and intimate distance. Each level needs to be constructed differently and with different levels of detail as each level corresponds to different senses besides visuals.

Moreover, Coburn (2019) suggests that vision is the most widely studied of the sensory systems. The vision is what interprets color, brightness, and hue. Contrast, order, complexity, and naturalness are further aspects that Coburn (2019) explains as the key aesthetic properties of architectural design. Contrast becomes essential as it gives an understanding of edges,

which is crucial as they may imply a high density of visual information about the space, which is used to identify objects within the space. Order, thus the absence of randomness and the presence of predictable patterns, is visually preferred as it can be processed more fluently by the brain. Balance and symmetry are also discussed as contributing factors to order. Resultingly, people often prefer spaces that are more ordered.

ACOUSTIC

Zumthor (2006) describes acoustic, or the sound of space, as the interior of architecture being like large instruments. He describes interior as capable of collecting, amplifying, and transmitting sound. The shape of the space, the material it's made of, and how the material has been applied all affect how the sound will take form. Furthermore, Zumthor (2006) describes sounds as being able to make us feel different things depending on what is sounding and from which room it originates.

Sound can, as described, originate from different sources, they can be natural or manmade. The natural can be linked to the sound the wind makes as it passes by or whispers through the trees. It can be from the song of different birds or the leaves slowly falling during autumn and how they change the sound of one's footsteps as one walks. The manmade is, however, what can be described as the sound of machinery or something as easy as the steel scraping on each other in a kitchen. It can be the music playing from the speakers, the different voices of the people sharing the same room, or even the voices that can be heard through a wall.

Yu (2009) explains that having the kitchen open to the dining area in a home is common. Adopting the same concept in a restaurant by having parts of the kitchen in the dining area may recreate that homelike environment. The sound it transmits, as sound enhances other sensory perceptions, may stimulate appetite and reinforce taste and smell (Yu, 2009). As viewing the food being made, hearing it also impact the perception of the food being prepared fresh.

Sound has the ability to complement vision, thus enlarging one's spatial awareness of what is not only in front of them but behind them, too, of what cannot be seen, too (Yu, 2009).

OLFACTORY

Olfactory rarely receives attention in interior design. However, like the other senses, smell strongly relates feelings to a space. Odor plays a critical role in behavior patterns as it is a key motivational factor (Yu, 2009). Therefore, smell should be thought of and planned for, especially in restaurant design.

MOVEMENT

A building is often static but not necessarily the suggestion of it. How a space is composed can control the rate of movement, according to Yu (2009). For example, the lack of ornament can increase movement, while the presence of it can slow down the rate. In the case of a restaurant, the presence of decoration can prolong the dining time and stimulate consumption (Yu, 2009). Zumthor (2006) adds that such as light, too, suggests a certain pace and movement. Light also has the ability to guide one through space. Zumthor (2006) also suggests that architecture can be seen as spatial art but also as a form of temporal art; thus, the experience is not limited to a single time. Instead, the experience of architecture can change due to both time and one's movement within it.

The type of movement and the suggestion of it can very too. In the example of a hospital corridor, the architecture shall often be directing. In other cases, such as in a spa, the architecture could seduce while inducing a sense of freedom. Some places, such as a living room, could suggest staying. *Passing* and *staying*, *directing*, *guiding*, *seducing*, *letting go* — it should all feel very natural (Zumthor, 2006).

COMPLEXITY

Complexity refers to the intricacy of elements in a space (Yu, 2009). It is further supported by Coburn (22019) as he states that complexity can also refer to the volume of information present in a space or to the richness of space. Yu (2019) further explains complexity as the element subdividing the space, furniture and decoration, patterns, general elements, shapes, forms, or any decoration that increases the greater complexity (Gobé, 2001, as cited in Kuo, 2003). The complexity and all it is made up of should embody the brand identity as it can effectively create appeal and memorability for clients (Gobé, 2001, as cited in Kuo, 2003).

MYSTERY

Mystery can be seen as the thoughtful curation of all the aspects mentioned earlier. Mystery is considered in regards to information - what one either has or lacks and the balance between the two. Malnar (2004) (cited in Yu, 2009) explains the two as informational needs. Understanding and exploration are the needs that can create patterns of complexity, coherence, legibility, and mystery. There shall be a good balance between allowing people to see and understand, but not everything at once, as it provokes a desire for

exploration and thus creates a more decadent, interesting space. It is about attracting people to pursue more information by proceeding further into the space, while the goal of the space itself is to provide both expectations and impressive aspects (Yu, 2009).

The balance to achieve mystery can firstly be described in the relation between visuals and the viewer, the "explorer." To achieve mystery, the architectural space should refrain from exposing all elements simultaneously. However, it should offer promises of what can or might be. It can be achieved by using different architectural elements, interiors, decorations, plants, and so on to partially block parts of the visual space(Yu, 2009). Another way of working with views is, as described by Baraban (1992), by using translucent materials such as frosted glass or a glass brick wall. The material will limit full see-through but allow some light and motion to be perceived.

Secondly, mystery needs balance in distance and accessibility. If something is too far away from the explorer to investigate, the mystery rate becomes lower. The closer it is, the more accessible it becomes for the explorers to investigate. The same goes for how one can reach the space and how the path to get there is (Malnar, 2004). As stated before, however, it shall be balanced in terms of visual accessibility as it cannot be too close, or it would already be exposed at first glance.

Lastly, a conclusion by Yu (2009) shows that a higher level of mystery is achieved if the first point of interest is of shorter distance than the rest, thus more accessible. Paths can provide easier access to the larger environment but should not be too long or too short, nor too narrow, and it should turn out of view at certain points. There should also be a brightness contrast of light between the foreground and deeper parts of a space. The spaces should neither be too large and wide open nor too small and enclosed (Scott, 1993, as cited in Yu, 2009).

SUMMARY

The rain made of water droplets is the physical aspect which, as it hits the ground, changes the smell, creates certain acoustics, one feeling outdoors, and thereafter creates an experiential atmosphere too. Light might hit the bodies of water and reflect on another material, thus creating a new experience. If it has been a long, hot summer, the rain might be well welcomed, but long into an ever-raining autumn, it might be the last thing one wants. The layers keep adding in relation to the bodily perception. With each new layer, whether coming from the one who experiences the atmosphere, being of physical character or experiential, an atmosphere is created in that particular time and place.

Nusairat et al. (2020) write about the effect of design on restaurants in relation to customer behavior intention. In it, they explain that servicescape is a term for the physical environment where service is provided. In a servicescape, employees and customers are exposed to cues that they respond to. Findings indicate that the design of, for example, a restaurant has a significant influence on customers' affective states and perceived quality. The design is found to be an influential factor in shaping a customer's perception (Nusairat et al., 2020). The way in which a space is designed is therefore essential not only to how it will be perceived but also to the perception that will result in a customer's affirmation and experience. By creating an atmosphere that relates to the business, such as experiencing the seasons in a farm-to-table restaurant, the relation between space, atmosphere, service, and customer sensorial perception may align for a better outcome.

Hellemar (2019) explains the same concept of his experiences within the restaurant world - there is not enough that a place is beautiful or that the food is good. He explains atmospheres as something hard to pinpoint but each and every aspect of it creates,

Architecture should, therefore, convey more than aesthetics. It plays a pivotal role in creating memorable experiences that entice diners to return. The interior must ensure that the table neighbor can be heard, as well as the atmosphere around, as a greater number of people give a positive experience, all while providing a pleasant overall experience from food to service to design.

SENSORY DESIGN

The atmosphere is a result of many factors that create layers of experiences. Atmospheres are physical things and experiential aspects that are understood by humans' bodily ability. When working with the body's ability, one often refers to sensory design, which is a deeper layer of atmospheric design. Sensory design discusses the basis of how humans interpret space, which lies in the senses.

As suggested by Malnar (2004), humans' understanding of the world is, in fact, not the real world; *see Figure 5.* The world, the space surrounding us, sends information for our senses to read, whether it be olfactory, sound, touch, visuals, or taste. The information given is thus collected and filtered through our senses and further our bodily ability to pick it up. Our neurological system will then interpret the filtered senses with the help of the cognitional processes of our brain. What is then perceived of the world is merely our understanding of it.

Moreover, one can argue that not everyone will understand a given space in the same way, even if their body would sense it precisely the same. Humans' complete comprehension of space is partially based on what Malnar (2004) calls cultural modifiers. As seen in *Figure 6*, our perceptual system (our senses) reads the space, but it is interpreted through cultural modifiers and previous experiences, which results in a contextual perception. The modifiers may be based on past experiences and memories, cultural belonging, knowledge, and prior understanding of the spatial configuration. In conclusion, in order to create the desired atmosphere, one can not only approach a play with our senses; one must understand who will interact with the space and what their background, experiences, and understanding might suggest about the space.

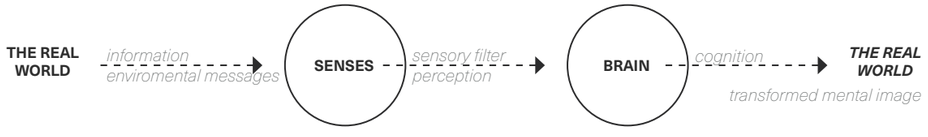
NEURO ARCHITECTURE

The intersection of neuroscience and architecture is, according to Coburn (2020), a fairly new field of study. The studies "aim to investigate the neural and psychological implications of architectural design and to inspire the construction of built environments that support physiological experiences and wellbeing" (Coburn, 2020, p. 660). As a relatively unstudied field, Coburn (2020) concludes that few studies have been conducted with an empirical investigation. There is, however, some research on neuroarchitecture that may be deemed relevant. Concerning atmospheric architecture, neuro architecture can be seen as a field that scientifically backs up the function of sensory design, thus atmospheric architecture, with a deepened understanding of what and why humans may prefer one space to another and their perception of the given space.

As mentioned, Malnar (2004) suggests that humans understand the world through filters of our senses and previous experiences. This is supported by Coburn (2020), on a neurological level, too. Coburn (2020) proposes that three neural systems are engaged when humans experience the built environment. The systems are the sensory-motor (visual, auditory, olfactory, somatosensory, and vestibular), emotional-valuation (feelings and emotional reactions), and knowledge-meaning (influenced by culture, education, and precious experiences).

Coburn (2019) explains the knowledge-based aspects of our spatial interpretation as a top-down input, while the neural responses are a bottom-up version. To illustrate this, he cites a study by Kirk, Skov, Christensen, & Nygaard (2009) which found that architectural students and architects had different neural responses to images of buildings compared to individuals without any study or experience in the field. This suggests that our understanding of architectural design is not solely based on our knowledge, but also on our neural responses to the stimuli.

Furthermore, the neuroscience of architecture has the potential to be valuable not only in terms of aesthetics but, as explained by Coburn (2019), when understanding the neural correlation of more profound and more complex mental states, too. The mental states that are induced by a space will be different depending on the space's characteristics. For example, a religious space is created to foster a state of contemplation; schools should support learning, and a workshop may be intended to inspire. By understanding the neuroscience of humans in relation to space, spaces can be designed to foster the intended qualities better.



Figur 5: Perception: the Transformation of the Real World to the Precived World. (Interpretation of Malnar, 2004)

Figur 6: Perception: A Quotient of Modifiers. (Interpretation of Malnar, 2004)

The references serve as sources of inspiration and as guides for refining seasonal concepts into solutions.

Part 5: Based on literature and analysis

REFERENCES

WIDEN THE PERSPECTIVE

Several references have been studied to better understand the possibilities and learn from previous research and projects. The references have been divided into 2 groups: restaurants to better understand the program and seasonal projects and solutions to better understand how to work with the concept of enhancing the seasons. Each project chosen may have more implications than what the groups suggest.

SEASONAL PROJECTS AND SOLUTIONS

for the concept

Three projects are chosen for their conceptual connection to the seasons. The first one, *Serpentine Gallery Pavilion 2011*, is chosen for its ability to direct the experience of its visitors - to come from one garden to another, but with architectural solutions, being able to experience it differently. Furthermore, rain is emphasized in the building, though guests can experience the downfall in a protected space. The second reference, the *Japanese Engawa*, is chosen for the architectural idea of creating a series of spaces that gradually go from outdoor to indoor, hence being able to select the level of emersion. The third reference, the *Ice Hotel*, is chosen for its strong seasonal relations. It is purely based on the changes of the seasons and utilizes the winter season and cold in particular to create a unique experience.

RESTAURANTS

for the program

Four projects are chosen for their relation to the chosen program - a restaurant. The first one, *Frantzén*, is chosen for its work with different spaces and atmospheres through the dining experience. The second reference, *Under*, is chosen for its unique relation to its surrounding nature - a relation that opens up new experiences and a way to come closer to nature. The third reference, *Äng*, is chosen for their work with material and their work with the journey to and from the restaurant. Lastly, the fourth, *Noma*, is chosen for their work with seasonal produce for the food and in story-telling-ways to create expectations for their guests.

Concept reference

SERPENTINE GALLERY PAVILION 2011
TYPE: PAVILION

Client: Serpentine Galleries
Architects: Peter Zumthor
Location: London, UK

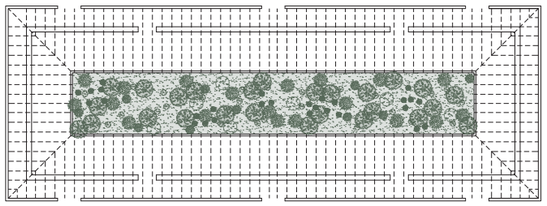
Year: 2011
Area: 390 m²

During the 11th edition of the annual series by Serpentine Galleries, Peter Zumthors pavilion operated as a public space for three and a half months. Since 2000, internationally renowned architects have been commissioned to design temporary spaces. The concept of the 2011 edition was *Hortus Conclusus*, an enclosed garden, which for this pavilion is described as a garden within a garden (Serpentine Galleries. n.d.).

The idea for the project was to create a pace that is cut off from the noise, traffic, and smells of London and instead offer a place to sit, walk, and observe in peace (Serpentine Galleries. n.d.). The shape itself is simplistic – it is rectangular with a hallway that connects the exterior garden of the park with the enclosed garden inside. What is impressive is the intense experience Zumthor has created by how each aspect is composed. The guest enters one of the multiple openings into a dark hallway. The next opening, which leads to the inner garden, is offset from the outer ones, thus creating a sense of mystery and exploration while exaggerating the bright exit into the inner garden.

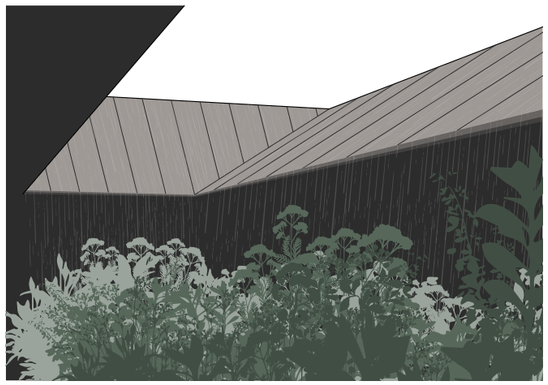
Furthermore, the choice of constructing an inward-facing roof opposite to an outward-facing roof, which might seem more common, greatly impacts the experience of the weather. Not only will the opening allow for the rain in its particular area, but the direction of the roof guides all other rainwater hitting the structure to be directed to the opening, thus enhancing and exaggerating the rain. Additionally, the roof gives a view of opening up to the sky while still framing it rather than closing in and limiting it.

The inner garden, designed by Oudolf, have been curated to embrace each plant life-cycle and to create a space that sparks throughout all seasons.



Figur 7: Plan of the pavilion. Note the lack of parallel opening.

Figur 8: Section of the pavilion.



Figur 9: A water wall created by the rain falling on the roof surrounding the inner gaden.

KEY TAKEAWAYS / IMPLICATIONS

A garden within a garden — to bring in what is usually outside or to see the seasons within what is normally sheltered from them. The 11th edition pavilion focuses on bringing in nature and works with the settings to emphasize the garden and the weather's appearance. The architecture is simplistic but complex in its configuration. It creates a story and manages to amplify the effect.

Concept reference

THE JAPANESE ENGAWA
TYPE: BUILDING DETAILS

Client: Varies
Architects: Varies
Location: Japan

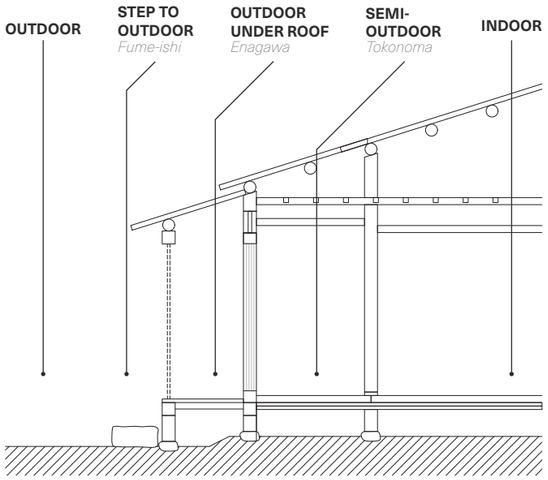
Year: Varies
Area: 1-1,3m wide

The Japanese gardens are renowned. The Japanese language has many words to describe each part of the garden and its relation to one another. Firstly, when one says garden, it always refers to the combination of architecture and greenery. The garden is consequently not one space, it's a combination of spaces meant to be viewed from different openings. Secondly, there is a different hierarchy of private, public, casual, and formal spaces – each arranged in an organized order representing higher respect. Thus, the gardens become increasingly richer with each step up the hierarchy (T. Mitani, persona communication, June 19, 2023).

Furthermore, the core space of a Japanese garden may not be seen as the actual garden, but the veranda, engawa 縁側, which runs along the outside of buildings. It has an important role within architecture as it connects outdoor and indoor in several steps: *the wide terrace* (dry part), *the drop terrace* (wet parts), *dog walking path* and the *rain catch* (T. Mitani, persona communication, June 19, 2023).

KEY TAKEAWAYS / IMPLICATIONS

The main takeaway is to understand and work with the relationship between the garden and the architecture — to not see them as separate entities but as two parts working together in every direction. They evolve and offer an enriched environment for people while better connecting the outdoor and indoor environments. The relationship between the two works in layers to provide comfort and handle needs profoundly.



Figur 10: The spatial transition from outdoor to indoor.

Concept reference

ICE HOTEL
TYPE: HOTEL

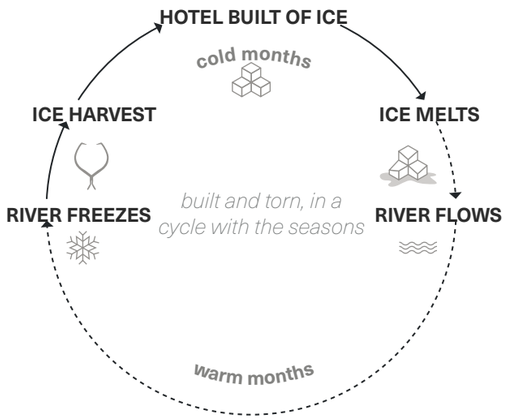
Client: Icehotel
Architects: Varies
Location: Jukkasjärvi, Sweden

Year: since 1989
Area: Varies

The ice hotel in northern Sweden is a highly seasonal project directly created by the surrounding forces, nature, and the climate. Each year, as the Torne River freezes when winter approaches, a new hotel is created from its ice. Ice blocks weighing 2 tons each are harvested during spring and stored until construction begins in the early winter. Later, as the heat rises towards the summer, the hotel melts away and back into the river (icehotel.se. n.d.). Without the cold winter and shifting seasons, the hotel would not exist the way it is known. It would not be an integrated part of nature's shifting seasons and forces.

KEY TAKEAWAYS / IMPLICATIONS

The ice hotel can be seen as an embodiment of the seasons. It was created from the cold and disappeared in the heat, each year in a new shape. While the project of this paper aims to be more static and work all year round, it is essential to understand each season — what happens during the year and how it can be utilized. By understanding the seasons of a specific location, it will be easier to integrate their characteristics into architecture to create spaces where one can experience them.



Figur 11: The building process of the Ice hotel in a cycle related to the seasons.

Program reference

FRANTZÉN
TYPE: RESTAURANT

Client: Frantzén Group
Architects: Joyn Studio
Location: Stockholm, Sweden
Year: 2017
Area: 500 m²
Seating: 23 seats

“A restaurant that will ’ignite all the guests’ senses and hit you in the stomach’” [original: ”En restaurang som ska ’tända gästernas alla sinnen och träffa dig i magen”] (Hallemar, D 2019, p. X, own translation), that’s how the restaurant concept is described by the architects of Joyn Studio. The restaurant is described to function as a “background to an act” that the guest moves through as they proceed with their dining. In each room, the interior has been designed to be versatile both in detail and as a whole. They have also worked with the transition between rooms by playing with scales, lights, and energies. One example of an opposite transition is when a room goes from being light and airy to dark, narrow, and dim or when the guest takes their first dishes in a laid-back lounge to later eat in a livelier room where they can see the chefs’ work (Hallemar, 2019).

KEY TAKEAWAYS / IMPLICATIONS

The restaurant and the room/-s it takes place in do not need to feel static or be designed the same way throughout. Instead, a segment of rooms can take the guest on a culinary journey that is both an atmospheric and an experiential journey. By doing so, the senses deepen, and the experience becomes enriched. This also implies the dishes can be served at different places as changing rooms for serving opens opportunities for more experiences. The changing of space can become a theatrical act where each room has its own characteristics. By adapting projects to these schematics, all aspects of each season don’t need to be experienced in the same place simultaneously. Instead, the guest can be given the chance to shift through the season’s changes and experience it to the fullest.

Figur 12: The contrasting experiences of spaces.

Program reference

UNDER
TYPE: RESTURANT

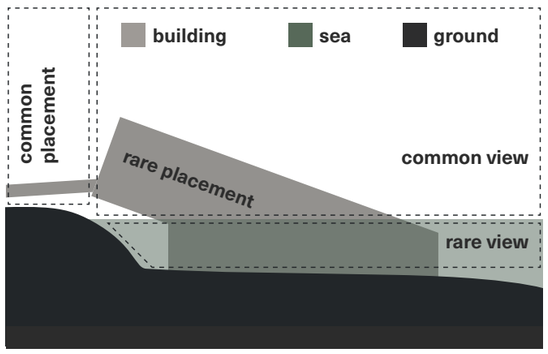
Client: Stig & Gaute Ubostad
Architects: Snøhetta
Location: Lindesnes, Nowway
Year: 2019
Area: 495 m²
Seating: 40 seats

The restaurant Under takes guests from the intense weather conditions that Lindesnes often faces and brings them down under the sea surface, where the dinner is served with a panoramic view of the marine life. Under is, by the architects Snøhetta, described as a project that emphasizes the balance between land and sea while proposing a way in which guests can understand the relation to the surroundings - both above and below the sea and alongside the sea life (Snohetta.com, n.d.).

Furthermore, the restaurant is equally designed for architecture as it is for marine research. It has been designed with a sensitive consideration of its context and is expected to become a part of the marine environment over time. One way to ensure it is the characteristics of the concrete shell, which works as an artificial reef that limpets and kelp may inhabit. The idea is that the projects become a place where marine studies can be conducted (Under.no, n.d.).

KEY TAKEAWAYS / IMPLICATIONS

Most interesting is the buildings’ ability to open up a world that’s rarely seen by the common eye. It has been constructed so that the guest, who would usually see the sea from above, now becomes a part of the life within. It offers a unique experience of nature.



Figur 13: Common and rare views and placements.

Program reference

ÄNG
TYPE: RESTURANT

Client: Ästad Vingård
Architects: NORM Architects
Location: Ästad, Sweden
Year: 2022
Area: 1200 m²
Seating: 17 parties

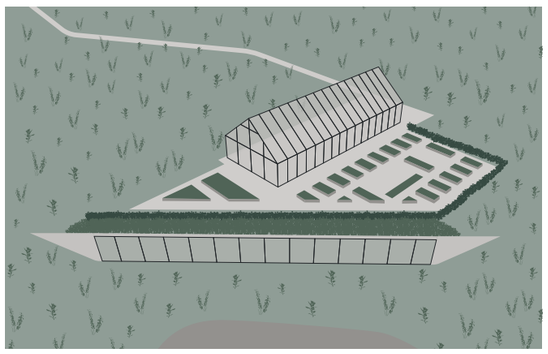
The experience of Äng starts even before the guest reaches the dining space. The guests get to walk on a winding path up to the contemporary interpretation of a greenhouse that stands lonely on the field (Norm Architects, n.d.). Right outside the greenhouse structure is an herb garden. The flooring on which it stands seamlessly connects the indoors and outdoors, emphasizing the relationship. Furthermore, the restaurant consists of another lower floor that isn’t visible as one faces the glass structure. The building is placed on a gentle slope, and the lower floor is partially underground, with one façade opening up with floor-to-ceiling windows towards the nearby pond (archdaily.com, n.d.).

The architects have said to work on a palette that would harmonize with the natural surroundings. The project is designed almost exclusively in stone from floor to wall or in pine from floor to ceiling. All furniture is made of wood, while the textile is in a muted grey colour (Norm Architects, n.d.).

The glass structure itself is clear of installations to maintain a minimalist aesthetic. Ventilation is hidden under the flooring in the greenhouse while being incorporated into the ceiling on the lower level (inventiair.se, n.d.). Overall, it allows for an almost seamless experience of sitting in the middle of a field with the sky stretching endlessly overhead.

KEY TAKEAWAYS / IMPLICATIONS

The restaurant isn’t just the building itself but also its surroundings and the journey there. Architecture could, therefore, immerse the visitors in nature with such a glasshouse, but the path from transport to the building should also be considered. The material chosen should also reflect nature to better connect indoors and outdoors.



Figur 14: Birdview of resturant.

Program reference

NOMA
TYPE: RESTAURANT

Client: Noma
Architects: Bjarke Ingels Group
Location: Copenhagen, Denmark
Year: 2018
Area: 1290 m²
Seating: 40 seats

Noma is an experimental restaurant that serves seasonal menus with a modern twist on Nordic cuisine (architecturalrecord.com, n.d.).

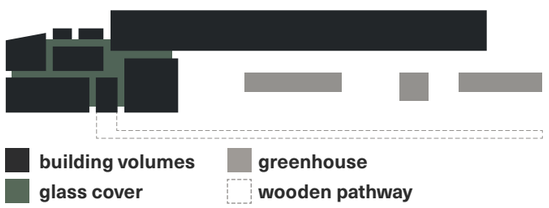
The spaces of Noma is seperated into 11 paviolions of different puposes: 3 greenhouses, 1 serving area, 1 bakery, 1 kitchen, and 8 areas dedicated to the cooking, experimenting, and staff areas. All pavilions are constructed differently in terms of material, light, view, and atmosphere. They are connected under glass-covered paths, which offer views of the changing seasons and current weather (big.dk, n.d.). The seasons are also showcased through glass jars, which are filled with various ingredients that are in season. Lastly, the path to the dining passes the greenhouse and kitchen, both to offer oversight of the seasonal cooking and what is currently growing (architecturalrecord.com, n.d.).

KEY TAKEAWAYS / IMPLICATIONS

The idea of separating the needed spaces into several pavilions can lead to two things: either the need for outdoor connection or, as in the case of Noma, the opportunity to connect through an indoor pathway that is visibly open to the outside while staying protected.

Working with changeable decorations is an easy way to set the seasonal atmosphere. The glass jars at Noma are a static element with a decided placement but with changeable contents. Further, the seasonal atmosphere can be shown by guiding the guests past specific spaces, such as a greenhouse.

Figur 15: Illustration of different seasonal ingredients showcased in the restaurants’ exhibition space.



Figur 16: The components of the restaurant: volymes, glass covers, green houses and and pathway

Once one understands the seasonal characteristics and what shapes how one experiences space, one can start to create concepts that combine the two into seasonal experiences. At this step, the concepts are still implicit ideas that will be interpreted into solutions later.

Part 6: Based on a synthesis

SEASONAL EXPERIENCES

COMBINING SEASONS AND ATMOSPHERES

CONCEPTS

The following tables of this chapter depictes suggestions of how to merge the principles of atmospheric architecture with the seasonal characteristics. It is based on the different *elements* found in *Table 2: Amospheric Building Blocks within Architecture*, thus: spatial, openings, thermal, material + colour, decoration, light, view, aucustic, smell, movement, complexity and mystery. Each *element* is given a suggestion of how to create architectonic experiences and spaces in relations to the seasons from T*able 1: Seasonal Characteristics*. The suggestions is based on the referens projects that follows in the next chapter, general and know solutions, memories and ideas of the auther, and general discussions with other. There are no one truth to the suggestions as they marley are created to spark ideas for further investigations.

Table 3: Seasonal Experiences Within Space

	RAIN
What	Movement, pouring, pattering, wet, blue/crystal clear, give smell to the ground
	How to experience / incorporate it
Spatial	It can be part of the immediate space or of a greater spatial configuration
Openings	See it come and go, in and out, from below and above
Thermal	Feel the warmth or cold it brings
Material + colour	Put light on it to create reflections on other materials
Decoration	Can be seen as a decoration by itself or as part of decoration when used with light
Light	Creates shimmering, sparkling and reflection when light is directed at it
View	See it, enhance it
Aucustic	Hear the pattering and pouring sounds
Smell	Smell the earth that it enhances
Movement	Create patterns of different movement - collect, direct, stop or flow, fast or slow
Complexity	Integration in several layers in the architecture and surrounding site
Mystery	Where will it go? Where can it be seen?
	WIND
What	Movement, air, soft or harsh, cooling or warming, invisible
	How to experience / incorporate it
Spatial	In or outside of the wind as a spatial configuration
Openings	Allowing the wind to enter, either to the fullest, partially or not at all
Thermal	Too cool down or to heat up with the wind
Material + colour	Lose materials that can catch the wind
Decoration	Have decorations that may move with the wind
Light	To shine a light on what moves, differences in movements and direction thus effect
View	To see things that move, or not move, by the wind
Aucustic	Hear the wind howl and whistle
Smell	smell what is further away carried by the wind
Movement	See where the winds move and stop by the movement of other things
Complexity	Allow the wind to enter in unexpected ways and places
Mystery	To showcase the invisible, the interplay

SUNSHINE

What Bright, warming

How to experience / incorporate it

Spatial Spaces that are heated with the sun and spaces brighten with its light
Openings Have a variety of openings for it to enter, play with the light in more than windows
Thermal Feel the natural heat
Material + colour Work with materials that change with the touch of the sun rays
Decoration Let the shadow and light it creates be decorative in itself
Light Utilize the sun in a non-common way, such as with optical fiber
View From sunrise to dawn, the contrast between shadow and light
Aucustic Hear the material crackles as it expands in the heat of the sun
Smell Smell the blossom in a space that heats up
Movement Change the space depending on its position, showcase its movement with shadows
Complexity Used in many ways for a variety of experiences
Mystery Where does it come from? Where did it go?

SNOW / FROST / ICE

What Cold, bright, hushed, sparkling, shining, calm

How to experience / incorporate it

Spatial To walk on ice, on spaces otherwise unreachable, to be covered in snow
Openings Create different openings where snow can fall and be seen
Thermal Places to feel the snowflakes fall on the skin
Material + colour Work with materials resembling the characteristics of ice for all-year-round effects
Decoration Have water elements that´s one thing frozen and another thing as liquid
Light Let light shine through the ice, reflect it
View To see it fall or to see it lying on the ground
Aucustic The cracking of the ice
Smell Have sentenced ice that gradually releases the aroma as it melts
Movement See it fall, form, gather on the ground, and eventually melt away
Complexity Contrast between the heavy and light, the cold and the warm
Mystery What's on the other side of the ice?

FOG / DEW

What Dull, blurry, grey, airy, light, mysterious

How to experience / incorporate it

Spatial In it or outside of it, with or without it, fully filled or partially
Openings Creates openings for where it enters or leaves
Thermal A mist of water clinging to the skin and cooling it down
Material + colour To be covered in fog, to seem as if it floats, or to fill the gaps
Decoration It becomes dull and blurry
Light It dims the light and makes it softer. It makes light visible in the air
View To see the fog
Aucustic Hear what one cannot see
Smell Infuse the fog with fragrance and let it naturally disperse across spaces
Movement It can be moved by the wind or by people, changed by things, tell where
Complexity To change what can be seen and the appearance of it
Mystery What is in the fog? What is beyond the fog? What does it hide?

WINTER

What Cold, dark, low light, snow, muffled sounds, tranquillity, contrasting, shiny, calm, pine

How to experience / incorporate it

Spatial Darker, enclosed spaces
Openings Low placed openings to invite the sun, open to the sky to see the snowfall
Thermal Let the cold be felt and cool the space or materials
Material + colour Reflective, shiny material with some translucency
Decoration Have decorations that can only stand during the condition of winter, eg. ice sculptures
Light Have light shine through materials like ice, complement natural light with artificial
View One water freezing to ice, on the ground covered in snow, on the sky with falling snow
Aucustic Hear the crackling of the cold ice and the warming fire
Smell Once the ice melts, release aromas frozen in the water
Movement Slow movements, gather
Complexity Contrast between dark and bright spaces
Mystery What is hiding in the dark or behind the ice, or under the snow?

SPRING

What Mild, increased light, mid sun, fresh, creeks, renewal, bright, soft, pouring, lilac

How to experience / incorporate it

Spatial Possibility to start opening up the spaces again, movable elements
Openings Connect visually and partially physically to the outdoor
Thermal Feel the sun once again heating the cold air
Material + colour Bright, smooth, colourful, and flexible materials
Decoration To celebrate the renewal, changes
Light Allow all light to enter spaces
View On greenery waking up during spring, on pouring water
Aucustic The return of the bird, the water that once again starts pouring
Smell Blossom
Movement To start moving, seduce and guide to what is coming
Complexity To explore what will come
Mystery To start seeing what is coming but not fully experience it or see it

SUMMER

What Warm, bright, high sun, pleasant, full song, energy, bright, vivid, flowing, blossom

How to experience / incorporate it

Spatial Utilize the outdoor spaces
Openings High placed openings to invite the sun, and protected angels to not get too much
Thermal Let the warmth be felt and heat the space
Material + colour Work with materials that feel alive and rich
Decoration Living decorations such as branches of seasonal crops or vegetation
Light Partially block the sun during the brightest hours and play with shadow as it moves.
View On greenery in full bloom, on flowing water
Aucustic Pouring water
Smell The blossom, the smoke from BBQ gatherings, cut grass
Movement Flexible spaces that can change with the needs and wants as the days progresses
Complexity Different textures can be felt under the feet - from grass to gravel, sand, or dew
Mystery The elongation of never-ending days

AUTUMN

What Mild, decreased light, mid sun, crisp, falling leaves, cozy, desaturated, rustic, slow, rain

How to experience / incorporate it

Spatial Protected spaces surrounded by rain and wind
Openings Openings on top to see the rain, bellow to see the falling leaves
Thermal Feel the cold but create a cozy comfort with heat
Material + colour Rough textures, earthy colours
Decoration Use decoration that appears to be dried out
Light Shine a light on the rough materials to give dimension
View On deciduous trees changing colour
Aucustic Hear the rain, the wind, and the crispy leaves
Smell The earthy tones
Movement Falling from above, like leaves, letting go
Complexity Different textures, from rough lives to soft blankets or shiny water
Mystery What will the wind carry away? What will be devoured by the approaching darkness?

As one now understands what the seasons are and what creates the experience of a space, and as one understands how to combine the two into concepts and ideas, one can now create examples of how to implement them into architecture.

Part 7: Based on a synthesis

SEASONAL SOLUTIONS

TRANSFORMING THEORY INTO SOLUTIONS

INTRODUCTION

The concepts of seasonal architecture presented thus far are concepts that need to be interpreted into architectonic solutions. Continuing on the concepts developed in *Table 3: Seasonal Experiences Within Space*, several solutions and difficulties are observed. The following text will discuss and give some examples of how to create seasonal architectonic solutions. There exist, of course, more solutions than what is presented here, but the aim is to start presenting ideas to understand the basic concepts. Furthermore, many solutions have multiple effects and are thus relevant to more than one atmospheric element. Some of these solutions will later be presented in the exemplification project.

SPATIAL

Starting with the physical qualities of space and, more precisely, the spatial experiences, *Table 3* mainly mentions one general concept: the seasons create a spatial configuration in which one is either inside or outside. A clear example is the wind; either one can feel the wind inside a space, or the space is configured to block it. Spaces can also partially block such as wind with the work of, for example, rasters or openings in different locations. The seasons can structurally create spaces. It can, for example, be a creek, natural or artificial, which sets a boundary in space or acts as a guide to follow. It can be a rainwall, which, unlike a massive wall that can be easily penetrable, creates a visual blockade. A visual space can also be created with the work of light as one can work with various openings and how the light falls, thus creating a spatial difference in dark or light. Similarly, one can be next to the rain and fog, snow, or in a space open to be surrounded by it. Lastly, the seasons have the possibility to give access to otherwise unreachable spaces. As the winter freezes bodies of water, it is possible to walk on such lakes. The new spaces can be used for different activities that would otherwise be impossible under the same circumstances.

OPENINGS

Openings are an essential aspect when connecting outdoors and indoors. Openings can be both visual and physical, and both are equally important. Openings are well-known solutions such as windows, skylights, oculus, doors, arches, and atriums, as well as rasters, louvers, and pergolas, which are structurally open spaces. Working with an opening would be to direct the views to seasonal experiences, e.g., have windows towards deciduous trees or place atriums where rain and snow can enter. It can also be modular openings which change with the seasons. For example, a raster may be attached in a way that allows it to spin and change direction with the wind, thus changing the degree of openness.

THERMAL

Not surprisingly, the most obvious influence on thermal performance is found in sunshine and wind. In architecture, the sun can be used to heat directly or indirectly through thermal mass or direct sunshine. Conversely, wind can provide ventilation to keep temperatures down and contribute to a good indoor climate. In winter, the cold outdoors can be used as an additional cold store. Like the sun, rain can also be used in cases where it is collected in a pond or similar adjacent to the building for thermal mass. As mentioned earlier, solutions such as louvers also impact heat as they regulate the incoming sun radiation.

MATERIAL + COLOUR

Materials and color choices have a significant impact on the perceived space. For example, materials can have an impact on the thermal experience. For example, stone can create a cold feeling, wood can be used for a warmer feeling, and metal can shift in both directions depending on its context. Thus, a cold winter can be experienced even colder with elements of stone in the rooms or evened out with wood elements. Dark colors also make rooms more similar to the cold winter and autumn, while the light rooms become similar to spring and summer. Materials also have different associations, with rough materials more often associated with autumn and soft shapes with spring. The way light shines through a translucent material can be more similar to the winter months than the light coming through a transparent material.

DECORATION
Decoration can come in a wide range of types. It can be openings that are for the decoration and playfulness of shadows that shift throughout the day. It can be wind chimes that play tunes as the wind passes by. It can be structures and fabrics that move with the wind. It can be water mirrors wich reflect sunlight and the pattern of water or become a icesculpture when temperatures drop.

LIGHT
Light comes either from an artificial source, such as lamps, or a natural source, such as the sun or a fire. In seasonal architecture, the use of natural light is particularly interesting. Sunlight can be used directly or indirectly for illumination; it can be shone through unhindered or with specific restrictions. Furthermore, light can also come as a reflection, such as water reflection or reflective materials. It can also be a combination of natural light with artificial structures, such as the use of fiber optics.

VIEW
Views are closely related to openings (*windows, skylights, atriums*), allowing one to see through one or more spaces. It would be advantageous for the views to be directed towards elements in nature or architecture that change with the seasons or reflect a particular atmosphere. Another suggestion is to present the seasonal elements in an unusual way. An example of this is the treatment of rainwater. Rather than hiding the rain, it can be highlighted as part of the architecture. This can mean changing the downpipe from a pipe to a chain so one can both see and touch the rain as it falls. After that, what happens to the rain can also be changed for a more effective seasonal detail. It works in the same way as letting the wind be caught in fabric or making it spin sculpture - it is about giving the seasons elements to interact with to show their presence.

ACOUSTIC
Much like views, acoustics is about creating elements that the seasons and weather can interact with. This can involve using clingy metal or drums that ping when water drops hit their surface. It can also involve windshimes that play music as the wind moves them. Acoustics is also about the general placement of a building, as it can be close to creeks, waterfalls, or greenery that chirping birds visit.

SMELL
Smell is a rather underestudied part of The smell is a relatively understudied part of architecture compared to other elements, but nonetheless important. The smell can deepen the atmospheric effect of a space. Different smells are often associated with different seasons, such as blossoms during summer or earthy tones during autumn. The seasons will naturally create these smells, though some intervention can be made. First, having greenery that spreads aromas is one solution to enhance the seasonal experience. The soil surrounding a space is essential, too, as it will reveal certain smells when rain hits it. Another way, in the program of a restaurant, is to allow the cooking smoke of the seasonal ingredients to be smelled, not hidden, from the guests. Living decorations from the outdoors, such as aromatic branches, can be brought inside, too, to keep the scents as one moves through different indoor spaces. Another way of using decoration is to fill ice sculptures with aromas that will slowly spread as the ice melts.

MOVEMENT
Movement within architecture can mean two things: movement that is provoked by the architectural design or when architecture itself is moving. In the former, the desire to move is more linked to the feelings associated with spring and summer; it is about the space around seducing to move. It is achieved in different ways when changing the size, volume, colour, or materials of a space or by using points of interest, among other solutions. In the latter, when architecture itself is moving, a physical aspect of the seasons must intertwine with the architecture. It can, for example, be about working with transitions in both movable and fixed fixtures, allowing for modulation of indoor and outdoor boundaries, creating dynamic spaces, and adhering a playfulness to space. Such solutions are louvers that allow for sunlight to enter at certain times, which change the direction of shadows, or for the strength and direction of the wind to be changed. It can be walls, decorations, or blinds, which can be moved to once again change the amount of light and visual connection between spaces or let the wind play with their movement. It can also be about showcasing the movement of rain or snow. Windows or atriums allows to remain indoors while viewing the falling of the rain or snow. Furthermore, rain can be collected and guided in various forms throughout a building and site with solutions such as downpipes, gutters, gutters, ditches, and so on. However, instead of using the regular modules for said details, other shapes, styles, and materials should be considered to showcase rather than hide the seasonal elements.

COMPLEXITY
Architecture is not one element on its own but the composition of various elements which form a whole. Complexity is about that whole context. By integrating all the mentioned elements, one can create a complex space. However, creating a complex space is not about saturating it with many intricate elements; it is about how those elements work together and are integrated into each other thoughtfully. There is, therefore, no concrete solution to create complexity specifically for the seasons. Instead, one must understand what creates the complexity of a space as described in the chapter *Creating an Atmosphere*, *page 11*.

As in general with complexity, the space should work with the contrast of light and dark, which, for example, can be done with different openings for the sun to enter. It is about how the shadows move in the room, ever-changing but always the same for each year. It is about the chosen texture which draws the hands towards it. It is about working with different materials that work together, create patterns, and create experiences both for the eyes and touch. It is about the different directions and sizes of view, which, one by one, reveal a story itself. It is about hearing how the sound changes as the rain drops on one material and later on another or how the speed of the wind results in different sounds. It is about the different smells that hint at what is nearby and the current season. It is about how space changes one's pace from wanting to move fast to walking slow or to wanting to stop. It is about what might come and what is and about wanting to know more about the unknown.

MYSTERY
Mystery is, in general, a playful act of architecture with the critical task of provoking interest. The mystery element of spaces is about what one already knows and does not know and the interplay between them. To work with mystery in spaces, one must have a great understanding of three-dimensional space. Each space affects the other, and the transition between them is of great importance. When working with mystery, one could choose to showcase an element, such as an artificial creek, and use it as a guide. Eventually, the creek can disappear but later return. One can use elements as points of interest, for example, a moving wind sculpture that is seen from far away and sparks curiosity for one to want to proceed towards it. Sightlines and thresholds are further elements that can be utilized.

An idea needs to be exemplified and tested. In this chapter, some seasonal architectural solutions will take shape and be integrated into a project, in this case, a farm-to-table fine-dining restaurant in southern Sweden.

Part 8: Based on the purpose and aim

PROPOSAL

INTRODUCTION

INTRODUCTION TO THE PROJECT

The following chapter is dedicated to the practical manifestation of the discussed theory. The project will take shape as a fine-dining farm-to-table restaurant situated in southern Sweden. The building will celebrate the diversity brought forth by the seasonal changes while becoming an example of how to design with presented solutions for atmospheric architecture. However, not all solutions will be presented as that is not deemed feasible.

SUMMARY GENERAL IDEAS

The site was chosen after an evaluation based on the potential prosperity of the business, see in *Figure 18-23*. As a site was declared in Skåne, as seen in *Figure 24-25*, the building shape was initially inspired by the local building practice of *Skånelänga*. It has, though evolvedved in several steps to accommodate for both the functions and space requirements of the restaurant, as seen in *Figure 33-34*, and the concept of seasonal experiences, which can be seen as a combination of the local climate data as seen in *Figure 26-29*, site analysis as seen in *Figure 30* and as being created in relation to the customer experience as seen as *Figure 31-32* and the theoretical background. The overall idea was to create an experience for the customer where they would be able to see the seasons in a new way as soon as they set foot on the site. A multitude of different atmospheric building blocks, as presented in *Table 2*, would be present for both the physical and experiential dimensions to give the guest a unique experience. This experience furthermore would change depending on during which season they visit and the current weather.

THE PROGRAM

It is highly relevant that the restaurant program functions and is profitable within the architectural building. The space that the architecture creates will not only influence the success of the program but also how the program is perceived. It is, therefore, essential to first evaluate the business plan and, later, create architecture that will support and assert that plan. As it is only hypothetical, this project will not evaluate all aspects of a restaurant's program. It is mainly the spatial requirement that will be evaluated as it greatly impacts the architectural arrangement.

It is also worth noting that the restaurant is decided to be a fine dining restaurant. The main reason is that such establishments often correlate to a longer visiting time than regular restaurants. The idea for this program is that guests will be served a set menu of around 20 dishes, resulting in a visit of around 4-5 hours, giving enough time to experience the spaces. Furthermore, it bakes into the sustainable aspects as the set menu and such a long visit time imply that the guest will book well in advance, and each day can be prepared by the chef accordingly, which in the end can reduce the waste.

FARM-TO-TABLE CONCEPT

A farm-to-table restaurant concept differs from a regular restaurant. All the food shall come from the soil or the sea, be foraged or hunted within the locality. In this project, the locality is first defined as what is mainly gotten from the own land, second from the neighboring producers within a 10km radius, and thirdly within the country and sea of Sweden.

A report by Sims (2009) states that tourists are likely to want to try local products and food of a country or region when visiting, as trying regional specialties creates a notion of being a "good traveler". Furthermore, food tourism is having an effect on sustaining regional identity while offering visitors a better connection where they can experience the region, culture, and heritage. Local foods, such as that produced by a farm-to-table restaurant, thereby have the chance to connect the consumers with the places while it also argued that foods and drinks, unlike tangible souvenirs, better engage all senses, create a more personal experience and memories (Sims, 2009).

The restaurant is designed to be a destination restaurant rather than a spontaneous dining place. The farm-to-table concept, therefore, revolves around the architectural concept of offering immersed seasonal experiences and will sustain the long-term business as it is more likely to attract tourists.

Part 8: Based on data

SELECTION OF THE SITE

The site can be crucial to the program's success. The site forms the possibilities and limitations, and choosing a site for a specific program and vice versa should be carefully considered. For this paper, the program and architectural specifications, to some extent, were decided first - a restaurant in which the season shall be experienced. The choice of location, therefore, comes second and only acts as a base to investigate the theoretical background. Therefore, the decision of the site will, for the sake of realism, be based on factors favorable to the program.

The factors that have been taken into consideration are, as seen in *Figure 18-23*, the population density, municipal classification in relation to the relative distribution of white guide restaurants, number of holiday homes, number of guest nights, and from where that guest comes. The general aim of the selection was to find a placement that can support an all-year-round business where there is both a high population and a high number of visitors. The aim was to make the restaurant a destination in itself, though better circumstances nonetheless better increase the chance of success. Therefore, statistics on the locations of acknowledged restaurants were also used to determine areas that may be considered advantageous. Most data overlapped, and the four best regions to establish a restaurant are regarded, in no particular order, Stockholms län, Västra Götaland, Hallands län, and Skåne.

The final decision of the exact site within any of the qualifying regions was based on the personal preference of the author of this paper. Each place holds characteristics, nonetheless, weather conditions that make them unique. Furthermore, all places have some kind of surrounding to which projects will relate. Zumthor (2006) writes about architecture in relation to its surrounding. He describes that as soon as there is an intervention, regardless of size, it will become a part of its surrounding. Even people [and nature] become part of the intervention, and the intervention becomes a part of people's lives (Zumthor, 2006). One must, therefore, decide how to relate to the surrounding context. The aim was to find a site that would naturally showcase the changing seasons in various ways to incorporate a diverse range of seasonal experiences into the architecture. Therefore, the site selection aimed to contain at least some body of water or river that could potentially freeze during winter and flow during summer, deciduous trees that would change colour, and it should ultimately be placed on fertile land, which preferably should be close to local producers of various sorts as well.

After analyzing several places within the qualified regions, the choice was made for a site in Sjöbo, Skåne, less than 1 hour / 60 km by car from Malmö (*see figure 24, p. 38*).

List of figures presented on page 35:

Figur 17: Population density, measured in habitants / km2, per county, based on the Classification of Swedish municipalities according to the Swedish Association of Local Authorities and Regions, as of 31st of december 2022. Data recived from SCB (2023), cartographic base map received from SCB (n.d.a)

Figur 18: Municipal classification, as of 31 january 2023, based on the Classification of Swedish municipalities according to the Swedish Association of Local Authorities and Regions (SCB, 2022b), cartographic base map received from SCB (n.d.b).

Figur 19: Relative distribution of White Guide restaurants for municipal classas in 2005, 2010 and 2015. Data recived White Guide (2024).

Figur 20: Number of holiday homes, as of 2020. Data recived from SCB (2022a), cartographic base map received from SCB (n.d.a).

Figur 21: Number of guest nights, during the period of jan 2013 - jan 2013. Data recived from Tillväxtverket (n.d.b).

Figur 22: Share of Swedish and foreign guest nights, during the period of jan 2013 - jan 2013. Data recived from Tillväxtverket (n.d.a).

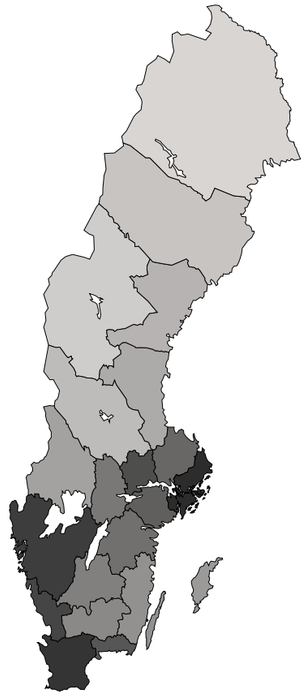


Figure 18

HABITANTS / KM²

- Stockholms län
- Skåne län
- Västra Götalands län
- Hallands län
- Västmanlands län
- Blekinge län
- Södermanlands län
- Uppsala län
- Östergötlands län
- Örebro län
- Jönköpings län
- Kronobergs län
- Kalmar län
- Gotlands län
- Värmlands län
- Gävleborgs län
- Västernorrlands län
- Dalarnas län
- Västerbottens län
- Jämtlands län
- Norrbottens län

Comment: Ranked from most densely populated county to least densely populated.

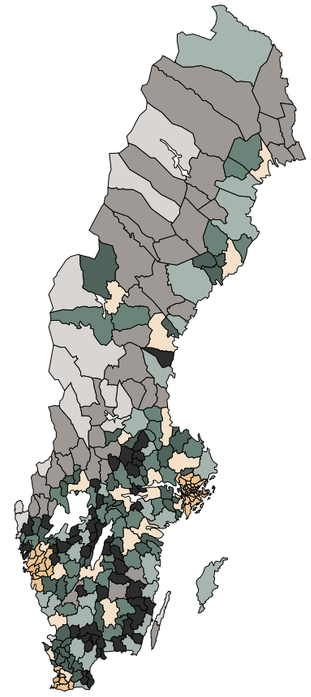


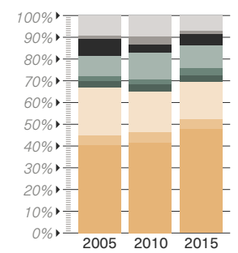
Figure 19

MUNICIPAL CLASSIFICATION

- Large city
- Commuting manicipalities near large cities
- Medium-sized town-manucipalities
- Commuting manicipalities near medium-sized towns
- Commuting municipalities with a low commuting rate near medium-sized towns
- Small towns
- Commuting municipalities near small towns
- Rural municipalities
- Rural municipaities with a visitor industy

Figure 20

RELATIV DISTRIBUTION OF WHITE GUIDE RESTAURANTS FOR MUNICIPAL CLASSES



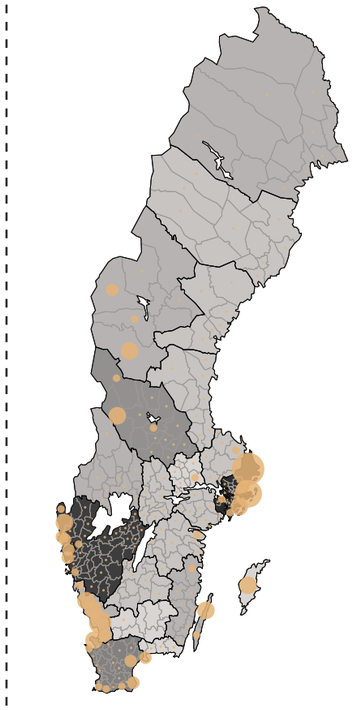


Figure 21

NUMBER OF HOLIDAY HOMES

Figure 22

NUMBER OF GUEST NIGHTS

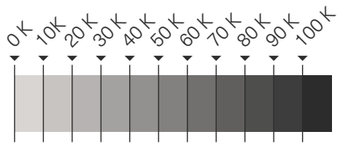
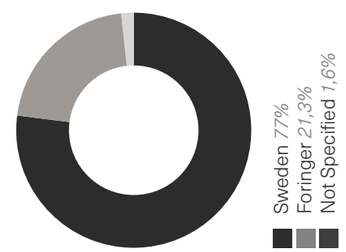


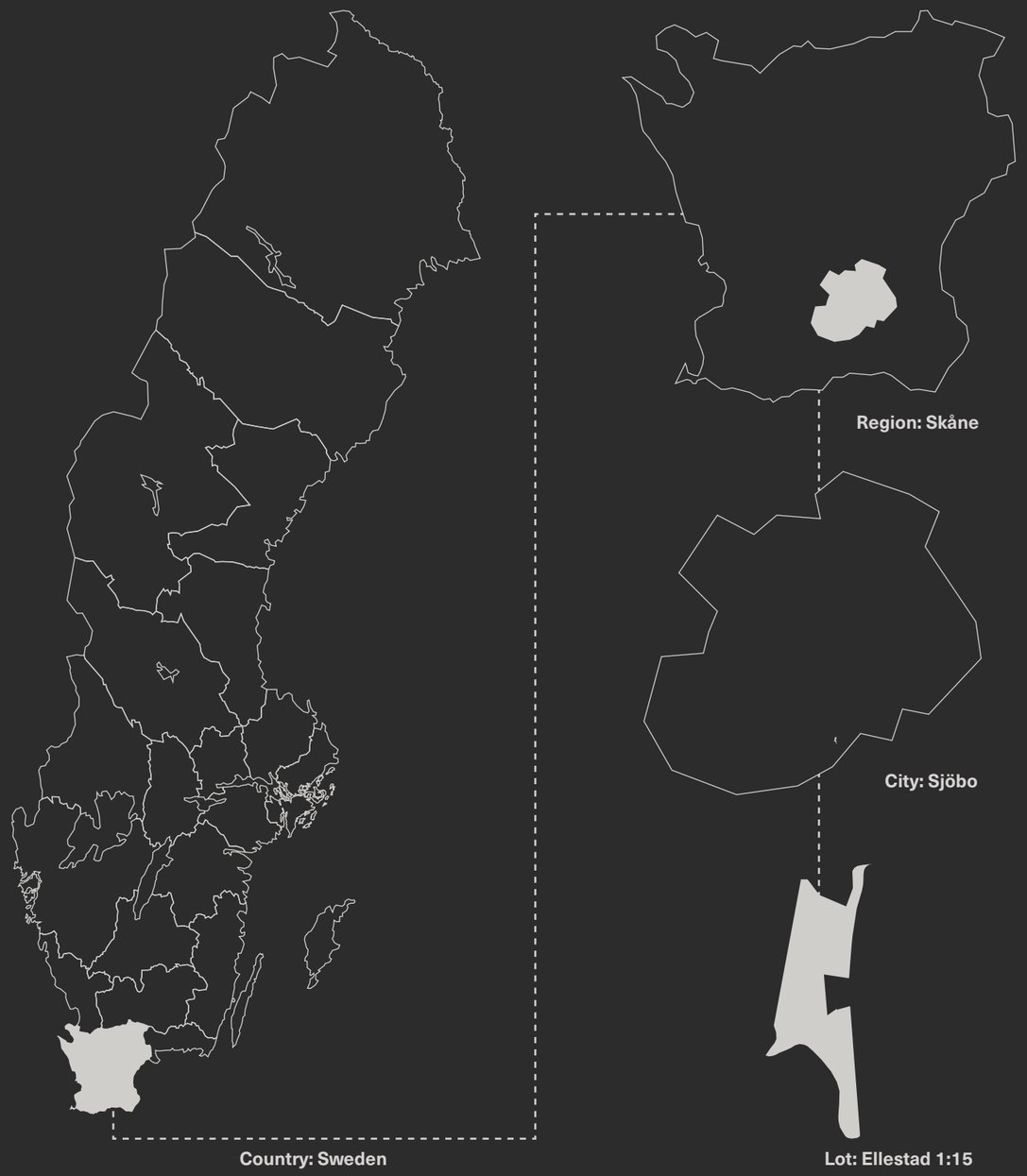
Figure 23

SHARE OF SWEDISH AND FOREIGN GUEST NIGHTS

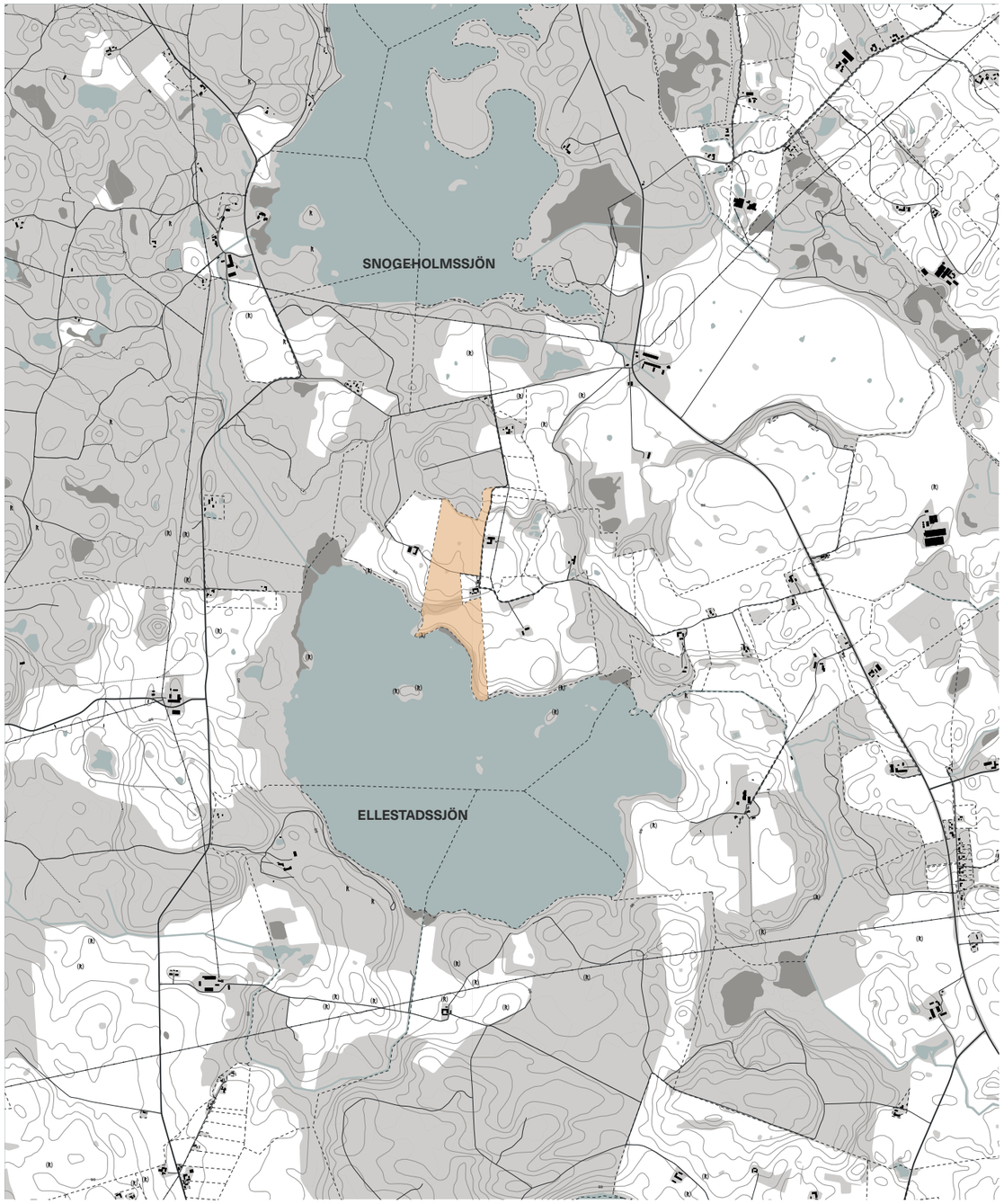


Part 8: Based on data

LOCATION

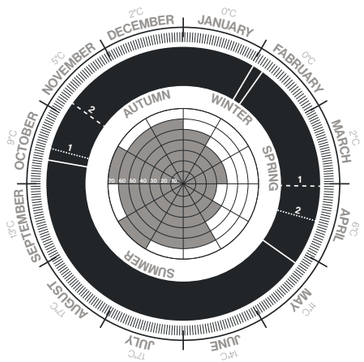


Figur 23: Placement of selected site.



Figur 24: Selected site and its surrounding (SLU).

WEATHER AND CLIMATE DATA

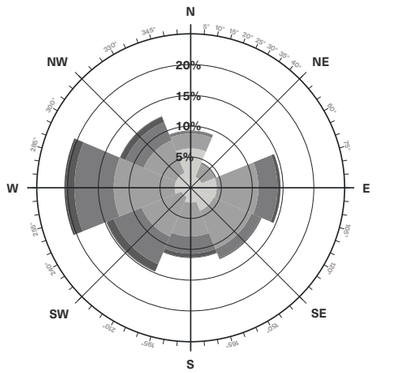


Figur 25:

THE SEASONS

0°C Average temperature, °C
1 Frist frost
2 Last frost
1 Start of vegetation period
2 End of vegetation period
Start/end of each season
Monthly Precipitation, mm

Wether and seasonal, during the period of1991-2020. Data recived from SMHI (n.d.a-l)

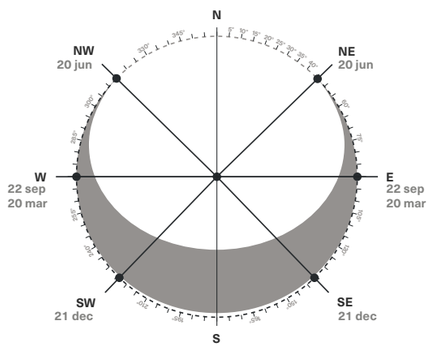


Figur 26:

WIND

0-2 m/s
3-5 m/s
6-8 m/s
9-11 m/s
>12 m/s

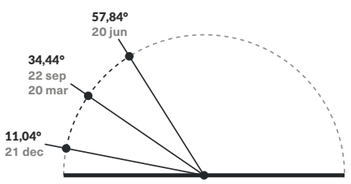
Wether and seasonal, during the period of january 1 2012 - december 31 2022. Data recived from SMHI (n.d.m)



Figur 27:

SUN'S AZIMUTH

Illustration of the sun's azimuth as well as its altitude seen from above during winter solstice, summer solstice, vernal- and autumnal equinox of the site, as of year 2024. Data recived from SMHI (n.d.n)



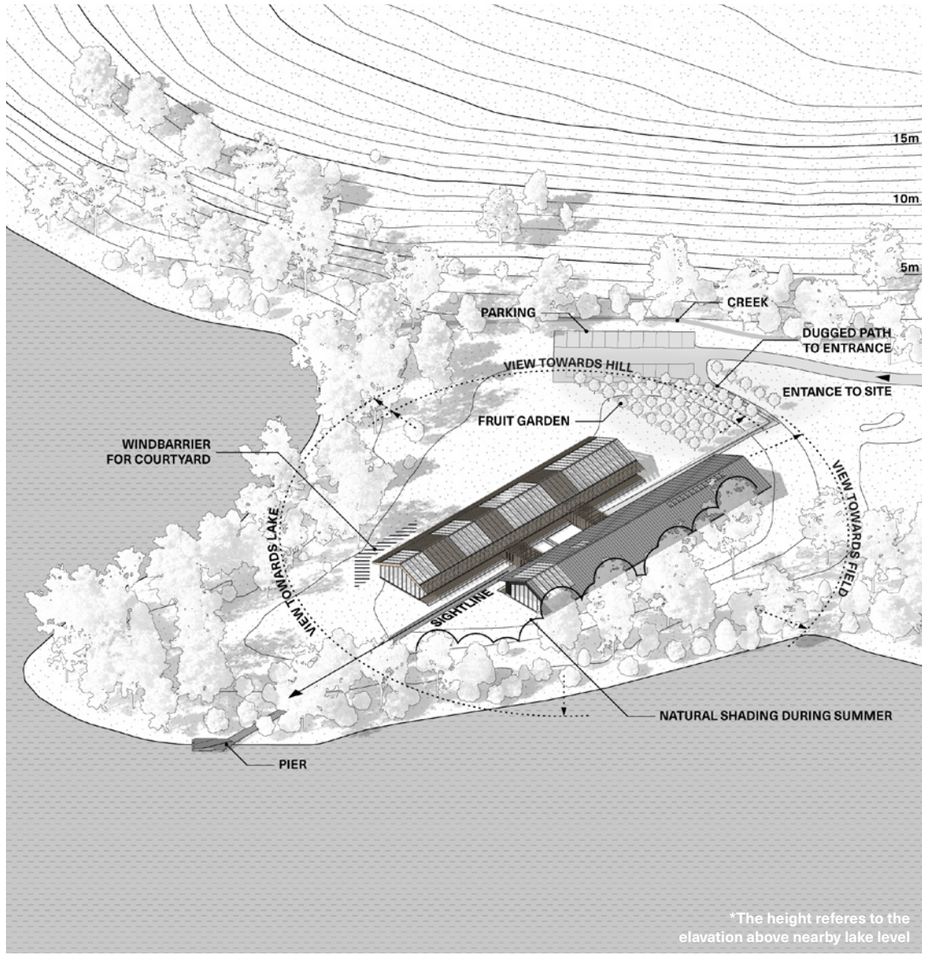
Figur 28:

SUN'S ALTITUDE

Illustration of the sun's altitude during winter solstice, summer solstice, vernal- and autumnal equinox of the site, as of year 2024. Data recived from SMHI (n.d.o)

THE SITE

Based on the analysis shown in Figure 18-23, and as depicted in Figure 24-25, the selected site is located in southern Sweden, Skåne. Surrounded by crop fields, it is an ideal location for the farm-to-table concept. The site also include deciduous greenery and a lake, two elemets which both will change shape during the passing of the seasons. Furthermore, greenery is taken into account in the actual design of the building. The building is located close to the greenery in the south, which results in it shading the building during the warm summer months. During winter, however, the greenery will lose its leaves, and the sun can more easily reach the building to heat it up. The view will consequently change accordingly, too. Regarding the rest of the views, windows have been planned in accordance with the usage of each room and the sough atmosphere.

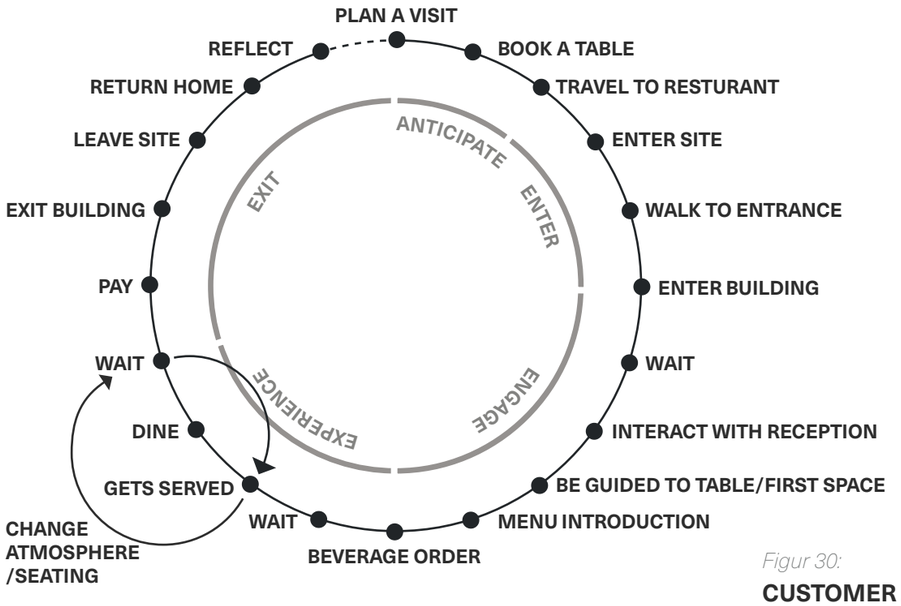


Figur 29:

SITE ANALYSIS

Analysis of the site and how it has been utilized.

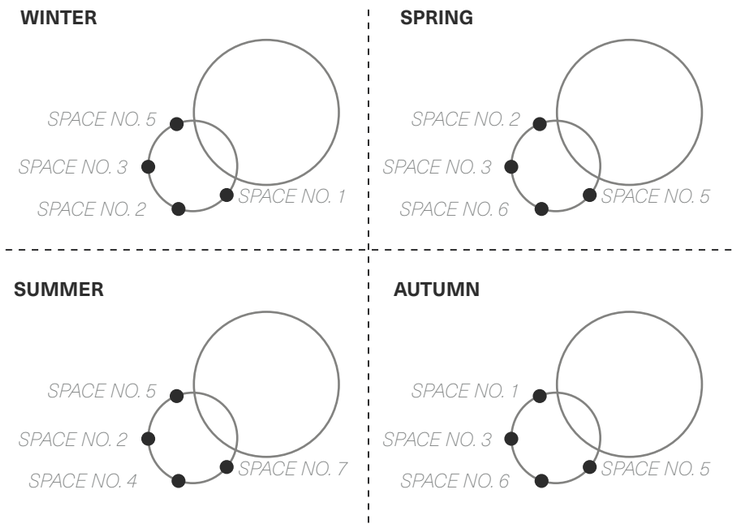
PROGRAM



Figur 30:

CUSTOMER JOURNEY

A holistic view of the customer's experience related to the program. The aim is to incorporate seasonal experiences in as many steps as possible.

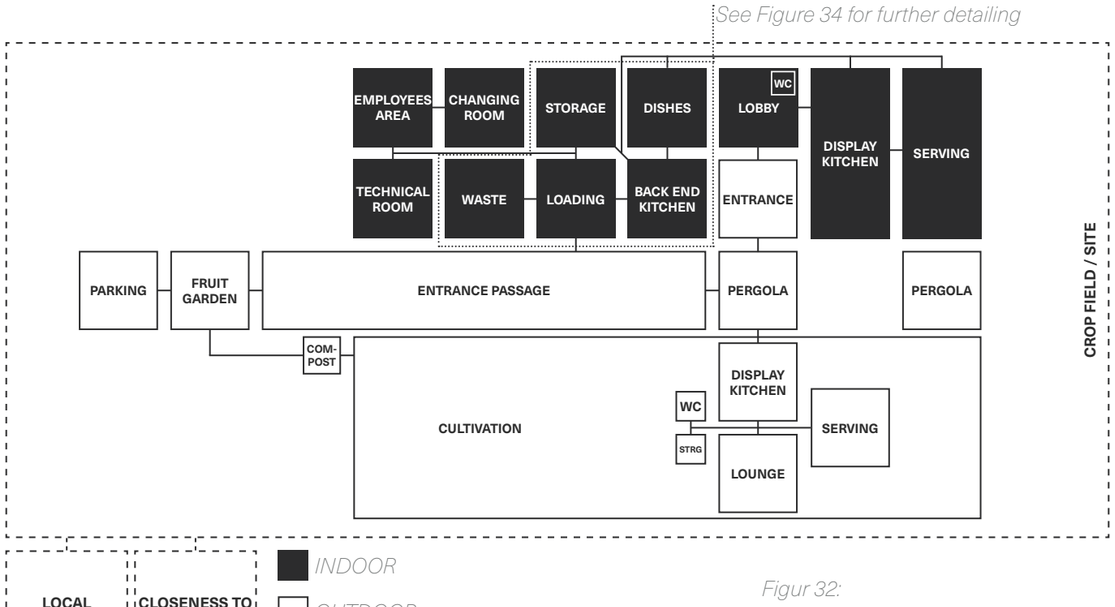


Figur 31:

SEASONAL VARIATIONS

1. Main building, Lounge
2. Main building, Display Kitchen
3. Main building, Dining Room
4. Outdoor, pergola
5. Green House, Lounge
6. Green House, Dining Room
7. Pier

The restaurant offers various spaces where guests can enjoy their dinner. For each season, guests will experience the spaces in a unique sequence with varying amounts of time spent in them. The diagram to the right suggests such sequences. Some spaces are used all year round, while others are furnished only for specific periods.

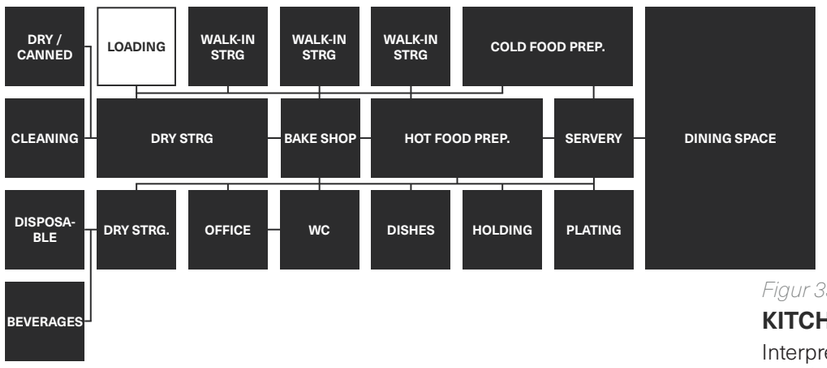


Based on site investigation and knowledge gained from reference projects and literature in relation to the projects aims.

Figur 32:

PROGRAM LAYOUT

The diagram showcases a general layout of the needed functions of the restaurant. The areas are not representative of their size.

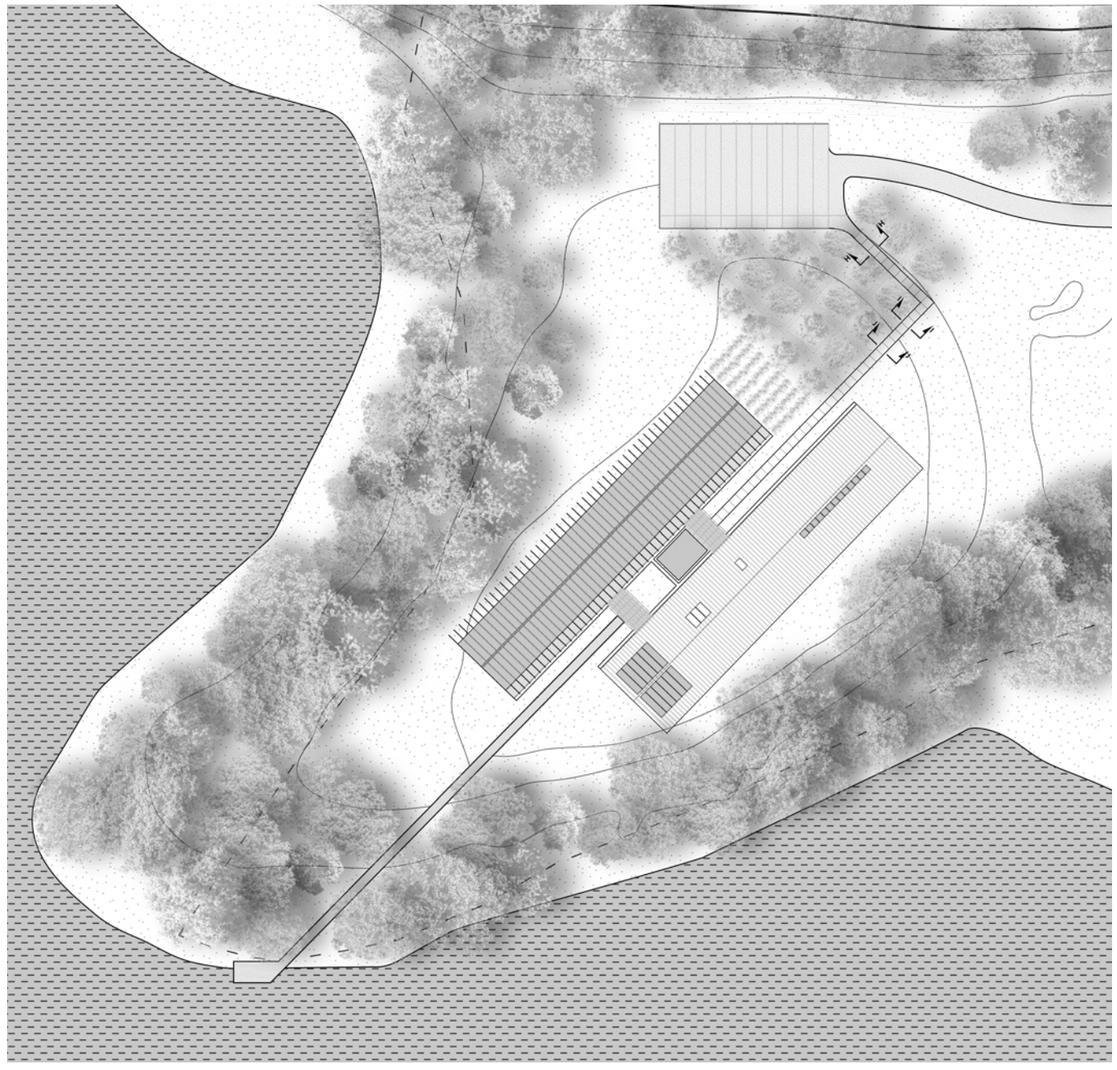


Figur 33:

KITCHEN LAYOUT

Interpretation of diagram by Baraban et al. (1992). The diagram and the flow between spaces and functions set the base for the project's restaurant design. Alterations have been made to the final kitchen layout.

DRAWINGS AND VISUALIZATIONS



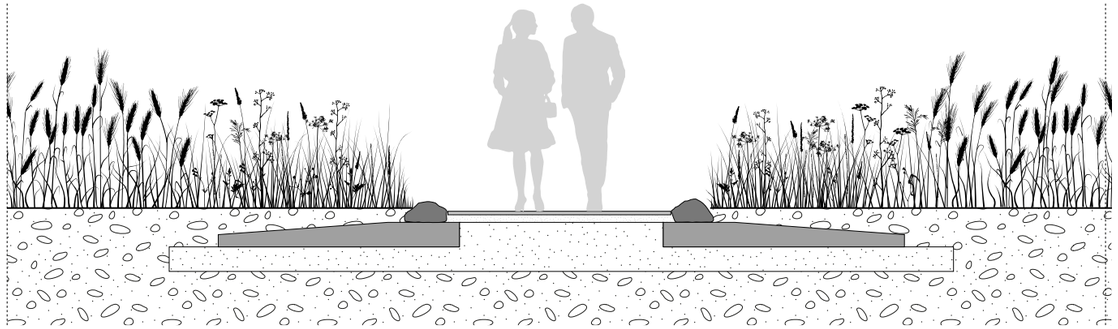
0 10 50m

Figur 34:

SITE PLAN

The guest will enter the site from the north, where the gravel and groundstone parking lot is located. From there, the guest may choose to go straight to the path leading to the building or to wander around in the fruit garden on one of the paths, which, too, leads to the main path.

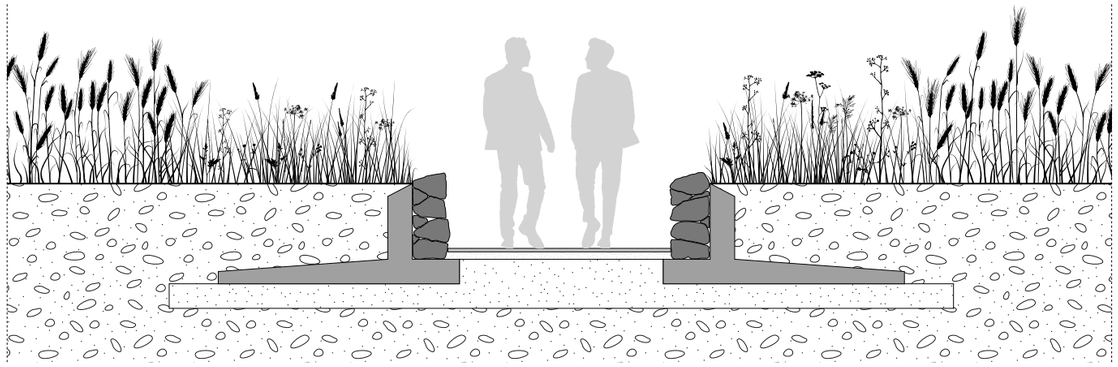
On the path, the guest will walk with a straight sightline towards the afternoon sun. The sightline goes all the way from the path, through the pergola, along the path to the pier, and out to the lake, creating a strong axis on the site. Once they have reached the building, their seasonal dining experience will start.



Figur 35:

SECTION H-H

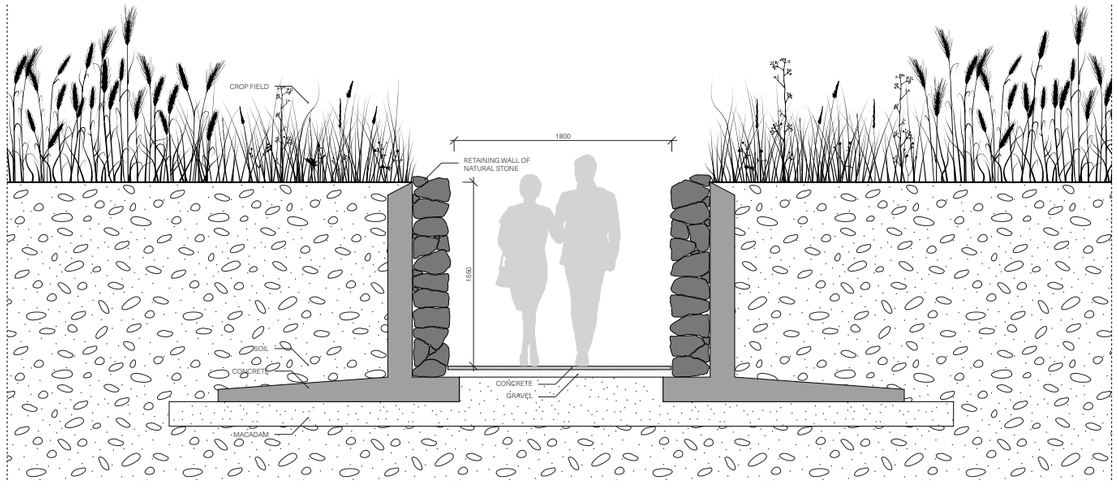
Details of path between parking and restaurant, starting point.



Figur 36:

SECTION I-I

Details of path between parking and restaurant, medium depth..



0 1 2m

Figur 37:

SECTION J-J

Details of path between parking and restaurant, deepest point.

0 10 20m

Figur 38:

SITE SECTION

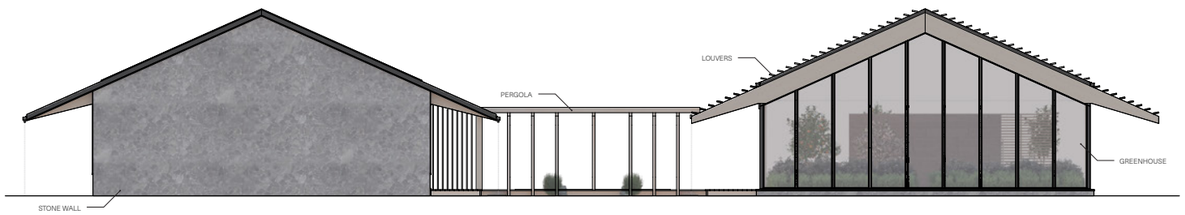
The path leading to the building cuts through the terrain. Guests descend into the ground and come closer to the crops as they walk towards the entrance. Eventually, the path ascends, and the guests meet a straight sightline towards the lake and afternoon sun. On the other side of the building, the guests may walk on a wooden pathway to the lake to either finish or start their gastronomic journey or simply enjoy the view.

Figur 39:

VIEW FROM SOUTHWEST

The restaurants are situated with views over the crop fields in all directions except for the front, where the lake takes form instead.

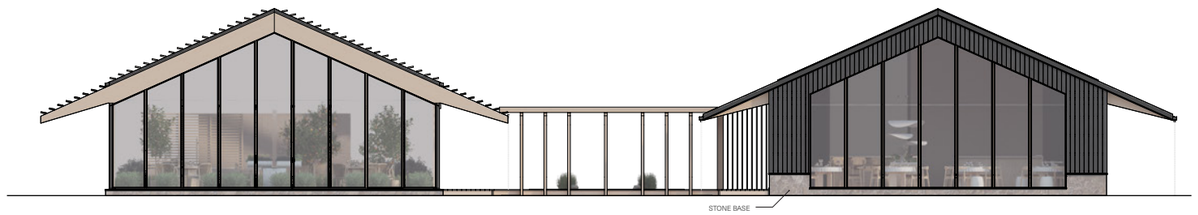
**Note that there is more greenery between the building and the lake than showcased in this image.*



Figur 40:

FACADE TOWARDS NORTHEAST

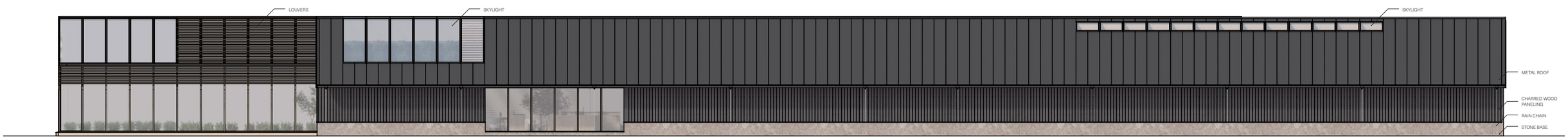
Details of path between parking and restaurant, starting point.



Figur 41:

FACADE TOWARDS SOUTHWEST

Details of path between parking and restaurant, starting point.



Figur 42:

FACADE TOWARDS SOUTHEAST

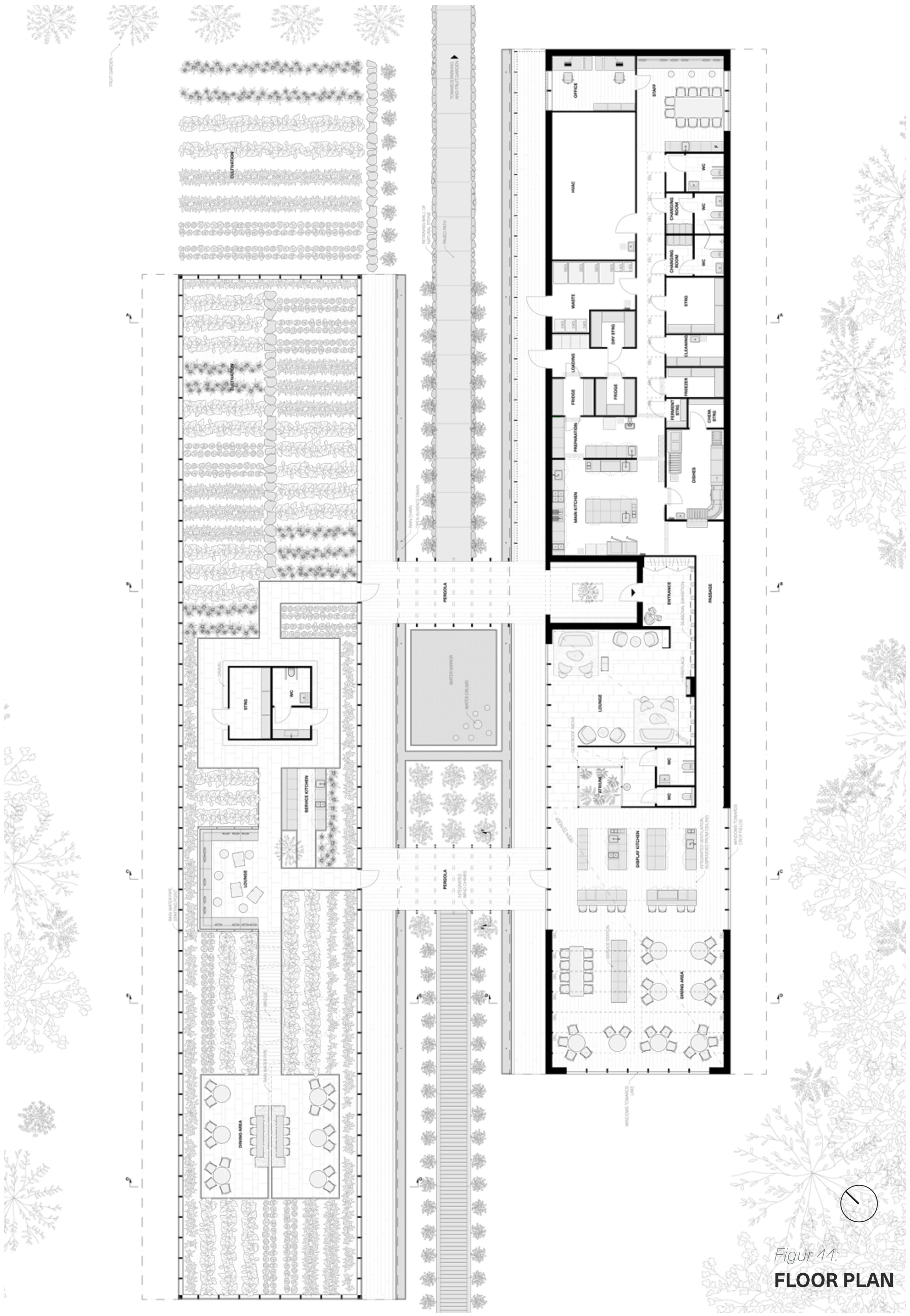
Details of path between parking and restaurant, starting point.

0 10 20m

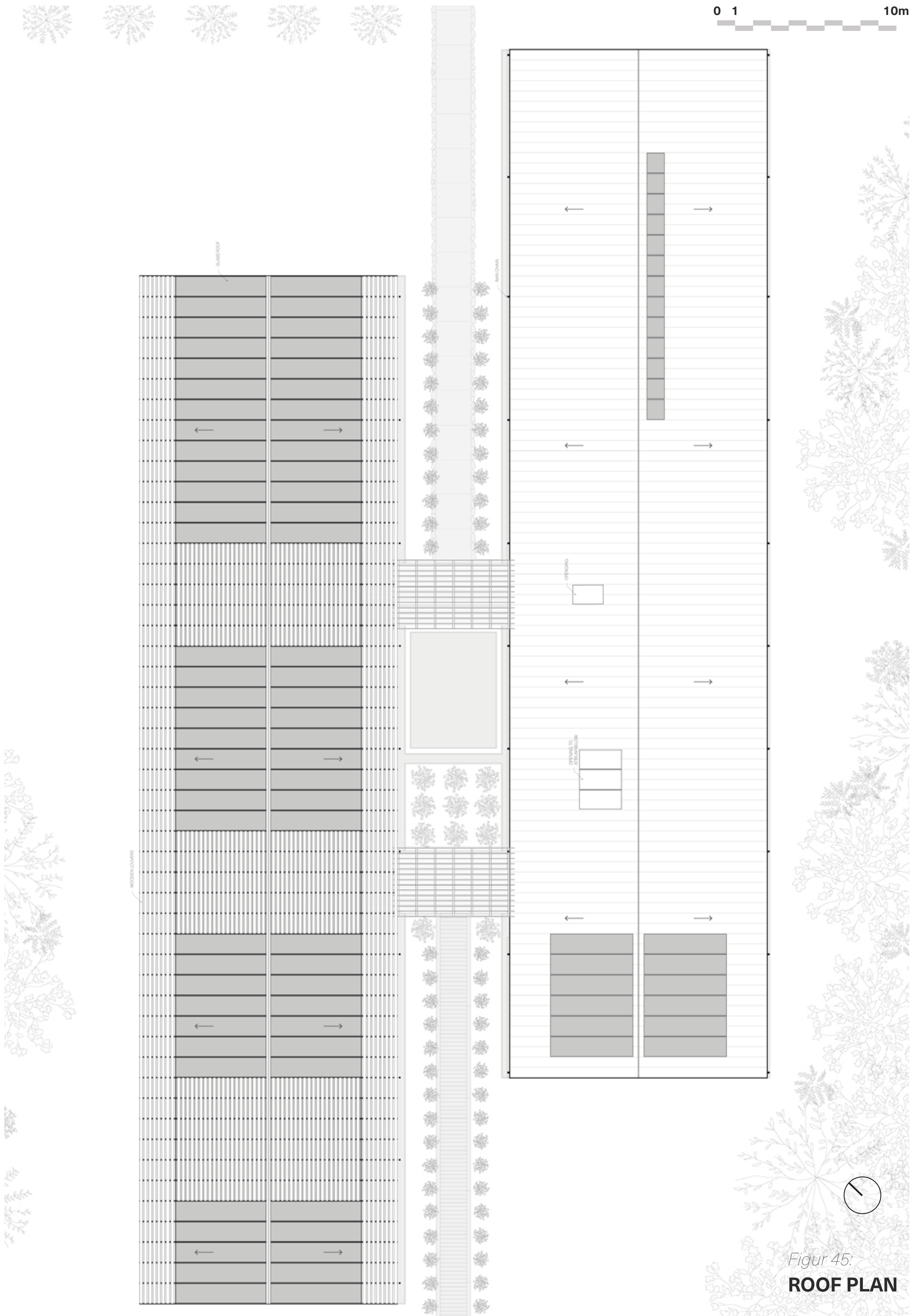
Figur 43:

FACADE TOWARDS NORTHWEST

Details of path between parking and restaurant, starting point.



Figur 44:
FLOOR PLAN



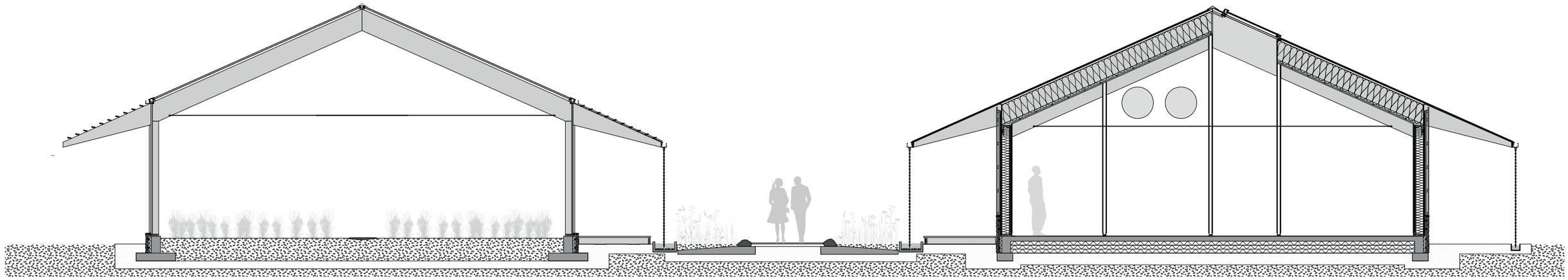
Figur 45:
ROOF PLAN

0 10 20m

Figur 46:

SECTION

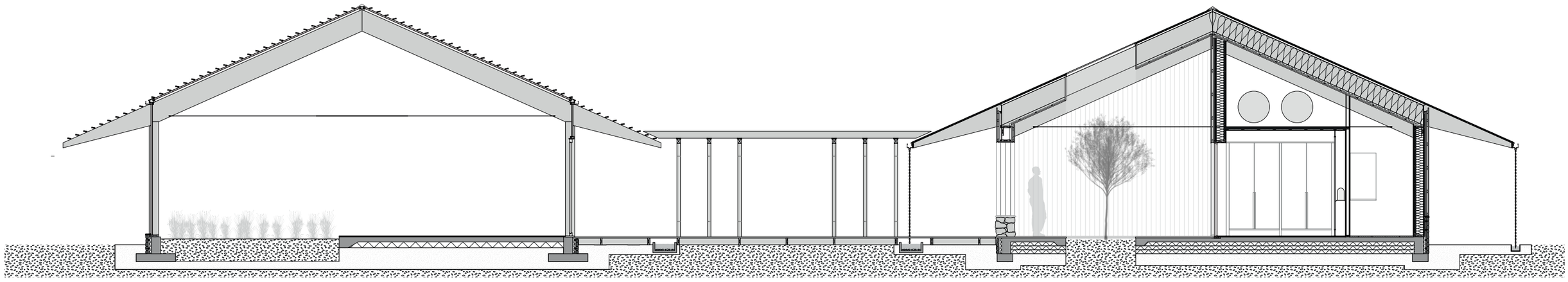
The section showcases the main guest areas: the greenhouse lounge, the display kitchen, and the pergola connecting them. The buildings are identical in volume and size but contrasting in experiential qualities as they conceptualize the seasons differently.



Figur 48:

SECTION A-A

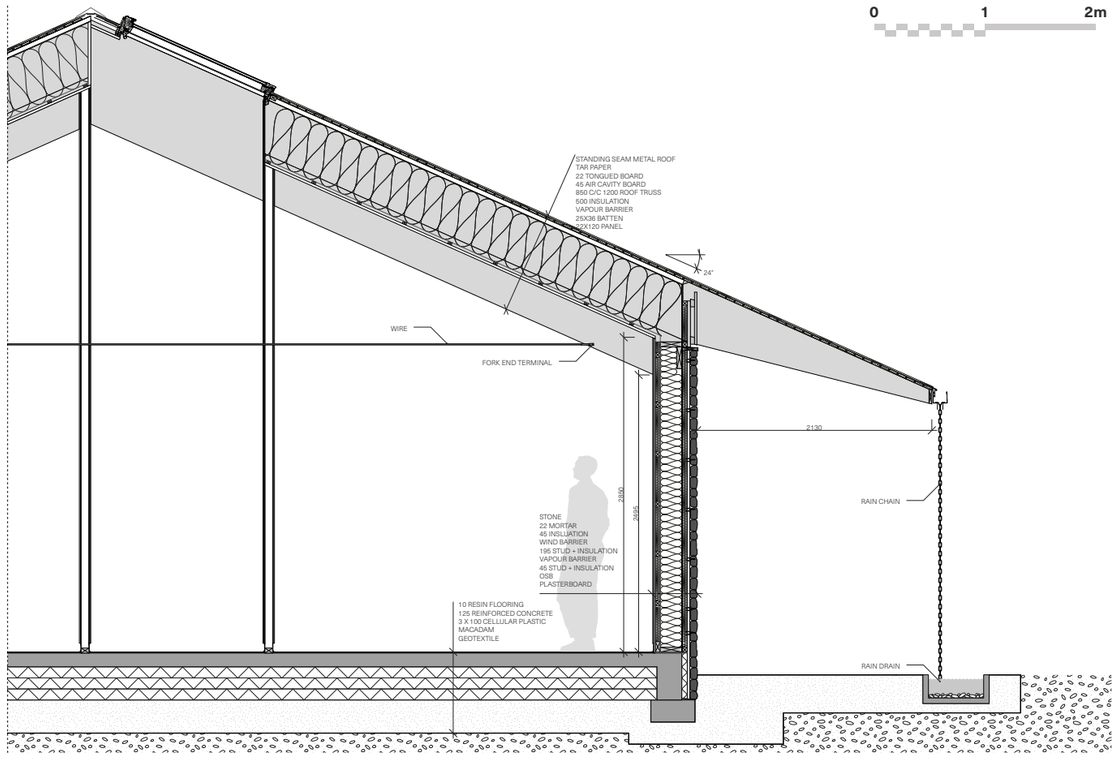
The greenhouse provides extensive areas dedicated to the cultivation of a variety of crops. Directly across the path from the greenhouse is the main kitchen, ensuring easy access to the freshest ingredients for meal preparation. The kitchen corridor features a skylight, designed to introduce natural light and create a more pleasant working environment for the staff.



Figur 47:

SECTION B-B

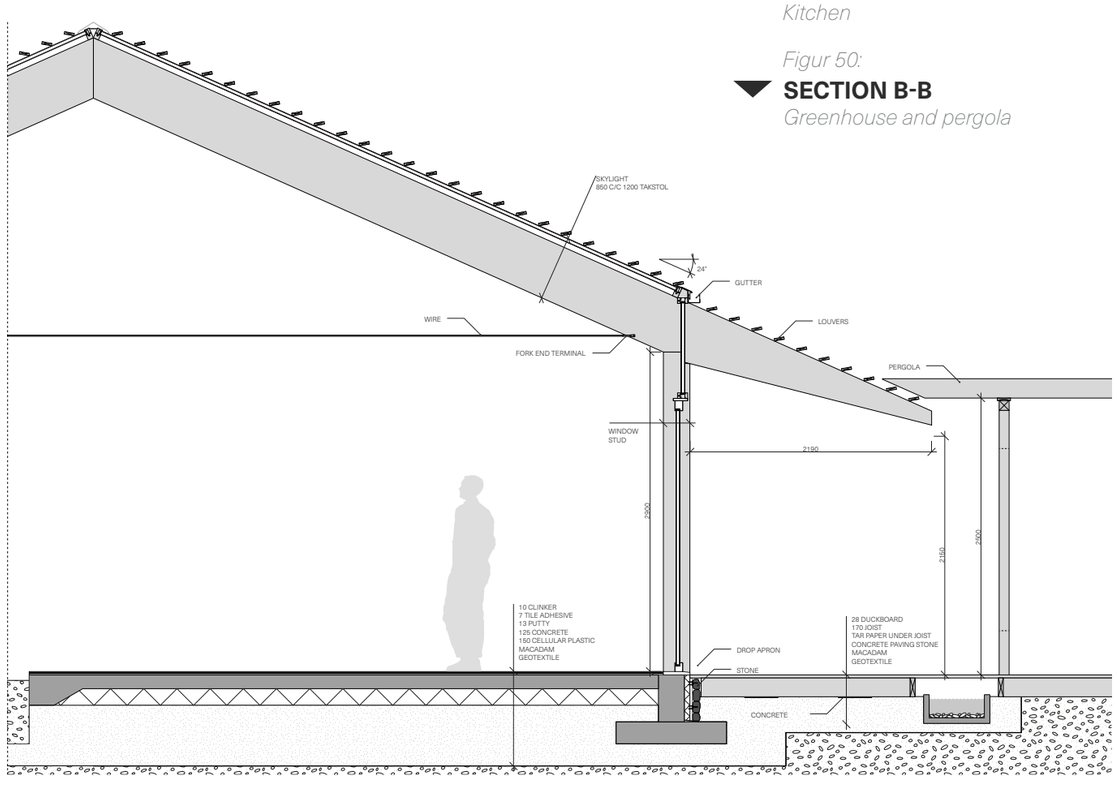
The section showcase the entrances to the greenhouse and the restaurant. The main entrance begins with a semi-outdoor space, enclosed on all sides except for an opening in the roof. This opening allows natural elements like light, snow and rain to be experienced as they interact with a tree positioned directly beneath it. Upon entering the indoor area, guests are welcomed into a more enclosed space and a seasonal exhibition, guiding them further into the restaurant.



Figur 49:

SECTION A-A

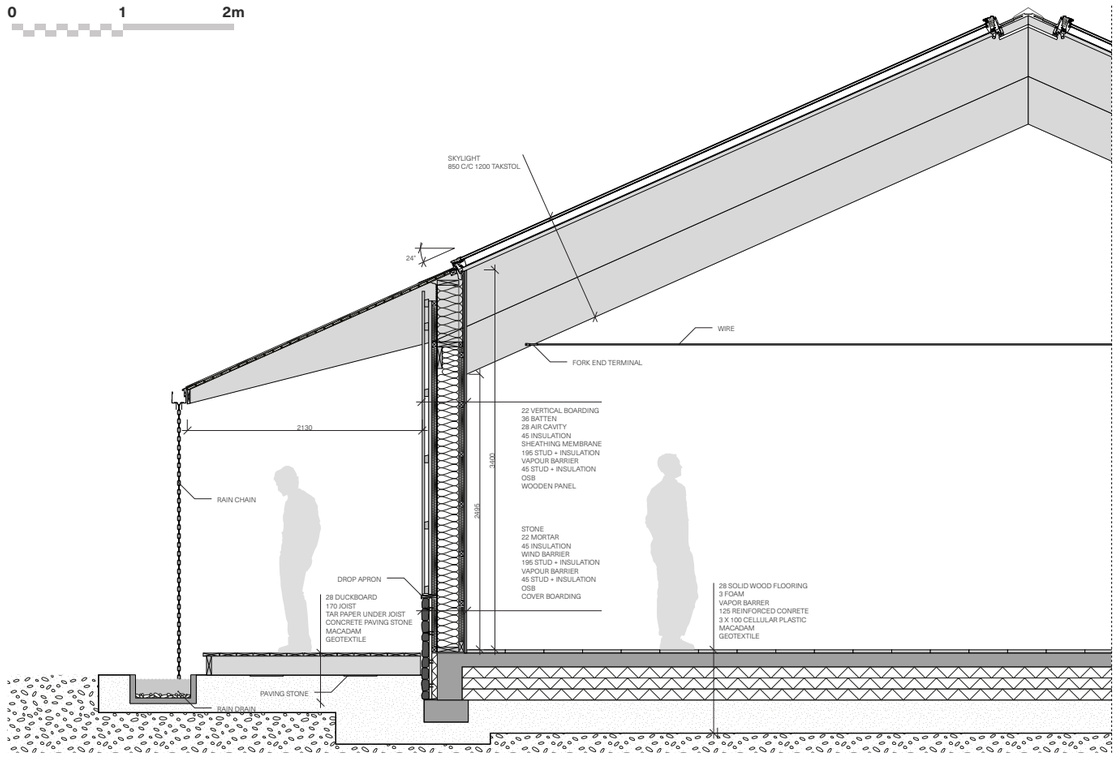
Kitchen



Figur 50:

SECTION B-B

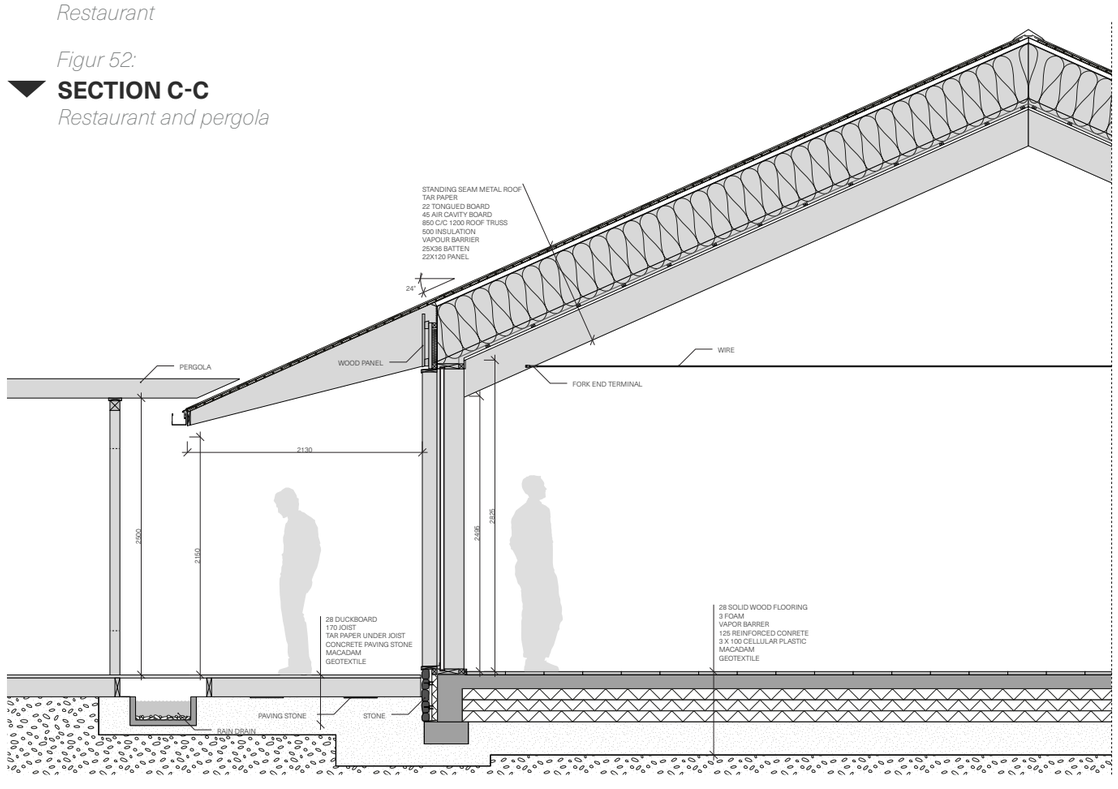
Greenhouse and pergola



Figur 51:

SECTION D-D

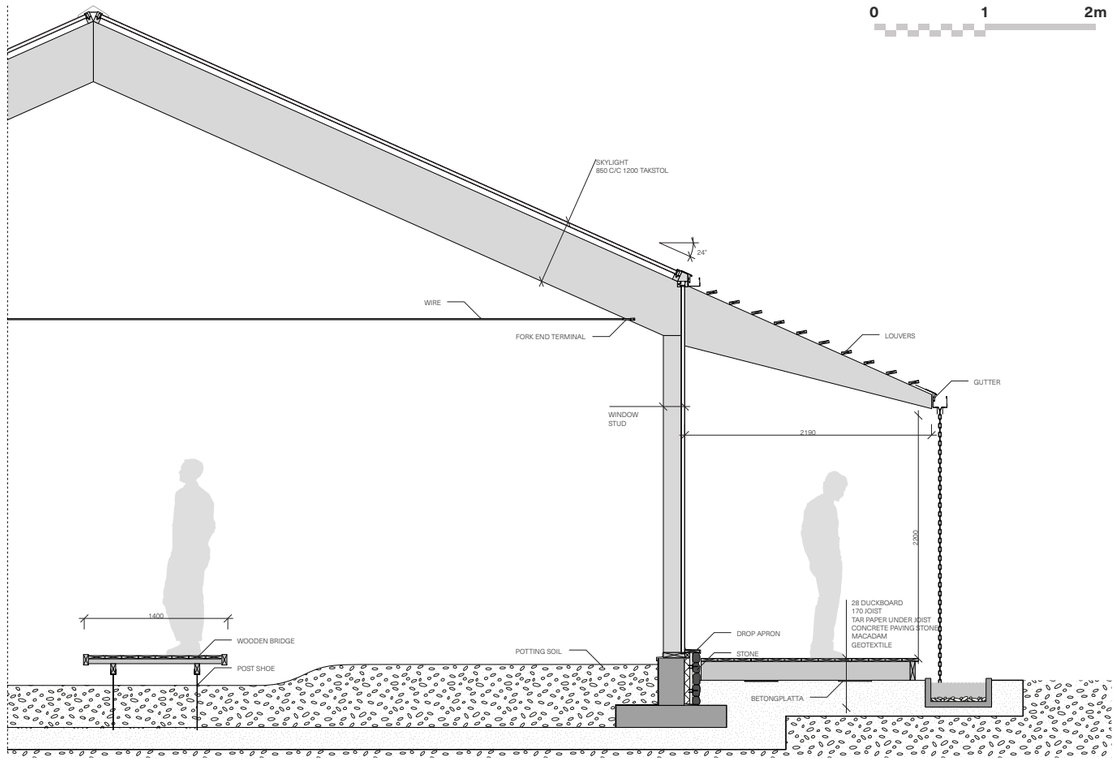
Restaurant



Figur 52:

SECTION C-C

Restaurant and pergola



Figur 53:

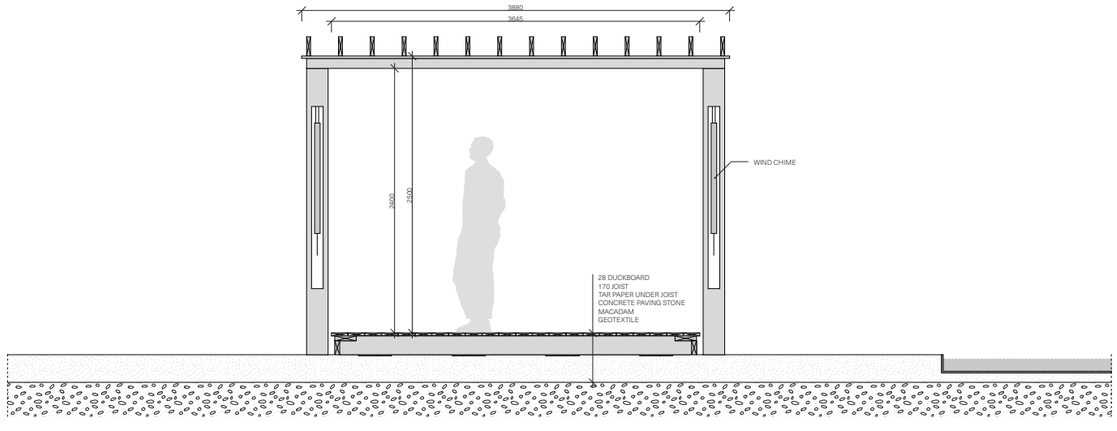
SECTION E-E

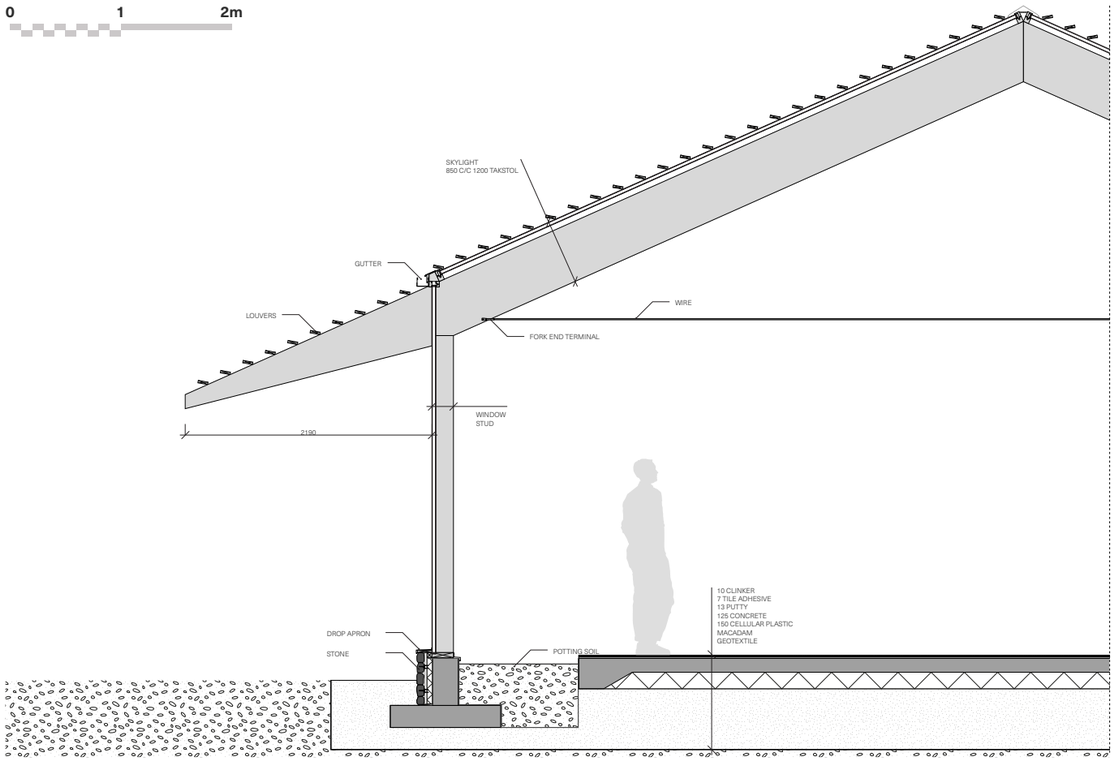
Green house, brigde

Figur 54:

SECTION G-G

Pergola





Figur 55:

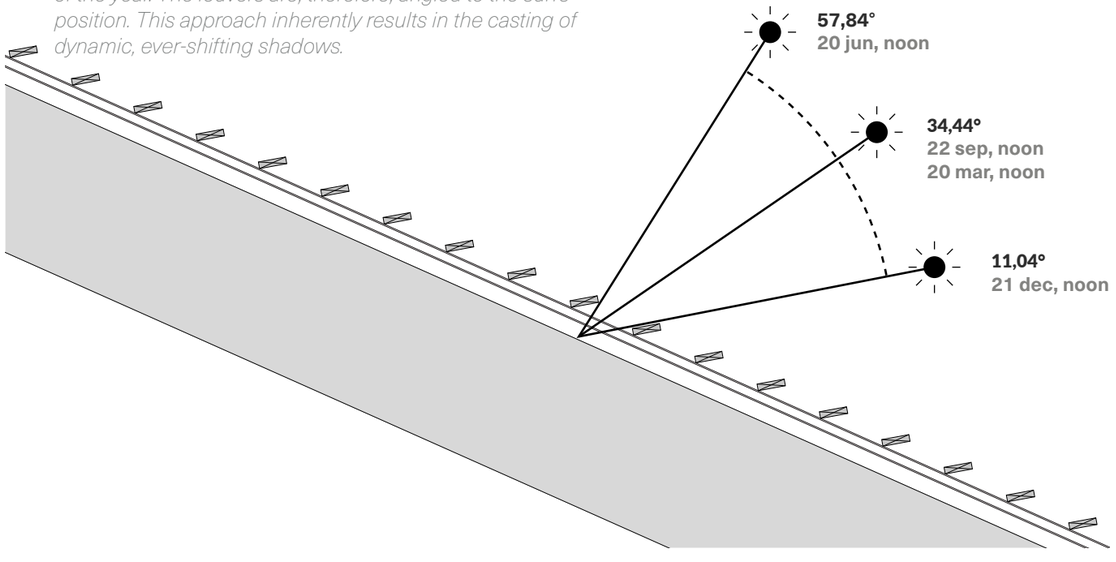
SECTION F-F

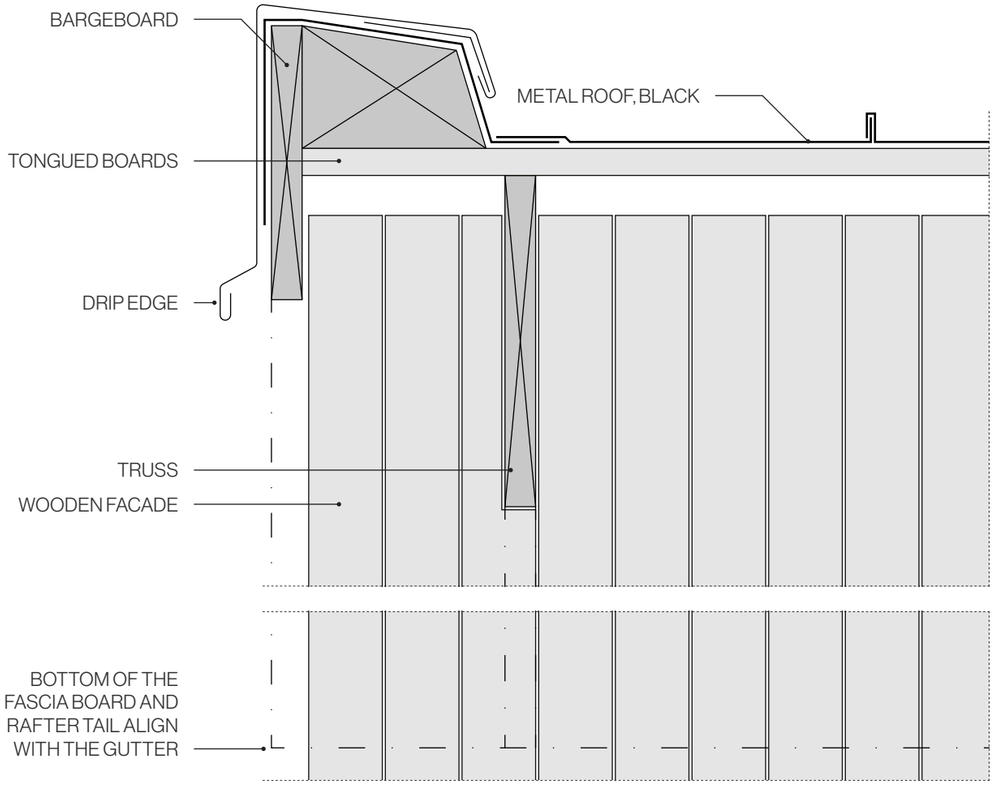
Green house, dining area

Figur 56:

DETAIL LOUVERS

The detail showcases the function of louvers above some selected windows. They aim to minimize, not exclude, direct sunlight during the summer months while ensuring unrestricted access to sunlight throughout the remainder of the year. The louvers are, therefore, angled to the sun's position. This approach inherently results in the casting of dynamic, ever-shifting shadows.

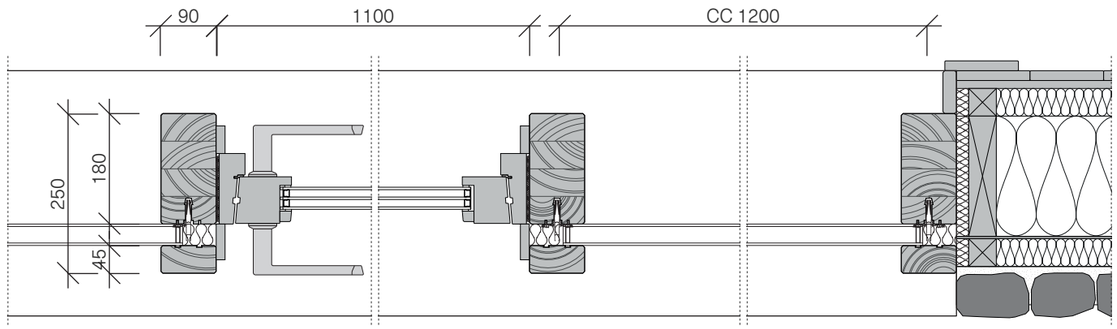




Figur 57:

DETAILS OF GABLE

The gables are designed to connect with the bottom of the truss and the gutter, creating a flush alignment.

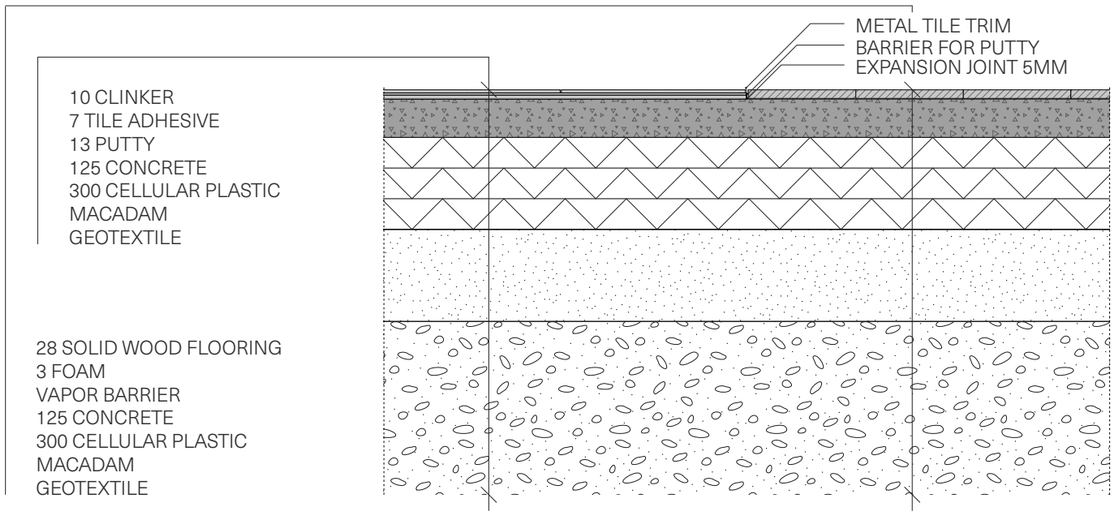


Figur 58:

DETAILS OF WINDOW, SPACING

Details of window, spacing
The building is created within a grid of 1200 cc, within which all constructional parts, including the windows, are fitted. All windows are designed as a glass facade system, fastened to the wooden beams with wood covering the intersection on the outside.

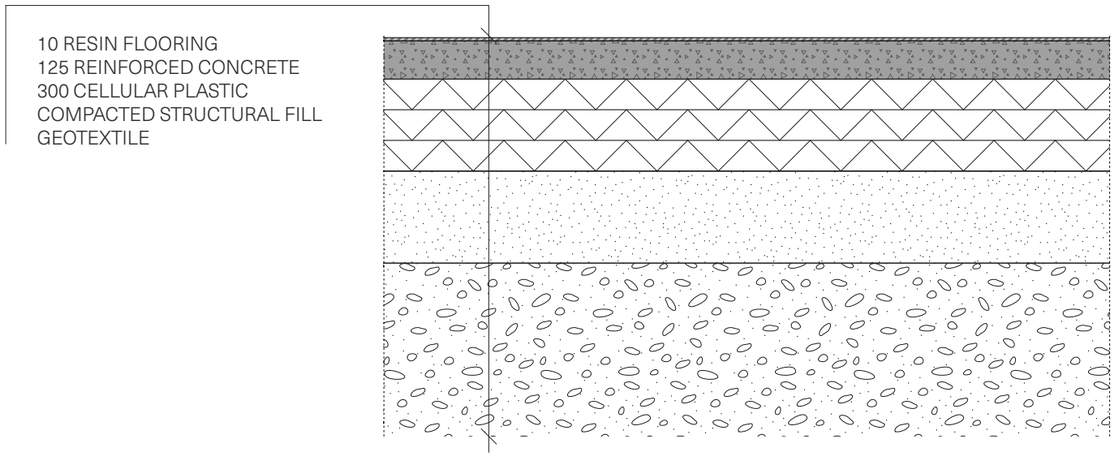
0 0,1 1m



Figur 59:

DETAILS OF FLOOR, TILES AND WOOD

Intersection of floor detail, restaurant

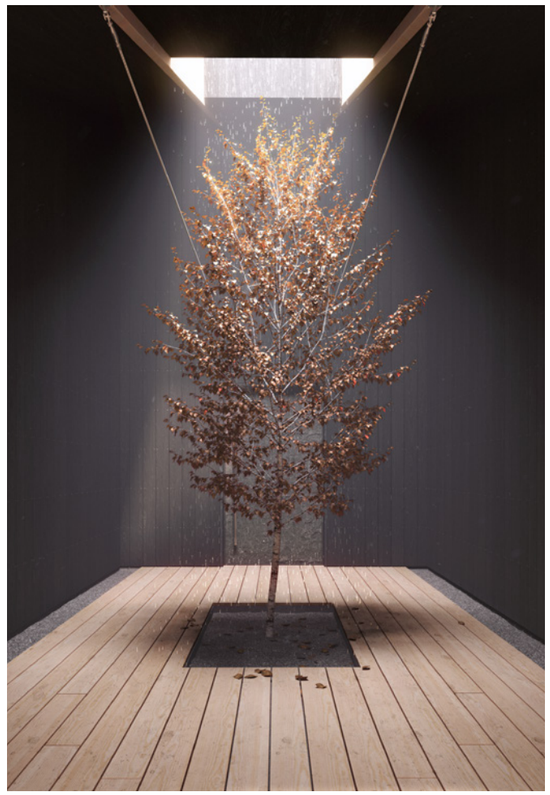


Figur 60:

DETAILS OF FLOOR, KITCHEN

Details of floor, kitchen

0 0,1 1m



Figur 61: Visualization of path

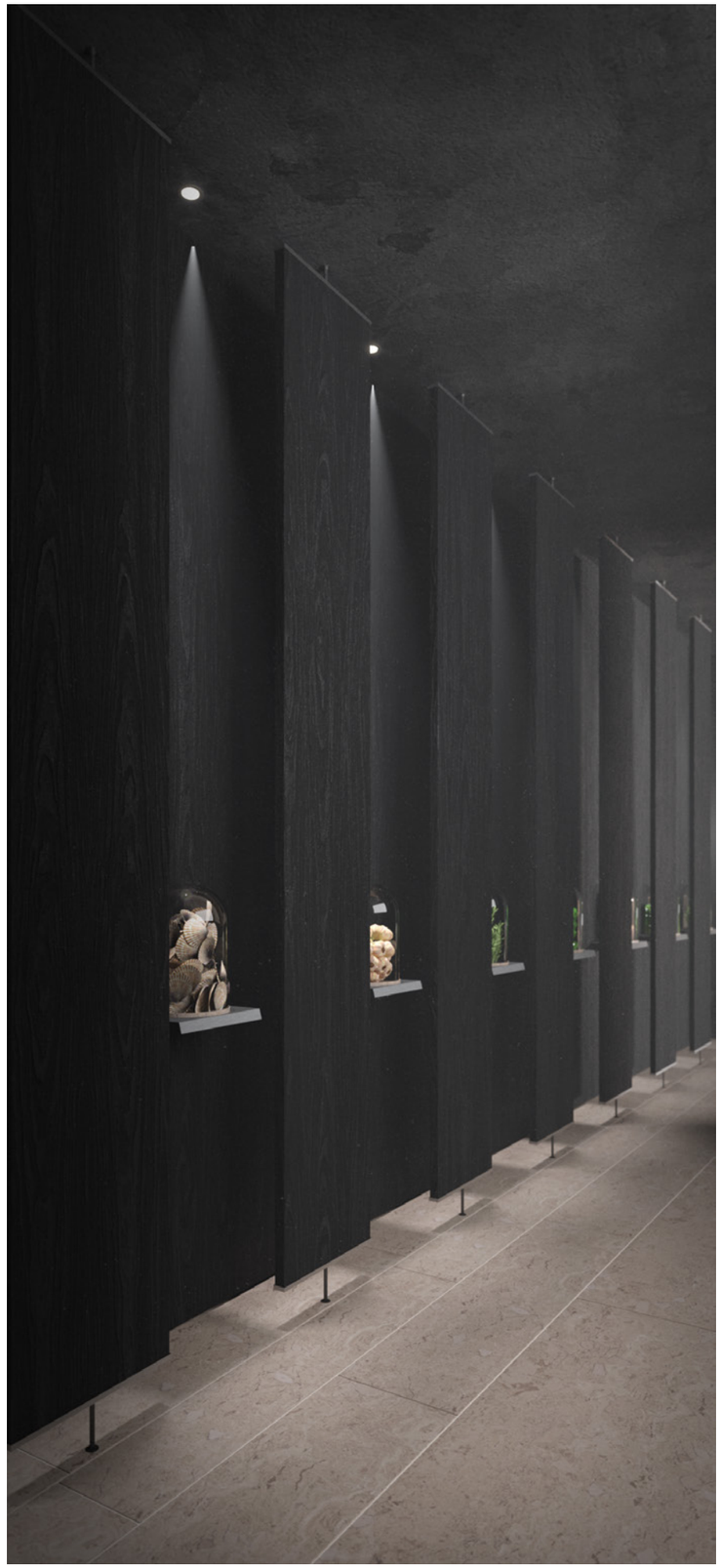
The path to the building cuts through the landscape, which allows the guests to get closer to the earth and the seasonal crops.

Figur 62: Visualization of entrance

Before fully entering the indoors, the guest enters a semi-outdoor space. It is a space that is protected from the weather in all parts except from the middle where sun, rain, snow, and all other conditions will be highlighted.

Figur 63: Visualization of rainchains

Rain is showcased by utilizing rain chains and collecting water in bassins, which direct the water along the building's edge. Note also the louvers on the rafter tails and the entrance's long sightline.



Figur 64: Visualization of exhibition

The first thing guests encounter is the seasonal exhibition, which leads them from the entrance to the lounge. The exhibition's content may change during each season, or more often if deemed fitting, to strengthen the feeling of the current season.

Figur 65: Visualization of view from lounge

The lounge area is a darker, more enclosed space with a focused view towards the water mirror. The water mirror will change the space by either casting water reflection, by lightning the space while it is frozen and covered with snow, or by allowing the guest to listen to the rain as it itfalls on the water drums.

Figur 66: Visualization of Lounge

Parts of the seasonal exhibition are visible from within the lounge, which has a fireplace that provides warmth and coziness.

Figur 67: Visualization of dining room

The main dining hall has windows towards the lake and up to the sky. During the bright summer, the nearby leafy greenery will shade the room. During winter, the view opens up more to compensate for the darker times. Here, guests can see, smell, and hear the preparation of their food in the display kitchen. They can sit next to the kitchen at the bar or at any of the tables. In the middle of the room is a service desk. The service desk offers storage for the restaurant but is also a place to showcase seasonal goods and create a suitable atmosphere.

Figur 68: Visualization of dining room

In the main dining hall, guests can enjoy their dinner with a view of the lake and the sky. During summer, the view is greener, and less light can enter the windows. During winter, more light can enter through the branches, and the view opens up more towards the lake. The shadows will ever shift in the space throughout the day and seasons.

Figur 69: Visualization of floor material

At the edge of the atrium, the meeting spot between lounge and dining, the space shifts from darker to more open and warm, thus thew material change too from tiles to wood with a metal molding. The atrium itself offers a section where the outdoors is invited indoors. Guests can walk alongside and even under portions of the atrium when visiting the toilets.

Figur 70: Visualization of dining space

The main dining space inside the greenhouse offers the guests a space to eat surrounded by seasonal crops. To enter the space, guests walk over a low bridge that crosses the crops. On rainy days, the water will be led inside through the tubing that lingers above the bridge and waters the crops through small holes in the outer parts. Any rest water is led to the middle table and guided through a stream before exiting to the crops at the back.

Figur 71: Visualization of lounge in green house

As one enters the greenery, the first thing they will see is the lounge. It is in a space that is more shaded than the rest, thanks to the louvers on the windows above. During the warmer periods, the shady qualities will be appreciated while the soft fabrics and blankets will offer comfort and coziness during the colder months.

Figur 72: Visualization of pergola

The pergola connecting the two buildings has wind chimes built into the structure, which play music of the wind for guests who pass by. During the warmer months, the area is wide enough to be furnished as an outdoor dining area.

As the paper comes to an end, it is essential to understand the findings' takeaways. The following chapter will summarise the findings, explain how to interpret them, and discuss their implications and limitations, along with further recommendations.

DISCUSSION

ABOUT THE RESULT

This paper has explored the intricate relationship between architecture and the seasons, aiming to explore how to create spaces that not only provide shelter but also foster a deeper connection to the natural cycles. Bringing the experiences of the seasons into architecture offers a better connection between the built environment and the natural world. Thus, it creates spaces that may immerse the user in the seasonal changes compared to a typical building. The research led to the development of a conceptual fine dining farm-to-table restaurant that is not only a place for dining but also one that offers immersive spaces that celebrate and take advantage of seasonal changes.

The difference between a typical space and one filled with seasonal experiences is not always as straightforward as it relies on the user to feel the need to explore and reflect on their surrounding. Furthermore, their need to understand their experience or whether it still affects their appreciation of the space and contributes to a positive perception remains to be determined. Studies suggest that being outdoors, particularly surrounded by greenery, offers both physiological and psychological benefits. Even so, views of greenery through windows offer benefits compared to the lack thereof. It is, therefore, safe to assume that the integration of seasons with similar applications in architecture could be viewed as beneficial. However, the factual benefit of each type of integration remains uncertain.

The studies found a great difference in the possibility of integrating different seasonal aspects into architecture. The difference likely correlates with the degree of physical effect each season or weather condition entails. It is found that the more physical elements the weather and season entail, the easier the application and translation into architectural solutions are.

Another possible explanation of the differences in the application may be the lack of architectonic elements designed for the experience rather than as a solution to a problem. One example is the management of rainwater. Rain has a physical impact on the environment (water falling from the sky and accumulating on the ground and surfaces). Rain also causes issues that result in the need for architectural solutions (such as drainage systems). As a result, there are established architectural elements that can be repurposed from merely functional to more experientially enriching designs. It can be compared to a cloudy sky. The sky mainly results in the environment becoming dimmer. Thus, it lacks a more significant physical impact. Furthermore, the cloudy sky does not create any direct problems; instead, it brings beneficial properties such as reducing glare and the need for additional shading. Consequently, no significant existing architectural solutions are akin to drainage systems for rain. Thus, a full-scale seasonal experience imposes greater demands on innovative thinking, which is limited in this analysis.

The findings of seasonal experiential solutions were tested on a fine dining restaurant with a farm-to-table concept. The project consequently offered a good opportunity as the premise of the dining experience falls close to the purpose of the studies. By including such solutions in a program whose narrative aligns with the seasonal changes, the embodiment of the seasons becomes stronger. The architectural theme and program work hand in hand. Furthermore, the location, being on farmland close to natural elements such as water (lake), deciduous trees, and crops, offered further reinforcement as those elements would change greatly throughout the seasons. However, the findings suggest that while views and, therefore, location are an advantage, several other principles can be applied in projects located on less favorable sites. Most weather conditions are present in one way or another throughout the world. Therefore, the findings are applicable and have potential variation in most architectonic creations. One can, therefore, see the potential of combining and selecting atmospheric principles of seasonal solutions for what best works for any given project.

These results build on existing theories of experiences within architecture that have previously been investigated and analyzed by such as Zumthor (2006), Hellemar (2019), Böhme (2018), Yu (2009), Coburn (2019),

Fritz Hollwich (1979), Gobé (2001), Kuo (2003), Levin (2009), Baraban (1992), Malnar (2004). Most previous studies are, however, focused on their understanding of the subject. Some, such as Nusairat et al. (2020), have conducted qualitative studies on how design affects behavior. While such studies can be found on behavioral matter, there are few measurable studies on sensory effects and their correlation to the themes of atmospheric design rather than specific design elements.

Furthermore, these findings contribute to the application of atmospheric architecture while providing new insights into how to do so with a seasonal filter. Nonetheless, this essay greatly emphasizes the presented possibilities and further developments. Integrating the seasons in architecture can shape spaces with unique and ephemeral experiences. Thus, the connections should be strengthened in future projects to get closer to the natural environment and contribute to both beneficial and beautiful architecture.

Another variable not discussed within this paper is the potential of recreating the seasonal atmosphere within architecture. This means that the architecture could work with seasonal characteristics to create spaces that are based on them beyond the actual seasonal effect of any given time, much like how the set of a theater works. A space could, for example, have a cooler room temperature and use more reflective and clear materials together with materials that feel cold to the touch in order to mimic the general characteristics of winter. It would, however, not be the season itself that changes the space. Thus, it falls beyond the scope of this paper while remaining a potential field to explore.

More research on this topic is necessary to first understand the scientific impact of spatial experiences in architecture. Then, more work is needed to create a larger library of applicable architectural solutions. Future studies could also include architectural systems and solutions that are not already present, as this paper lacks that type of solution to a broader extent. Instead of reimagining present solutions, the hope would be to imagine something new to, perhaps, even better, enhance the seasonal experience. Such studies would, however, inflict disputation of the need for them, other than the aesthetic and experimental aspects. More studies are needed to support such solutions and resolve the effects on seasonal atmospheric architectures and their potential benefits.

To conclude, the seasons, specifically those of southern Sweden, can be physically and experientially experienced by adjusting known solutions and adding certain architectural elements. Different solutions will enhance different weather conditions, though some work by enhancing several conditions. The main principle for working with the seasons within atmospheric architecture may be first to concretize the weather's physical aspects and then study how to work with and translate that physical change in details, from the general to the smaller scale.

REFERENCE LIST

LITERATURE + DATA SET

A Aries, M. B. C., Veitch, J. A., & Newsham, G. R. (2010). Windows, view, and office characteristics predict physical and psychological discomfort. Journal of Environmental Psychology, 30(4), 533–541. https://doi.org/10.1016/j.jenvp.2009.12.004

B Baraban, R. S., & Durocher, J. F. (1992). *Successful restaurant design*. Van Nostrand Reinhold.

Beautyman, M. (2018, Sepember 4). Noma by Bjarke Ingels Group and Studio David Thulstrup. *Architectural record*. https://www.architecturalrecord.com/articles/13612-noma-by-bjarke-ingels-group-and-studio-david-thulstrup?ajs_trait_oebid=3782E0258467B1M&ajs_uid=4236I5857812H6Y&oly_enc_id=4236I5857812H6Y

BIG, Bjarke Ingels Group. (n.d.). *Noma 2.0*. Retrieved September 21, 2023, from https://big.dk/projects/noma-2-0-3189

Böhme, G., & Engels-Schwarzpaul, A.-C. (2018). A*tmospheric architectures : the aesthetics of felt spaces*. Bloomsbury Visual Arts.

G Ghisleni, C. (2020, November 25). *What is Vernacular Architecture?* https://www.archdaily.com/951667/what-is-vernacular-architecture

H Hallemar, D., & Lindhag, I. (2019). *Äta ute : svenska restauranger : arkitekturen och maten*. Arkitektur förlag.

I InventiAir. (n.d.). *Ästad Vingård*. Retrieved October 3, 2023, from https://inventiair.se/referenser/astad-vingard/

J Jormakka, K. (2017). *Basics Design Methods*. https://doi.org/10.1515/9783035612387

K Keller, H. (2018, March 12). The Exhaustive Sourcing Behind the Materials for Noma and Noma 2.0: The restaurants' wood planks are as carefully considered as their innovative dishes. *Architectural Digest*. https://www.architecturaldigest.com/story/noma-2-copenhagen-design-dinesen-wood

Kuo, T. M., Liu, C.-R., Wang, Y.-C., & Chen, H. (2023). Sensory Experience at Farm-to-Table Events (SEFTE): conceptualization and scale development. *JOURNAL OF HOSPITALITY MARKETING & MANAGEMENT*. https://doi.org/10.1080/19368623.2023.2241048

M Malnar, M. J., Vodvarka, F. (2004). *Sensory Design*. University of Minnesota Press.

N National Geographic. (2023, March 14). *Season*. https://education.nationalgeographic.org/resource/season/

Nordström, M. (1994). *Vårt behov av grönska: Några aktuella miljöpsykologiska forskningsresultat*. Solna: Stadens råd för byggnadsforskning.

Norm Architects. (n.d.). *ÄNG, Sweden.* Retrieved October 3, 2023, from https://normcph.com/architecture/ang/#optin

Nusairat, N. M., Hammouri, Q., Al-Ghadir, H., Ahmad, A. M. K. & Al, H. E. M. (2020). The effect of design of restaurant on customer behavioral intentions. *Management Science Letters*, 10(9). https://doi.org/10.5267/j.msl.2020.2.021

P Pintos, P. (2022, 27 July). ÄNG Restaurant / NORM Architects. *ArchDaily.* https://www.archdaily.com/986016/ang-restaurant-norm-architects sweden

S Serpentine Galleries. (n.d.) *Serpentine Gallery Pavilion 2011 by Peter Zumthor.* Retrieved September 21, 2023, from https://www.serpentinegalleries.org/whats-on/serpentine-gallery-pavilion-2011-peter-zumthor/

Sims, R. (2009). Food, place and authenticity: local food and the sustainable tourism experience. *Journal of Sustainable Tourism*, 17(3), 321–336. https://doi.org/10.1080/09669580802359293

Snøhetta. (n.d.). *Under: Europe's first underwater restaurant*. Retrieved September 21, 2023, from https://www.snohetta.com/projects/under

T Torgny, O. (1984). *Skåneläng*or *: att förstå och bevara ett kulturarv* (2., omarb. uppl.). LiberFörlag.

U Under. (n.d.). *Opplevelsen*. Retrieved September 21, 2023, from https://under.no/opplevelsen/

W Walter, U., Muller, D. K., & Langvall, A. (2022). The spatial distribution of gourmet restaurants. *SCANDINAVIAN JOURNAL OF HOSPITALITY AND TOURISM*. https://doi.org/10.1080/15022250.2022.2112412

White Guide. (n.d). *Krogar*. Retrieved September 22, 2023, from https://whiteguide.com/se/sv/search?query=&type=restaurant&execute=true

Y Yu, X. (2009). *Sensory study in restaurant interior design* [Master thesis, Iowa State University]. https://lib.dr.iastate.edu/etd/11104

Z Zumthor, P. (2006). *Atmospheres : Architectural environments ; surrounding objects*. Birkhäuser.

DATA SET

S SCB, Statistikmyndigheten. (2022a). *Antal fritidshus i fritidshusområden efter region och vart 5:e år. Perioden 2022.* [Data Set]. https://www.statistikdatabasen.scb.se/pxweb/sv/ssd/START__MI__MI0806__MI0806A/FritidshusomrRegion/table/tableViewLayout1/

SCB, Statistikmyndigheten. (2022b). *Län och kommuner i nummerordning samt motsvarande koder för vissa andra administrativa och icke-administrativa områden. Perioden 2023-01-01.* [Data Set]. https://www.scb.se/hitta-statistik/regional-statistik-och-kartor/regionala-indelningar/lan-och-kommuner/

SCB, Statistikmyndigheten. (2023). *Folkmängd i riket, län och kommuner 31 december 2022 och befolkningsförändringar 2022.* [Data Set]. https://www.scb.se/hitta-statistik/statistik-efter-amne/befolkning/befolkningens-sammansattning/befolkningsstatistik/pong/tabell-och-diagram/folkmangd-och-befolkningsforandringar---helarsstatistik/folkmangd-i-riket-lan-och-kommuner-31-december-2022-och-befolkningsforandringar-2022/

SCB, Statistikmyndigheten. (n.d.a). *Kartfiler i wmf-format. Sveriges län.* [Cartographic material]. https://www.scb.se/hitta-statistik/regional-statistik-och-kartor/regionala-indelningar/kartor-over-indelningar/

SCB, Statistikmyndigheten. (n.d.b). *Kartfiler i wmf-format. Sveriges kommuner.* [Cartographic material]. https://www.scb.se/hitta-statistik/regional-statistik-och-kartor/regionala-indelningar/kartor-over-indelningar/

SMHI, Sveriges meteorologiska och hydrologiska institut. (n.d.a). *Normal start för vintern för perioden 1991-2020.* [Data Set]. https://www.smhi.se/data/meteorologi/kartor/normal/arstid-start/vinter

SMHI, Sveriges meteorologiska och hydrologiska institut. (n.d.b). *Normal start för våren för perioden 1991-2020.* [Data Set]. https://www.smhi.se/data/meteorologi/kartor/normal/arstid-start/var

SMHI, Sveriges meteorologiska och hydrologiska institut. (n.d.c). *Normal start för sommar för perioden 1991-2020.* [Data Set]. https://www.smhi.se/data/meteorologi/kartor/normal/arstid-start/sommar

SMHI, Sveriges meteorologiska och hydrologiska institut. (n.d.c). *Normal start för höst för perioden 1991-2020.* [Data Set]. https://www.smhi.se/data/meteorologi/kartor/normal/arstid-start/host

SMHI, Sveriges meteorologiska och hydrologiska institut. (n.d.d). *Normal medeltemperatur i januari för perioden 1991-2020.* [Data Set]. https://www.smhi.se/data/meteorologi/kartor/normal/manadsmedeltemperatur-normal/manad/januari

SMHI, Sveriges meteorologiska och hydrologiska institut. (n.d.e). *Normal medeltemperatur i januari till december för perioden 1991-2020.* [Data Set]. https://www.smhi.se/data/meteorologi/kartor/normal/manadsmedeltemperatur-normal/manad/januari

SMHI, Sveriges meteorologiska och hydrologiska institut. (n.d.f). *Normalt startdatum för första frosten för perioden 1991–2020.* [Data Set]. https://www.smhi.se/data/meteorologi/kartor/normal/frost-start

SMHI, Sveriges meteorologiska och hydrologiska institut. (n.d.g). *Normalt slutdatum för sista frosten för perioden 1991–2020.* [Data Set]. https://www.smhi.se/data/meteorologi/kartor/normal/frost-slut

SMHI, Sveriges meteorologiska och hydrologiska institut. (n.d.h). *Normal start för vegetationsperioden för perioden 1991-2020.* [Data Set]. https://www.smhi.se/data/meteorologi/kartor/normal/veg-start

SMHI, Sveriges meteorologiska och hydrologiska institut. (n.d.i). *Normal längd för vegetationsperioden för perioden 1991-2020.* [Data Set]. https://www.smhi.se/data/meteorologi/kartor/normal/veg-langd

SMHI, Sveriges meteorologiska och hydrologiska institut. (n.d.j). *Normal månadsnederbörd i januari för perioden 1991-2020.* [Data Set]. https://www.smhi.se/data/meteorologi/kartor/normal/manadsnederbord-normal/manad/januari

SMHI, Sveriges meteorologiska och hydrologiska institut. (n.d.k). *Normal månadsnederbörd i januari till december för perioden 1991-2020.* [Data Set]. https://www.smhi.se/data/meteorologi/kartor/normal/manadsnederbord-normal/manad/januari

SMHI, Sveriges meteorologiska och hydrologiska institut. (n.d.l). *Solskenstid (h). Lund Sol. 2m över mark. Perioden 2012-01-01 till 2022-12-31.* [Data Set]. https://www.smhi.se/data/meteorologi/ladda-ner-meteorologiska-observationer#param=sunshineTime,stations=core,stationid=53445

SMHI, Sveriges meteorologiska och hydrologiska institut. (n.d.m). *Vindriktning och vindhastighet (h). Malmö-Sturup Flygplats. 10m över mark. Perioden 2012-01-01 till 2022-12-31.* [Data Set]. https://www.smhi.se/data/meteorologi/ladda-ner-meteorologiska-observationer/#param=wind,stations=core,stationid=53300

SMHI, Sveriges meteorologiska och hydrologiska institut. (n.d.n). *Malmö, solbanediagram år 2013*. [Data Set]. https://www.smhi.se/kunskapsbanken/meteorologi/solens-upp-och-nedgang/vad-ar-ett-solbanediagram-1.31981

SMHI, Sveriges meteorologiska och hydrologiska institut. (n.d.o). *Malmö, solbanekontur år 2013*. [Data Set]. https://www.smhi.se/kunskapsbanken/meteorologi/solens-upp-och-nedgang/vad-ar-ett-solbanediagram-1.31981

Sveriges Kommuner och Regioner. (2023, January 31). *Classification of Swedish municipalities.* https://skr.se/en/skr/tjanster/kommunerochregioner/faktakommunerochregioner/kommungruppsindelning.2051.html

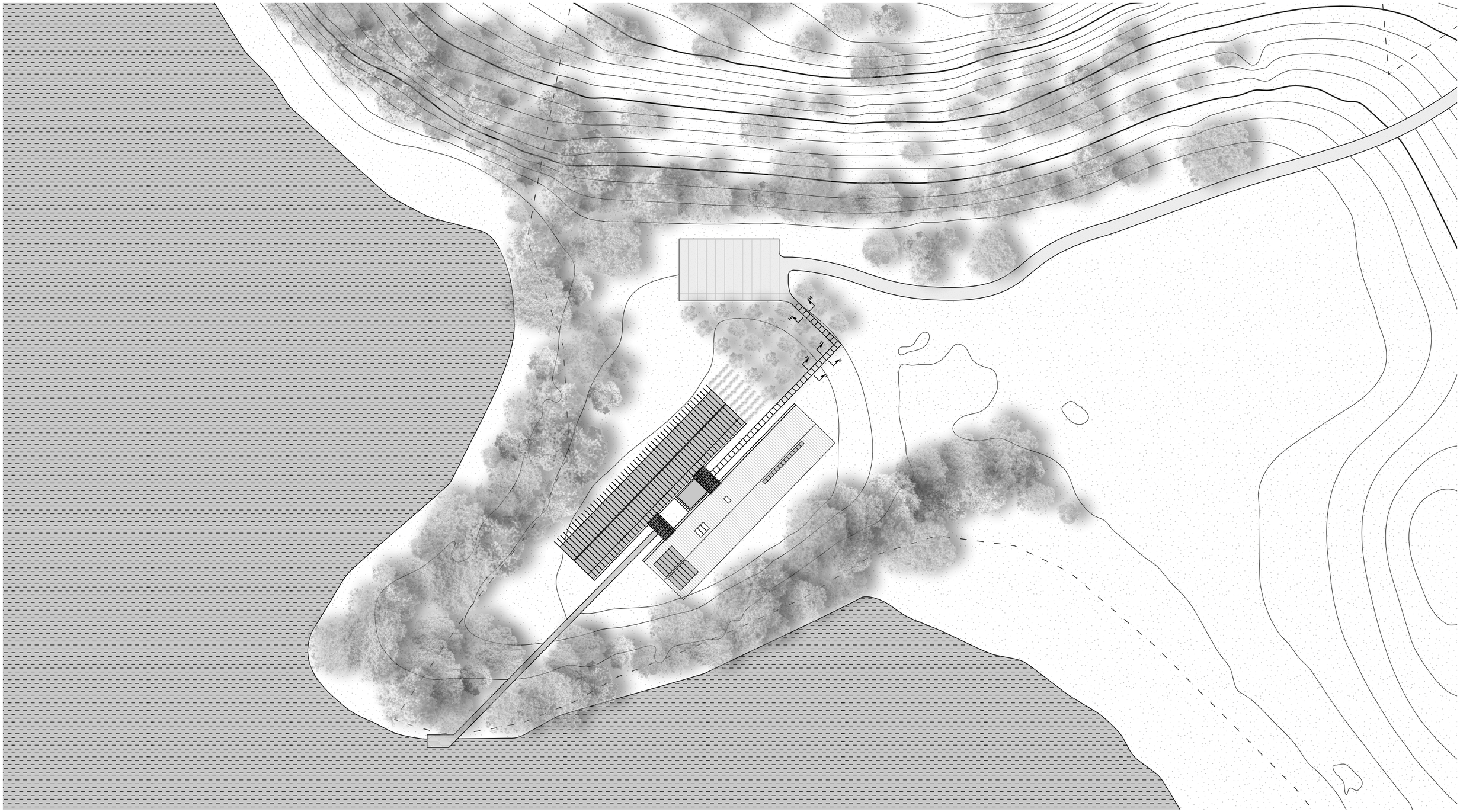
T

Tillväxtverket (n.d.a). *Andel svenska och utländska gästnätter. Perioden 2013-01 till 2023-01.* [Data Set]. https://tillvaxtdata.tillvaxtverket.se/statistikportal#page=72b01aa0-1d4a-425c-8684-dbce0319b39e

Tillväxtverket (n.d.b). *Gästnätter, län. Perioden 2013-01 till 2023-01.* [Data Set]. https://tillvaxtdata.tillvaxtverket.se/statistikportal#page=72b01aa0-1d4a-425c-8684-dbce0319b39e

DRAWING INDEX
RESTAURANT SENSE

DRAWING NO.	CONTENT	SCALE
A-01	**COMPILED**	
A-01.1-001	SITE PLAN	1:1000
A-16	**SUPPORT STRUCTURES**	
A-16.2-001	SITE DETAILS; H-H, I-I, J-J	1:50
A-40	**GENERAL DRAWINGS**	
A-40.1-001	FLOOR PLAN	1:200
A-40.2-001	SECTION A-A	1:100
A-40.2-002	SECTION B-B	1:100
A-40.2-003	SECTION C-C	1:100
A-40.3-001	FACADE NORTHEAST	1:100
A-40.3-002	FACADE SOUTHWEST	1:100
A-40.3-003	FACADE NORTHWEST	1:200
A-40.3-004	FACADE SOUTHEAST	1:200
A-41	**ROOF**	
A-41.1-002	ROOF PLAN	1:200
A-42	**EXTERIOR WALLS, OPENINGS**	
A-42.6-001	SECTION A-A	1:20
A-42.6-002	SKYLIGHT	1:20
A-42.6-003	SECTION B-B	1:20
A-42.6-004	SECTION C-C	1:20
A-42.6-005	SECTION D-D	1:20
A-42.6-006	SECTION E-E	1:20
A-42.6-007	SECTION F-F	1:20
A-42.6-008	SECTION G-G	1:10
A-42.6-009	DETAIL, ROOF GABLE	1:10
A-42.6-010	HORIZONTAL SECTION, WINDOWS	1:5, 1:10



RESTAURANT SENSE

TITLE
SITE PLAN

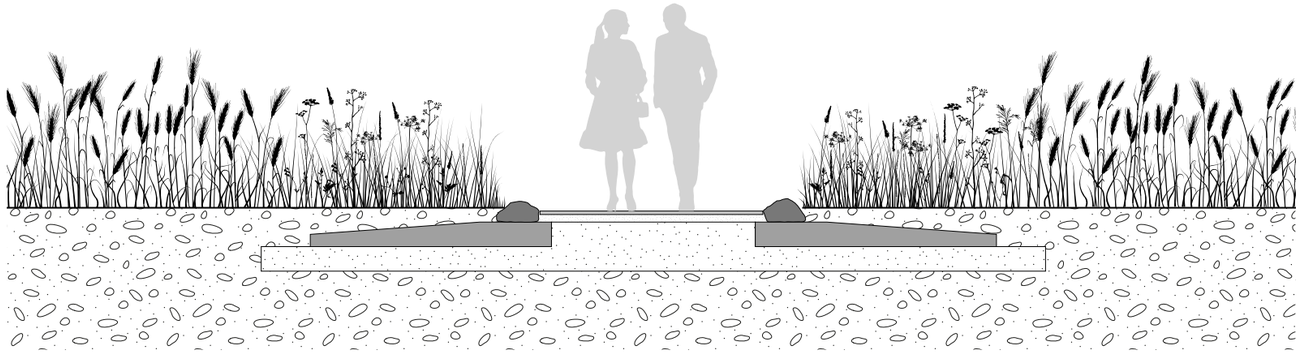
ARCHITECT
ALICIA OPLAND

DATE
240513

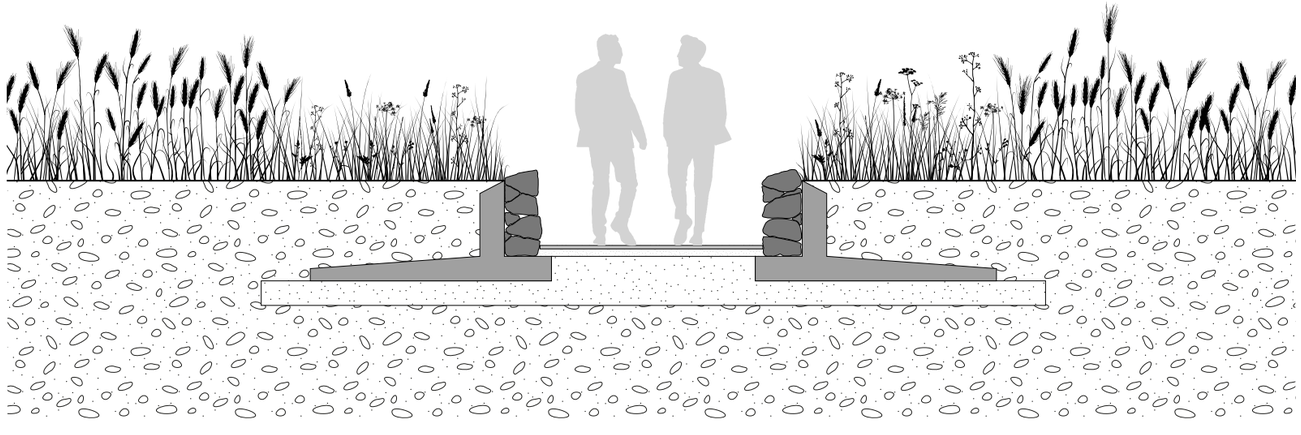
SCALE
1:1000, A3

ORIENTATION

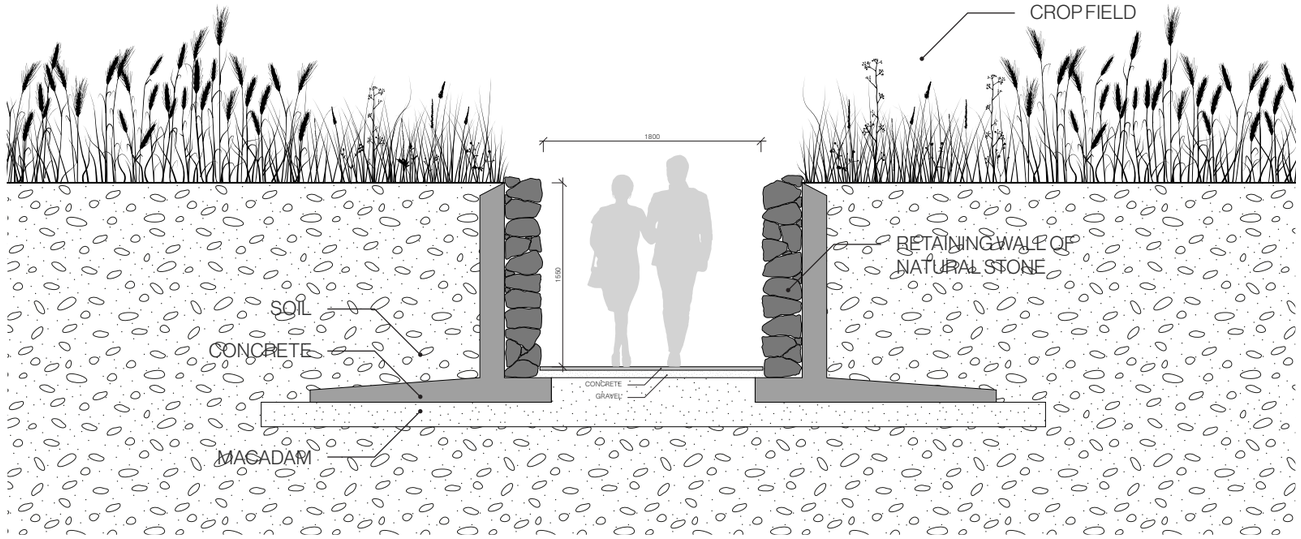
NO.
A-01.1-001



SECTION H-H

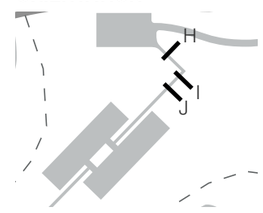


SECTION I-I



SECTION J-J

ORIENTATION



RESTAURANT SENSE

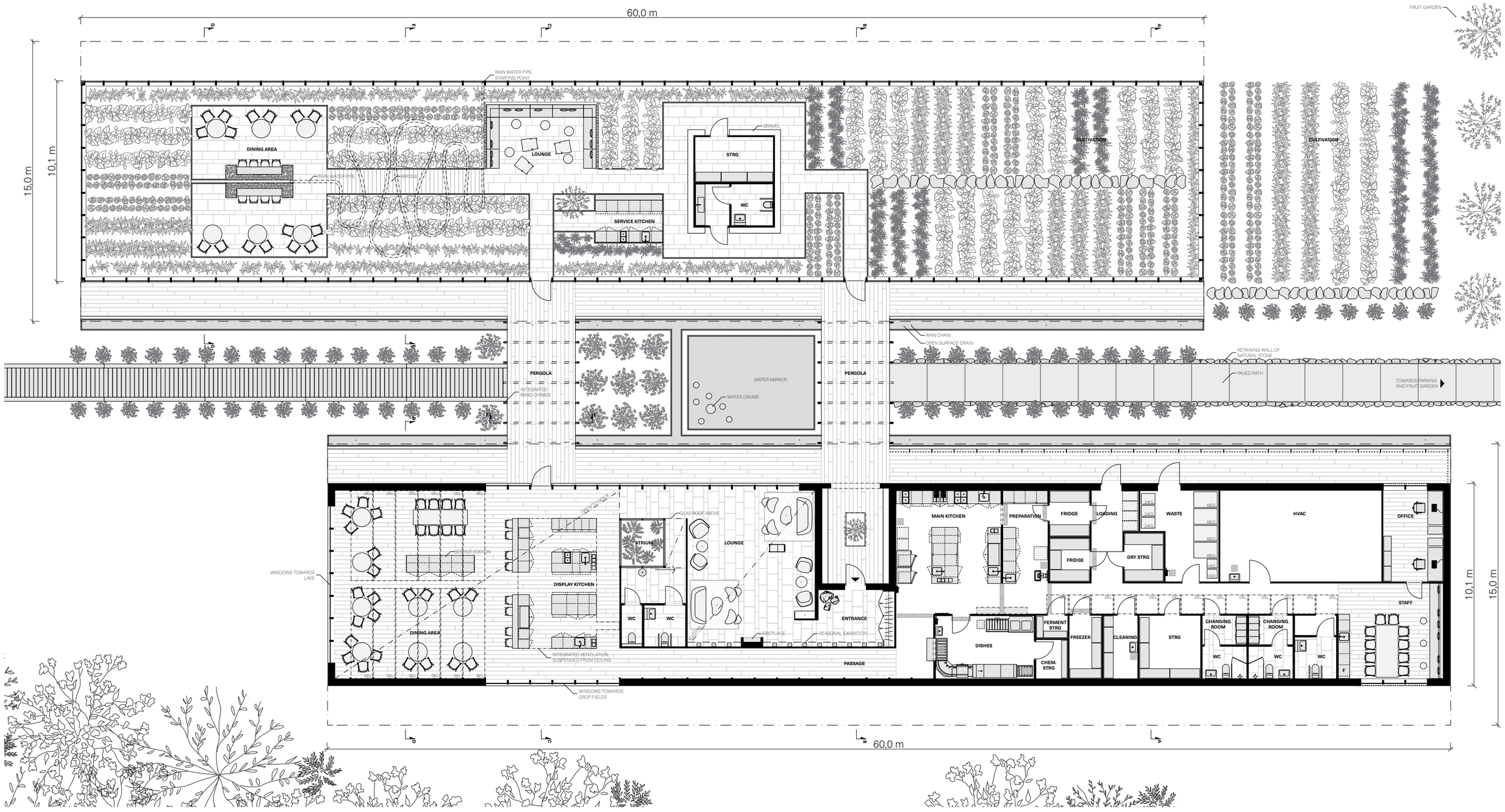
TITLE
SECTION H-H, I-I, J-J

ARCHITECT
ALICIA OPLAND

DATE
240513

SCALE
1:50, A3

NO.
A-16.2-001



ORIENTATION

RESTAURANT SENSE

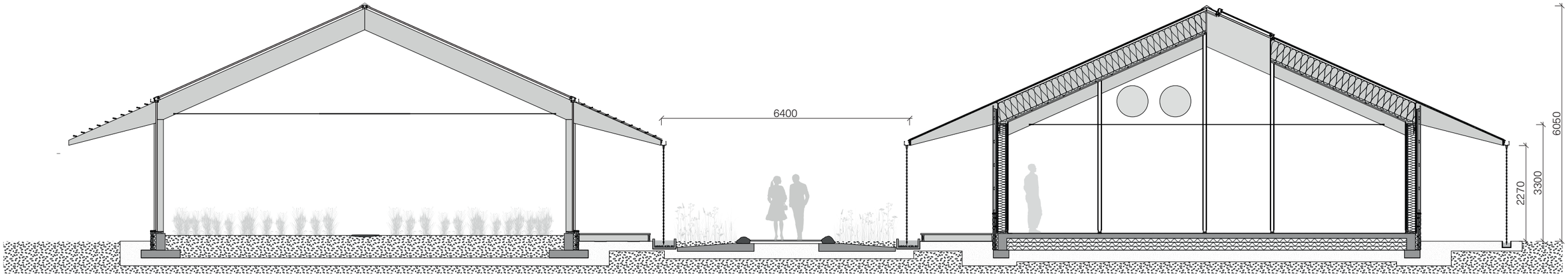
TITLE
PLAN

ARCHITECT
ALICIA OPLAND

DATE
240513

SCALE
1:200, A3

NO.
A-40.1-001



RESTAURANT SENSE

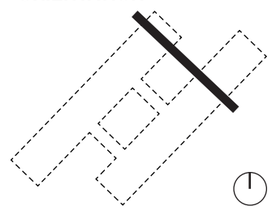
TITLE
SECTION A-A

ARCHITECT
ALICIA OPLAND

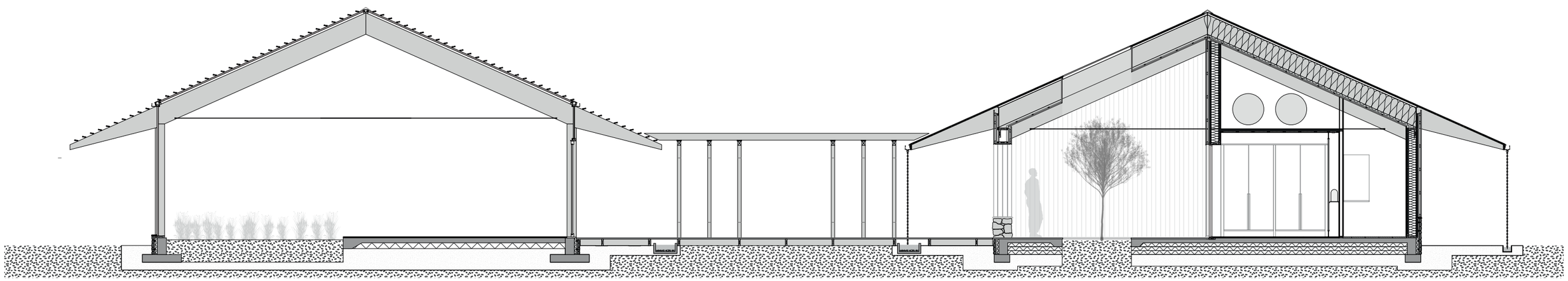
DATE
240513

SCALE
1:100, A3

ORIENTATION



NO.
A-40.2-001



RESTAURANT SENSE

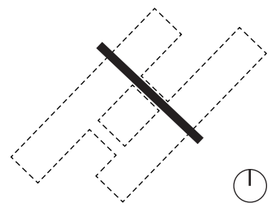
TITLE
SECTION B-B

ARCHITECT
ALICIA OPLAND

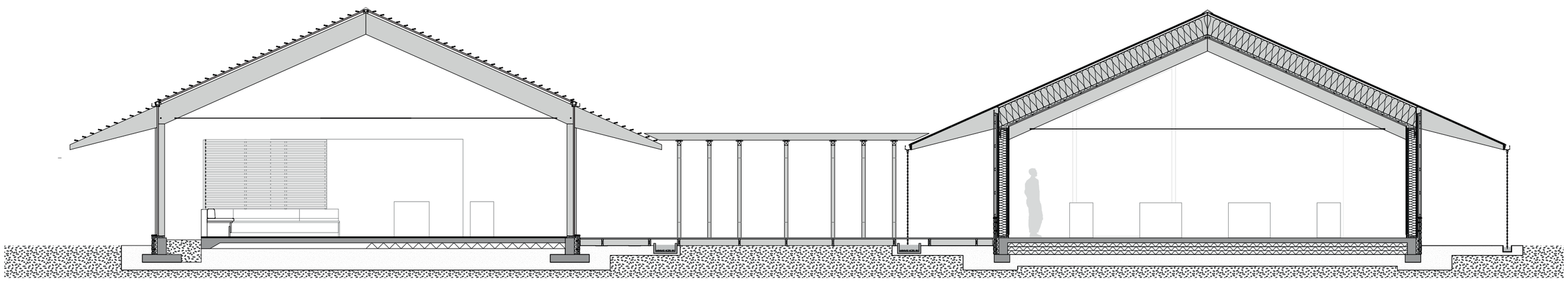
DATE
240513

SCALE
1:100, A3

ORIENTATION



NO.
A-40.2-002



RESTAURANT SENSE

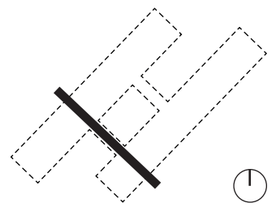
TITLE
SECTION C-C

ARCHITECT
ALICIA OPLAND

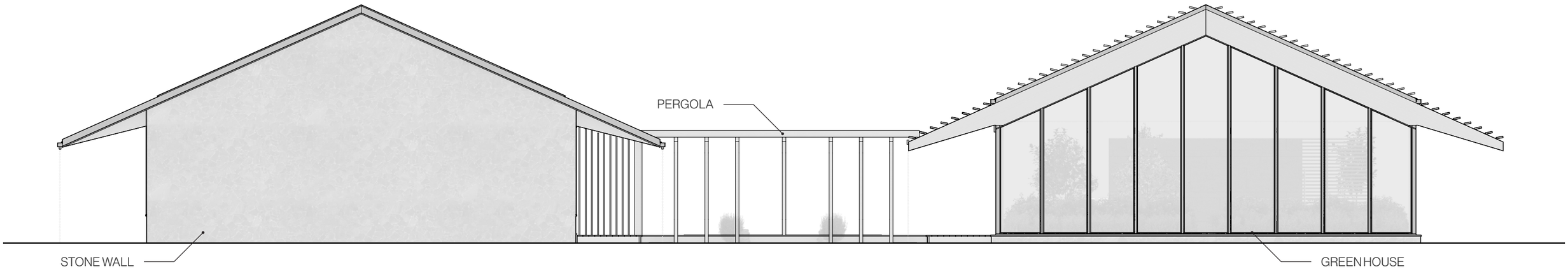
DATE
240513

SCALE
1:100, A3

ORIENTATION



NO.
A-40.2-003



RESTAURANT SENSE

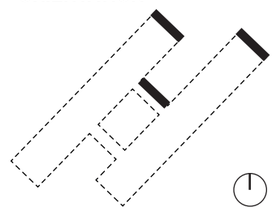
TITLE
FACADE, NORTHEAST

ARCHITECT
ALICIA OPLAND

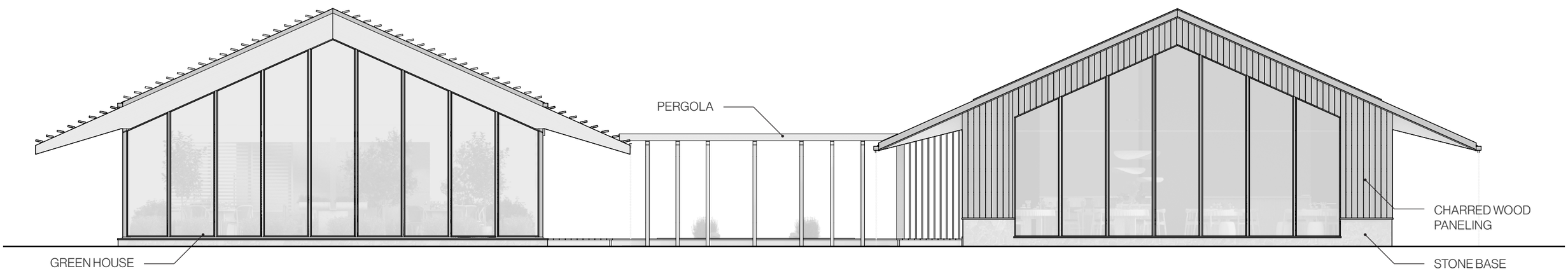
DATE
240513

SCALE
1:100, A3

ORIENTATION



NO.
A-40.3-001



RESTAURANT SENSE

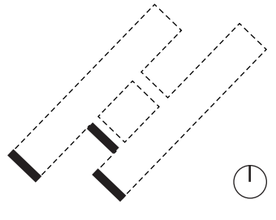
TITLE
FACADE, SOUTHWEST

ARCHITECT
ALICIA OPLAND

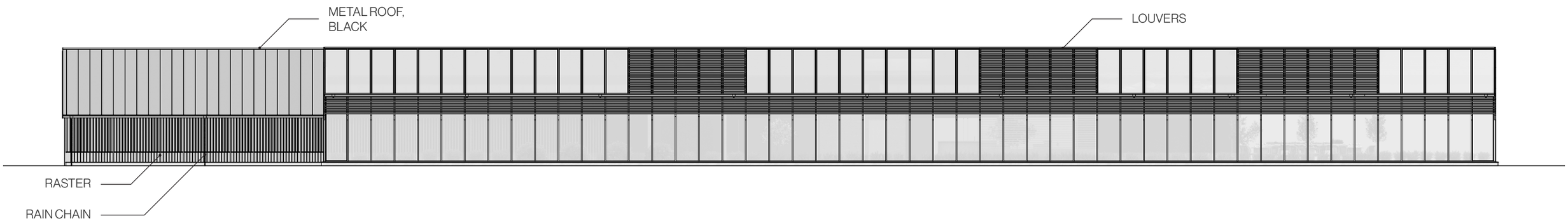
DATE
240513

SCALE
1:100, A3

ORIENTATION



NO.
A-40.3-002



RESTAURANT SENSE

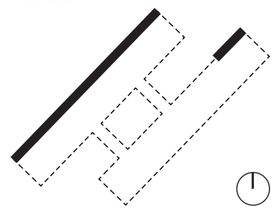
TITLE
FACADE, NORTHWEST

ARCHITECT
ALICIA OPLAND

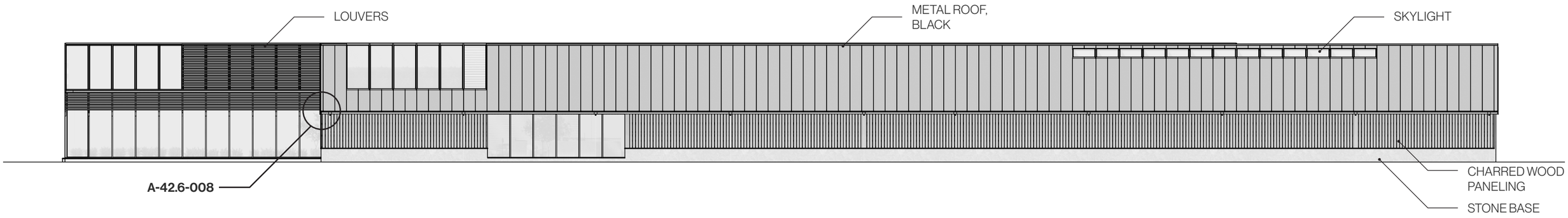
DATE
240513

SCALE
1:200, A3

ORIENTATION



NO.
A-40.3-003



RESTAURANT SENSE

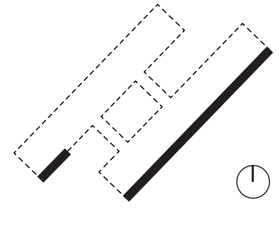
TITLE
FACADE, SOUTHEAST

ARCHITECT
ALICIA OPLAND

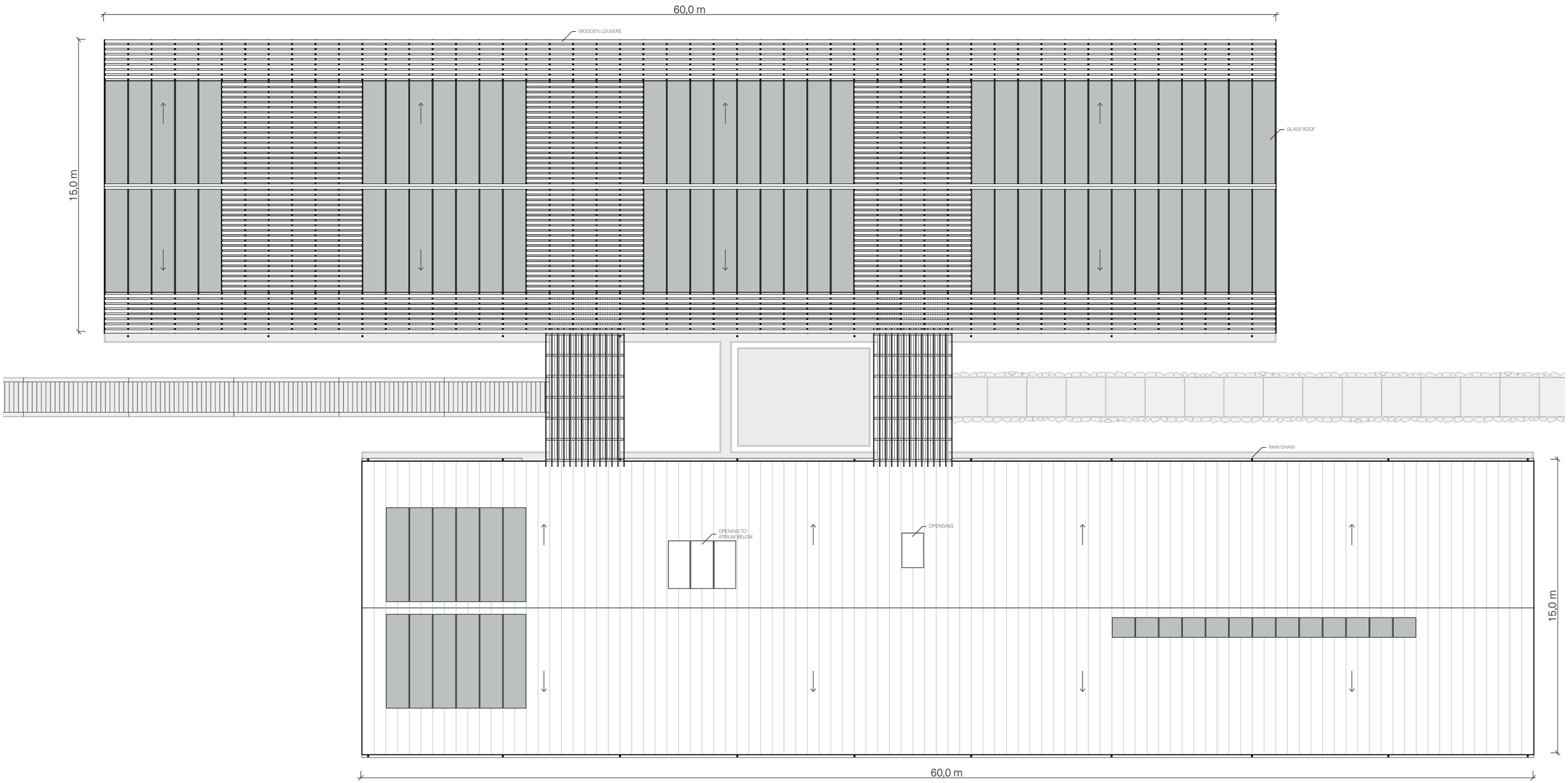
DATE
240513

SCALE
1:200, A3

ORIENTATION



NO.
A-40.3-004



RESTAURANT SENSE

TITLE
ROOF PLAN

ARCHITECT
ALICIA OPLAND

DATE
240513

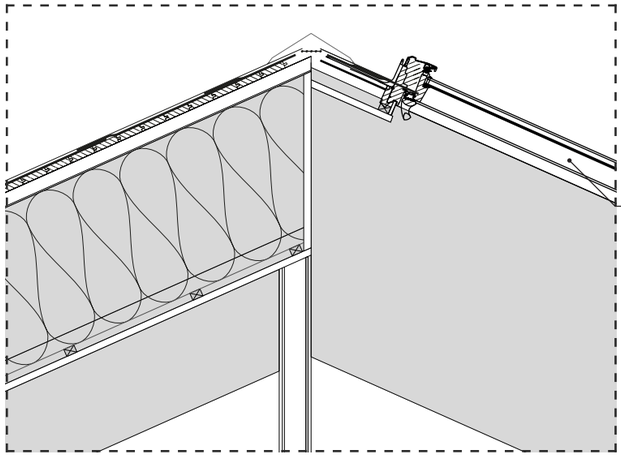
SCALE
1:200, A3

ORIENTATION

NO.
A-41.1-001

STANDING SEAM METAL ROOF
TAR PAPER
22 TONGUED BOARD
45 AIR CAVITY BOARD
850 C/C 1200 ROOF TRUSS
500 INSULATION
VAPOUR BARRIER
25X36 BATTEN
22X120 PANEL

24°



SEE DRAWING **A-42.6-002**
FOR FURTHER DETAILING

WIRE

FORK END TERMINAL

GUTTER

2130

RAIN CHAIN

2850

2495

STONE
22 MORTAR
45 INSLUATION
WIND BARRIER
195 STUD + INSULATION
VAPOUR BARRIER
45 STUD + INSULATION
OSB
PLASTERBOARD

10 RESIN FLOORING
125 REINFORCED CONCRETE
3 X 100 CELLULAR PLASTIC
MACADAM
GEOTEXTILE

OPEN SURFACE DRAIN

RESTAURANT SENSE

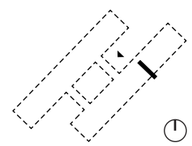
TITLE
SECTION A-A

ARCHITECT
ALICIA OPLAND

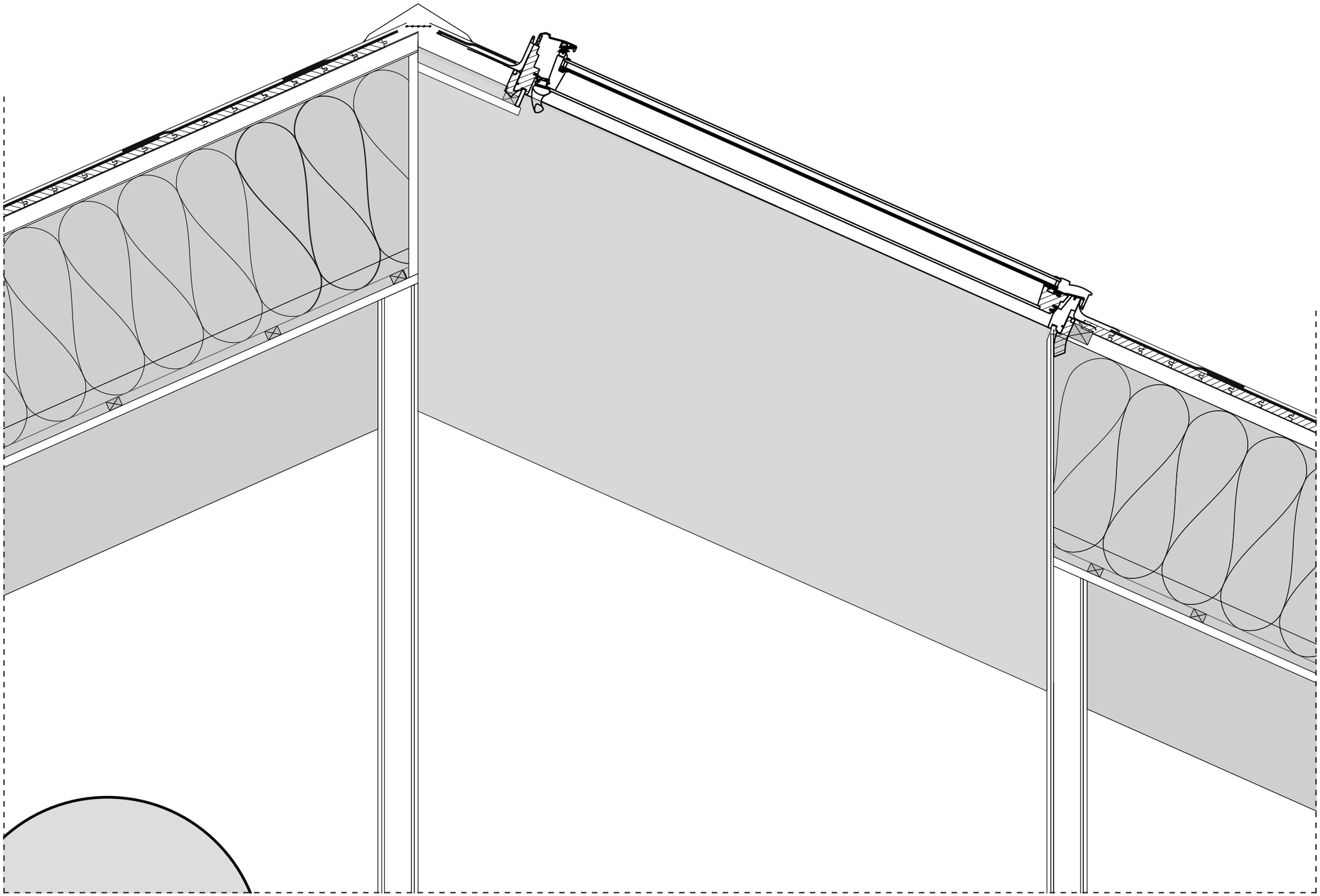
DATE
240513

SCALE
1:20, A3

ORIENTATION



NO.
A-42.6-001



RESTAURANT SENSE

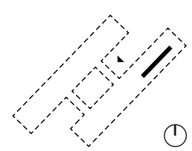
TITLE
SKYLIGHT

ARCHITECT
ALICIA OPLAND

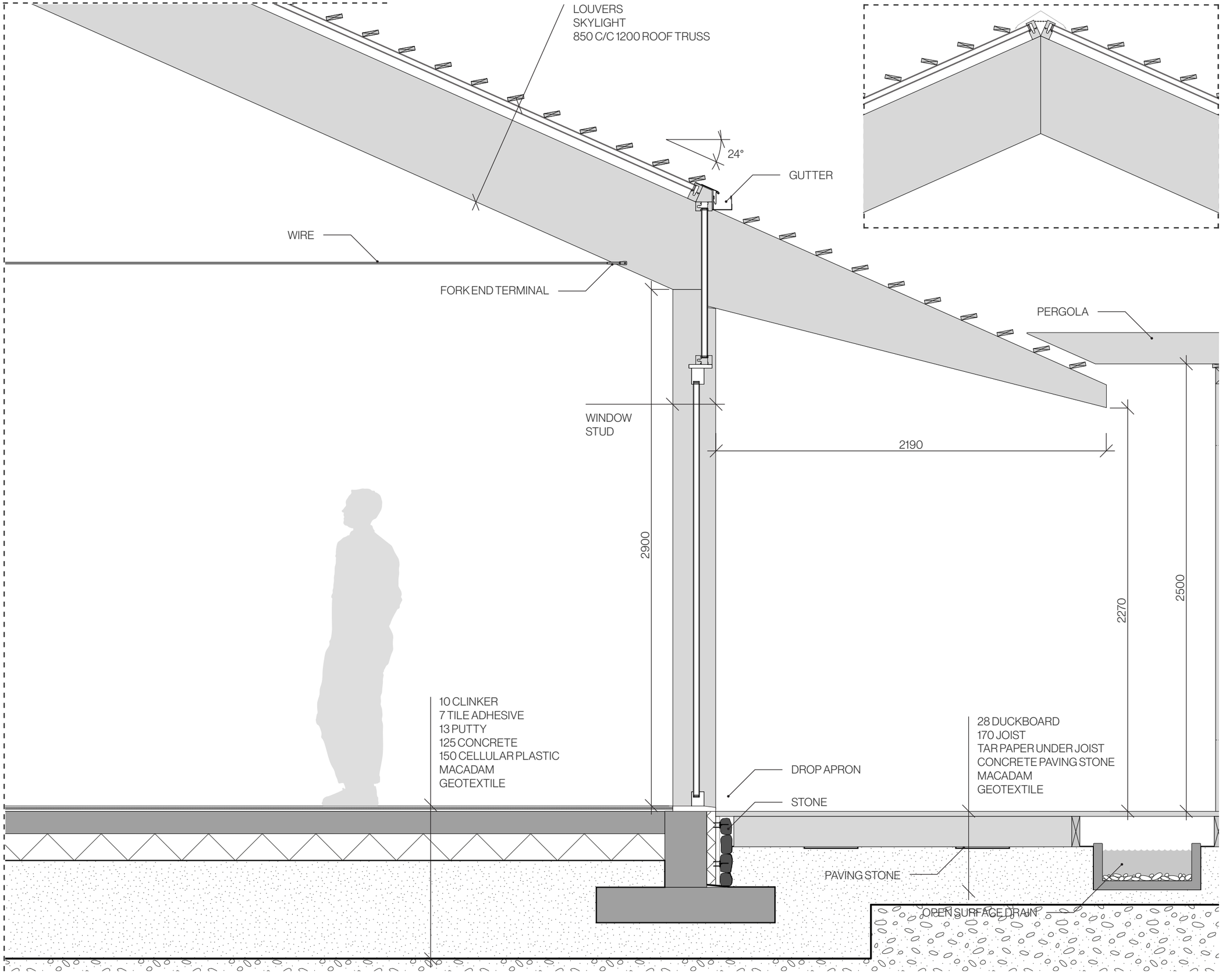
DATE
240513

SCALE
1:10, A3

ORIENTATION



NO.
A-42.6-002



RESTAURANT SENSE

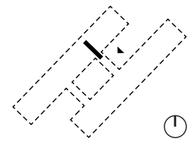
TITLE
SECTION B-B

ARCHITECT
ALICIA OPLAND

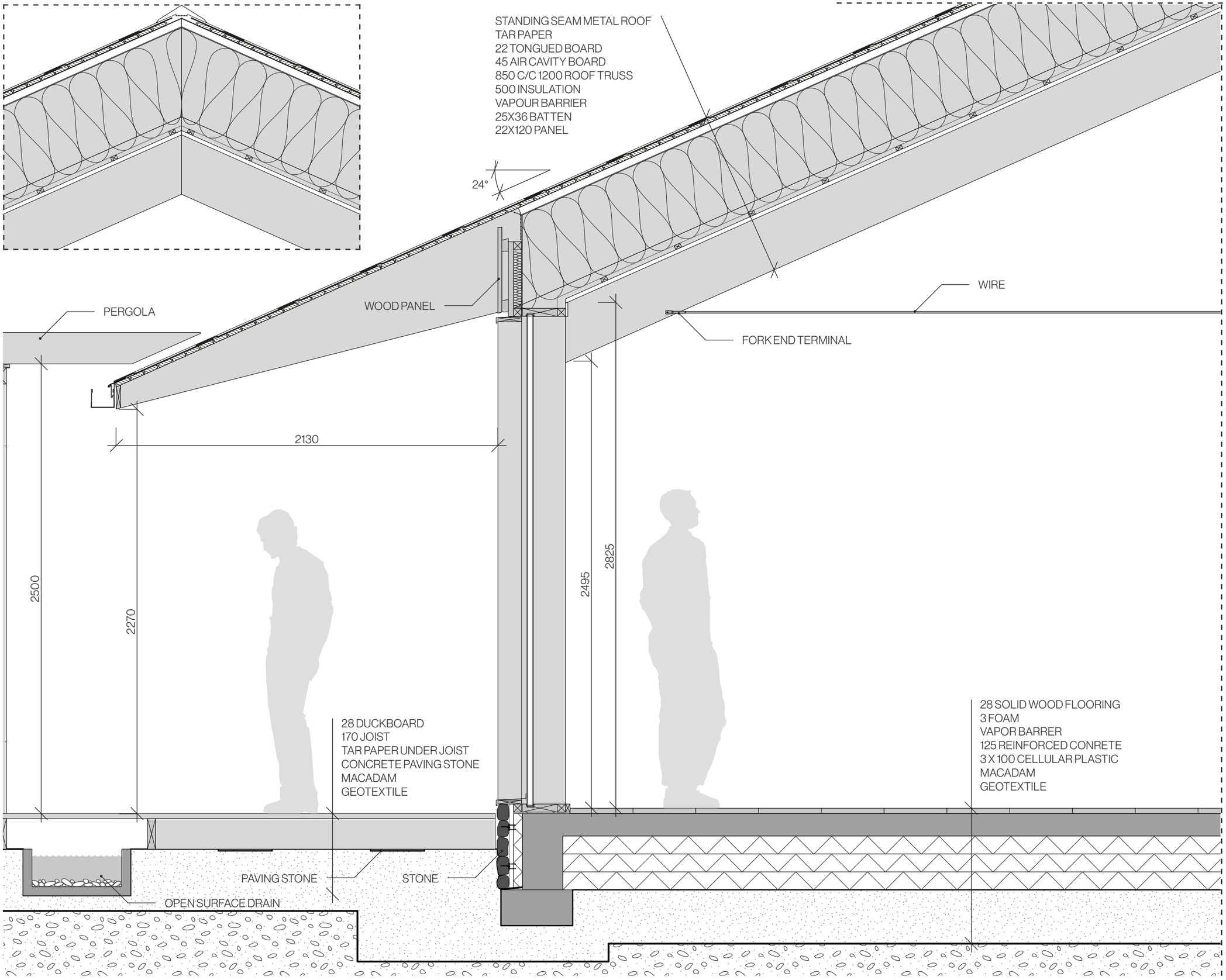
DATE
240513

SCALE
1:20, A3

ORIENTATION



NO.
A-42.6-003



RESTAURANT SENSE

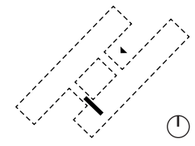
TITLE
SECTION C-C

ARCHITECT
ALICIA OPLAND

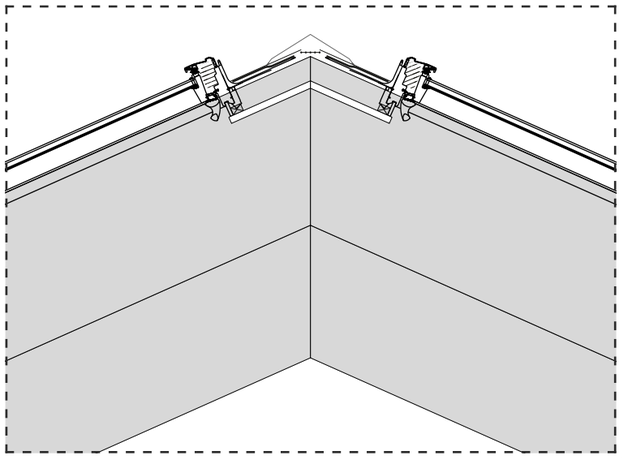
DATE
240513

SCALE
1:20, A3

ORIENTATION



NO.
A-42.6-004



RESTAURANT SENSE

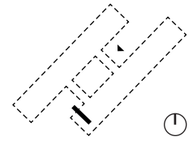
TITLE
SECTION D-D

ARCHITECT
ALICIA OPLAND

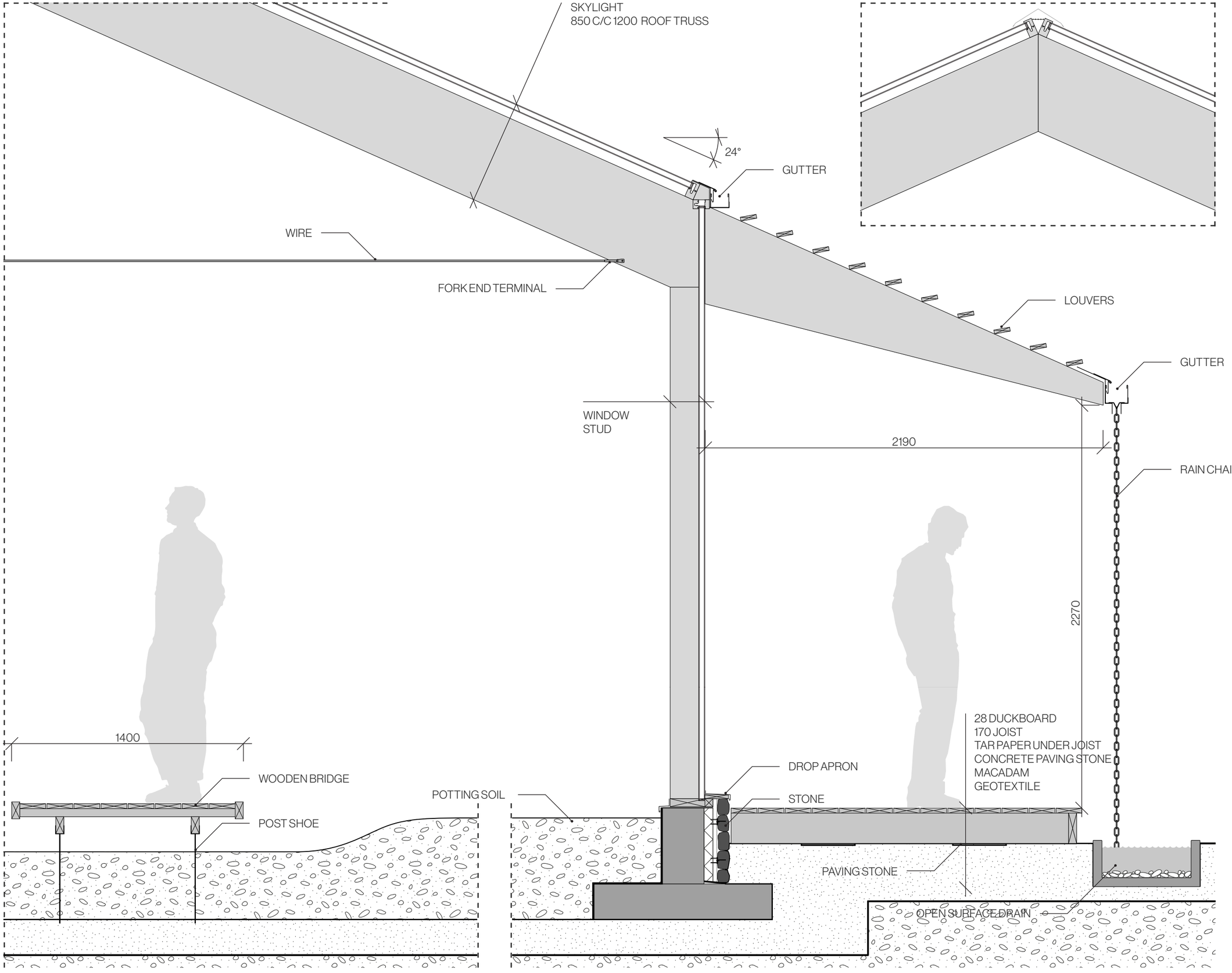
DATE
240513

SCALE
1:20, A3

ORIENTATION



NO.
A-42.6-005



RESTAURANT SENSE

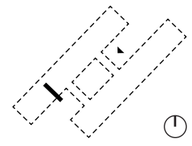
TITLE
SECTION E-E

ARCHITECT
ALICIA OPLAND

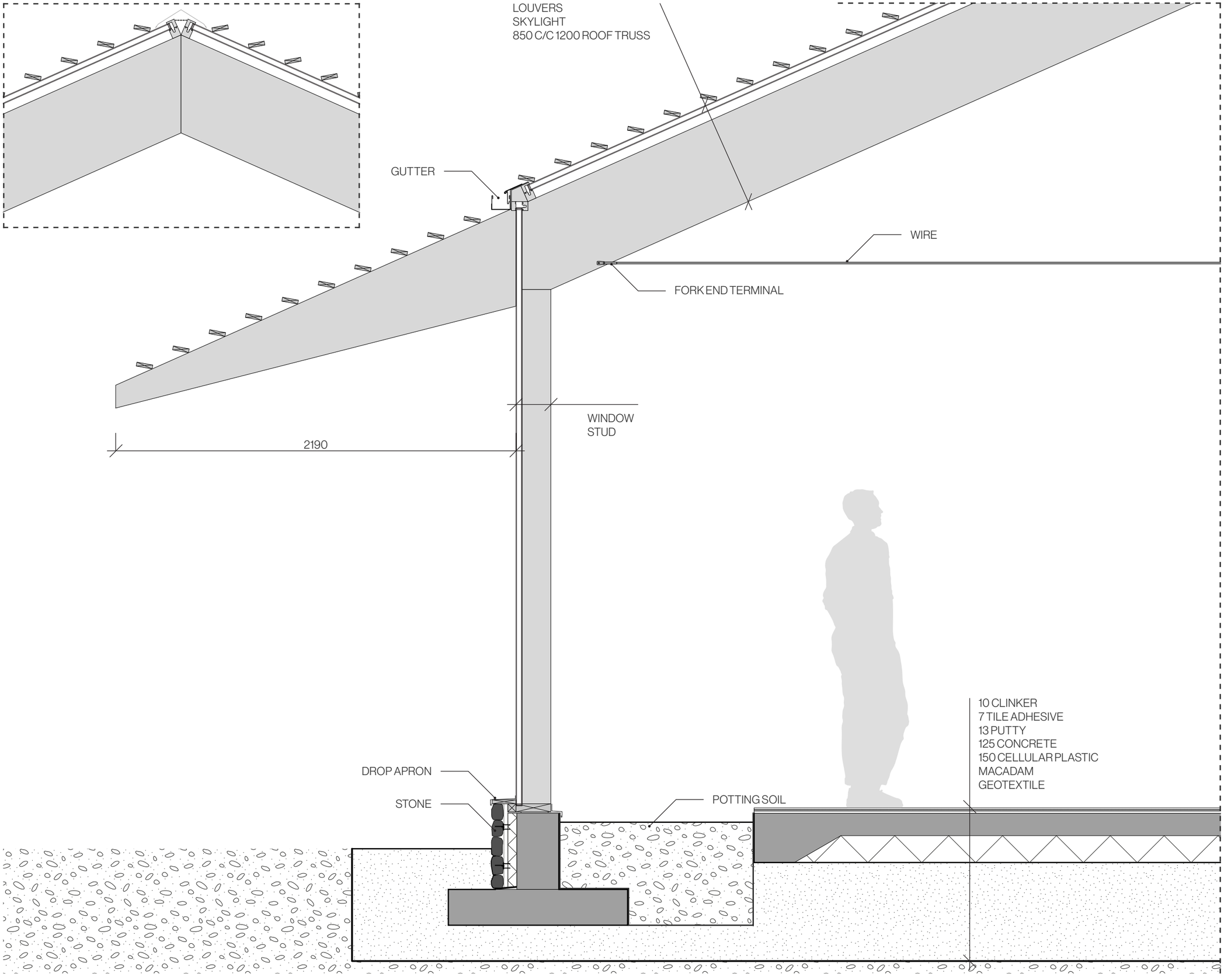
DATE
240513

SCALE
1:20, A3

ORIENTATION



NO.
A-42.6-006



RESTAURANT SENSE

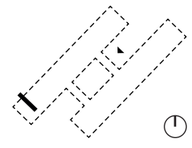
TITLE
SECTION F-F

ARCHITECT
ALICIA OPLAND

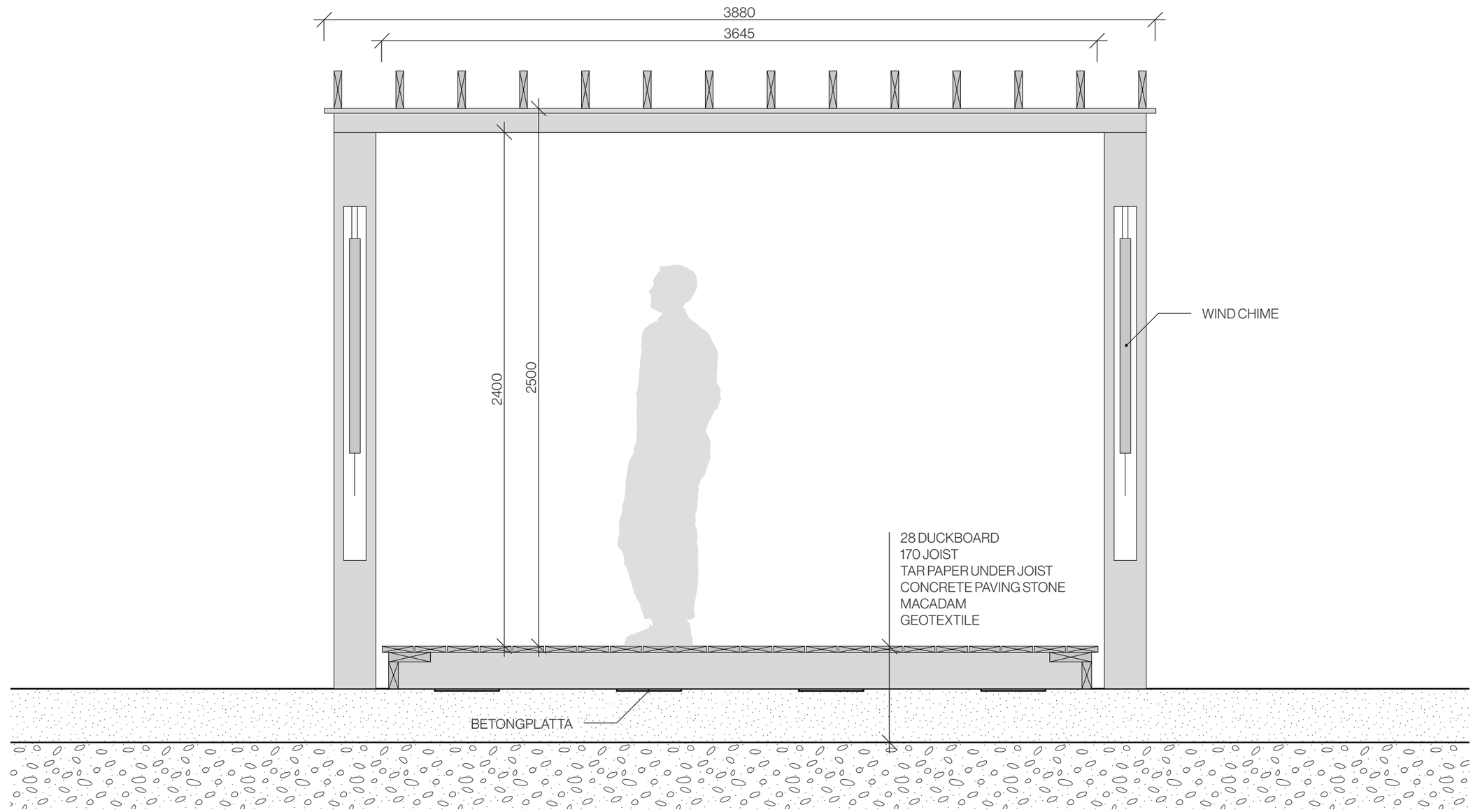
DATE
240513

SCALE
1:20, A3

ORIENTATION



NO.
A-42.6-007



RESTAURANT SENSE

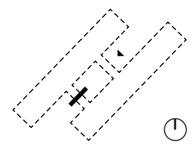
TITLE
SECTION G-G

ARCHITECT
ALICIA OPLAND

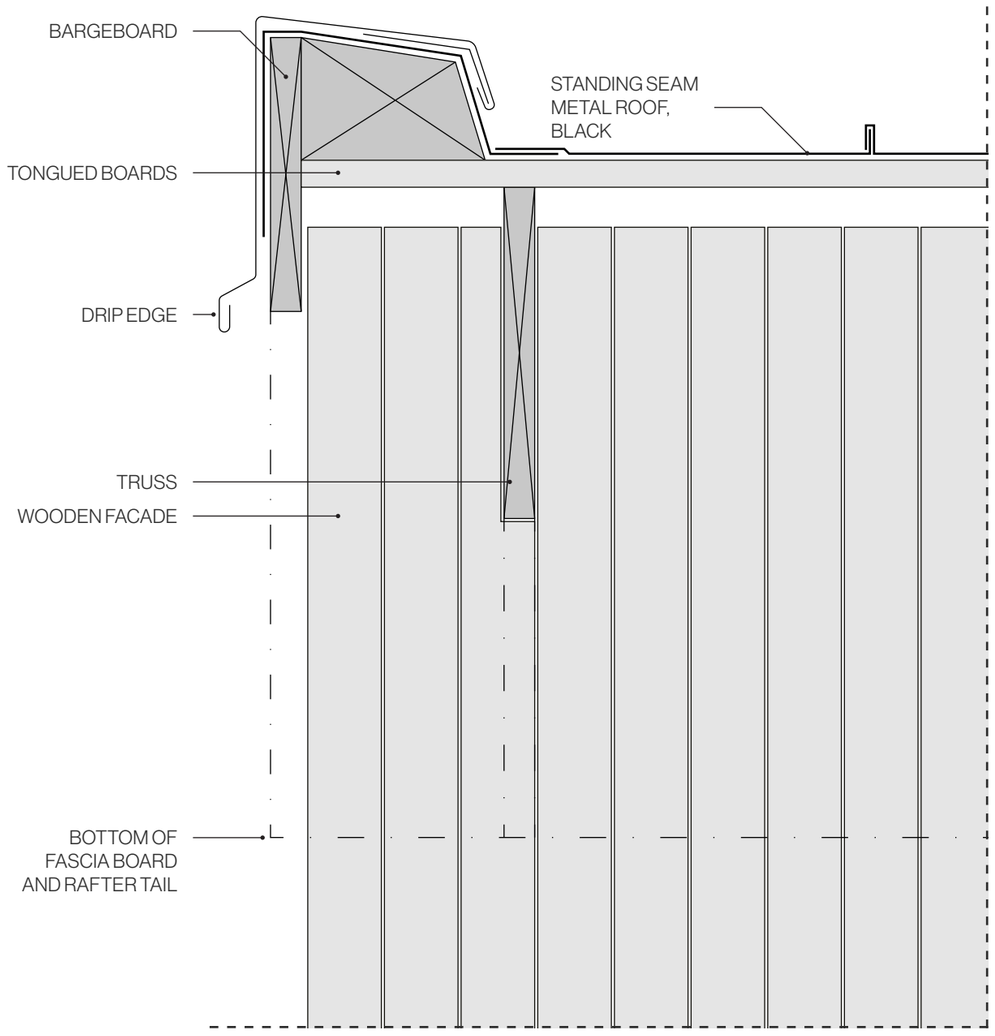
DATE
240513

SCALE
1:20, A3

ORIENTATION



NO.
A-42.6-008



RESTAURANT SENSE

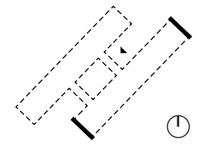
TITLE
DETAIL, ROOF GABLE

ARCHITECT
ALICIA OPLAND

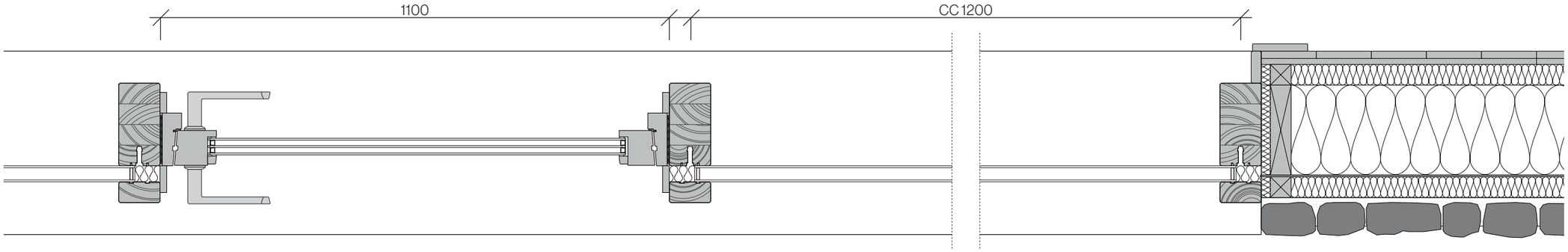
DATE
240513

SCALE
1:10, A3

ORIENTATION



NO.
A-42.6-009



RESTAURANT SENSE

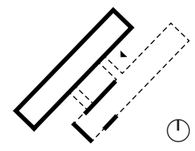
TITLE
DETAIL, WINDOWS

ARCHITECT
ALICIA OPLAND

DATE
240513

SCALE
1:5 ; 1:10, A3

ORIENTATION



NO.
A-42.6-010