

# Coexistence through

inhabited

# forests

Aarhus School of Architecture

Studio 1d, Spring 2023, Supervisor: Rune Christian Bach

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and polluting without  
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Addressing climate  
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**How do we humans  
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What is the role of the  
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nected to nature? How  
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Can we rethink the  
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ing less surface of the  
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## ABSTRACT

We are consuming and polluting without considering the consequences. Addressing climate change and biodiversity loss are of outmost importance in todays society. How do we humans dwell and coexist with nature strengthening the ecosystems? What is the role of the architecture and can it make us more connected to nature? How do we construct our houses carbon free? Can we rethink the surroundings and how we dwell occupying less surface of the earth?

The workflow, investigations and design choice for this master project has encompassed all scales, from the landscape down to the manifestation of the architectural details that establish a connection to the elements. This continuous joy and curiosity over a timespan of 4 months has been an investigation into three distinct categories, each focusing on a different aspect of the scale in the project: maintenance, cultivated coexistence, and landscape and forest.

This study is about establishing new perspectives, thoughts and insights inhabiting forests, through these three categories of scale, where the architecture and the landscape both are strengthening our connectedness with the nature and become more resilient to changes. The importance of planning and setting goals for longer periods than just the next election.

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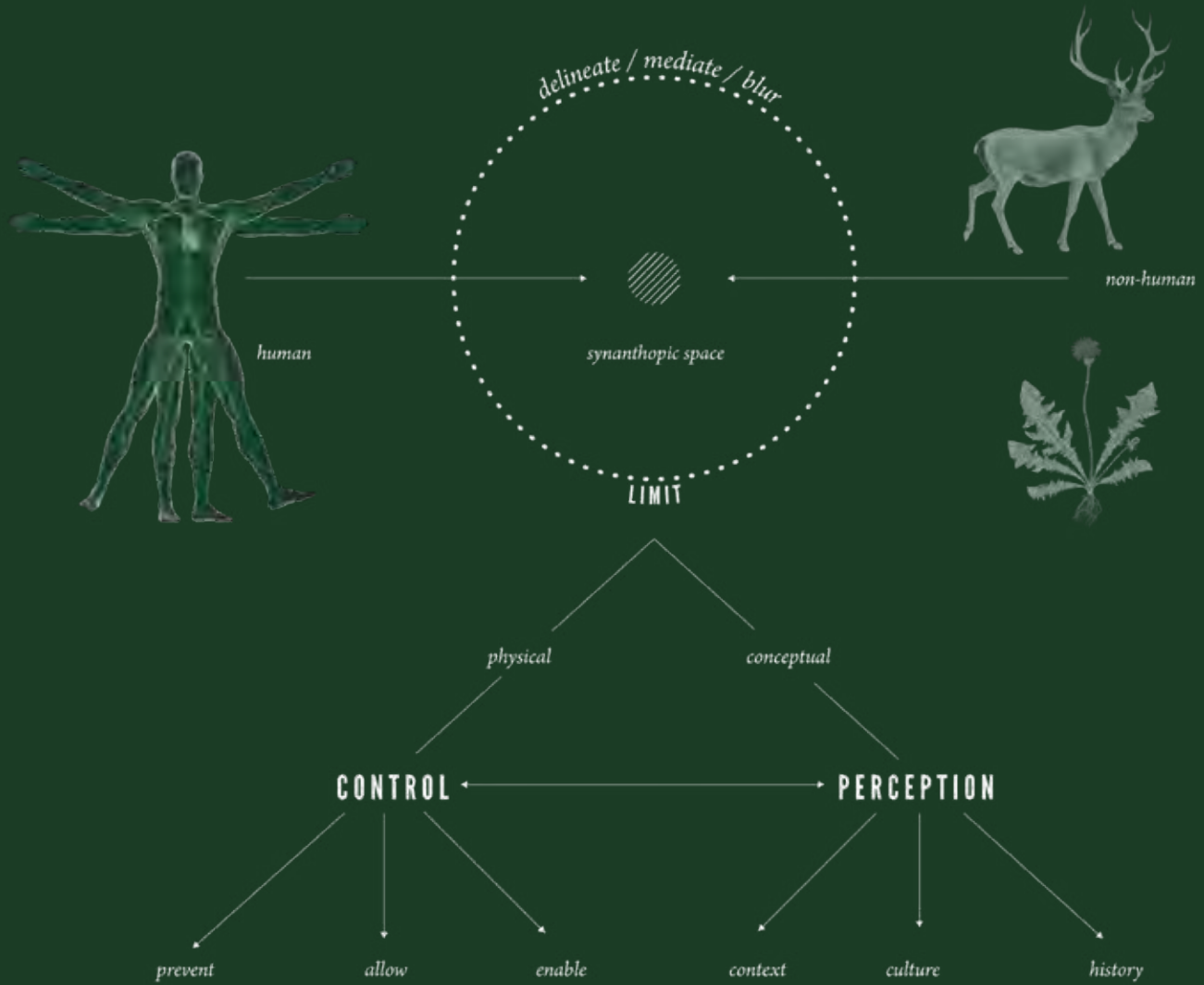
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## Cultivated Coexistence



[1] Hwang, J. (2011, January, 28) A 10-Point Manifesto: Interventions.  
Presented at Storefront for Art and Architecture as part of the MANIFESTO  
SERIES: Infrastructural Opportunism.

# Prologue

## A CHANGE OF VALUES & WILL TO ACT

**In an era marked by unprecedented environmental challenges, the need for a harmonious relationship between humans and the natural world has become more crucial than ever before.** As we strive to address the pressing issues of climate change and the depletion of natural resources, it is essential that we recognize the profound interdependence between ourselves and the ecosystems that sustain us. This understanding not only entails acknowledging the significance of our landscapes but also embracing a mindset that promotes coexistence with non-human entities.







## THE ROLE OF THE ARCHITECTURE

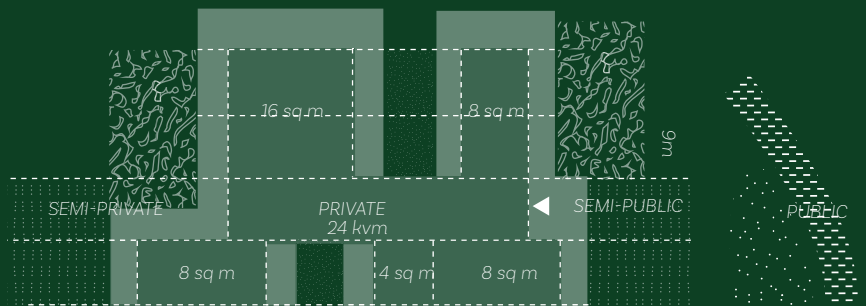
You are standing in the kitchen, as you pour yourself a cup of tea. You look out into the forest. It is just right there, beginning where the terrace stops. Dense, healthy alive and green. The wooden column in next to the window carrying the roof, are beautifully mimicking the trees and forest in the other side. You have bare feet, standing on a pine floor. It feels soft and warm, celebrating the craftsmanship of the local sawmill. You let your hand slide though the rammed earth wall. The honesty of its compression is impressive. The sliding doors behind you into the courtyard are open. You got a breeze on you right now and there is a bird tripping over your shoulder somewhere. You can see peripherally the leaves are moving because of the breeze. You take a deep breath. The air is fresh! And the light in the livingroom are gorgeous.

It is a rowhouse that feels very much connected to nature, and everywhere you look, it's both outdoors or private. The choice of natural materials allow the house, you and the materials to breathe together in the same beat as a connected whole. It makes you value each moment. It reminds you, of the spirit of creativity - that's part of all of us. Being in this house remind you of how wonderful we can be, and it reminds you how wonderful the world around us can be. As one human connected to the nature, you feel like you are inspired every day that you are here. To keep your eyes open to the world around you, and to enjoy everything that you might be exposed to or see and this rowhouse is certainly a foundation of that. And everywhere you look you see things that please you. And that happiness has been very much because of the experience of being in this sheltered open space.

## CONSTRUCTION PRINCIPLE

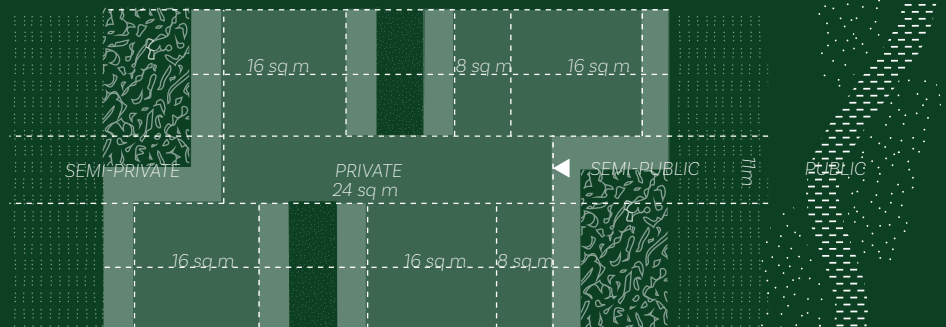
### OPTION D

68 sq m Groundfloor  
24 sq m Upper floor  
Laundry / Drying/ Guesthouse  
Shop / Cafe / Association Room



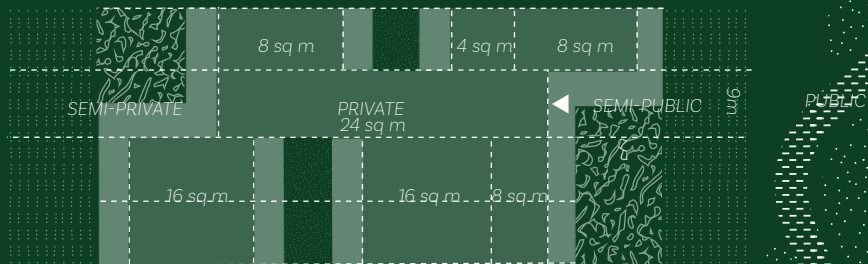
### OPTION C

Large four field house  
104 sq m Groundfloor  
56 sq m Upper floor



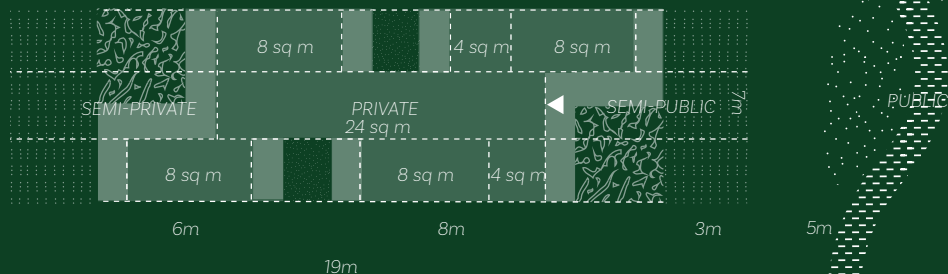
### OPTION B

Medium tree field house  
84 sq m Groundfloor  
40 sq m Upper floor



### OPTION A

Small two field house  
64 sq m Groundfloor  
28 sq m Upper floor



# Maintenance

## A NEW ARCHITECTURE OF THE HEART

**This sense of belonging and reciprocity, this spirit of place, has informed architectural design throughout time and among cultures throughout the world.** It suggests something we all sense but rarely acknowledge, the fact that architecture has both immediate consequences and lasting implications. We all celebrate its wonder, the beauty of spaces that indeed move us to rapture. We recoil from the forms that are transparently ugly, conceived in greed, constructed in a fever of unconsciousness.

This master and choice of natural materials suggests that there is an option, a way out, a means to imagine a new the relationship between place, nature, and the physical spaces we construct and inhabit for most of the hours of our lives.

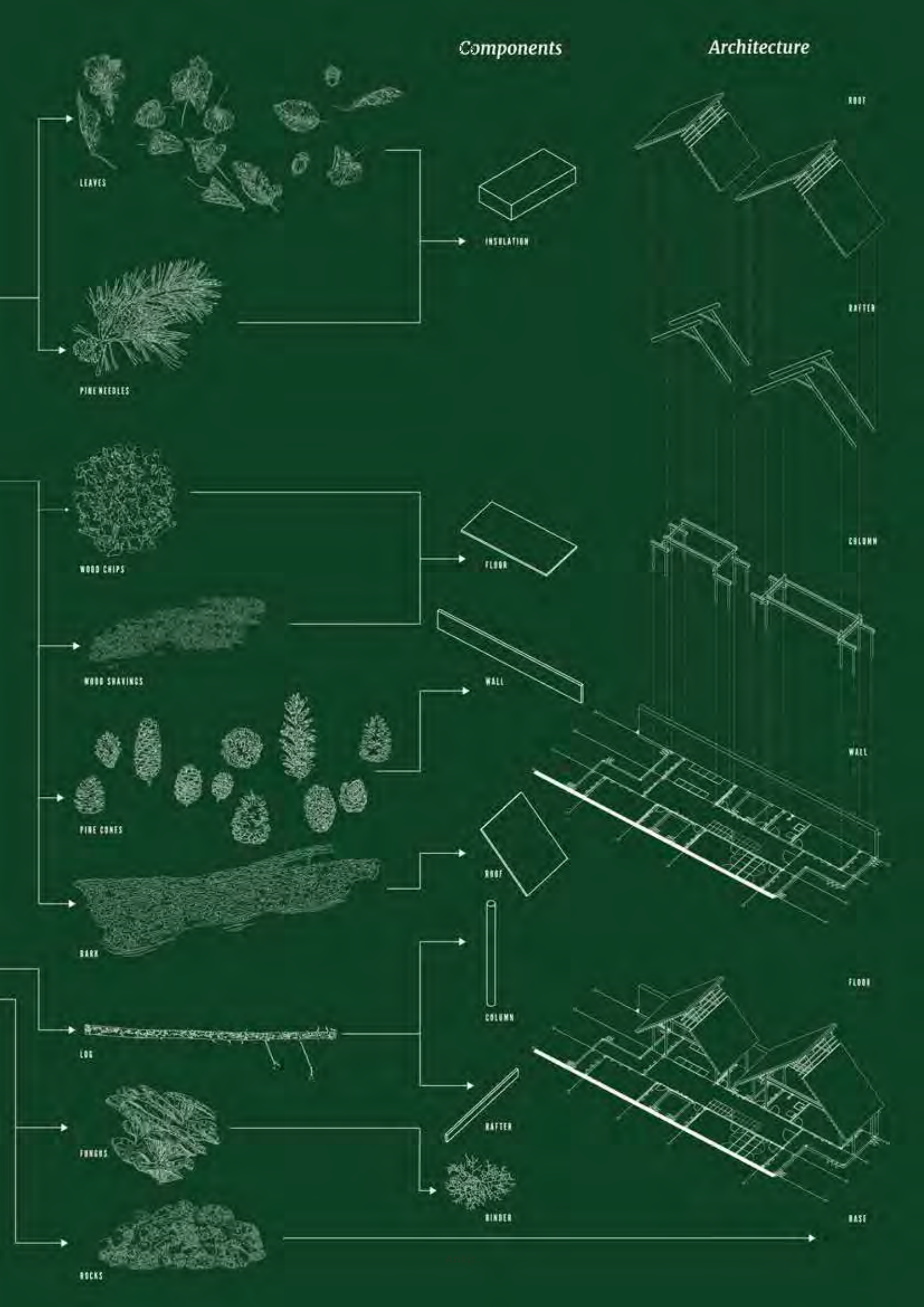
A new architecture of the heart, informed by beauty and pure design, with materials as simple as the sun, that yield new possibilities. Crucial it it though that the handling and processing of these are minimum. This allows for a long lifespan, a natural storytelling of belonging and forms so delicate, so functional, and so perfectly aligned with the axis of the spirit, they will inspire a totally new dream for the Earth.



# The forest provides all we need









*Investigating the layers of private, semi-private, semi-public, and public spaces and zoning. From the open street to the inclosed space in the house. Model scale 1:50. Materials, plywood, cork, woodpaper, dried plants, stones, plastic figures, straw.*

## THE BUILD ARCHITECTURE AND ITS LIFE

In the initial phase, a larger village cluster will be constructed, taking inspiration from Japanese townhouses and classic Danish landscape characteristics such as long structures. The villages are positioned as clearings within the forest, following the moraine landscape. Future village clusters will be named according to their location: Ved Skråningen, På Kanten, På Sletten, På The Plateau, and In the Valley. The village locations accentuate and support the larger landscape context. The buildings are constructed using wood

and can be left untreated to weather and develop a gray patina over time, or they can be painted white with lime, akin to the villages on Zealand.

The buildings are closer to each other than in a typical village, creating squares, courtyards, and a sense of community. This proximity also allows for more space dedicated to the forest and nature in the selected area. A total of 60 homes will be built in three different typologies. The buildings provide shelter and create a microclimate that

# Cultivated Coexistence



*Through additive principles the roof design reveals the play of the houses under are in between the construction and how the addition meets the next structure and how sunlight plays a crucial role. Model scale 1:100, Material woodpaper, woodglue, plywood, a pencil.*

offers a pleasant environment, suggesting that life unfolds between the buildings. These spaces can accommodate tables, benches, communal vegetable gardens, safe play areas, neighbourly gatherings for coffee, or even street parties. The shared spaces foster a sense of shared living rather than mere adjacency.

At the heart of each village, identity-defining elements like street fairs and meeting houses are incorporated to promote meeting places and

community engagement. Street lamps also serve as rainwater catchment systems, allowing collected water to be used for gardening and other purposes. Excess rainwater is directed to the bog and Egå Engsø, thereby creating green and blue oases within the city. Community facilities are established within the common house, including spaces for communal dining, parties, physical activities such as gymnastics, yoga, or cultural events like talks, film clubs, or sewing studios. The common house contributes to fostering a vibrant village life.



# The food chamber

## 38 ha. new food forest



Apple picking



Radishes



Snake willow herb



Strawberry



Fungus



Spinach





# No supermarkets but super forests



Hive



Scillias



Rhubarb chard

PLATEAU FOR CLEARING FOR SETTLEMENT  
JÆVNT TERRÆN TIL LYSNING FOR BEBYGGELSE

LIGHT OPEN FOREST WITH SHADOW TREES  
LYSÅBEN SKOV MED SKYGGETRÆER MED  
SKOVURTER OG SVAMPE

FIR TREES  
GRAN TRÆER

GRASSLAND WITH BUSHES AND TREES  
OVERDREV MED BUSKE OG TRÆER

MEADOW AND MARSH  
ENG OG MOSE

GLADE W. DENSE BUSHES  
LYSNING MED FORTÆTTET BEVOKSNINGER  
(INDRE OG YDRE SKOVBRYN)

THICKETS OF BERRIES  
KRAT OG SKOVBRYN MED KOMBINATIONER AF  
BROMBÆR, HASSEL, HINDBÆR, HYLD, JORDBÆR,  
KASTANJE, KIRSEBÆR, MOREL, TJØRN, VALNØD



FOOD FOREST  
SCALE 1:2.000





# Cultivated Coexistence

## 60 ecological off grid homes







BUSSTOP

PARKING

AREA FOR WILLOWS,  
CLEANING PLANT  
HANDLING HUMAN WASTE

LAUNDRY

TYPE A

TYPE B

PLAYFIELD FOR SPORTS

FOREST  
MANAGEMENT

TYPE A

TYPE C

BOUTIQUE

OFFICE

OFFICE

GUEST HOUSE

SQUARE

TYPE A

SHARED  
LAUNDRY

SQUARE

TYPE A

TYPE B

TYPE B

TYPE B

TYPE B

TYPE A

GUEST HOUSE

TYPE A

TYPE A

OFFICE

SHARED  
LAUNDRY

TYPE C

BOUTIQUE

SQUARE

Shared facilities, laundry, guestrooms,  
association rooms, flexible rooms  
for temporary needs. Resident democracy.  
Requirement of 2h common work pr. week.

60 Ha FOOD FOREST

LIGHTRAIL STOP

PHASE ONE  
AREA FOR OFFGRID SETTLEMENT  
SCALE 1:500

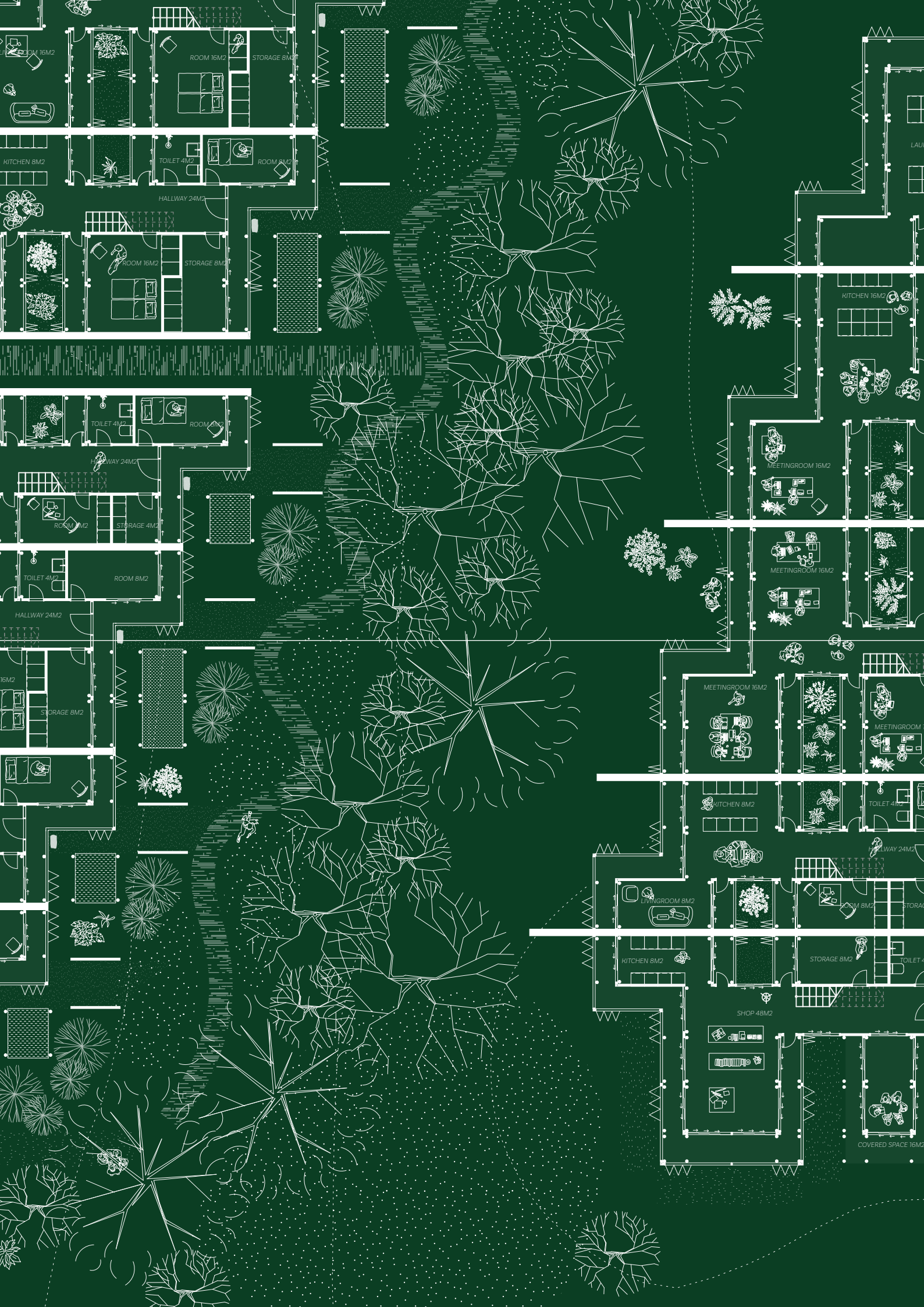






# Forest and architecture braided together





Shared intensive food garden  
(with fenced animals)

20m - Canopy Layer

10m - Understory Layer

5m - Sub Canopy/ Large Shrub Layer

2.5m - Shrub Layer

0m - The Ground Cover Layer  
(Herbaceous Layer)  
(Mycelial / Fungal Layer)  
(Aquatic / Wetland Layer)

-5m - The Root Layer

Public

Semi - Private

Private

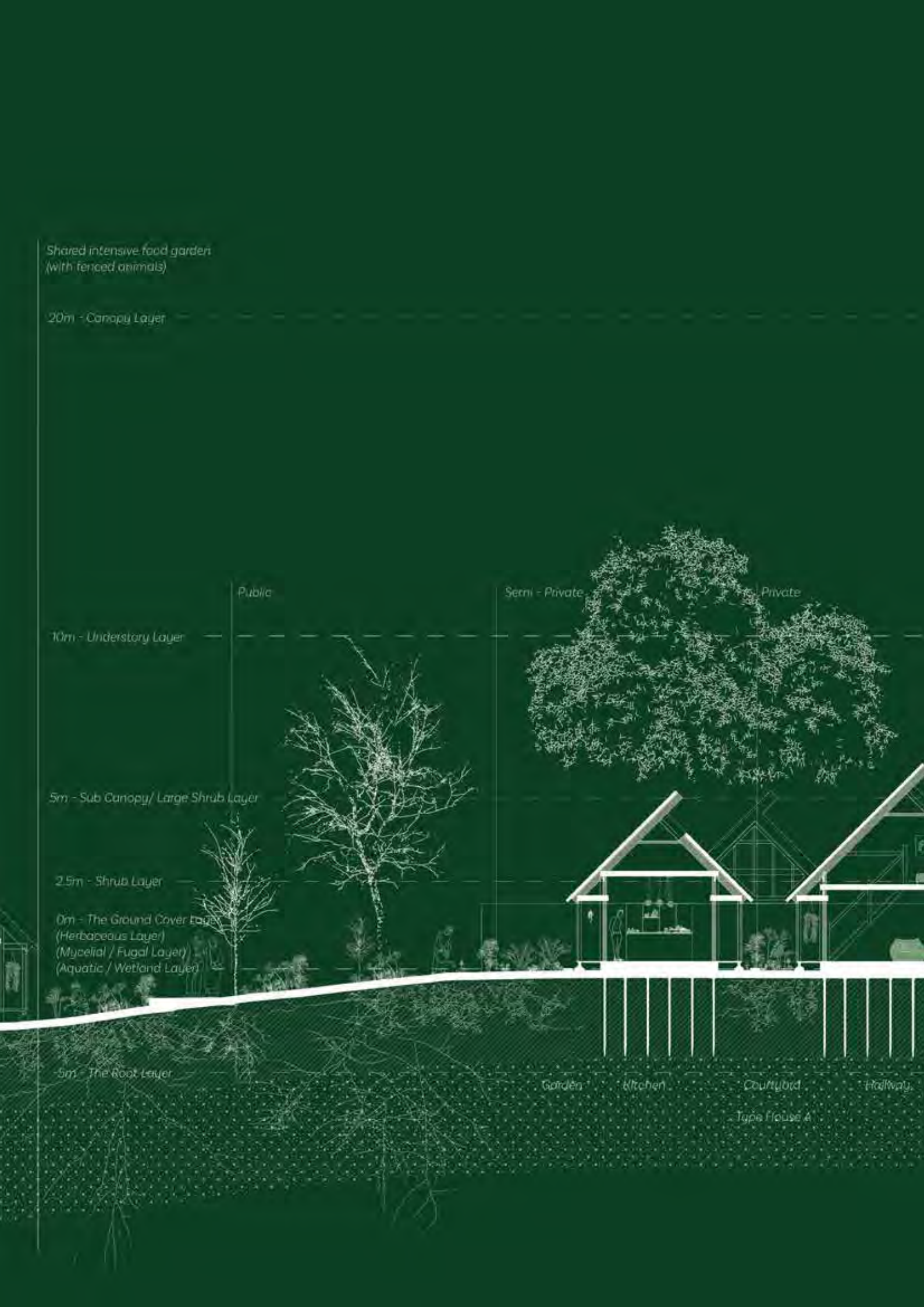
Garden

Kitchen

Courtyard

Hallway

Type House A

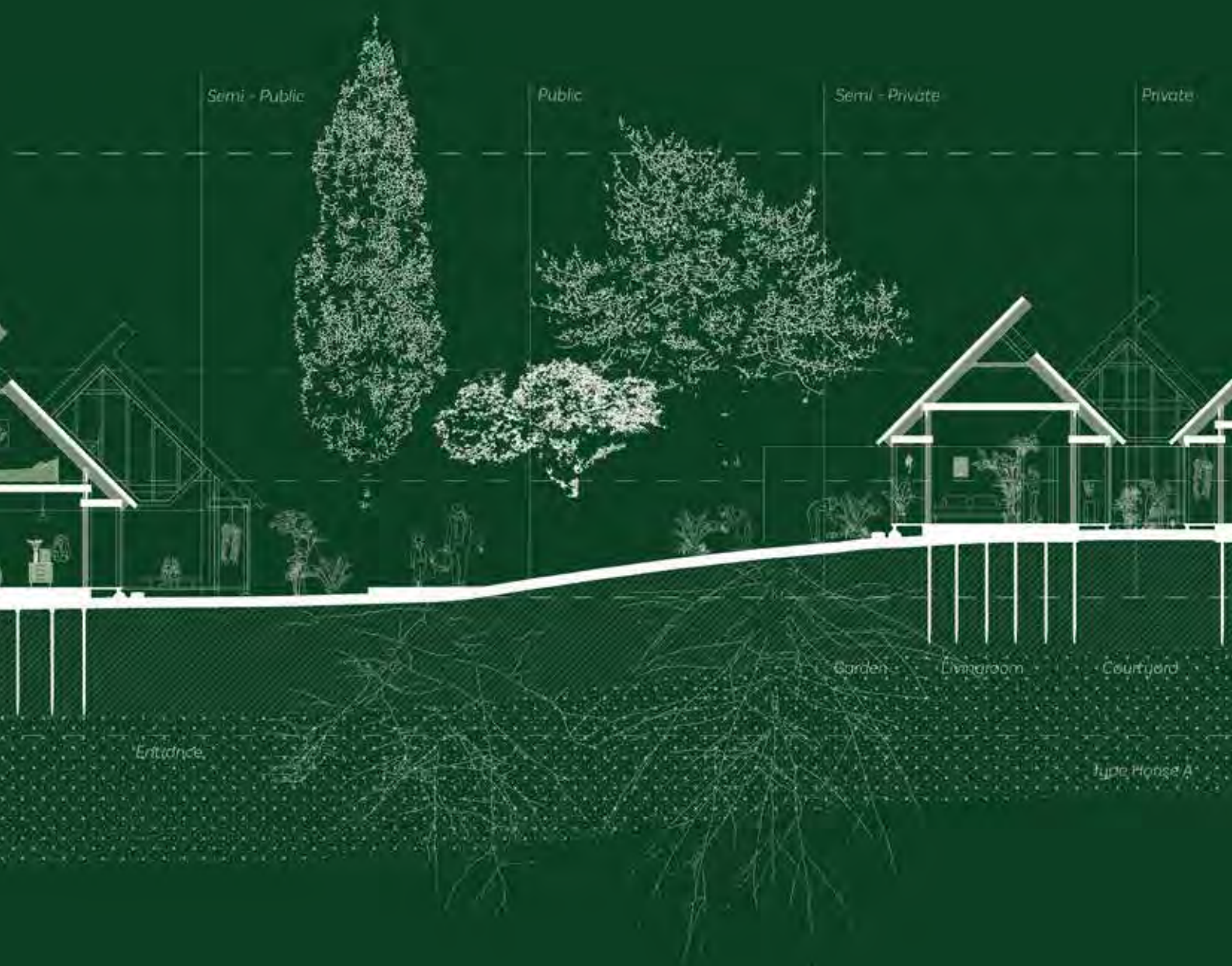




In the village, a forest kindergarten is established, granting children daily access to a large forested area for play and exploration. Regular exposure to forests and nature strengthens children's creativity, playfulness, physical engagement, and reduces stress levels. The forest kindergarten can also host a farm shop offering local and organic products, fostering trade and becoming a meeting place on weekends where markets with locally produced goods can be organized in the parking area.

Danish forests are the most utilized leisure

facilities in the country, and it is important to further support their use by providing residents and visitors with facilities to enjoy the forests even more. Therefore, additional structures are proposed to complement nature in the selected area, including lookout towers, shelters, campfire sites, and bird towers. Moreover, the regular natural processes and seasonal variations within the landscape offer a wide range of experiences throughout the year.





*The Australian bushfires in 2019-2020 were the first link in a chain of events that appear to have affected climate conditions not just in Australia, but across much of the globe. The fires have helped create drought in East Africa, extra heavy rain in Pakistan in 2022 and perhaps more hurricanes in the Atlantic. And history reminds us of how closely linked the world's weather phenomena are and how much we humans can change them. Photo by Paul Crock / AFP / Ritzau Scanpix*



**Solastalgia** is a term used to describe the pain and distress experienced by those witnessing their home environments destroyed or changed in unwelcome ways.

Solastalgia is expected to become more prominent as climate change worsens and transforms landscapes

# Landscape and forests

## THE DANISH LANDSCAPE AND ITS CULTURE

The selected area features a moraine landscape from the last ice age, situated as a plateau amidst a network of tunnel valleys. The wetlands to the west and south have an elevation of approximately 6 meters above sea level, while the plateau's highest point reaches over 50 meters above sea level, creating a difference of 44 meters. This area has been an agricultural landscape for centuries and continues to be actively cultivated today. The surrounding built structures include historical winding road villages such as Lisbjerg to the west and Student to the north. The road layout of these

villages has developed in harmony with the terrain and the gradual growth of the settlements.

The area is located on the outskirts of Aarhus and is part of the Aarhus suburb plan. Aarhus, with its major roads, housing, and knowledge industry, characterises the southern portion of the area. The nearest station is Letbanen station Nye, which is connected to Line 1 between Grenå and Odder.

Historically, the area and its surroundings have been predominantly agricultural, with sparse forest cover. The cultural landscape has been shaped and utilised by humans for thousands of years.

*The space on both sides of the rowhouse and the importance of the microclimate are to design with the sun. Orientation of east-west means the sun travels through house throughout the day with midday sun through the courtyard window.*



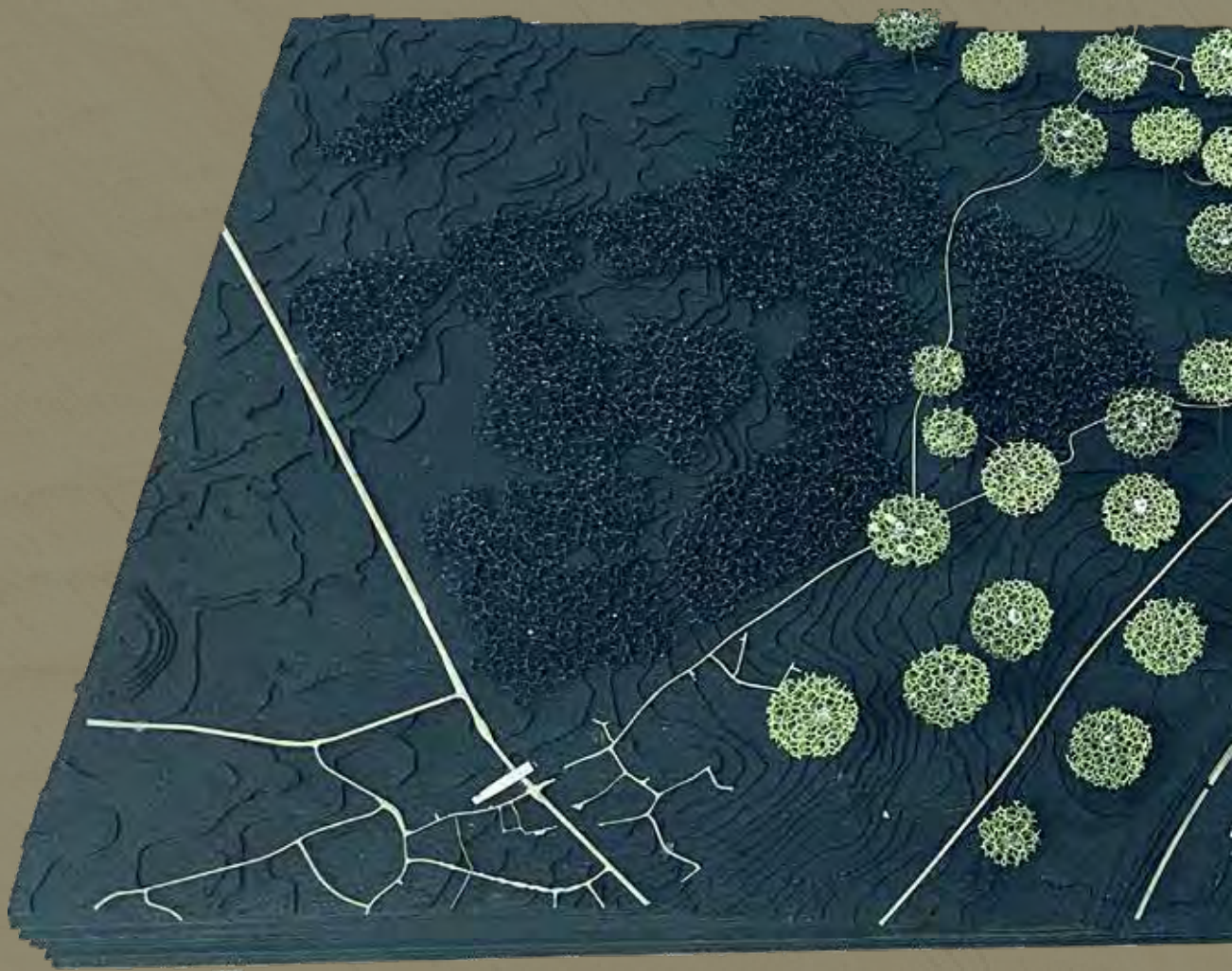
*Investigating the openness of the rowhouse and the connection to the elements. By layering this spacial transistion from public street to private inclosed space the rowhouse is experienced much more open, because one can look from the public street through courtyard to the garden on the other side. Model scale 1:50, Materials cork, clay, plywood, dried plants, spraypaint, mdf, plastic figures.*

## DENMARK AND THE FOREST

In 1989, the Folketing (Danish Parliament) set a goal to double Denmark's forest area to 25% of the total land area within approximately 75 years. The objectives of future afforestation efforts include enhancing biodiversity, increasing CO<sub>2</sub> storage, ensuring clean groundwater, ensuring wood production (the world's most environmentally friendly raw material), and providing recreational areas for outdoor activities. Danish forests are the most utilized leisure facilities in the country. Currently, Denmark's forest area stands at 14.7%.

The project in this area is based on using forests as a foundational element for landscape development. The road structure creates forest clearings, where densification occurs, inspired by village typologies like winding road towns and forest villages. The new buildings are strategically positioned within the middle elevation, following the historical pattern of winding road villages. The towns are concentrated, manageable, and complex, reminiscent of older village and town centers.





*Understanding and analysing the landscape. From how the waterflow has been through time, to the possibilities of afforestation. Very dark green are existing forests of Lisbjerg. Light green are possible afforestation area creating new fauna corridors to the wetlands of Egå Engsø. Model scale 1:5000, material spraypaint, 2mm floor kork, foam, paper, plywood.*

Each village has distinctive elements at its core, such as street gutters for rainwater collection and community centers. Danish forests contain more life and species than any other natural habitat in Denmark. The forests surrounding the five village clusters exhibit various characteristics, ranging from dense forests in some areas to mixed forests consisting of native foliage and conifers.

This blend of forest types adds character to the landscape and offers a cultural and historical perspective. The suggested forest design

encompasses different forest types, including grazing forests that allow light penetration and promote undergrowth and vegetation, forest meadows where berries, fruits, nuts, and mushrooms can be gathered, and habitats for butterflies and other wildlife, as well as untouched forests that facilitate ecological processes within the forest ecosystem.



## CONNECTEDNESS WITH NATURE

In Denmark, few forests remain untouched for extended periods, which is unfortunate since untouched forests play a crucial role in supporting microorganisms. By incorporating the four forest types, a spatially diverse forest is created, providing opportunities for organic production, recreational enjoyment, and maintaining high biodiversity and species richness.

A total of approximately 38 hectares of forest and 9.5 kilometers of forest edges will be established, serving as important habitats for plants, birds, and small animals. The western part of the area is

adjacent to existing biotopes comprising bogs and meadows, protected under §3 conservation, further contributing to additional habitats for animals and plants.

By integrating forests into the selected area and employing concentrated urban units, the landscape can actively be utilised for climate adaptation. Forests sequester significant amounts of CO<sub>2</sub> while also creating recreational spaces with diverse forest types, dry and wet meadows, and a bog area, thus promoting a more natural living environment within the area.







# — Read the landscape


## RESILIENT THINKING

We have the opportunity to redefine our relationship with the natural world. By nurturing a deep understanding of our landscapes and cultivating a spirit of coexistence, we can rebuild our natural resources, counter climate change, and ensure a thriving planet for generations to come.

Understanding the landscape, weather patterns are key points as we stand at this critical juncture in history, where climatic changes underline the importance of resilient thinking and planning. How does the water flow? Where are the most sunny hills for intensive food production, where are the most sheltered area for strong winds? What kind of infrastructure are there and how to do we commute to work?

Let us embark on this transformative journey, where human and non-human entities coexist, weaving a tapestry of resilience, beauty, and hope.



An aerial photograph showing a small village with colorful, multi-story houses built on a hillside. The houses are surrounded by a dense, lush green forest that covers the majority of the landscape. The scene is captured from a high angle, looking down on the village and the surrounding forest.

*“Even a child knows how valuable the forest is. The fresh, breathtaking smell of trees. Echoing birds flying above that dense magnitude. A stable climate, a sustainable diverse life and a source of culture. Yet, forests and other ecosystems hang in the balance, threatened to become croplands, pasture, and plantations.”*



## RESPONSIBILITY

**Our planet's landscapes are not merely a backdrop to human activities; they are intricate tapestries of interconnected systems that support all life forms, including ourselves.** From towering mountains and vast forests to meandering rivers and expansive oceans, these natural resources offer us invaluable benefits ranging from clean air and water to food security and cultural inspiration. Yet, in our pursuit of progress and development, we have often neglected the fragility and resilience of these ecosystems, leading to their degradation and loss.

Climate change stands as one of the most formidable challenges of our time, with its far-reaching implications affecting every corner of the globe. Understanding the intricacies of our landscapes is key to effectively countering its effects. By comprehending the natural processes and delicate balances that ope-

rate within our ecosystems, we can devise sustainable strategies to mitigate climate change, restore damaged habitats, and adapt to the changing conditions. This knowledge empowers us to make informed decisions that preserve our natural heritage while safeguarding future generations.

However, rebuilding our natural resources and countering climate change necessitates a paradigm shift in our relationship with the environment. It demands recognizing the agency of non-human entities and acknowledging their rights to coexist alongside us. Just as human societies rely on the environment, so too do countless species that contribute to the intricate web of life. The preservation of biodiversity is not a luxury but a prerequisite for our own survival. Embracing a mindset that emphasizes coexistence requires fostering respect, empathy, and stewardship towards the non-human world, reimagining our role as caretakers rather than conquerors.



# Afforestation Plan

## 600 ha. new forest

It is estimated that in a timespan of 50-90 years from planted 500-900 ton CO<sub>2</sub> eqv. pr. ha or 10 ton CO<sub>2</sub> eqv. pr. ha pr year.

LISBJERG FOREST

LISBJERG

# Strengthening fauna through new corridors

SKEJBY



## SITE

Reflecting the global tasks, I choose to work with an 'already in progress' local afforestation silviculture area in Aarhus, investigating how this can be inhabited. The forests are located at the outskirts of Aarhus, well connected to highways, public transport as the light-rail, bus-routes, and bike-lanes connected to Aarhus centrum. How we can live radical different from what we do today in this manmade forest, rethinking the space occupied, and the impact of the settlement's footprints, underlining the title 'coexistence though inhabited forest'.

NEW FOREST

EXISTING FOREST

MEADOW/BOG

SCALE 1:10.000

N





*The landscape after humans. The former structural rammed earth walls of the rowhouse are the only remains, and become elements in the landscape fostering micro climate for non-humans, for then to slowly erode because of weathering as landscape art, leaving no trace. Model scale 1:50. Materials cork, plywood, spray paint, clay, dried plants.*

# Epilogue

## EQUALITY FOR ALL LIVINGS

As architects, it is our responsibility to contribute to the creation of a hopeful and optimistic vision of what the future can hold. This entails challenging the constant stream of negative news, the greenwashing and the ever-changing realities of climate change. Despite the challenges, as architects, we maintain an inherent optimism. In these times, the world needs this optimism more than ever before. Through the investigations made in this master it is to be stressed how important the choice of material and resource and the understanding the site, time and energy, to create an architecture that can play a major role in strengthening the relation between afforestation and cultivated settlement.

There are no need for more skyscrapers however new forest settlements that can help the forest grow into larger connected patches. The forests need humans in order to grow however humans need new values, learn new ways of farming and good architecture to thrive in order to strengthening the ecosystem.



A photograph of a modern interior space. On the left, a wall is covered in a rough, textured material that looks like stone or plaster. To the right, a large window with a grid of thin metal frames allows natural light into the room. The floor is made of light-colored wooden planks. The overall atmosphere is warm and minimalist.

# Ankjr.

*A new architecture of the heart. Can the architecture and choice of material make we humans more connected to our surroundings? And does the organic materials make us feel connected?*

*[ankjrdesign.com](http://ankjrdesign.com) // [@ankjr\\_architect](https://www.instagram.com/ankjr_architect)*