



RECREATION FROM THE FOREST

DESIGN OF A LOWTECH SPA IN AN EXTRACTION LANDSCAPE

CONTENT

INTRODUCTION

*THE GREENMETROPOLIS
EXTRACTION LANDSCAPE PARKSTAD
RECREATION LANDSCAPE PARKSTAD*

WHY, HOW, WHAT ?

RESEARCH QUESTION

RESEARCH

*FROM THE FOREST: BIOMASS
FROM THE FOREST: LOCAL WOOD*

DESIGN

*LANDSCAPE RODE BEEK
CLIMATE DESIGN OF PAVILIONS
PROGRAM OF PAVILIONS*

BUILD

SUMMARY AND CONCLUSION

INTRODUCTION

INTRODUCTION



Map Green Metropolis

INTRODUCTION



'The big challenge for the Green Metropolis is to find ways of converting itself into a region that can get all its energy needs from renewable sources extracted in the region itself. Its unique history, underground potential and characteristic appearance above ground can inspire plans to develop the 'energy landscape of the twenty first century'

(Sijmons, 2016)

INTRODUCTION



Pictures of Brunsummerheide / Extraction landscape

INTRODUCTION



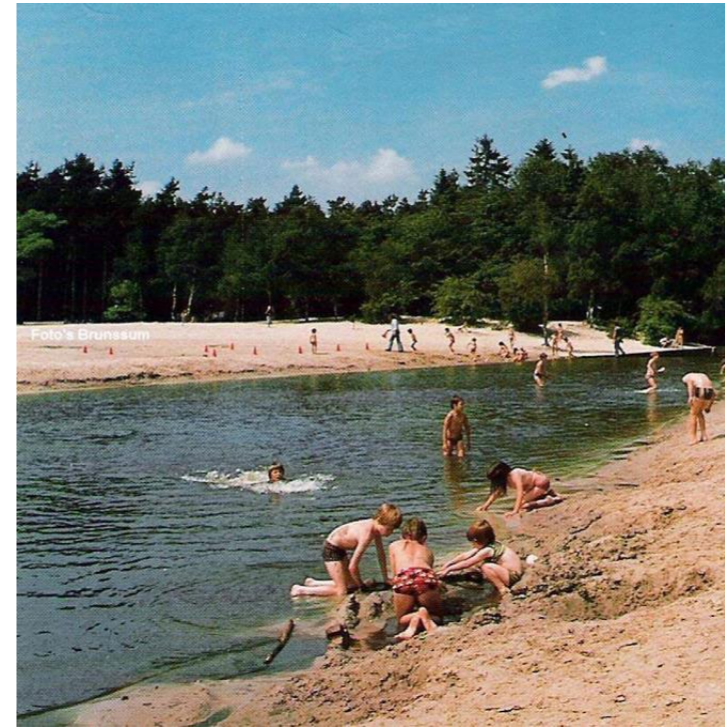
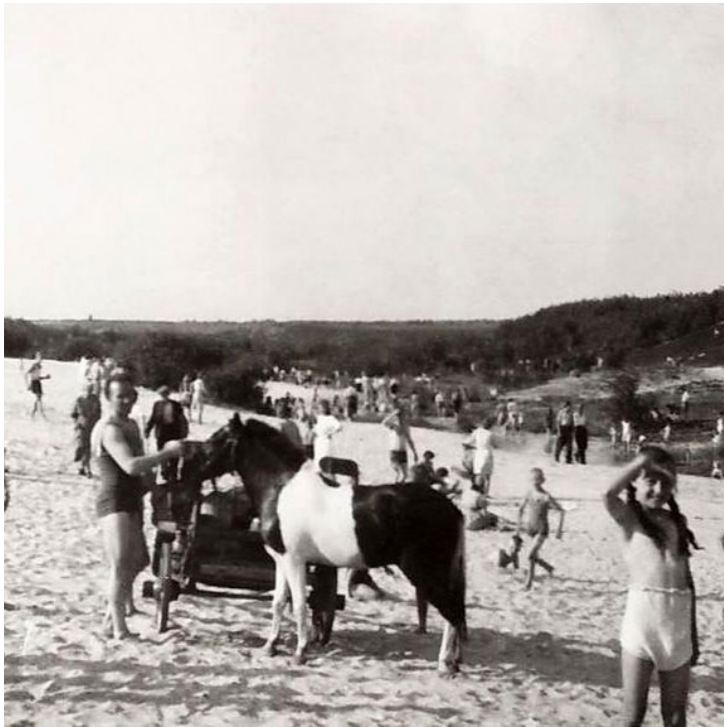
Schutterspark recreation / Recreation landscape

INTRODUCTION



Swimming pool Zeekoelen / Recreation landscape

INTRODUCTION



Rode Beek bath place / Recreation Landscape

WHY, HOW, WHAT ?

WHY, HOW, WHAT?



Most recreation places have been closed in the region



The introduction of 'natuurwaarde' (1), the closing of the mineindustry (2) and the introduction of new materials (3)



The forest has lost its production function



Why ?

WHY, HOW, WHAT?



Bringing back a recreation place for people.....



That also facilitates the harvesting of local waste streams in the forest

How ?

WHY, HOW, WHAT?


ENERGY



Making use of local waste streams


BUILD



Making use of local wood


CONTEXT



Making use of a local water source

What ?

RESEARCH QUESTION

RESEARCH QUESTION

*How can **local materials** be utilized at the Brunssummerheide and which spatial and architectural requirements does this set for the reintroduction of a **recreation place**?*

RESEARCH

RESEARCH



Making use of local waste streams

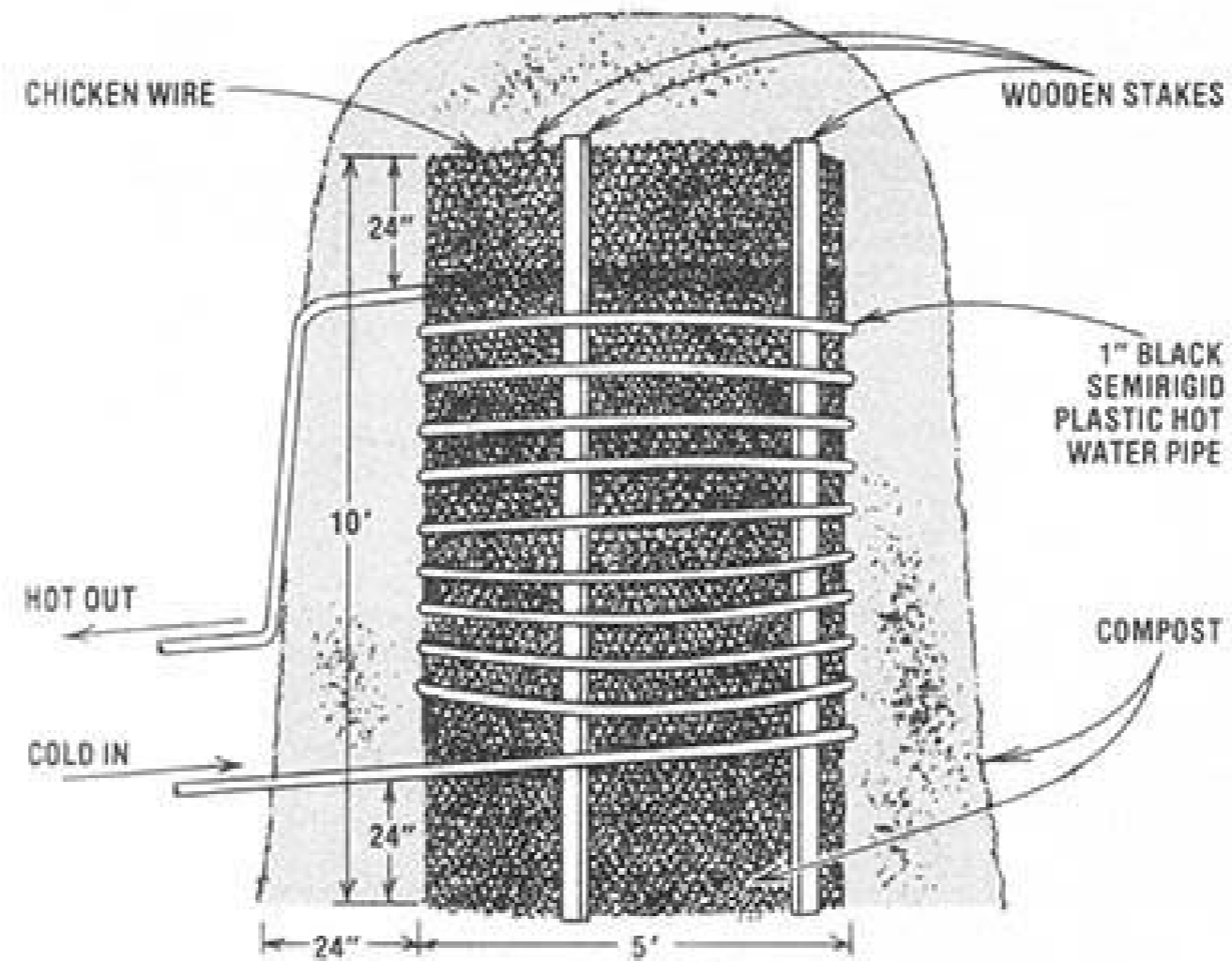
RESEARCH



Jean Pain 1970

Using wood as natural heat exchanger

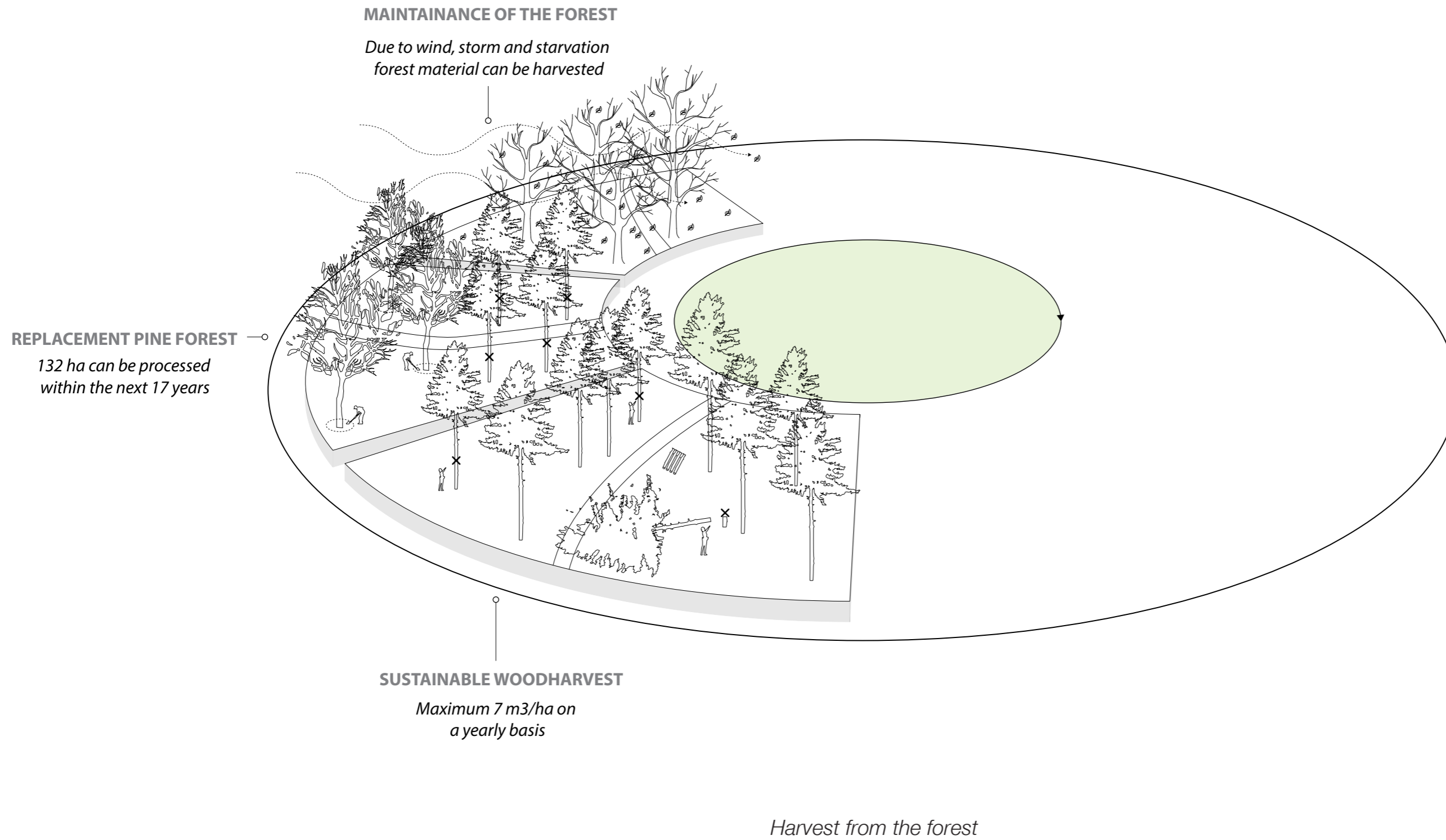
RESEARCH



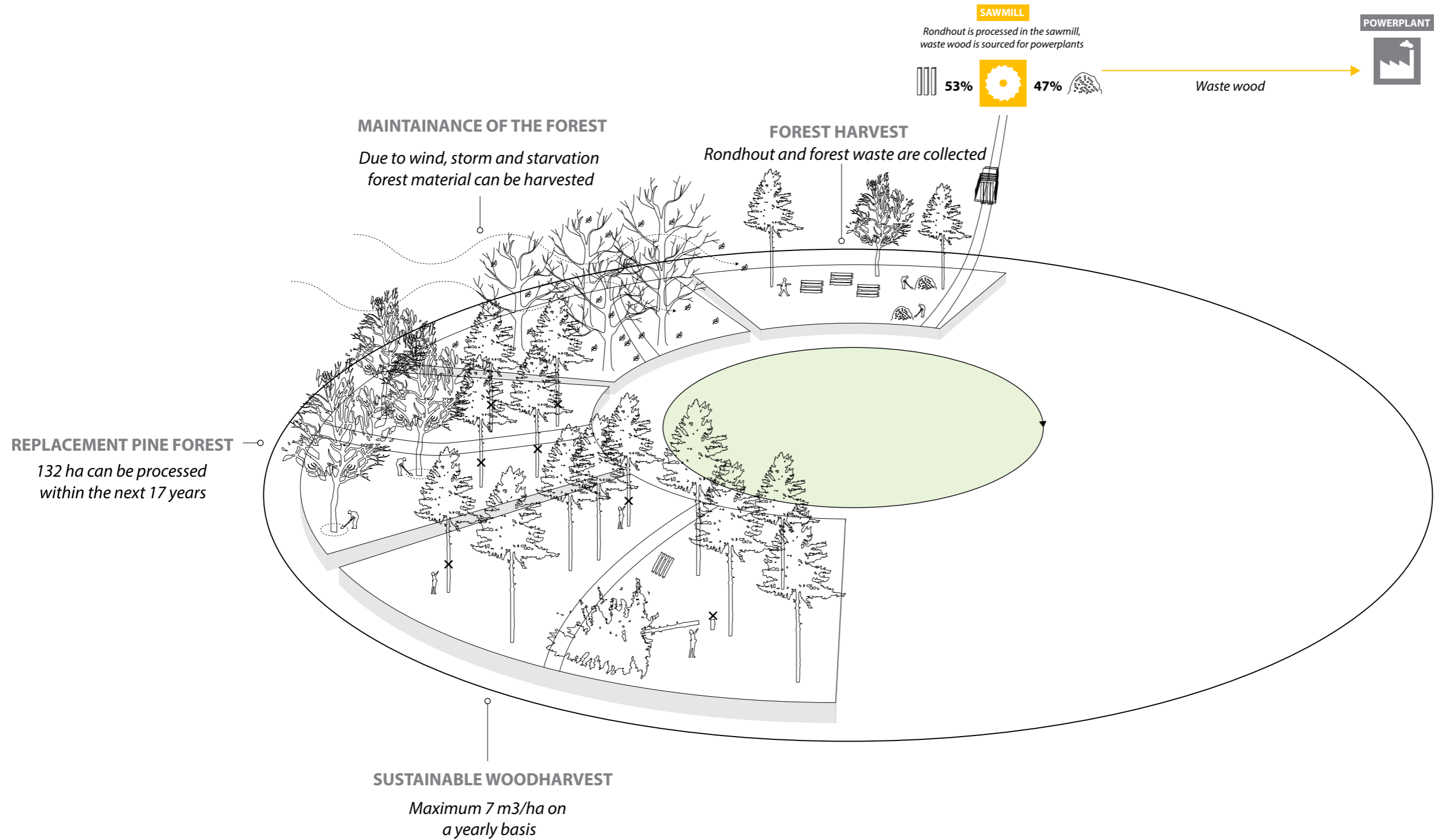
Jean Pain method of using wood as heat exchanger.....

Using wood as natural heat exchanger

RESEARCH

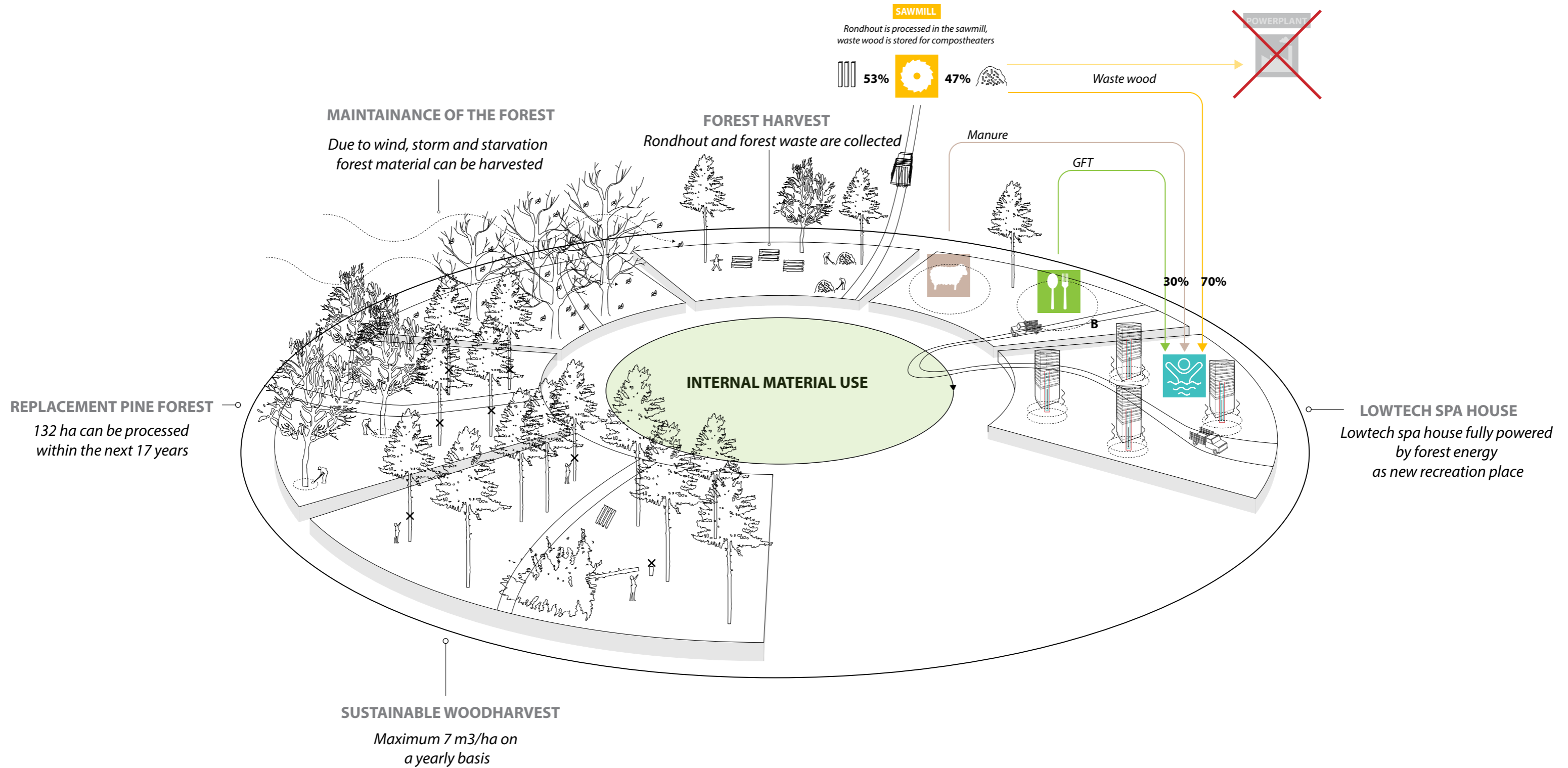


RESEARCH



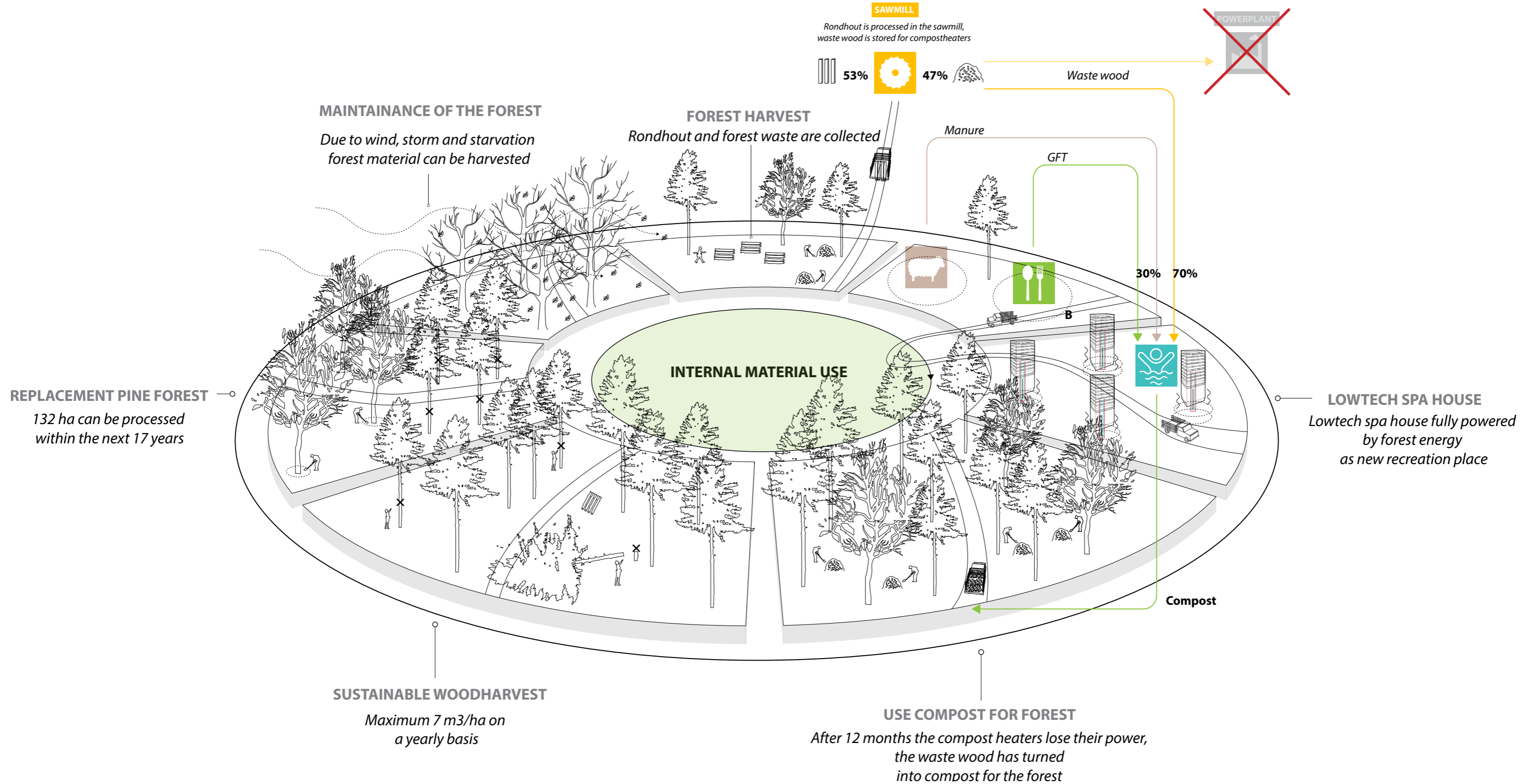
Existing situation: biomass leaves the forest

RESEARCH



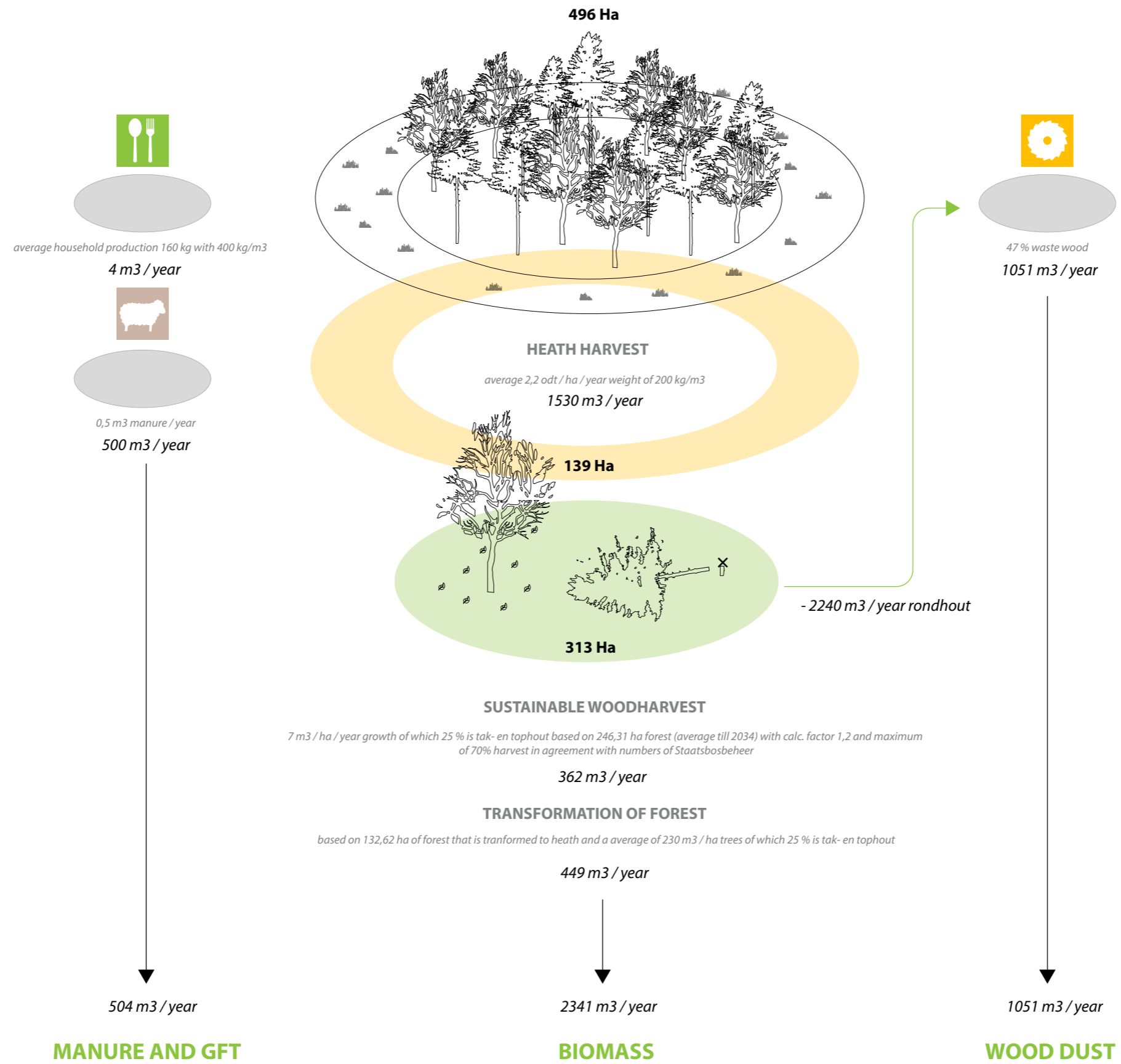
New situation: biomass is locally used as heat exchanger

RESEARCH



New situation: compost can be used locally

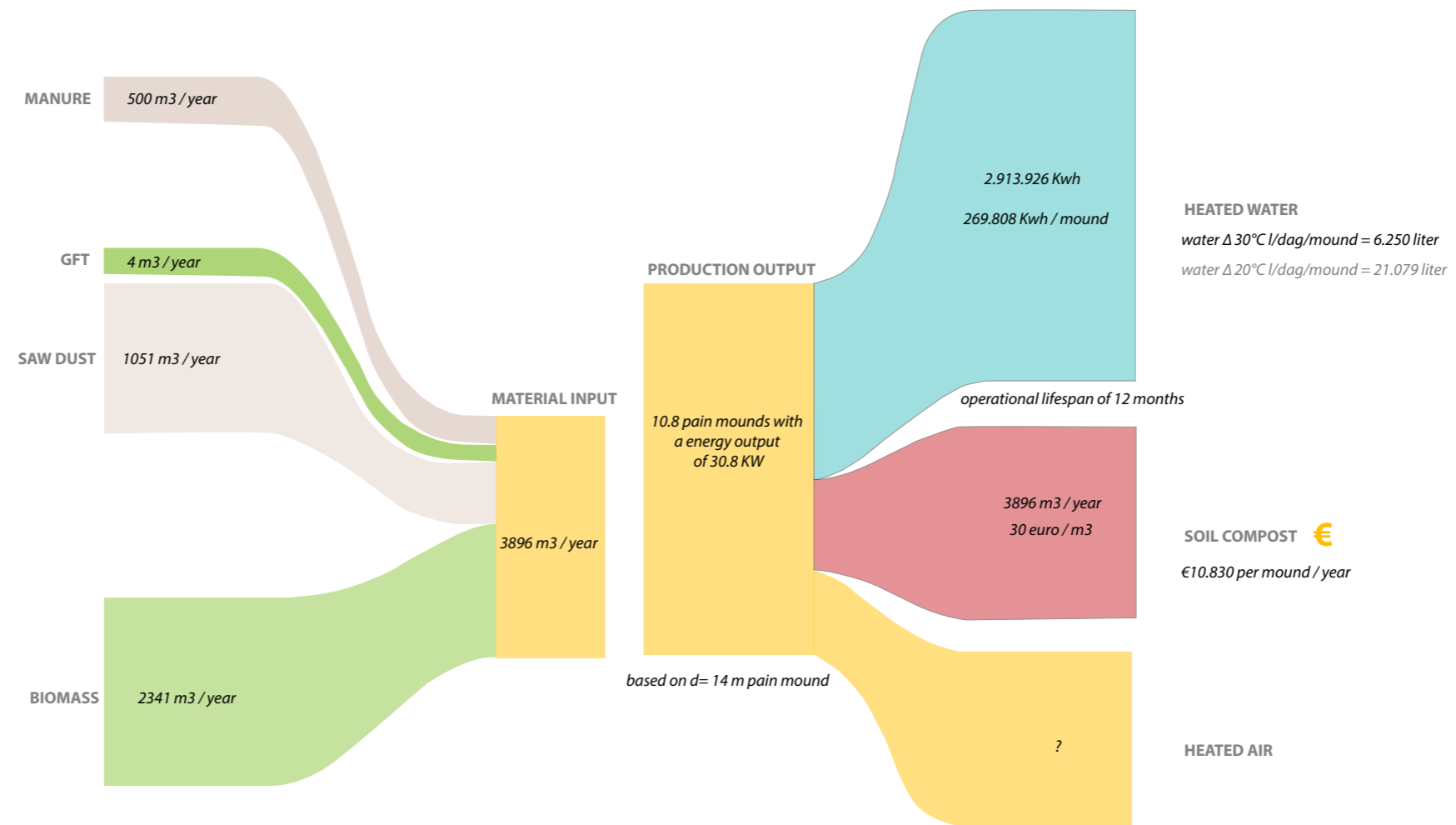
RESEARCH



Biomass quantity: different local sources

RESEARCH

FLOW DIAGRAM



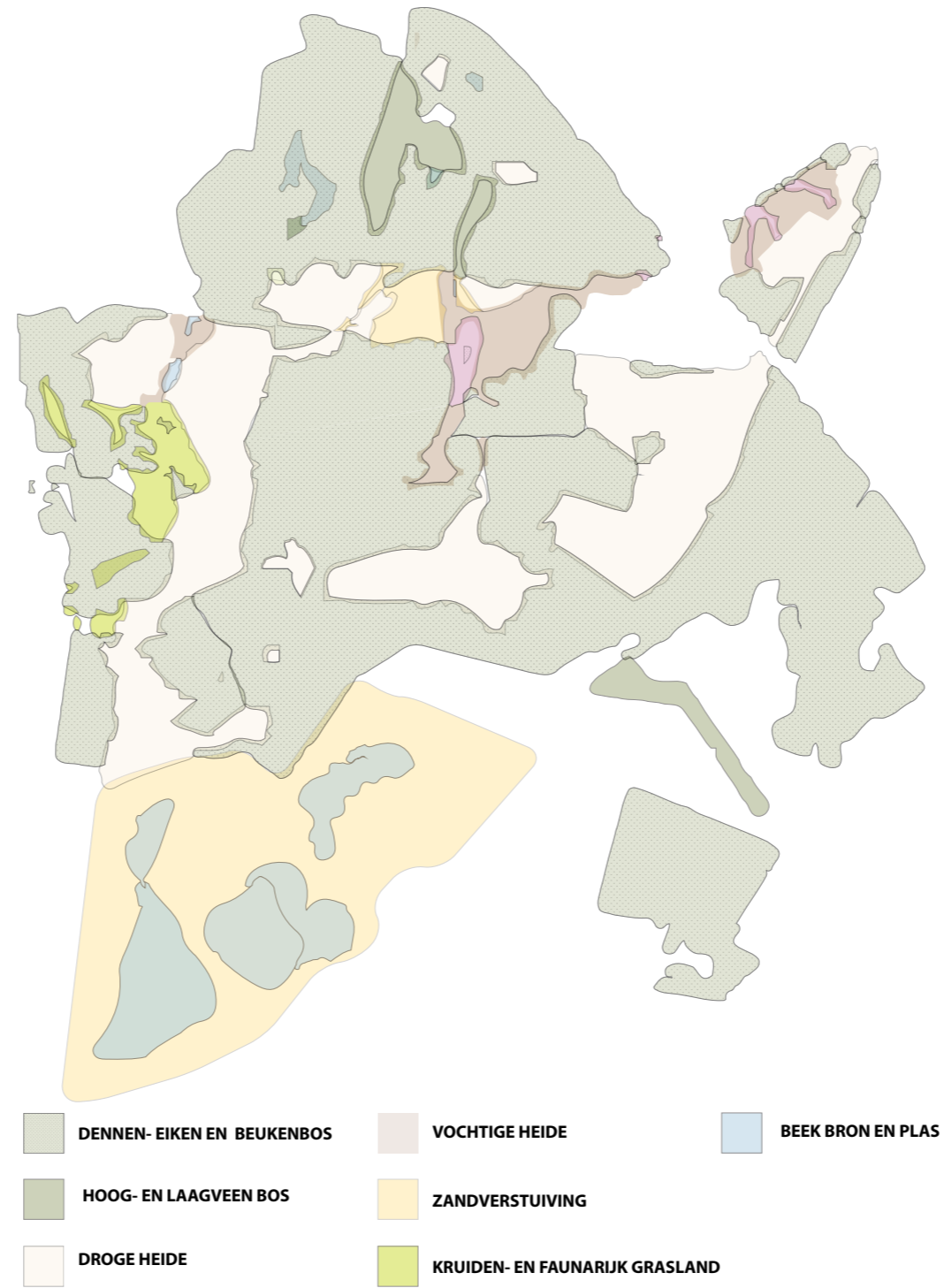
Local material input and energy output

RESEARCH



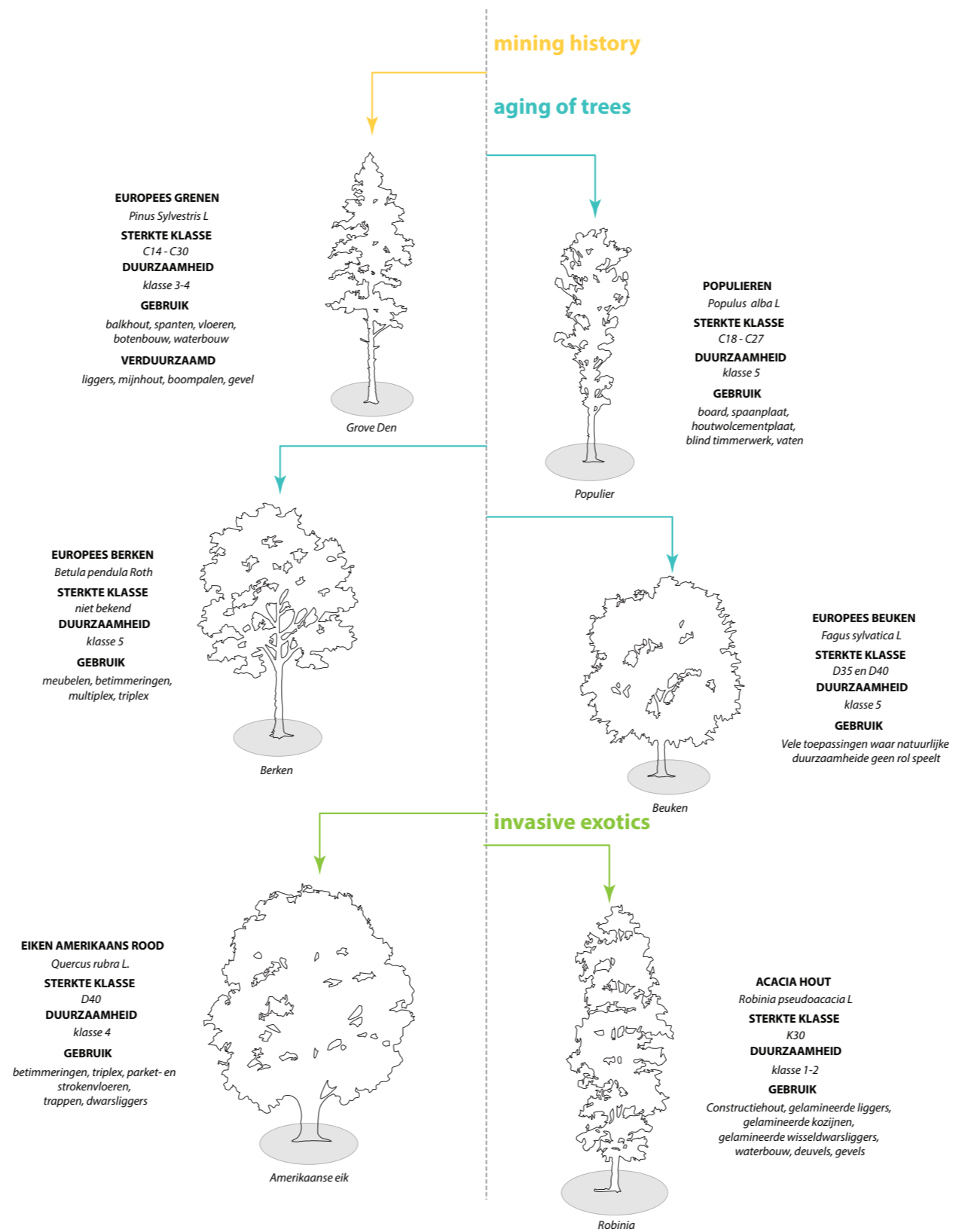
Build with local wood

RESEARCH



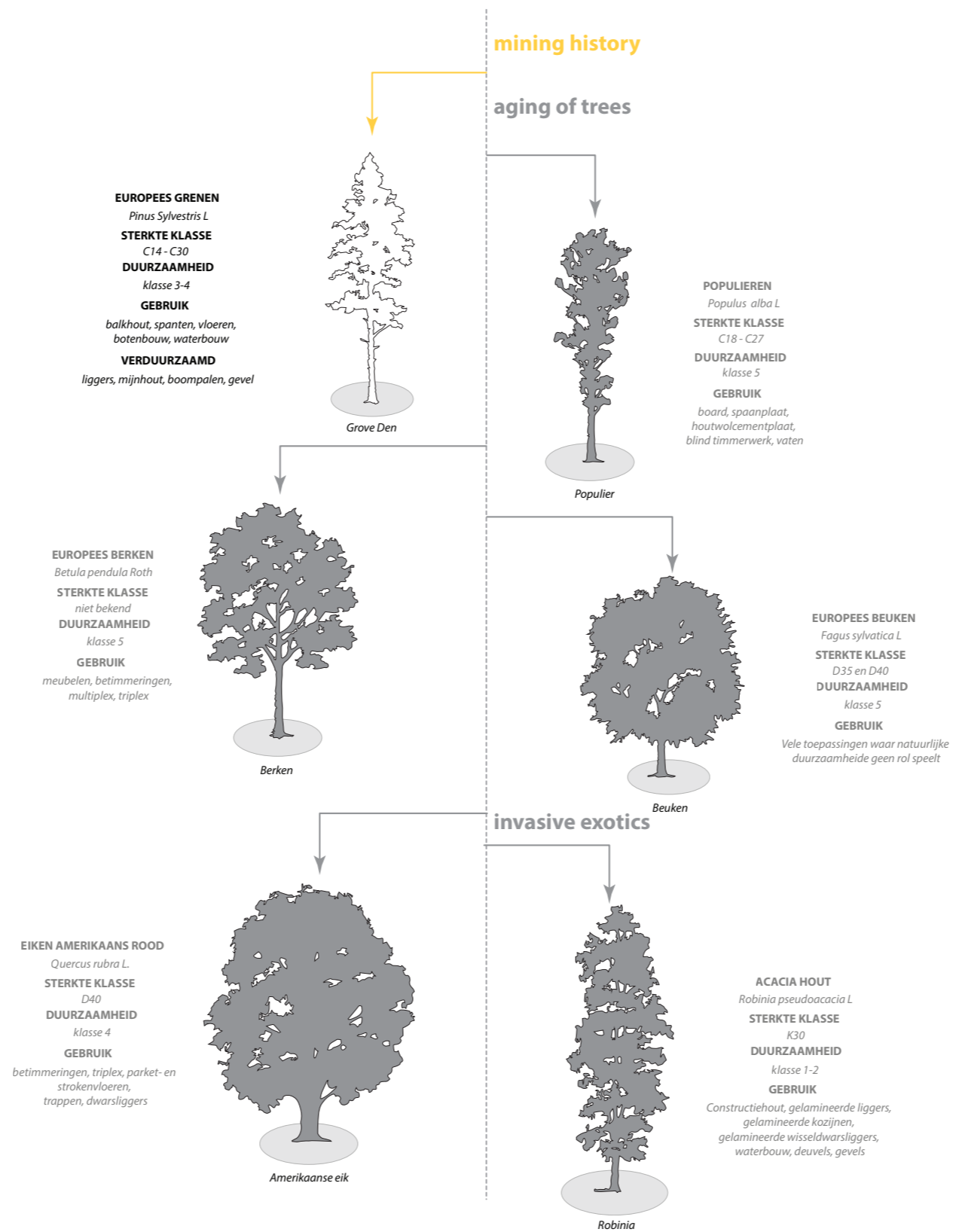
Types of vegetation at Brunssummerheide

RESEARCH



Properties of the local wood

RESEARCH



Types of vegetation at Brunssummerheide

DESIGN



Rode Beek bath place / winter situation

DESIGN | LANDSCAPE



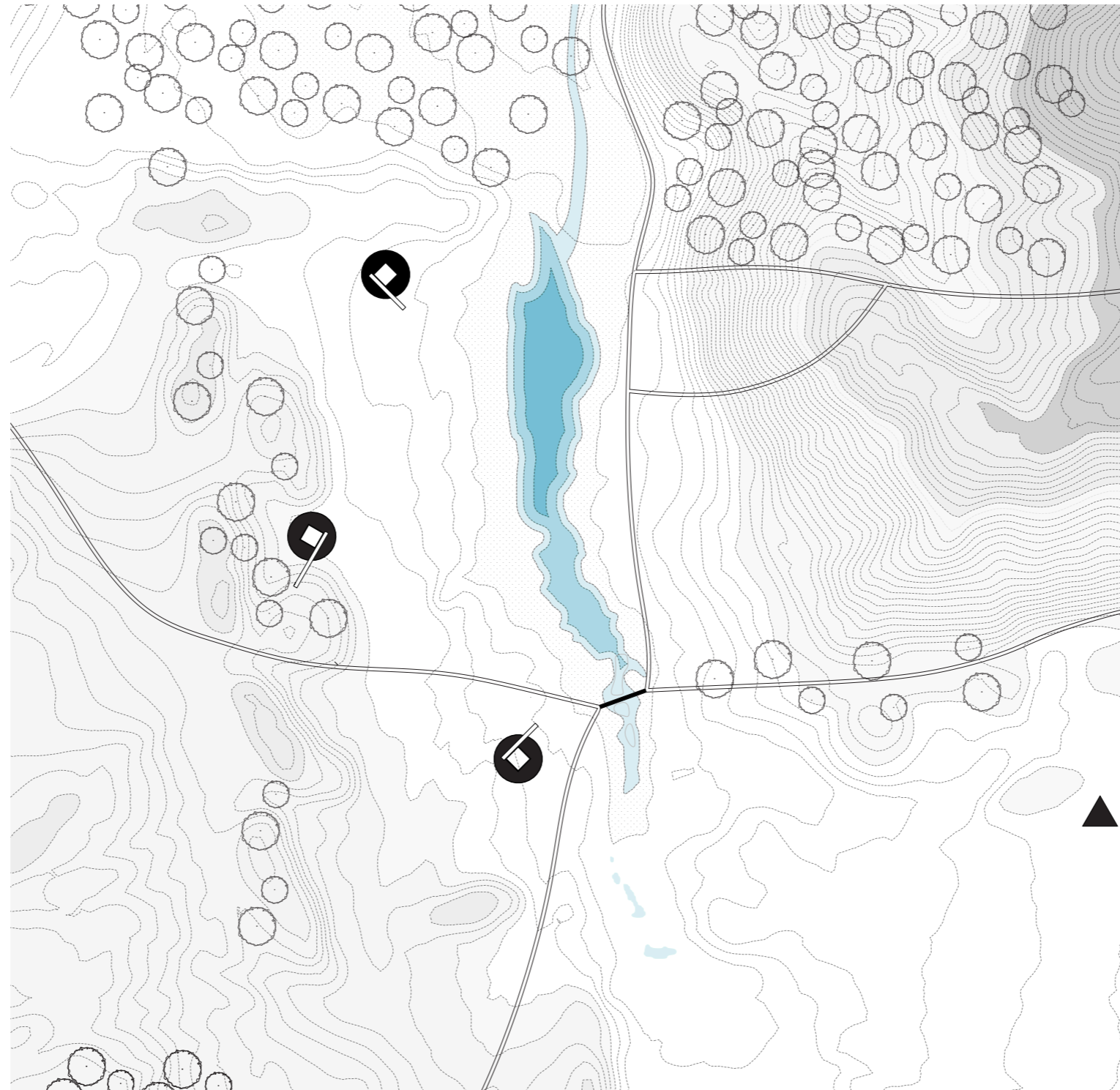
wooden bridge



trail route for runners



summer at beek



winter at beek



nature swimming

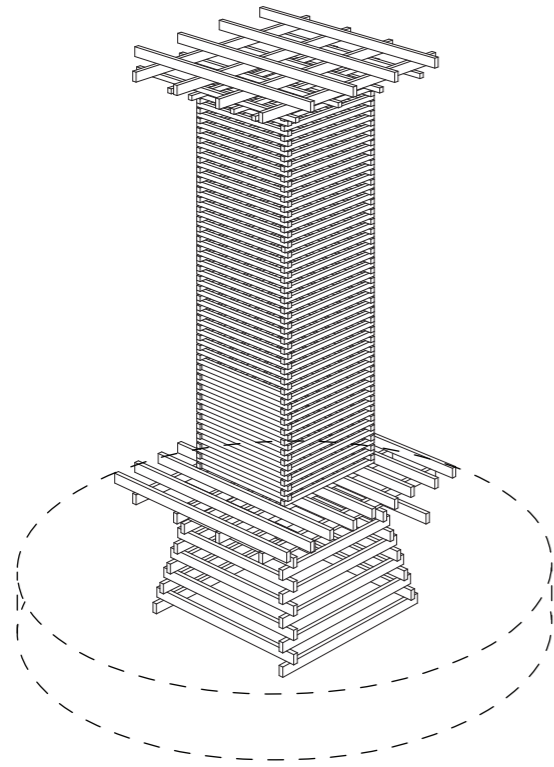


hiking route

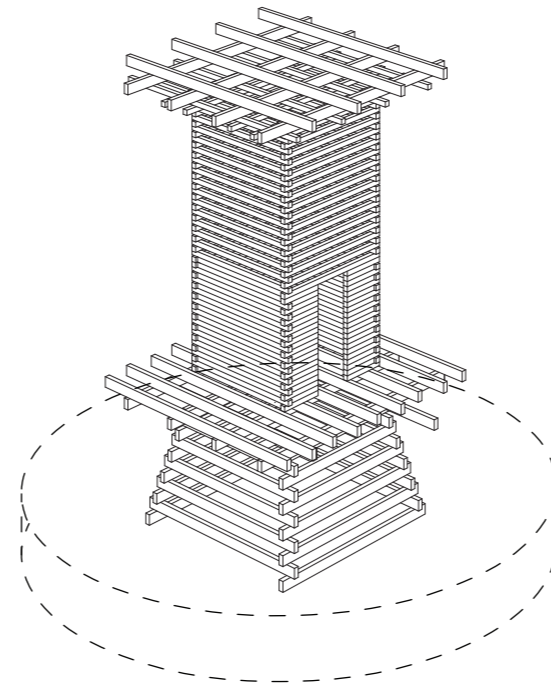
Program of hedonistic sustainability

DESIGN | NEW TYPOLOGY

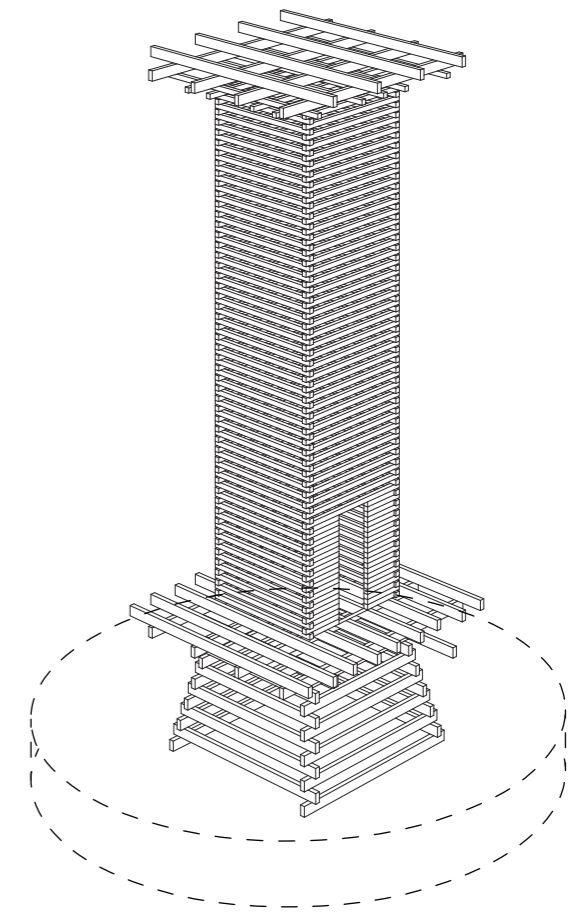
MEDITATION PAVILION



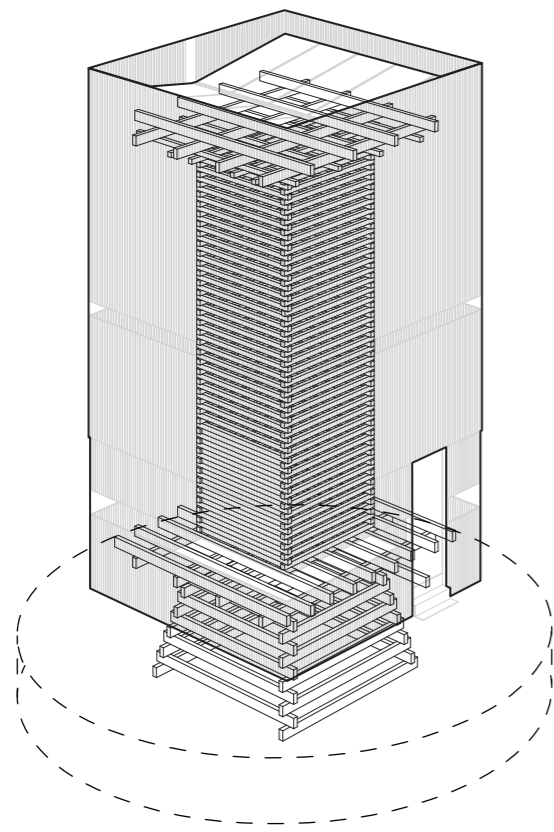
TREATMENT PAVILION



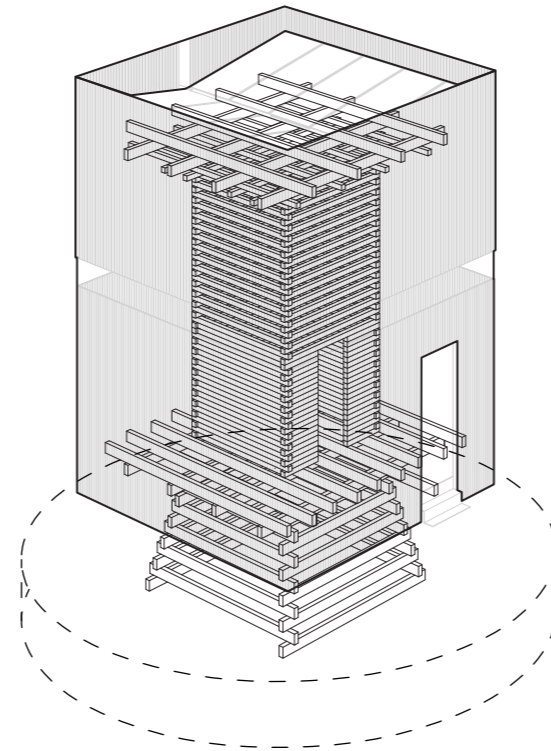
SPA PAVILION



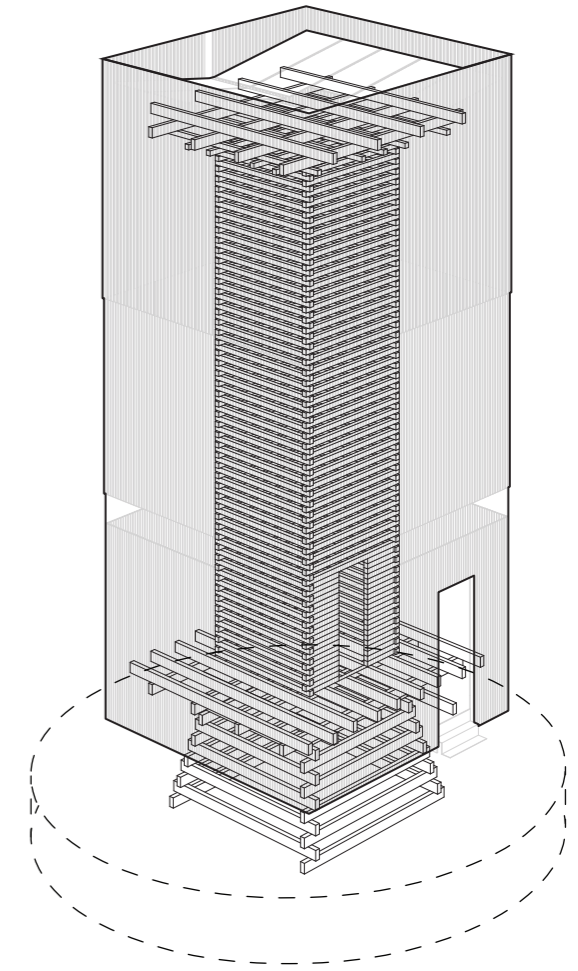
MEDITATION PAVILION



TREATMENT PAVILION

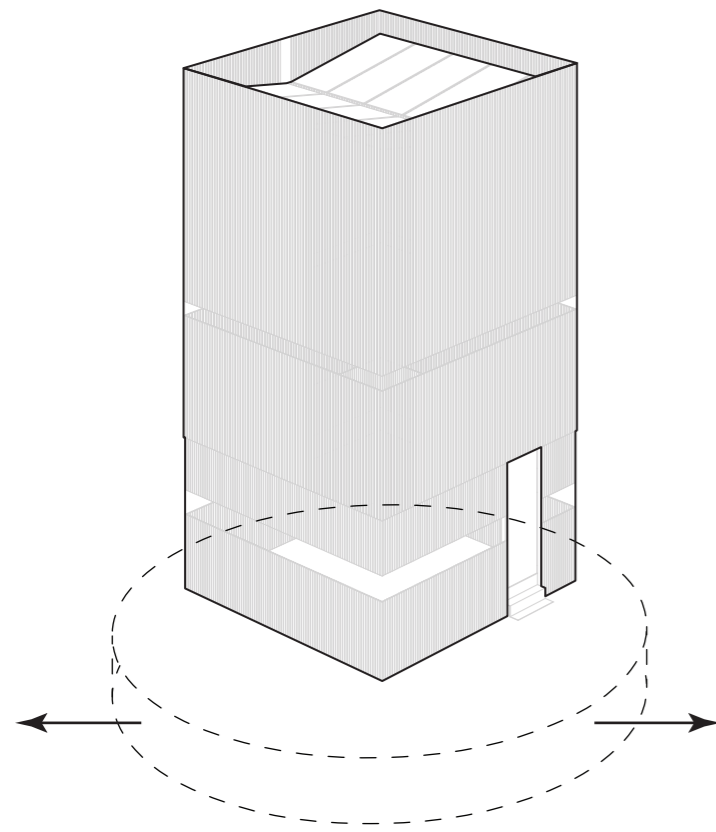


SPA PAVILION



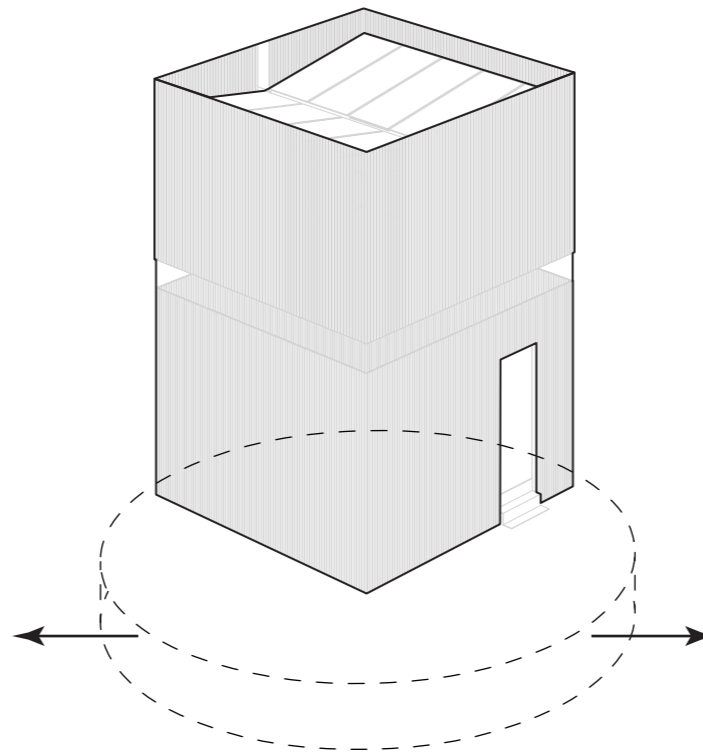
DESIGN | NEW TYPOLOGY

MEDITATION PAVILION



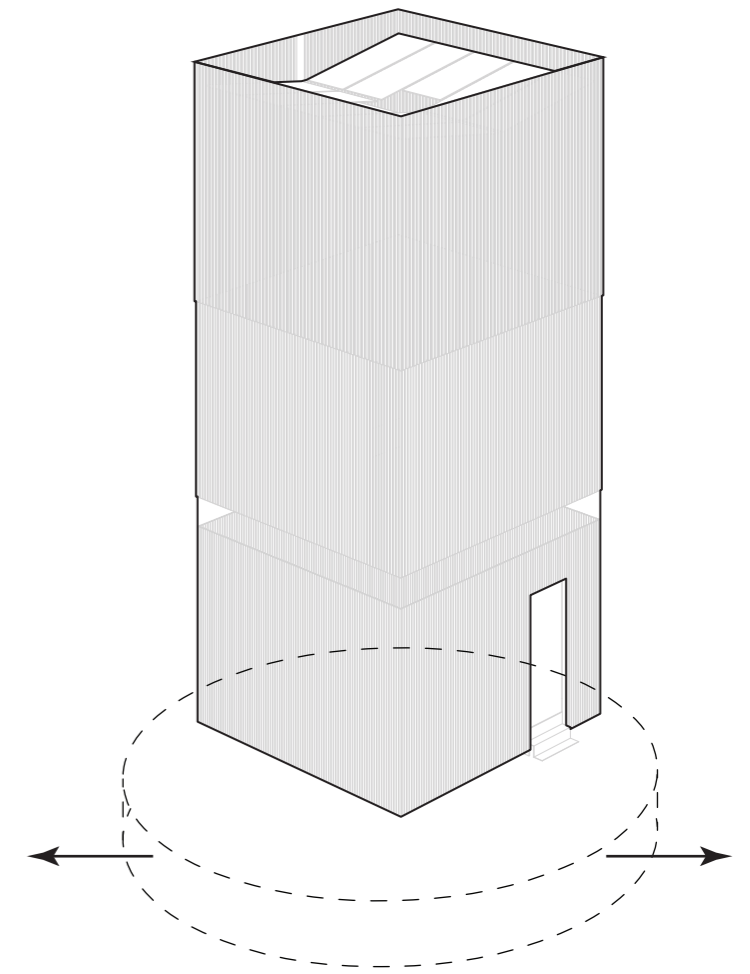
14 m
148 m³
≈ 11 KW

TREATMENT PAVILION



15 m
120 m³
≈ 9 KW

SPA PAVILION



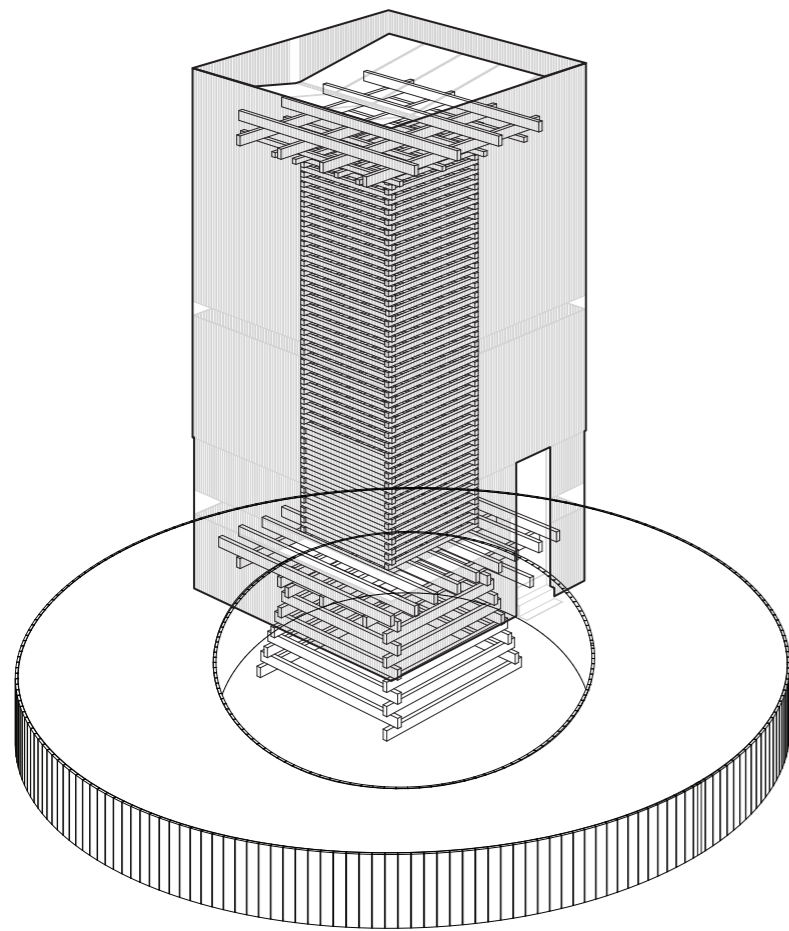
17 m
210 m³
≈ 16 KW

Typology of the pavilions

DESIGN | NEW TYPOLOGY

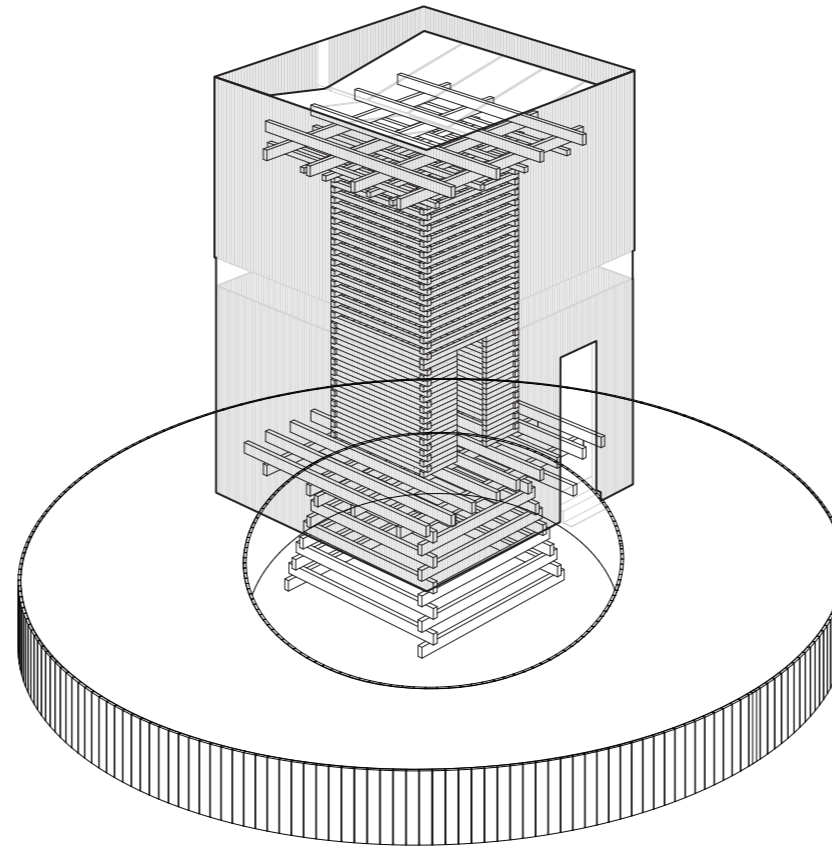
≈ 1000 hot bathtubs/month

MEDITATION PAVILION



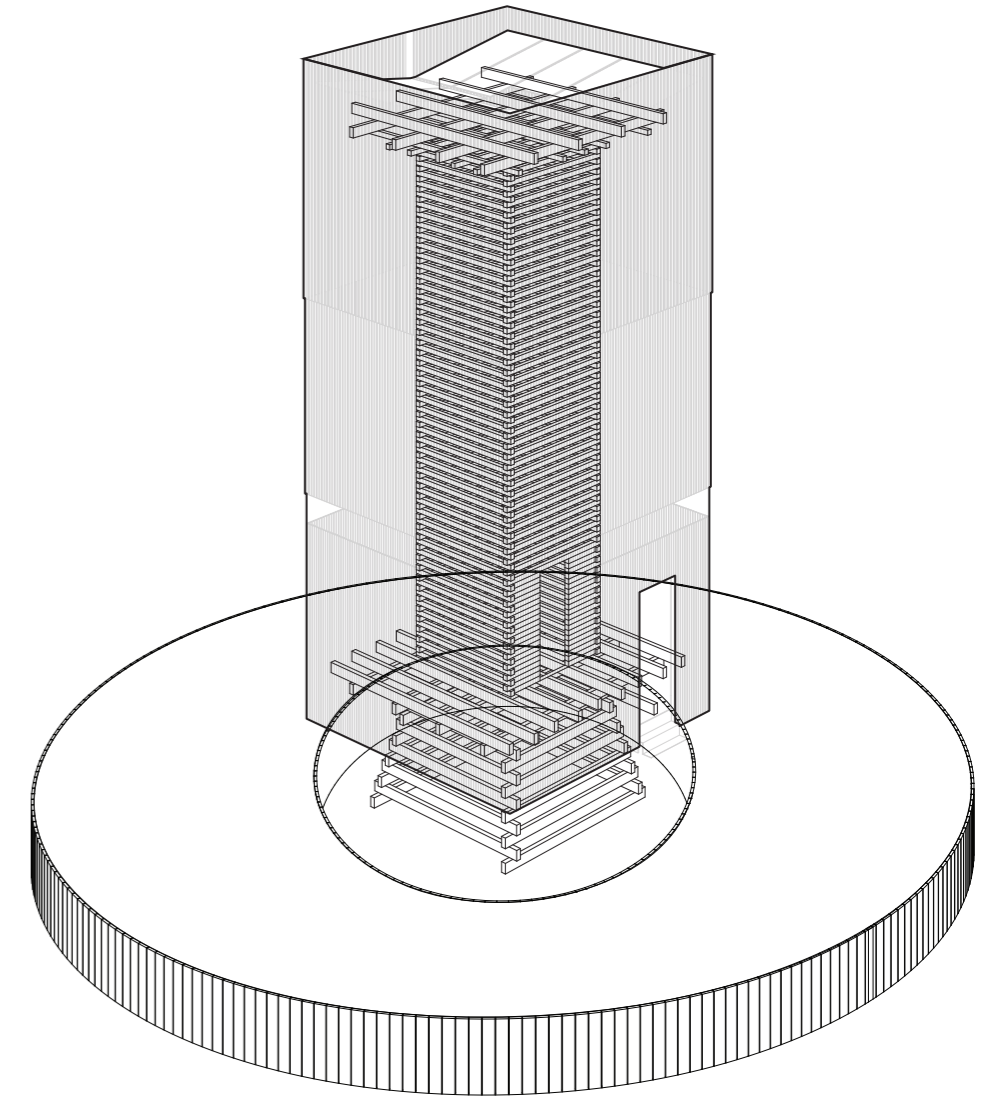
14 m
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TREATMENT PAVILION



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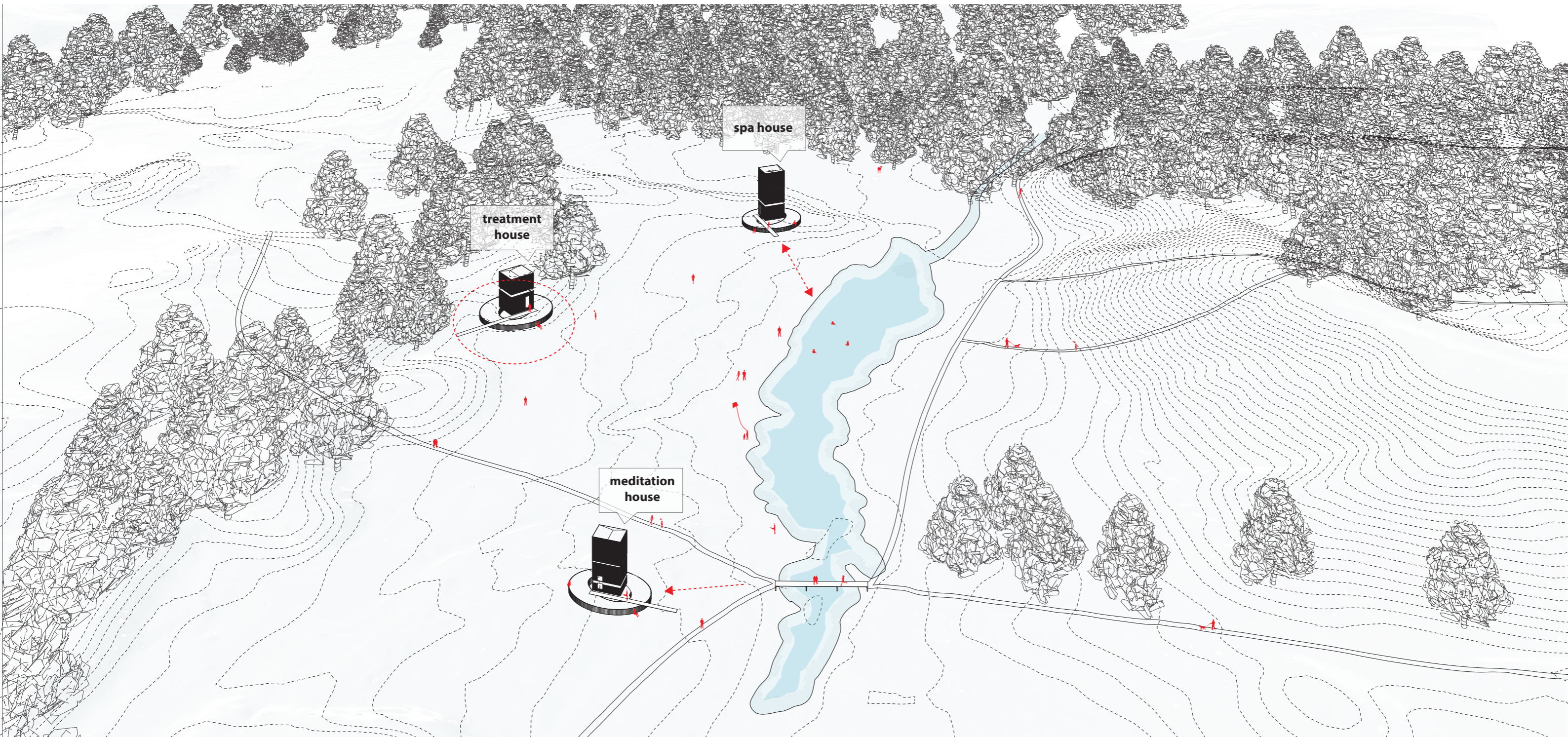
SPA PAVILION



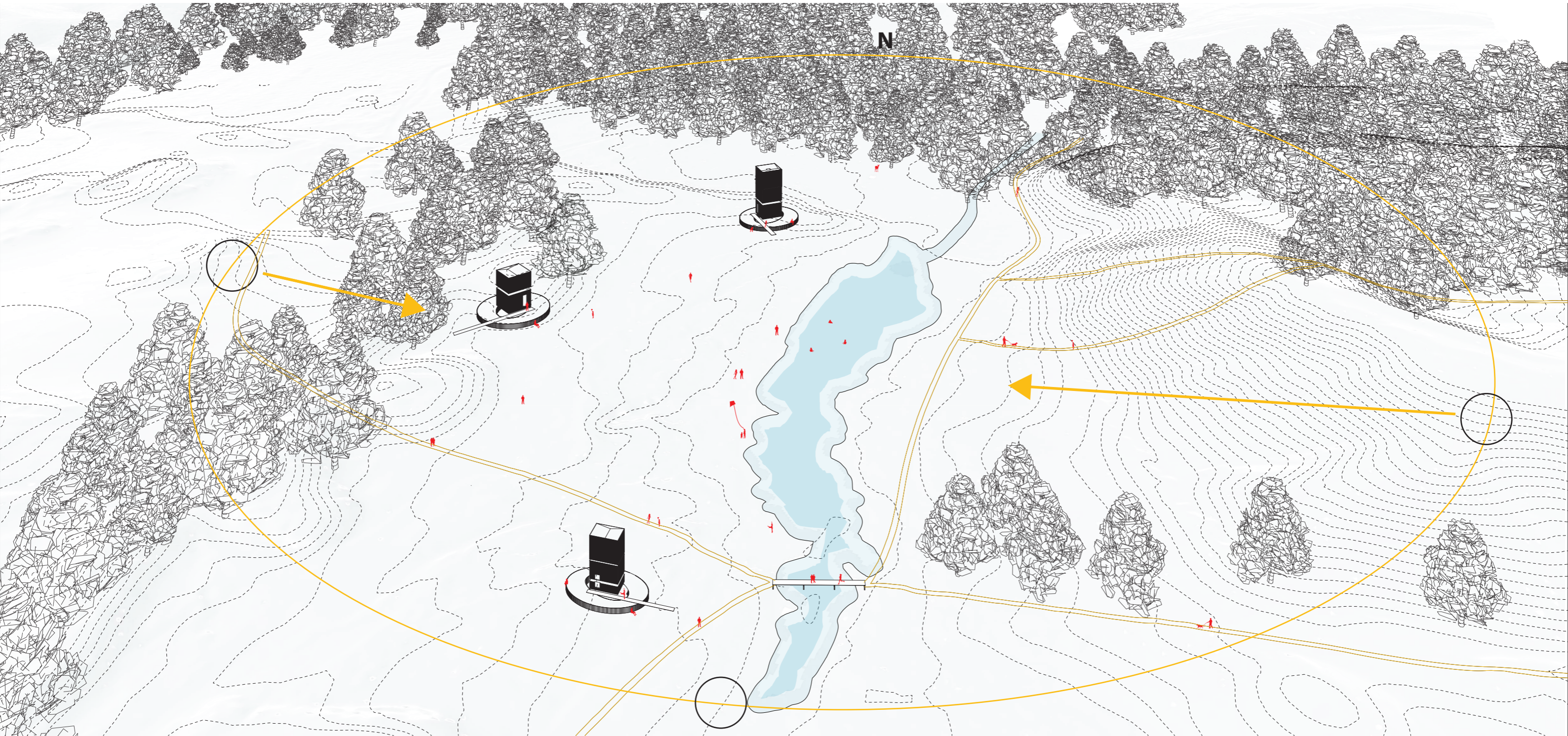
17 m
210 m³
≈ 16 KW

Typology of the pavilions

DESIGN | LANDSCAPE

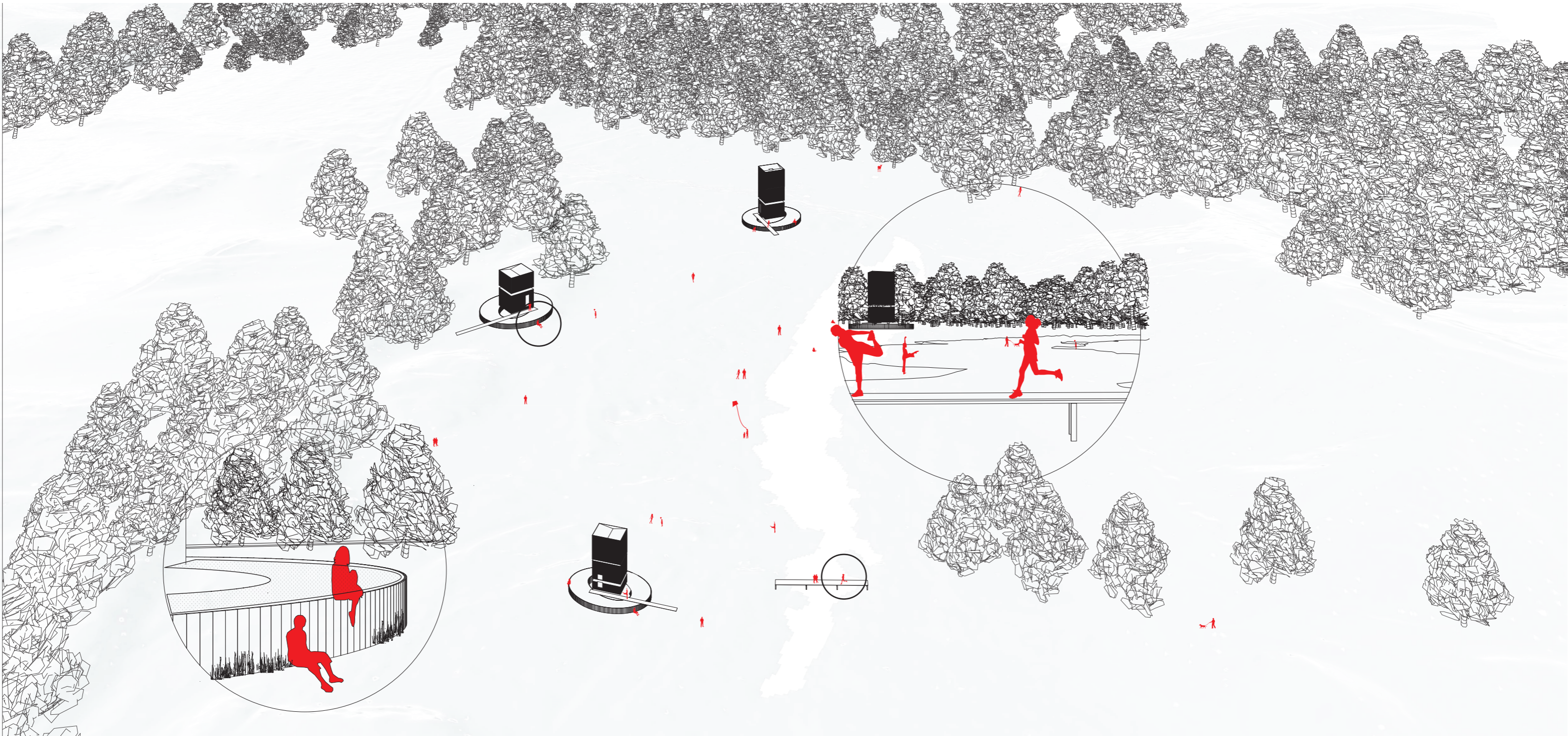


Design program



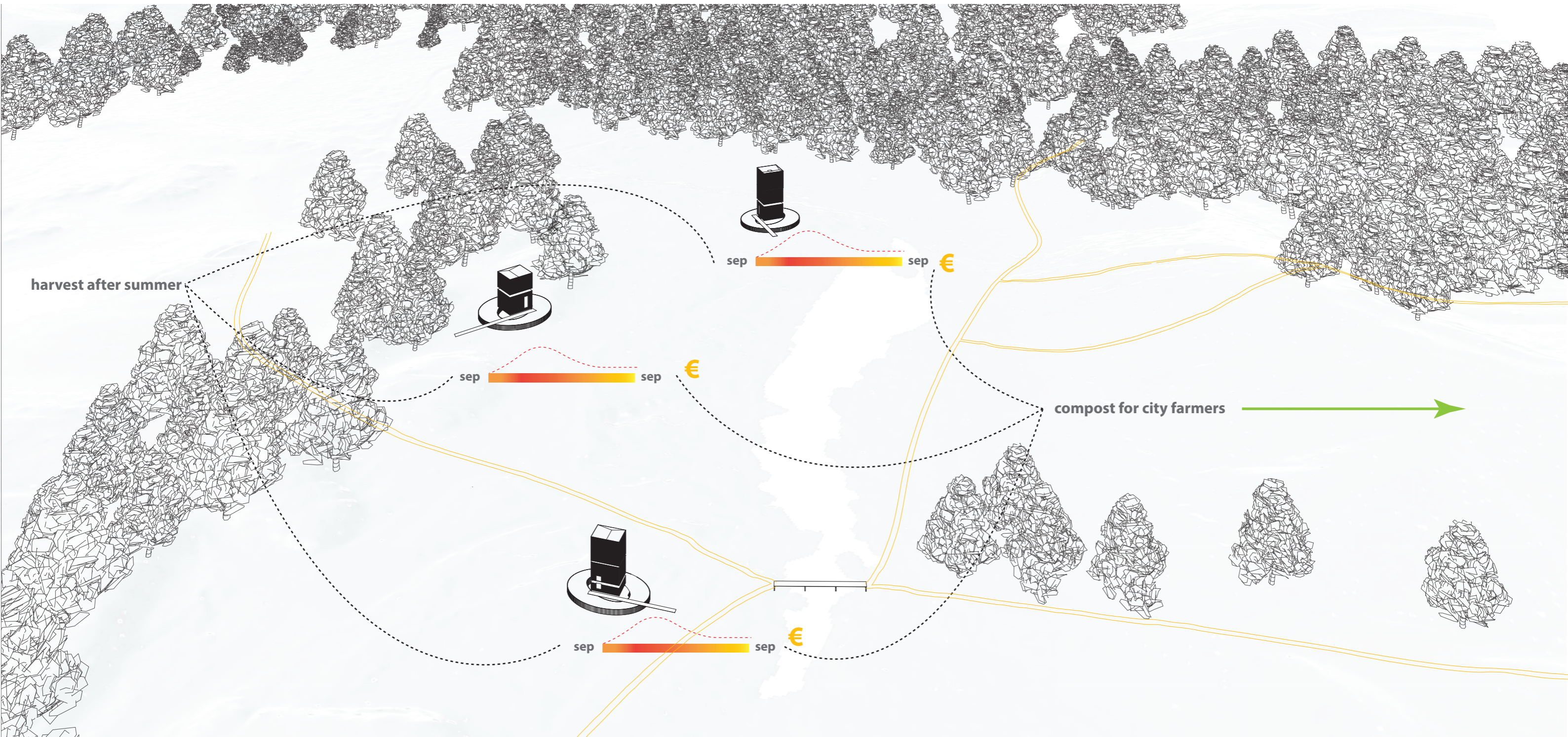
Sun and walking routes

DESIGN | PROGRAM



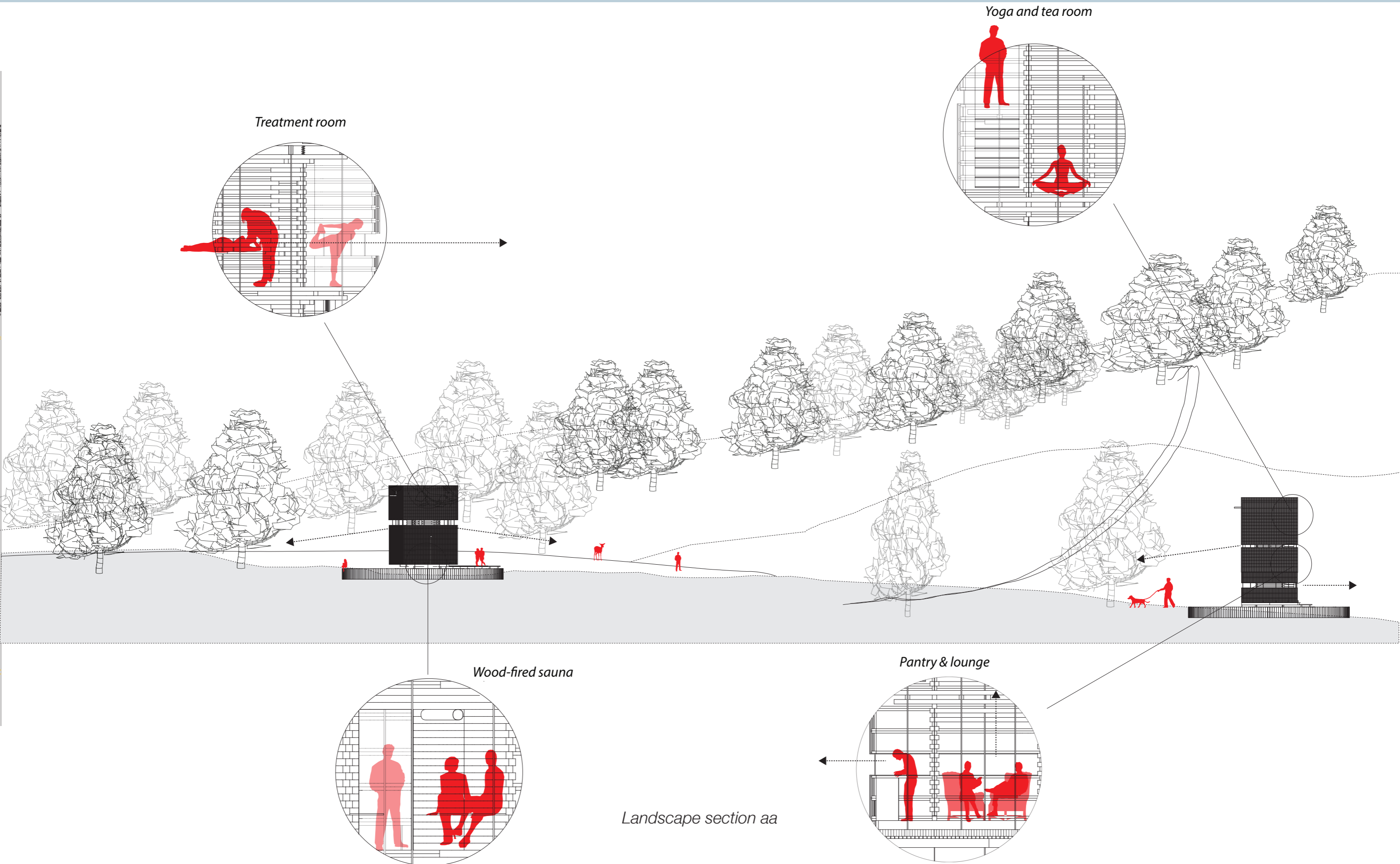
Pavilions in the landscape

DESIGN | PHASES

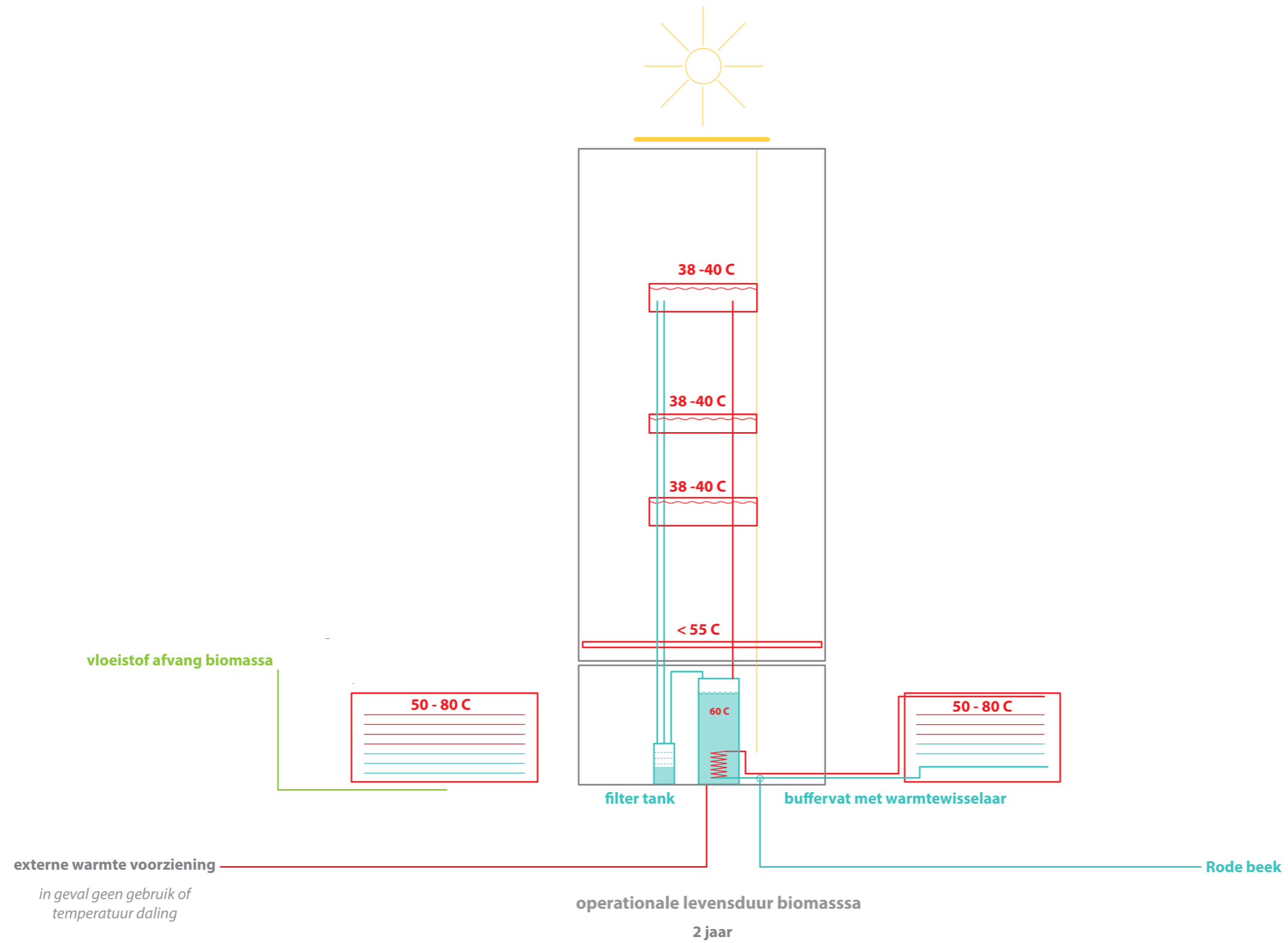


Pavilions in the landscape

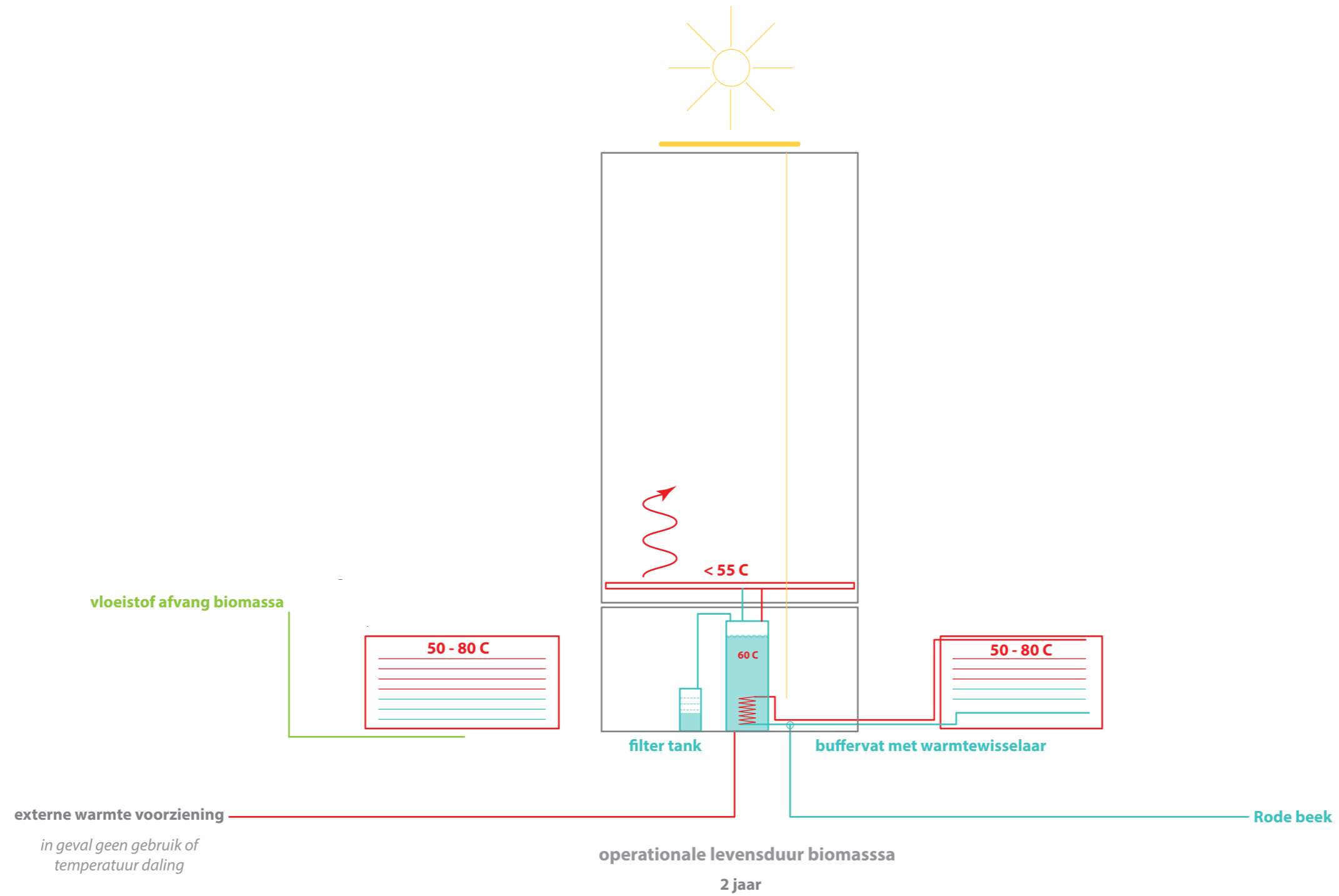
DESIGN | PROGRAM



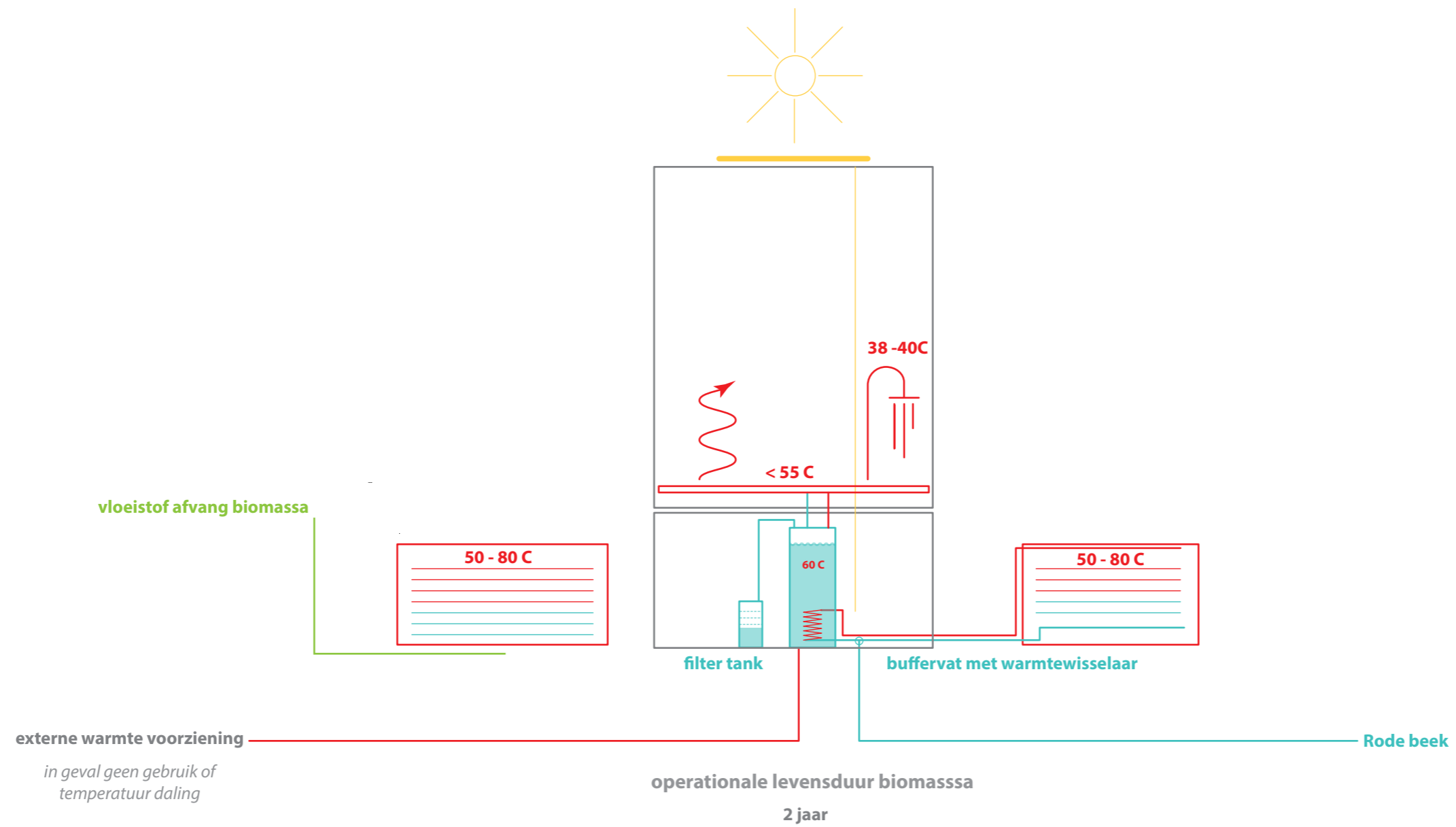
DESIGN | CLIMATE



Climate diagram of spa pavilion



Climate diagram of meditation pavilion



Climate system of treatment pavilion

DESIGN | SPA PAVILION

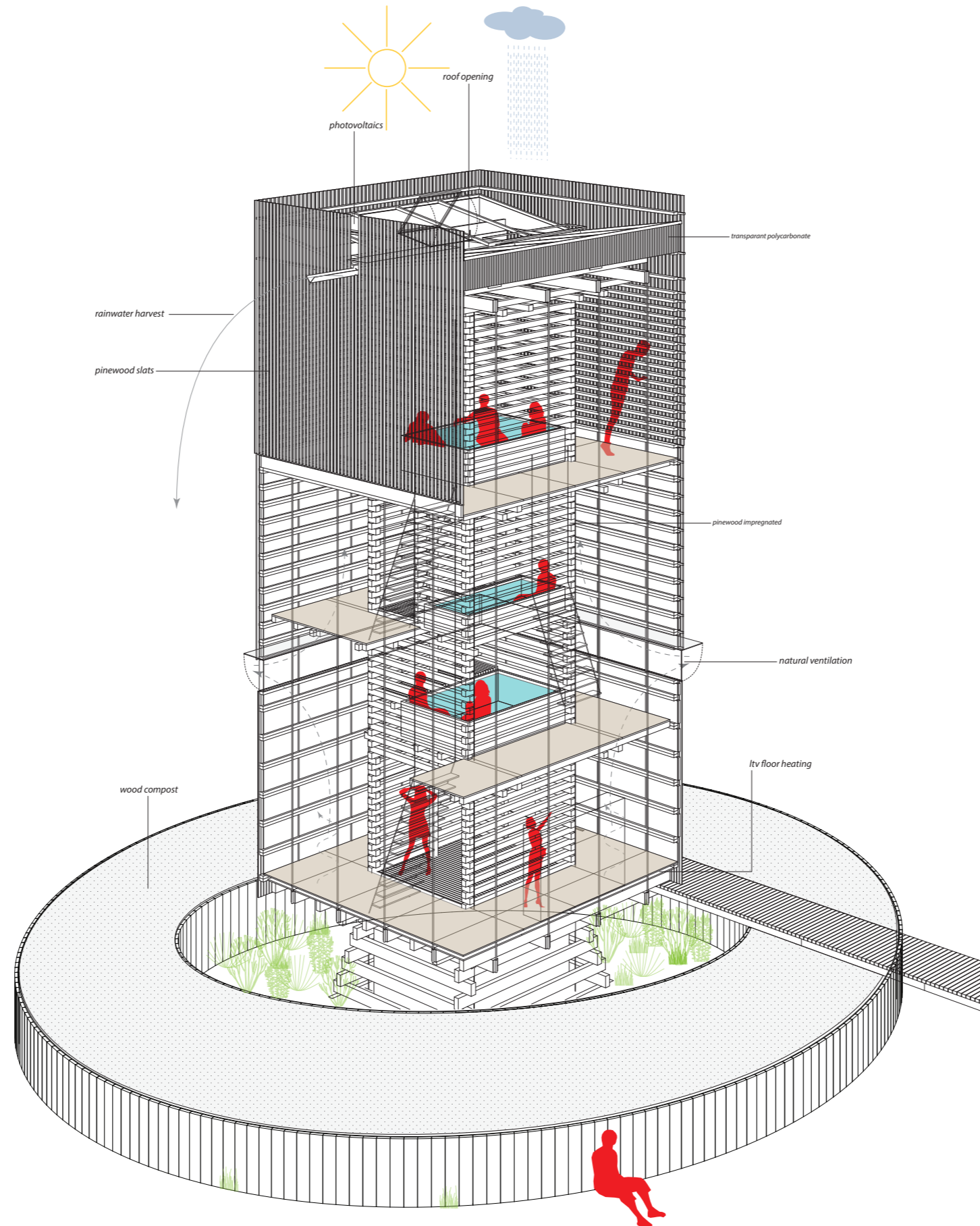


Spa pavilion in landscape

DESIGN | SPA PAVILION



DESIGN | SPA PAVILION



Program of spa pavilion

DESIGN | SPA PAVILION



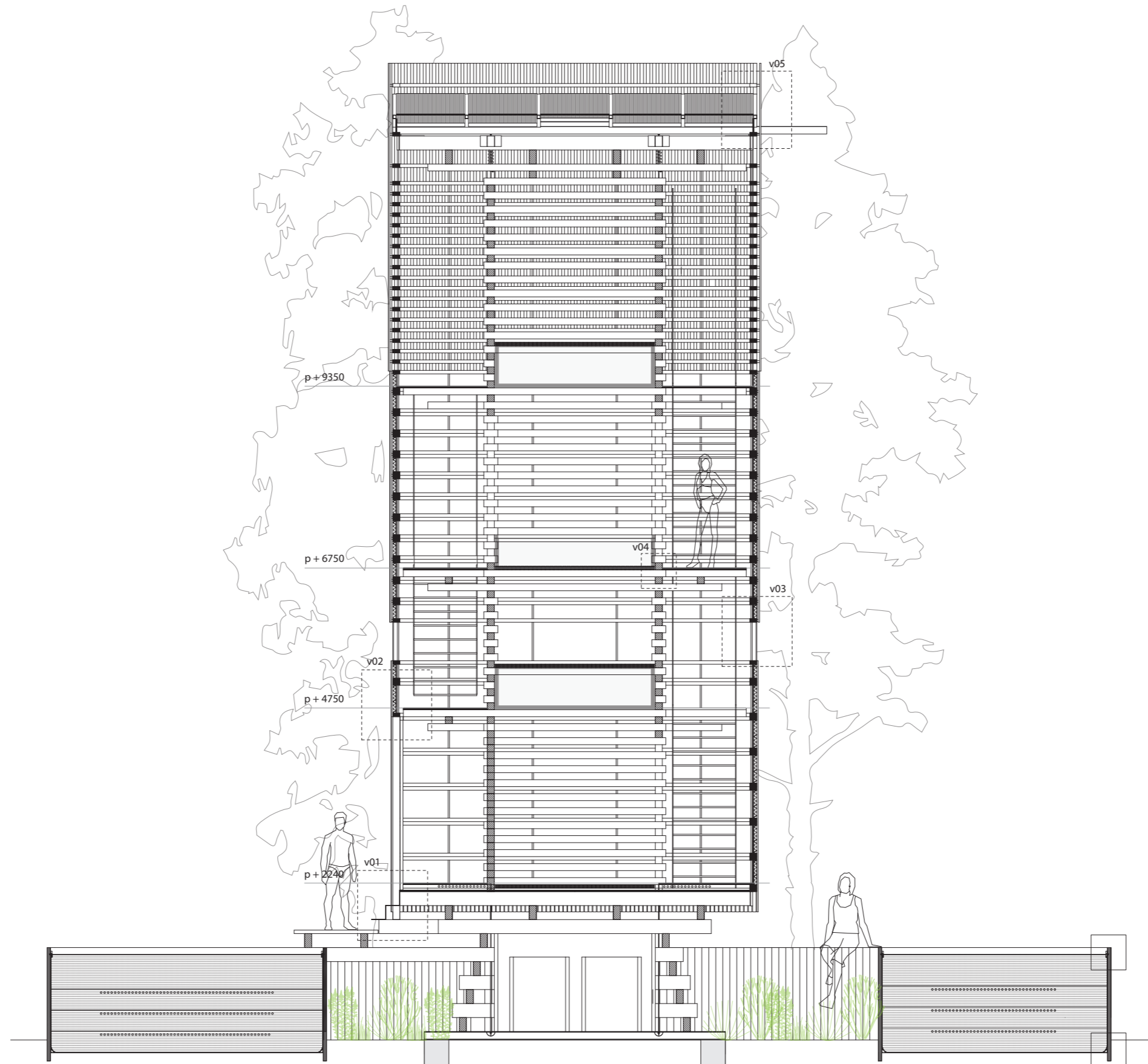
Interior of spa pavilion

DESIGN | SPA PAVILION



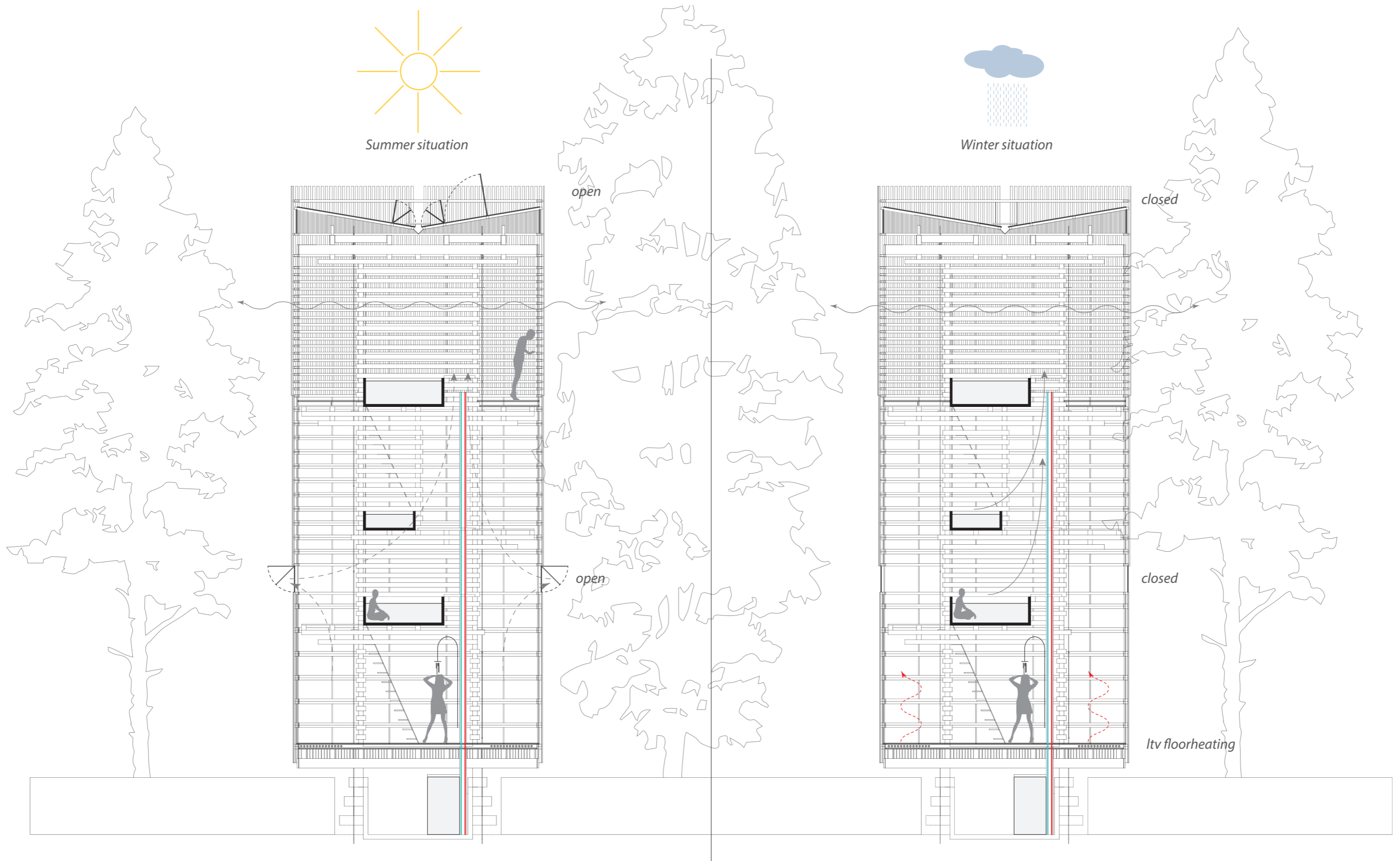
View point on spa pavilion

DESIGN | SPA PAVILION



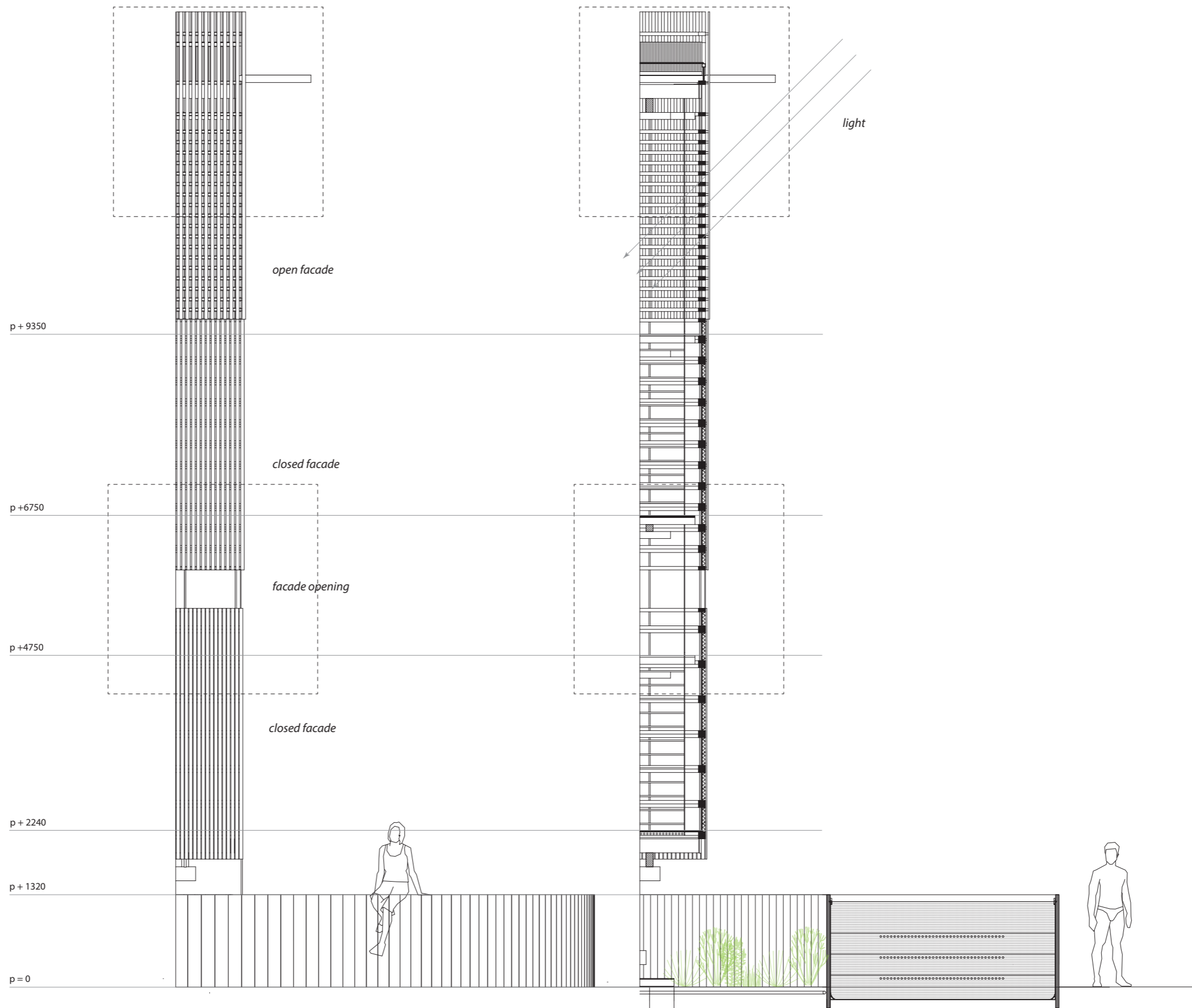
Section of spa pavilion

DESIGN | SPA PAVILION



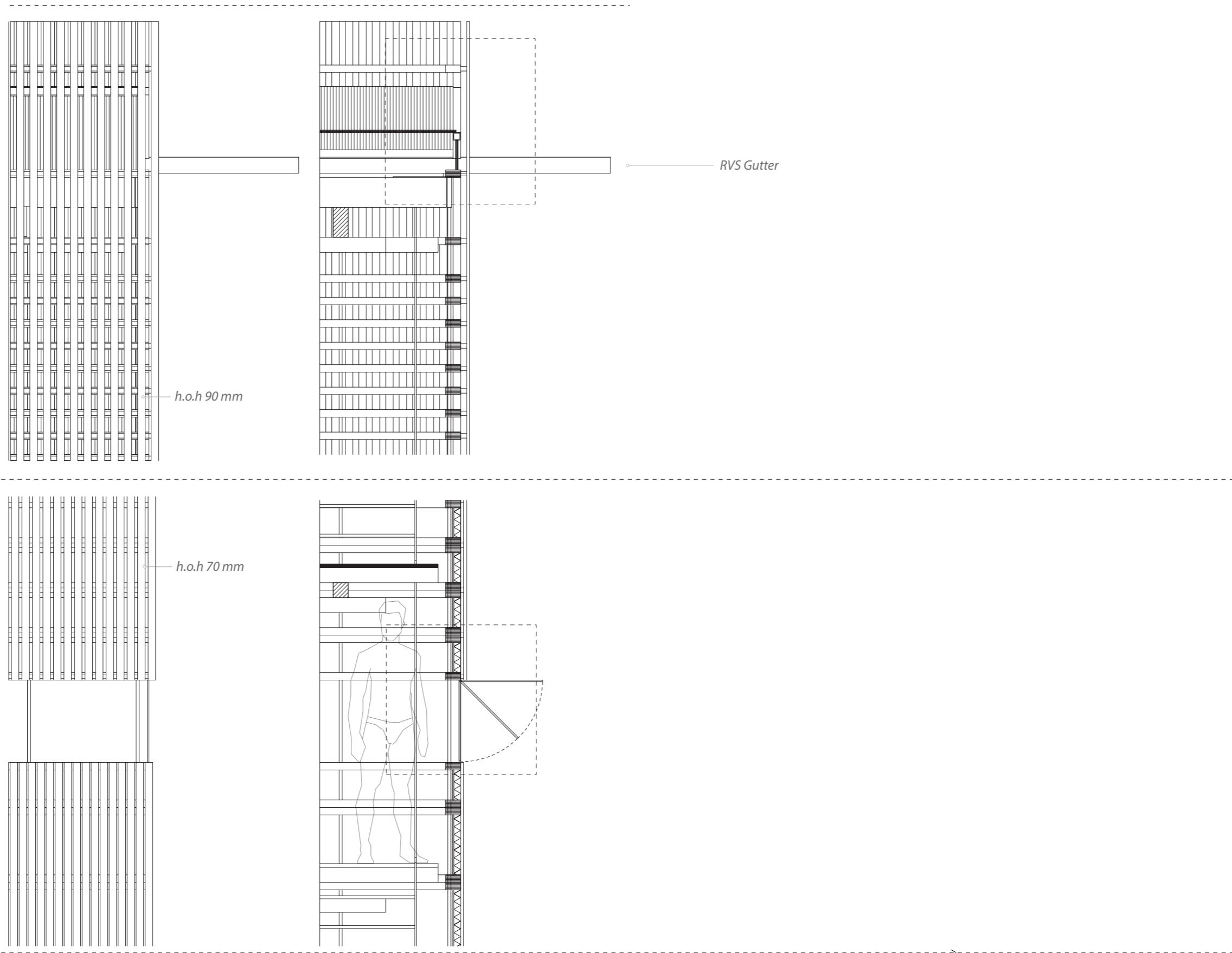
Summer and winter situation

DESIGN | SPA PAVILION



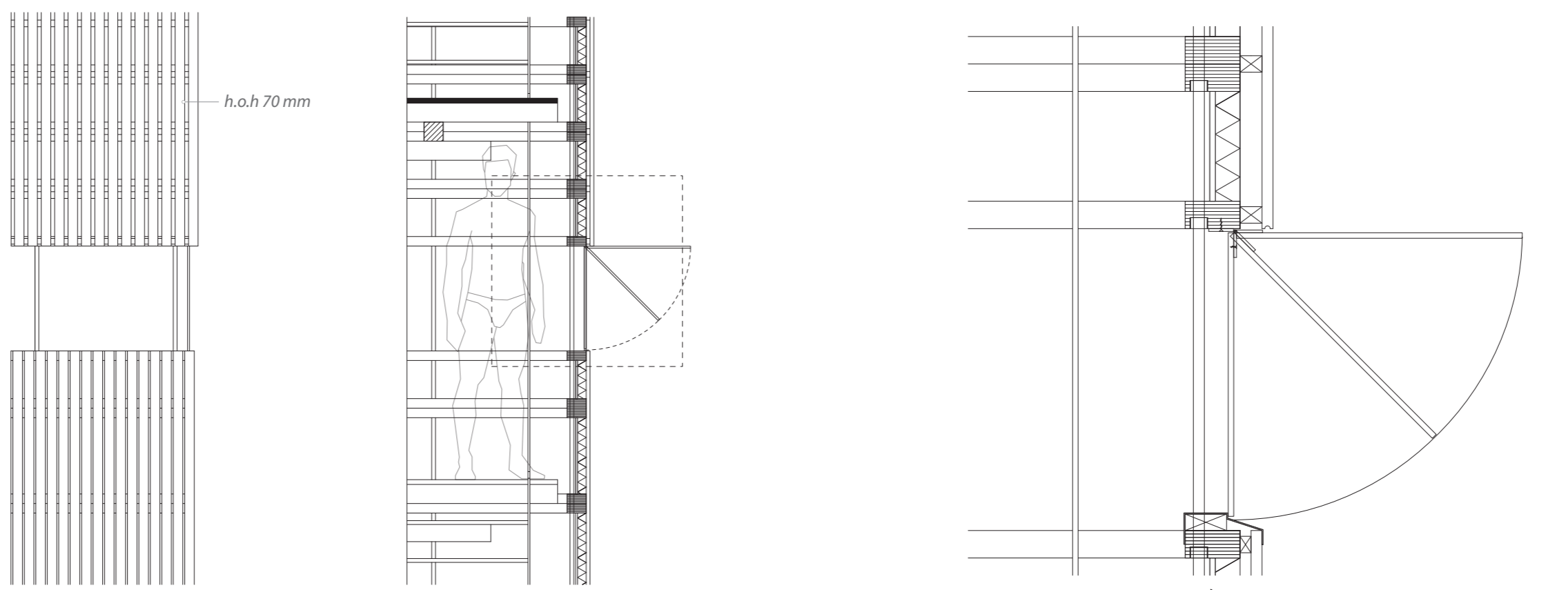
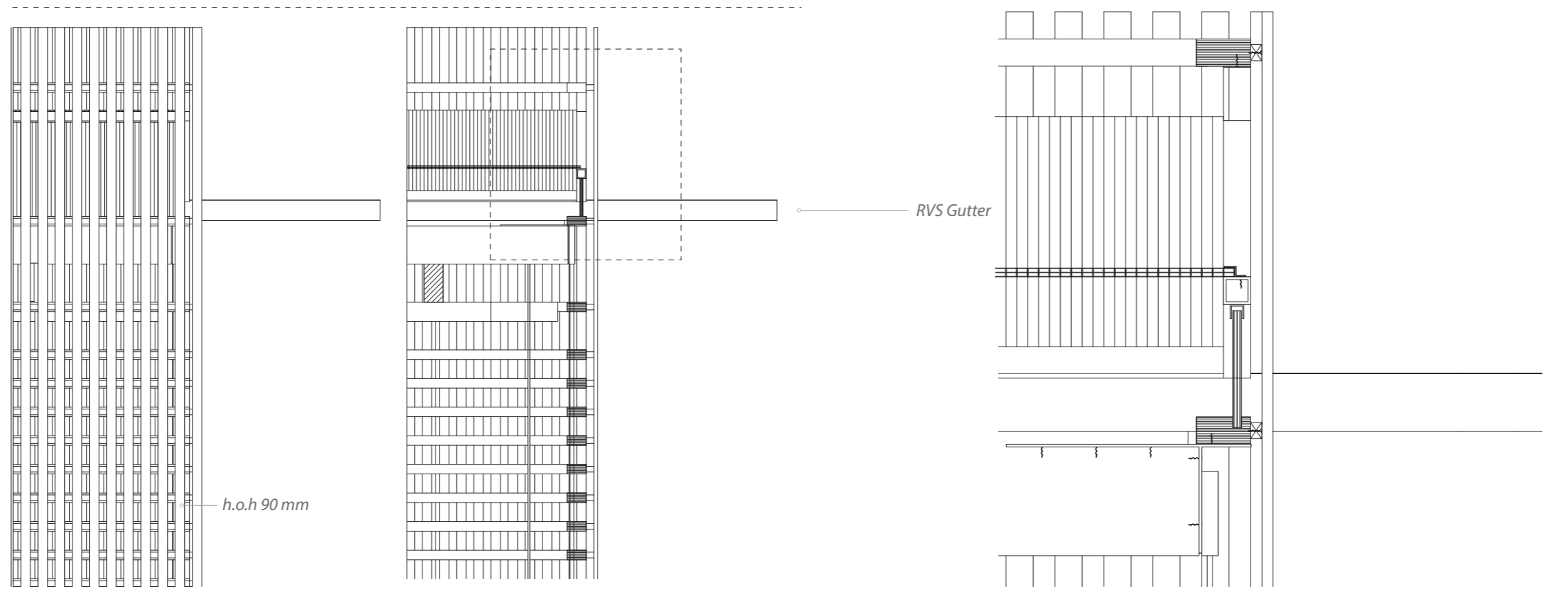
Section of facade 1:50

DESIGN | SPA PAVILION



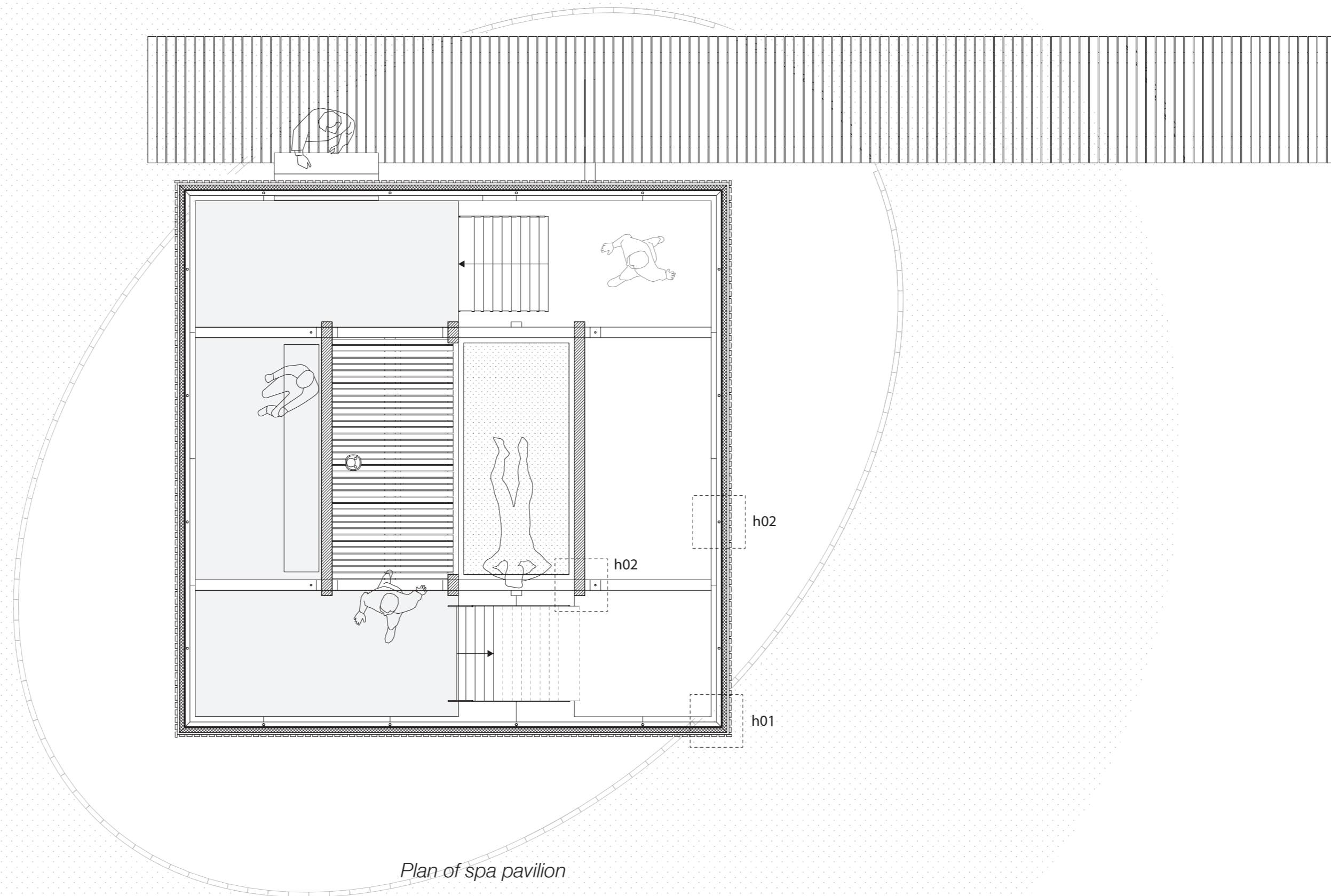
Section of facade 1:20

DESIGN | SPA PAVILION



details v03 and v05

DESIGN | SPA PAVILION



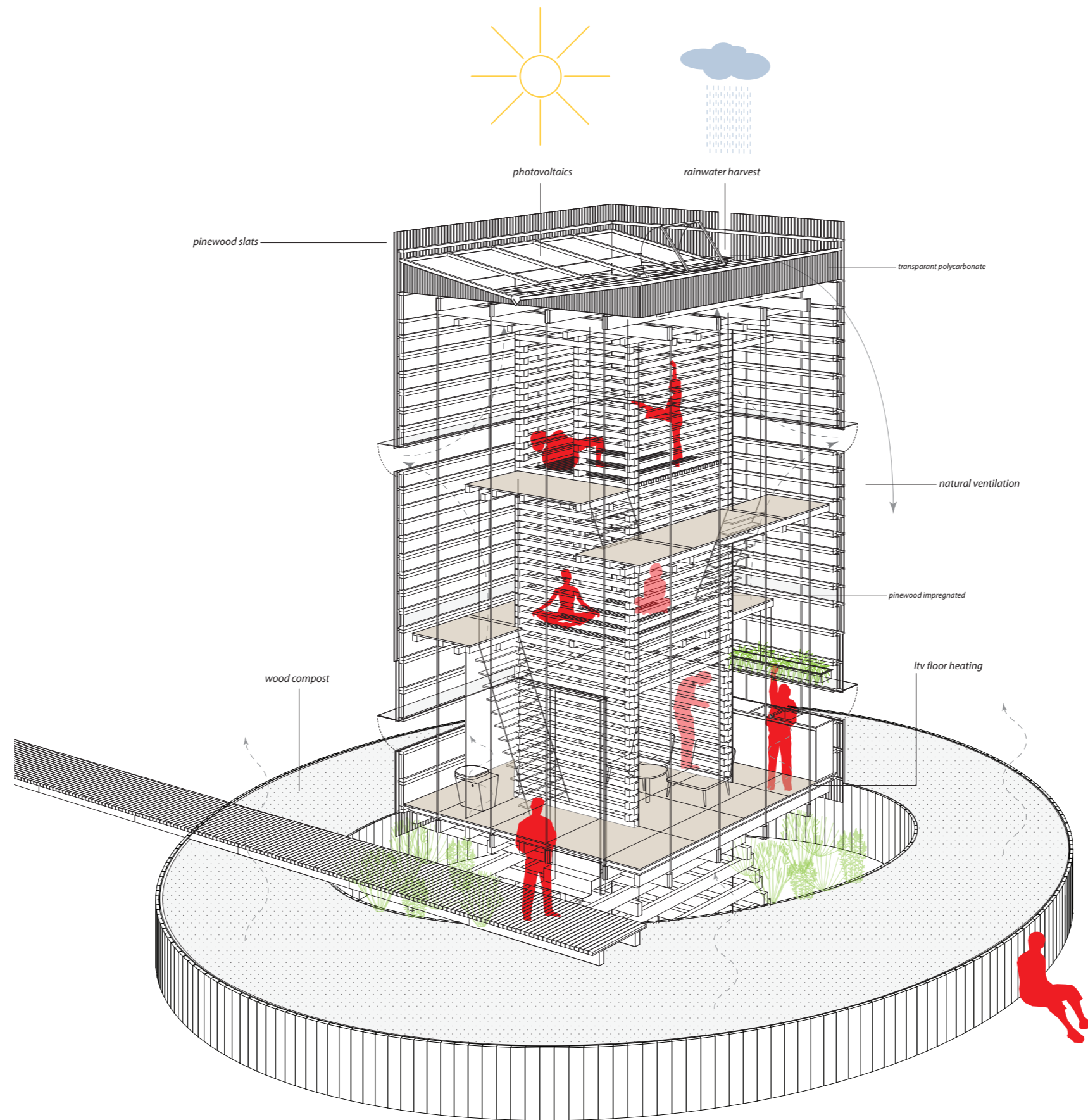
Plan of spa pavilion

DESIGN | MEDITATION PAVILION



Meditation pavilion in landscape

DESIGN | MEDITATION PAVILION



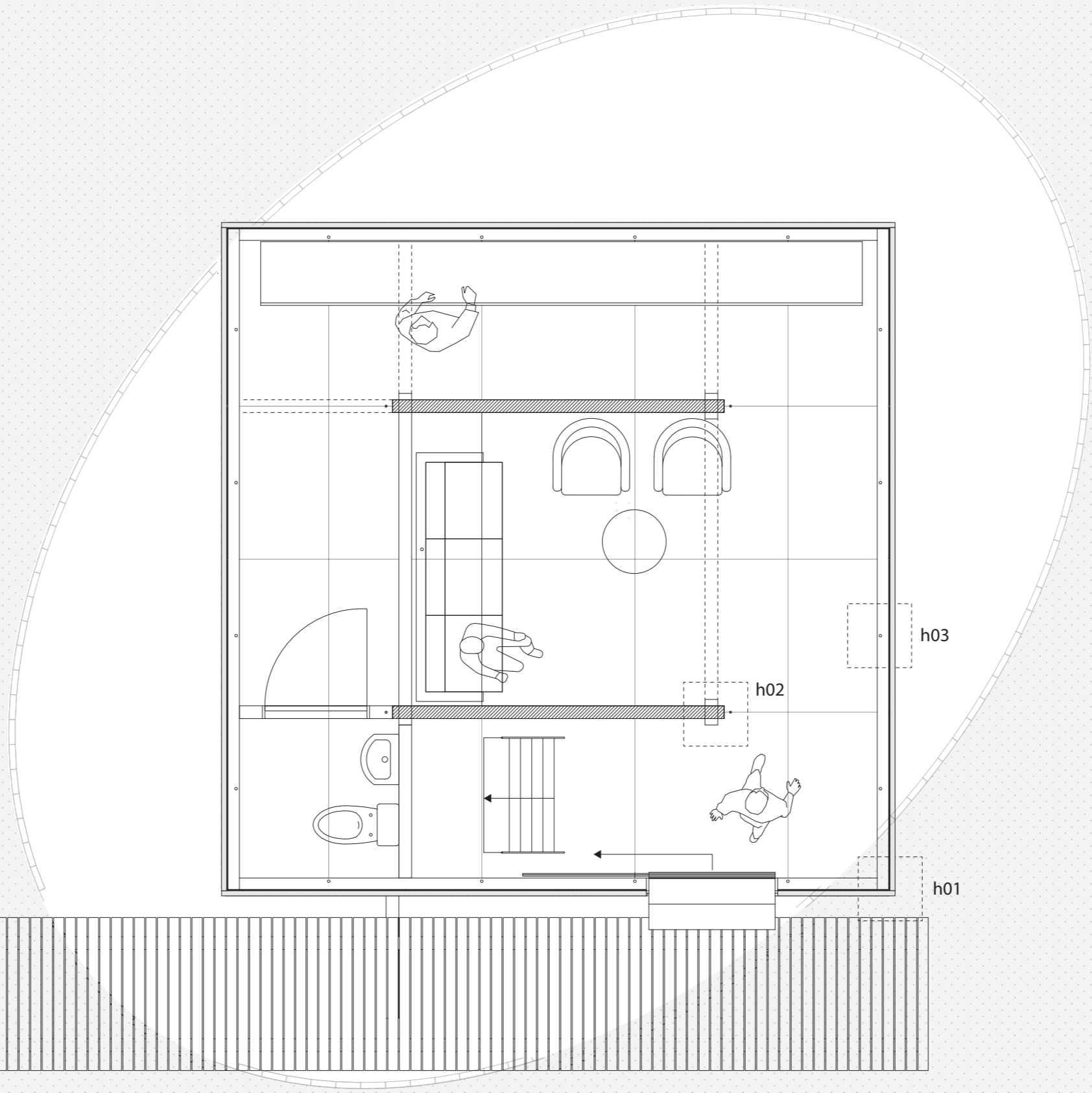
Program of meditation pavilion

DESIGN | MEDITATION PAVILION



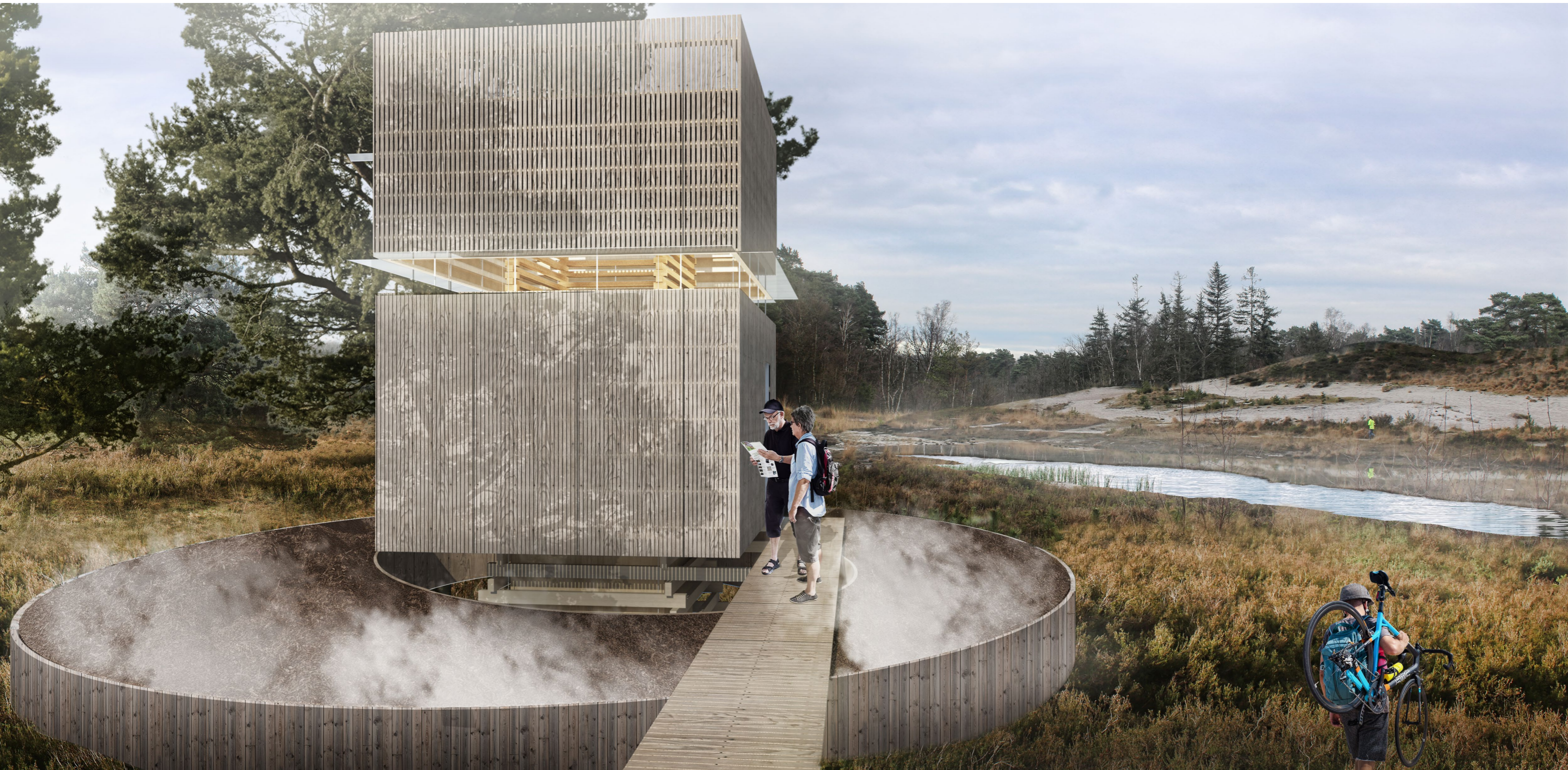
Use of pantry of the meditation pavilion

DESIGN | MEDITATION PAVILION



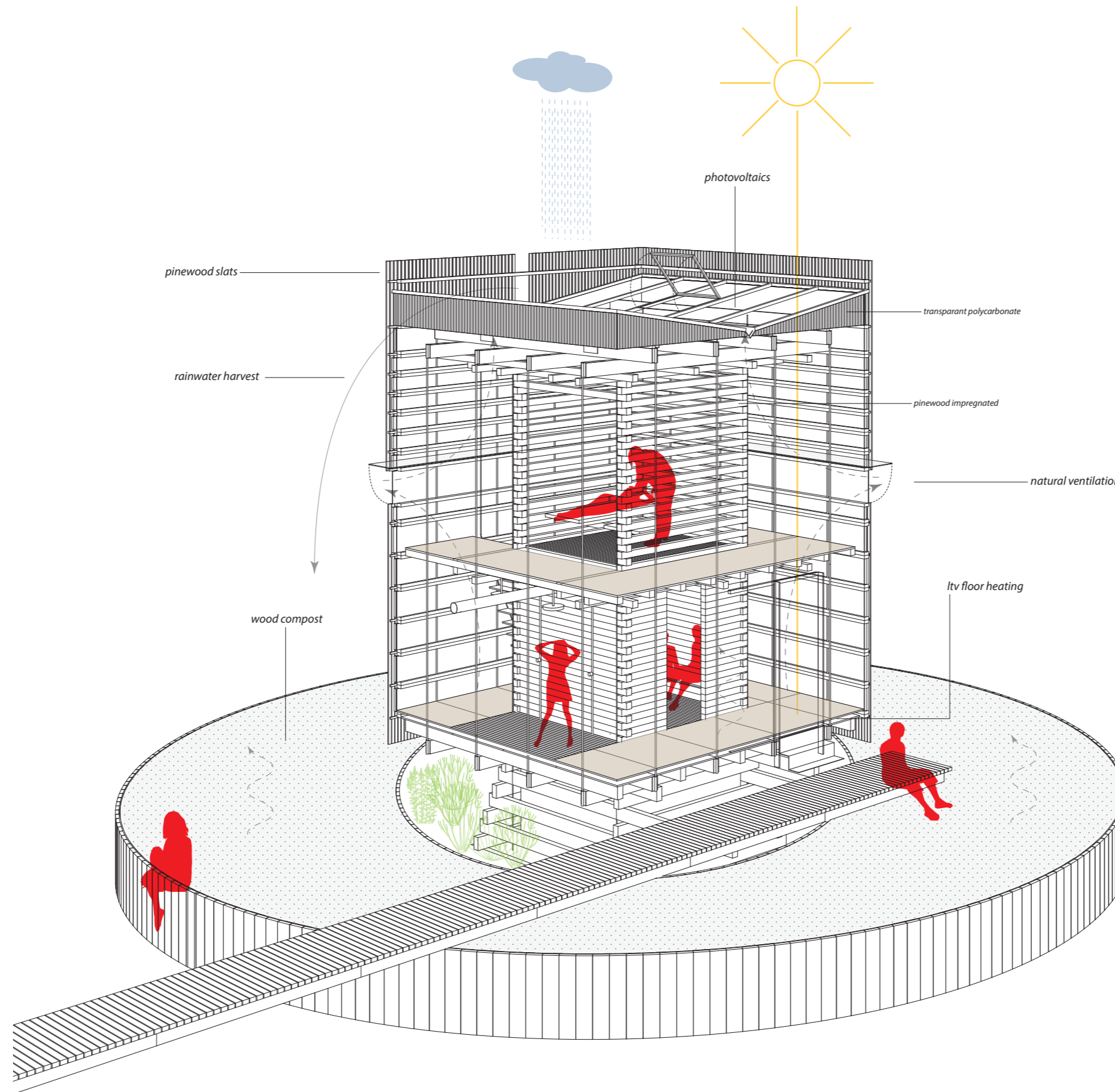
Plan of meditation pavilion

DESIGN | TREATMENT PAVILION



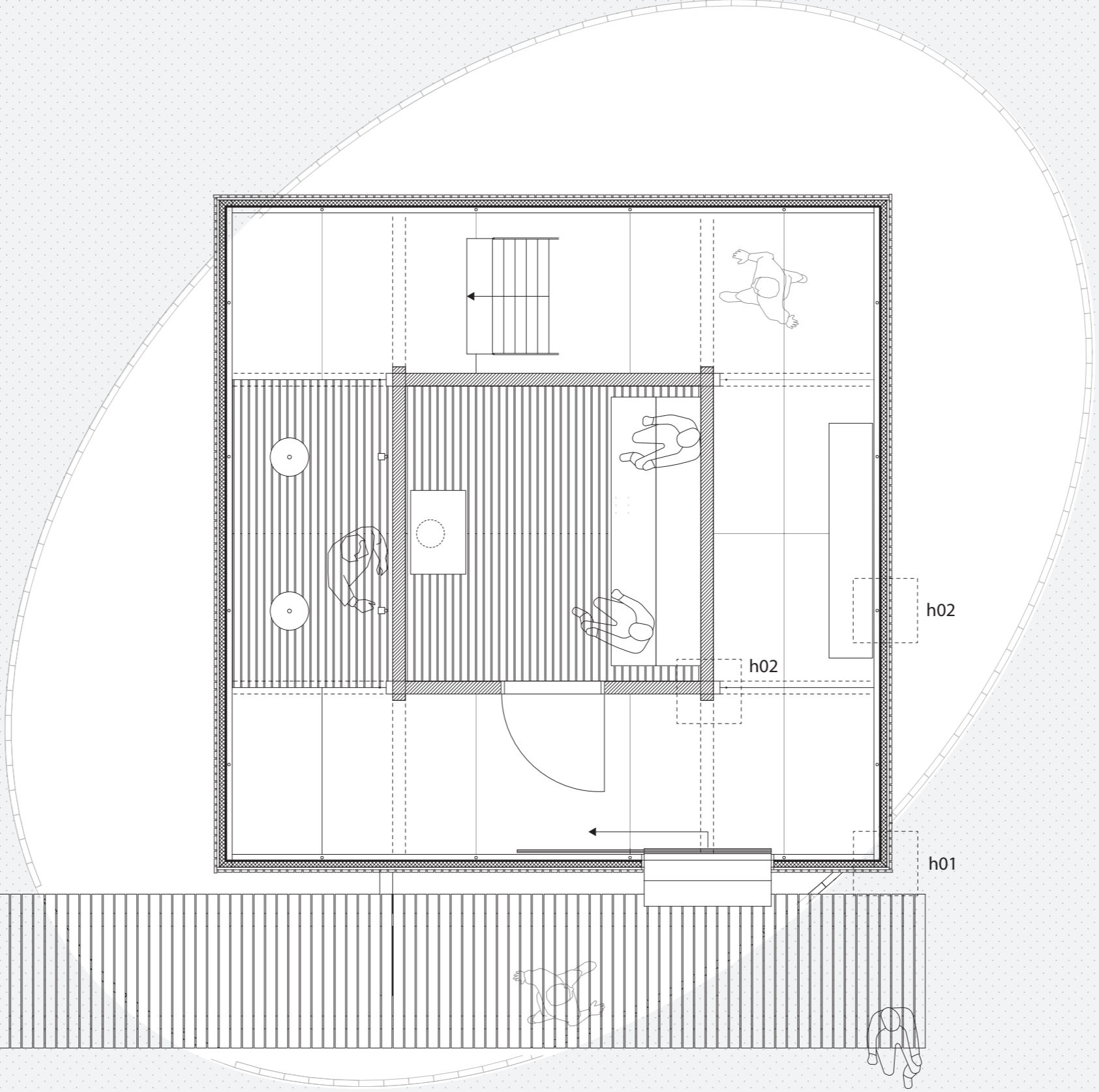
Entrance of treatment pavilion

DESIGN | TREATMENT PAVILION



Program of treatment pavilion

DESIGN | TREATMENT PAVILION



Plan of treatment pavilion

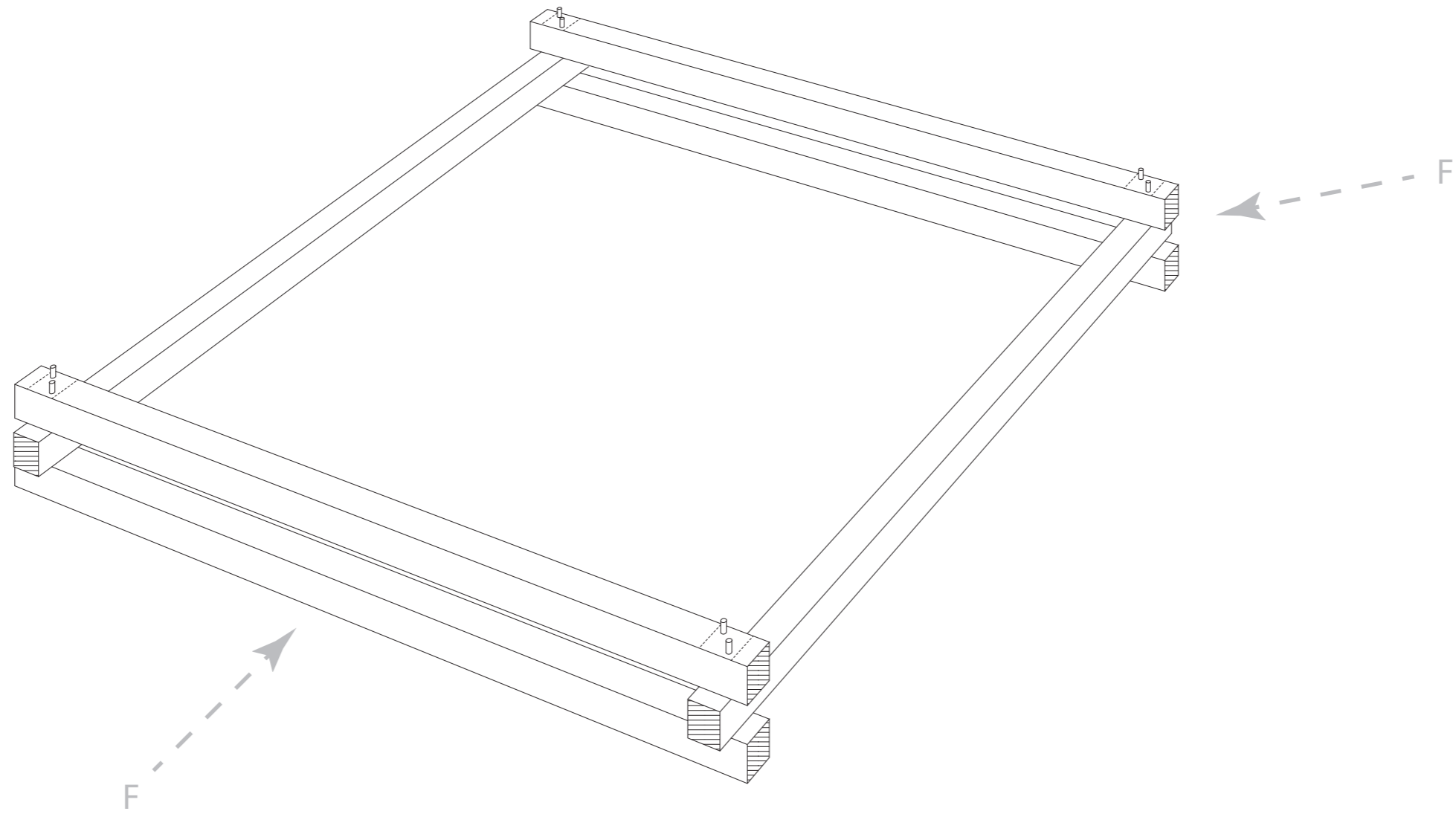
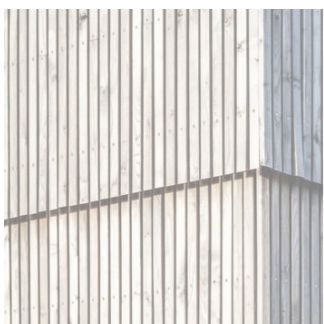
DESIGN | TREATMENT PAVILION



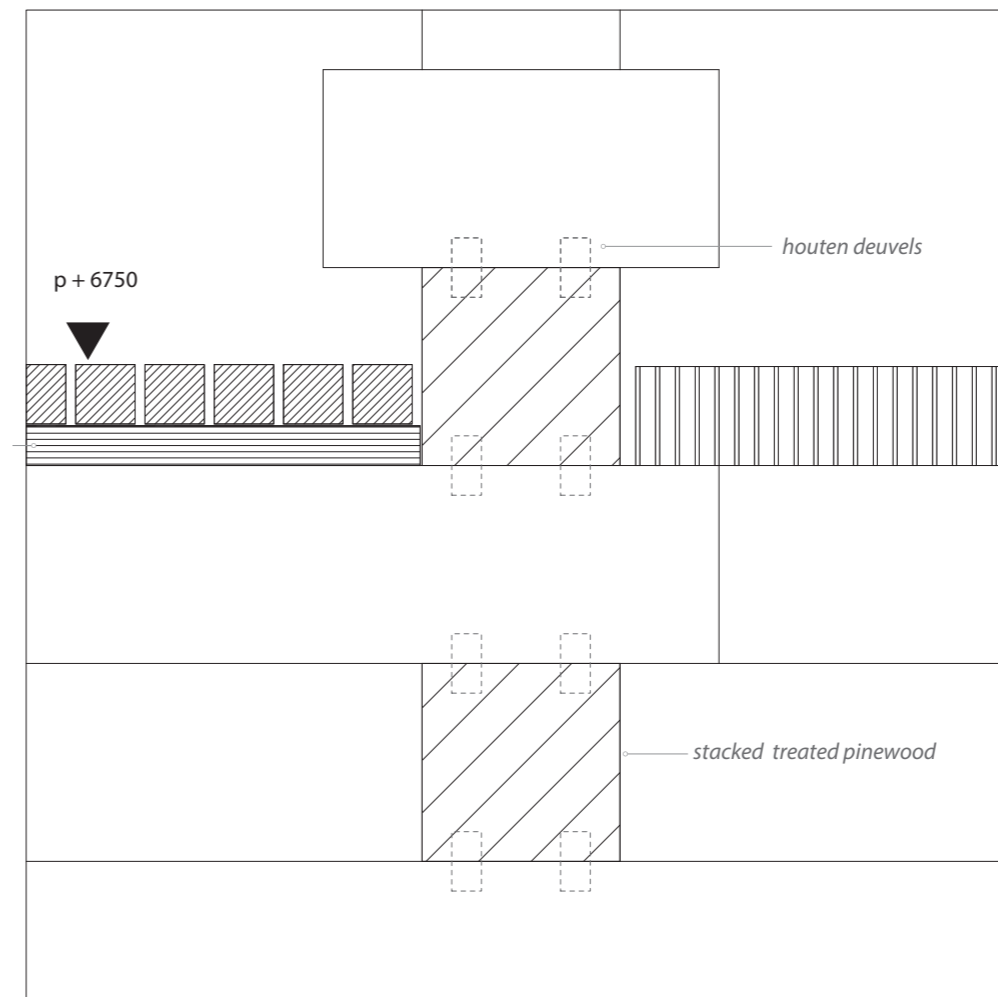
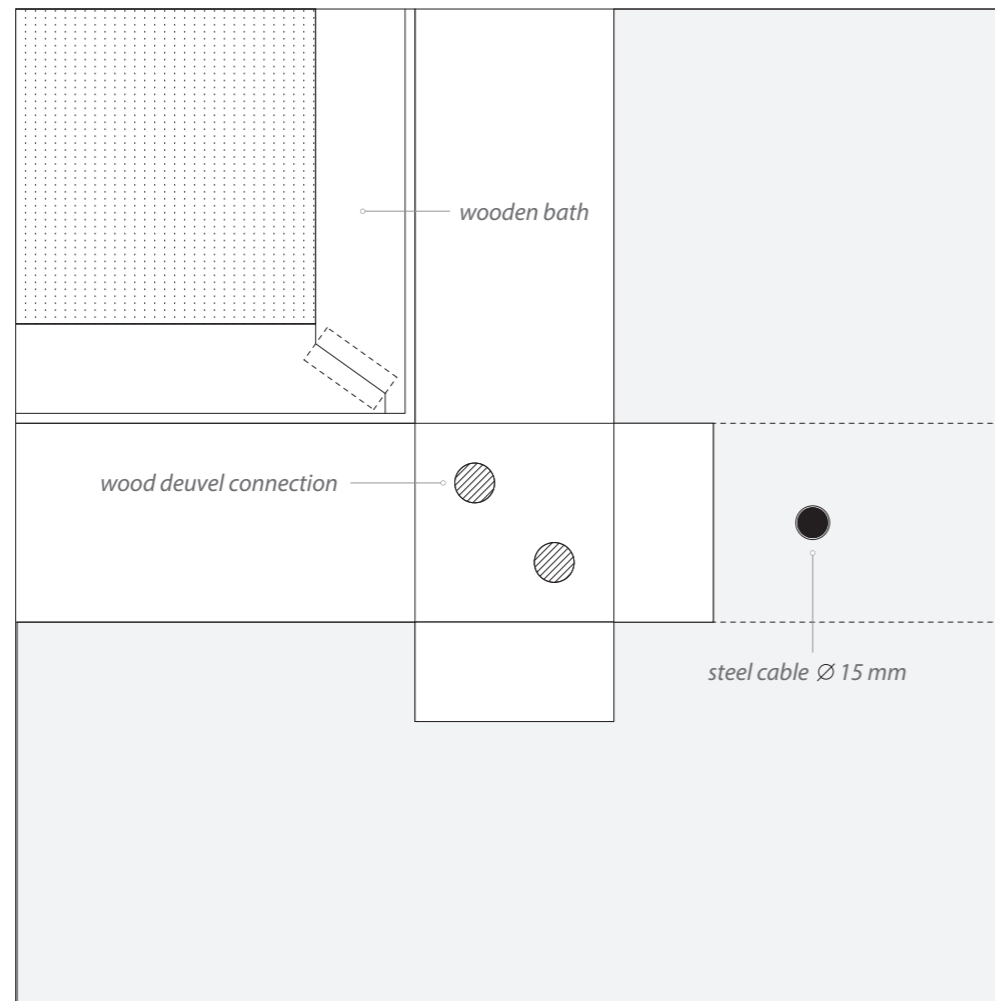
Interior of treatment pavilion

BUILD

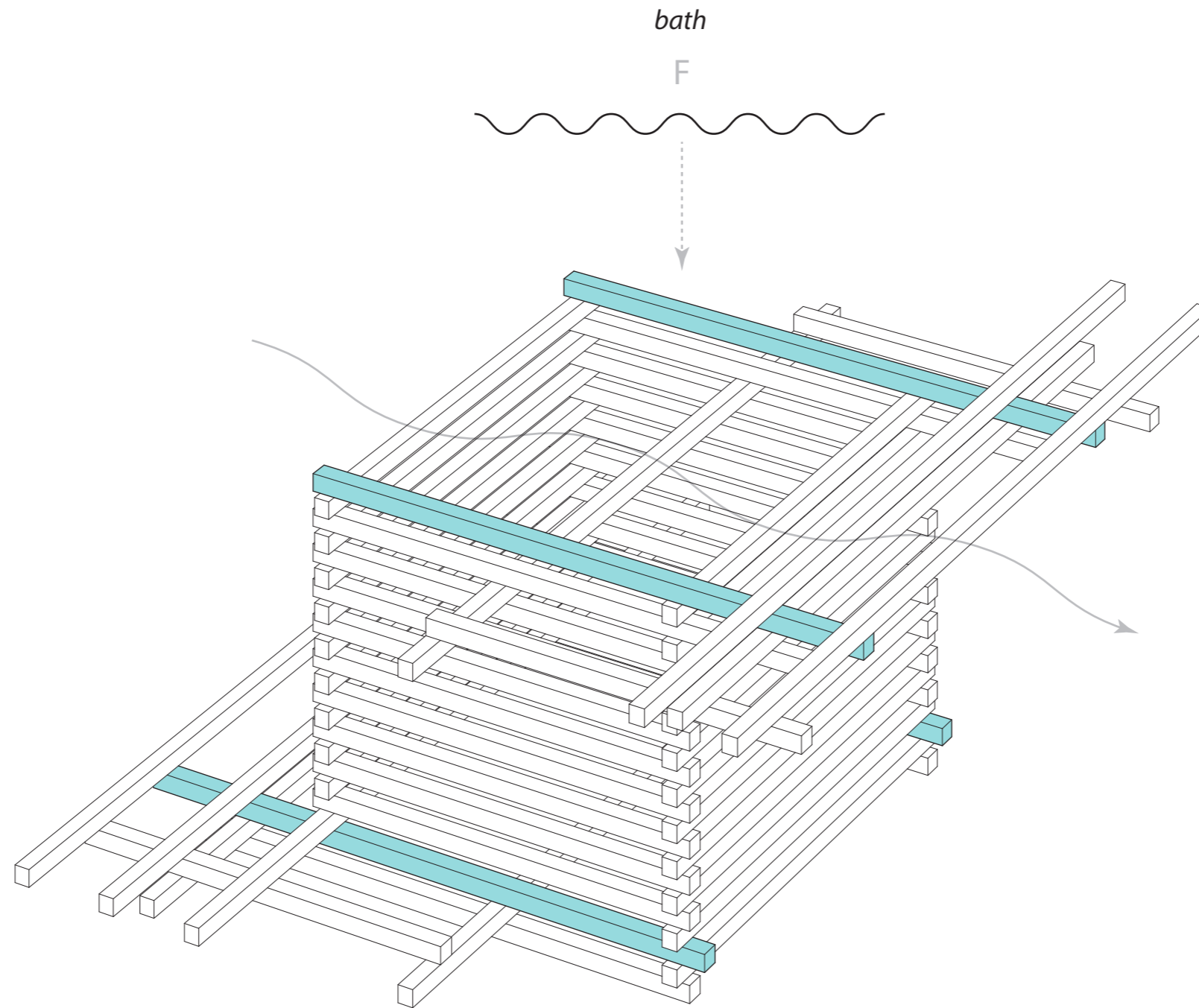
BUILD | CONSTRUCTION



Stacking wood

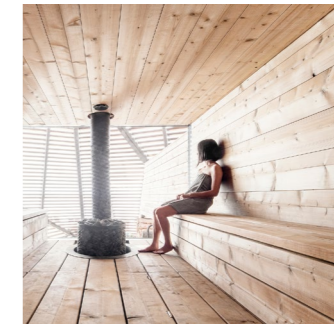
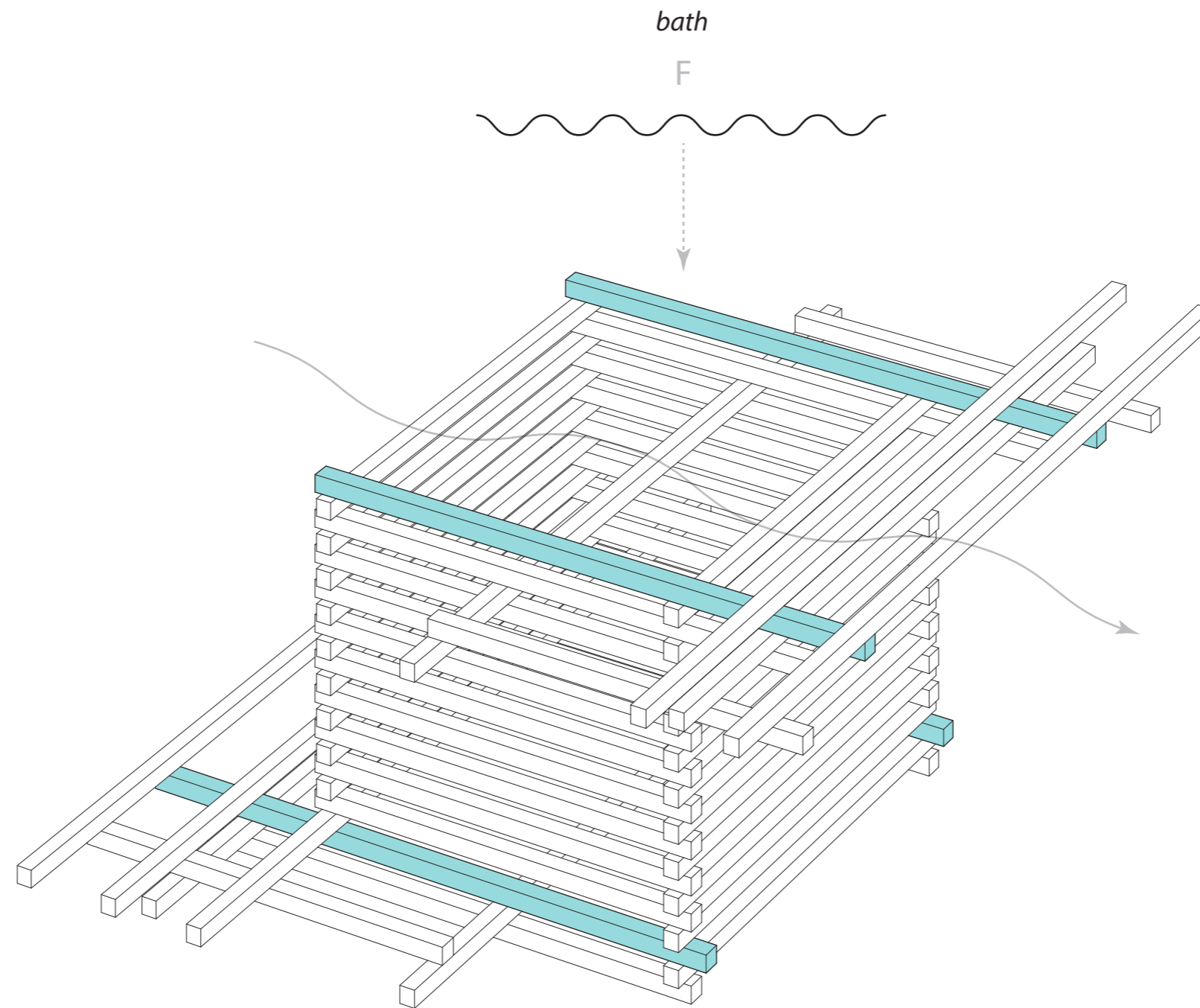
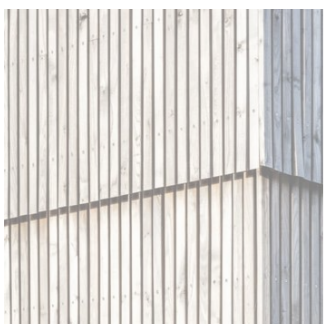


BUILD | CONSTRUCTION



Stacking wood

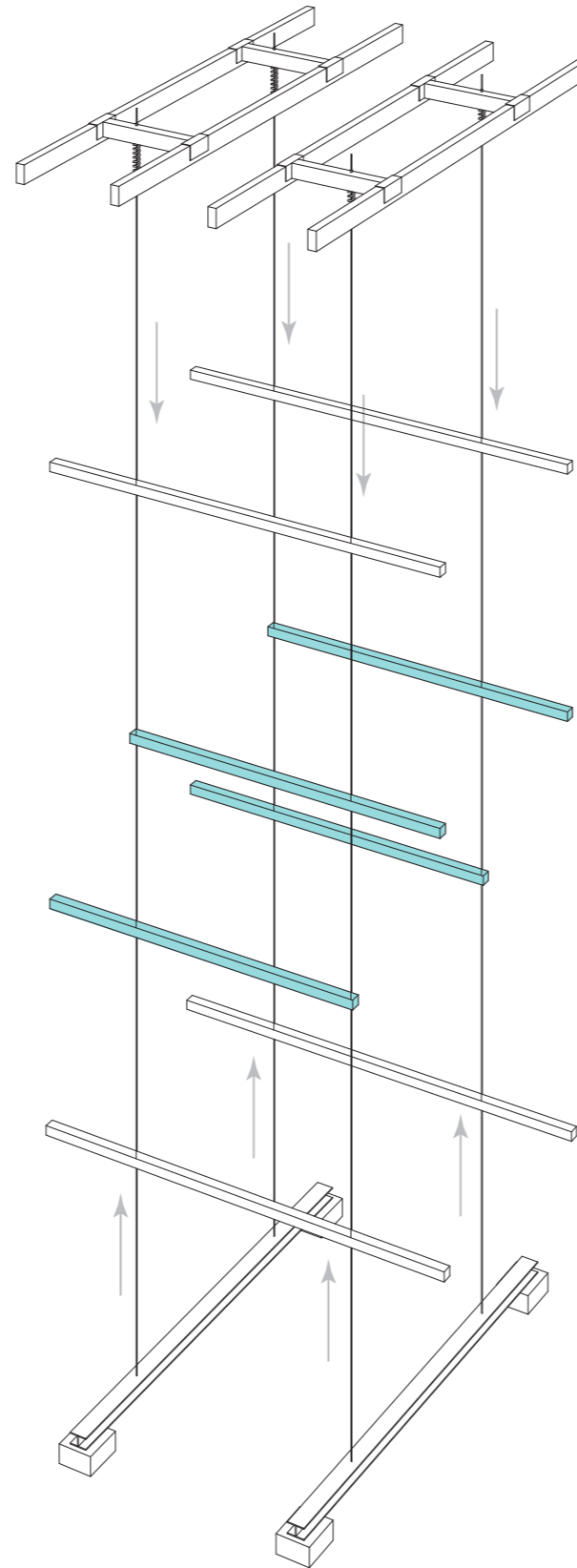
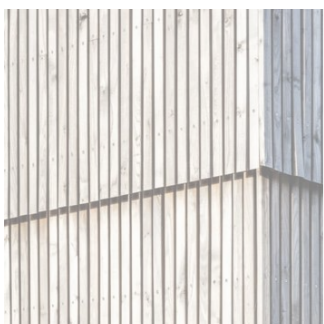
BUILD | CONSTRUCTION



*naaldhout
weinig krimp en zwellung - niet
splinteren - langzaam opwarmen*

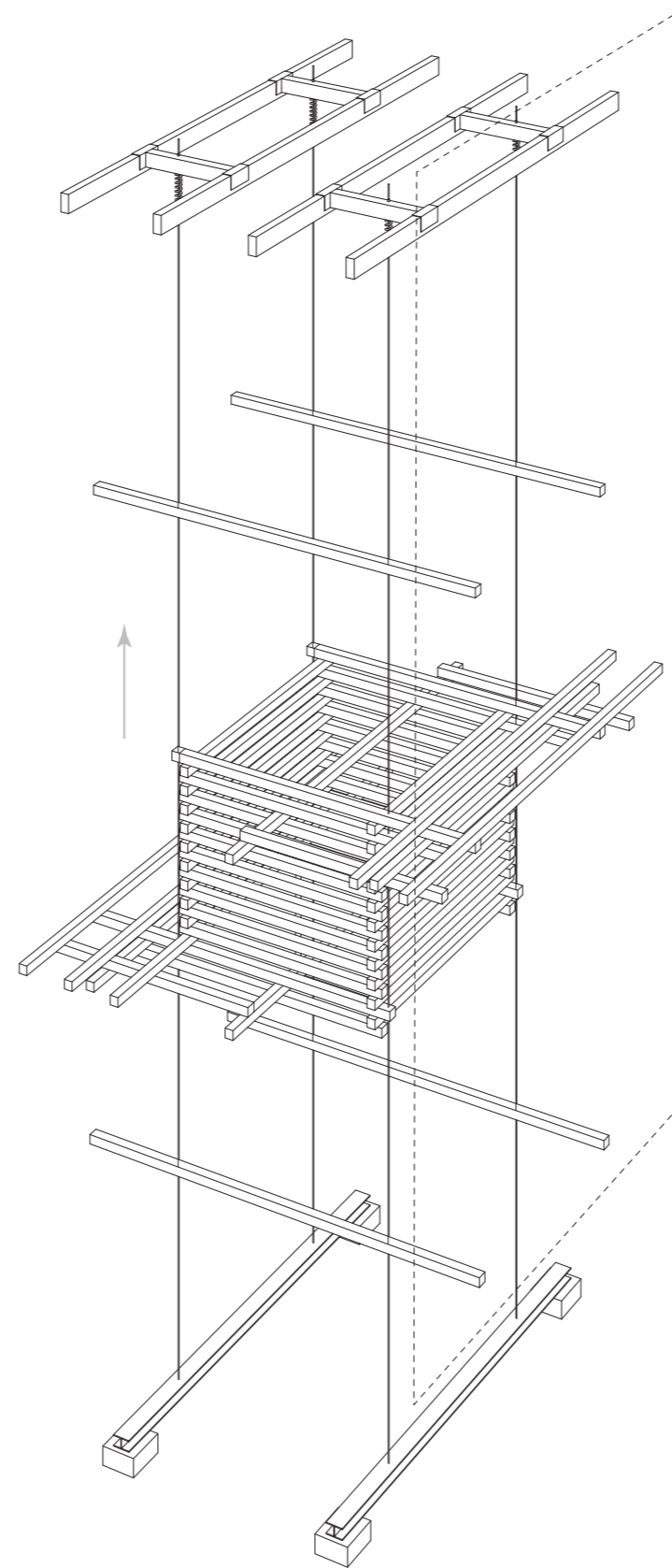
Stacking wood

BUILD | CONSTRUCTION



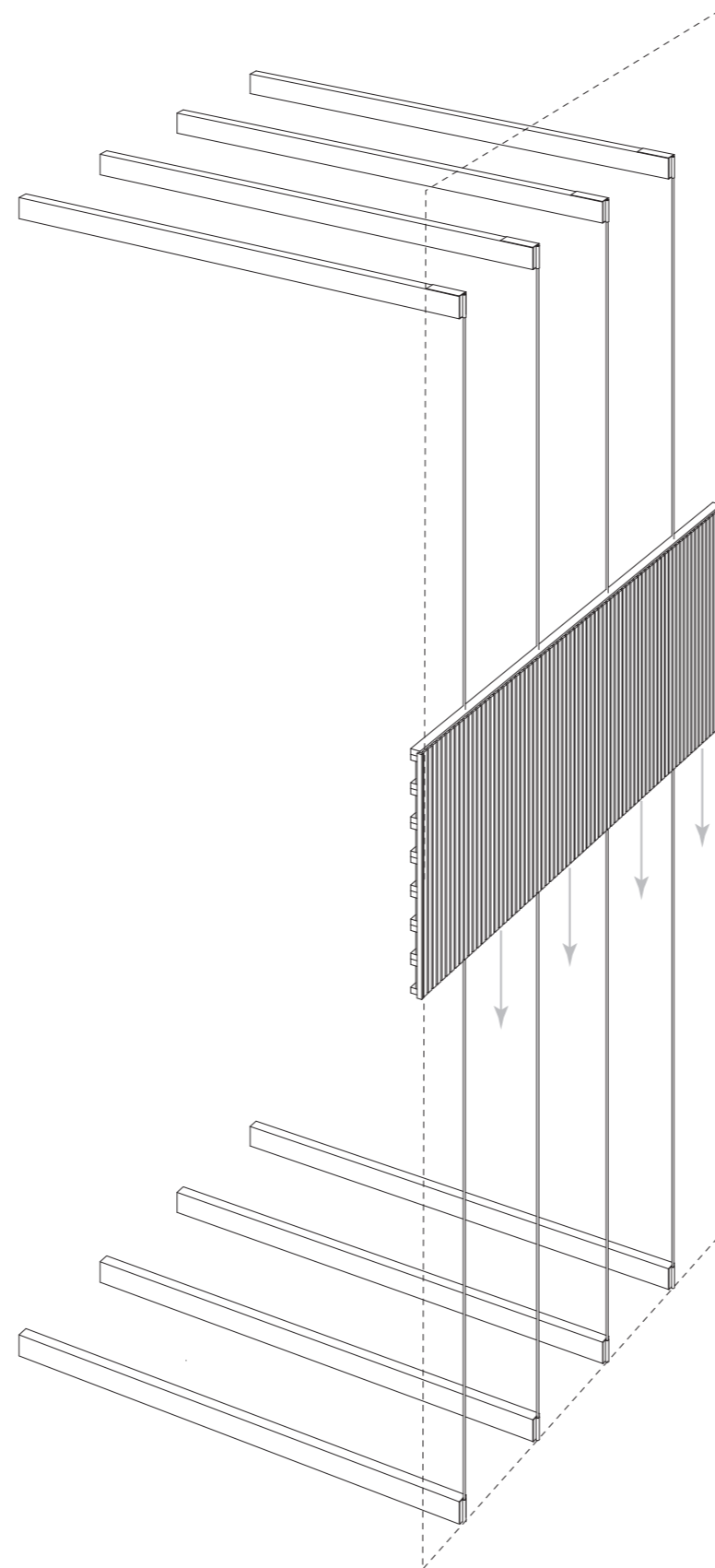
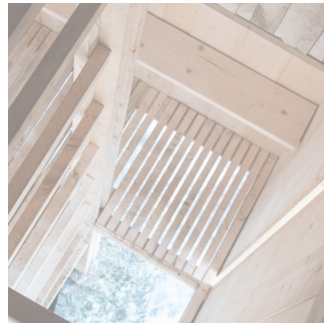
Stacking wood

BUILD | CONSTRUCTION



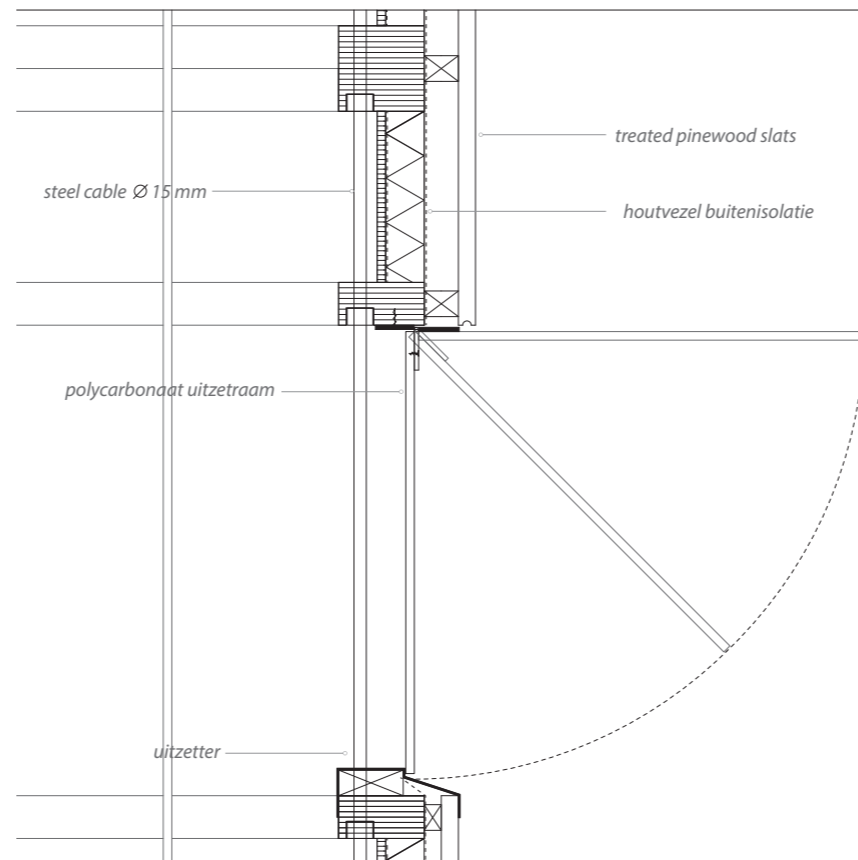
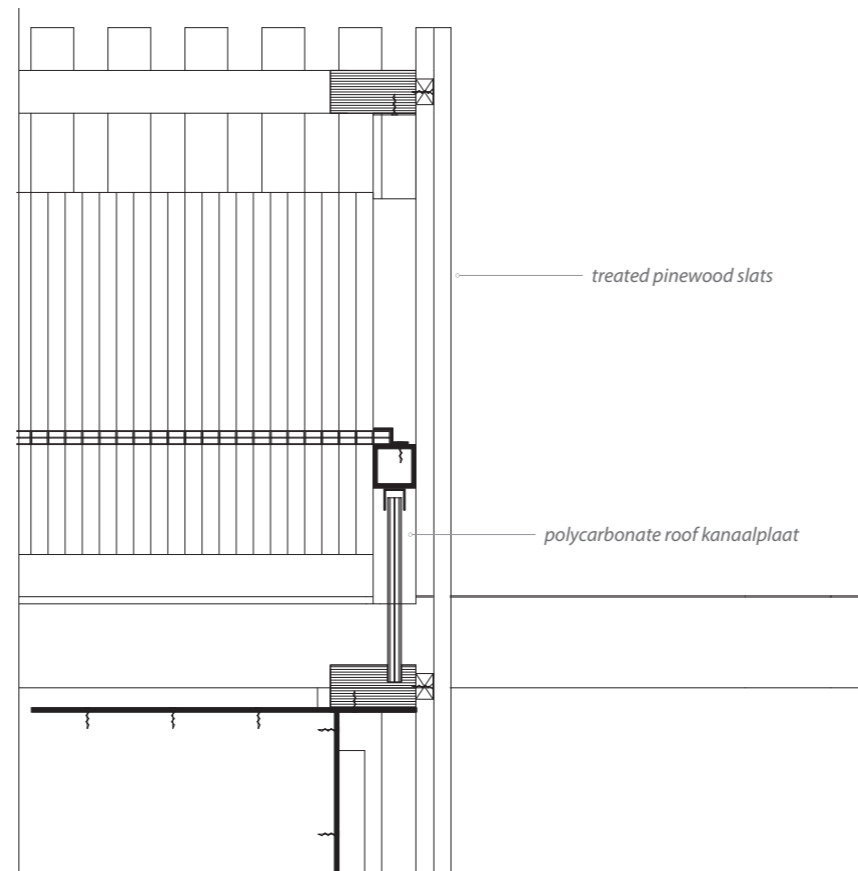
Stacking wood

BUILD | CONSTRUCTION



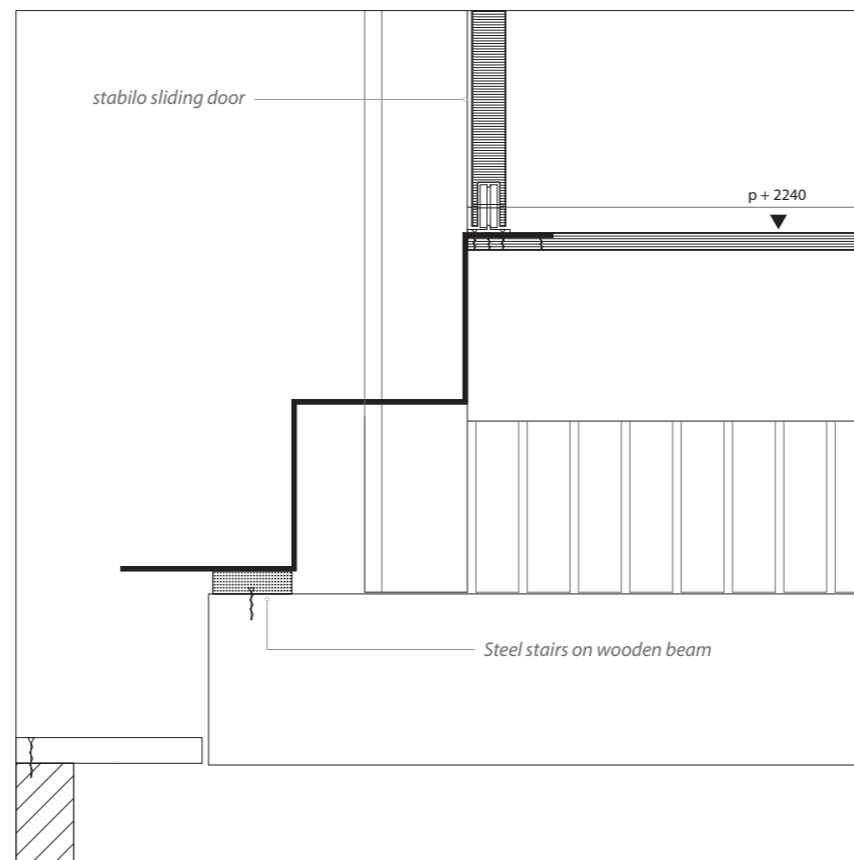
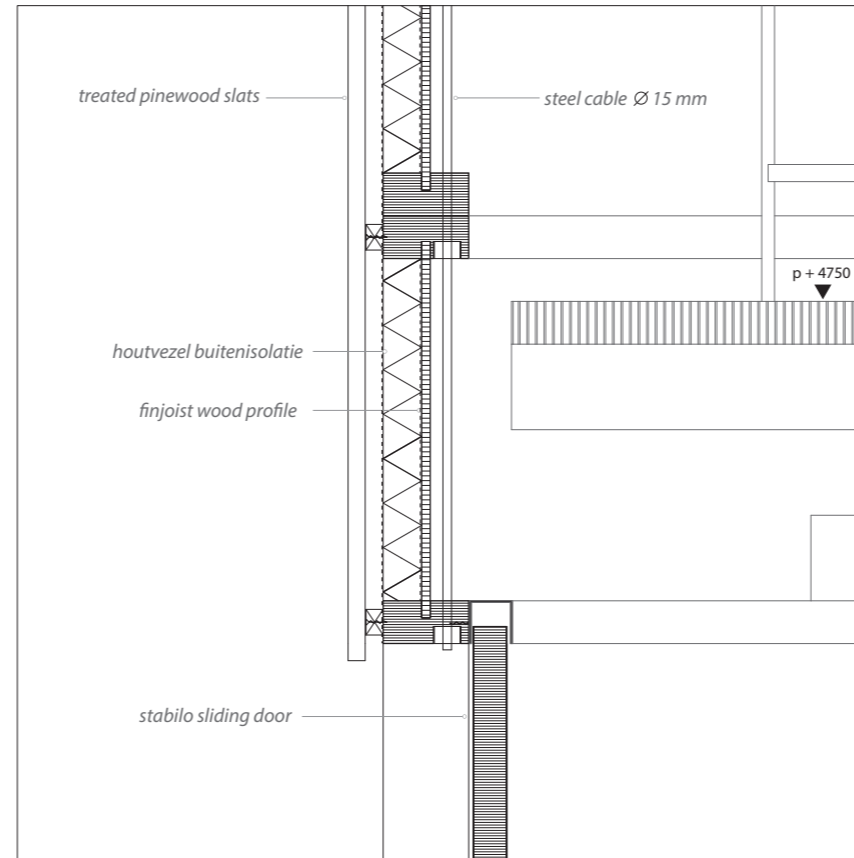
Stacking wood

DESIGN | SPA PAVILION

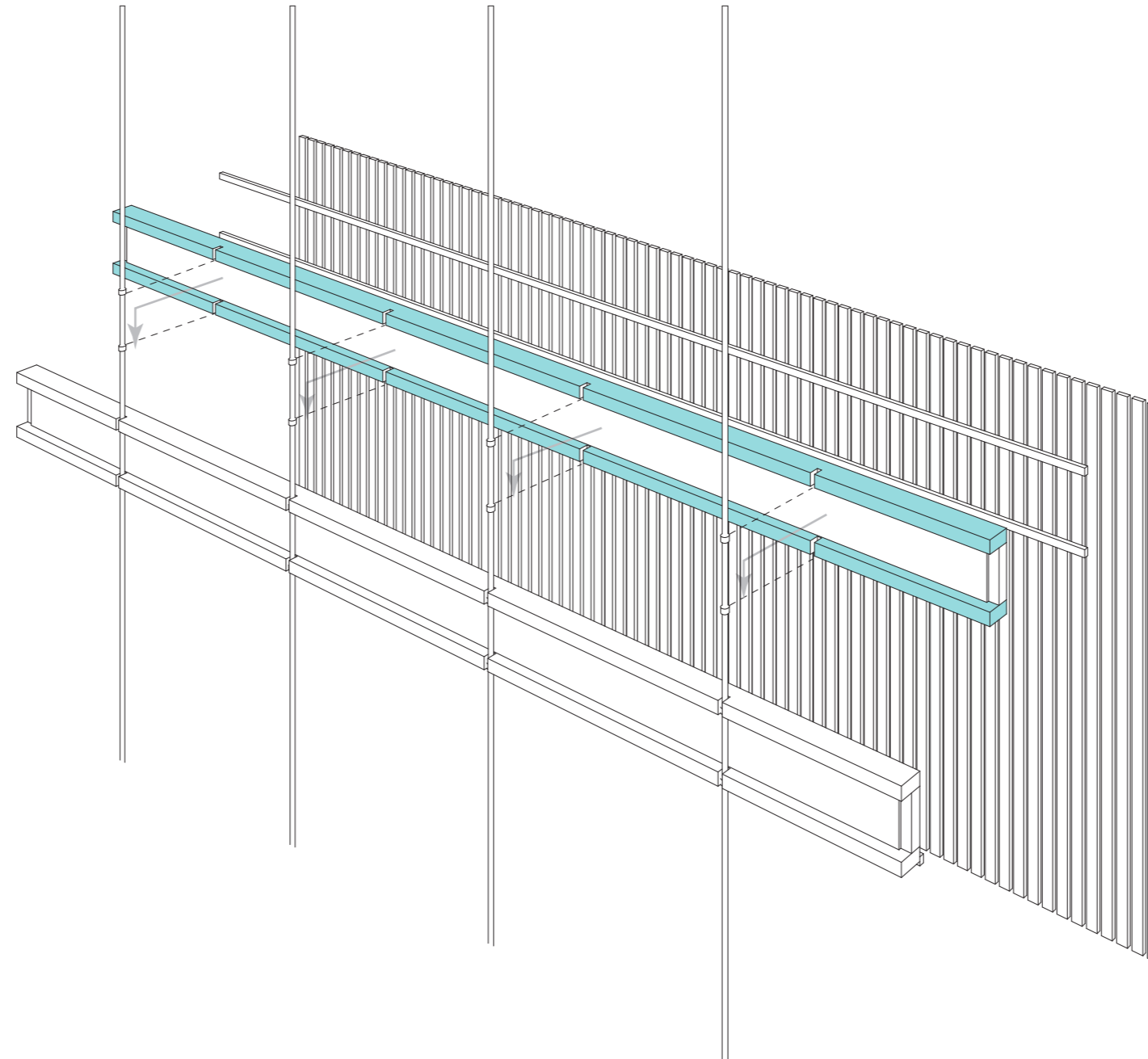
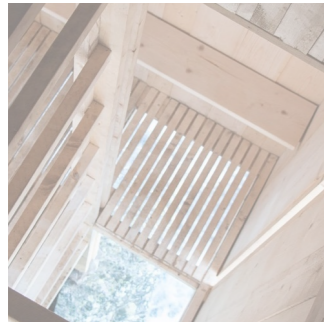


details v03 and v05

DESIGN | SPA PAVILION

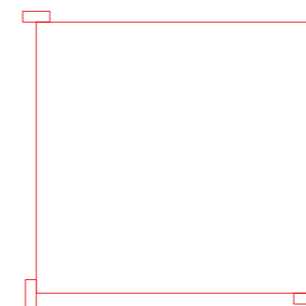
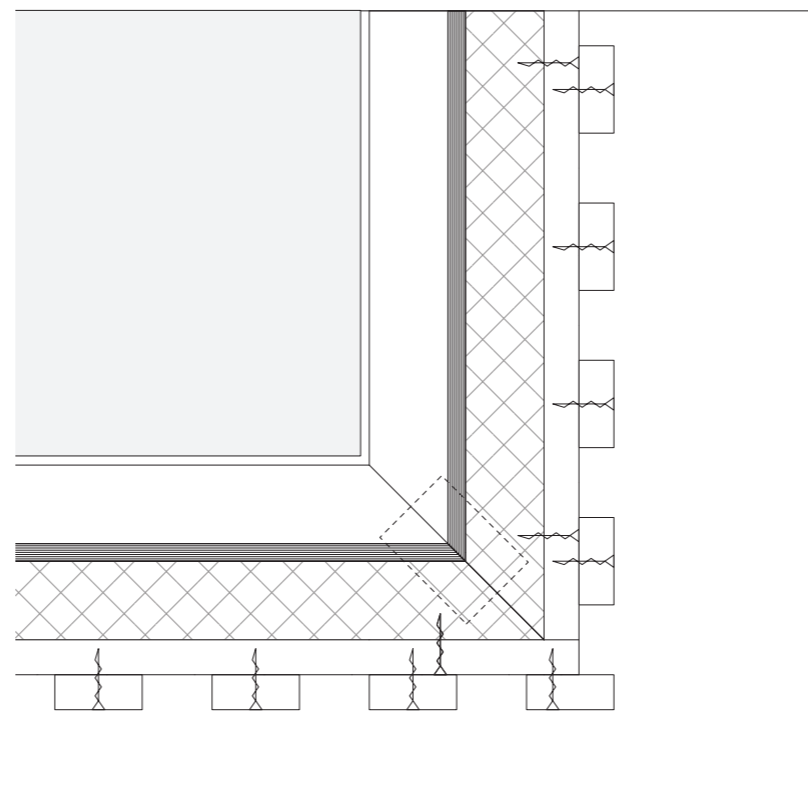
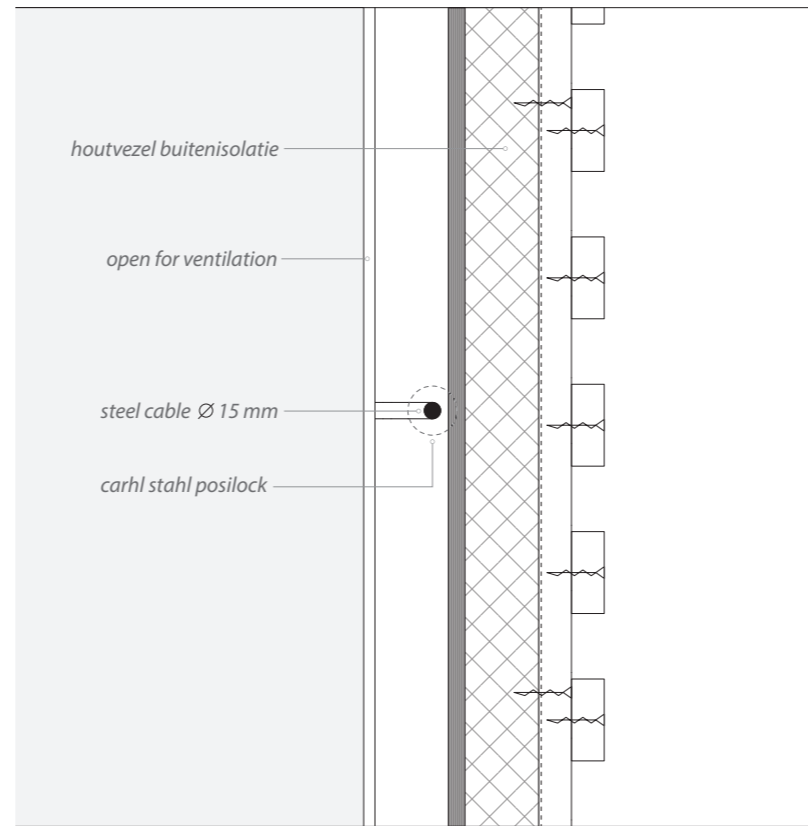


details v01 and v02



*Van stamresten naaldhout
mogelijk om zonder damprem te
werken - verspreid damp in vezels
- volledig recyclebaar*

Stacking wood



detail h01 & h02

SUMMARY AND CONCLUSION

SUMMARY AND CONCLUSION

*How can **local materials** be utilized at the Brunssummerheide and which spatial and architectural requirements does this set for the reintroduction of a **recreation place**?*



*A **lowtech approach** and **demonstration** of using **biomass** from the forest for energy and using the **pine trees** to build*



(1) Alternative plan for large scale recreation plans adjacent to the brunssummerheide

(2) Addition to existing recreation at the Rode Beek

(3) Lowtech approach in a fragile landscape

EINDE



EINDE

