Mental Health Center Hembrug

Revitalizing Hembrug, to revitalize society

Project Documentation
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Introduction

This project documentation is a collection of drawings and visualisations on the graduation project ‘Mental Health Centre Hembrug’. The graduation project is focused on a transformation of industrial heritage in Campus North in Hembrug, a former closed-off military production terrain on a peninsula in Zaandam.

For a long time the terrain was used by the Artellerie-Inrichtingen for the production and manufacturing of weapons and ammunition for the Dutch army. After the companies left the area, the area became vacant and nature took over the area. Now it is an oasis of rest where time has been standing still. The area is located in the metropolitan area of Amsterdam with Zaandam and Haarlem on the other side. This is an area where people are mentally and physically suffering under a lot of stress and pressure which resulting in overstraining, depressions and burnouts. At the moment new developments are started to reconnect this former closed off area with the city. For a lot of buildings there is still no future plan. Some of them are in temporary use and others are already transformed. Campus North is located near the new entrance of Hembrug. This part of Hembrug is located on the border between the open campus of the terrain and the forest.

The assignment for the graduation project is a transformation for the ensemble Campus North and consisting of: two buildings, building 8 ‘the weapon depot’ and building 320 ‘the machine hall’, an open space in front of building 8 including the old Foundation of building 309, ‘storage and canteen’ and a piece of forest next to building 320 including there surrounding. For both buildings there is still no permanent function.

In the graduation project the ensemble is transformed into a GGZ complex where people can be treated and residence who suffer from stress, burnout and depression. The machine hall will get the new function of a treatment centre combined with a small theatre and the weapon depot will be transformed into an open residential community. On the terrain there will also be a closed residential community and a gym realized in new buildings.
Hembrug

Campus North

Shared public space

Forest edge

Structure
Hembrug
Amsterdam metropolitan area 1:200,000
Campus North

Hembrug 1:8000
Forest Pavilions
Plan 1:50
Forest Pavilions

Section 1:20
Building 8

Weapon Depot

Orientation over time  Facades and rhythm  Skylight and structure
Weapon Depot

Concept

Original orientation 1899

First redesign 1950

Interior North-South reconnection

Program

Facilities
Weapon Depot
Site 1:500
Weapon Depot

Ground floor 1:200
Weapon Depot
First floor existing and demolition 1:200
Weapon Depot
North elevation 1:100
Weapon Depot
South elevation 1:100
Weapon Depot

Section existing and demolition 1:100
Weapon Depot

Section 1:100
Building 320
Machine hall
Machine Hall

Concept

Removing the annexes

Creating new entrances

Connect the halls

Routing

Meeting spaces

Entrance halls

Theatre

Functional plan

Space dividing

Installations

Practical execution
Machine Hall
Ground floor existing and demolition 1:200
Machine Hall
First floor 1:200
Machine Hall
South Elevation existing and demolition 1:200
Machine Hall
South elevation 1:200
Machine Hall

East elevation existing and demolition 1:200
Machine Hall

East elevation 1:200
Machine Hall

North elevation existing and demolition 1:200
Machine Hall
North elevation 1:200
Machine Hall
West elevation existing and demolition 1:200
Machine Hall
West elevation 1:200
Machine Hall
Section North-South 1:200
Machine Hall
Section East-West 1:100

East
Machine Hall
Section entrance facade 1:20

Left side:
Shutters open

Right side:
Shutters closed
Machine Hall
Ground floor 1:100
Therapy room
Machine Hall
Horizontal section 1:20
Therapy room
Machine Hall

Detail 1:5
Window
West facade
Bottom

Steel window frame
Float glas 4mm
Putty

Steel window frame
Steel profile UNP 120

Brickwork 100mm
Cavity wall 70 mm
Brickwork 100 mm

Concrete 30 mm

Steel pipe column
Ø 50 mm

Concrete 30 mm

Double-glazing
6-18-6 mm

Steel pipe column
Ø 50 mm

Concrete foundation 200 mm
Water proofing membrane
Drainage system 60 mm
Insulation board 25 mm
Substrate 400 mm
Concrete 30 mm
Conical 1 mm
Concrete footing 200 mm

Steel window frame
Steel profile UNP 120

Brickwork 100mm
Blown cavity wall
Insulation 70 mm
Brickwork 100 mm
Insulation in framework 100 mm
Plasterboard 12 mm

Concrete 30 mm

Double-glazing
6-18-6 mm

Steel window frame
Steel window frame
Steel window frame

Steel mounting and adjusting profile

Aluminum rear window
Sealant
Prefab wooden frame
90 x 50 mm
Steel mounting profile
120 x 50 mm

Steel mounting profile
12

Round steel base plate bolted
Round steel foot plate bolted
Rubber spacer
Milled notch
Steel wire clamp
Wire rope thimble

Cavity 40 mm
Lattice girder
50 x 50 mm

3500 < h < 4500

Insulated spacer
Plastic rail profile
Cavity 40 mm

Prefab wooden frame
130

Concrete 200 mm
Leveling screed 30 mm
Coated floating screed

Stabilization column Finishing plate glued
Clamp

Sound-insulating glass wall
Sound-insulated seal
Wooden bottom rail bolted

Gravel 200 mm
Membrane 2 x 1 mm
Prefab insulation panel
Wooden cladding 50 mm
Retaining wall 2 mm

Lowered ceiling 188 mm
Concrete 200 mm
Substrate 300 mm

18812 200
100
3000
3000
30
50 50 50
50 125050
50

Beam layer  50 mm

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Machine Hall

Detail 1:5
Window
West facade
Top

Brickwork 100mm
Cavity wall 70 mm
Brickwork 100 mm
Steel profile UNP 120
Steel window frame
Turning mechanism
Putty

Float glass 4mm

Steel pipe column
Ø 50 mm

Current

Brickwork 100mm
Blown cavity wall insulation 70 mm
Brickwork 100 mm
Insulation in framework 100 mm
Plasterboard 12 mm
Steel profile UNP 120
Steel window frame
Turning mechanism
Putty

Float glass 4mm

Steel pipe column
Ø 50 mm

Double-glazing
6-18-6 mm

New
Machine Hall
Section eaves 1:20
Machine Hall

Detail 1:5
Therapy rooms
Interior wall
Machine Hall

Section piles 1:20
Machine Hall

Detail 1:5

Pile

Bottom beam lattice girder

Cable tensioner

Steel cable Ø 4 mm

Steel wire clamp

Wire rope thimble

Eye anchor

Wooden pole Ø 150 mm

Coated floating screed with floor heating 50 mm

Insulation board 25 mm

Levelling screed 30 mm

Concrete foundation 200 mm

Milled notch

Steel threaded rod welded

Round steel foot plate bolted

Round steel base plate bolted

Rubber spacer
Machine Hall

Detail 1:5
Planter

- Plastic clamp
- Hidden bolt
- Optigroen system
- Filter fabric 1 mm
- Water proofing membrane 2 x 1 mm
- Galvanized steel retaining wall 2 mm
- Stainless steel edge profile 2 mm
- Spacer 45 mm
- Insulated spacer

Substrate 400 mm
Filter fabric 1 mm
Drainage system 60 mm
Water proofing membrane
2 x 1 mm
Insulation board 25 mm
Leveling screed 30 mm
Concrete foundation 200 mm

Coated floating screed
with floor heating 50 mm
Insulation board 25 mm
Leveling screed 30 mm
Concrete foundation 200 mm
Machine Hall Construction

Exploded views
Machine Hall Construction

Construction 1:300
Foundation
Machine Hall Construction

Construction 1:300
First floor
Machine Hall Construction
Construction 1:300
Second floor
Machine Hall Construction

Construction 1:200
Section East-West
Machine Hall Climate

Climate summer
Day
Machine Hall Climate

Climate winter
Day
Machine Hall Climate

Climate winter
Night
Machine Hall Renders

Entrance mental health centre
Slats open
Machine Hall Renders

Entrance mental health centre
Slats closed
Machine Hall Renders

Entrance theatre
Machine Hall Renders

Pavilions
Machine Hall Renders
Foyer mental health centre
Machine Hall Renders

Foyer theatre
Machine Hall Renders

Central space near therapy rooms
Machine Hall Renders
Central space near offices
Machine Hall Renders

Therapy room
Machine Hall Renders

Corridor next to the living rooms
Machine Hall Renders

Main staircase to the green roof
Machine Hall Renders

Reflection
Machine Hall Models

Site model
1/200
Machine Hall Models

Construction and mass

1200
Machine Hall Models

Roof intervention
Daylight model
1:100
Machine Hall Models
Room dividing
Pole model