THE 2050 BIOPHILIC CITY

URBAN GREEN SPACE EFFICIENCY

MSC3 COMPLEX PROJECTS
GRASUATION STUDIO
AMS MID-CITY

MIAOLAN LIN
4613260
THE 2050 BIOPHILIC CITY
AN INSECT-BASED ECOLOGY CENTER

Complex Project
MSc3
Student
Student Number
Tutor
BT Tutor
Examiner
Date

AMS MID-CITY
P5 Presentation
Miaolan Lin
4613260
Olindo Caso
Gilbert Koskamp
Rein Have
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PREFACE

00  PREFACE

01  DESIGN CONTEXT

02  URBAN STRATEGY 2050

03  ARCHITECTURAL DESIGN
PREFACE
HAVENSTAD
AMS MID CITY SITES
Zaanstad Group
Our site located in the southeast of Zaanstad and northwest of Amsterdam, so it is made up of Achtersluispolder and Hembrugterrein area belongs to Zaanstad and other land ownership to Amsterdam.
SITE LINE MAP
Research Area
SITE MAP
Concept Diagram
NINE PROJECTS
Nine Interventions on Site
FLOW DIAGRAM
Ecological flow
DESIGN CONTEXT
The presence of **GREEN**

**Waterfront**

**Mobility & Connection**

Havenstad  
+150,000 population
GREEN SHORTAGE
Not Enough Space for Green

BY 2050 HAVENSTAD
+150,000 population

WORLD HEALTH ORGANIZATION
+1 Habitant    +9 m² Green Space

GREEN SPACE
+150,000 X 9 m² = 1,350,000 m²

5 X Vondelparks
Not Enough Space
SURROUNDING GREEN

City Center Green

Citizens Movement

Surrounding Green
A DENSIFYING CITY - DENSIFIED GREEN SPACE
GREEN EFFICIENCY
RESEARCH QUESTION

HOW TO IMPROVE THE EFFICIENCY OF FUTURE URBAN GREEN SPACE FOR THE 2050 BIOPHILIC CITY OF HAVENSTAD?
URBAN STRATEGY
GREEN SPACE ON THE IJ

How to improve the efficiency of urban green space?

The green challenge is largely a matter of quality rather than quantity for us, which means that making the existing green areas in the city and surrounding countryside more attractive and better suited for people to collectively use and experience them, to meet, play sports and get fit as well as to learn and experience them. And it means ensuring these green spaces contribute to biodiversity and help the city become more climate resilient. The Noorder IJ-plas in our site will become a metropolitan landscape and natural park in 2050: the entire lake and the green strip around it are all about nature, recreation and possibly sport, it is the green lung and infrastructural link between Amsterdam and Zaanstad. A public building as a green intervention or landmark in the IJ-plas is my proposal for project design to give every resident an equal right to get in and use the architecture and experience and learn the nature.
URBAN CONTEXT

GREEN STRUCTURE L --- S
MAIN GREEN STRUCTURE 2050
Continuous Work of Green Spaces
IJ ACROSS GREEN ON SITE
Incontinuous Green Structure
PROJECT SITE
Green Condition on site
THE NOORDER IJ-PLAZ
Green Fragment on the North Side
NOORDER IJ-PLAS COLLAGE
Due to relative peace and location, the area has developed into a unique nature area. The brackish aquatic environment of the lake is unique in the Netherlands, with rare plants and animals like various wreaths and the brackish pisses.
BIODIVERSITY IN NOORDER IJ-PLAS
The Area Left Alone for Years and Nature Takes Its Course
Blue Chest
Blue Heron
Woodpecker
Tufted Duck
Nightingale
Sperwer
Tafeleend

Late Flyer
Bat
Dwarf Bat

Grass Snake
Bufo Clamita

Rietorchis

Birds
Mammals
Amphibians
Reptiles
High Plants
Rietorchis
UNACCESSIBILITY
Walk, Bike, Bus, Car
TIME CONSUMPTION

Mobility Types

- Walking: 42 mins
- Car: 14 mins
- Bicycle: 13 mins
- Vehicle: 7 mins
THE PETROLEUMHAVEN
Green Fragment on the South Side
PETROLEUMHAVEN PARK
The Future Theme Park
PROBLEMS AND STRATEGIES

FOUR PROBLEMS AND STRATEGIES
FOUR PROBLEMS

- Fragmentation of Green
- Unaccessible of Green
- Biodiversity
- Nonparticipation
FRAGMENTATION OF GREEN
UNACCESSIBLE GREEN
BIODIVERSITY
NONPARTICIPATION
STRATEGY ONE

Fragmentation of Green

Unaccessible of Green

Biodiversity

Nonparticipation

Ecoduct
ECODUCT
STRATEGY TWO

Fragmentation of Green

Unaccessible of Green

Biodiversity

Nonparticipation

Ecoduct

Gate
ACTIVATE PARK
STRATEGY THREE

Fragmentation of Green

Unaccessible of Green

Biodiversity

Nonparticipation

Ecoduct

Gate

Landscape Reorganization
BIOTOPES
ORIGINAL WAY
LANDSCAPE REORGANIZATION
STRATEGY FOUR

Fragmentation of Green  
Unaccessible of Green  
Biodiversity  
Nonparticipation

Ecoduct  
Gate  
Landscape Reorganization  
Immersive Experience
HOLOGRAPHIC DISPLAY/ VR (VIRTUAL REALITY)
AR (AUGMENTED REALITY)
INSECT WORKSHOP
ARCHITECTURAL PROPOSAL
AMBITION

A GREEN INTERVENTION improving green efficiency in physical and psychological way and give every resident an equal right to get in and use the architecture and experience and learn the nature.
AN INSECT-BASED ECOLOGY CENTER

CONCEPT AND DESIGN
FUNCTION COMPOSITION
FOUR CONSTRAINTS
BORDER
LINEAR ORGANIZATION?
CIRCULAR ORGANIZATION!
BIOTOPE + WORKSHOP
FIVE SCENARIOS FROM DUTCH ECOSYSTEM
FIVE BIOTOPE TOPICS
STREAM BIOTOPE (DRAGONFLY)
STREAM BIOTOPE AXO
AIR BIOTOPE (BUTTERFLY)
AIR BIOTOPE AXO
GROUND BIOTOPE (CRICKET/BEE)
GROUND BIOTOPE AXO
UNDERGROUND BIOTOPE (SOIL INSECT)
UNDERGROUND BIOTOPE AXO
UNDERWATER BIOTOPE (FLATWORM/FISH)
UNDERWATER BIOTOPE AXO
FIVE SCENARIOS
UNDERWATER BIOTOPE SECTION
AIR BIOTOPE SECTION
WORKSHOP PLAN
WORKSHOP COLLAGE
IMMERSIVE EXPERIENCE
PUBLIC SPACE
ENTRANCE PLAN
ENTRANCE EXTERIOR
ENTRANCE INTERIOR
EXHIBITION PLAN
EXHIBITION COLLAGE
WATERFRONT COLLAGE
WATERFRONT COLLAGE
ROOF + ECODUCT
ROOF FUNCTIONAL ZONES
FUNCTIONAL ZONES PLAN

OUTDOOR EXHIBITION

PET ZONE

CAFE BAR

STAGE
CAFE BAR COLLAGE
STAGE COLLAGE
PARK SIDE COLLAGE
STRUCTURE DESIGN

PREFABRICATED COMPONENTS
MAIN STRUCTURE
MAIN STRUCTURE FRAGMENT
FACADE FRAGMENT (URBAN)
FACADE FRAGMENT (WATERFRONT)
FOUR TYPES
INSECT HOTEL
BIRD NEST
GREEN ROOF DETAIL
WOODEN PANEL DETAIL

**Components:**
- **50mm laminated panel**
- **between 60/160mm timber studs**
- **160mm cellulose-fibre thermal insulation**
- **24mm softwood tongued-and-grooved boarding**
- **moisture-diffusing windproof building paper**
- **insect screen**
- **30mm laminated panel**
- **stainless steel sheet folded on aluminum tube**
- **1 : 5**
- **waterproof membrane**
- **thermal insulation**
- **filter fabric**
- **(optional: mat or plate system)**
- **drainage: 4'' to 6'' granular**
- **filter fabric**
- **6'' to 12'' growth medium (typ.)**
- **erosion control (wind blanker or jute mesh)**
- **plants: perennials and shrubs**
- **aluminum curbing**
- **stainless steel sheet folded on aluminum tube**
- **100mm laminated panel**
- **underfloor heating pipe on aluminum tube**
- **200mm concrete slab**
- **vapour barrier**
- **300mm filled grave**
- **compact earth**
- **Bamboo fragment with soil and plant**
- **Air vent**
- **pipe clips**
- **joists**
- **floor deck**
- **insulation**
- **Aluminum conducting sheet**

**Materials:**
- **Steel brackets of timber structure**
- **500mm x 400mm x 100mm**
- **100mm x 100mm**
- **200mm**

**Design:**
- **Student | Miaolan Lin | 4613260**
- **Tutor | Olindo Caso & Gilbert Koskamp**
ELEVATION
BIOTOPE STRUCTURE
STEEL TRUSS FRAGMENT
CLIMATE DESIGN

DOUBLE FACADE
DOUBLE FACADE (UNDERWATER BIOTOPE)
UNDERWATER BIOTOPE PLAN
T: OUTSIDE > INSIDE
T: OUTSIDE < INSIDE
INCREASE HUMIDITY
DECREASE HUMIDITY
GROWING WALL
GROWING WALL FRAGMENT
CARBON NEUTRAL
RAINWATER COLLECTOR
WATER SYSTEM
TOOLS OF GREEN EFFICIENCY

- Ecoduct
- Gate
- Prefabrication
Ecoduct Gate

Vertical Landscape

Immersive Experience

Double Facade