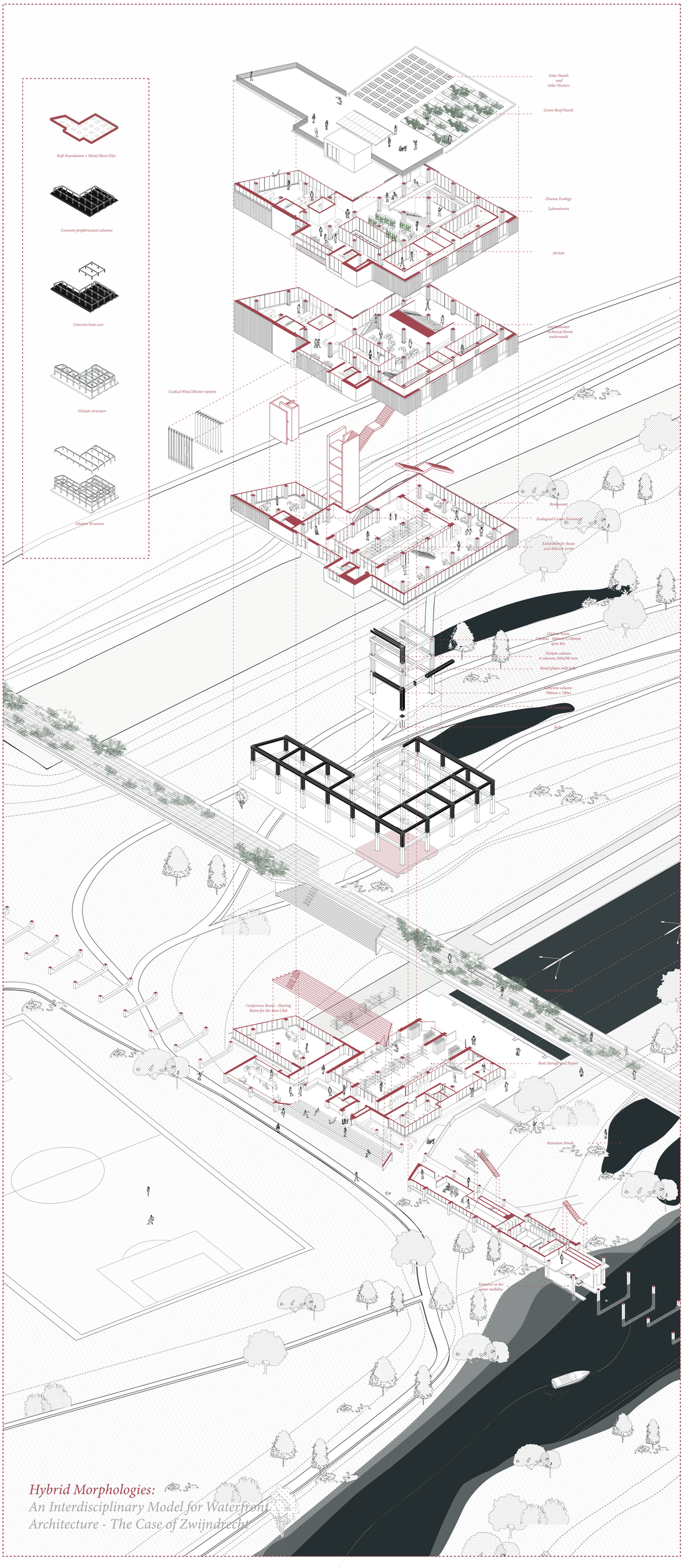
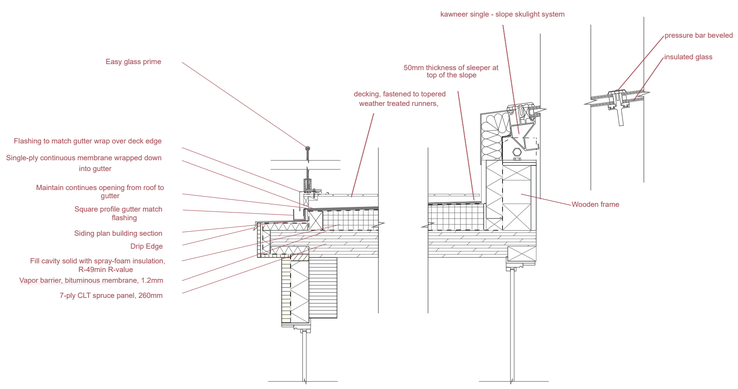


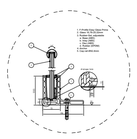
Hybrid Morphologies:
An Interdisciplinary Model for Waterfront Architecture - The Case of Zwijndrecht

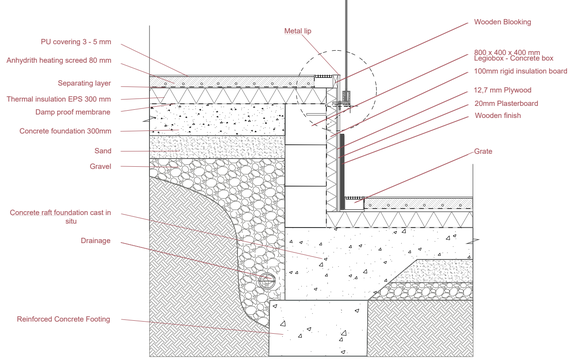
Hybrid Morphologies:
An Interdisciplinary Model for Waterfront Architecture - The Case of Zwijndrecht

1to20 Section

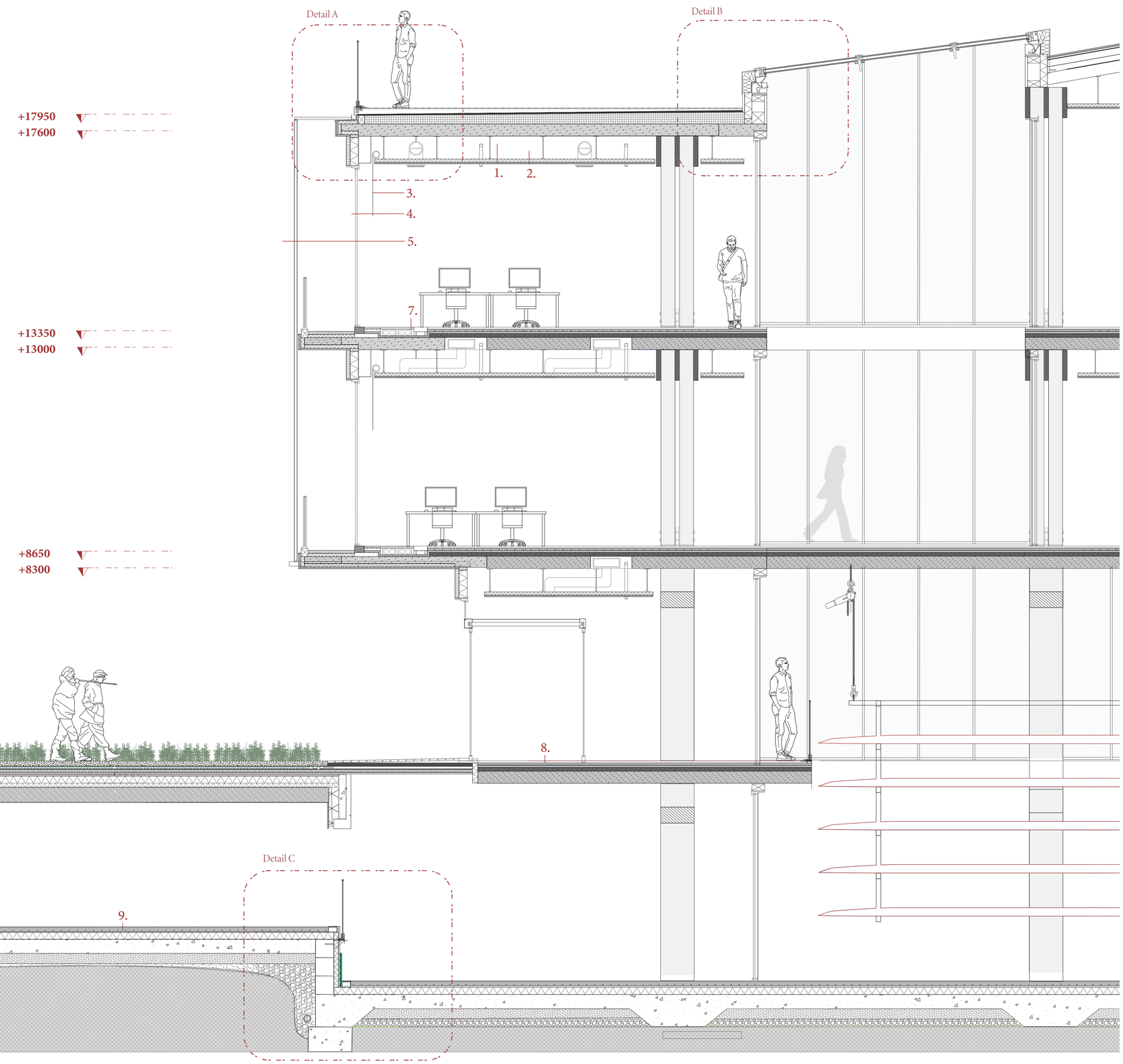


1 to 5 Roof Skylight and edge detail





1 to 5 Foundation Detail
The two structures coming together

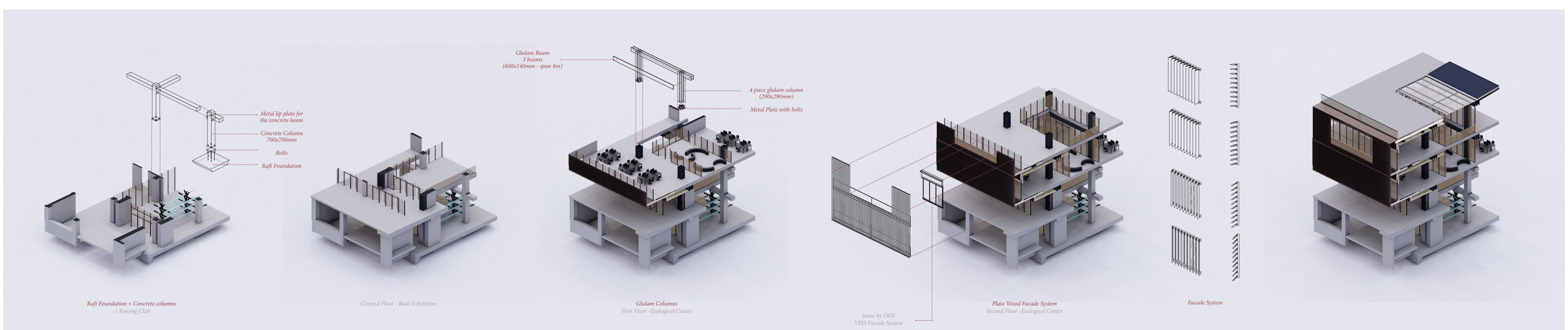


1. Fire safety sprinkler system
2. Laminated Timber roof:
   Accoya battens 120 x 21mm (subfloor), 80mm:
   Fireproof waterproof membrane, 1.8mm
   Thermal insulation to fall, rockwool, 150 - 100 mm:
   Thermal Insulation, rockwool, 120 mm;
   Vapour barrier, bituminous membrane, 1.2mm
   7-ply CLT spruce panel, 260mm;
   3 GLT beam,150x600mm
   Mineral Fiber acoustic insulation 40mm
   Acoustic suspended panels

3. Solar control: textile
4. Therman glazing: 8mm toughned glass +12.7mm cavity + laminated safety glass of 2x8mm
5. Vertical fin, cooked wood, 100x30mm
6. Mechanical ventilation duct, max 580x220mm
7. Water suply ducts 4x of O 100mm
8. Internal Laminated Timber Slab:
   Floor covering 20mm
   Dry heating screed, concrete overlaid 75mm
   Footfall sound insulation 40mm
   3 - ply CLT pruce panel, 90mm;
   7-ply CLT spruce panel, 260mm;
   Mineral Fiber acoustic insulation 40mm
   Acoustic suspended panels 35mm

9. PU covering 3 - 5 mm
   Anhydrith heating screed 80 mm
   Separating layer
   Thermal insulation EPS 300 mm
   Separating layer
   Concrete 220 mm

1 to 20 Building Section



DYNAMIC

MOST SUSCEPTIBLE TO ECOLOGICAL CHANGES
BETTER ADAPTING TO ATMOSPHERIC, GEOLOGICAL
AND HUMAN INFLUENCES

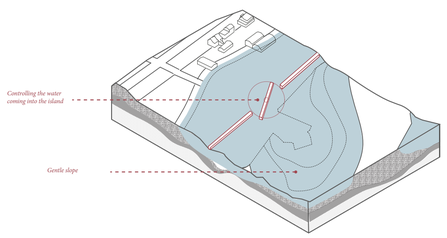
STATIC

LEAST SUSCEPTIBLE TO ECOLOGICAL CHANGES
RIGID FORMS AND LARGE SCALES OF INTERVENTION
WITH THE LANDSCAPE

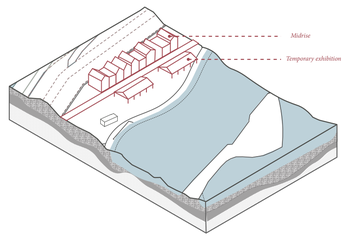
WET

MORE AREA IS FLOODED

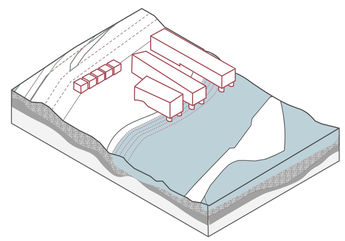
WF - ES - 0 (land type – use – density)
Wetland Flux - Ecological Services
organic constructed wetlands, marshes, new habitats , controlled through an operable barrier



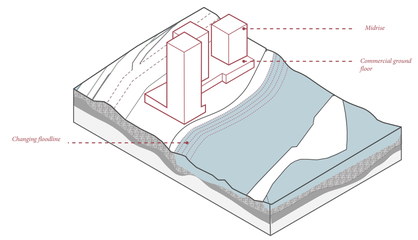
WF - MR - 3 (land type – use – density)
Wetland Flux - Medium Residential
Medium density housing with local street upland, civic spaces for public activities along the river front.



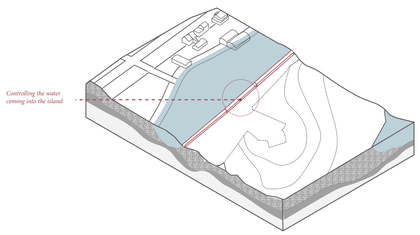
WF - MC - 3 (land type – use – density)
Wetland Flux - Medium Commercial
Architecture on pylons as a means of flood protection



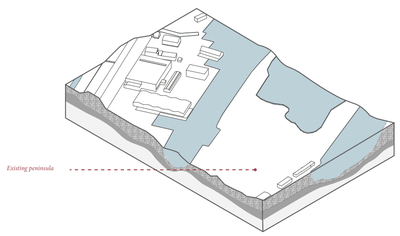
WF - HR - 5 (land type – use – density)
Wetland Flux - Hight density mixed use
High density with a commercial podium



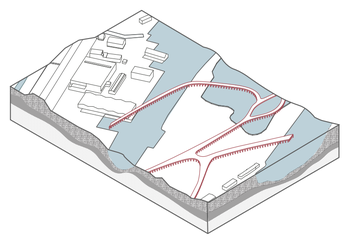
WF - ES - 0 (land type – use – density)
Wetland Flux - Ecological Services
organic constructed wetlands, marshes, new habitats, controlled through an operable barrier



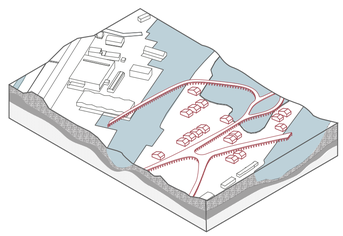
RI - ES - 0 (land type – use – density)
River Island - Ecological Services
organic constructed wetlands, marshes, new habitats



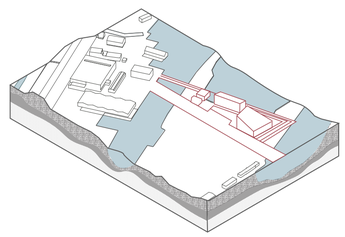
RI - R-ES - 0 (land type – use – density)
River Island - Recreational & Ecological Services
Elevated walkway that provide recreational use on the wetland



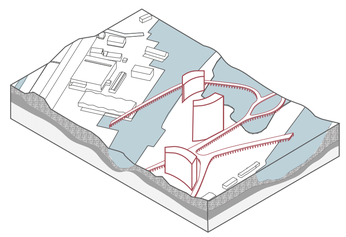
RI - LR - 1 (land type – use – density)
Wetland Flux - Low Density Residential & Recreational
Low density housing in upland areas, floodable water retention areas and wetlands connected through infrastructure



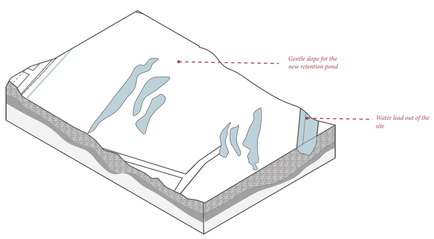
RI - MP - 2 (land type – use – density)
River Island - Medium Public building
public building connected with an elevated path



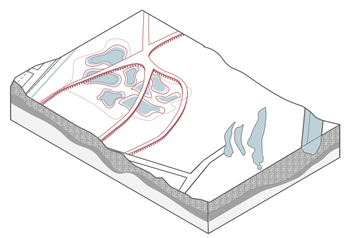
RI - HD - 5 (land type – use – density)
Wetland Flux - Hight density
High density connected through elevated paths



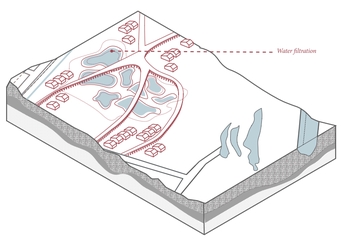
WT - ES - 0 (land type – use – density)
Wetland - Ecological Services
organic constructed wetlands, marshes, new habitat, retention ponds for water filtration



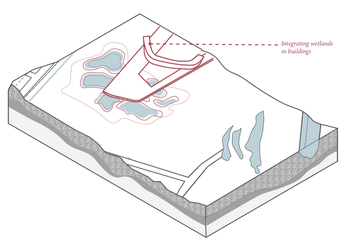
WT - R-ES - (land type – use – density)
Wetland - Recreational & Ecological Services
Elevated walkway that provide recreational use on the wetland



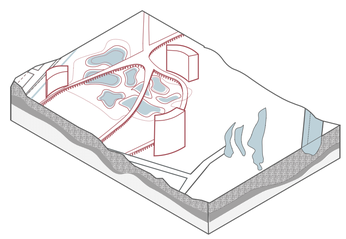
WT - LR - 1 (land type – use – density)
Wetland - Low Density Residential & Recreational
Low density housing in upland areas, floodable water retention areas and wetlands connected through infrastructure



WT - MP - 1 (land type – use – density)
Wetland - Medium Public building
public building connected with an elevated path



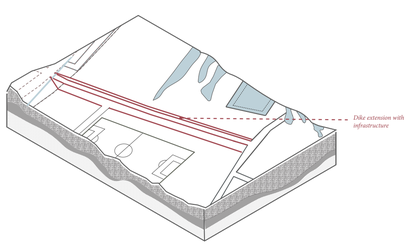
WT - HD - 5 (land type – use – density)
Wetland Flux - Hight density
High density connected through elevated paths



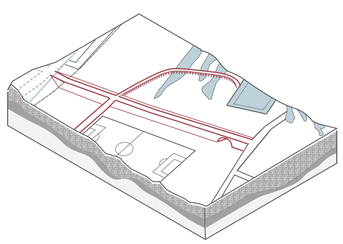
DRY

LEAST AREA IS FLOODED

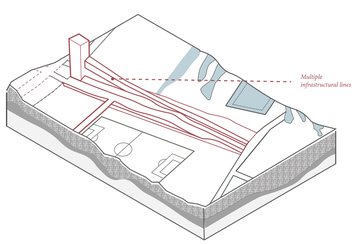
DI- ES - 0 (land type – use – density)
Dike - Ecological Services
extension of the dike providing a new dry land to build on



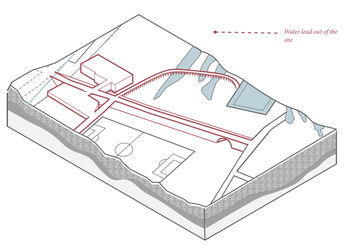
DI - R-ES - 0 (land type – use – density)
Dike - Recreational & Ecological Services
Elevated walkway that provide recreational use and connection



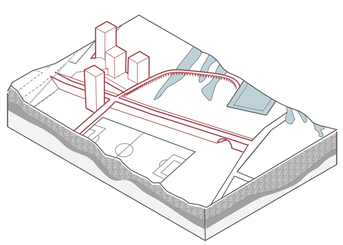
DI- MP - 3 (land type – use – density)
Dike - Medium Public building
public building connected with an elevated path



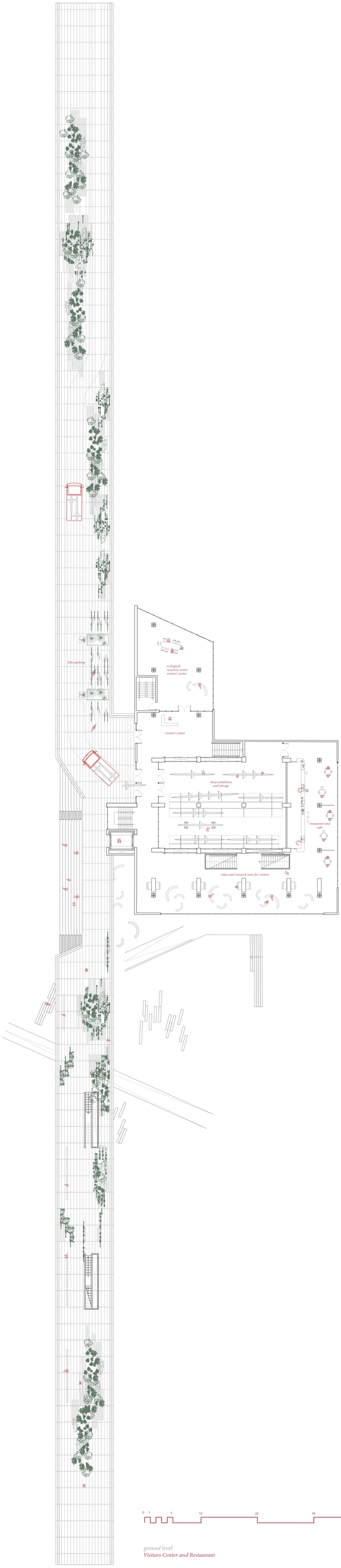
DI- MP - 3 (land type – use – density)
Dike - Medium Public building
public building connected with an elevated path



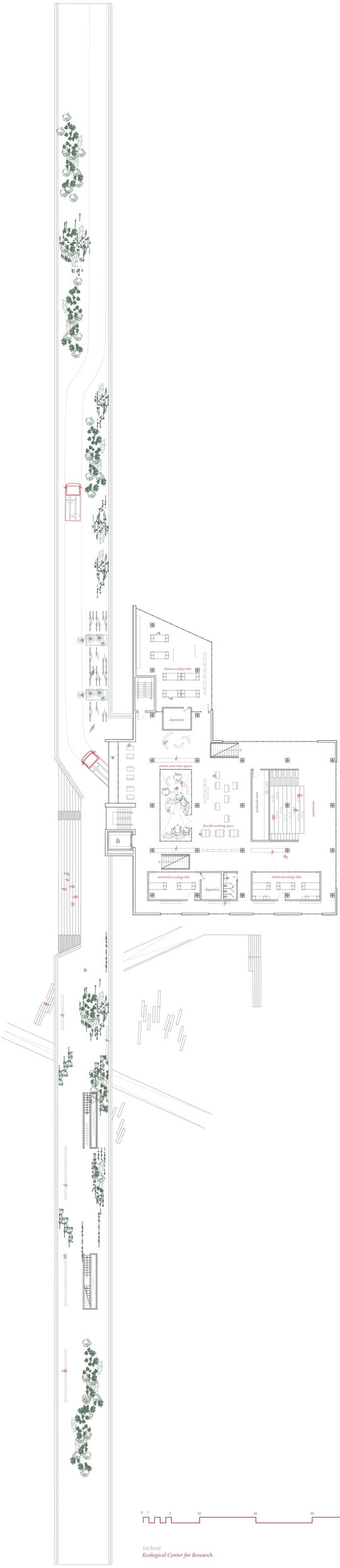
DI- HD - 5 (land type – use – density)
Dike - Hight density
High density connected through elevated paths



ground level
Visitors Center and Restaurant



ground level
Visitors Center and Restaurant

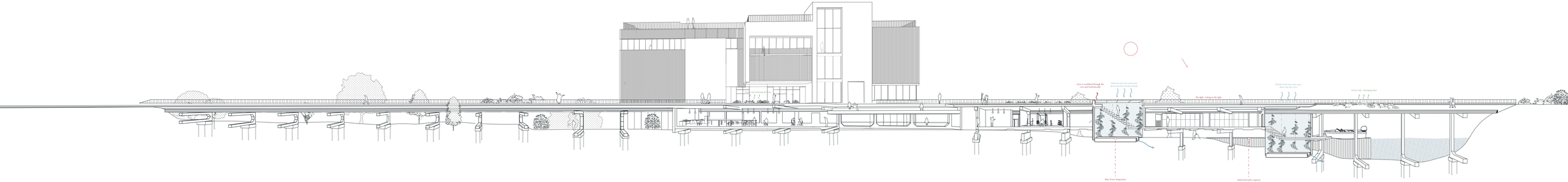


1st level
Ecological Center for Research

0 1 5 10 20 30 50

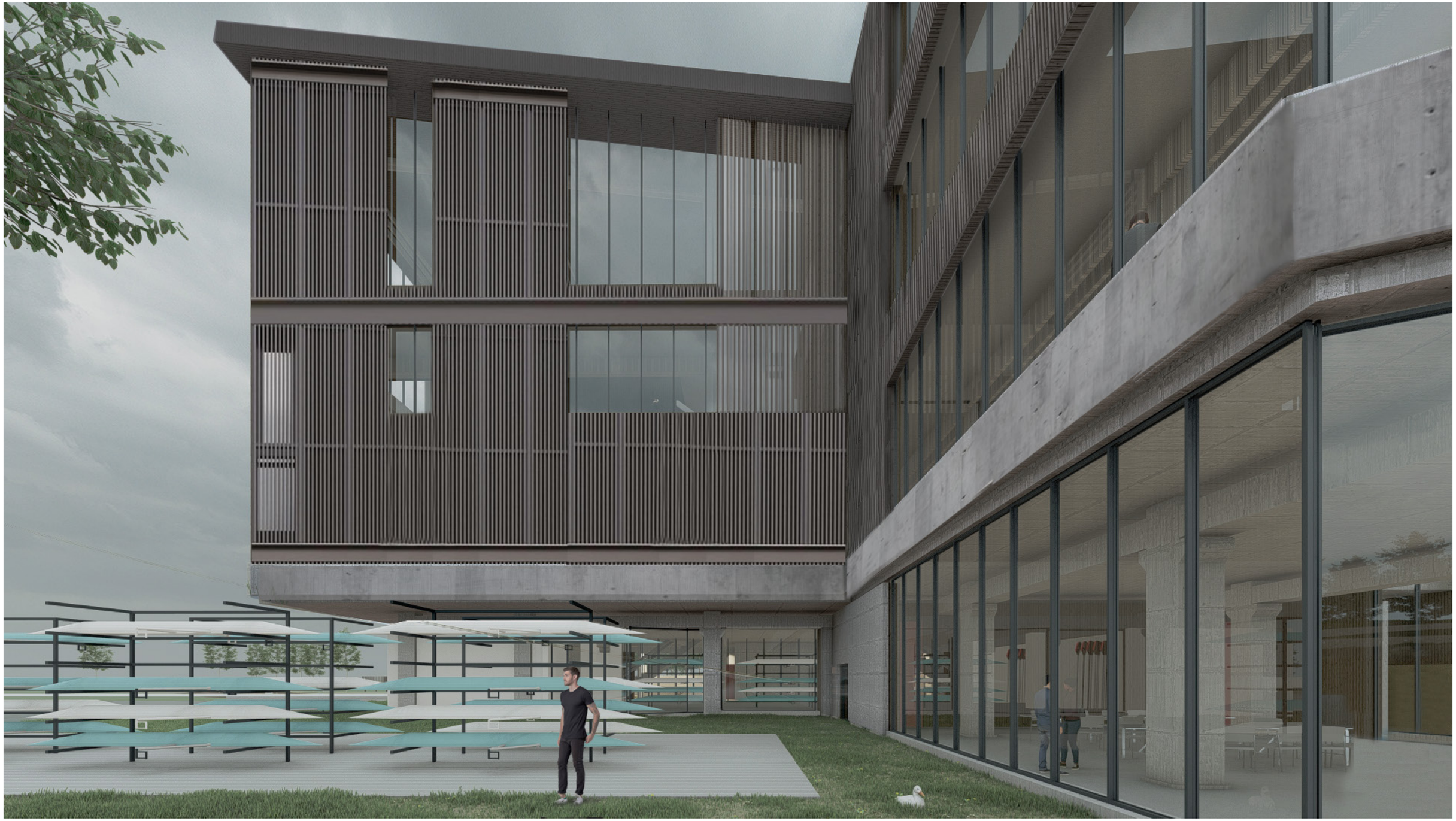
2nd level

Ecological Center for Research



Perspective Section
1:200

Atrium - Ecological Center



Outdoor Boat Storage

Indoor Boat Storage