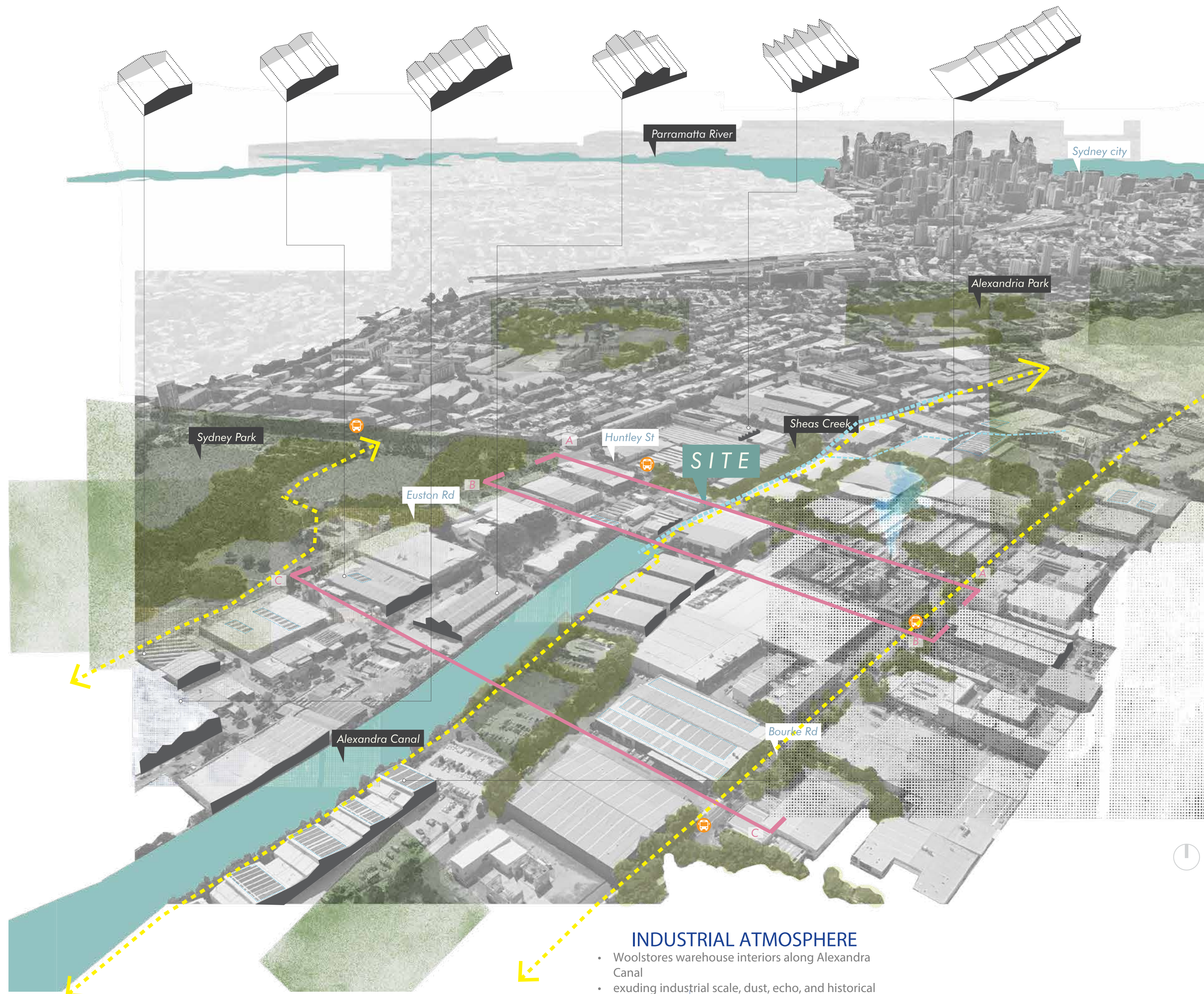


WHERE WATER MEANDERS



Industrial Edges, Living Layers

This research investigates the architectural and spatial character of the Alexandria Canal precinct in Sydney.

Through sectional collage studies and mapping, the project identifies the distinct layers that shape the area, from expansive industrial warehouses and adaptive reuse projects to the fine-grain residential edges and emerging human-scale activities along the canal.

The Alexandria Canal itself, a historic industrial waterway, operates as both barrier and threshold: channelized, polluted, yet central to the site's identity. Supporting infrastructures of roads, trucks, and logistics dominate the built environment, while green buffers, solar energy initiatives, and active transport routes reveal opportunities for ecological and social regeneration.

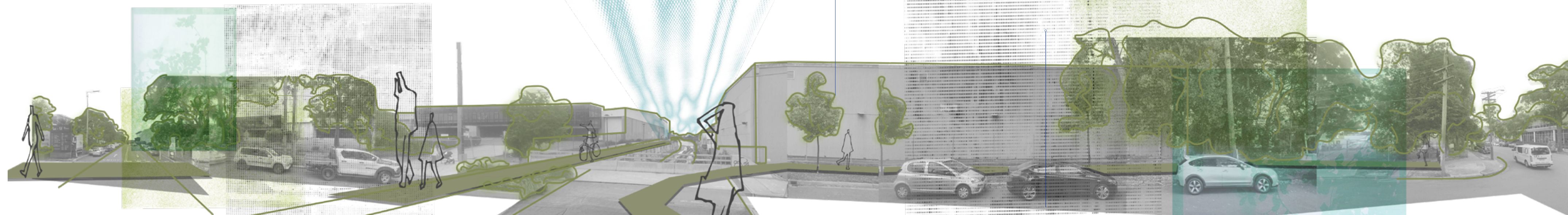
Together, these elements highlight the contrasts and overlaps between industry, landscape, and everyday life, framing the canal as a critical site of tension and potential within Sydney's urban fabric.

LEGEND

- Sections
- Canal
- Bike path
- Green zones
- Creek
- Bus Stops

INDUSTRIAL ATMOSPHERE

- Woolstores warehouse interiors along Alexandra Canal
- exuding industrial scale, dust, echo, and historical character



HUMAN-SCALE ACTIVITY

- cyclists & pedestrians occupy paths along canal edges
- domestic activity contrasts industrial scale

INDUSTRIAL WAREHOUSE

- utilitarian sheet form, steel/clad, loading dock
- minimal street interaction
- culprit of large amounts of pollution within the Alexandra Canal



GREEN EDGE / PUBLIC SPACE

- informal tree buffers, emerging bike/pedestrian routes, adjacency to Sydney Park
- Green Grid strategy for the area and public realm planning

INFRASTRUCTURE LANDSCAPE

- wide truck roads, loading bays, asphalt surfaces override pedestrian comfort

SECTION A-A

SECTION B-B

INDUSTRIAL ATMOSPHERE

- Woolstores warehouse interiors along Alexandra Canal
- exuding industrial scale, dust, echo, and historical character

HUMAN-SCALE ACTIVITY

- cyclists & pedestrians occupy paths along canal edges
- domestic activity contrasts industrial scale

SOLAR POWER INSTALLATION

- The City of Sydney's Alexandra Canal Depot features approximately 1,600 rooftop solar panels paired with a 500 kWh Tesla Powerpack battery
- this installation allows the depot to generate, store, and supply renewable energy—making it energy-resilient and partially grid-independent

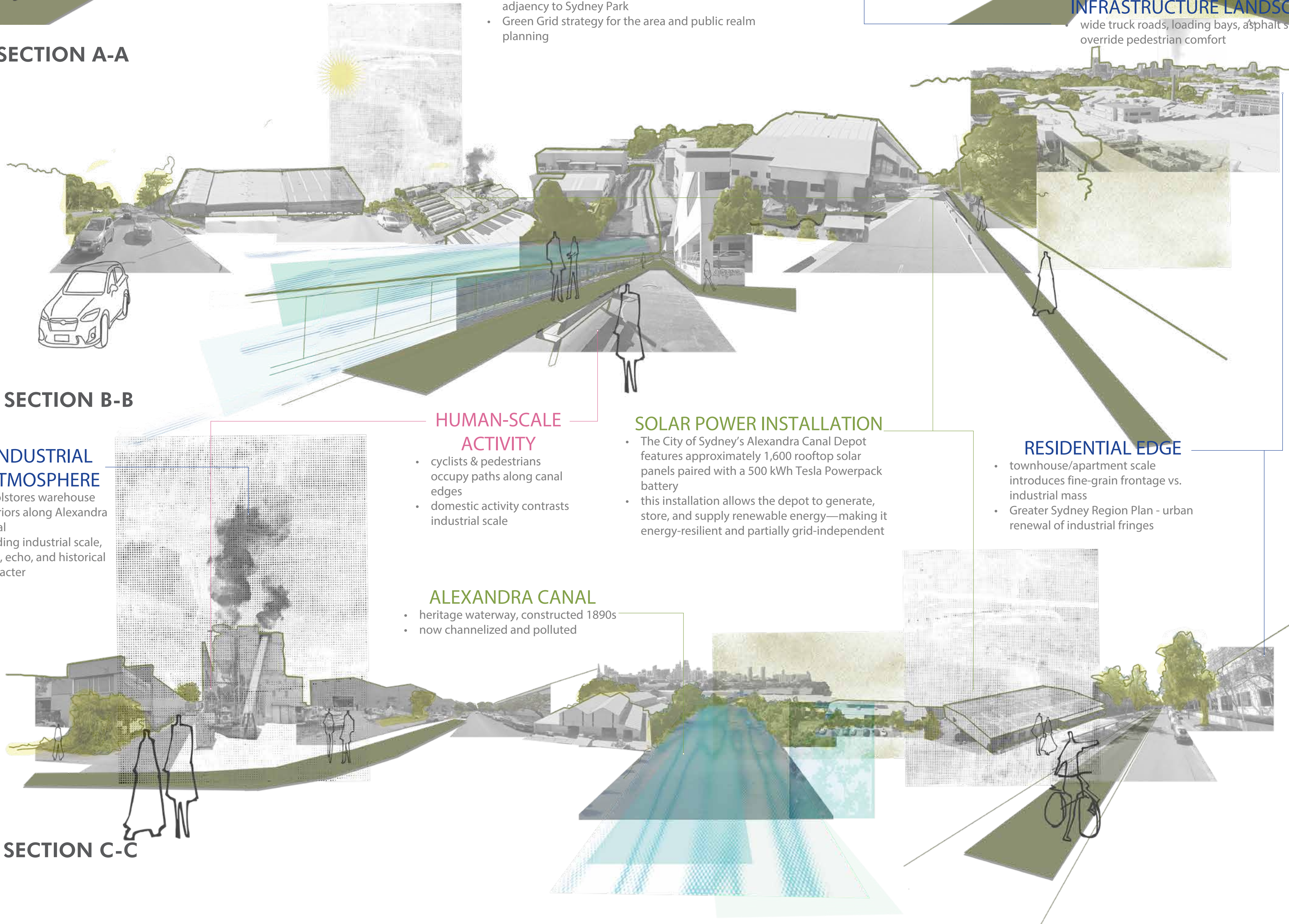
RESIDENTIAL EDGE

- townhouse/apartment scale introduces fine-grain frontage vs. industrial mass
- Greater Sydney Region Plan - urban renewal of industrial fringes

ALEXANDRA CANAL

- heritage waterway, constructed 1890s
- now channelized and polluted

SECTION C-C





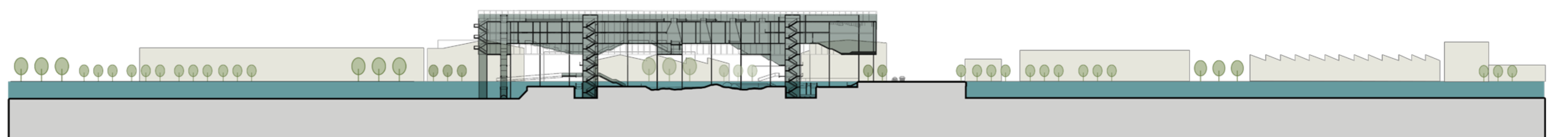
THE BIOSWALE AND MEANDER: NATURAL FILTRATION SYSTEMS



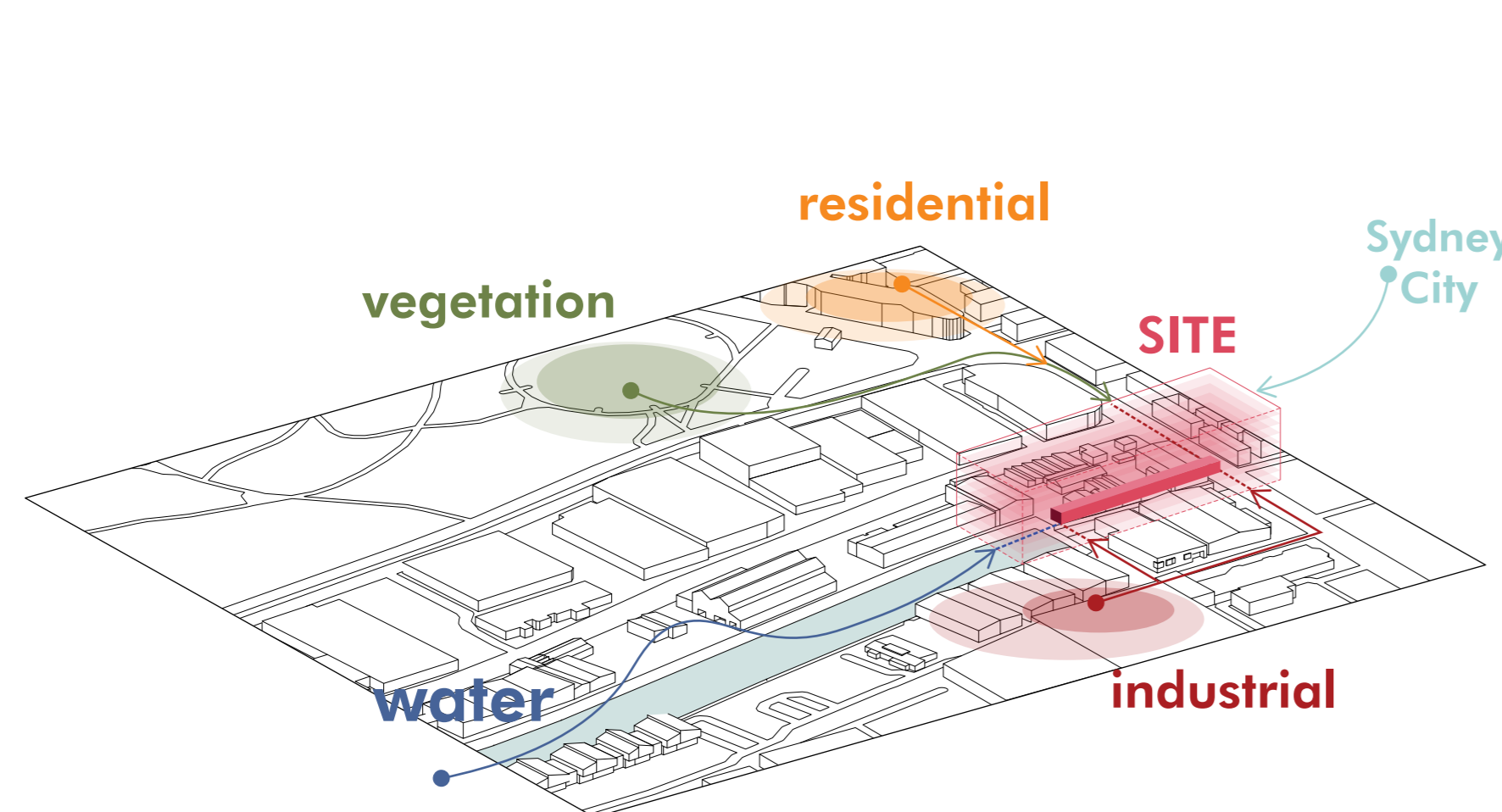
LOCALIZATION
ALEXANDRIA, SYDNEY

ABSTRACT

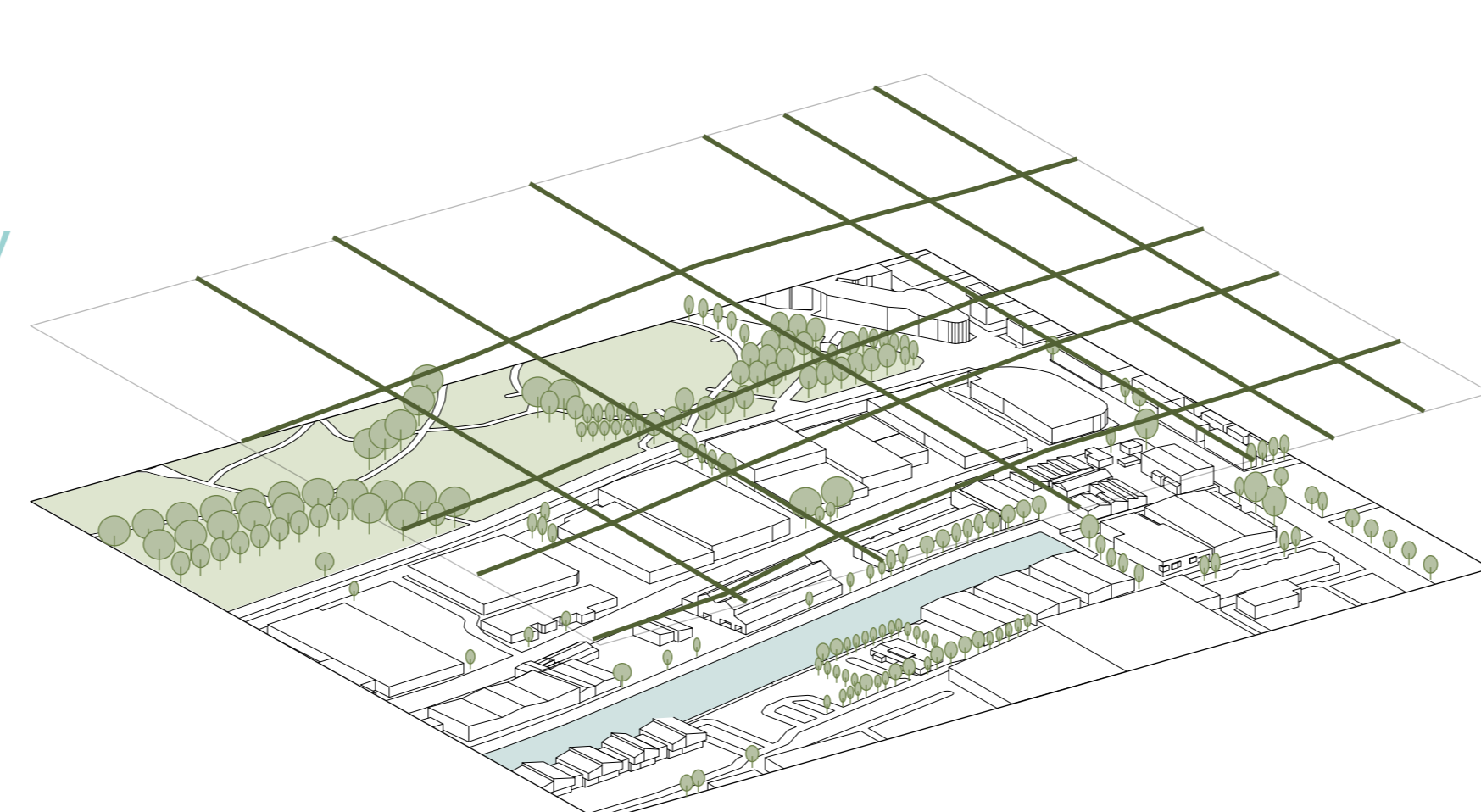
Where Water Meanders is a Water Advocacy Centre along the Alexandra Canal that responds to a landscape shaped by industrial density and a lack of public space. By lifting the building, the project frees the ground to become a civic terrain where circulation, gathering, and ecological systems coexist. A bioswale beneath the structure transforms polluted water into an inhabitable landscape, while intersecting paths above choreograph both human movement and the visible journey of water. Rain is collected, filtered, and revealed through skylights, exhibition gardens, and floor voids, positioning water as an embodied learning experience and architecture as an active public advocate.



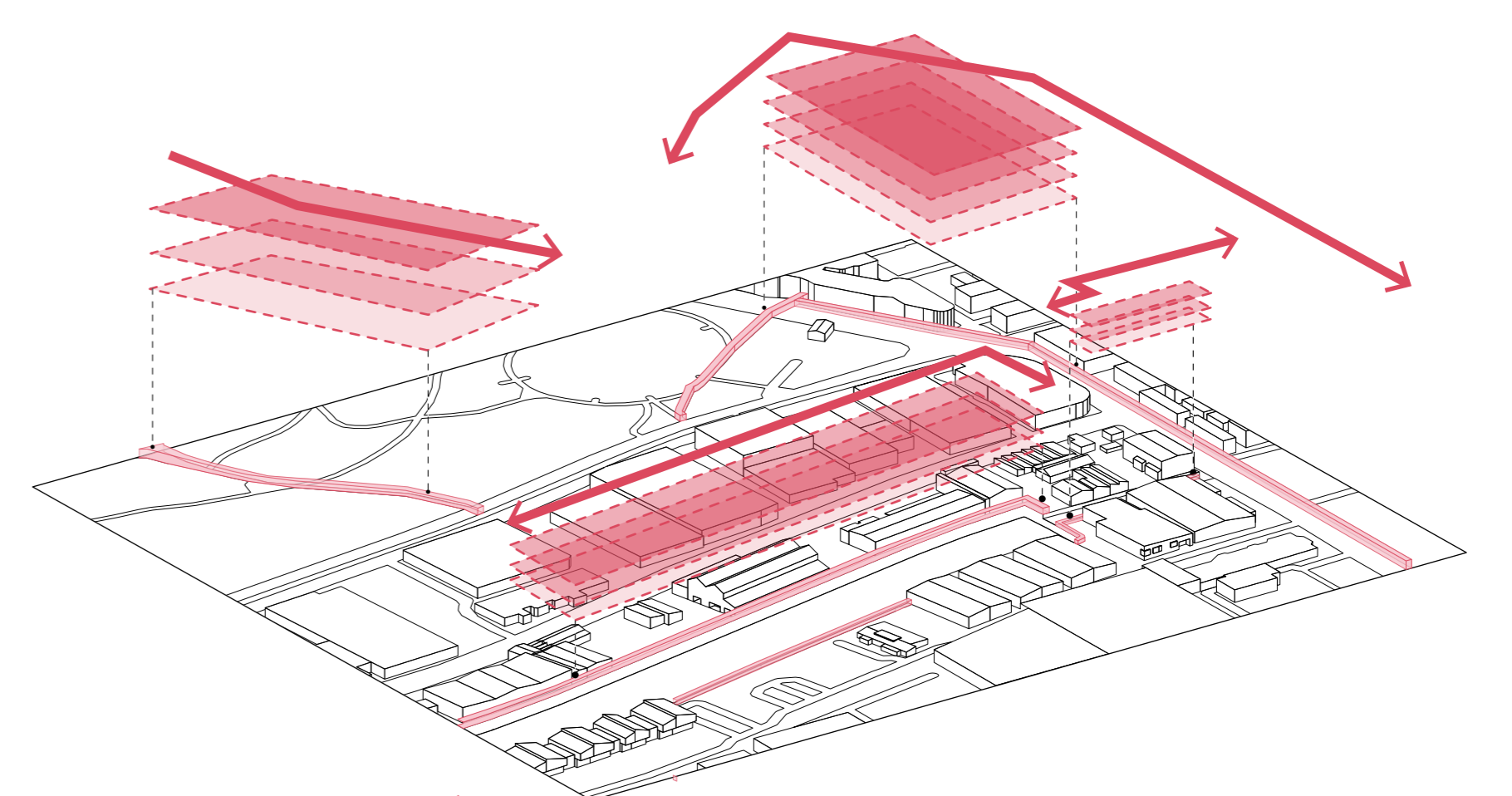
SITE PLAN AND URBAN SECTION A-A'
SCALE 1:1000



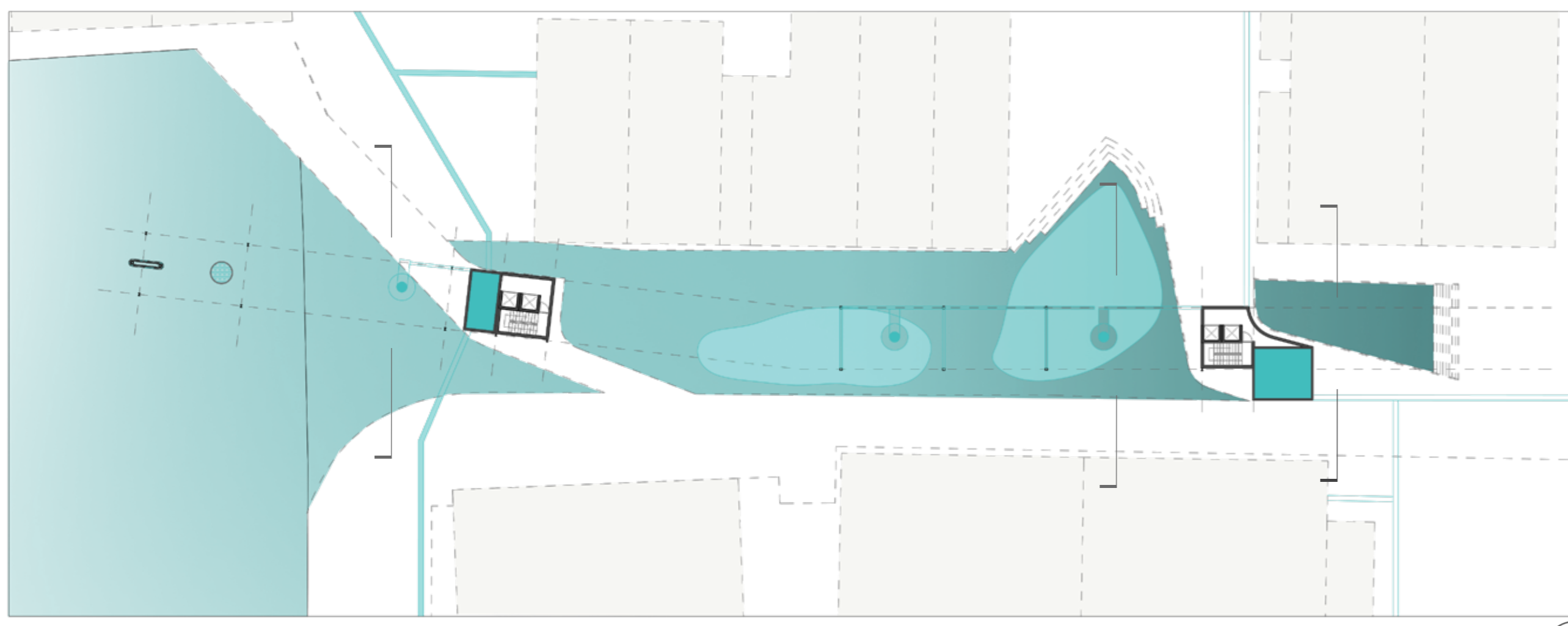
URBAN ZONES AND THEIR USES
THE INDUSTRIAL AND THE RESIDENTIAL RELATIONSHIP



NATURAL COMPONENTS
PARKS AND BODY OF WATER



URBAN PATHS
THE WALKING EXPERIENCE



FLOORPLAN LEVEL -1
SCALE 1:500



ROOF PLAN LEVEL 6
SCALE 1:500



GROUND FLOOR PLAN
SCALE 1:250



FLOORPLAN LEVEL 4
SCALE 1:250



SECTION A-A'
SCALE 1:250

- Level 6 +22.20m
- Level 5 +18.50m
- Level 4 +14.80m
- Level 3 +11.10m
- Level 2 +7.40m
- Level 1 +3.70m
- Level 0 0.00m
- Level -1 -1.80m
- Level -2 -5.50m



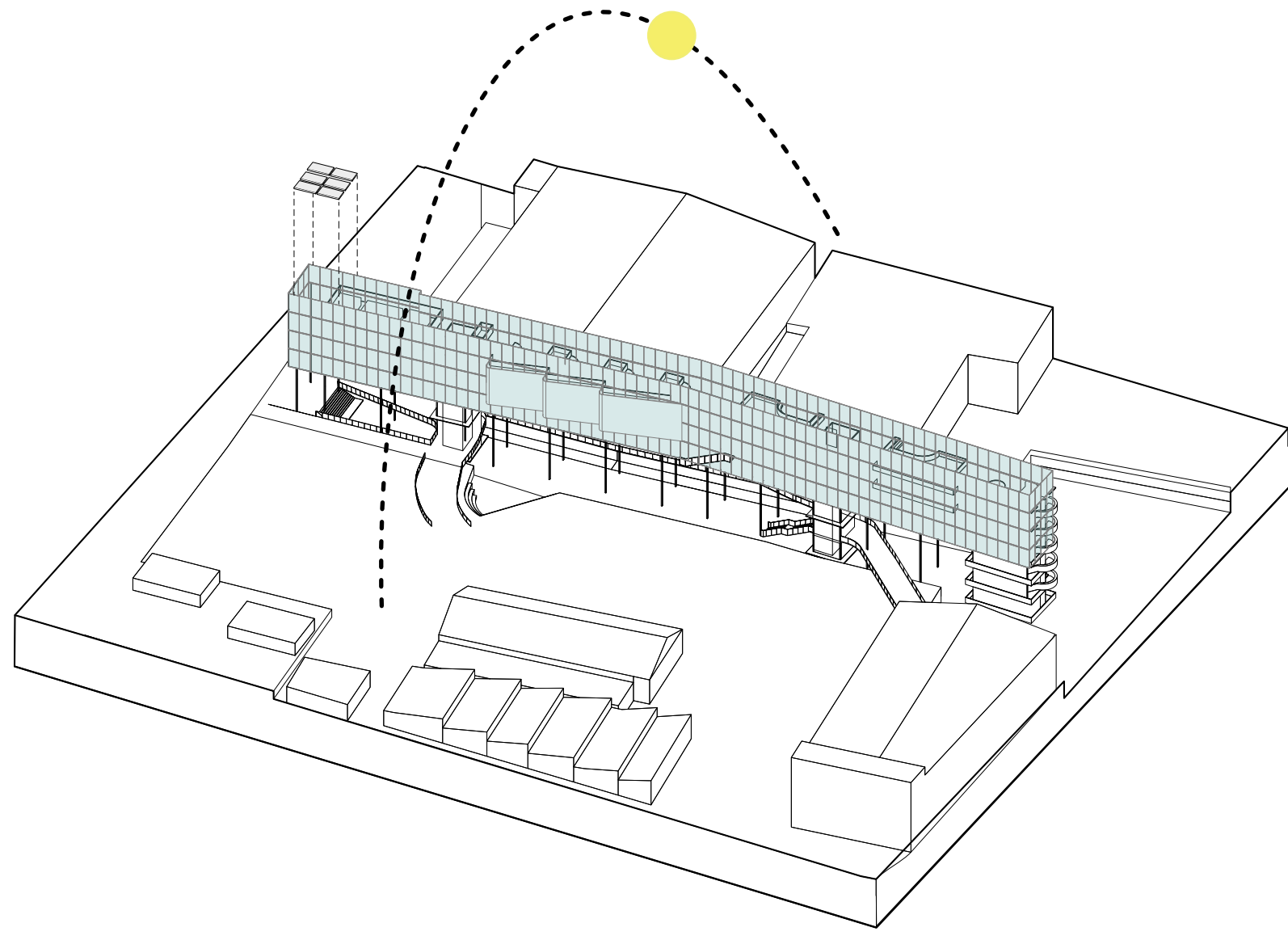
SECTION B-B'
SCALE 1:250



SECTION C-C'
SCALE 1:250

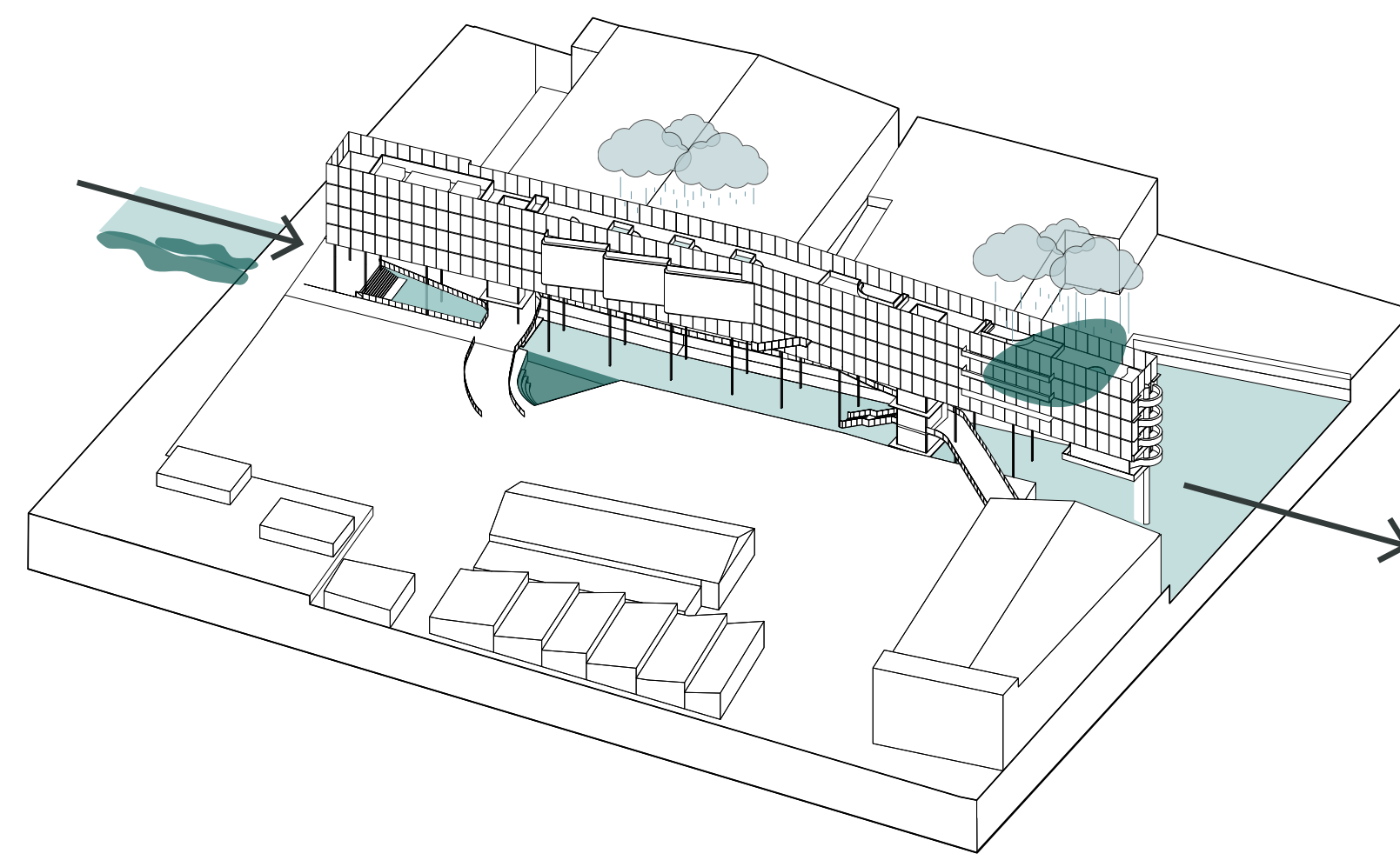
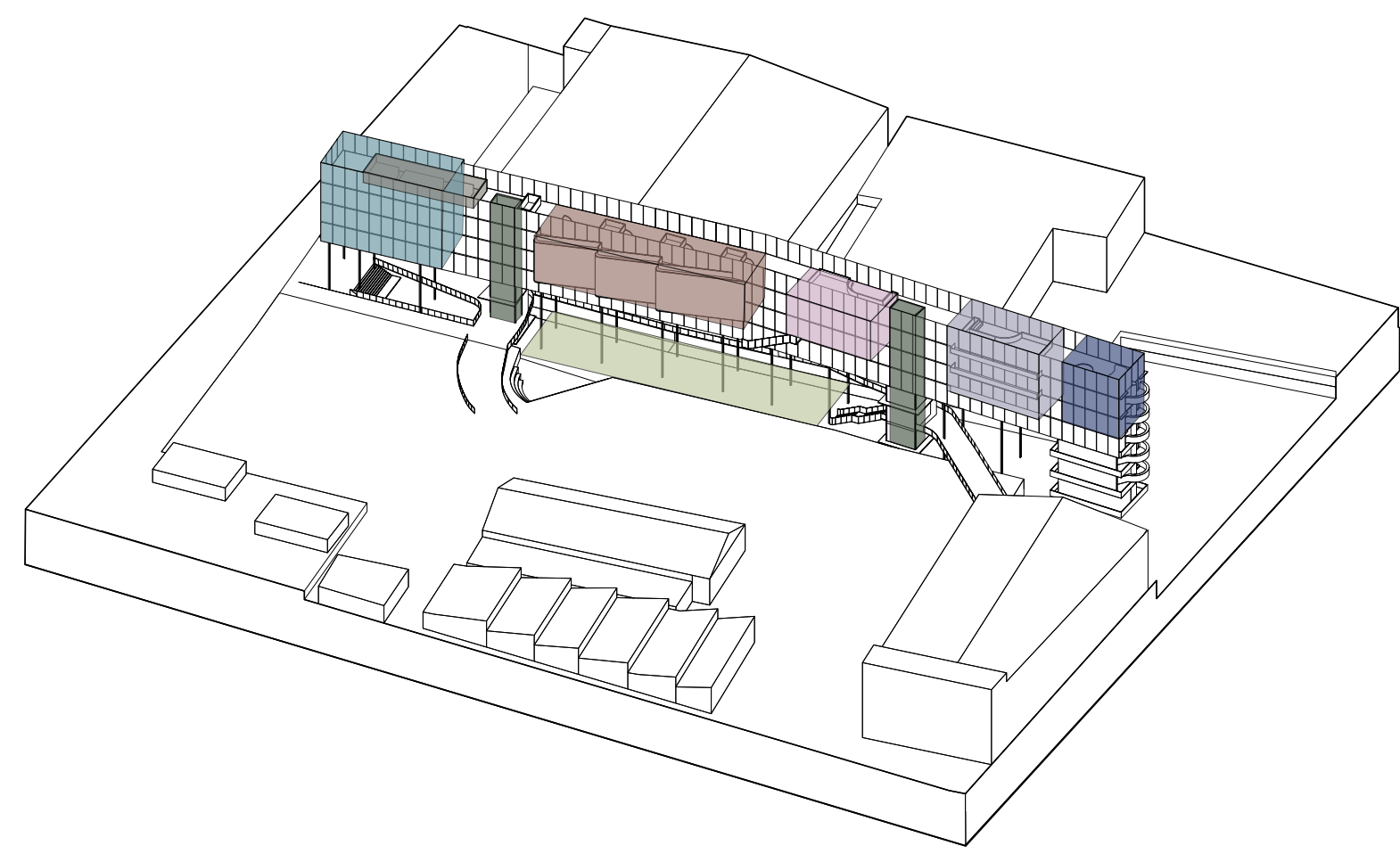


SECTION D-D'
SCALE 1:250



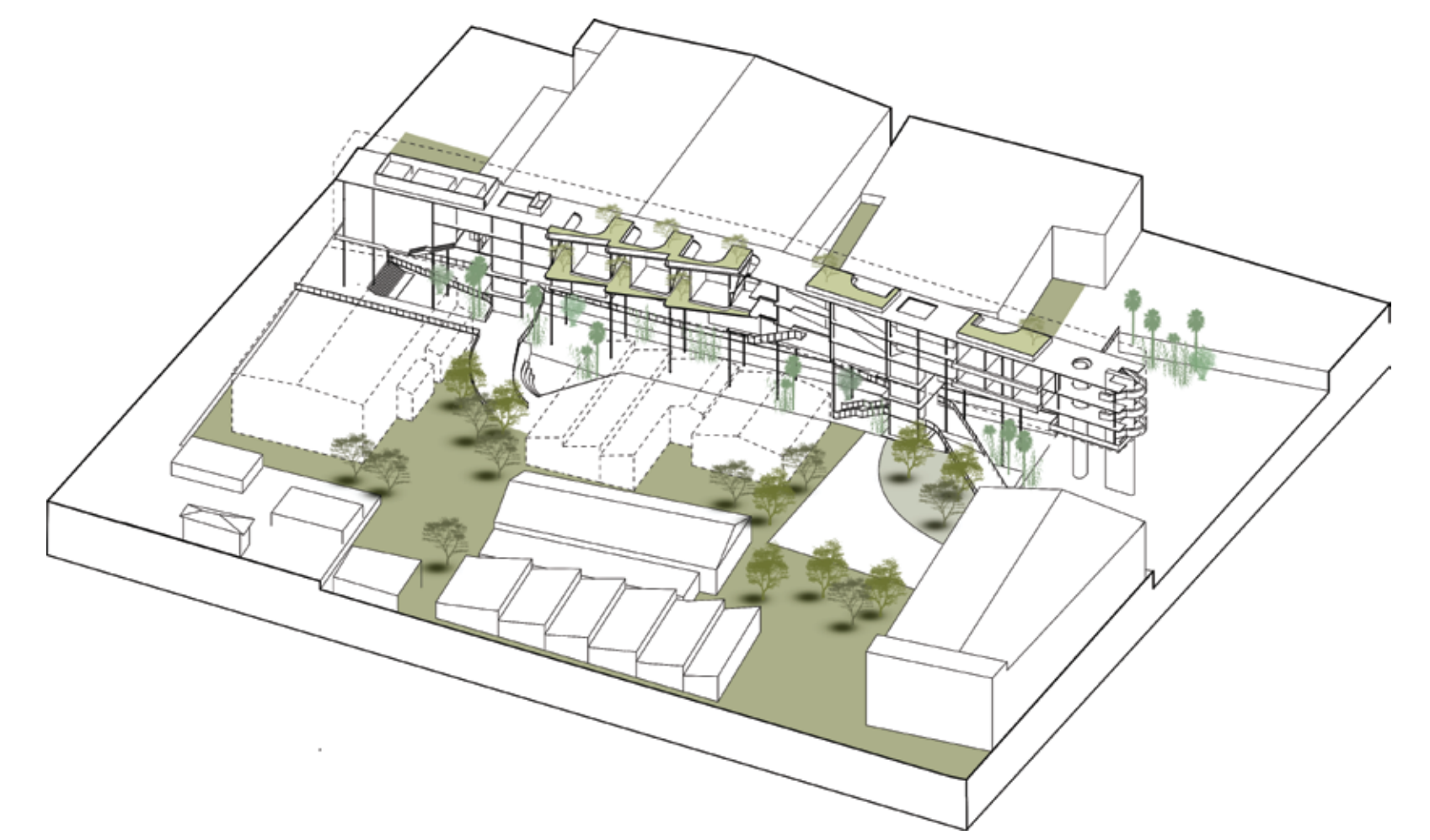
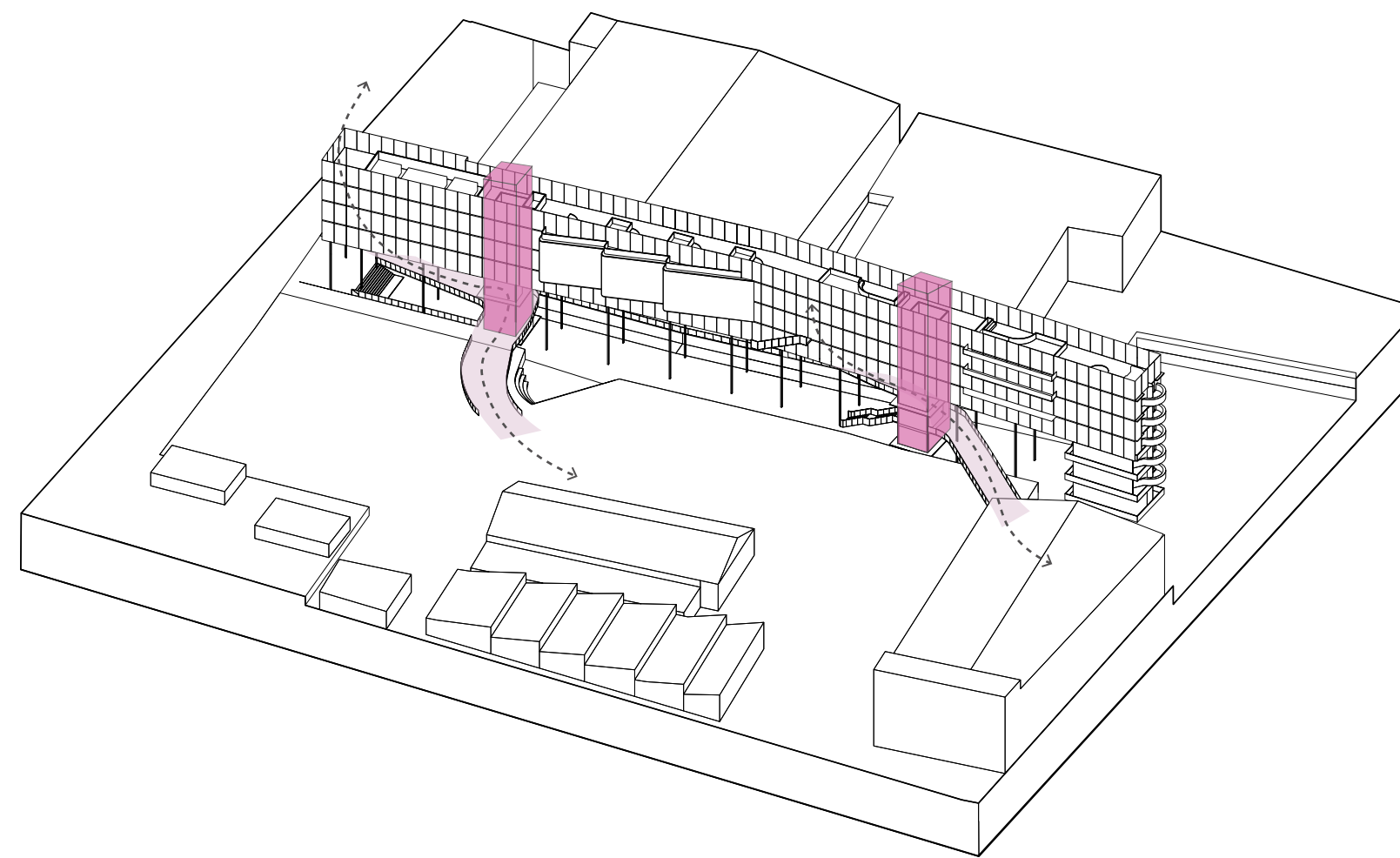
SUSTAINABILITY DIAGRAM

- Double Facade
- Sun Path
- Solar Panels

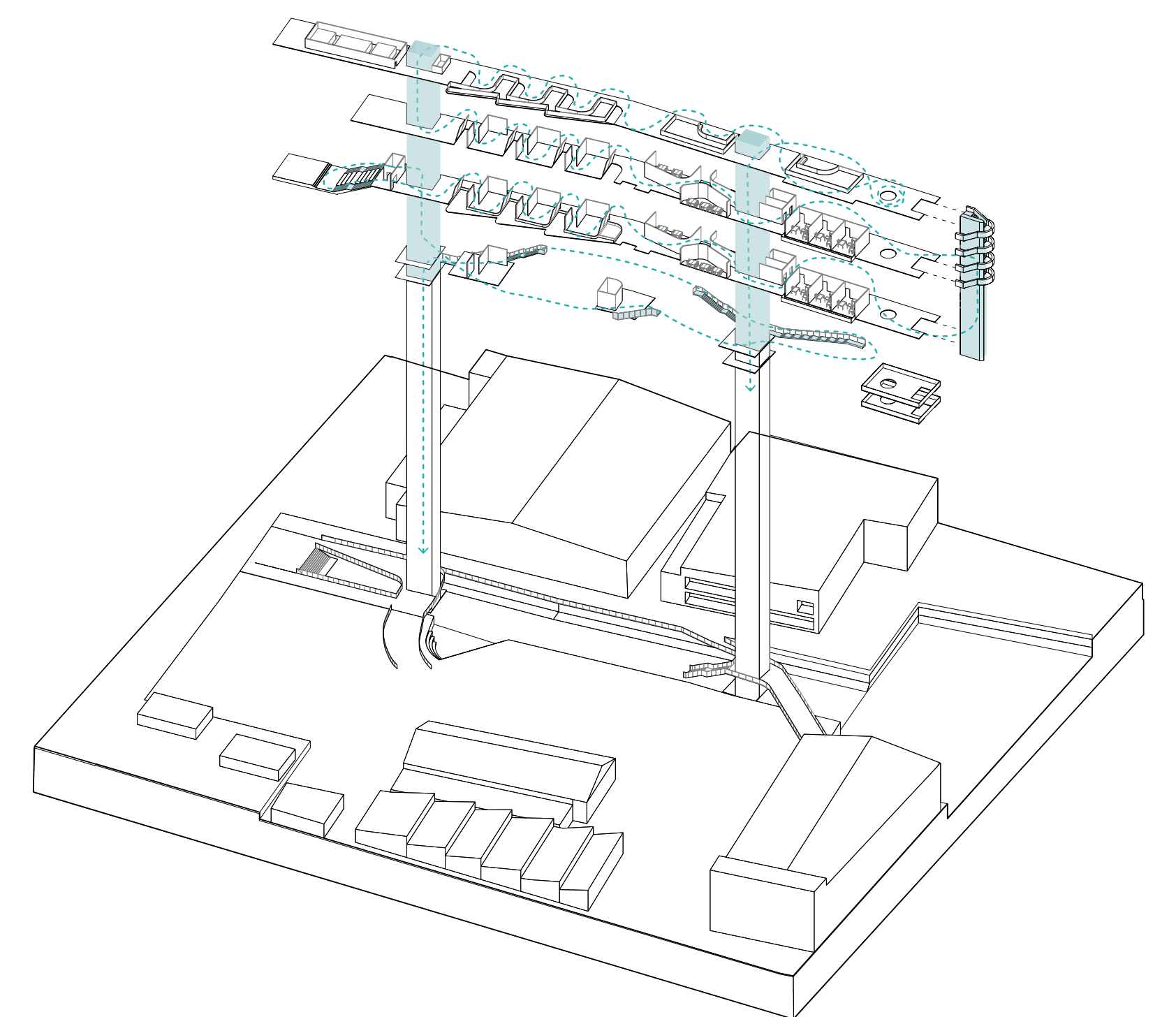


WATER DIAGRAM

- ☁ Rain Water Collection
- Movement of Dirty Water to Clean Water
- Canal & Bioswale
- Canal Natural Borders



VEGETATION DIAGRAM



PROGRAM DIAGRAM

- Auditorium
- Exhibitions
- Classrooms
- Mechanical Services
- Bioswale
- Cafe/Flex Space
- Circulation/Bathrooms
- Offices
- Rooftop Garden

CIRCULATION DIAGRAM

- Cores
- Bridges

PATHS DIAGRAM

- Vertical Circulation & Stairs
- ↔ Bridges

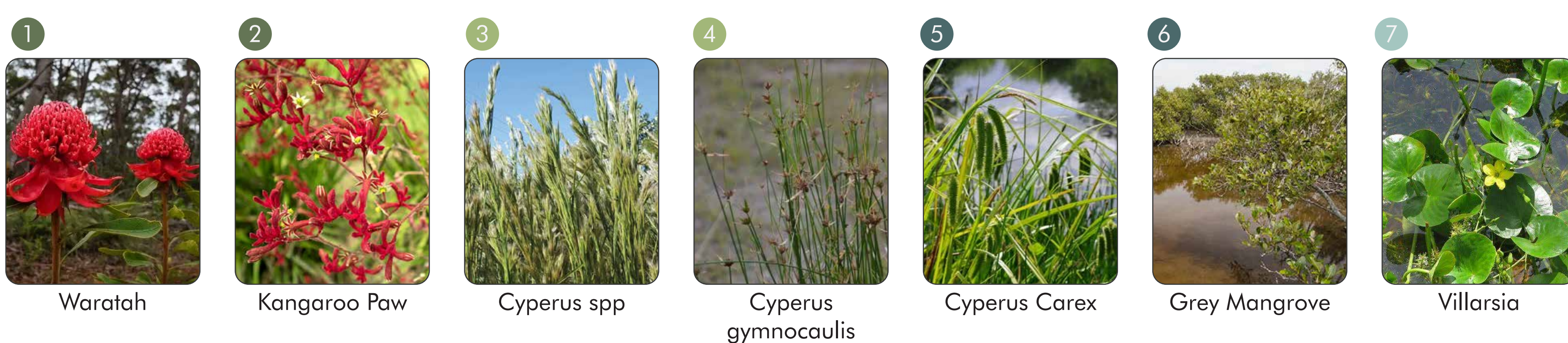
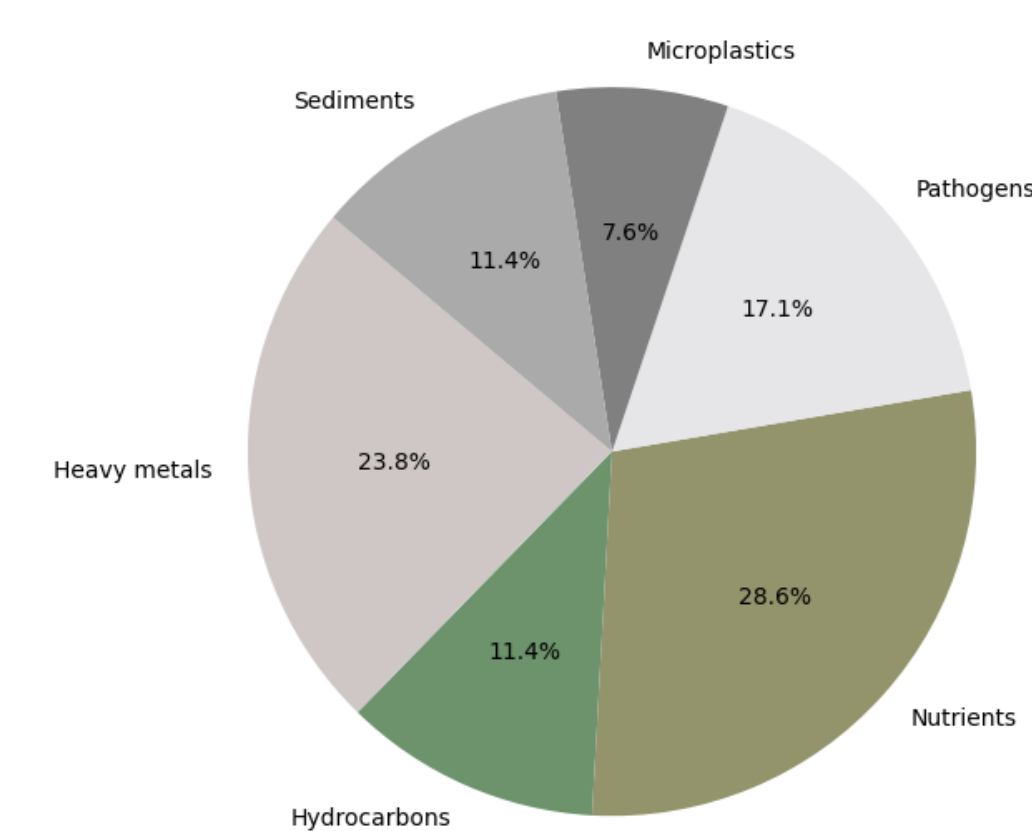
BIOSWALE DIAGRAM

The Alexandria Canal in Sydney is considered one of the most polluted in Australia, with the presence of heavy metals, hydrocarbons, nutrients, and pathogens. A 1,500m² bioswale with native plants could filter between 30–50% of the contaminated water, depending on flow and maintenance.

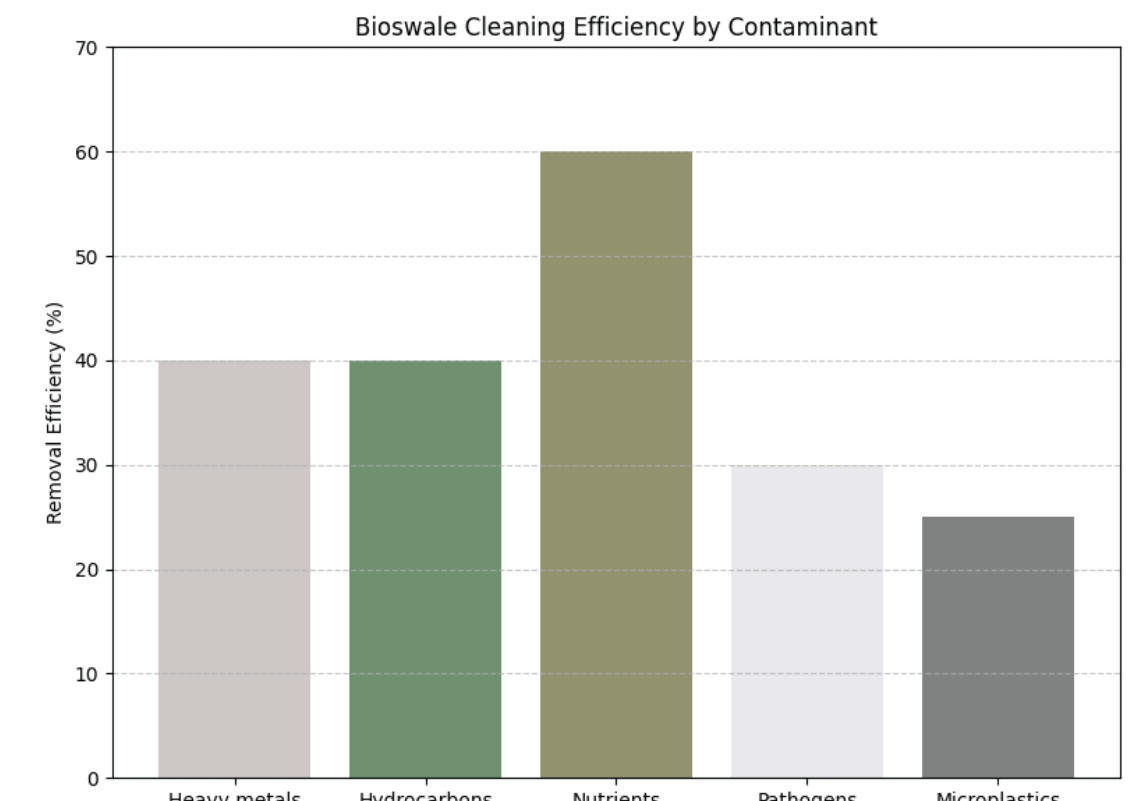
- Contaminant removal capacity: 30–50% of contaminated water volume. Efficiency by contaminant:
- Heavy metals: up to 40%
- Hydrocarbons: 30–40%
- Microplastics: 15–25%
- Nutrients: 50–60%
- Pathogens: 20–30%



Estimated Presence of Contaminants in Alexandria Canal

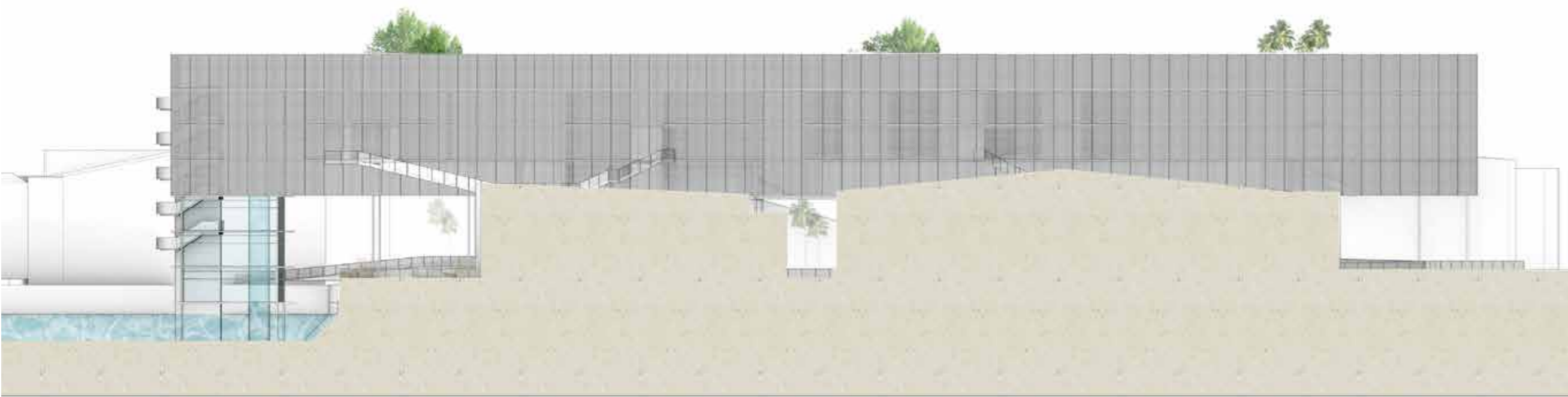


Bioswale Cleaning Efficiency by Contaminant

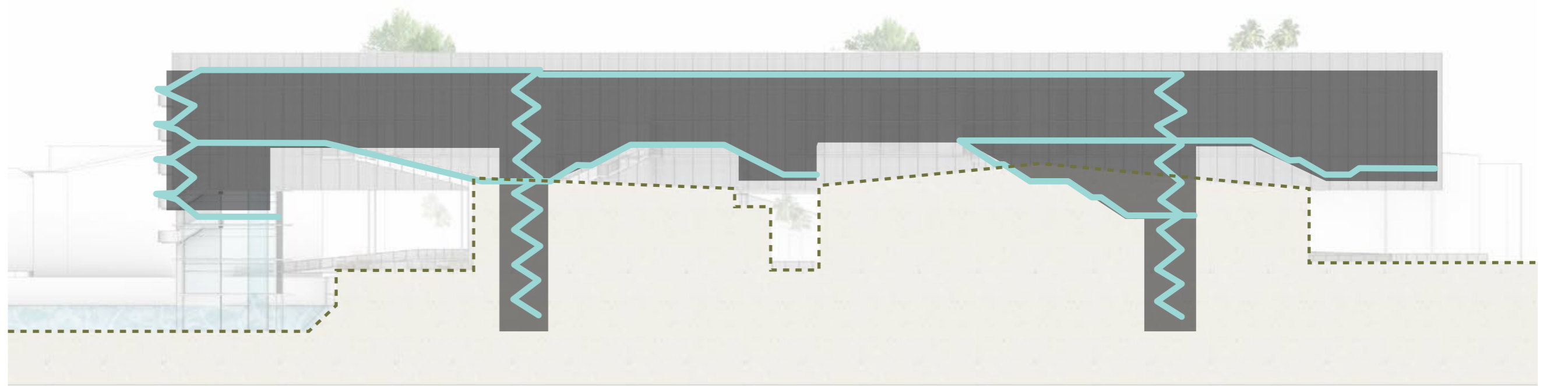




GENERAL EAST VIEW: THE ELEVATED PARK AND THE BIOSWALE



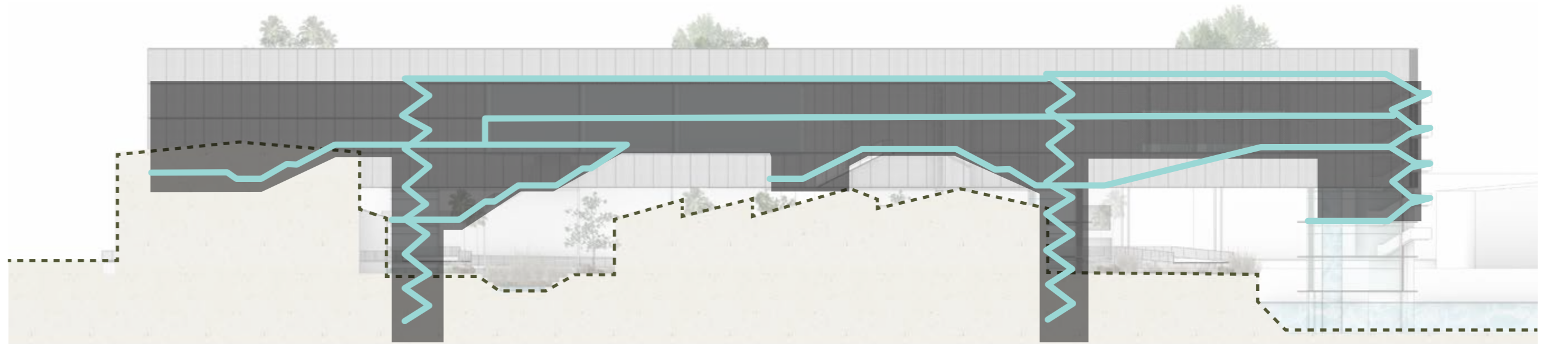
EAST ELEVATION
SCALE 1:500



ELEVATION DIAGRAM
SCALE 1:500



WEST ELEVATION
SCALE 1:500



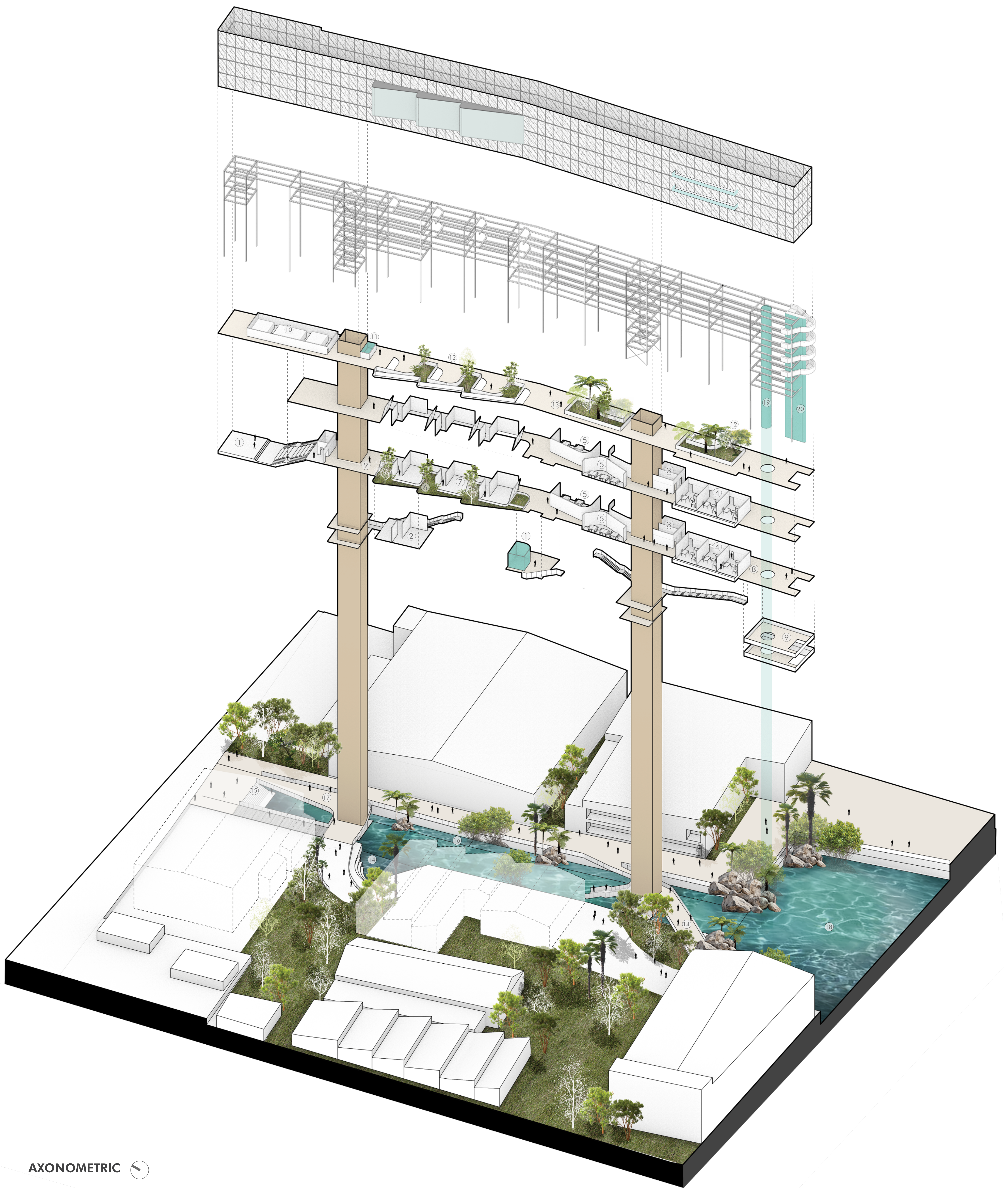
ELEVATION DIAGRAM
SCALE 1:500



RAINWATER INTERIOR GARDENS



ELEVATED GREEN PARK FOR ALEXANDRA CANAL



AXONOMETRIC ↻

PROGRAM

- | | |
|---------------------------|---------------------|
| 1. Auditorium | 11. Water Collector |
| 2. Lobby | 12. Gardens |
| 3. Restrooms | 13. Rooftop Cafe |
| 4. Classrooms | 14. Meander |
| 5. Offices | 15. Amphitheater |
| 6. Rain Water Gardens | 16. Bioswale |
| 7. Exhibition Rooms | 17. Bridges |
| 8. Cafe | 18. Canal |
| 9. Contemplative Terraces | 19. Filter Pipe |
| 10. Mechanical Room | 20. Fountain Stairs |

LEGEND

- Vegetation
- Alexandra Canal
- Ground Floor: Plazas, Bridges And Paths
- Vertical Circulation
- Water Collector Systems