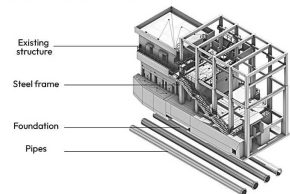


THE NILE AXIS : URBAN / INDUSTRIAL CONFLICT

cairo size - industrial corridor

INDUSTRY TO URBANITY

A Linkage Between Production And Community
HydroScape | Artificial Nile, Cairo



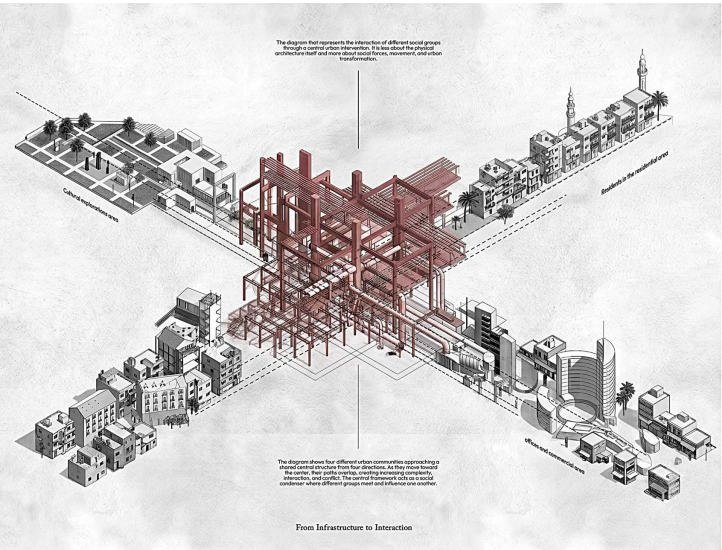
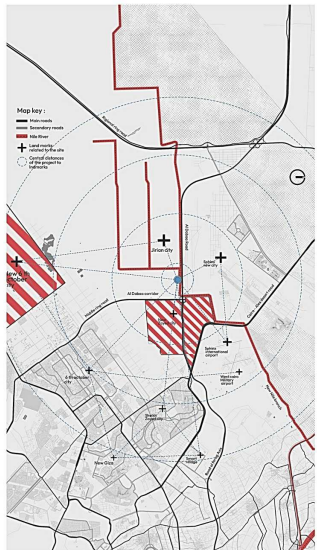
The existing water pumping stations establish a physical and psychological boundary between the city and the river. Designed solely as industrial utilities, they disconnect surrounding communities from the waterfront and limit public engagement with this vital infrastructure. This project challenges that separation by reimagining the pumping station as a social condenser, transforming a hidden machine of water distribution into a civic platform that fosters interaction, recreation, and collective urban life.

WHY ARTIFICIAL NILE ?

The Artificial Nile was conceived as a strategic catalyst for the future growth of Steel City, introducing a new waterfront landscape that supports diverse economic, environmental, and public life. Beyond its hydraulic function, the river establishes a linear ecological corridor capable of shaping new patterns of development and creating opportunities for social interaction along its banks.

Despite its potential, the waterfront is interrupted by water pumping stations and technical infrastructure that operate as isolated industrial enclaves. Designed primarily for efficiency and utility, these facilities create physical and visual barriers between communities and the river, limiting public access and reducing the waterfront to a purely functional landscape.

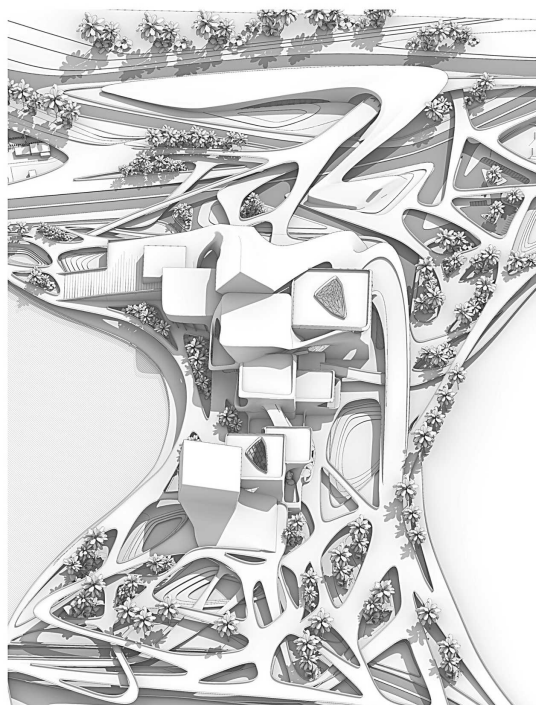
The project reimagines these pumping stations as social condensers, transforming essential water infrastructure into vibrant civic destinations. Through outdoor recreation, the structures become places for gathering, learning, recreation, and cultural exchange, offering industry and urban life to coexist. By reconnecting people with the Artificial Nile, the project positions infrastructure not as a barrier, but as a catalyst for community, identity, and urban life.



LAYOUT FORMATION

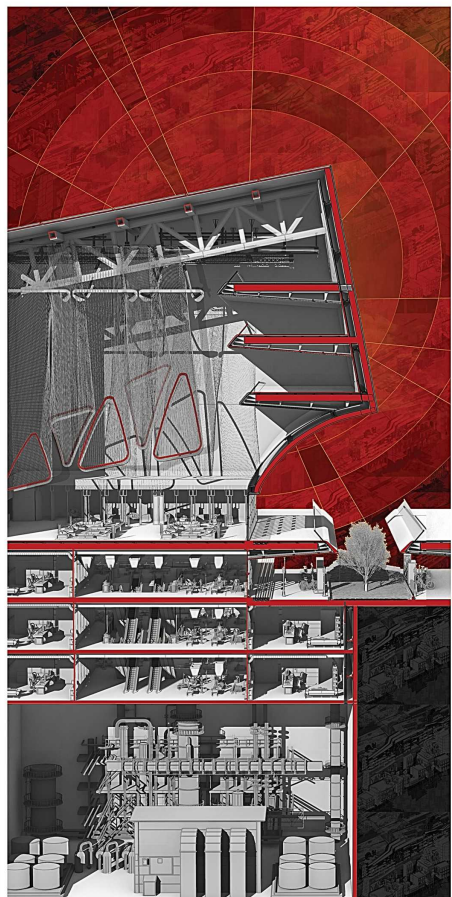
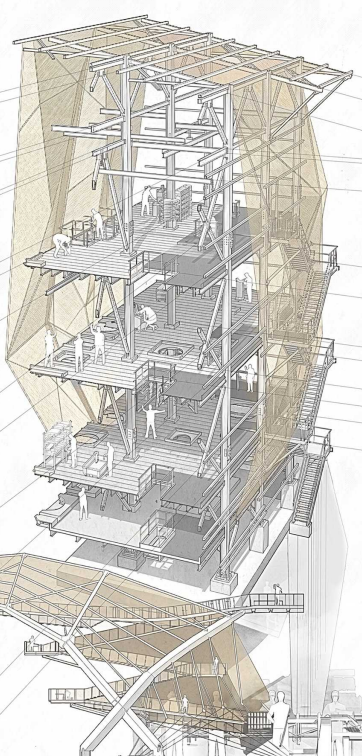
An Axonometric of Layout
HydroScape | Artificial Nile, Cairo

An organic masterplan that integrates a central cluster of rectilinear masses with a fluid, parametric landscape. This central core is enveloped by a web-like network of biomorphic circulation paths and sinuous canopies that branch out across the site. The layout creates a deeply interconnected environment, carving out organic pockets for clustered trees, terraced landforms, and fluid contours.



multi-layered complex defined by an intricate, monochrome structural framework of exposed beams and columns. This rigid, industrial core is partially wrapped in a lightweight, faceted skin with a translucent, warm orange tone, creating a distinct visual contrast between the building's skeleton and its geometric envelope.

dynamic system of crisscrossing ramps and external stairways handles the vertical circulation, while a sharp pyram alignment line emphasizes the technical precision of the draft. Throughout the staggered floor plates, numerous small-scale figures are shown interacting with the space, giving the complex a functional, workshop-like atmosphere.



MASTER PLANNING

The design responds to two distinct realities: context and concept

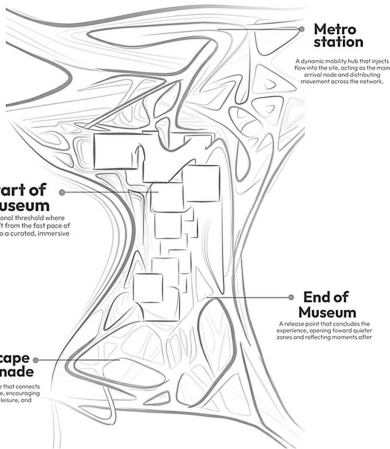
Hydroscape | Artificial Nile, Cairo

Context

A highly connected urban waterfront where transportation networks, public spaces, and the natural landscape converge into a dynamic mobility corridor. The metro station serves as the central interchange, organizing movement through a radial, fluid circulation system that seamlessly connects pedestrians, transit, and the waterfront, enhancing accessibility, urban vitality, and spatial continuity.

Concept

The concept envisions a fluid, radial hub where the metro station serves as the anchor of movement, transforming circulation patterns into an expressive architectural form. Branching pathways radiate outward like an organic network, seamlessly extending into the surrounding urban fabric to connect transportation, public spaces, and the waterfront, creating a continuous and intuitive spatial experience.

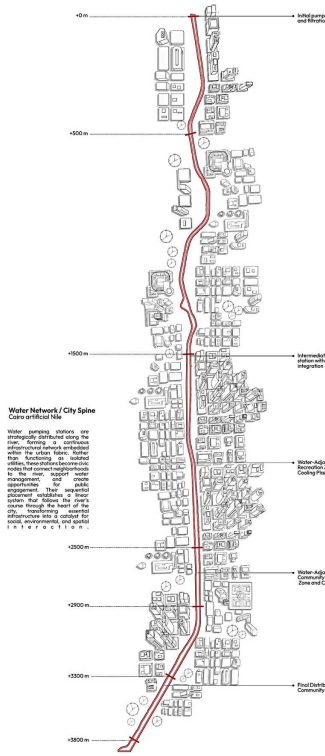


- 1. Entrance
- 2. assembly hall
- 3. ticket office
- 4. cctv
- 5. safety room
- 6. bazars
- 7. lounges
- 8. temporary exhibition
- 9. permanent exhibition
- 10. Ladin entrance
- 11. atrium
- 12. meeting room
- 13. office
- 14. storage
- 15. cafe
- 16. back of house
- 17. auditorium assembly hall
- 18. House
- 19. stage
- 20. back&side stage
- 21. MPH
- 22. Restaurant
- 23. library entrance
- 24. Reading steps
- 25. Book shelves hall
- 26. Conference room
- 27. organizational spaces for library
- 28. Assembly hall
- 29. info desk
- 30. Commercial shops
- 31. Lost and founds
- 32. Private sector offices
- 33. Outdoor seating terrace
- 34. Ticketing area
- 35. Administration zone
- 36. Restaurant

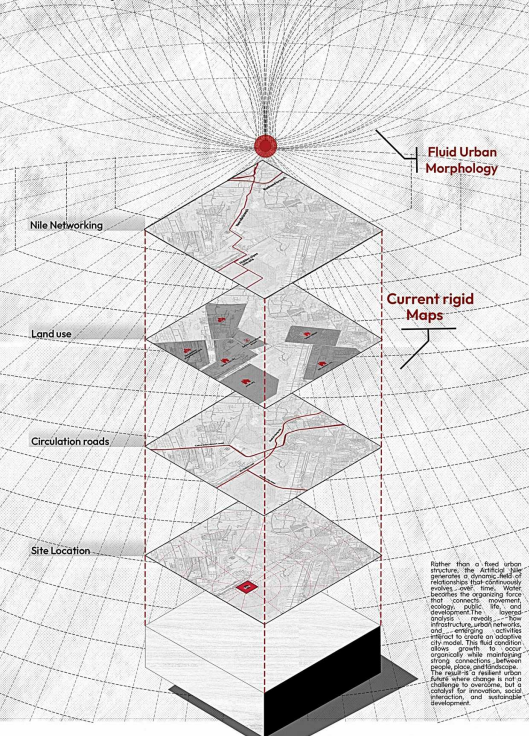
The Central Cairo Urban artificial Nile / Integrated Water Network

Distribution of water pumping stations along artificial Nile branch

The hydrology diagram explores the ground-level concept of an "Artificial Nile," a proposed new waterway engineered to flow through the heart of central Cairo. This project serves as a catalyst to improve the city's water distribution through a sequence of integrated pumping and filtration stations or objects embedded within the dense urban fabric. Our hydrological design encompasses three distinct stages: first, a network of water pumping stations to ensure a consistent, reliable, and accessible water supply to surrounding neighborhoods.



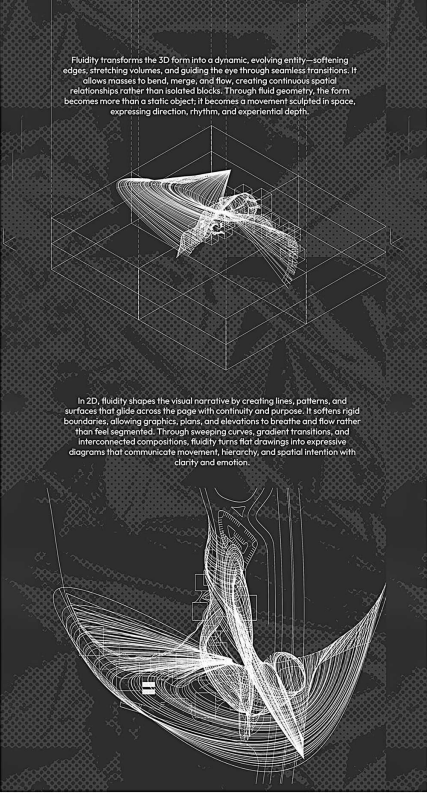
Site Analysis

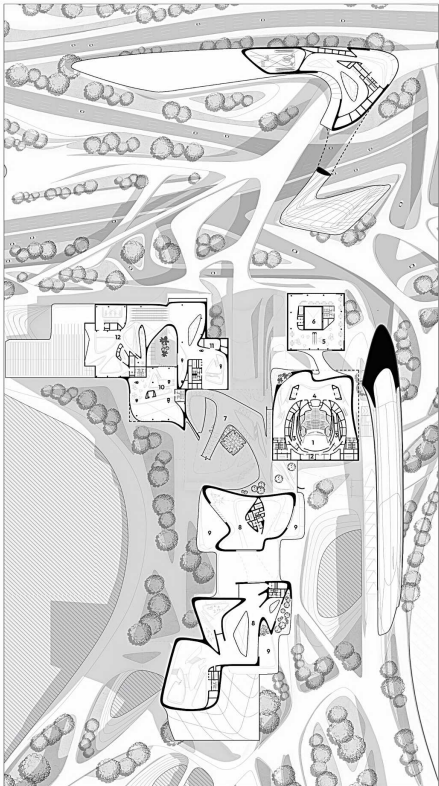


The Fluid City: Mapping an Evolving Urban Future

An interconnected landscape of flows and relationships, where the artificial Nile becomes the catalyst for resilient growth, urban transformation, and collective urban life.

Studio theme





HYDROSCAPE
Floor plan level +14.00m

- 1. House
- 2. Back stage
- 3. Side stage
- 4. Assembly hall for auditorium
- 5. Cafe
- 6. MPH
- 7. EXPO
- 8. Permanent gallery
- 9. Outdoor seating
- 10. Restaurant
- 11. Workshops



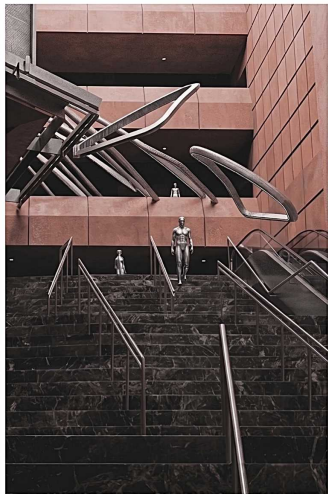
HYDROSCAPE
Floor plan level +22.00m

- 1. House
- 2. Back stage
- 3. Side stage
- 4. Assembly hall for auditorium
- 5. Outdoor seating
- 6. To the big exhibition hall
- 7. EXPO
- 8. Cafe
- 9. Gallery
- 10. admin entrance
- 11. Helical ramped space (permanent gallery)
- 12. To the library
- 13. Workshops



HYDROSCAPE
Floor plan level +14.00m

- 1. Open gathering space
- 2. Restaurant
- 3. Cafe
- 4. Stepped plaza
- 5. Gallery
- 6. Sky court
- 7. Outdoor seating
- 8. Open space exhibition
- 9. Simulation rooms
- 10. Admins
- 11. Court



Formality of Spaces

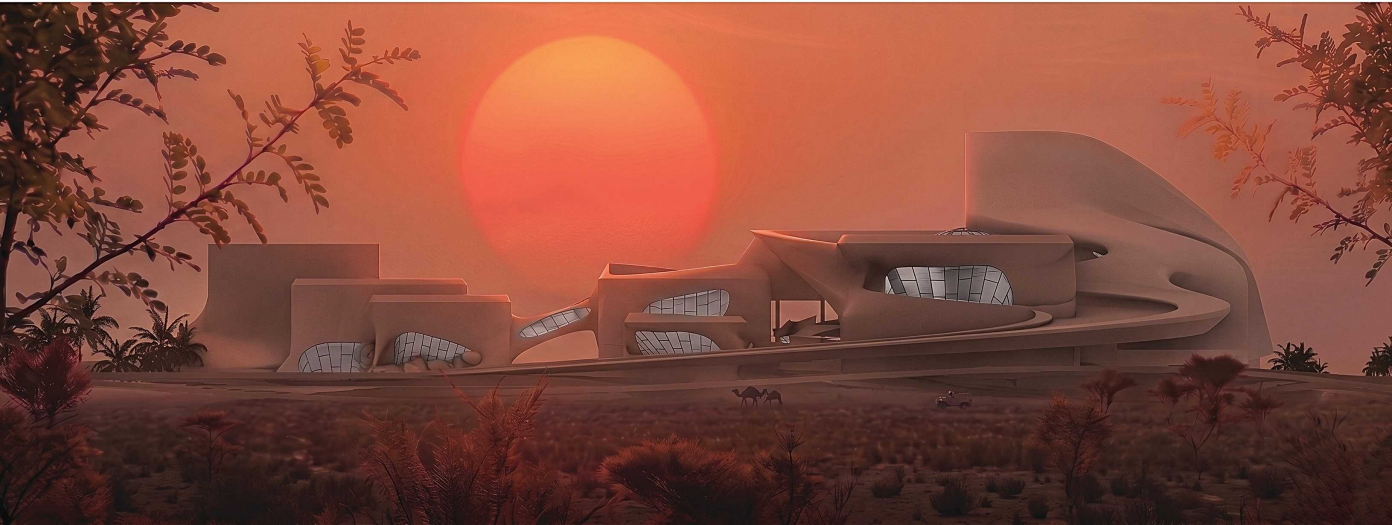
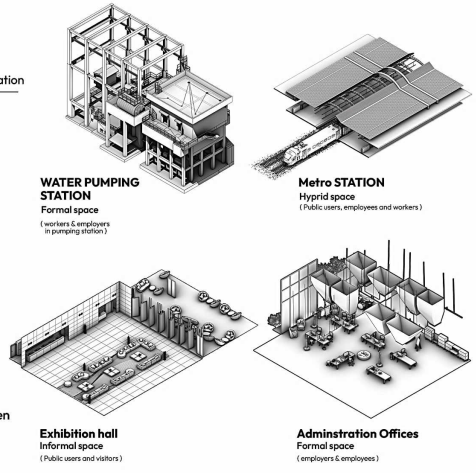
A Spatial Framework for Shared Occupation
HydroScape | Artificial Nile, Cairo

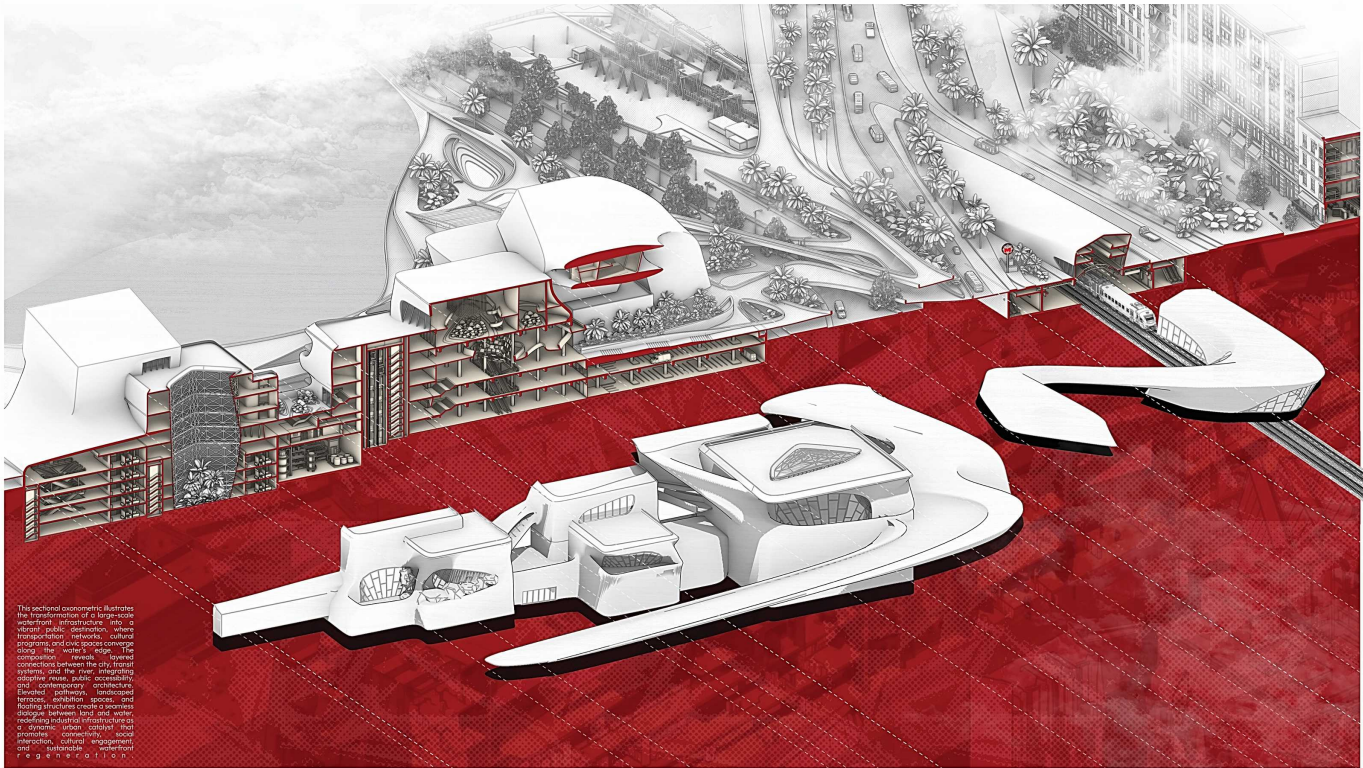
The project brings together users with different levels of access, responsibility, and engagement. Formal spaces, such as the water pumping station and administration offices, operate through controlled circulation and defined hierarchies. Informal spaces, including exhibition areas and public gathering zones, encourage exploration, interaction, and social exchange. Hybrid spaces act as transitional environments where production, education, and community activities overlap.

By transforming industrial infrastructure into a social condenser, the project creates a productive interaction between industry and urban life. The architecture mediates between controlled and open environments, enabling knowledge exchange, public participation, and collective ownership of a previously inaccessible industrial landscape.

"Life takes place in the overlap between the public and the private."

-Jan Gehl





The technical axonometric illustrates the transformation of a large-scale waterfront redevelopment into a vibrant public destination where transportation, recreation, cultural programs and civic spaces converge along the water's edge. The illustration details the strong connections between the city transit system and the new structure, adaptive reuse, public accessibility, and contemporary architecture. Terraces, pathways, courtyards, and bridges enhance spaces and dialogue between land and water, creating a dynamic catalyst that promotes community, social interaction, cultural engagement, and environmental stewardship.

HYDROSCAPE

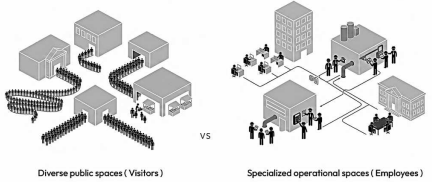
URBAN (INFRA) STRUCTURE

Urban infrastructure forms the interconnected network of transportation, utilities, public spaces, and civic systems that support mobility, connectivity, economic growth, environmental resilience, and the everyday experiences of urban life.

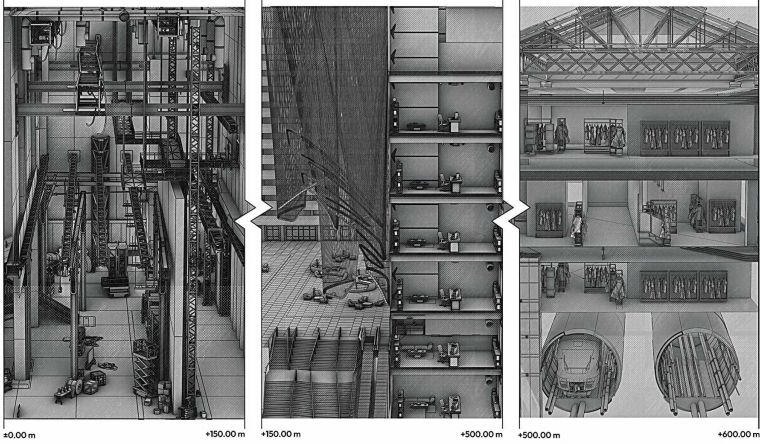
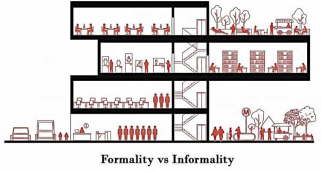
DISTRIBUTION OF USERS

A Linkage Between Production And Community
HydroScope | Artificial Nile, Cairo

"Diverse public spaces (Visitors)" focuses on mass accessibility, showing large, high-volume crowds forming extensive, winding lines to enter public or commercial buildings. Conversely, the right side, "Specialized operational spaces (Employees)", highlights a structured corporate and industrial ecosystem where smaller, distinct groups of workers perform targeted tasks, moving seamlessly between office desks, meeting areas, and technical factory stations.



This architectural cross-section diagram titled "Formality vs Informality" contrasts structured, institutional environments with casual, social spaces within and around a multi-story building. The left side of the structure represents formality through highly organized, regulated zones, featuring a ground-floor reception with security turnstiles and rigidly lined-up individuals, corporate offices filled with orderly computer workstations, and a curated exhibition gallery. In contrast, the right side and outdoor areas embody informality by showcasing relaxed, community-oriented environments, including a bustling ground-level streetcar with a metro entrance, trees, and an open rooftop terrace designed for leisure with lounge chairs, greenery, and outdoor dining.



Workers space allocation
This complex schematic carefully designates critical key zones to facilitate maximum safety protocols, multi-level collaborative workspaces, and overall maximum efficient worker access across all levels of the structure.

Public museum and administration
Distinct public and private zones are multi-levels/separated for clarity. Shared vertical circulation of the core serves as efficient and secure inter-level access.

Connecting people and transit
A multi-functional space where metro access is seamlessly integrated below diverse commercial and leisure activities. Besides the critical integration of urban transport and commerce.

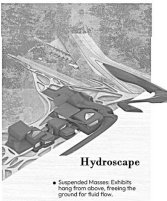


CONCEPT OF EXHIBITS

Fluidity Suspended. Space Unleashed.
Hydroscape (Artificial Nile, Cairo)

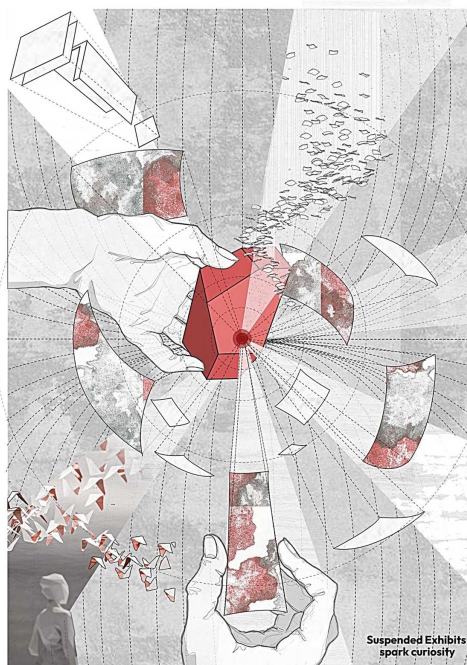
By anchoring the exhibition volumes entirely to the upper structural canopy, the design liberates the ground plane, allowing the architectural landscape below to mimic the unimpeded flow of water. The overhead structural suspension creates a gravity-defying environment where massive forms appear weightless, resembling suspended droplets or fluid masses frozen in mid-air.

Leaving the floor entirely unobstructed not only maximizes spatial flexibility but also guides visitors through a seamless, continuous journey. This vertical separation opens up dramatic voids, allowing cinematic god rays and atmospheric fog to seep through the cavernous spaces, deeply intensifying the ethereal, fluid experience of the architecture.

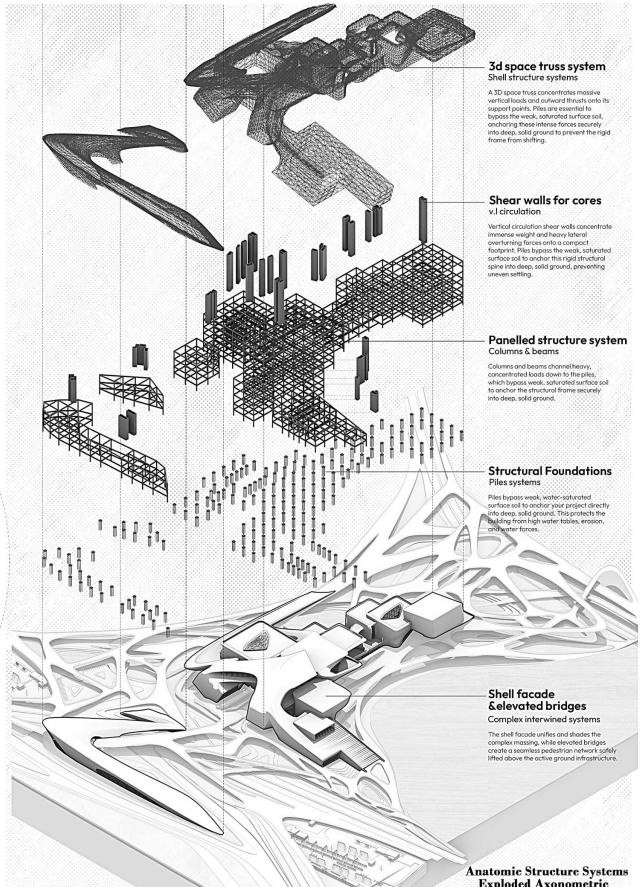


Hydroscape

- Suspended Masses: Exhibits, grid from above, freeing the suspension to full use.
- Cinematic Voids: Floating volumes create dramatic gaps for light and fog.



Suspended Exhibits spark curiosity



- 3d space truss system**
Shell structure systems
A 3D space truss concentrates massive vertical loads and outward thrusts onto its support points. This one is essential to bypass the weak, saturated surface soil, anchoring these intense forces securely into deep, solid ground to prevent the rigid frame from settling.
- Shear walls for cores**
V.I circulation
Vertical circulation shear walls concentrate immense weight and heavy lateral overwinds into either a central 'footprint' pile. Piles bypass the weak, saturated surface soil to anchor this rigid structural spine into deep, solid ground, preventing uneven settling.
- Panelled structure system**
Columns & Beams
Columns and beams channel heavy, concentrated loads down to the piles, which bypass weak, saturated surface soil to anchor the structural frame securely into deep, solid ground.
- Structural Foundations**
Piles systems
Piles bypass weak, water-saturated surface soil to anchor your project directly into deep, solid ground. This protects the building from high water tables, erosion, and other forces.
- Shell facade**
Elevated bridges
Complex interlinked systems
The shell facade unifies and shades the complex massing, while elevated bridges create a seamless pedestrian network safely lifted above the active ground infrastructure.
- Anatomic Structure Systems**
Exploded Axonometric

Form generation

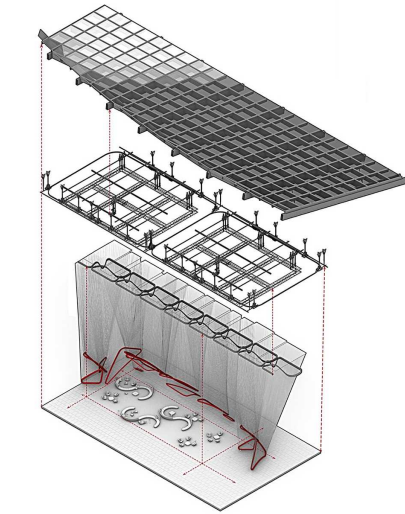
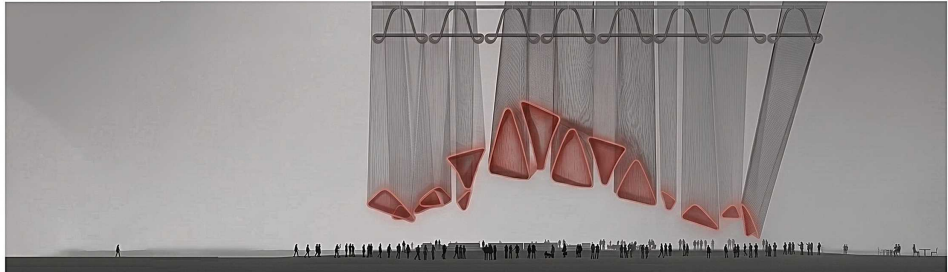
- 1. Site location and existing water pumping station**
The underpinning program and pumping station directly dictate the building's layout, grids, and circulation.
- 2. Built up areas**
The 30% built-up area footprint directly dictates a dense, vertical massing approach to preserve 70% of the land for open water landscapes and ecological integration.
- 3. Recognizing context**
The shifting structural boxes are deliberately rotated along key panoramic vectors to maximize responsive views of the surrounding urban and landscape.
- 4. Reshaping roads & connectivity**
The reshaped road network creates seamless multi-modal connections, bridging the surrounding urban fabric directly to the new water park site.
- 5. Fluidity approach**
Emulating openings
The fluid, arched curves seamlessly guide pedestrian flow while carved openings puncture the massing to draw natural light and breeze deep inside.
- 6. Landscape linkage**
Hiding bridge connectivity with multiple levels.

Why Exhibits installed from ceiling

Ceiling-suspended exhibits create a floating and immersive spatial experience.

Suspending the exhibits transforms the museum into an immersive spatial experience rather than a static display. The floating elements create a sense of tension, movement, fragmentation, and visual lightness, allowing visitors to perceive the exhibition from multiple perspectives while reinforcing the project's narrative of continuity and transition.

By freeing the ground plane, the space becomes more fluid, dynamic, and interactive, encouraging circulation beneath and around the installations. The hanging system also enhances vertically, emphasizes the atrium voids and skylights, and allows light, shadow, transparency, and motion to become part of the exhibition experience itself.

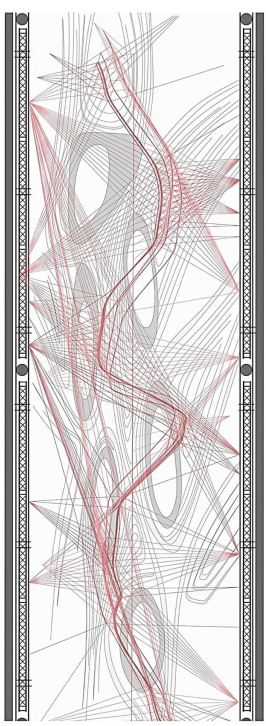


SUSPENDED EXHIBITION SYSTEM

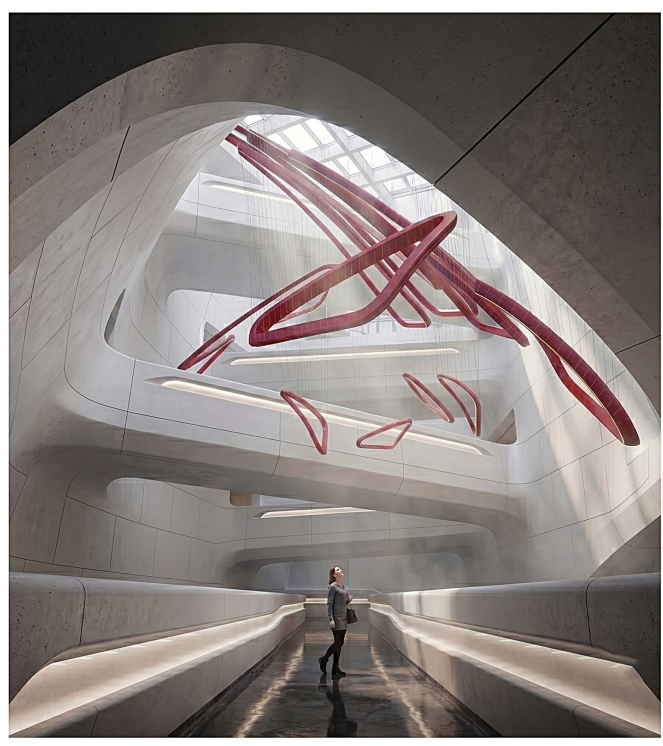
The exhibitions are suspended from a concealed ceiling grid using a modular steel frame and adjustable hangers. This system allows flexibility in configuration, height, and arrangement to accommodate various exhibit forms and spatial needs.

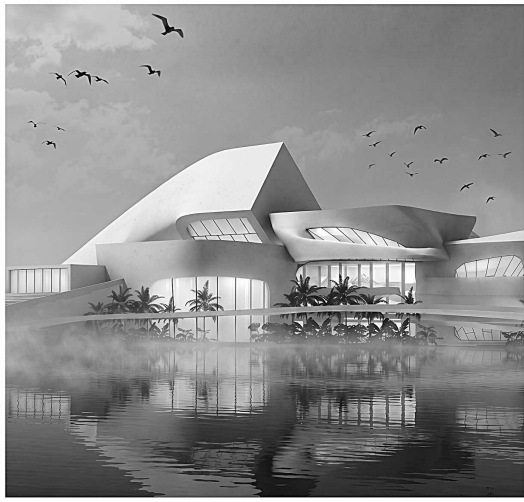
Lightweight mesh panels and sculptural elements are hung within the frame, creating layered, semi-transparent installations that float above the ground plane. The system ensures structural stability while maintaining a sense of lightness and openness in the space.

This hanging approach keeps the floor clear for circulation, enhances visibility from multiple levels, and allows light and air to flow freely through the exhibition.



Looking up ceiling plan

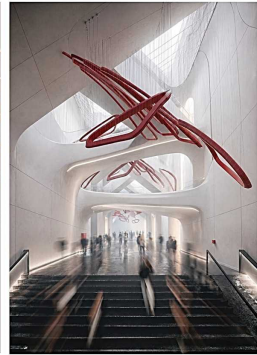
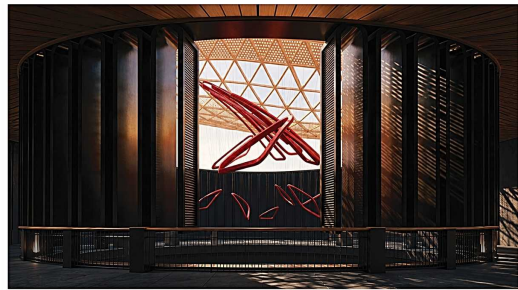
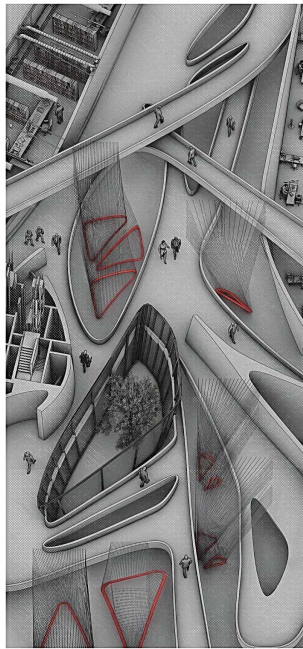




Sculpted Biomorphic Horizon Landmark

A Vision of Fluid Monoliths
HydroScope | Artificial Nile, Cairo

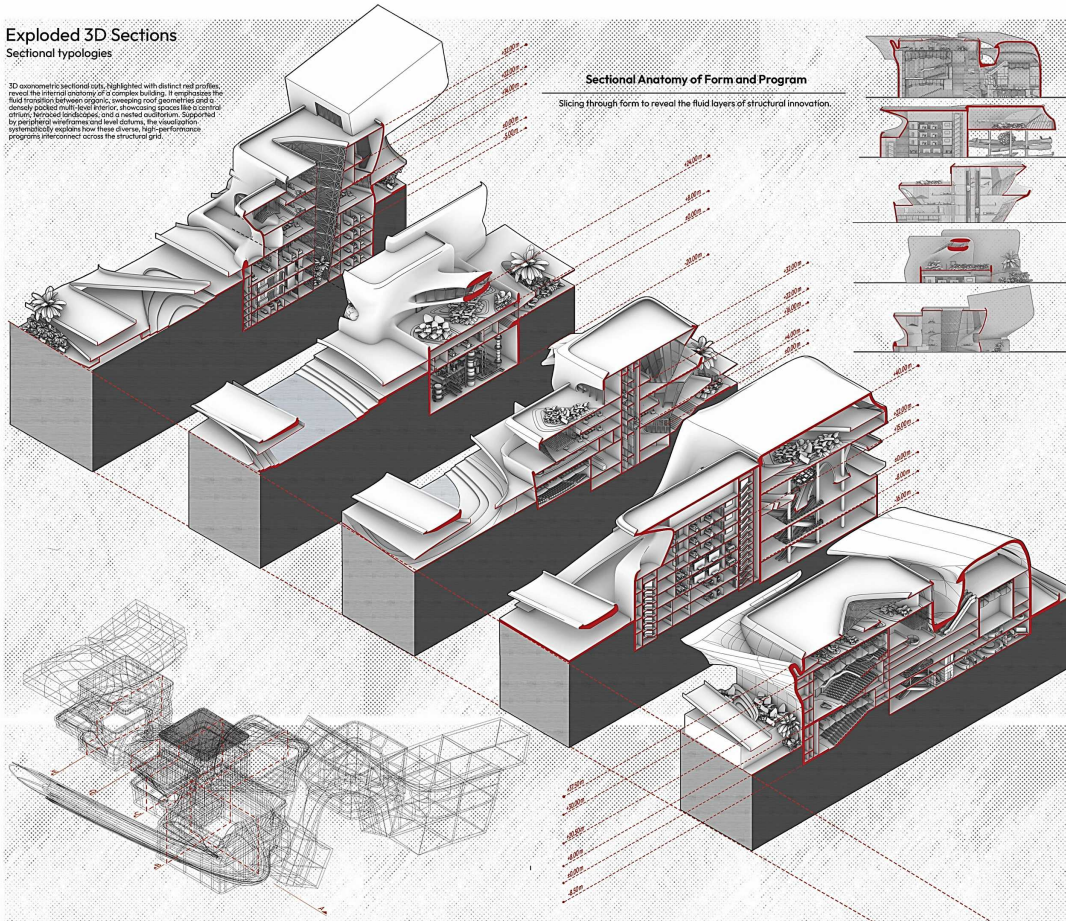
This architectural landmark seamlessly blends organic, sweeping geometries with sharp, angular canopies to redefine Cairo's waterfront identity. The structure acts as an ecological pavilion, utilizing high-strength, cast-in-place concrete forms to provide passive shading while framing expansive, light-filled glass facades that look out over the water. Surrounded by lush, native palm groves and a tranquil reflective lagoon, the design dissolves the boundary between built architecture and the natural river ecosystem. A sweeping pedestrian boardwalk extends outward, inviting visitors into a dynamic civic oasis where sustainable design meets monumental cultural expression.



Exploded 3D Sections

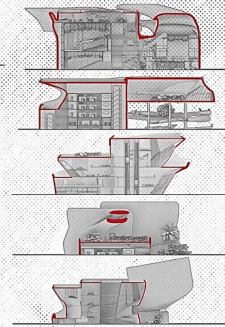
Sectional typologies

3D axonometry to sectional cuts, highlighted with distinct red profiles, reveal the internal anatomy of a complex building. It emphasizes the fluid transitions between organic, sweeping floor geometries and densely packed multi-level interior, showcasing spaces like a central atrium, landscaped landscape, and a multi-level auditorium. Supported by peripheral wireframes and level columns, the visualization synthetically explains how these diverse, high-performances programs interconnect across the structural grid.



Sectional Anatomy of Form and Program

Slicing through form to reveal the fluid layers of structural innovation.



Architecture Elements

The Integration of Form, Flow and Function
HydroScope | Artificial Nile, Cairo

The collection of design components functions as an integrated ecosystem of contemporary public space. It highlights the fusion of dynamic circulation systems (stairs, ramps, and escalators) with specialized performance volumes (exhibits and acoustic shells) to transform rigid physical boundaries into fluid, experiential environments.



Suspension Exhibits
Floating Display Planes



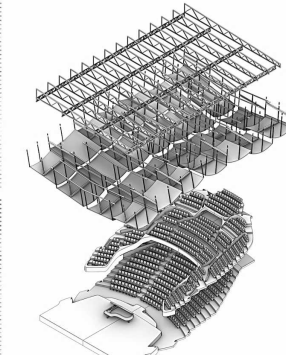
Dual Escalator Nexus
Vertical Kinetic Circulation



Double Helical Staircase
Continuous Vertical Ascent



Fluid Multi-Level Ramps
Interwoven Spatial Flow



Acoustic Shell Assembly
Form Follows Sound

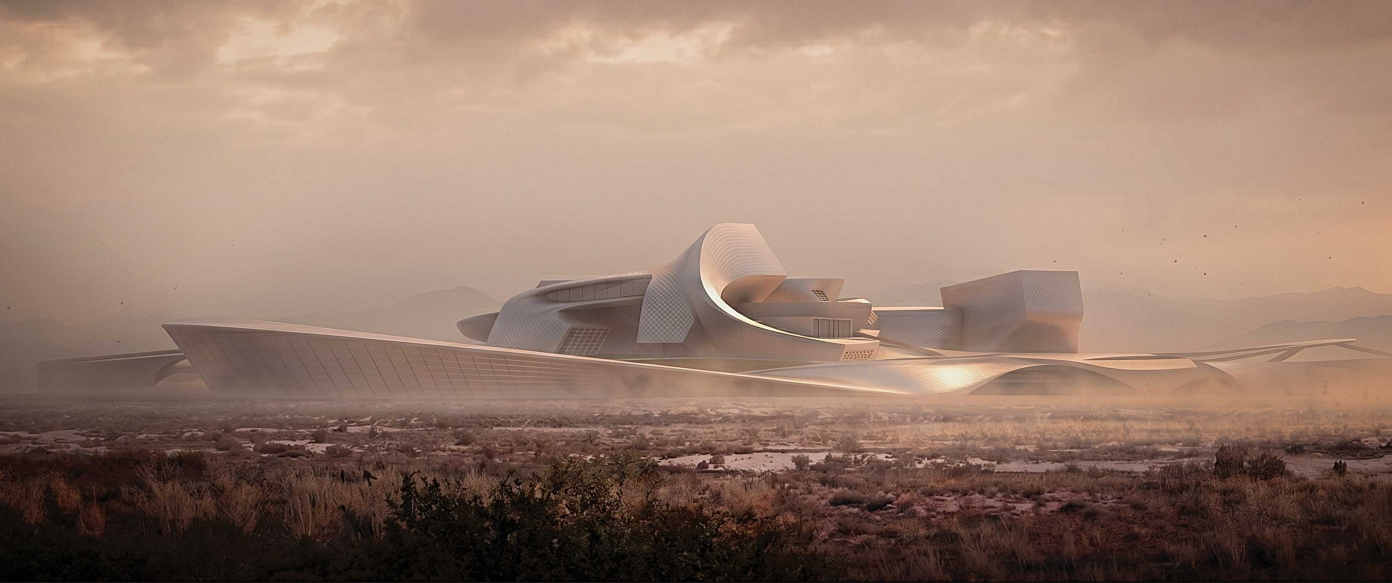


Infrastructure as Public Realm

Condensing water and community within a renewed civic landscape that celebrates the Nile and public life.

HYDROSCAPE

A HYDRO-URBAN LANDSCAPE FOR THE NEW ARTIFICIAL NILE, EGYPT
TRANSFORMING WATER INFRASTRUCTURE INTO PUBLIC REALM



NEW DEFINITION OF CITY

Untapped Potential Within Existing Assets
HydroScope | Artificial Nile, Cairo

Transforming Hidden Infrastructure into Urban Life.

Water pumping stations are strategically distributed along the Nile and its connected waterways, forming an extensive infrastructural network that silently sustains urban life. Positioned at critical points where water management, transportation corridors, and urban development intersect, these facilities have shaped the growth of surrounding communities for decades. Although often overlooked as purely technical installations, their geographic spread reveals a continuous chain of infrastructural landmarks embedded within the heart of the city.

As urban priorities shift and cities seek more sustainable approaches to development, many pumping stations present a unique opportunity for adaptive reuse. Their robust structures, waterfront locations, and proximity to residential districts make them valuable urban assets rather than isolated industrial compounds. By reimagining these facilities as publicly accessible destinations, the city can preserve its infrastructural heritage while introducing new social, cultural, educational, and recreational functions that enrich everyday urban life.

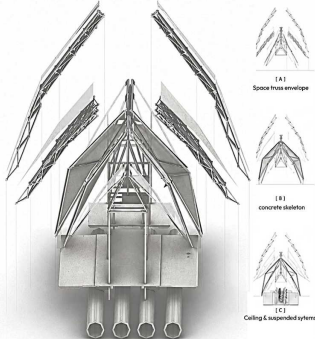
The collective distribution of pumping stations creates the possibility of establishing a connected network of social hubs along the river corridor. Instead of functioning solely as machines that condense and distribute water, these sites can evolve into social condensers that gather people, activities, and experiences. Through strategic interventions, each station can become a node within a larger urban system. Linking neighborhoods, activating waterfronts, encouraging community interaction, and transforming neglected infrastructure into catalysts for regeneration, together they offer a vision in which the infrastructure that once connected water across the city can now connect people as well.

The Assembly of Structural Layers Forming Architectural Space

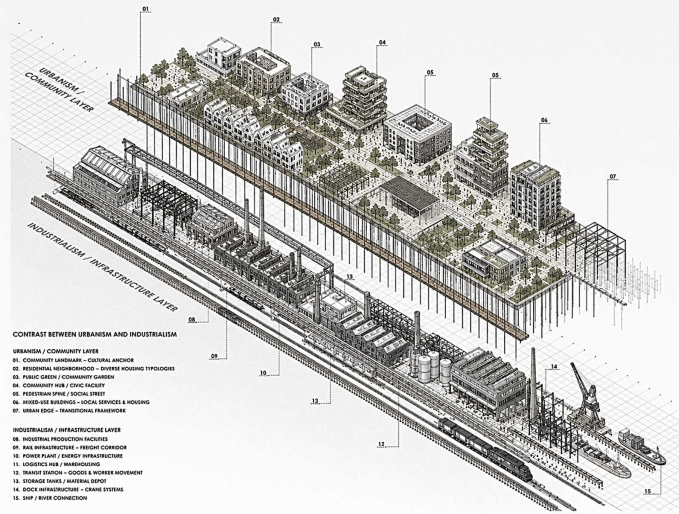
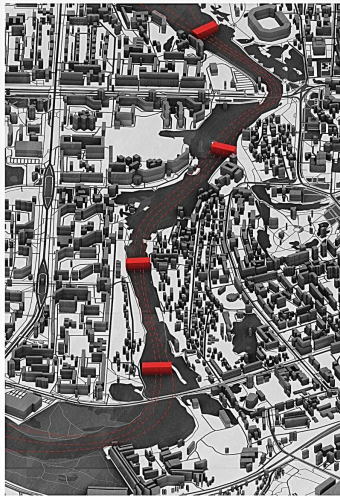
Exploring how layered structural systems shape architectural space.

This diagram illustrates the layered assembly of the architectural system, revealing the relationship between primary structural elements, secondary support systems, and spatial enclosures. Through an exploded axonometric composition, the project demonstrates how individual components are organized and integrated to form a cohesive architectural framework. The visualization highlights the hierarchy of construction, emphasizing the interaction between structure, envelope, and infrastructure while communicating the tectonic logic that shapes the building's form, performance, and spatial experience.

A visualization of the layered construction that reveals the tectonic components into a cohesive architectural whole, revealing construction logic and spatial hierarchy.



THE LOGIC OF STRUCTURAL ASSEMBLY



- CONTRAST BETWEEN URBANISM AND INDUSTRIALISM
- URBANISM / COMMUNITY LAYER
 - 01. COMMUNITY LANDMARK - CULTURAL ANCHOR
 - 02. RESIDENTIAL HIGH-DENSITY - DIVERSE HOUSING TYPOLOGIES
 - 03. PUBLIC GREEN / COMMUNITY GARDEN
 - 04. COMMUNITY HUB / COLLEGIATE
 - 05. PEDESTRIAN SPINE / SOCIAL STREET
 - 06. STREET-LEVEL AMENITIES - SOCIAL SERVICES & SHOPPING
 - 07. URBAN EDGE - TRANSITIONAL FRAMEWORK
 - INDUSTRIALISM / INFRASTRUCTURE LAYER
 - 08. INDUSTRIAL PRODUCTION FACILITIES
 - 09. RAIL INFRASTRUCTURE - FREIGHT CORRIDOR
 - 10. POWER PLANT / ENERGY INFRASTRUCTURE
 - 11. LOGISTICS HUB / WAREHOUSING
 - 12. TRANSIT STATION - GOODS & WORKER MOVEMENT
 - 13. STORAGE HUBS / MATERIALS DEPOT
 - 14. ROCK INFRASTRUCTURE - CRANE SYSTEM
 - 15. SHIP RIVER CONNECTION

