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01

Sixty Steps to Home

Sturgeon Fish Ladder through Three Gorges Dam

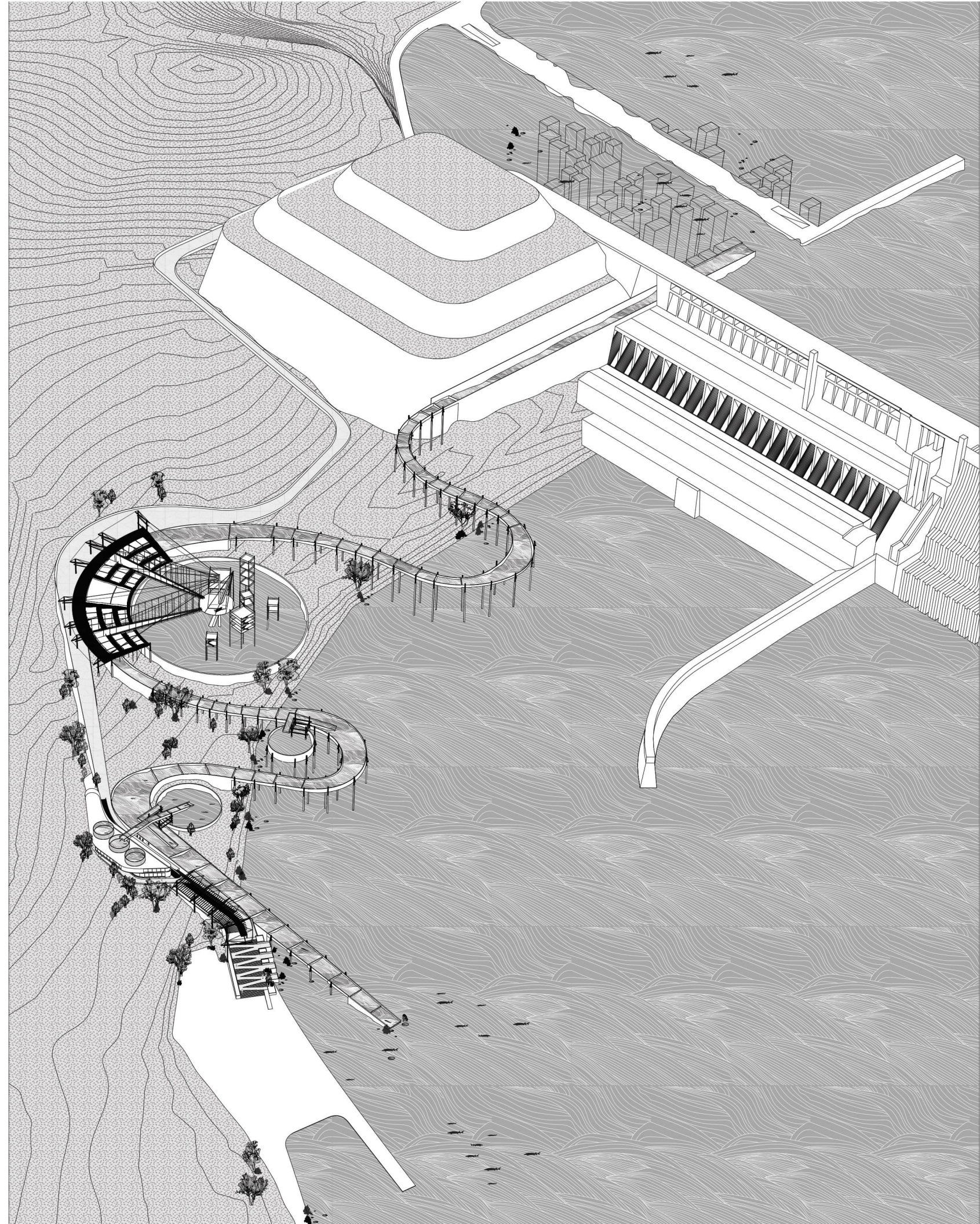
Instructor: Eva Franch

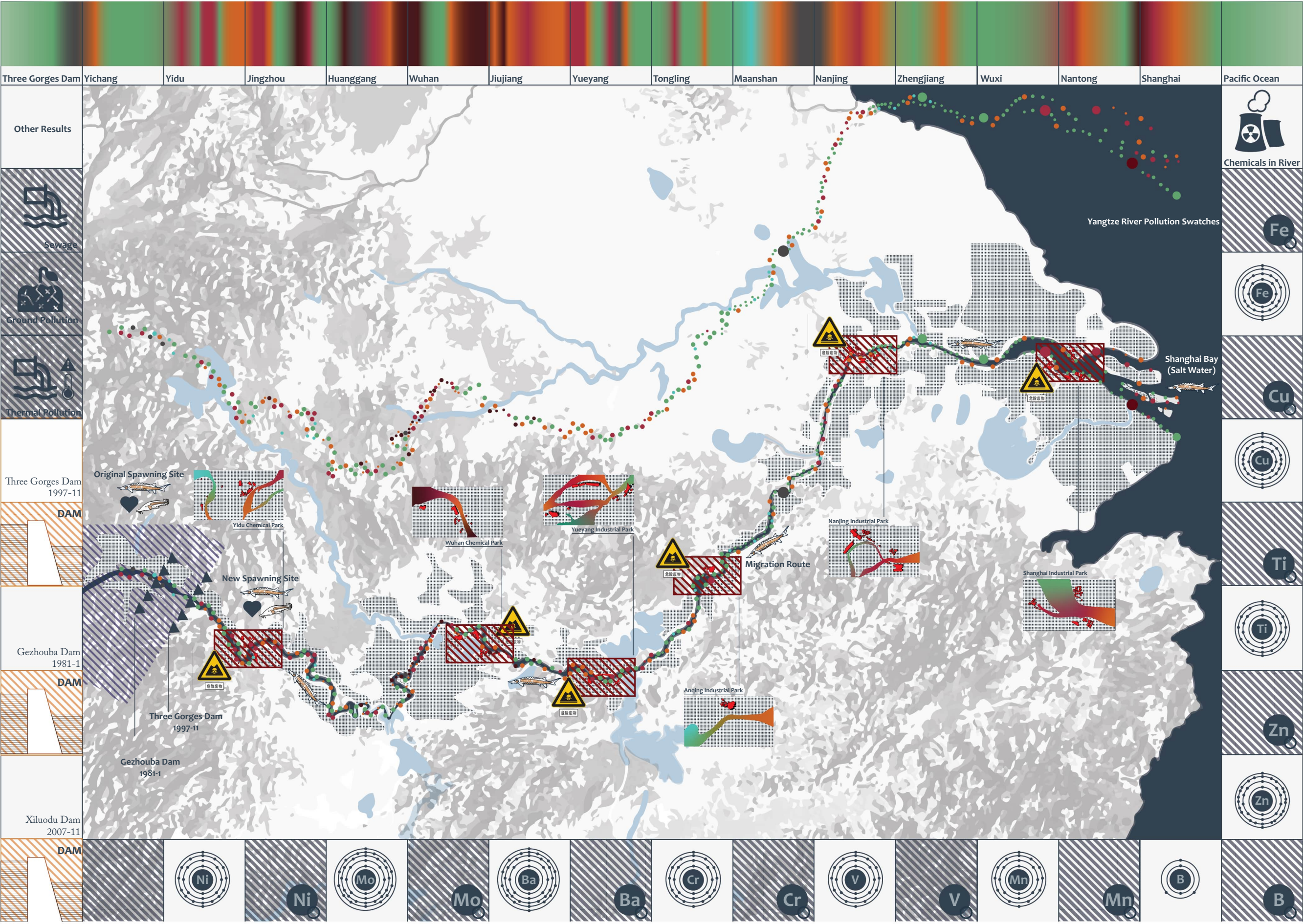
Site: Hubei, China

The first project investigates the relationship between human infrastructure and ecological displacement at the Three Gorges Dam. The dam, while monumental in scale and productive capacity, interrupts the migratory cycle of the Chinese sturgeon and disconnects species from their historical habitats.

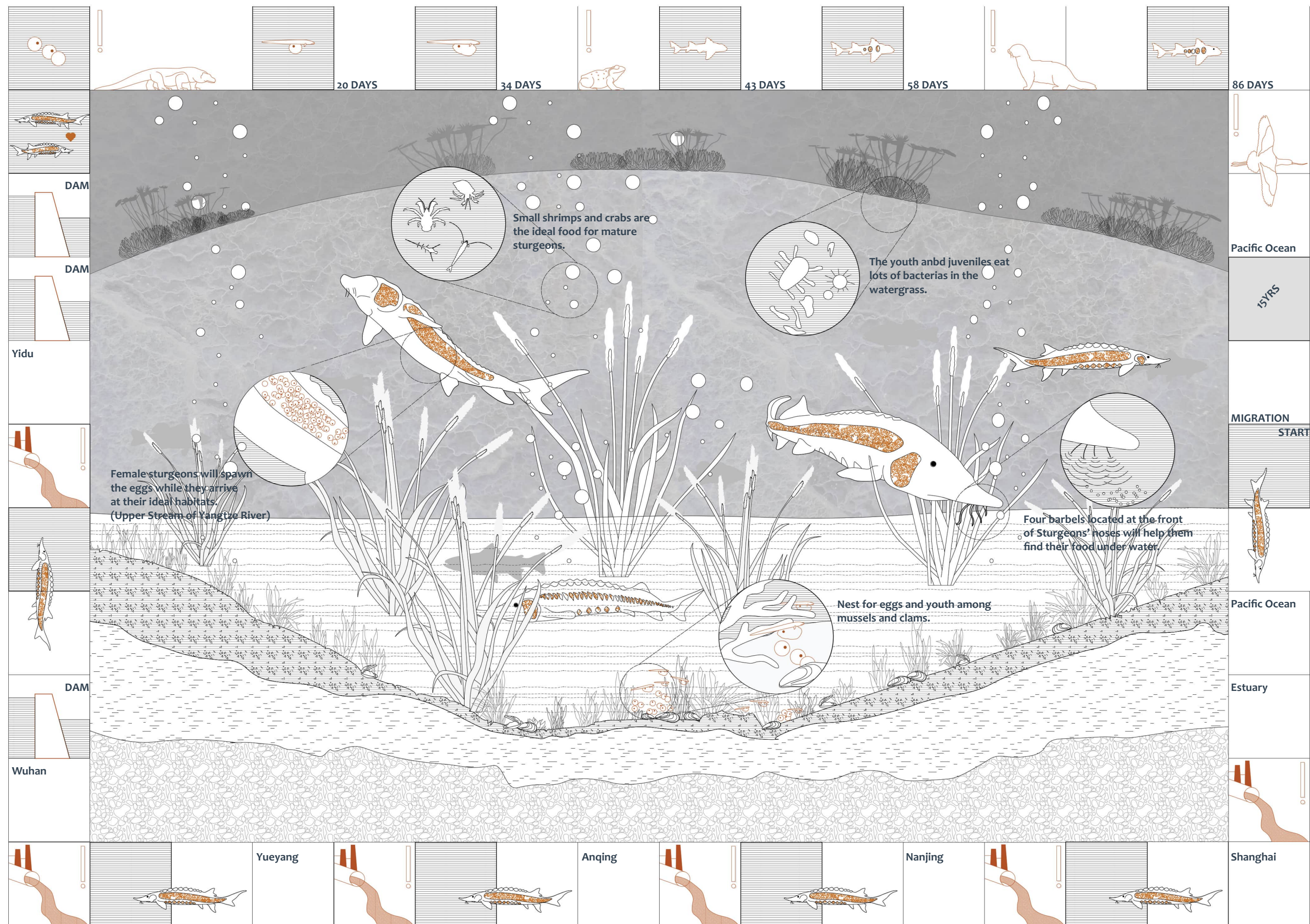
Instead of imagining restoration as simply “bringing nature back,” the project proposes a new coexistence between human activity and ecological systems. A continuous fish ladder allows sturgeons to migrate upstream again, while a parallel linear museum and theater position humans alongside this journey. Scientists, workers, visitors, and aquatic species occupy the same infrastructural corridor.

Here, architecture becomes a device of negotiation between human and non-human life. The project reframes environmental infrastructure not as a machine of separation, but as a shared spatial experience that reconnects ecology, labor, and public awareness.

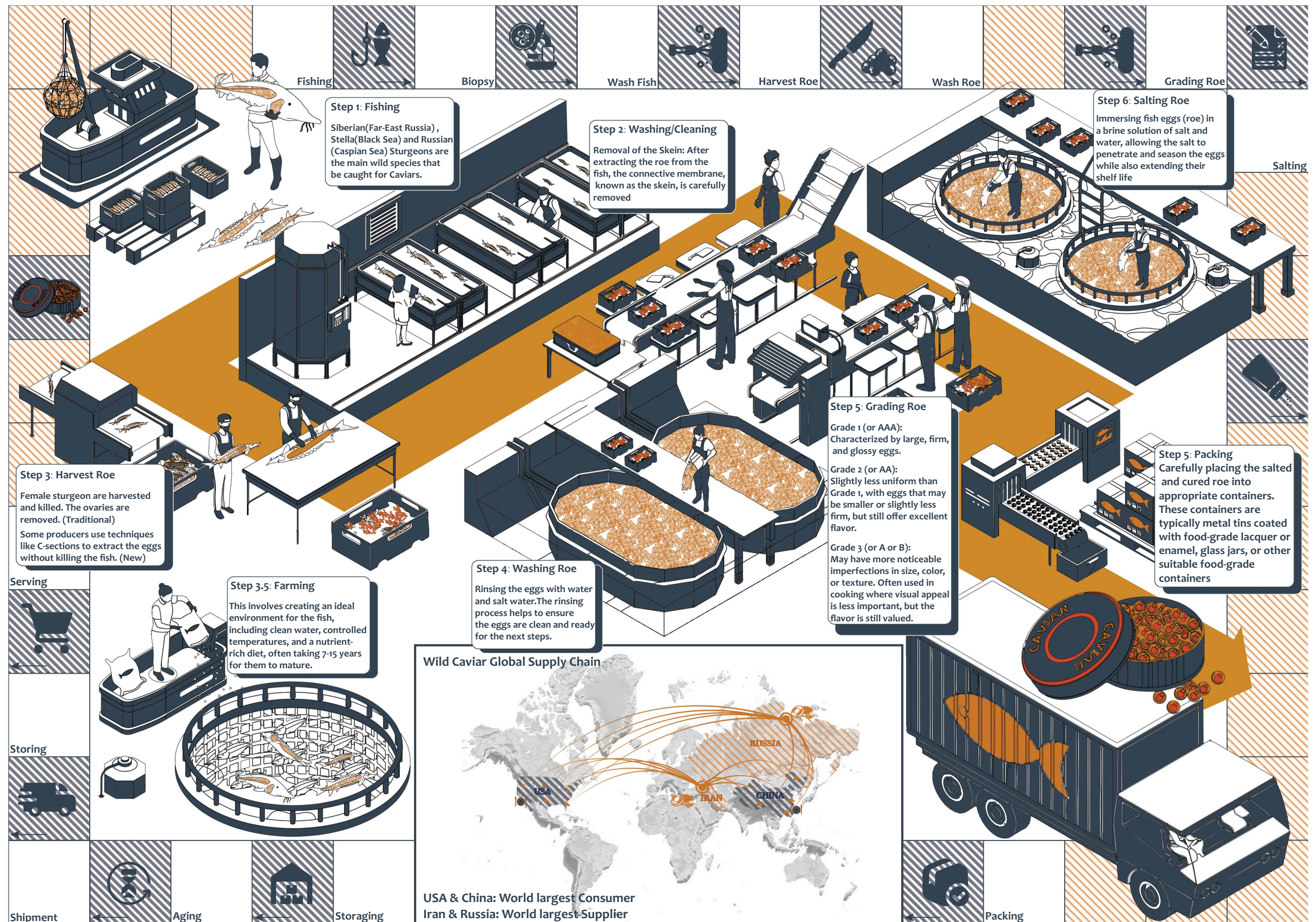




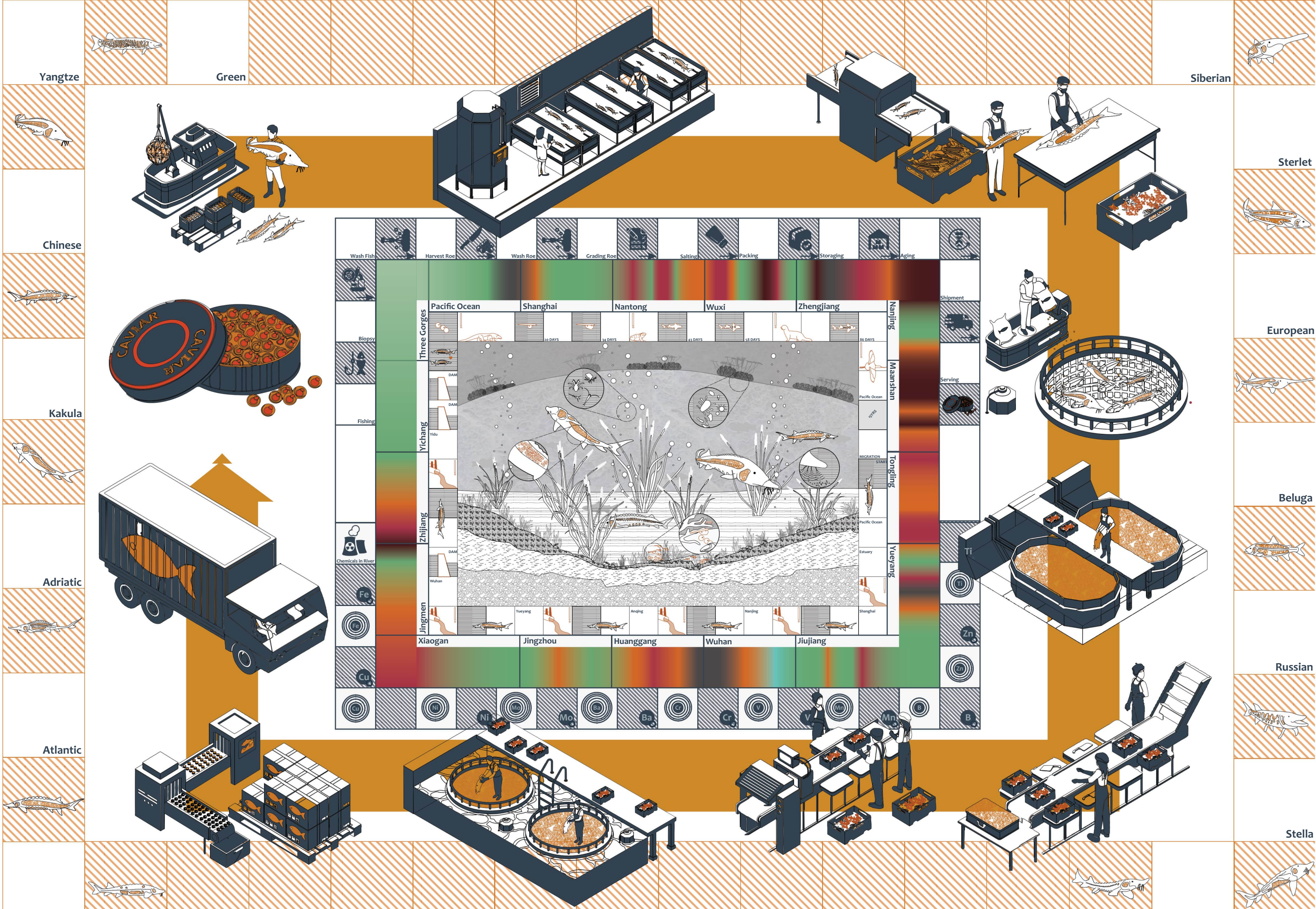
Pollution Diagram of Yangtze River that harming the Yangtze Sturgeons.

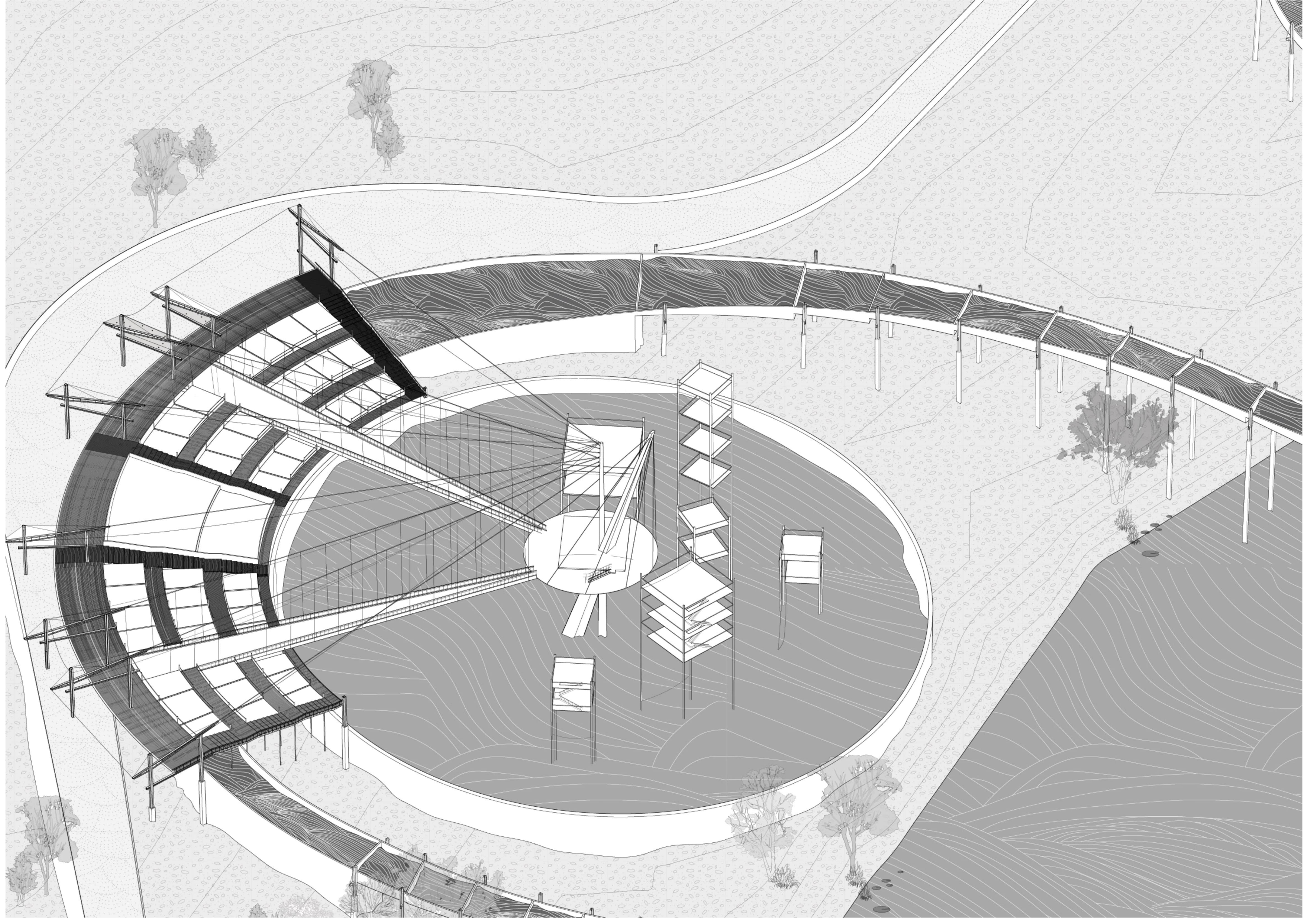


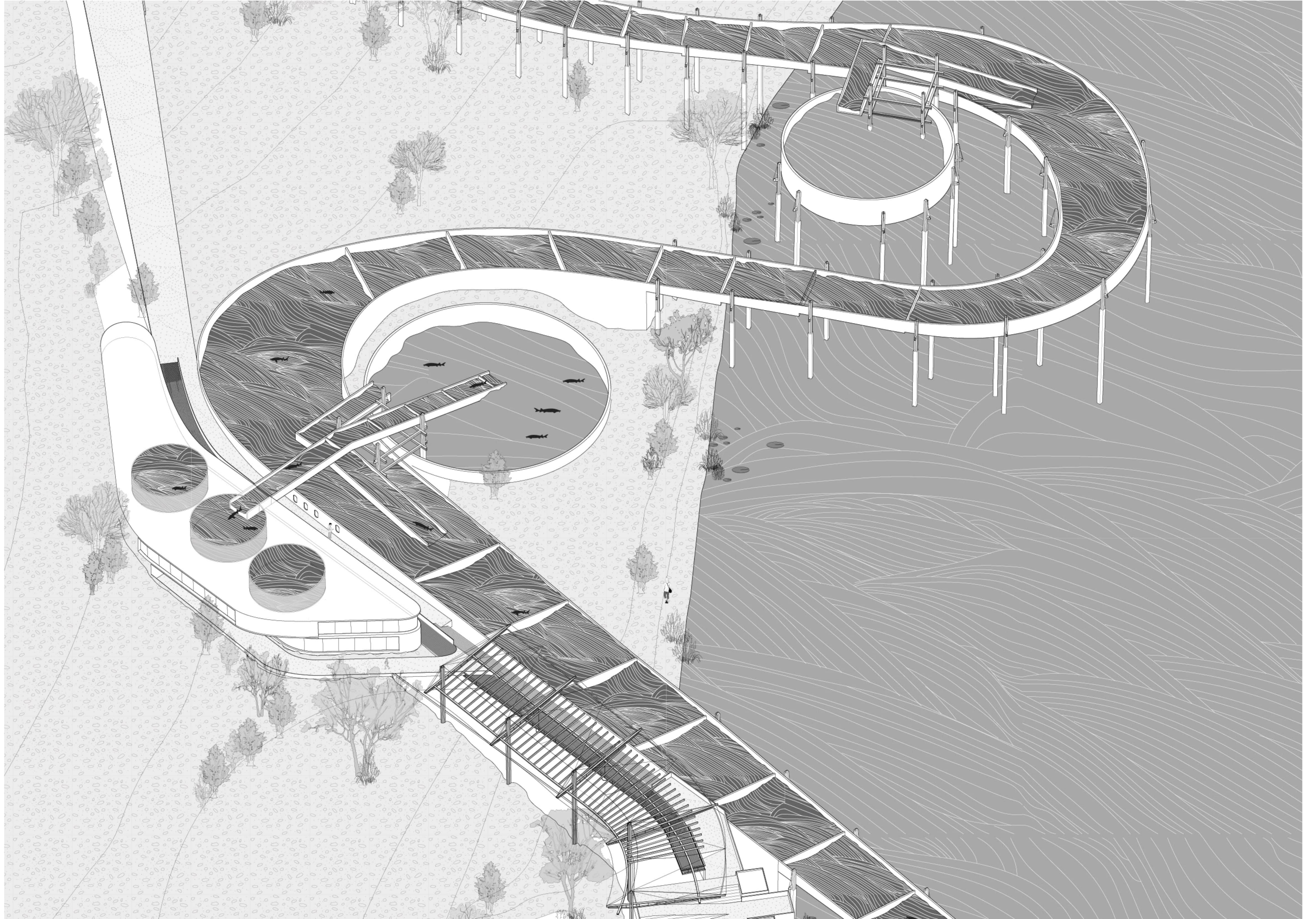
Habitat diagram and growth diagram of Yangtze Sturgeons.

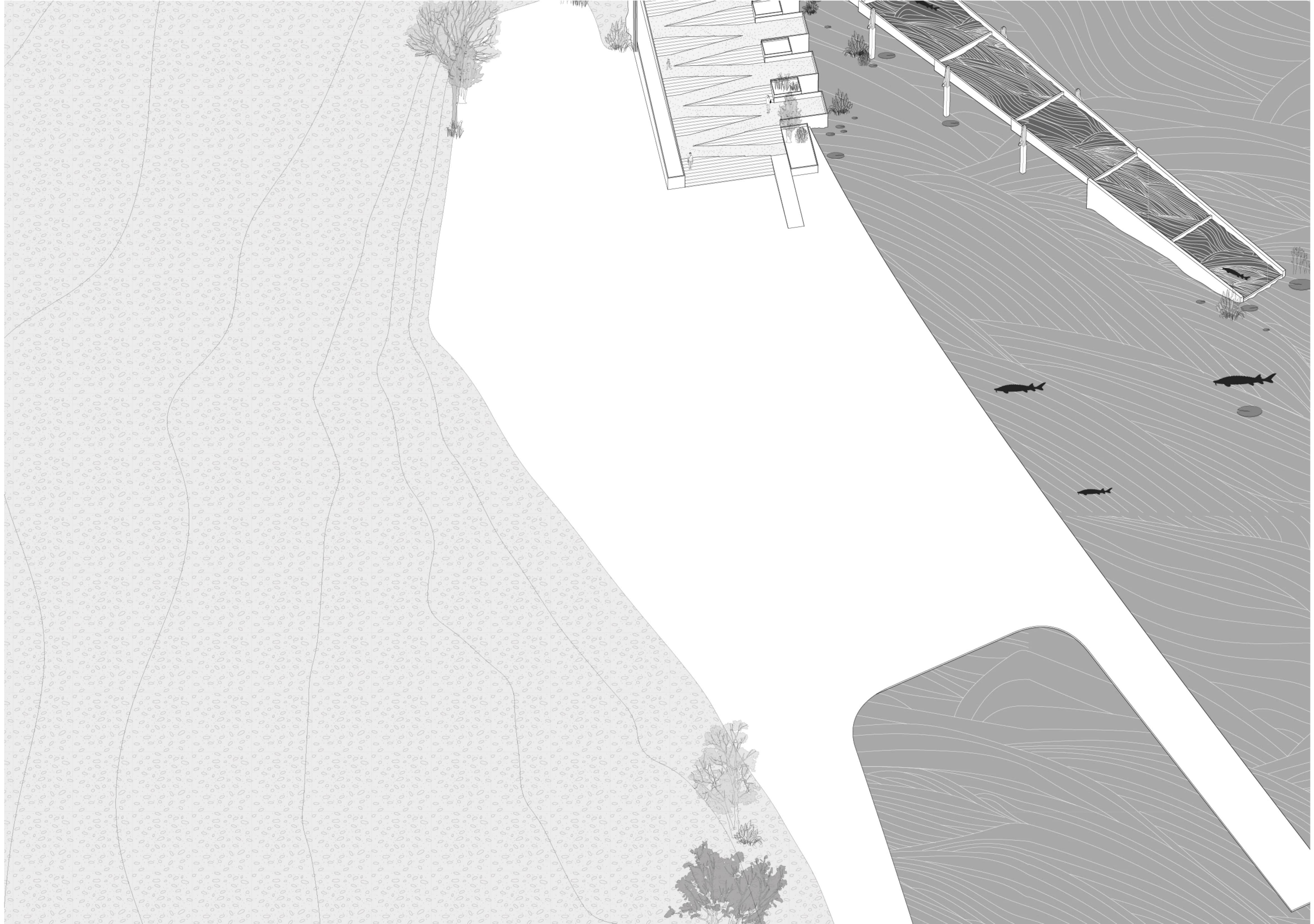


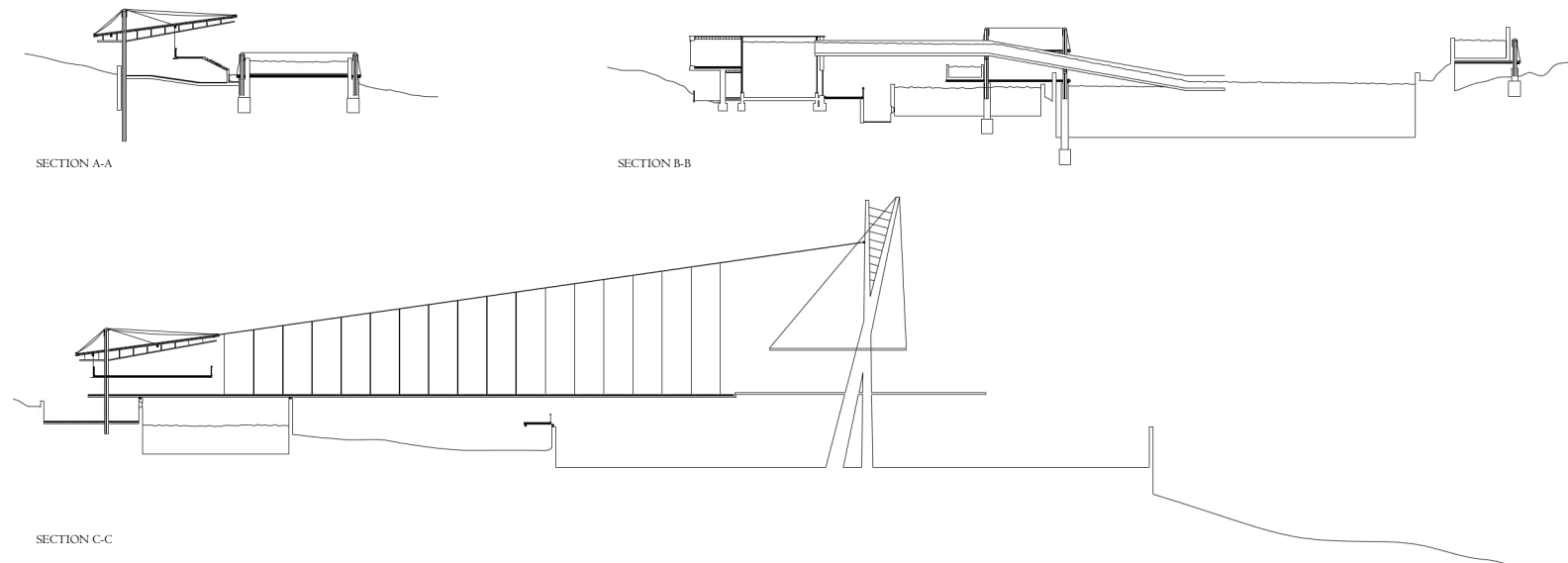
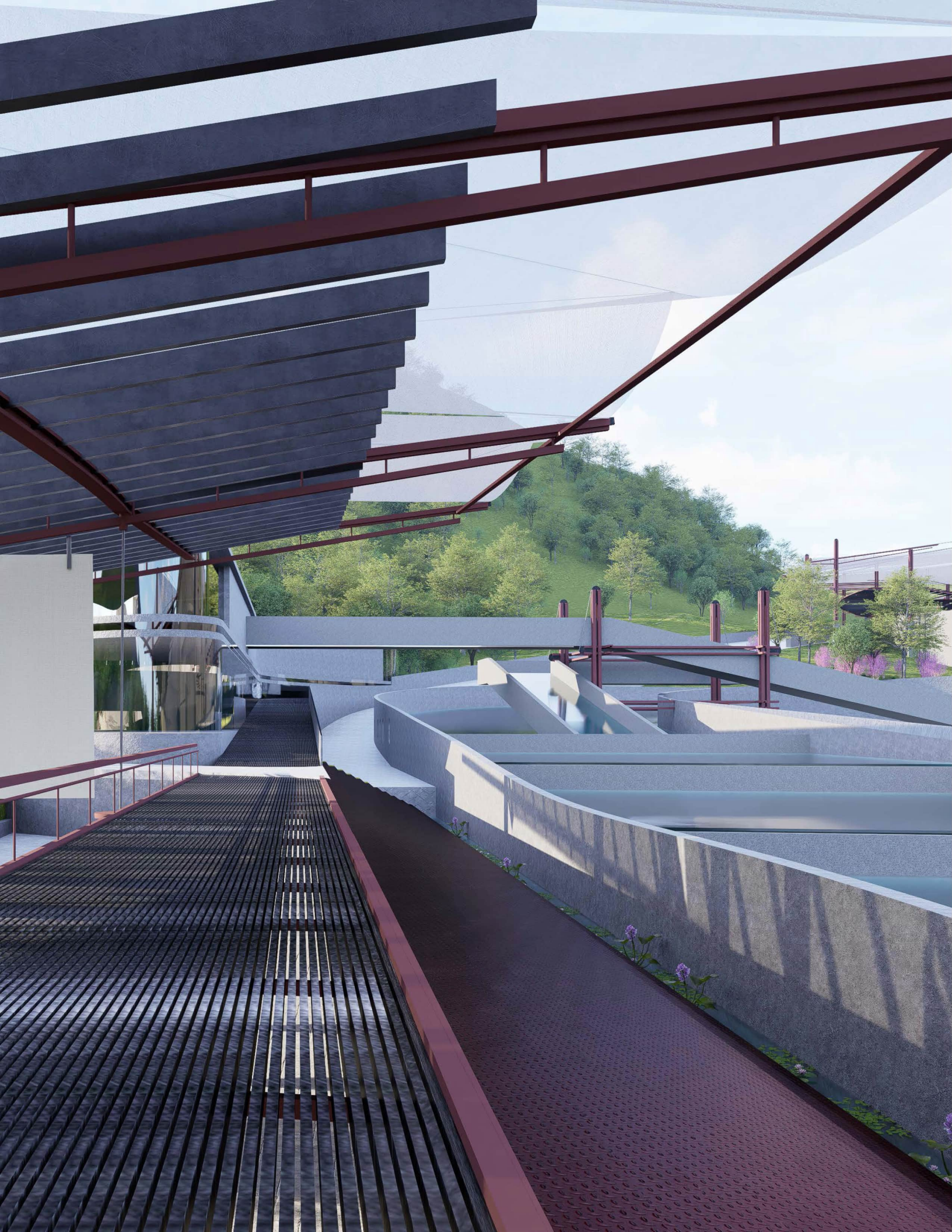
One of the main reason of the Extinction of Sturgeons.











1. Museum of the Construction of the Three Gorges Dam

Memory of Human Ambition

The museum documents the political, technological, and territorial history of the Three Gorges Dam. Instead of presenting the dam simply as an engineering triumph, the space critically reflects on the immense transformations caused by megastructure infrastructure — displacement of communities, alteration of landscapes, and disruption of ecological systems.

Positioned alongside the fish ladder, the museum creates a direct confrontation between industrial intervention and environmental consequence. Visitors move through archival spaces, suspended walkways, and framed views toward the dam itself, constantly aware of the scale of human control over nature.

The museum therefore becomes not only a space of documentation, but also a space of reflection: a place where the history of extraction and construction is reexamined through the lens of ecological repair.

2. Sturgeon Research Institute

Space for Coexistence and Restoration

The institute functions as the scientific core of the project. Researchers, biologists, and environmental workers occupy laboratories, observation corridors, breeding facilities, and monitoring platforms embedded directly within the migration infrastructure.

Rather than isolating science from public life, the institute exposes research as a visible and collective activity. Visitors encounter moments where scientific work overlaps with public circulation, allowing environmental restoration to become part of everyday cultural awareness.

Architecturally, the institute operates as an interface between human knowledge and non-human life. Transparent boundaries, submerged observation spaces, and linear monitoring platforms create proximity between researchers and the sturgeons themselves.

The project reframes ecological restoration not as a hidden technical process, but as a shared social responsibility.

3. Theater

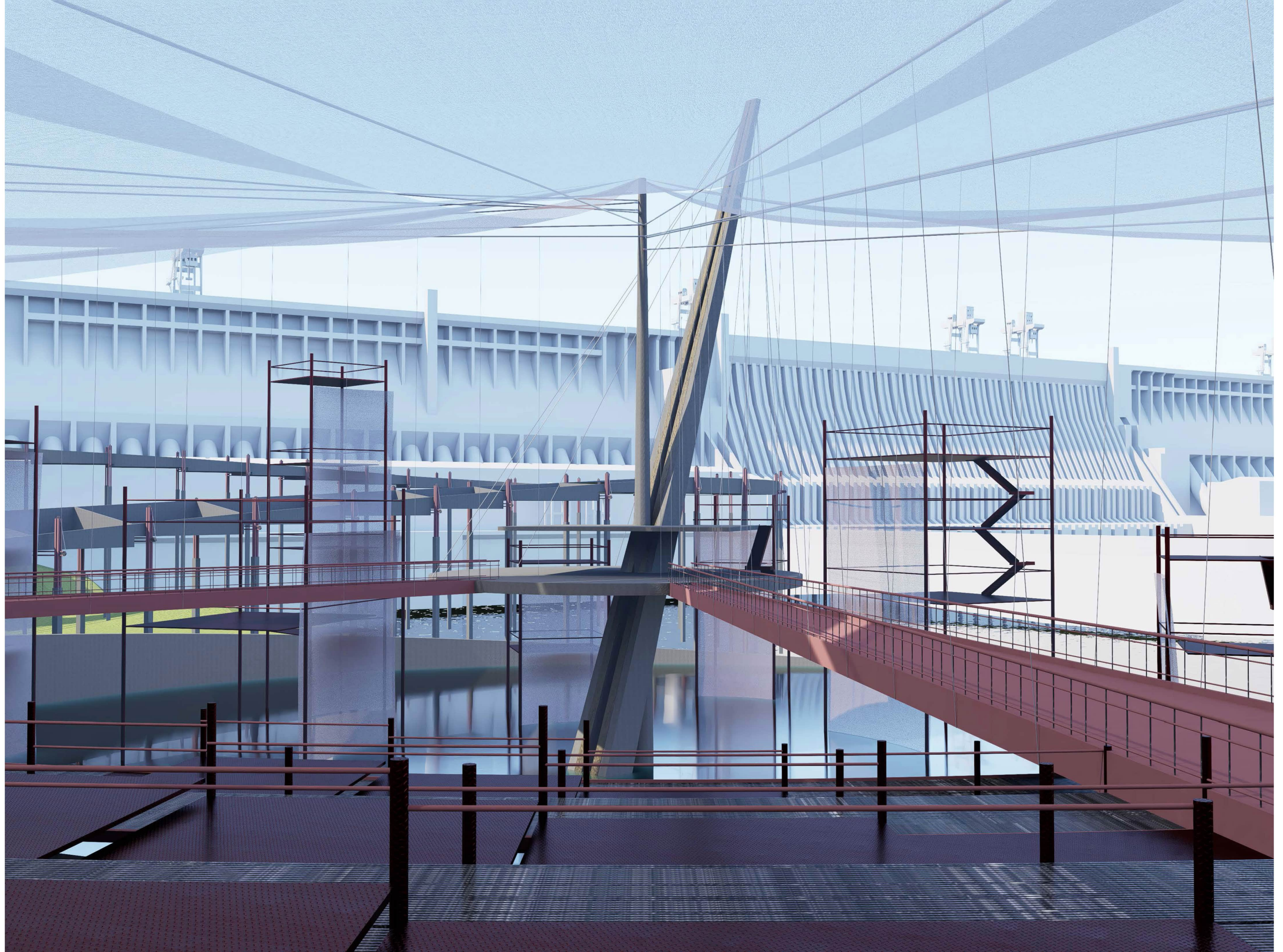
Collective Experience of Ecology

The theater acts as the emotional and public culmination of the human path. Positioned along the migration corridor, it transforms the environmental journey into a collective spatial event.

Performances, projections, lectures, and seasonal gatherings occur alongside the movement of water and fish, allowing natural processes to become part of the stage itself. The sound of flowing water, changing light conditions, and the rhythm of migration become active architectural elements within the performance space.

Unlike a conventional enclosed theater, this space blurs the boundary between audience, landscape, and infrastructure. It turns ecological awareness





02

Urban Roots Collective

Reviving the Past, Growing the Future

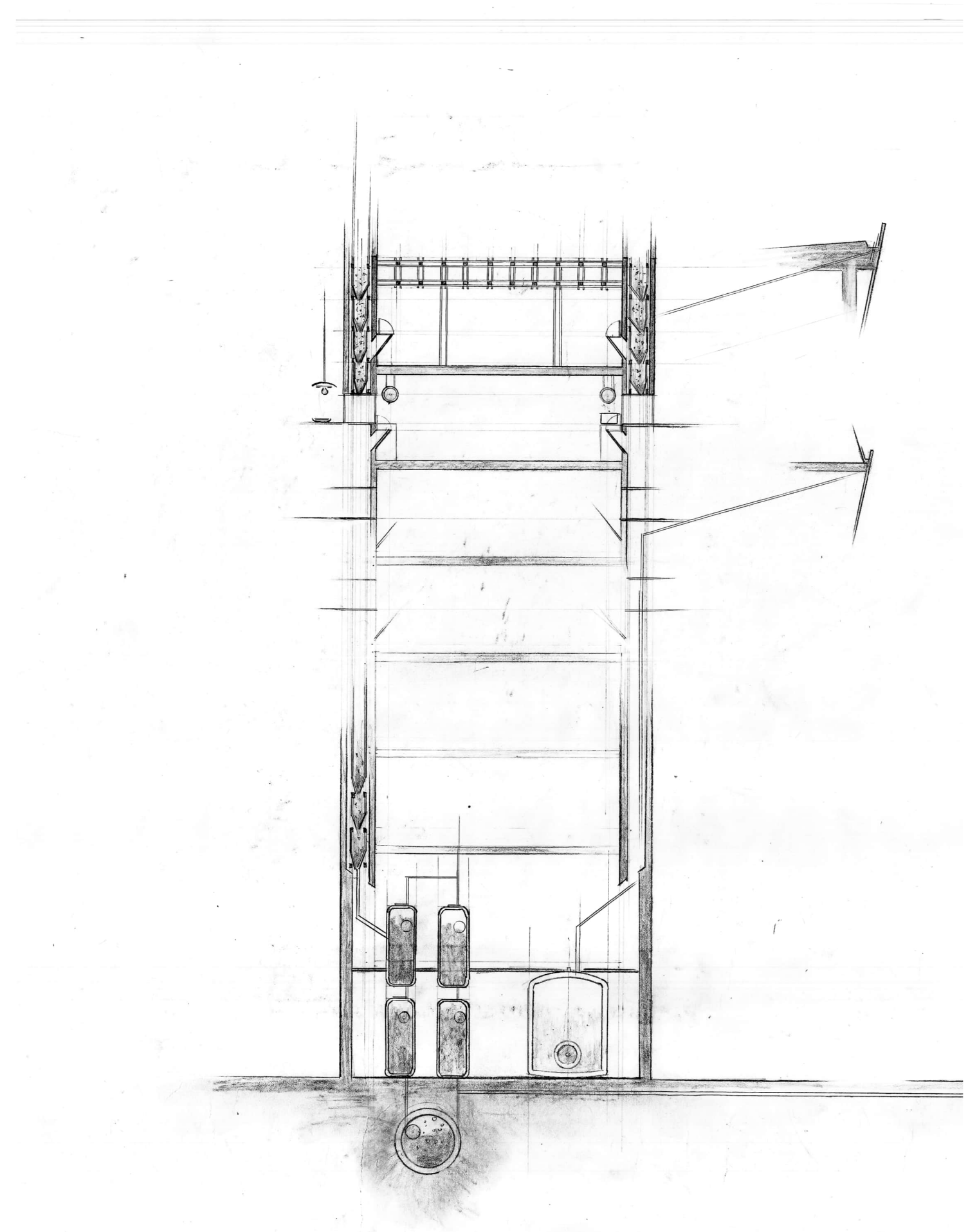
Instructor: Ricardo Flores, Eva Prats

Site: Long Island City, New York

The design for the urban roots collective community renovated old factories and warehouses in Long Island City, New York, to create a welcoming community for immigrant workers and their families. By providing housing close to their workplaces, they no longer have to endure long commutes on the LIRR and subway.

The local schools will support their children, and the renovated warehouses will be transformed into modern industrial kitchens. These kitchens will allow families to prepare meals for workers, and any surplus food will be sold to the public to generate profits that benefit the community.

Our new neighborhood is also committed to sustainability and self-sufficiency. We plan to grow vegetables and corn, and use vermicomposting to produce fertilizer for vertical farms. The gas produced through this process will be used to power the stoves, making the community more eco-friendly and self-reliant.

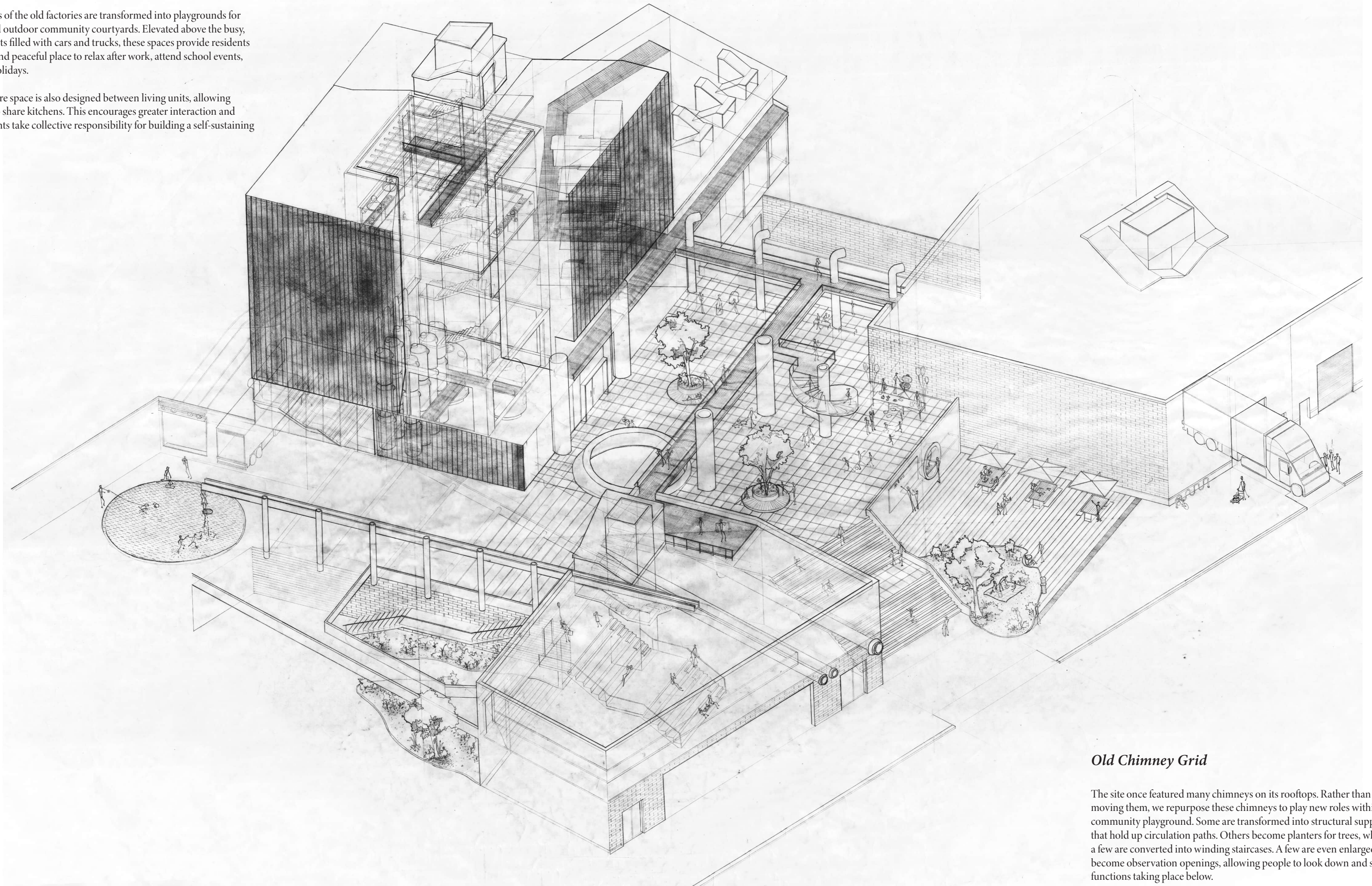


Sketch Highlights the Vertical Self-Sustainable Workshop

Community Space

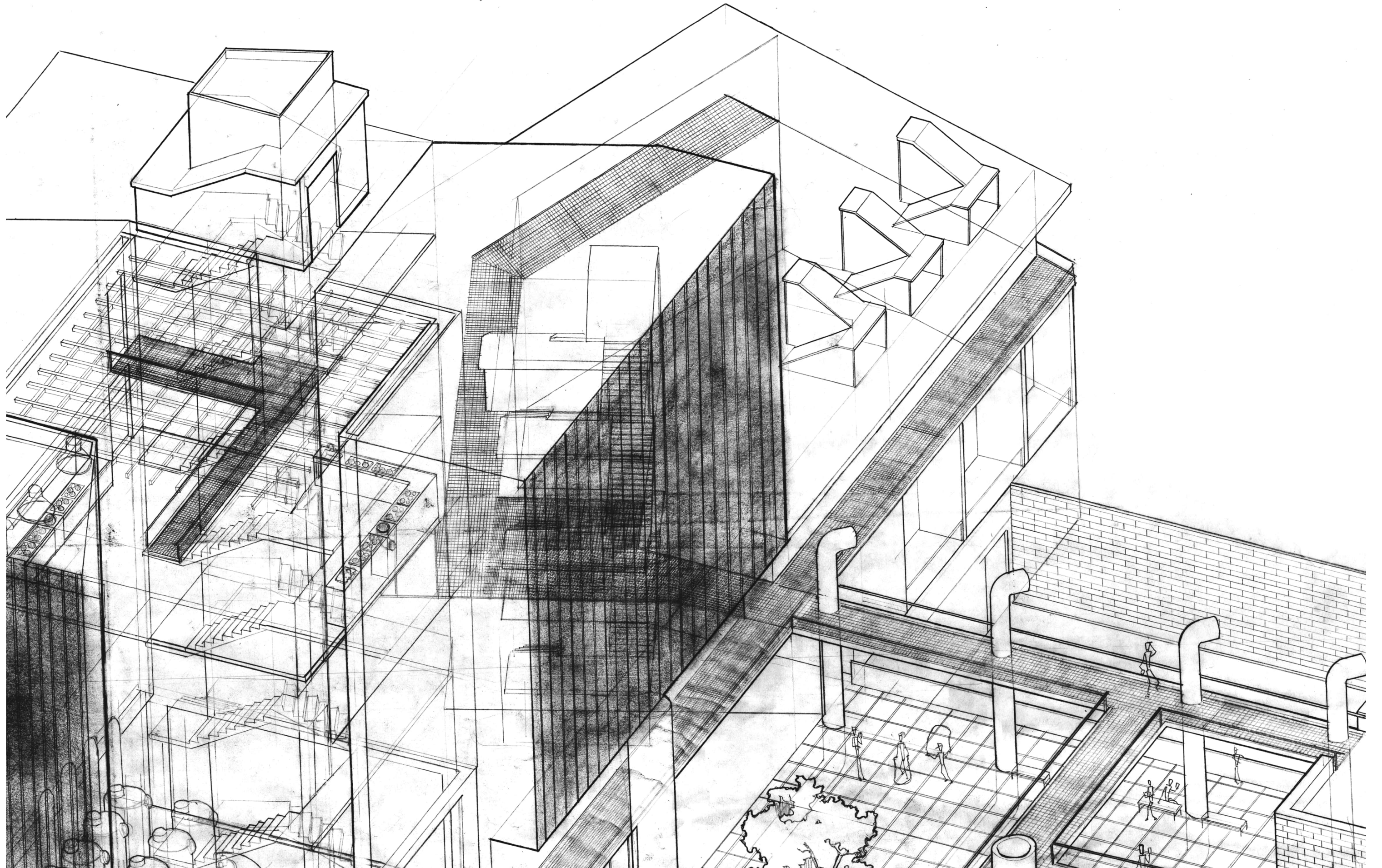
The rooftops of the old factories are transformed into playgrounds for children and outdoor community courtyards. Elevated above the busy, chaotic streets filled with cars and trucks, these spaces provide residents with a safe and peaceful place to relax after work, attend school events, and enjoy holidays.

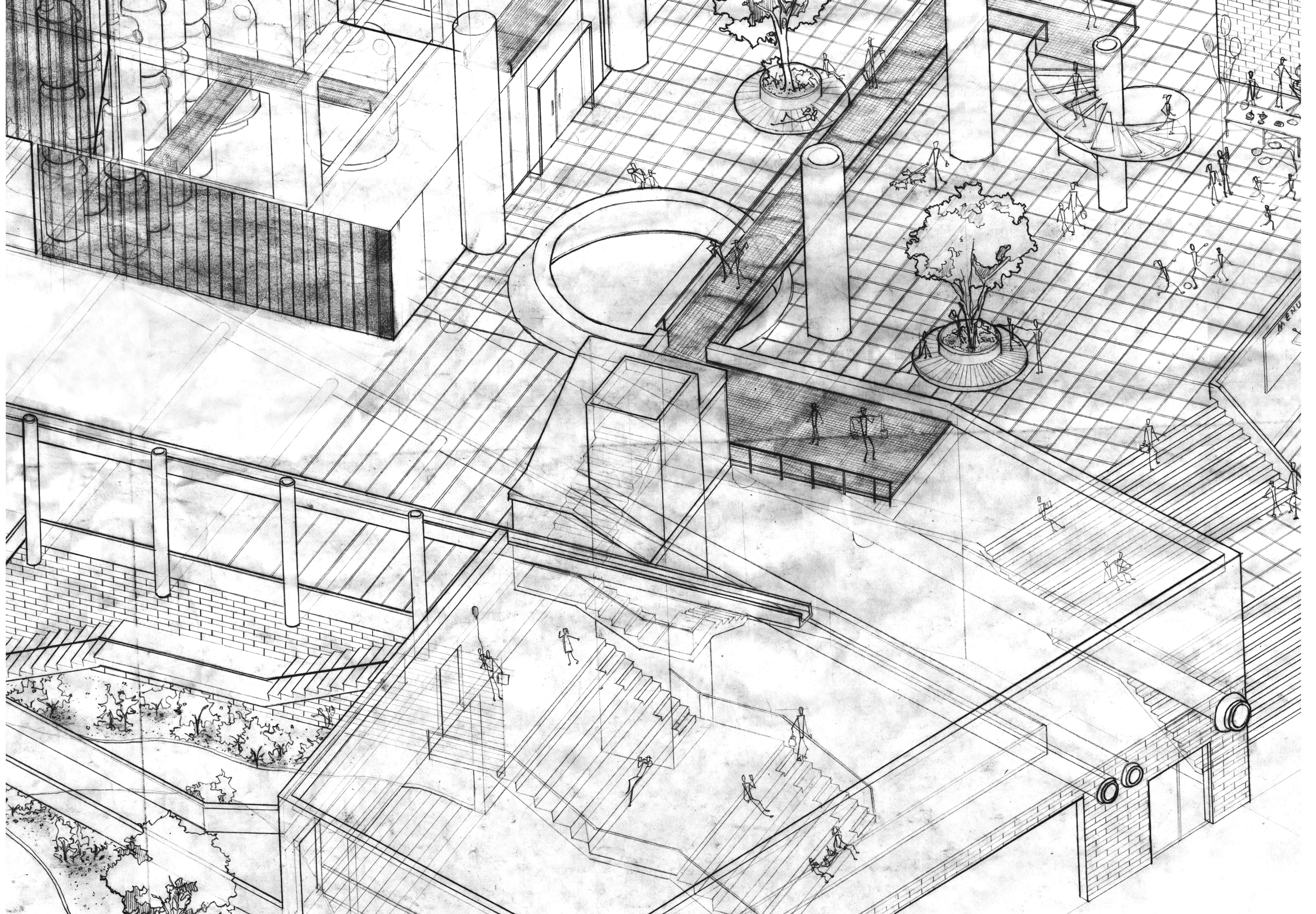
A vertical core space is also designed between living units, allowing neighbors to share kitchens. This encourages greater interaction and helps residents take collective responsibility for building a self-sustaining community.



Old Chimney Grid

The site once featured many chimneys on its rooftops. Rather than removing them, we repurpose these chimneys to play new roles within the community playground. Some are transformed into structural supports that hold up circulation paths. Others become planters for trees, while a few are converted into winding staircases. A few are even enlarged to become observation openings, allowing people to look down and see the functions taking place below.

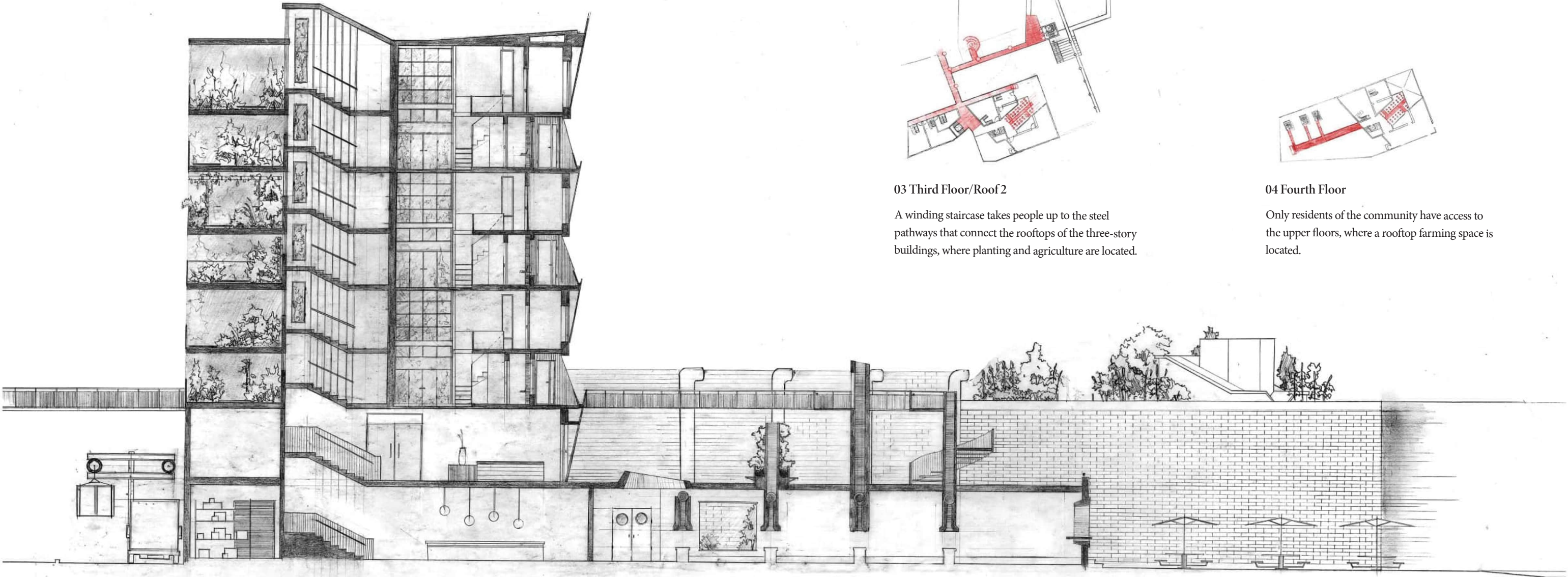




Safe, Loving and Self-sustainable Community Space

Reviving the Past, Growing the Future

The ground floors house industrial kitchens where hot meals are prepared for the community. The rooftops are dedicated to community playgrounds and agricultural fields. In the residential high-rise, each floor features two gardens: one facing south for sun-loving plants, and one facing north for plants that prefer shade.



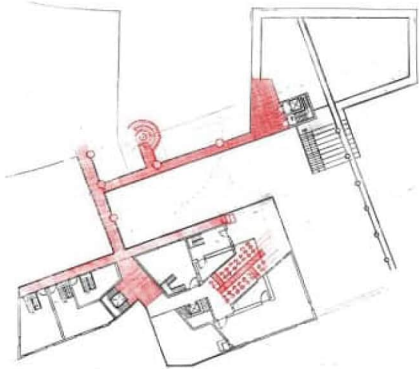
01 Ground Floor

A modern kitchen with new pipe system and closed-up playgrounds are located on the ground floor of the site.



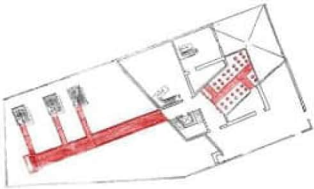
02 Second Floor/Roof 1

Huge Stair case leading children and visitors to the large roof top area upon the kitchen's roof.



03 Third Floor/Roof 2

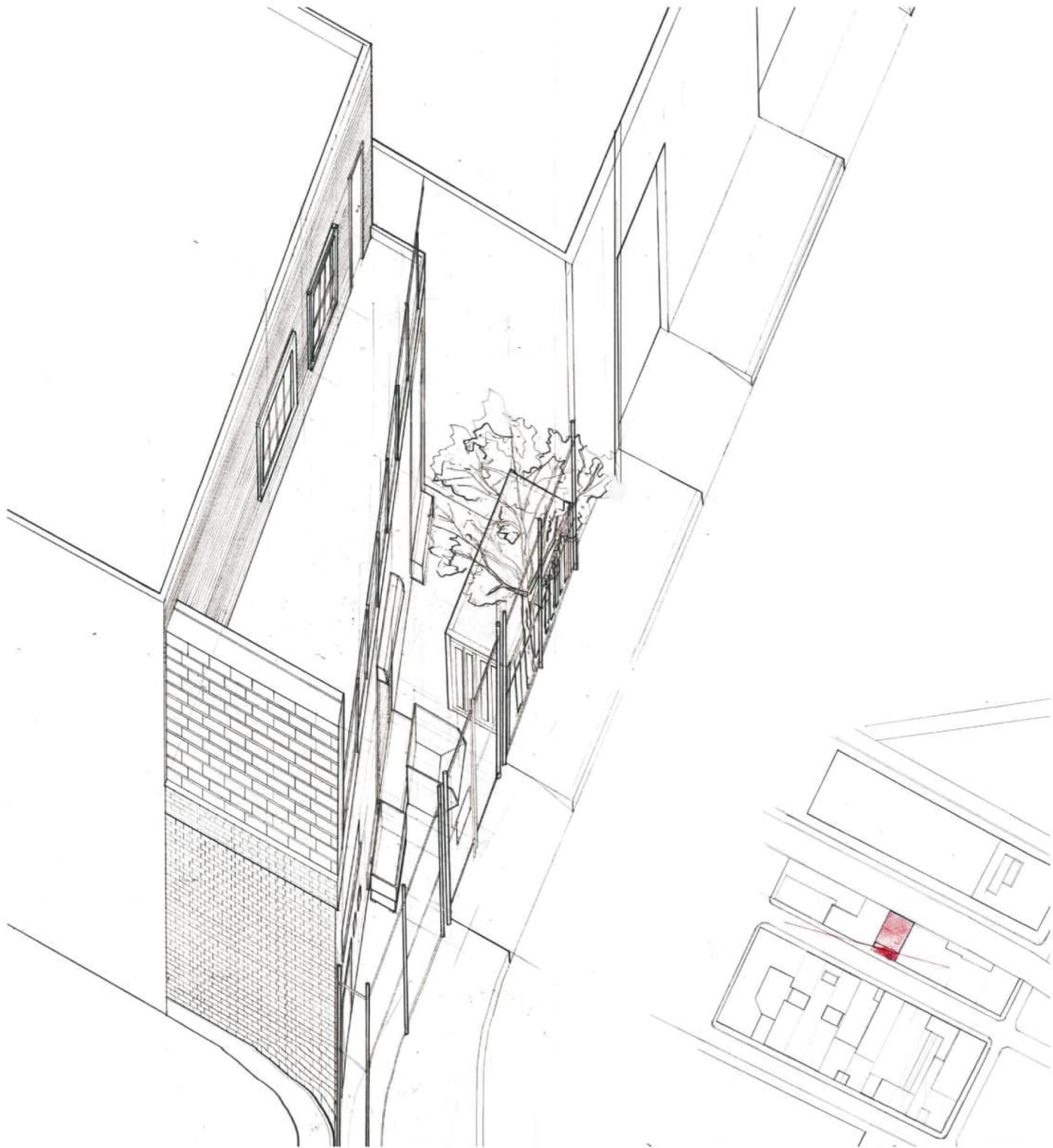
A winding staircase takes people up to the steel pathways that connect the rooftops of the three-story buildings, where planting and agriculture are located.



04 Fourth Floor

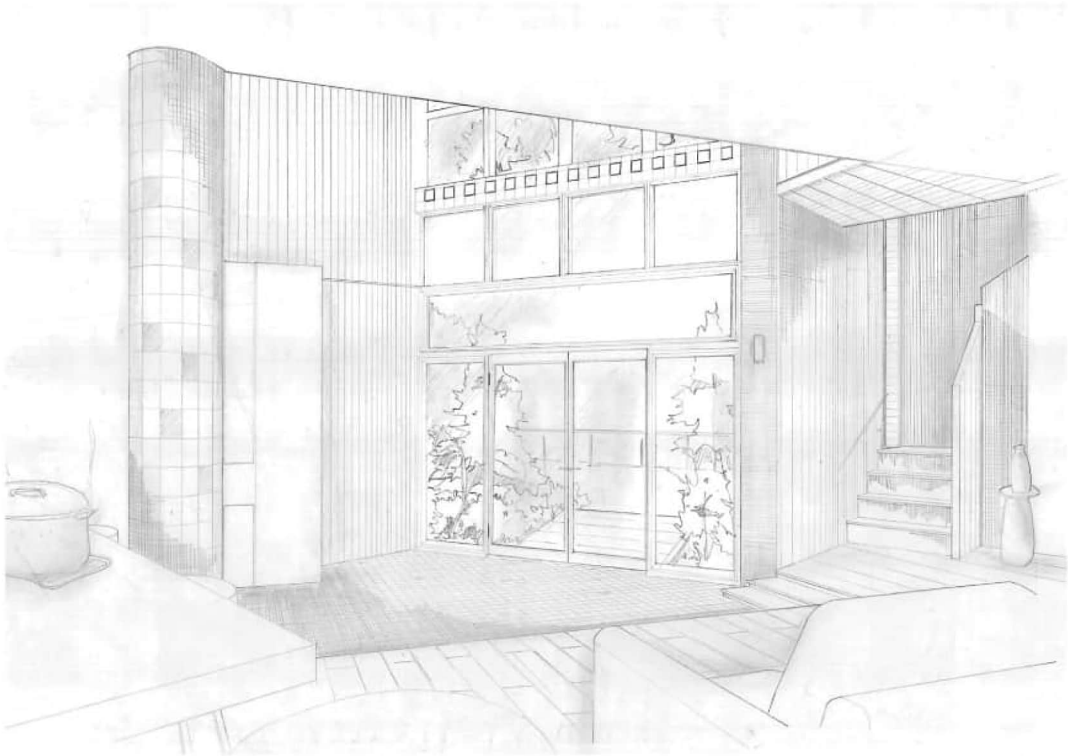
Only residents of the community have access to the upper floors, where a rooftop farming space is located.

Warm and Semi-public Residential Apartment



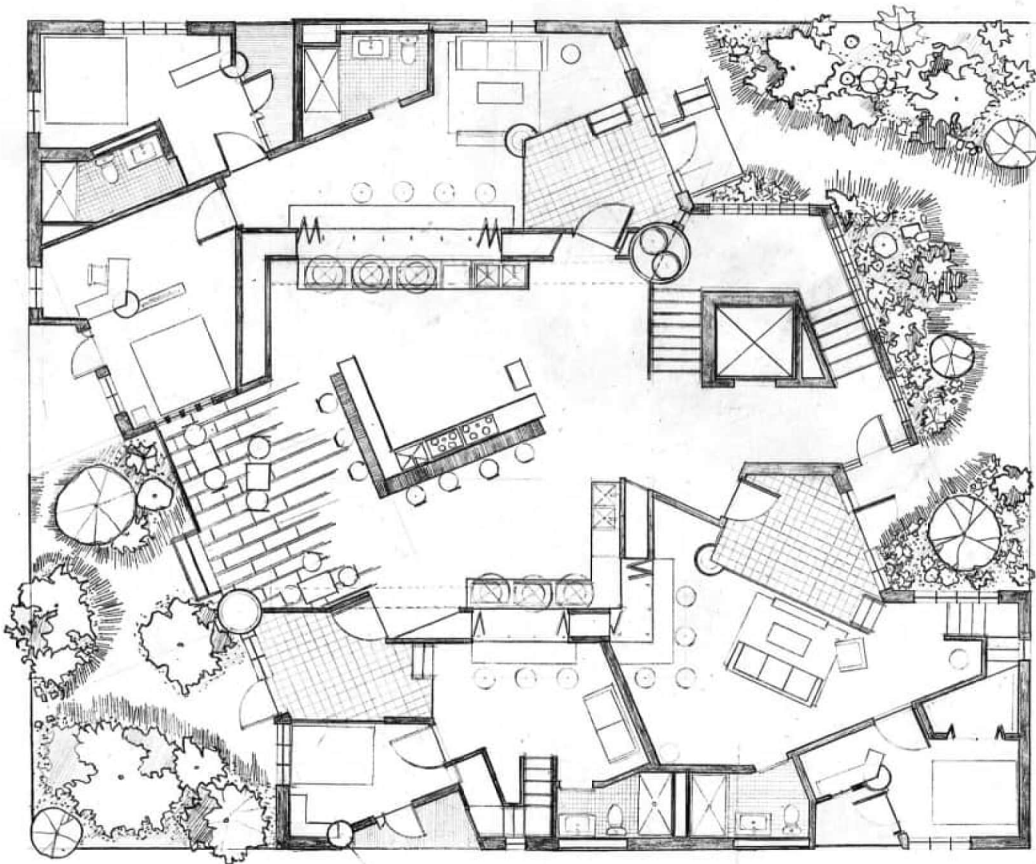
Site Conclusion

On the site, there is one building with a diagonal cut on its façade. The only tree in this industrial zone grows in the open courtyard created by that cut. This feature is especially interesting to me, and I decided to use it as inspiration for my design methodology.



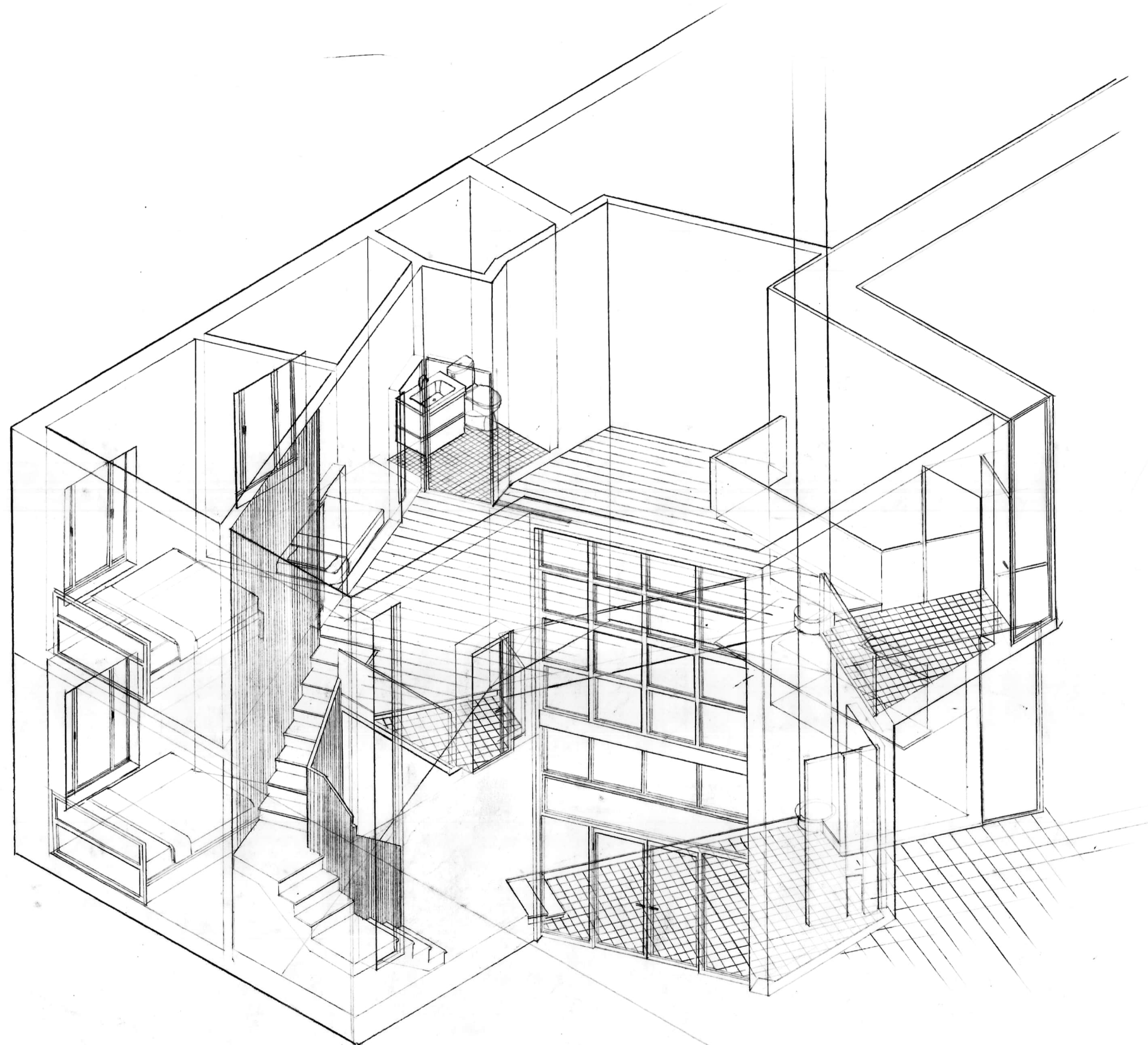
View from the Apartment's Living Room

Sunken floor panels act as a threshold connecting each apartment's doorway to the vertical gardens and the living space. Residents can use this area to change, prepare, and transition between different activities and purposes.

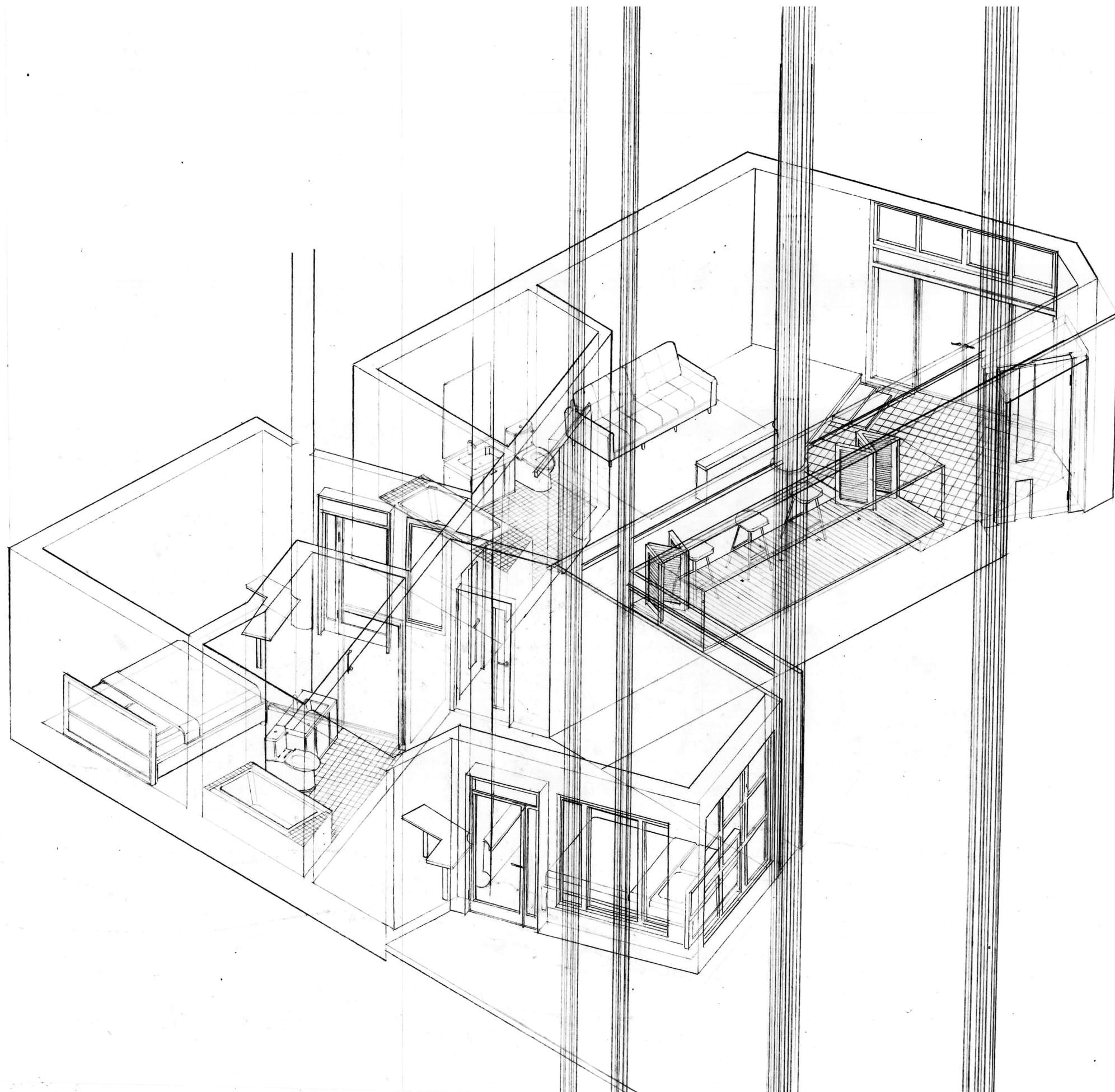


Typical Floor Plan

The central square is a shared community workshop that serves as a kitchen or lab, surrounded by vertical gardens and vermi-composting walls. The tilted square outside represents the semi-public space in each unit, used for dining and social sharing. The outermost square contains the private sleeping and bathing areas.



Typical Unit A



Typical Unit B





03

Parallel Academy

Spatial Frameworks for Equal Learning

Instructor: Takaharu Tezuka, Yui Tezuka, Abraham Murrel

Site: Columbia University, New York

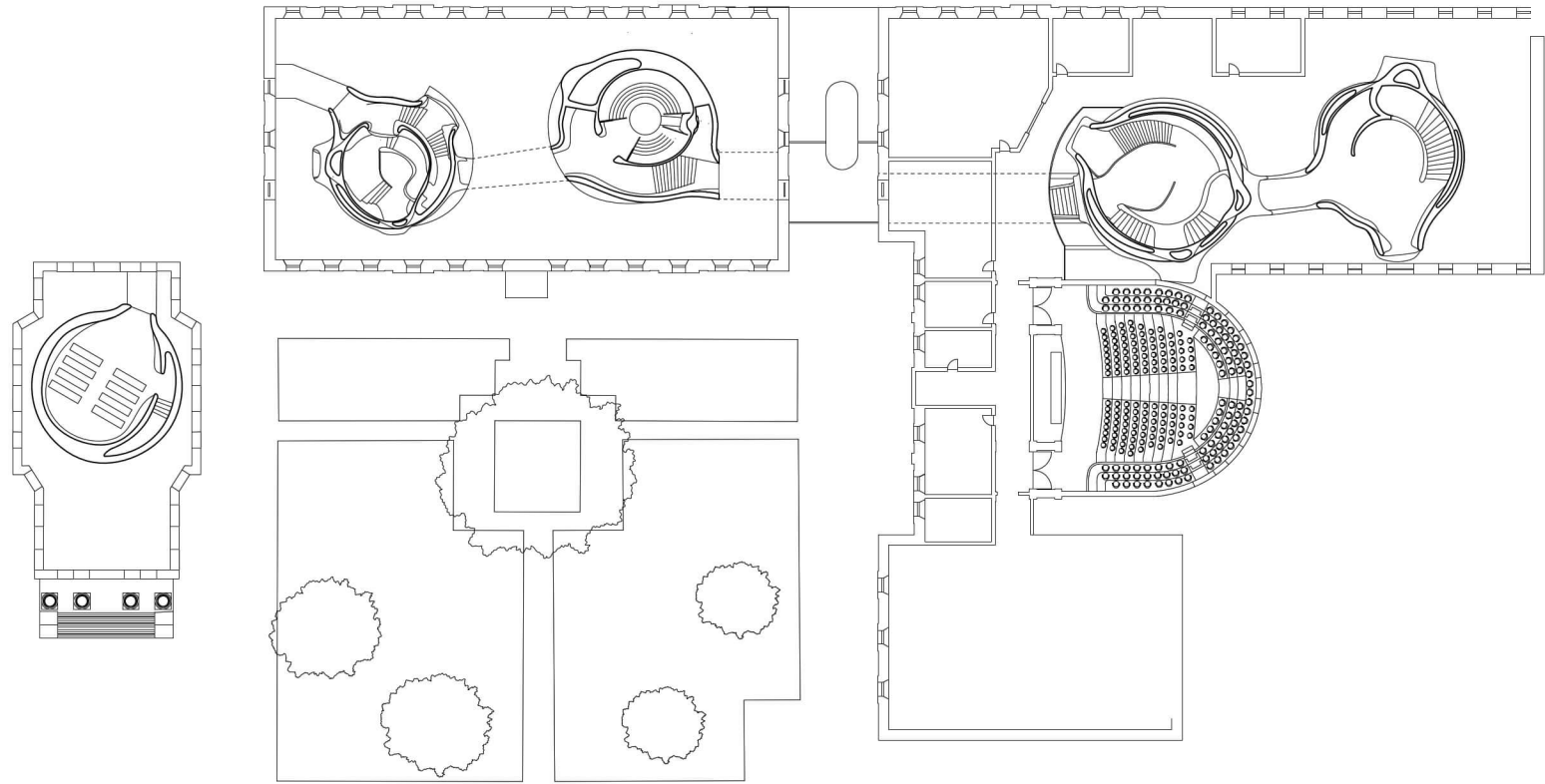
The third project explores architecture as a framework for educational equality within Columbia University. The proposal introduces a parallel academy for children ages 3–18 embedded within the university environment.

Rather than creating a closed institution, the school opens itself toward the rhythms, movements, and atmospheres of university life. Through visual openings, shared circulation, and spatial overlaps, children experience the culture of higher education long before entering it formally.

The project challenges the invisible barriers that shape access to learning. Educational inequality often begins not in the classroom itself, but in the absence of exposure, proximity, and belonging. By spatially intertwining the academy with the university, architecture becomes a tool for democratizing aspiration and participation.

If the first project restores ecological access and the second restores social access, this project restores intellectual access.





The Parallel Academy

The Parallel Academy operates as a secondary educational layer embedded within Columbia University. Rather than functioning as an isolated school campus, it inserts spaces for children ages 3–18 directly alongside the everyday life of the university. The project challenges the traditional separation between elite academic institutions and early education by creating continuous spatial relationships between the two environments.

The school works through proximity, visibility, and shared experience.

Instead of completely separating children from university students, the architecture creates controlled moments of overlap through openings, shared circulation paths, visual connections, and collective spaces. Children move through classrooms, workshops, libraries, gardens, and play spaces while remaining constantly aware of the rhythms of university life surrounding them — critiques, lectures, conversations, studio culture, and public gatherings.

At the same time, Columbia students and faculty also become aware of the presence of younger learners. The institution is no longer a closed academic enclave; it becomes a more porous educational ecosystem shared across generations.

The “parallel” condition is important:

the academy does not replace the university, nor does it imitate it. Instead, it runs alongside it as an alternative educational framework that allows children from different social and economic backgrounds to experience intellectual culture long before higher education becomes formally accessible.

Spatially, the project operates through varying degrees of openness:

Some areas are fully shared, such as courtyards, public ramps, exhibition spaces, and cafeterias.

Some spaces allow visual overlap without direct access, creating moments of observation and aspiration.

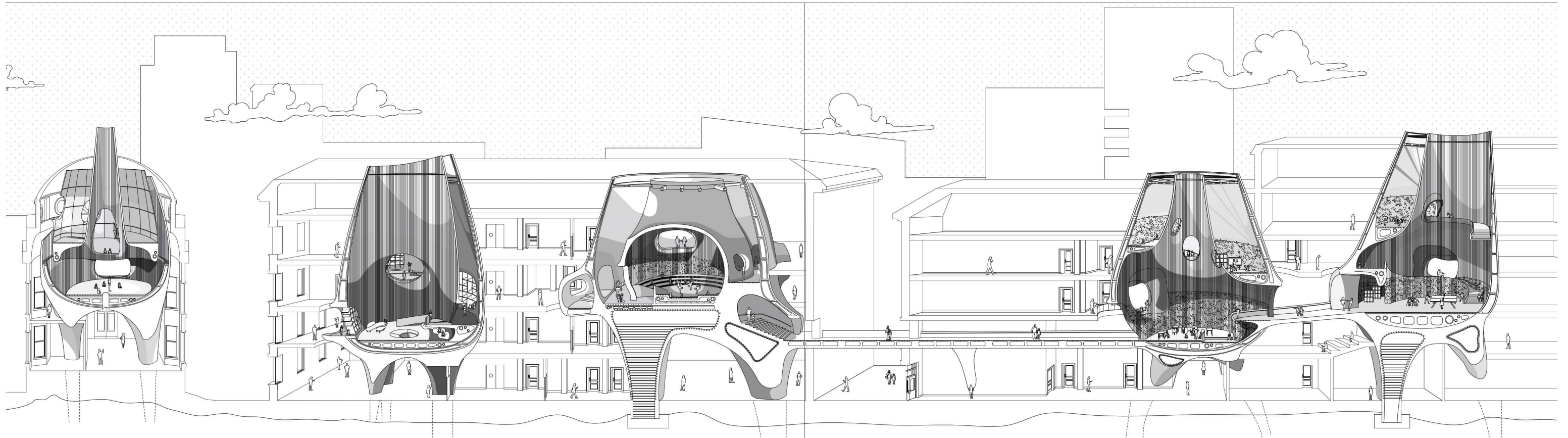
More private classrooms and study areas remain protected for focused learning.

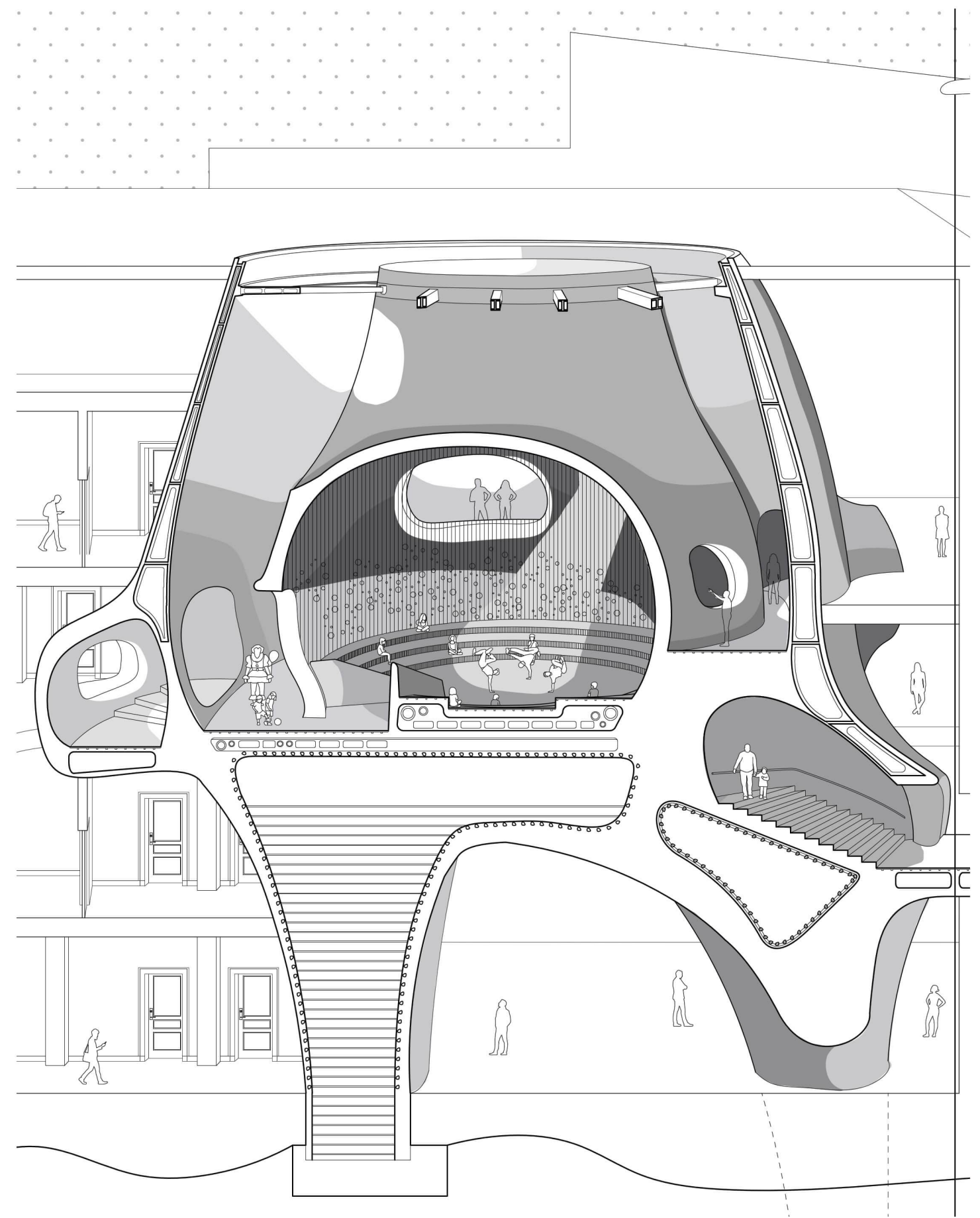
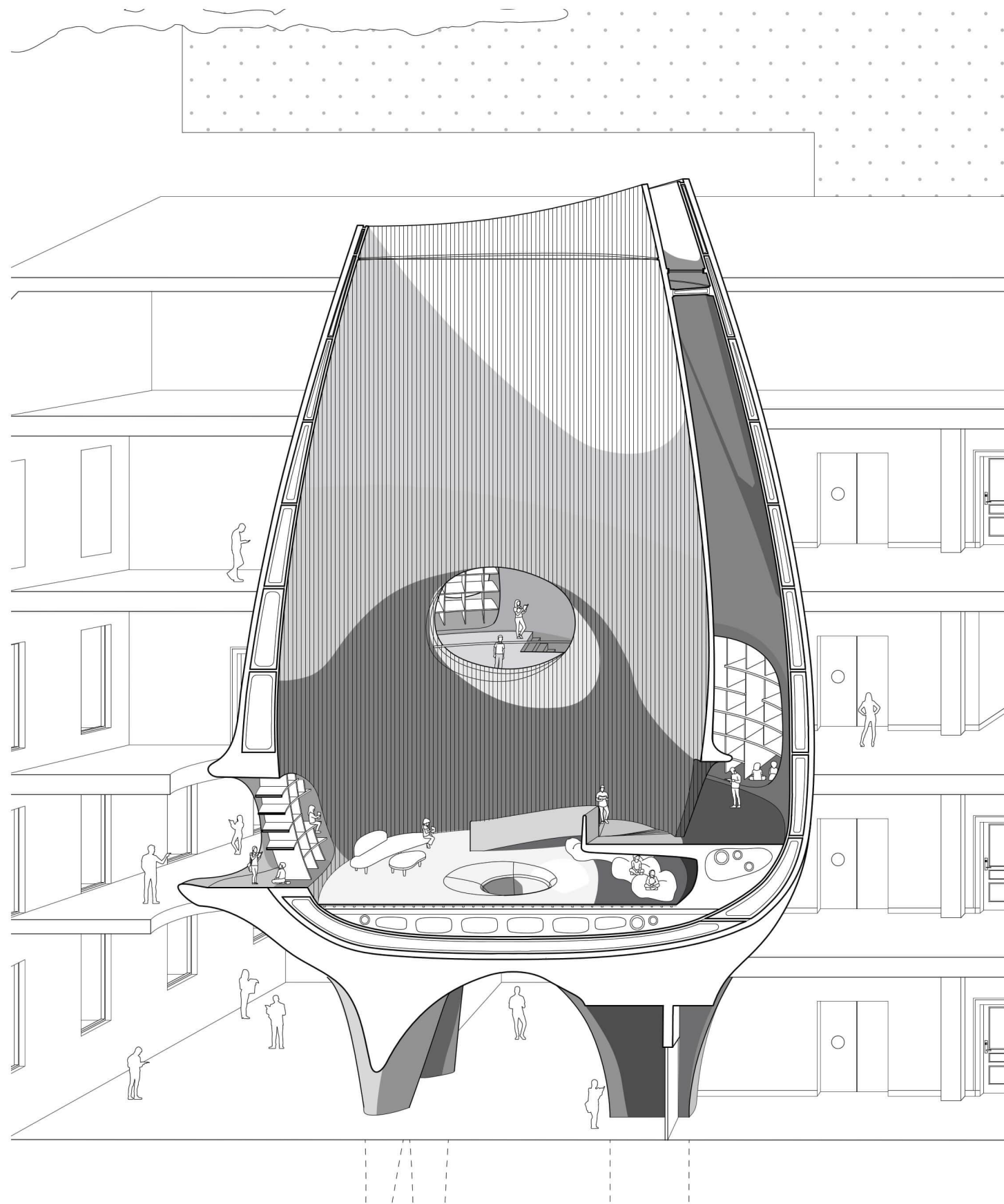
This layered system creates a gradual relationship between childhood education and institutional life.

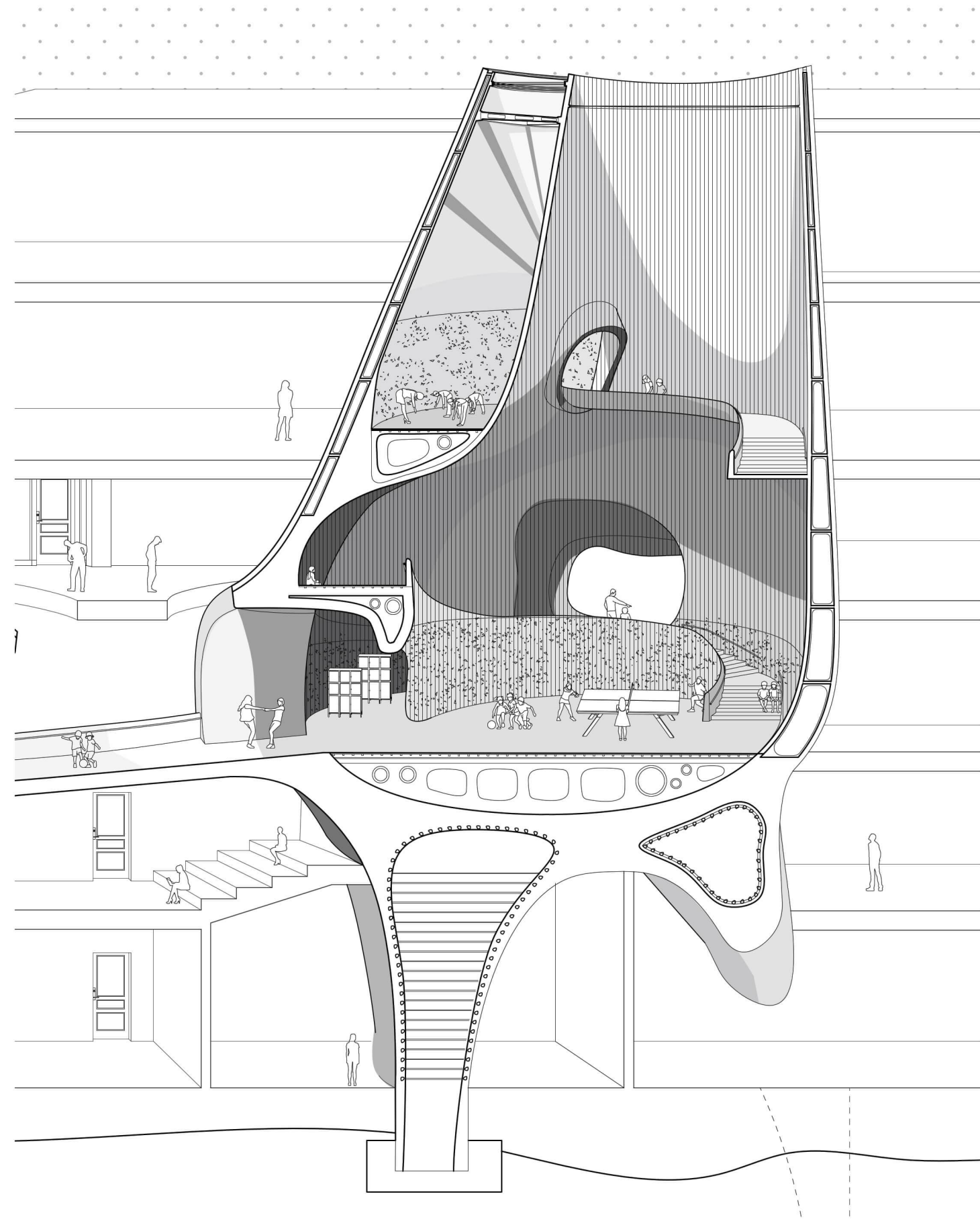
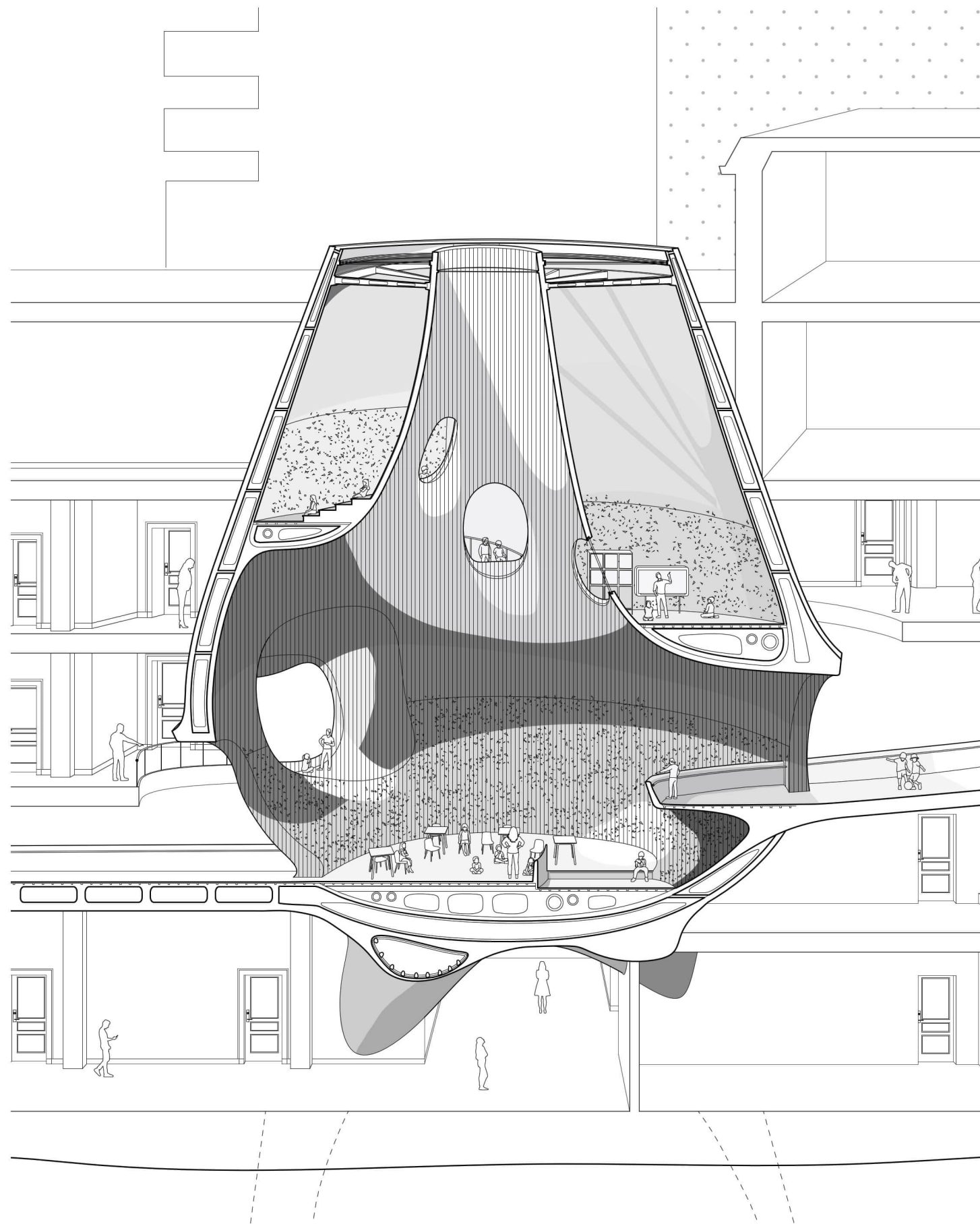
The project argues that educational inequality often begins with unequal access to environments, exposure, and cultural confidence. By embedding the academy within the atmosphere of the university itself, architecture becomes a tool for democratizing educational experience.

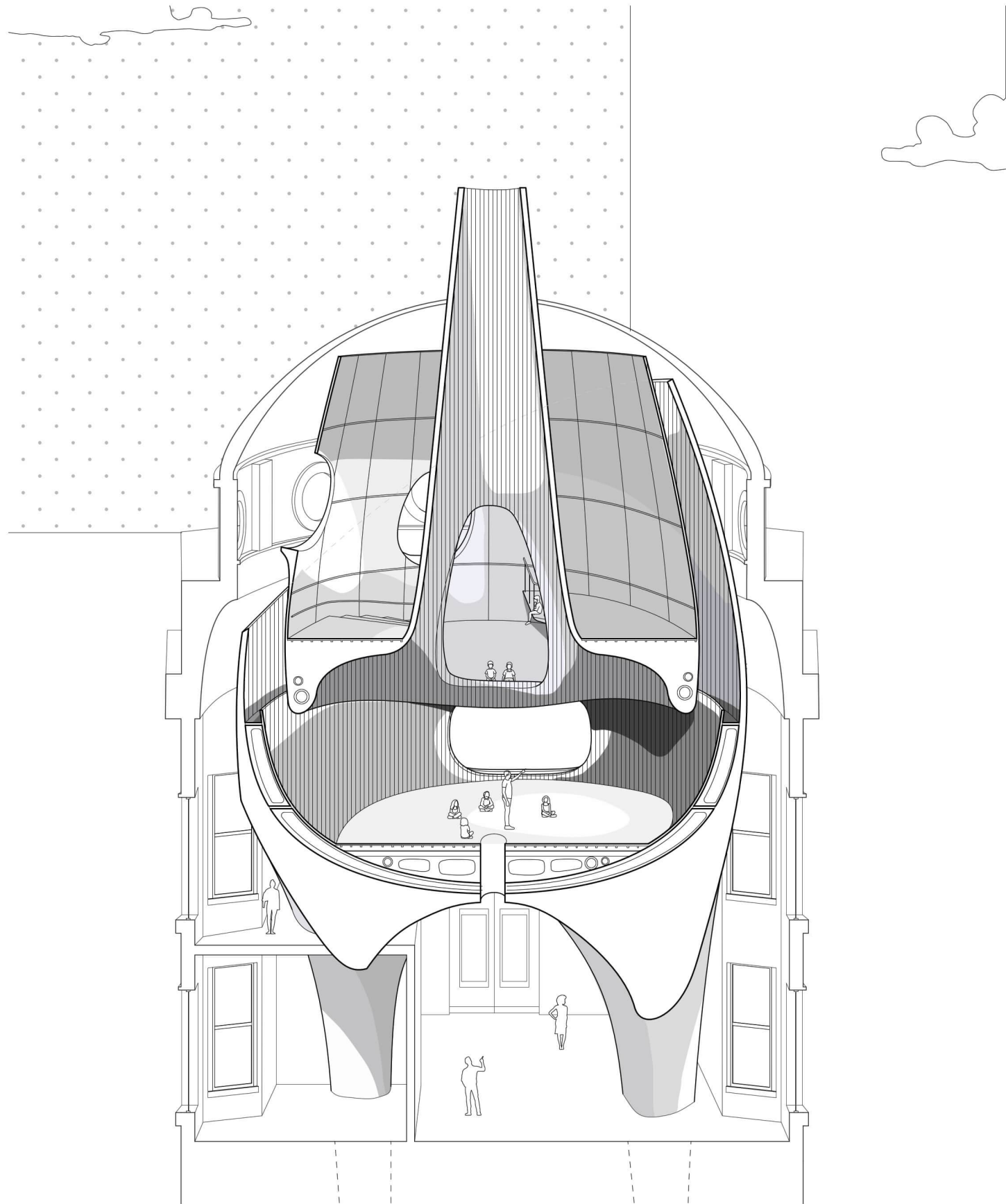
Learning therefore extends beyond the classroom:

children learn not only from teachers, but also from inhabiting the spatial, social, and intellectual rhythms of the institution around them.









1. Classroom

Space of Collective Learning

The classrooms are flexible learning environments connected to the larger atmosphere of the university. Visual openings and shared edges allow children to remain aware of the activity beyond the classroom, transforming learning into a collective and socially connected experience.

2. Theater

Space of Public Expression

The theater acts as the civic core of the academy, hosting performances, lectures, and gatherings shared between children and university students. It gives children visibility within the institution and turns education into a public experience.

3. Library

Space of Intellectual Access

The library is designed as an open knowledge landscape where children are exposed to books, research culture, and university learning environments. It challenges the exclusivity of institutional knowledge through spatial accessibility and shared learning spaces.

4. Meditation Space

Space of Reflection

The meditation space provides moments of quietness and emotional balance within the active educational environment. Through light, material, and silence, it creates a space for reflection, concentration, and mental rest.





04

The Steel "Leaves"

Responsive Steel Skin

Instructor: Zachery Multitauaopele
Site: Columbia University, New York

This project investigates the window shade not as an accessory element, but as a mediating architectural interface between the human body and the environment. Constructed entirely from steel, the system operates as a responsive layer that filters sunlight, visibility, heat, and atmosphere through movement, density, and material reflection.

Rather than treating the facade as a static boundary, the project rethinks it as an active environmental threshold that continuously negotiates relationships between interior and exterior conditions. The steel shade controls exposure — allowing light, shadow, airflow, and privacy to shift throughout the day — transforming climate into a spatial experience.

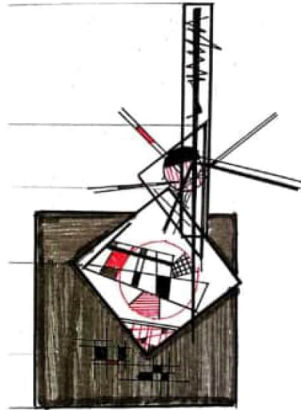
Like the other projects in the portfolio, the window shade challenges rigid separations:

between inside and outside,
protection and openness,
human comfort and environmental forces.

The project therefore extends the broader argument of the portfolio at a smaller architectural scale.







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