



## Portfolio

Architecture, reconstruction, steel  
and concrete heritage preservation,  
urban development.

Selected work 2020 -2025

# VALERIIA HRYNENKO

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As a recent Master of Architecture graduate from Taubman College, I focus on creating design responses that address social needs while balancing stakeholder priorities. My work integrates functional clarity with long-term sustainability, while building expertise to support revitalization and future-ready development.

## Education

### Master of Architecture

Taubman College of Architecture and Planning, University of Michigan | Ann Arbor, MI  
05/2025

- Merit Scholarship Recipient (GPA 3.4/4)
- Bridge for Students Scholarship

### Bachelor of Arts in Architectural And Building Technology

Kyiv National University of Construction and Architecture | Kyiv, Ukraine  
06/2021

- Full Tuition Scholarship and Higher Scholarship Recipient
- Graduated with honors (GPA 3.9/4)

## Work Experience

### Creator Architect

Archimatika | Kyiv, Ukraine  
11/2020 - 05/2021

- **Urban Analysis:** Conducted comprehensive site analysis, evaluating transportation networks, underground features, and land use potential to inform a master planning strategy for the residential complex in Kyiv
- **Strategic Design Thinking:** Developed a strategic design proposal that optimized land use and enhanced site integration, achieved stakeholder approval.
- **Space Planning:** Designed architectural layouts for 20+ apartment units in Odesa, maximized functionality and spatial efficiency
- **Technical Drafting:** Delivered detailed technical drawings for architectural extensions, adhered to budget and material constraints
- **Visual Communication:** Created oral and schematic presentations for project proposals that effectively communicated project designs, which resulted in securing stakeholder approval
- **Team Collaboration:** Optimized cooperation between creating department, team leader and landscape team

## Skills

### Design and Technical Software:

- Advanced: Revit 2025, Photoshop, InDesign,
- Intermediate: Excel, Dynamo, Rhino, Enscape,
- Basic: SketchUp, Energy Plus,

### Design and Drawing Skills:

- Conceptual visualization (styled and collaged)
- Schematic design and space planning,
- Precise technical drafting

### Analytical:

- Site and environmental analysis, space planning,
- Historical and cultural research, community engagement,
- Building life cycle and material analysis, and structural analysis

### Interpersonal:

- Creative problem-solving with structured thinking
- Active listening, empathy, and collaborative communication
- Systemic creativity,
- Consistent detail delivery,
- Efficient resource and time management, adherence to deadlines.

### Languages:

Ukrainian (native), English (fluent)

## Competitions

### REbuild Ukraine Competition

Canada and Ukraine | 08/2023

- **Modular Design Thinking:** Proposed a post-war mass housing solution using prefabricated systems focused on adaptability, speed, and cost-efficiency.
- **Material Research:** Explored sustainable materials for environmentally conscious housing solutions.
- **Urban Strategy:** Addressed urban integration, community needs, and scalability to ensure functional and inclusive design.

### She Builds Ukraine Hackathon

Canada, Ukraine | 06/2023

- **Team Leadership and Coordination:** Led a team of 4 undergraduate students in designing an AI-powered debris sorting system, emphasizing sustainable reconstruction practices.
- **Awards:** Secured 7th place out of 40 for optimized resource use and environmental impact reduction in post-conflict reconstruction.

### STEELFREEDOM National Competition

Mariupol, Ukraine | 11/2020

- **Leadership:** Led a team of 4 in designing a stadium.
- **Awards:** Achieved a top 10 finalist position out of 60 teams for innovative use of steel tree-columns, structural clarity, and efficient land use.

## Additional Experience

### Fundraiser

Office of Development, University of Michigan Telefund | Ann Arbor, MI  
01/2024 - 04/2025

- **Negotiation and Consistency:** Fundraised over \$15,000 for UofM funds, regularly contributing 10–30% of shift campaign totals through persistent and respectful outreach.
- **Trust and Autonomy:** Promoted to Authorized Fundraiser within one semester for consistently high performance, trusted to confirm pledges and process transactions without managerial oversight.

### Car Creative Photographer

AutoFocus | Austin, TX  
03/2023 – 07/2023

- **Workflow Efficiency:** Photographed 15-20 cars daily, ensuring on-time update to the company website.
- **Attention to Detail:** Promoted from Chevrolet to Infinity photography within 2 months, reflecting consistent performance and attention to detail.

### Youth Camp Manager/Tutor

Plast, Ukrainian Scouts | Valencia, Spain  
07/2022 - 08/2022

- **Adaptability and Leadership:** Managed logistics and activity planning in a fast-paced camp environment; tutored displaced children with empathy and structure.

### Humanitarian Aid Coordinator

Plast | Valencia, Spain  
02/2022 - 04/2022

- **Process Optimization:** Transformed sorting and packaging of humanitarian aid into a conveyor-line process.

### English Tutor

AIESEC | Levico Terme, Italy  
07/2019 - 08/2019

- **Curriculum Design:** Led educational sessions for underserved youth across two locations, independently planning and delivering age-appropriate English activities.

### Environmental Conservation Assistant

"Extremal" Camp | Korostyshiv, Ukraine  
15/10/2019

- **Environmental Stewardship:** Cleaned the area of 50m<sup>2</sup> of forest at the Quarry of Korostyshev to facilitate a site for outdoor mountaineering activities.

### "Work and Travel" Program

Server,Dave & Buster's | Jacksonville, FL  
05/2018 - 08/2018

- Gained experience in customer service, time management, and multitasking in a high-pressure setting.

### Publication: BUILD MASTER CLASS Conference

| Kyiv, Ukraine  
10/2017  
Presented paper "The Manipulation of the 'Kyivan Rus' Narrative in Politics Through Architecture".

# Contents

## O1 Reconstruction

2023. The competition project focused on modernizing standartized prefab housing using concrete modules.  
pages 1-4

## O2 Optimization

2025. My master's thesis was inspired by O1 Reconstruction and took my research into unexpected direction.  
pages 5-6

## O3 KinoStep

2024. Architectural sequel, that brought italian Casa Malaparte to the streets of Ann Arbor, Michigan.  
pages 7-10

## O4 MUSEUM

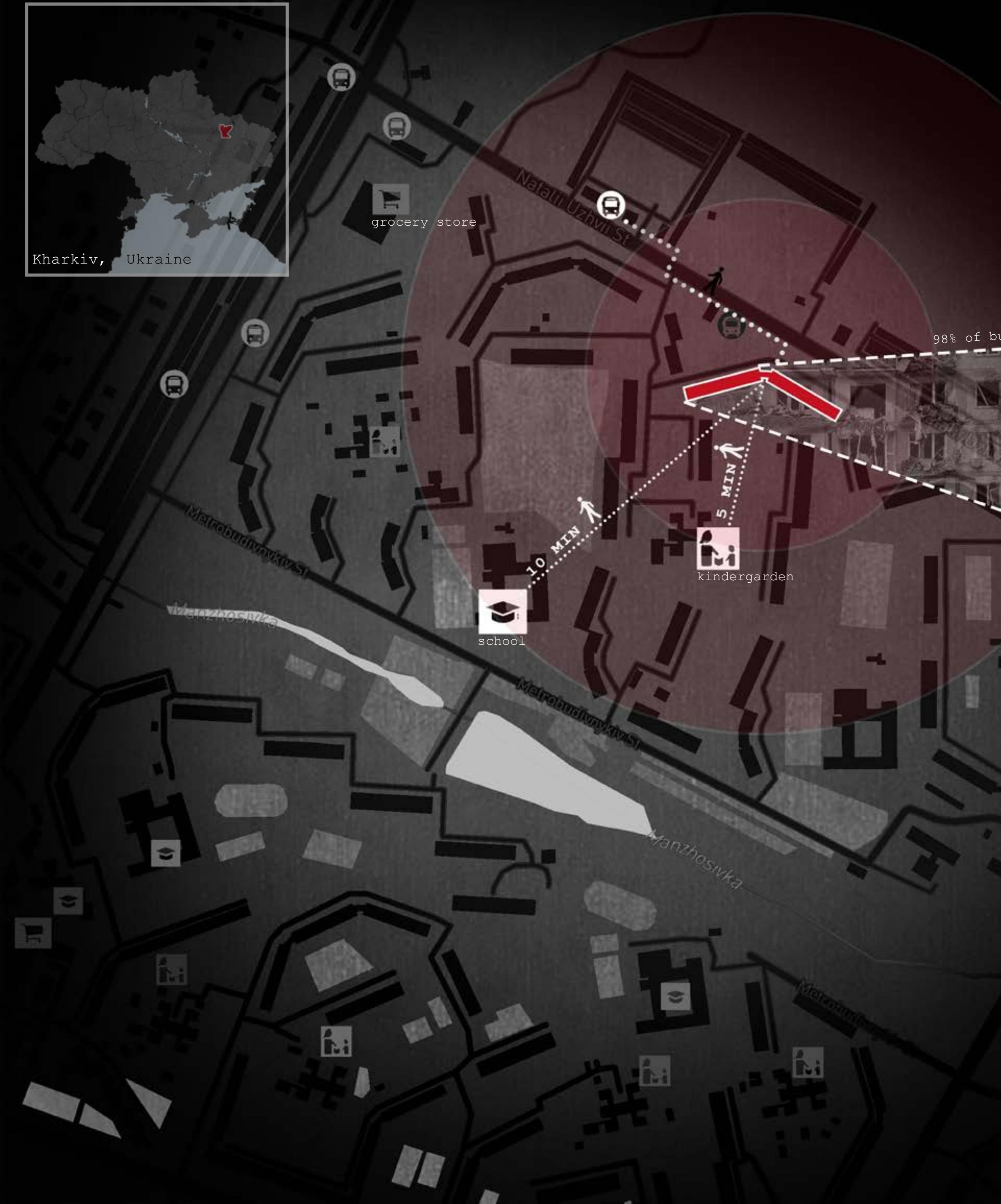
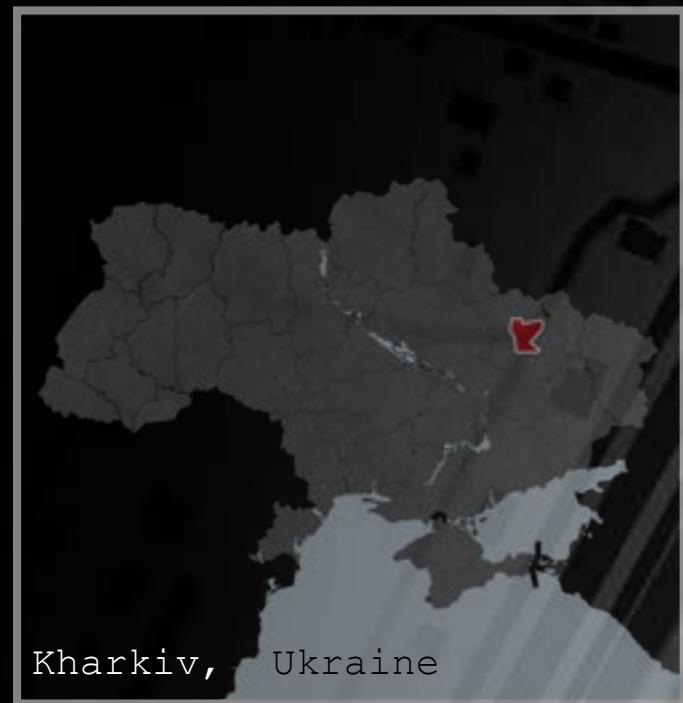
2021. Bachelor's diploma inspired by Renzo Piano's approach of managing urban vibrancy.  
pages 11-14

## O5 Stadium

2020. National competition award-winning project showcases the freedom of steel.  
pages 15-18

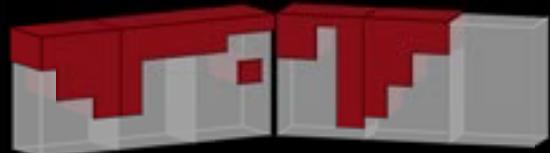
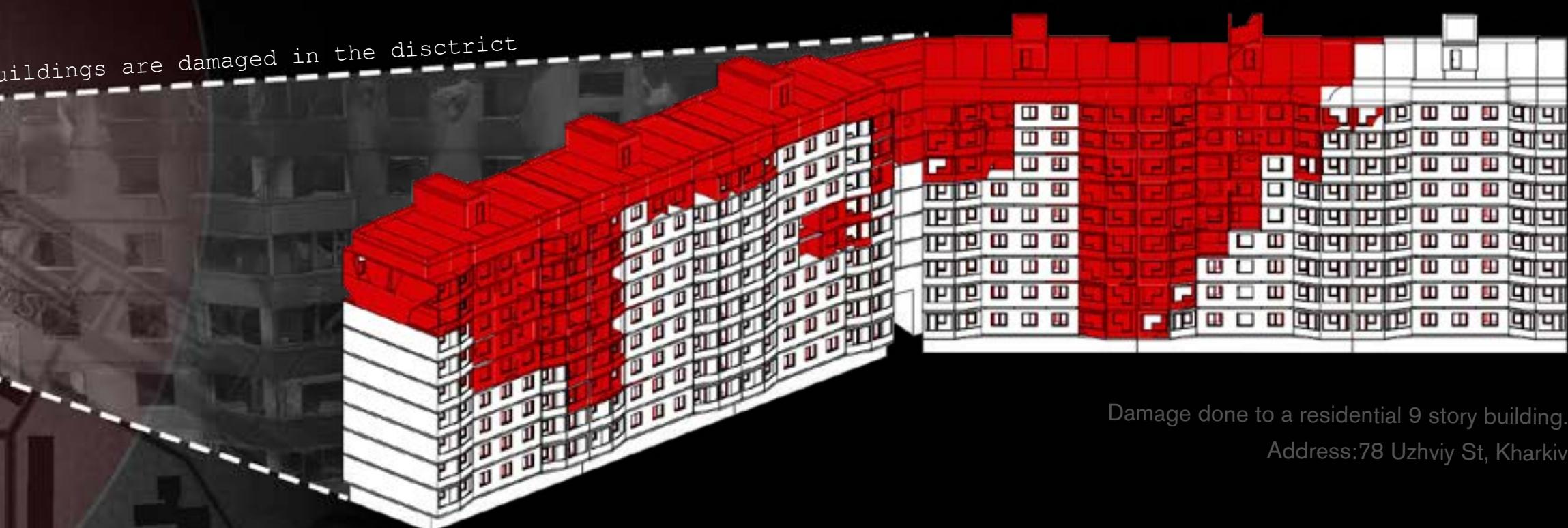
# O1 Reconstruction of Panel Housing

## Microregion Analysis

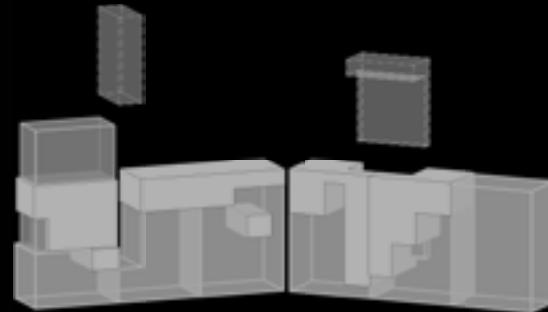


# O1 Reconstruction

The competition was centered around the integration of **prefabricated modules** into standardized grid of series 11-7 to experiment with **silhouette and program rethinking under streamlined restoration**



1. Seizure unreliable panels



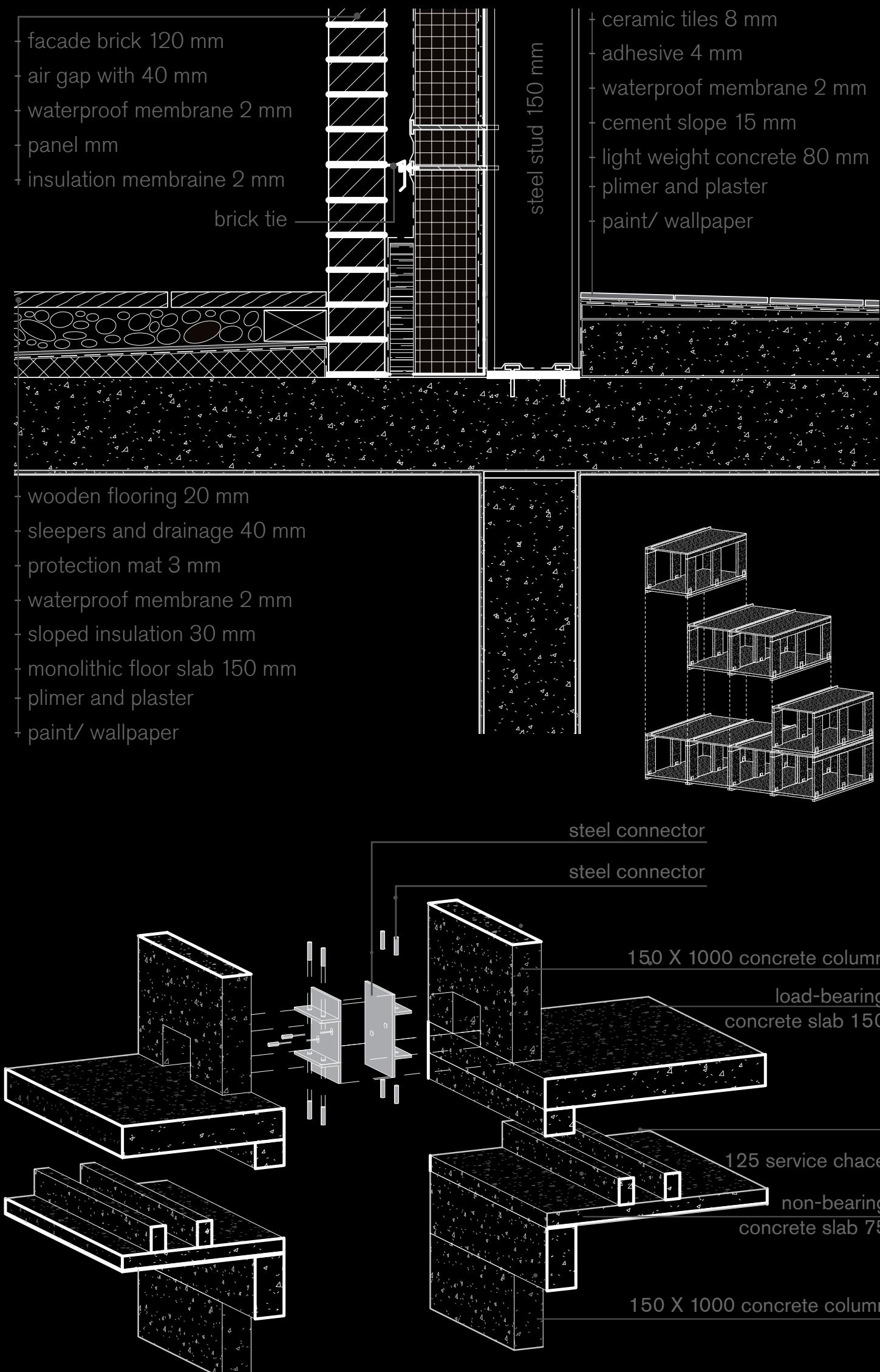
2. Defining mass blocks

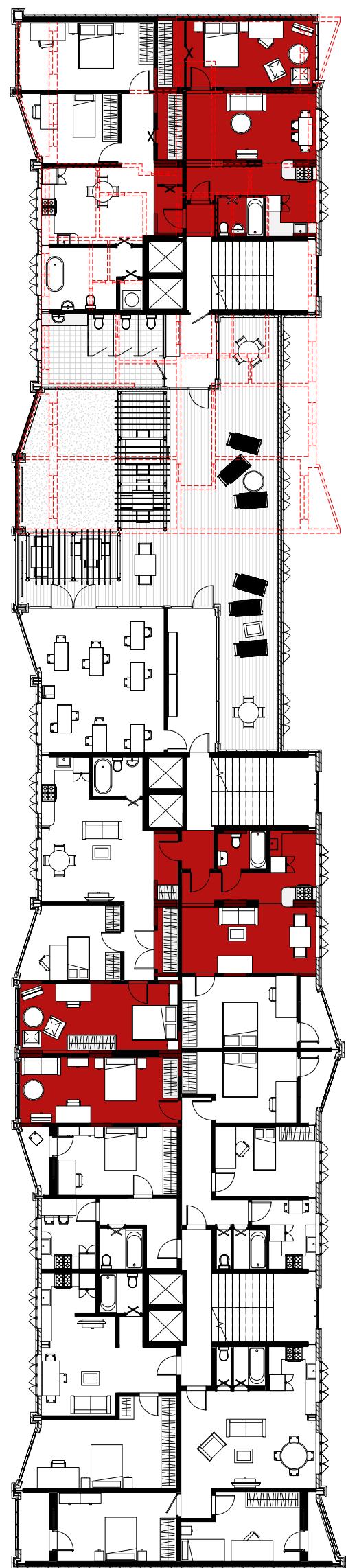


3. Adding dynamics to the silhouette

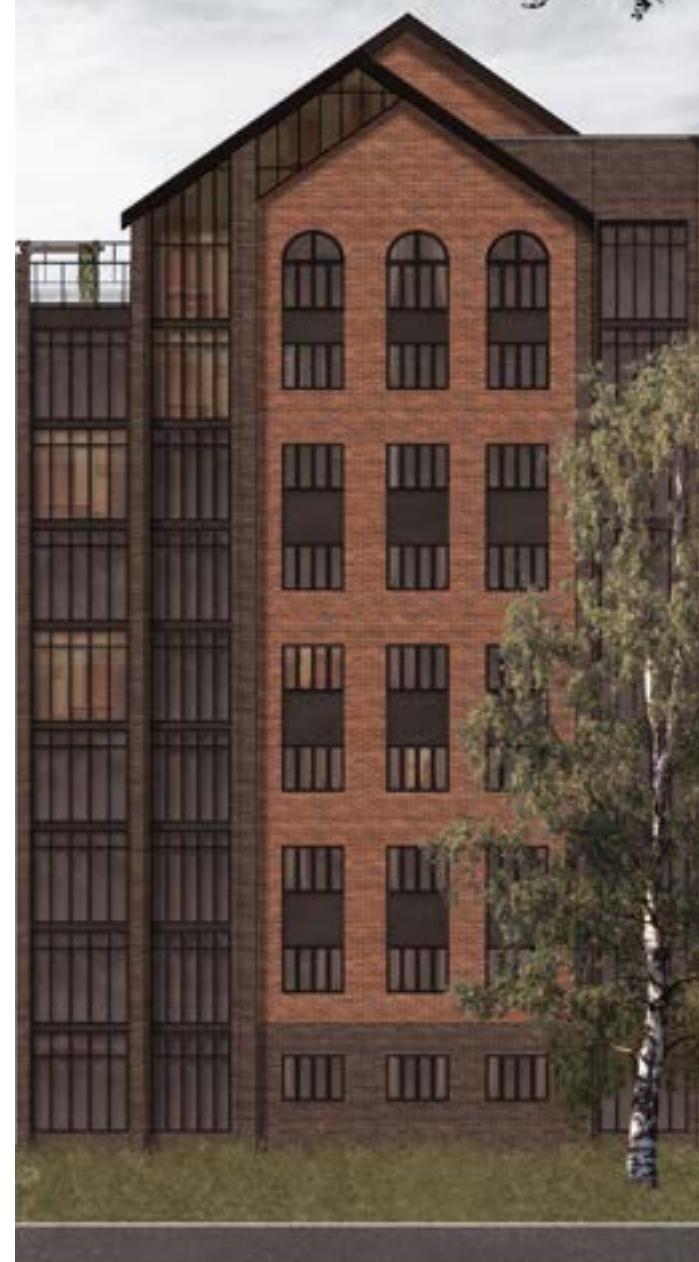
# O1 Reconstruction of Panel Housing

## Structural Details





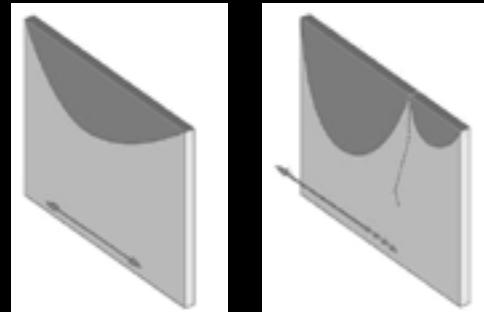
Apartments originally: 216  
After reconstruction: 176 units, social hall,  
playground, barbecue deck, and sun deck on  
a rooftop terrace.



## 1. Panel Damage

This table collects information about 134 panels in 14 parameters of damage in flaking, cracking and burn. As a pioneering sample, it relies on images.

This information allows to categorize structural integrity issues and expedite assessment process.



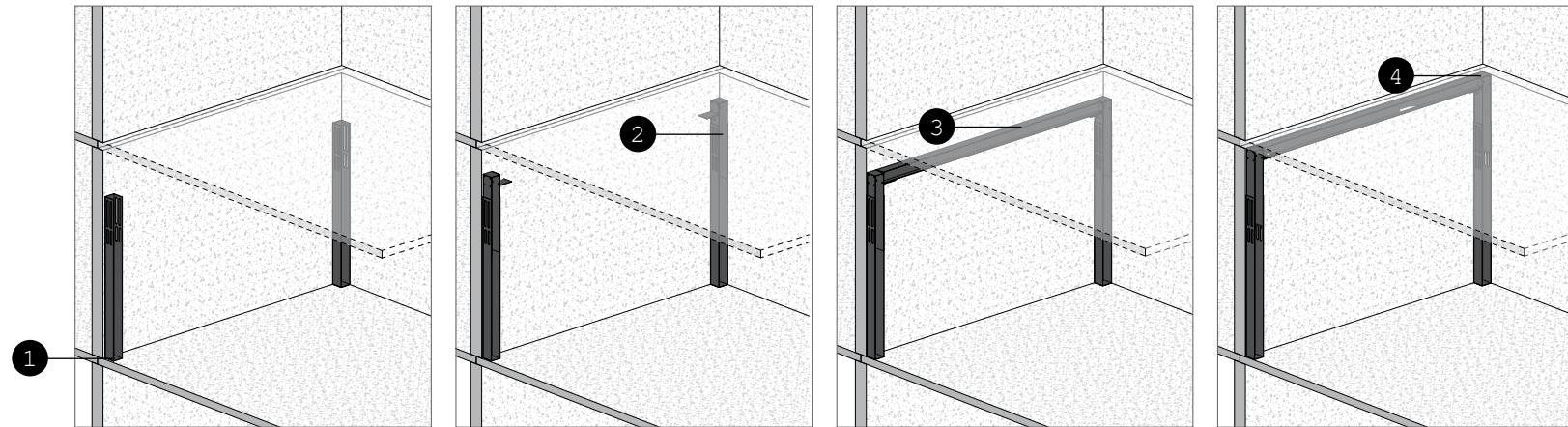
Several pictures were chosen to take a look at damage caused to non-bearing facade panels and structural longitudinal and transverse panels.

#	Panel Type	Location	Load bearing	Openings	Series	missing panel	Crack Size	Crack Pattern	Crack Location	Crack Depth	Flaking Level	Flaking Area	Rubber Rust	Exposed Rubber	Seams	Fire Effect	Fire ET Area	Fire-Rubber	
2	facade	exterior	self-bearing	window	1-464	diagonal	-	-	-	-	medium	edge, window	-	-	-	-	-	-	
3	facade	exterior	self-bearing	window	1-464	side	-	-	-	-	surface	edge, window	-	-	-	-	-	-	
4	facade	exterior	self-bearing	window	1-464	side, bottom	-	-	-	-	medium	edge, window	-	-	-	-	-	-	
5	facade	exterior	self-bearing	window	1-464	-	medium	diagonal	opening	structural	surface	edge, window	-	-	-	-	-	-	
6	facade	exterior	self-bearing	window	1-464	side	medium	diagonal	bottom	structural	surface	edge, window	-	-	-	-	-	-	
7	facade	exterior	self-bearing	window	1-464	-	short	diagonal	bottom corner	surface	surface	corner	n/a	yes	side panel missing	-	-	-	
8	facade	exterior	self-bearing	window	1-464	side	medium	horizontal	opening	structural	deep	edge, window	-	-	-	-	-	-	
9	facade	exterior	self-bearing	window	1-464	-	short	random	all	surface	surface	edge, window	-	-	-	-	-	-	
10	facade	exterior	self-bearing	window	1-464	-	short	random	all	surface	surface	edge, window	-	-	-	-	-	-	
11	facade	exterior	self-bearing	window	1-464	-	short	horizontal	bottom	medium	surface	edge, window	-	-	-	-	-	-	
12	facade	exterior	self-bearing	balcony (w+o)	1-464	-	-	-	-	-	surface	bottom	-	-	-	-	-	-	
13	facade	exterior	self-bearing	window	1-464	side, bottom	-	-	-	-	surface	bottom	-	-	-	-	-	-	
14	facade	exterior	self-bearing	window	1-464	-	-	-	-	-	surface	bottom	-	-	-	-	-	-	
15	facade	exterior	self-bearing	balcony (w+o)	1-464	-	-	-	-	-	surface	bottom	-	-	-	-	-	-	
16	facade	exterior	self-bearing	window	1-464	side	long	random	all	structural	deep	edge, window	yes	yes	side panel missing	-	-	-	
17	facade	exterior	self-bearing	window	1-464	-	-	-	-	-	surface	edge, window	-	-	-	-	-	-	
18	facade	exterior	self-bearing	balcony (w+o)	1-464	-	-	-	-	-	surface	edge, window	-	-	-	-	-	-	
19	facade	exterior	self-bearing	window	1-464	side	-	-	-	-	surface	edge, window	-	-	-	-	-	-	
20	facade	exterior	self-bearing	window	1-464	-	-	-	-	-	surface	edge, window	-	-	-	-	-	-	
21	facade	exterior	self-bearing	balcony (w+o)	1-464	-	-	-	-	-	surface	edge, window	-	-	-	-	-	-	
22	facade	exterior	self-bearing	window	11-57	side	-	-	-	-	surface	perimeter	-	-	-	-	-	-	
23	facade	exterior	self-bearing	window	11-57	side	-	-	-	-	surface	perimeter	-	-	-	-	-	-	
24	facade	exterior	self-bearing	window	11-57	side	-	-	-	-	surface	perimeter	-	-	-	-	-	-	
25	facade	exterior	self-bearing	window	11-57	side	-	-	-	-	surface	perimeter	-	-	-	-	-	-	
26	longitudinal	interior	yes	balcony (w+o)	11-57	side, top	-	-	-	-	surface	perimeter	-	-	-	-	-	-	
27	longitudinal	interior	yes	balcony (w+o)	11-57	top	-	-	-	-	surface	perimeter	-	-	-	-	-	-	
28	longitudinal	interior	yes	balcony (w+o)	11-57	-	-	n/a	-	-	surface	perimeter	-	-	-	-	-	-	
29	facade	exterior	self-bearing	window	11-57	diagonal bottom	-	-	-	-	surface	perimeter	-	-	-	-	-	-	
30	facade	exterior	self-bearing	window	11-57	bottom	-	-	-	-	surface	bottom perimeter	-	-	-	-	-	-	
31	transverse	butt	yes	-	11-57	corner	-	-	n/a	-	surface	perimeter	-	-	-	-	-	-	
32	transverse	butt	yes	-	11-57	corner	medium	random	corner	structural	deep	perimeter	n/a	yes	corner panel missing	n/a	-	yes	
33	transverse	butt	yes	-	11-57	corner	medium	random	corner	structural	deep	perimeter	n/a	yes	corner panel missing	n/a	-	yes	
34	transverse	butt	yes	-	11-57	corner	medium	horizontal	corner	medium	medium	perimeter	n/a	yes	corner panel missing	n/a	-	yes	
35	transverse	butt	yes	-	11-57	corner	medium	random	corner	structural	medium	perimeter	n/a	yes	corner panel missing	n/a	-	yes	
36	longitudinal	interior	yes	-	11-57	side, corner	medium	vertical	corner	medium	deep	corner	n/a	yes	bottom loose	-	-	-	
37	longitudinal	interior	yes	-	11-57	side, corner	-	-	-	-	surface	perimeter	n/a	-	-	-	-	-	-
38	longitudinal	interior	yes	-	11-57	side, corner	-	-	-	-	surface	perimeter	n/a	-	-	-	-	-	-
39	longitudinal	interior	yes	-	11-57	side, corner	-	-	-	-	surface	perimeter	n/a	-	-	-	-	-	-
40	longitudinal	interior	yes	-	11-57	-	-	-	-	-	surface	perimeter	n/a	-	-	-	-	-	-
41	longitudinal	interior	yes	door	11-57	-	-	-	-	-	surface	perimeter	n/a	-	-	-	-	-	-
42	longitudinal	interior	yes	door	11-57	-	-	-	-	-	surface	perimeter	n/a	-	-	-	-	-	-
43	longitudinal	interior	yes	door	11-57	-	-	-	-	-	surface	perimeter	n/a	-	-	-	-	-	-
44	longitudinal	interior	yes	door	11-57	-	-	-	-	-	surface	perimeter	n/a	-	-	-	-	-	-
45	longitudinal	interior	yes	-	11-57	side, corner	-	-	-	-	surface	perimeter	n/a	-	-	-	-	-	-
46	longitudinal	interior	yes	-	11-57	corner	-	-	-	-	surface	perimeter	n/a	-	-	-	-	-	-
47	longitudinal	interior	yes	-	11-57	corner	-	-	-	-	surface	perimeter	n/a	-	-	-	-	-	-
48	longitudinal	interior	yes	-	11-57	corner	-	-	-	-	surface	perimeter	n/a	-	-	-	-	-	-
49	longitudinal	interior	yes	-	11-57	corner	-	-	-	-	surface	perimeter	n/a	-	-	-	-	-	-
50	longitudinal	interior	yes	-	11-57	corner	-	-	-	-	surface	perimeter	n/a	-	-	-	-	-	-
51	longitudinal	interior	yes	-	11-57	corner	-	-	-	-	surface	perimeter	n/a	-	-	-	-	-	-
52	longitudinal	interior	yes	-	11-57	corner	-	-	-	-	surface	perimeter	n/a	-	-	-	-	-	-
53	longitudinal	interior	yes	-	11-57	corner	-	-	-	-	surface	perimeter	n/a	-	-	-	-	-	-
54	longitudinal	interior	yes	-	11-57	corner	-	-	-	-	surface	perimeter	n/a	-	-	-	-	-	-
55	longitudinal	interior	yes	-	11-57	corner	short	diagonal	top	surface	deep	perimeter	n/a	-	corner panel missing	n/a	-	yes	
56	longitudinal	interior	yes	-	11-57	corner	medium	vertical	top-corner	structural	deep	perimeter	n/a	-	corner panel missing	n/a	-	yes	
57	longitudinal	interior	yes	-	11-57	corner	medium	diagonal	top-corner	structural	deep	perimeter	n/a	-	corner panel missing	n/a	-	yes	
58	longitudinal	interior	yes	-	11-57	corner													

# imization



## 3. Adaptive Prototype



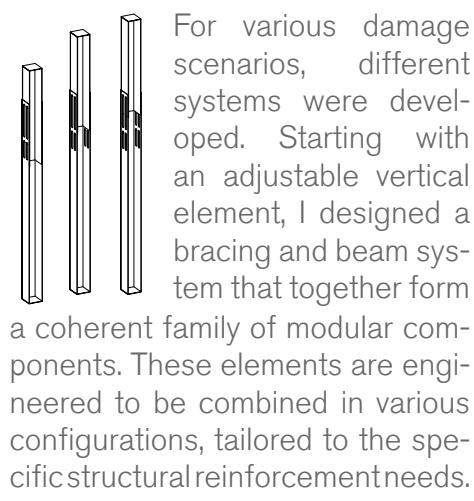
1. Base permanently secured to the floor panel with chemical anchors.

2. Capitel temporarily secured at lowest position.

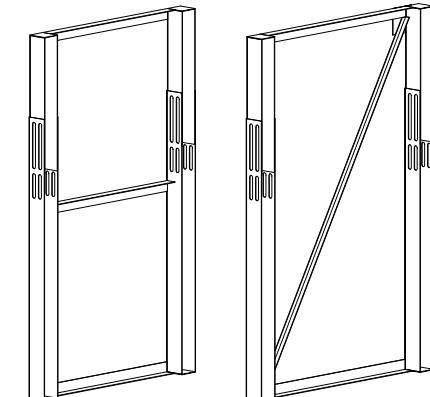
3. Beam placed and secured in beam seat.

4. Extending the frame, permanently attaching the capitel to the top floor panel (anchors) and verticals welded.

## 4. Scaling



For various damage scenarios, different systems were developed. Starting with an adjustable vertical element, I designed a bracing and beam system that together form a coherent family of modular components. These elements are engineered to be combined in various configurations, tailored to the specific structural reinforcement needs.

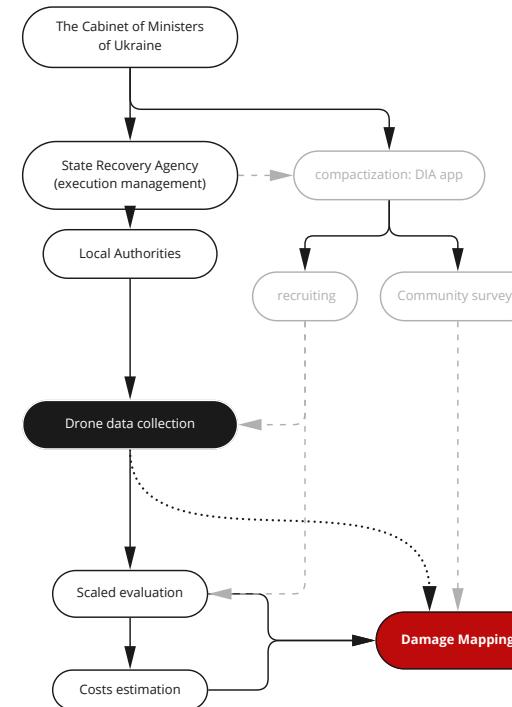


With precise information on the components required for each building, reconstruction efforts and budgeting can be accurately visualized.

## 5. Integration

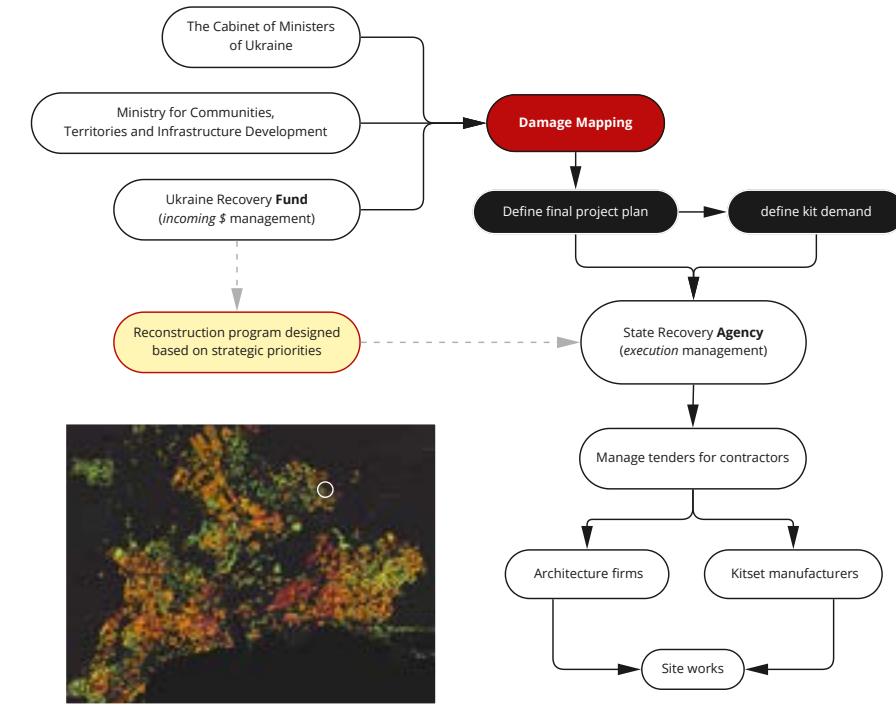
**Phase 1** aims to oversee efforts for information collection and accommodate decision making in Phase 2. It begins with top-down coordination from the Cabinet of Ministers of Ukraine, legally delegating execution management to the State Recovery Agency.

### Phase\_1: Scanning



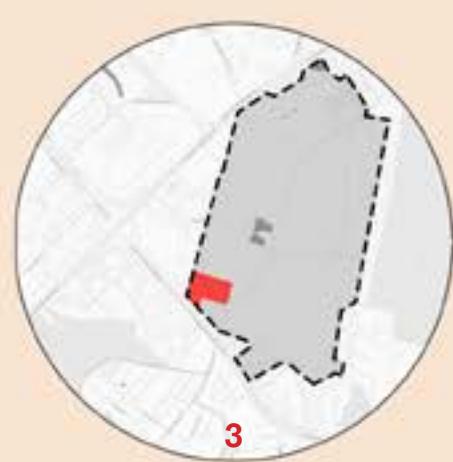
Local authorities then initiate on-ground operations, starting with drone-based scans. The gathered information feeds into a centralized mapping and budgeting platform, enabling a scalable understanding of financial needs from individual buildings to entire cities.

### Phase\_2: Decision Making

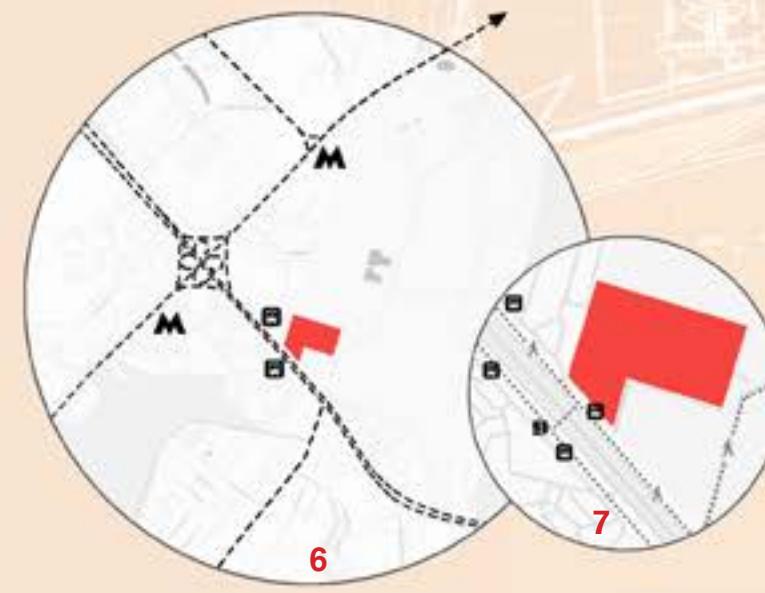
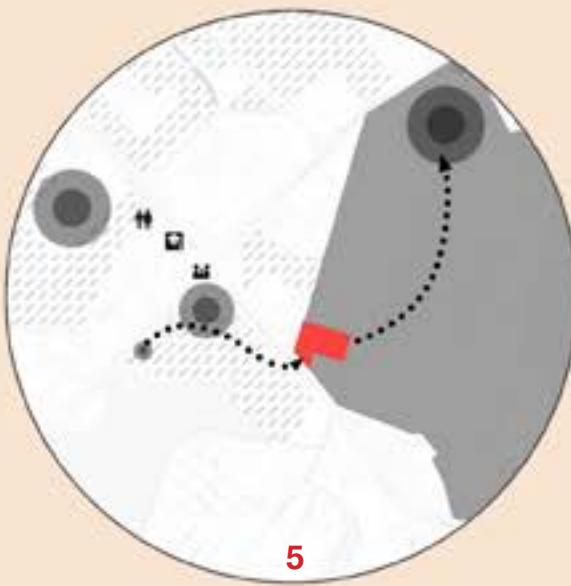
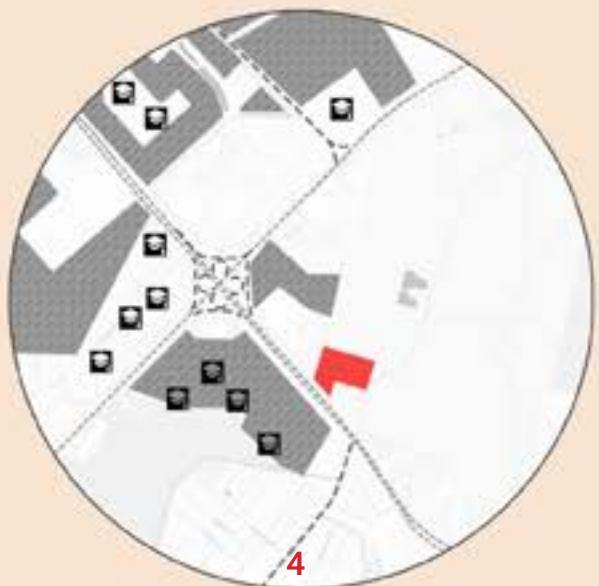


## O2 Nature and Science Museum

### Site Analysis



[1] The capital of Ukraine is facing a transitional period reflecting historic political and economic changes. [2] In the peripheral district of Kyiv, [3] the site lies within a large area registered as state property and includes an underused Soviet-era exhibition complex surrounded by forest. [4] Soviet housing defines the area's higher population density and identifies families and students as the primary users.



[5] The proposal aims to balance limited public infrastructure and [6] offer a transition between urban and outdoor leisure zones. [7] Despite mild urban decay, the transportation network secures the site connection to the rest of Kyiv with bus routes and metro. Nearby bus stops and pedestrian access highlight the site's approachable and walkable territory.

garden of water

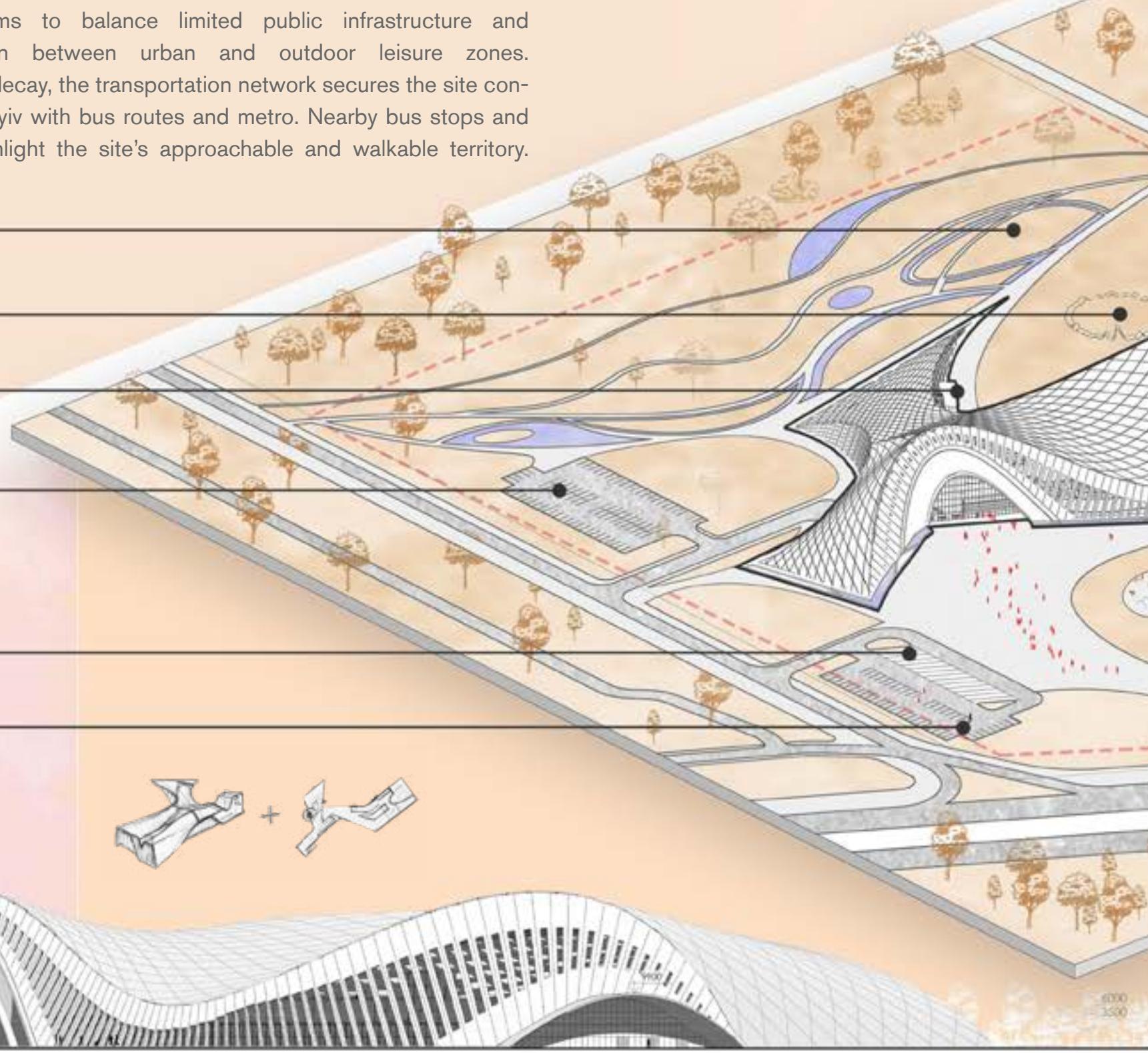
outdoor theater

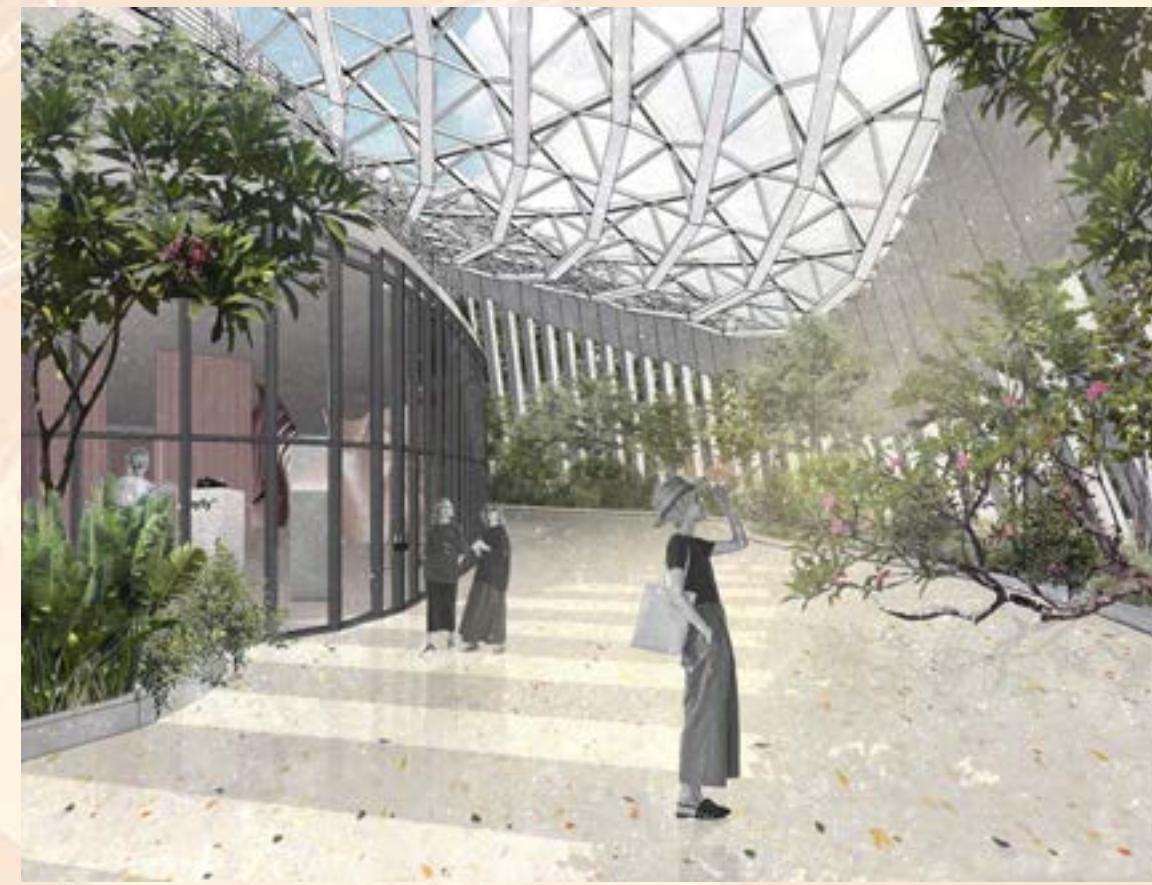
library entrance

employee parking

bus parking

guest parking

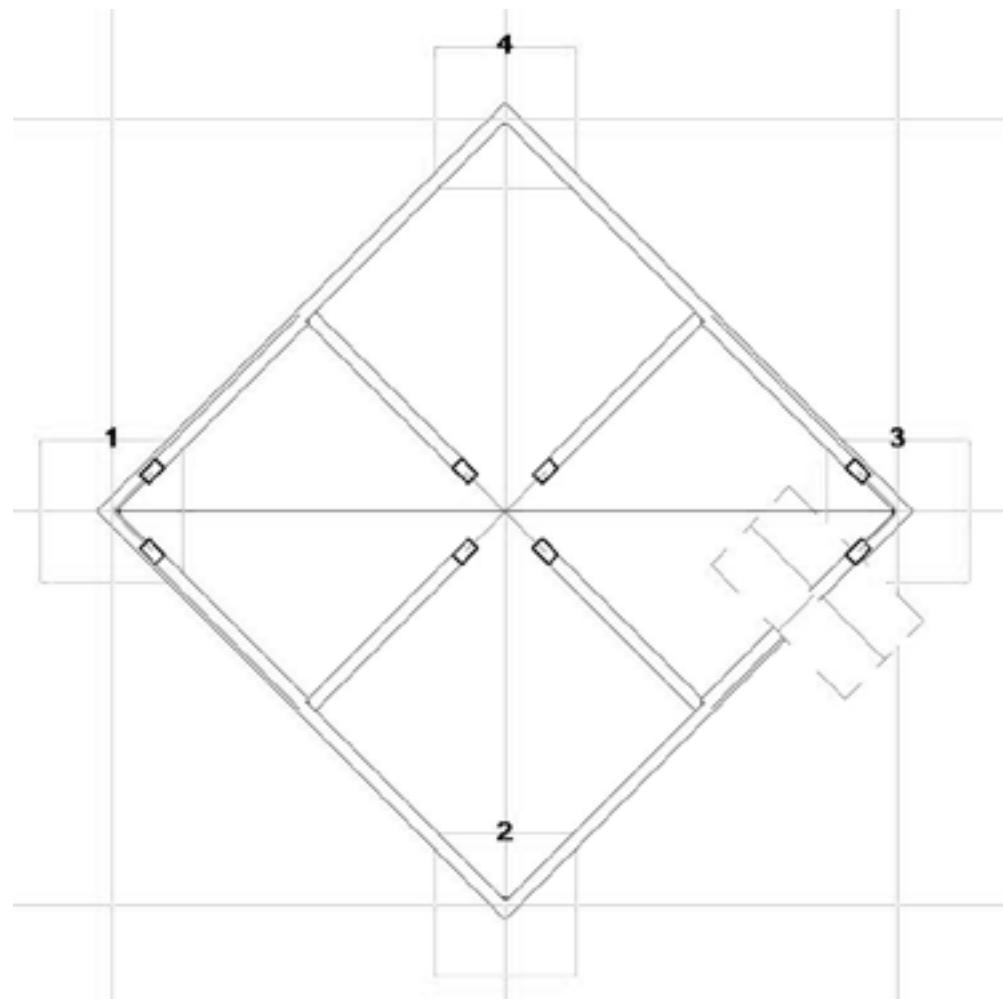




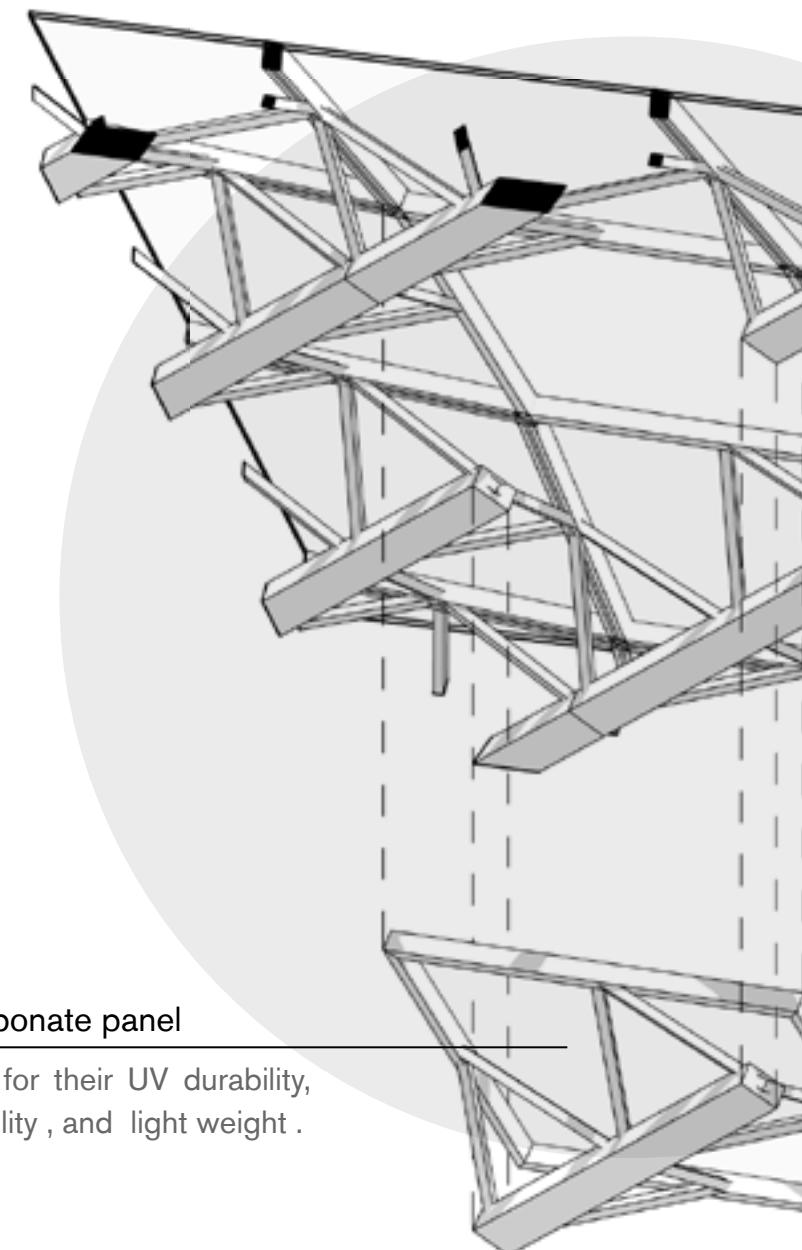
## O3 MUSEUM



## O1 Reconstruction of Panel Housing Envelope

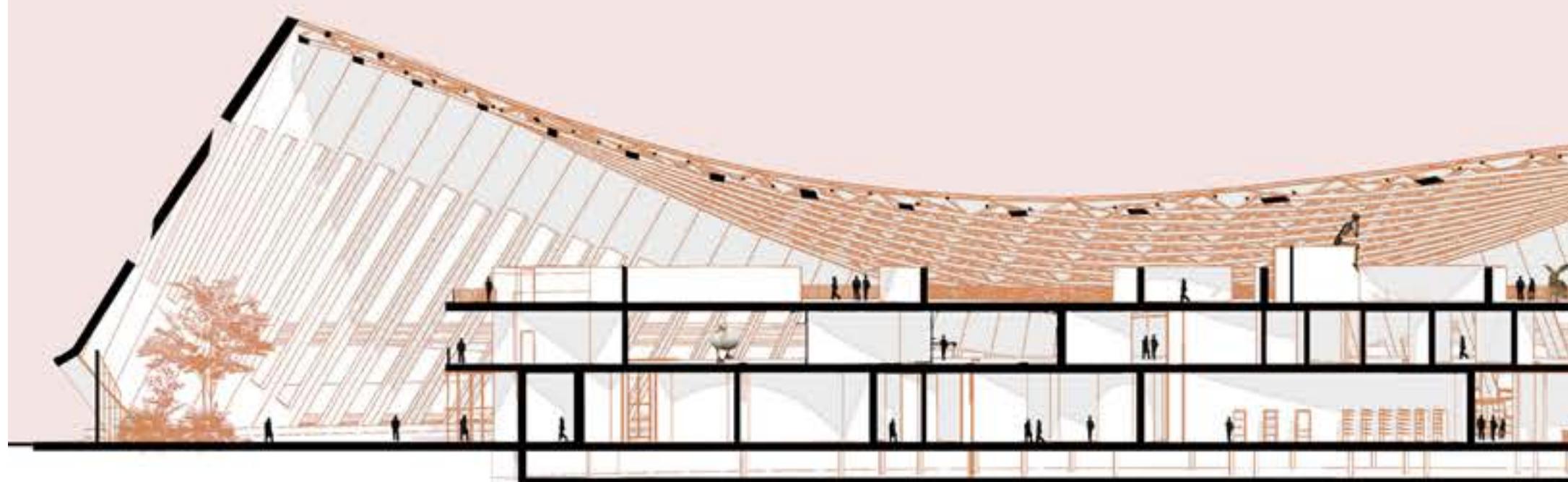


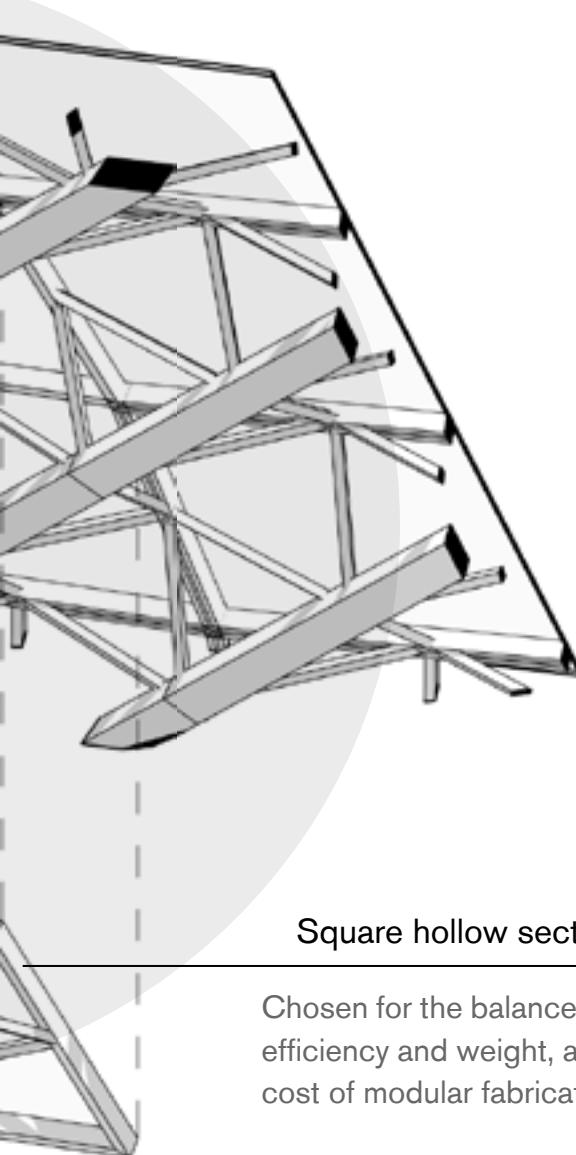
The parametric dome spans several independent volumes, including a museum, library, and restaurant, each containing their own support spaces. The voids between these structures act as transitional zones that generate much-needed third spaces. The envelope, constructed from adaptive lightweight steel modules with polycarbonate panels, provides high light transmission while keeping the need for stabilizing interior temperatures. Modules are prefabricated off-site and assembled on-site using bolted connections and lightweight cranes.



### Polycarbonate panel

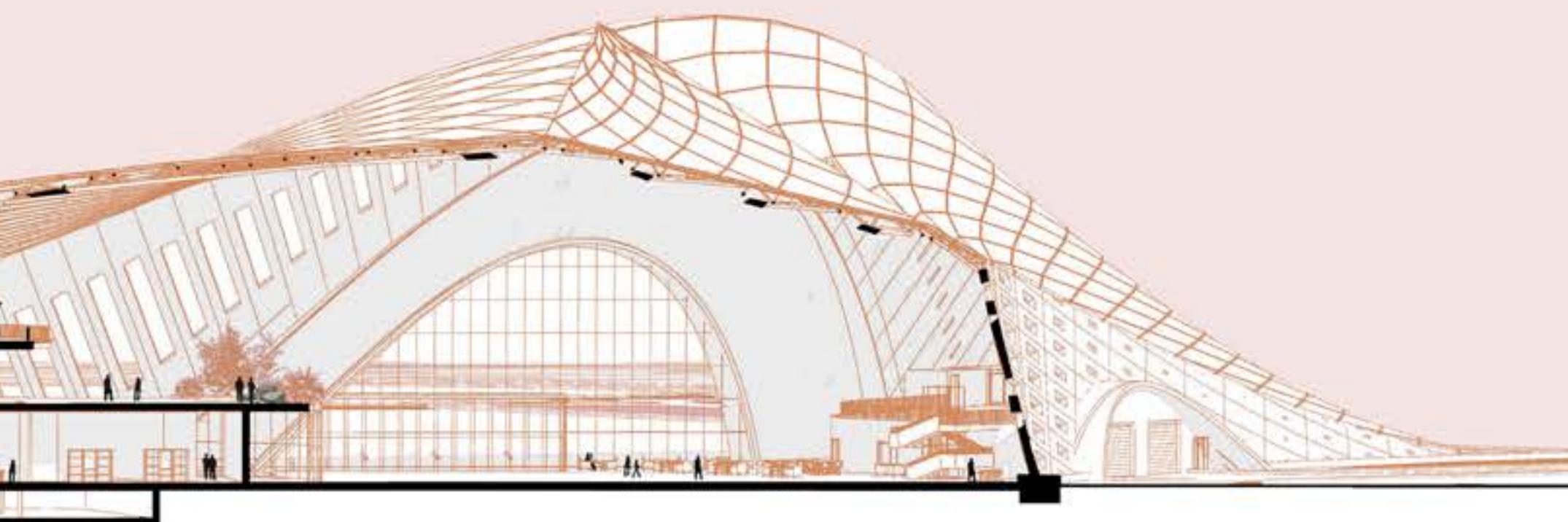
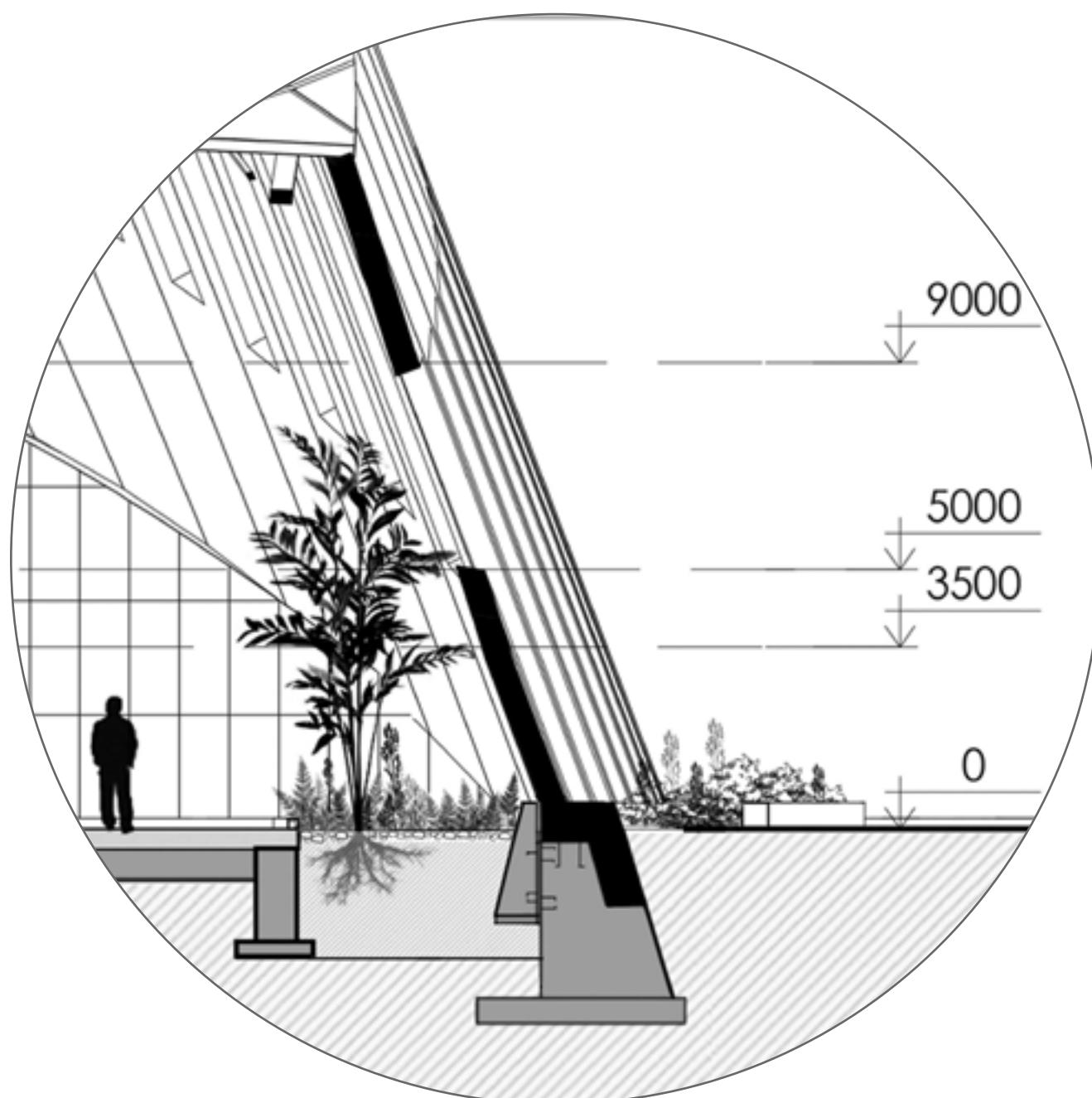
Chosen for their UV durability, affordability , and light weight .



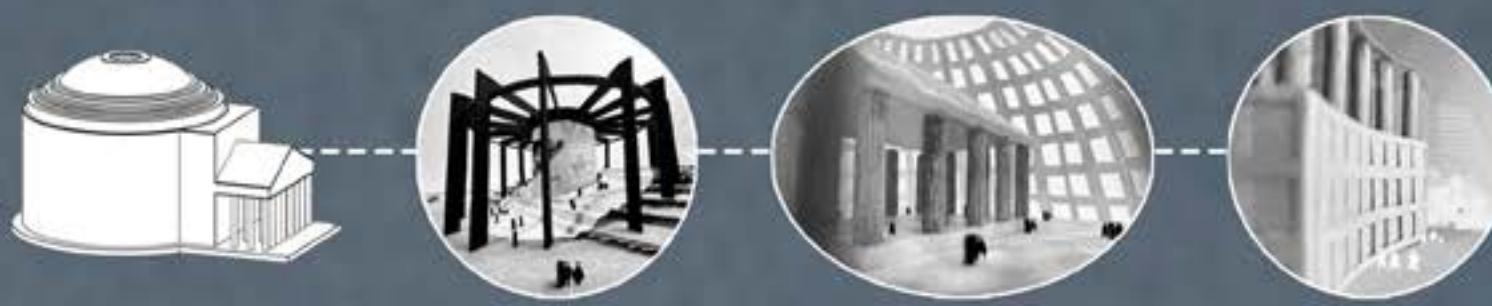


Square hollow sections (SHS)

Chosen for the balance of structural efficiency and weight, and ease and cost of modular fabrication



O3 KinoStep  
Architectural Sequel



## 04 Casa Malaparte to KinoStep

**Sequel Studio** challenged me to design a conceptual continuation to an existing architectural landmark. Specil logic, material or structure - anything could become a leading motif in the new inspiration.



Ann Arbor YMCA

W Washington St

Second St

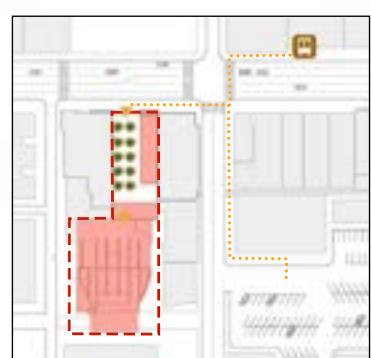
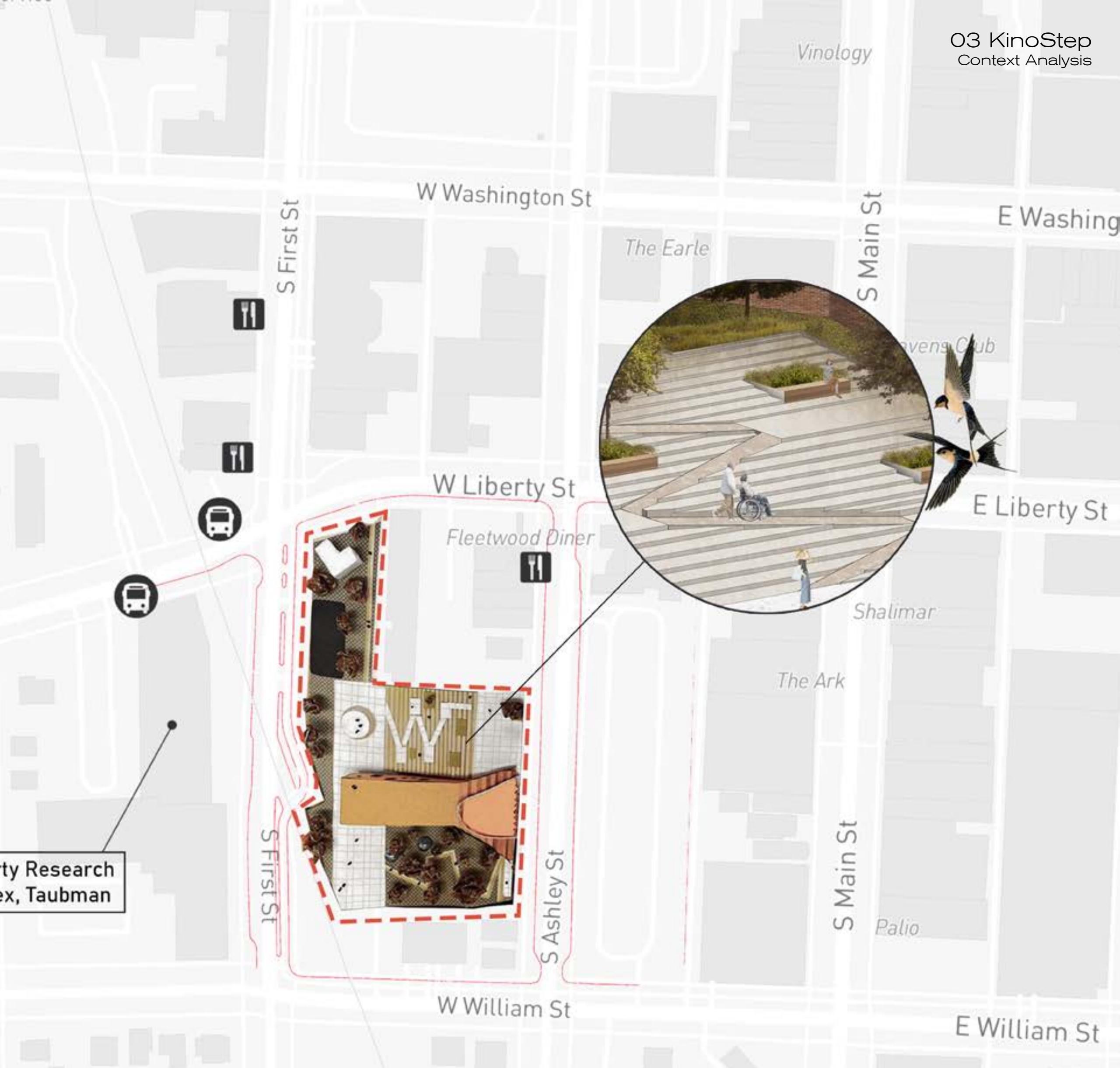
Liber  
Anne

W William St

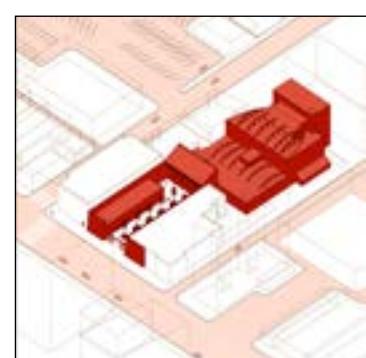
Burnt Tack Inn

### The Egyptian Theatre as a precedent study

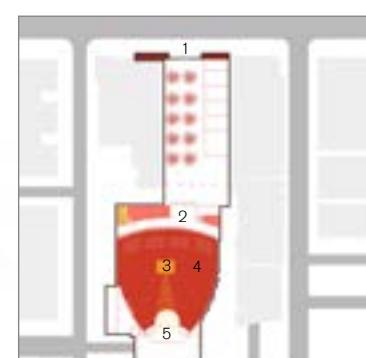
Its design combines features of traditional theater and modern cinema. Spatial experiences it provides through form, ornament, and color stands out dramatic as functional. The programmatic layering offers a dynamic sequence of spaces that guide visitors from gathering zones to intimate performance areas.



Site accessibility



Spatial massing



Program

1- entrance, 2- foyer, 3 - booth,  
4 - auditorium, 5 - screen.



Spatial hierarchy



Interior

04 KinoStep  
Section

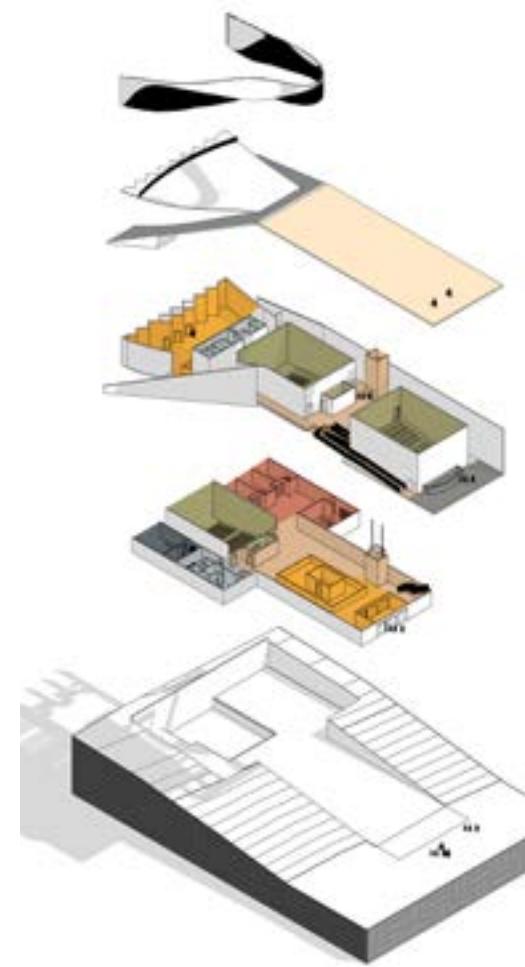




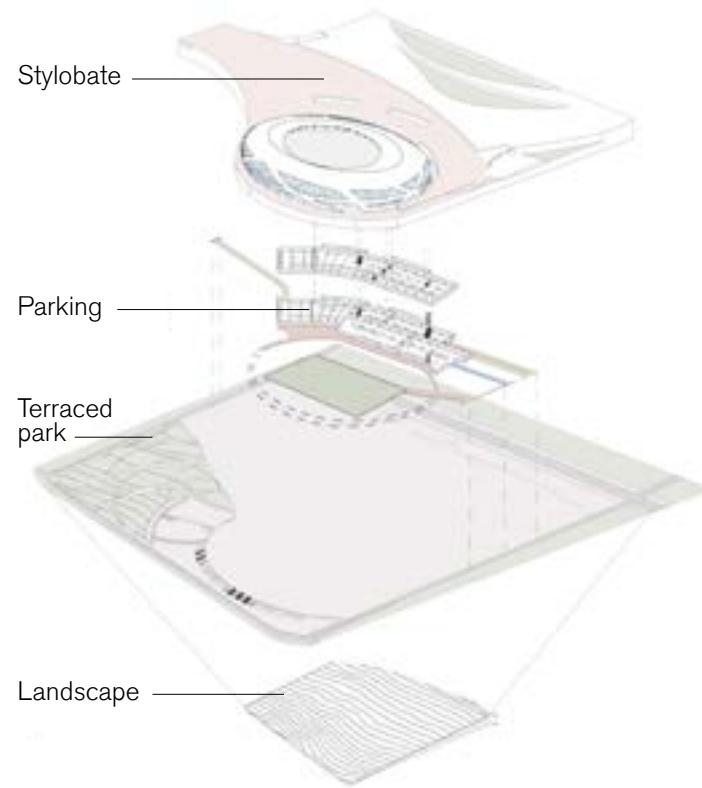
The KinoStep building creates two distinct architectural expressions on each side. A great console extends above a spacious plaza observing the transitional space below. On the other side, the dynamic facade continues the existing rhythm of street view.

Program legend:

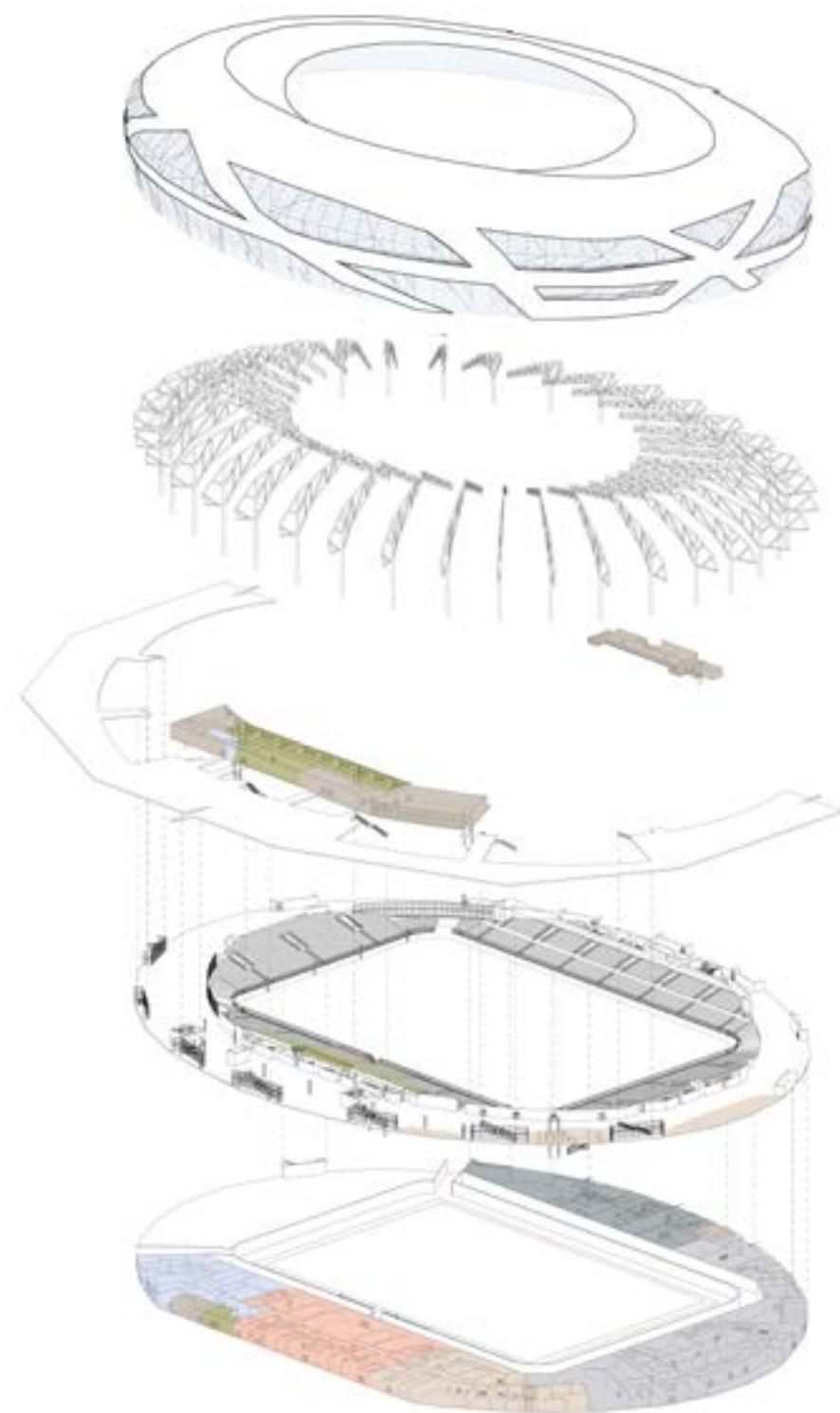
- Observation deck
- Lobby
- Circulation
- Retail
- Auditorium
- Screening rooms
- Bar
- Office, storage
- Restrooms



## 05 Mariupol Stadium Site and Structure Concept

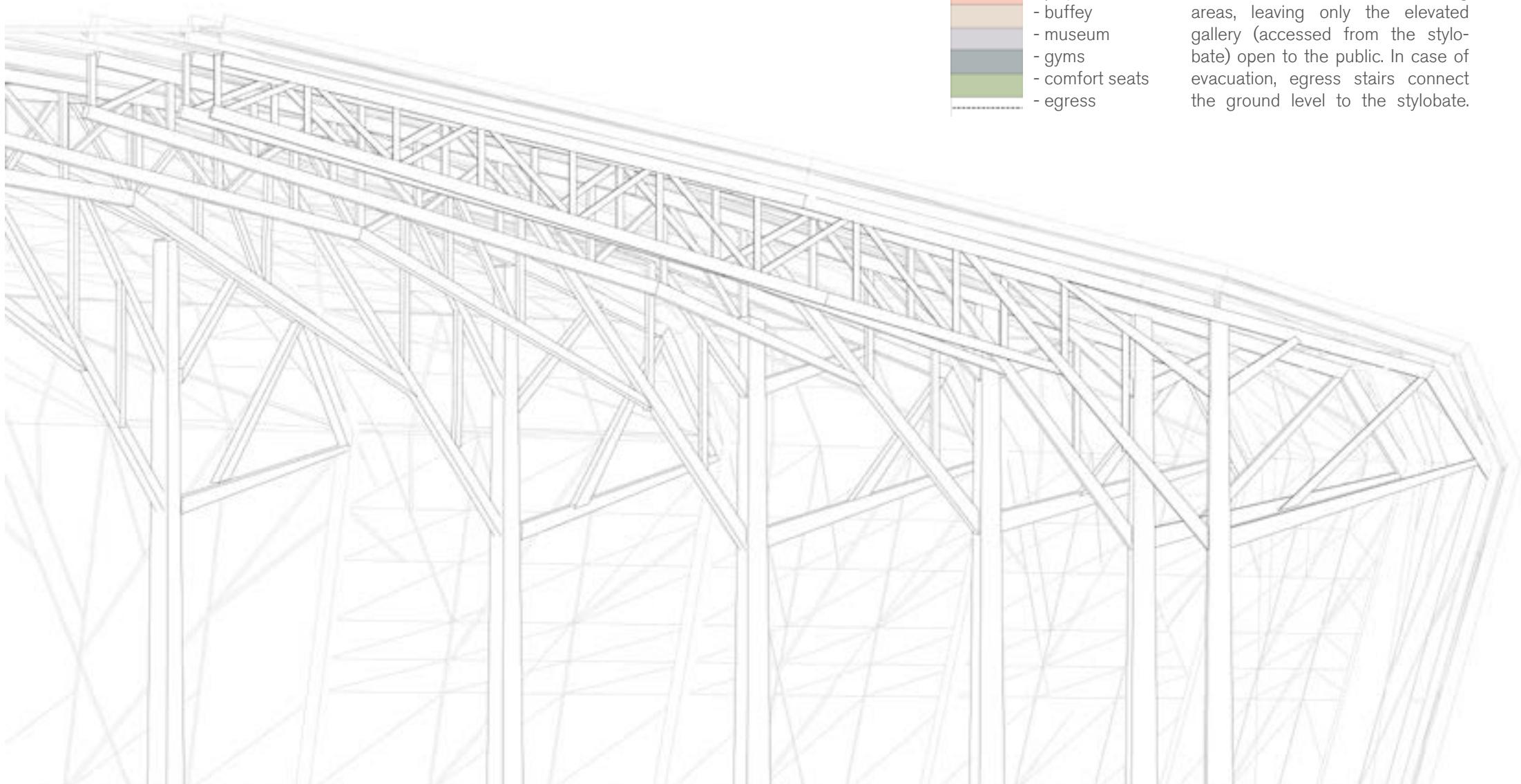


The site features an 11-meter-high slope, which accommodates an underground parking covered with a stylobate. The parking is connected to the road on both sides of the site. This creates a spacious public square above while concealing the parking below.



[Color Box]	- kitchen zone
[Color Box]	- press
[Color Box]	- business guests
[Color Box]	- players zone
[Color Box]	- buffey
[Color Box]	- museum
[Color Box]	- gyms
[Color Box]	- comfort seats
[Color Box]	- egress

The perimeter ring of leaning tree-trusses supports the glass facade. All service and support zones are located beneath the seating areas, leaving only the elevated gallery (accessed from the stylobate) open to the public. In case of evacuation, egress stairs connect the ground level to the stylobate.





# 05 Mariupol Stadium

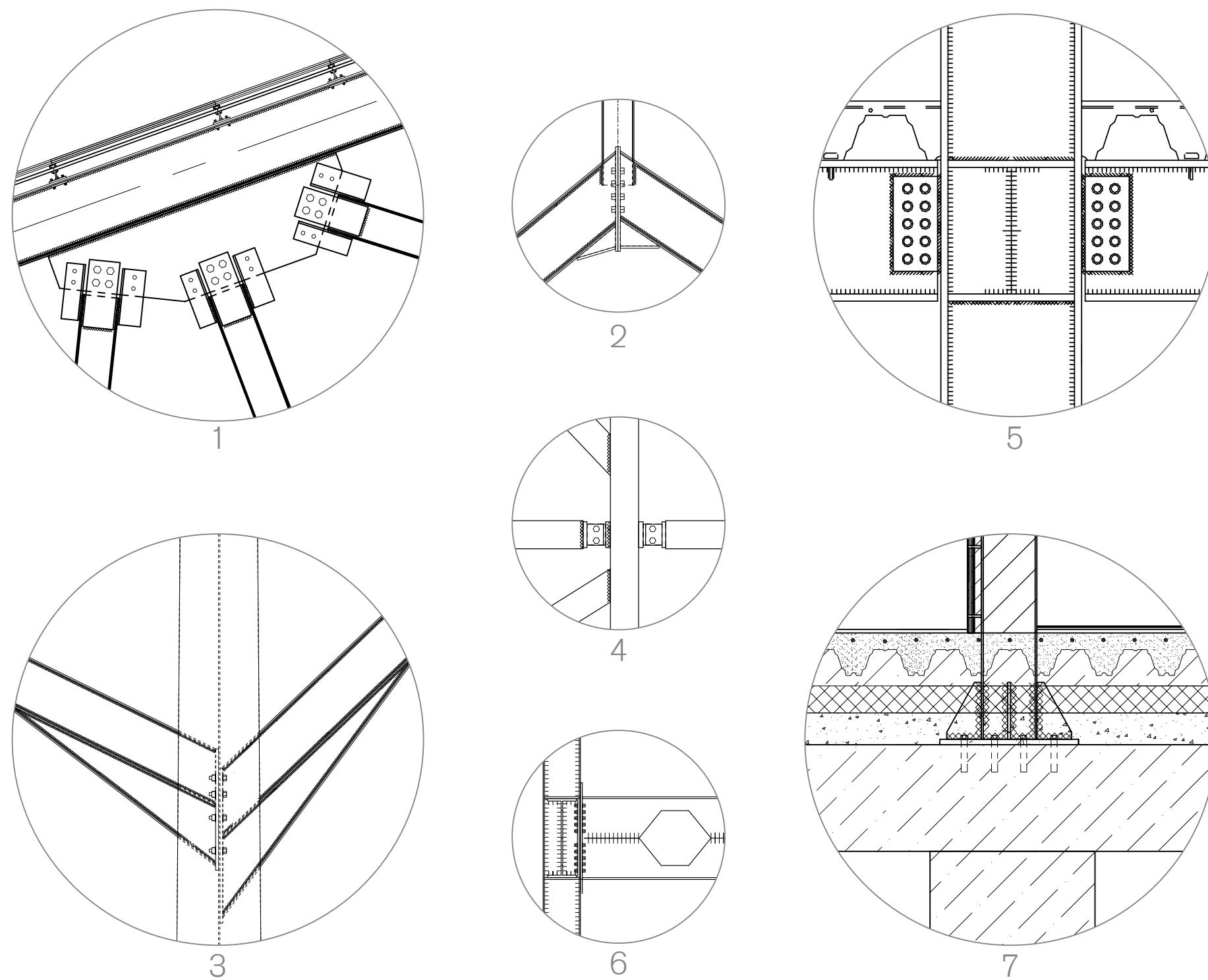


The stadium competition was part of **Mariupol's** ambitious urban development in **2020**, led by the **city as the client**. Located in a neglected yet expansive **parkland along the Azov Sea** in Mariupol, the project aimed to transform a previously unwelcoming area into a vibrant urban destination and a seamless urban connector. The silhouette of the main structure draws inspiration from an asymmetrical pearl. Its flowing curves create a rhythmic presence in the master plan, while the entire composition appears to merge into the surrounding "sea" of trees.

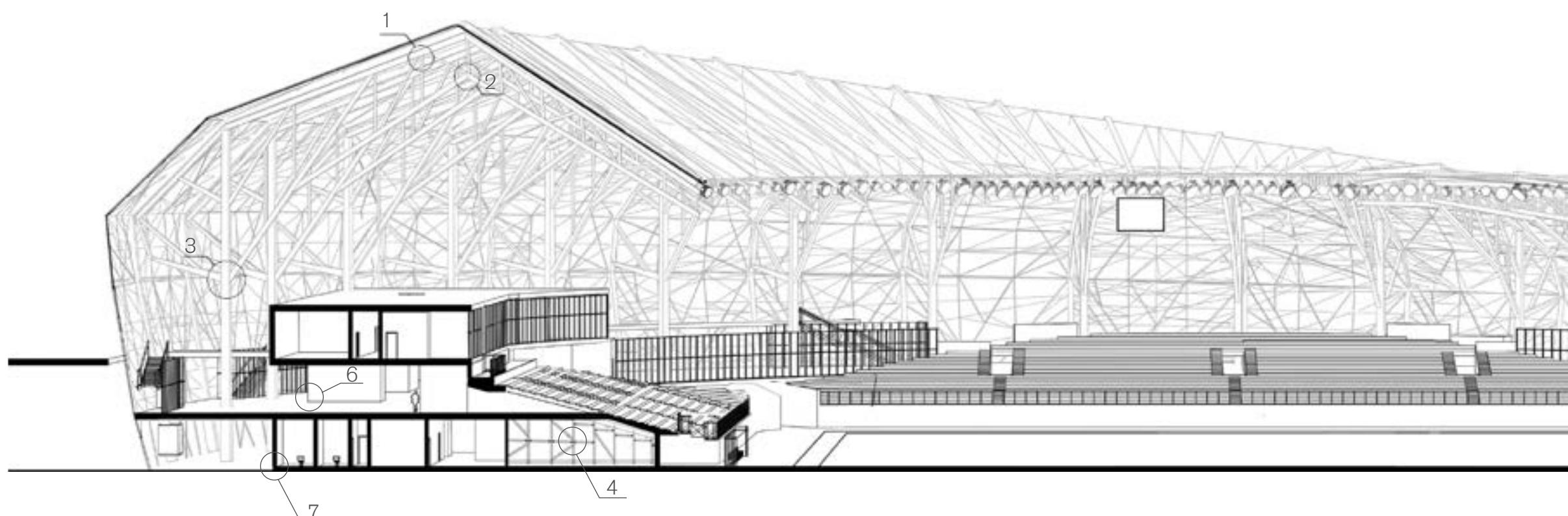


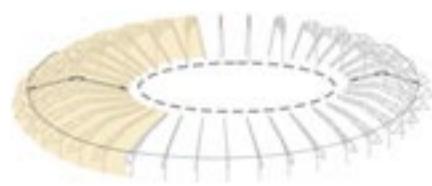
# 05 Mariupol Stadium

## Structural Detail



**[1]** Three webs join where the three column transitions into the truss, distributing vertical loads into horizontal chords. **[2]** Two bottom chords meet at a central bearing joint for direct axial load transfer. **[3]** First-level branches bolted to the web of the H-trud trunk. Triangular gusset plates are inserted for additional support. **[4]** Shear connection where two tubular webs meet at a central vertical plate. For the indoor structure, **[5]** in the primary framing, the vertical plates on either side of the stud transfer both axial and bending forces between the built-up beam segments. **[6]** To reduce the weight, secondary beams are also built-up and have voids. **[7]** A steel column base is secured to the reinforced concrete foundation with embedded anchor bolts.





This structure uses a ring-supported system where each leaning tree-truss transfers its load to the central compression ring; when pressure is applied from all sides, the forces counterbalance, creating a stable, self-supporting stadium roof.

