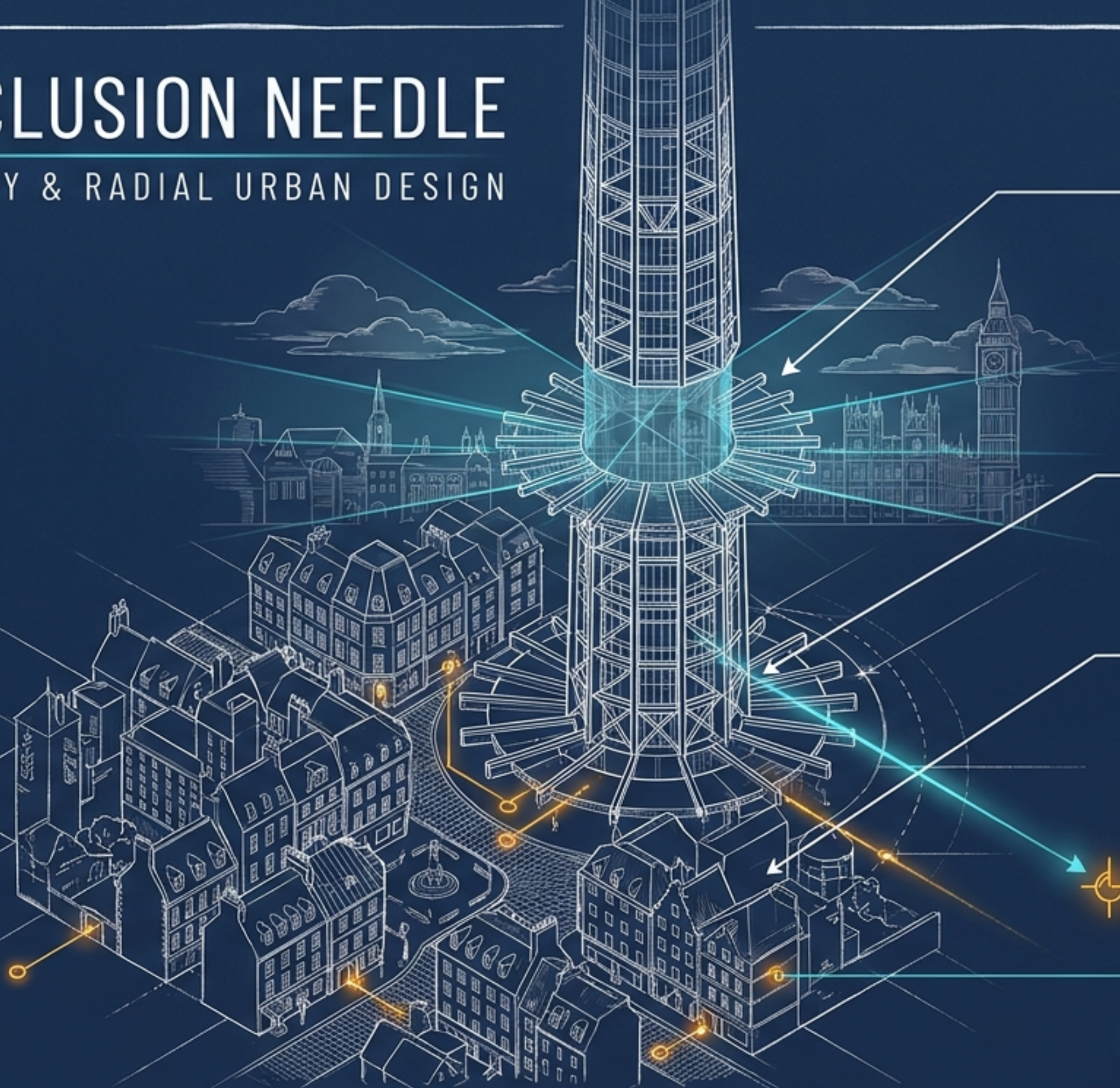


THE OCCLUSION NEEDLE

OPTICAL RELAY & RADIAL URBAN DESIGN



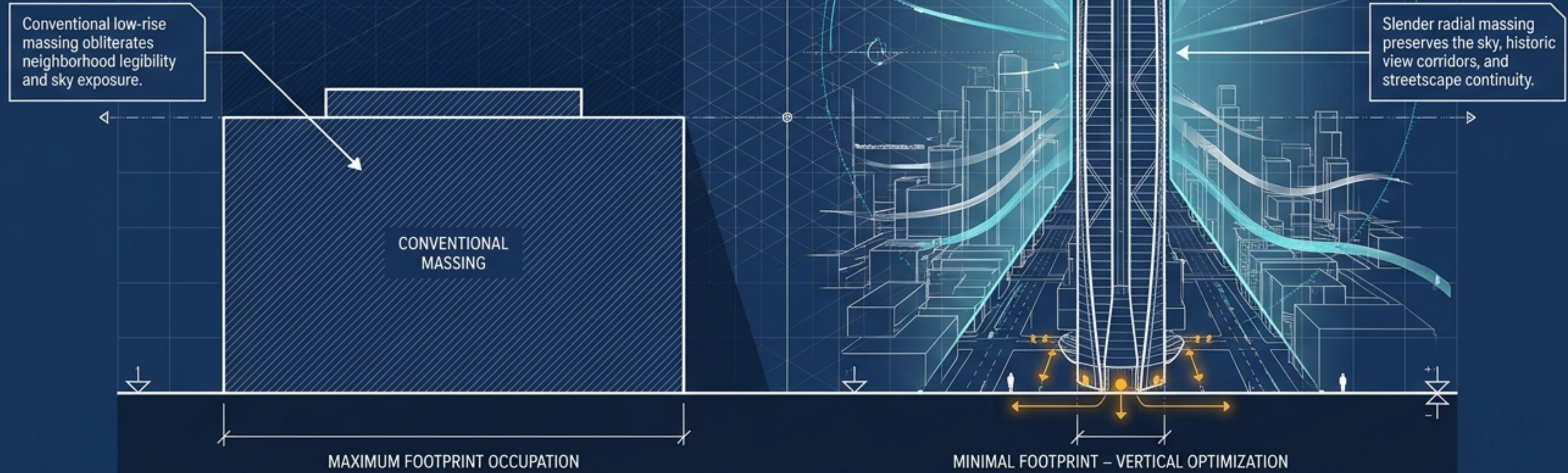
OPTICAL RELAY ZONE:
SEAMLESS HORIZON
INTEGRATION

RADIAL STRUCTURAL CORE:
MINIMIZED FOOTPRINT

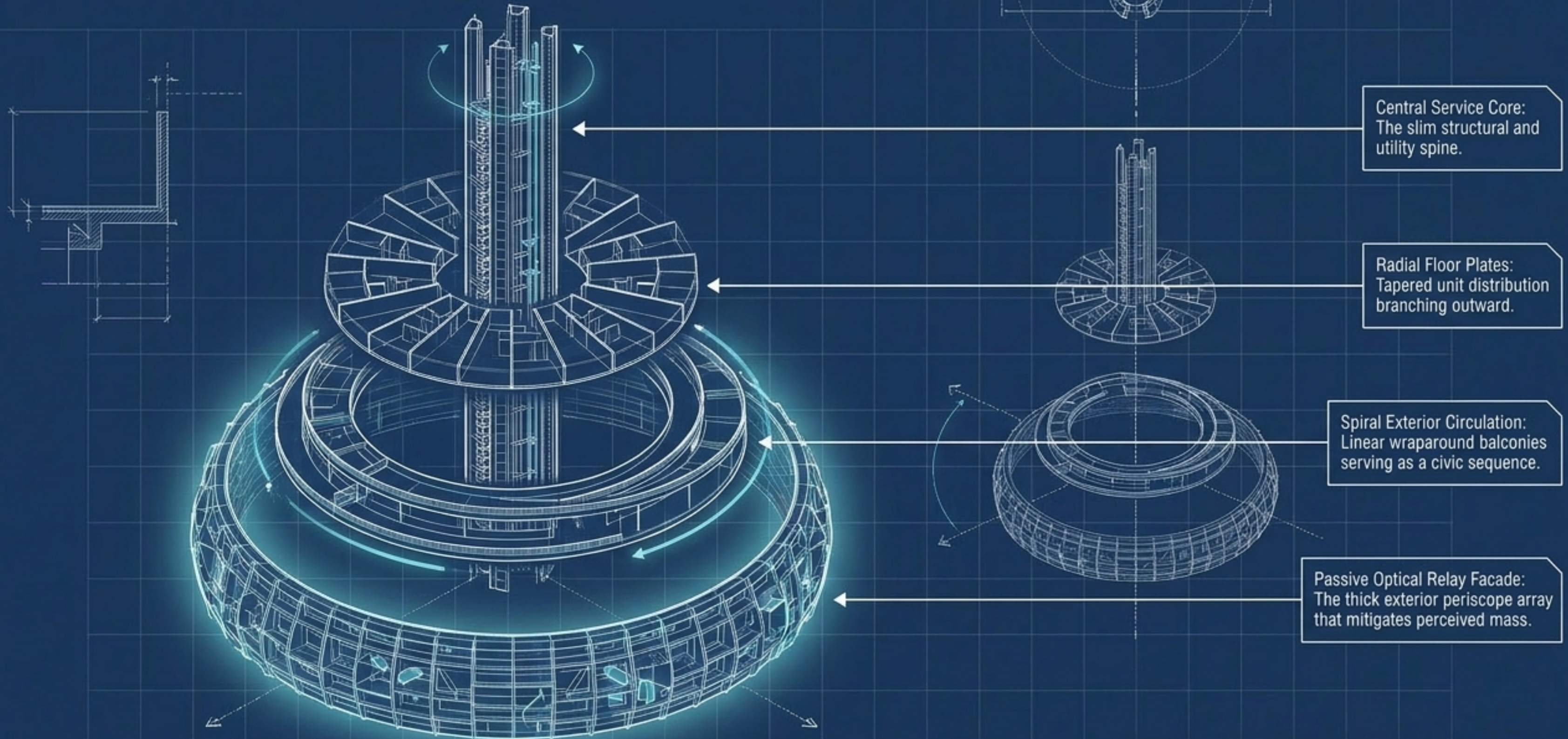
PRESERVED HISTORIC FABRIC:
LOW-IMPACT URBAN
INSERTION

A high-density housing prototype
engineered for stringent historic
preservation zones.

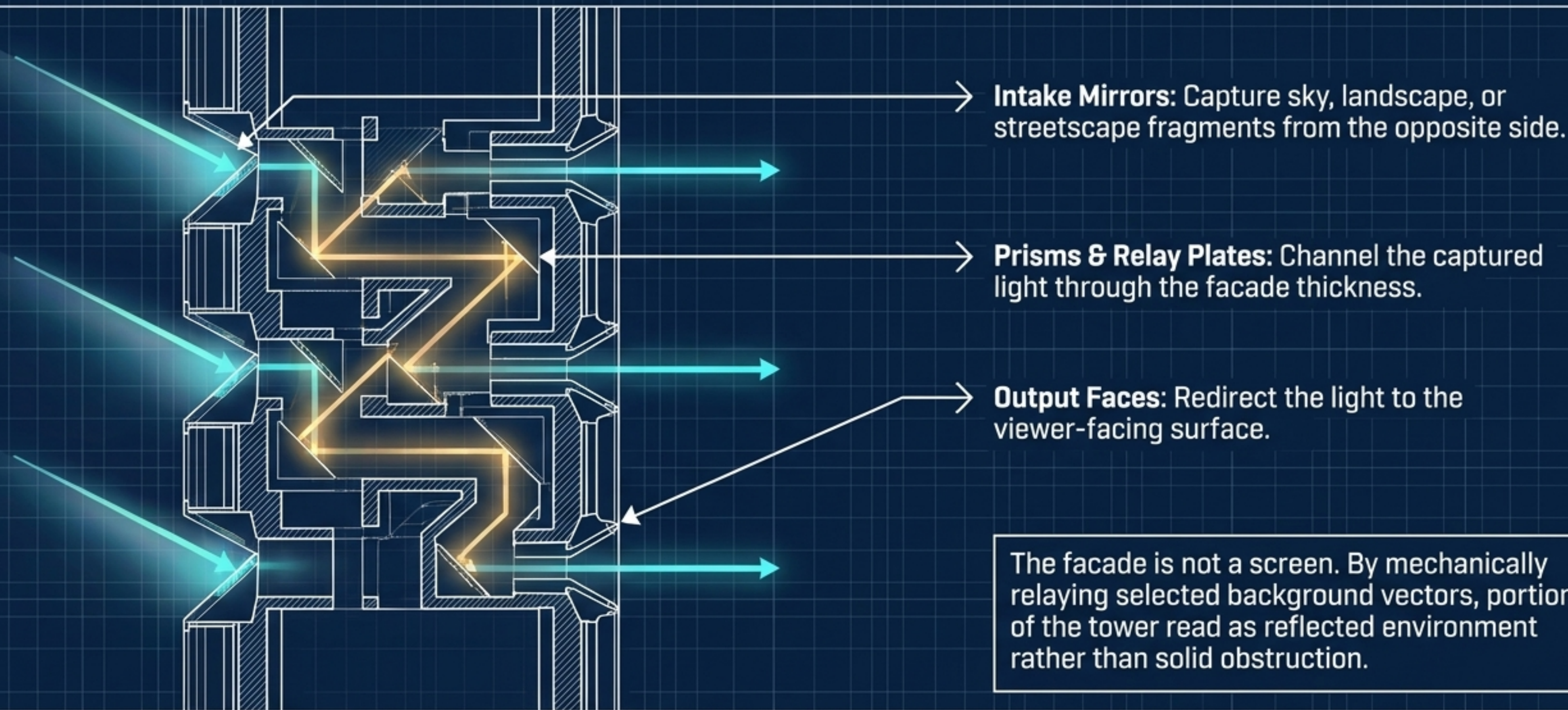
Density is a visual-impact problem, not a height problem



Dismantling the radial prototype



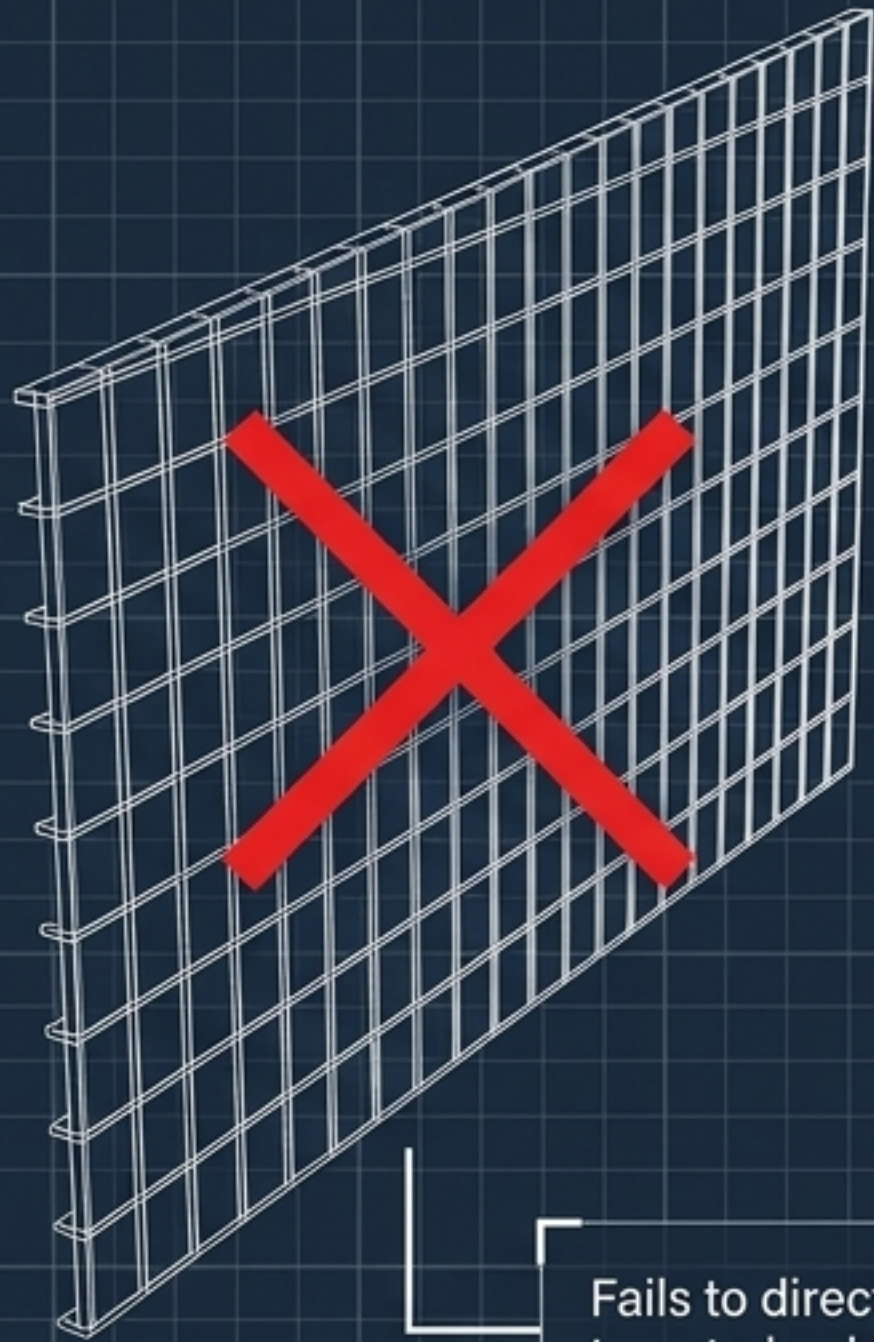
Calibrated permeability through an analog periscope array



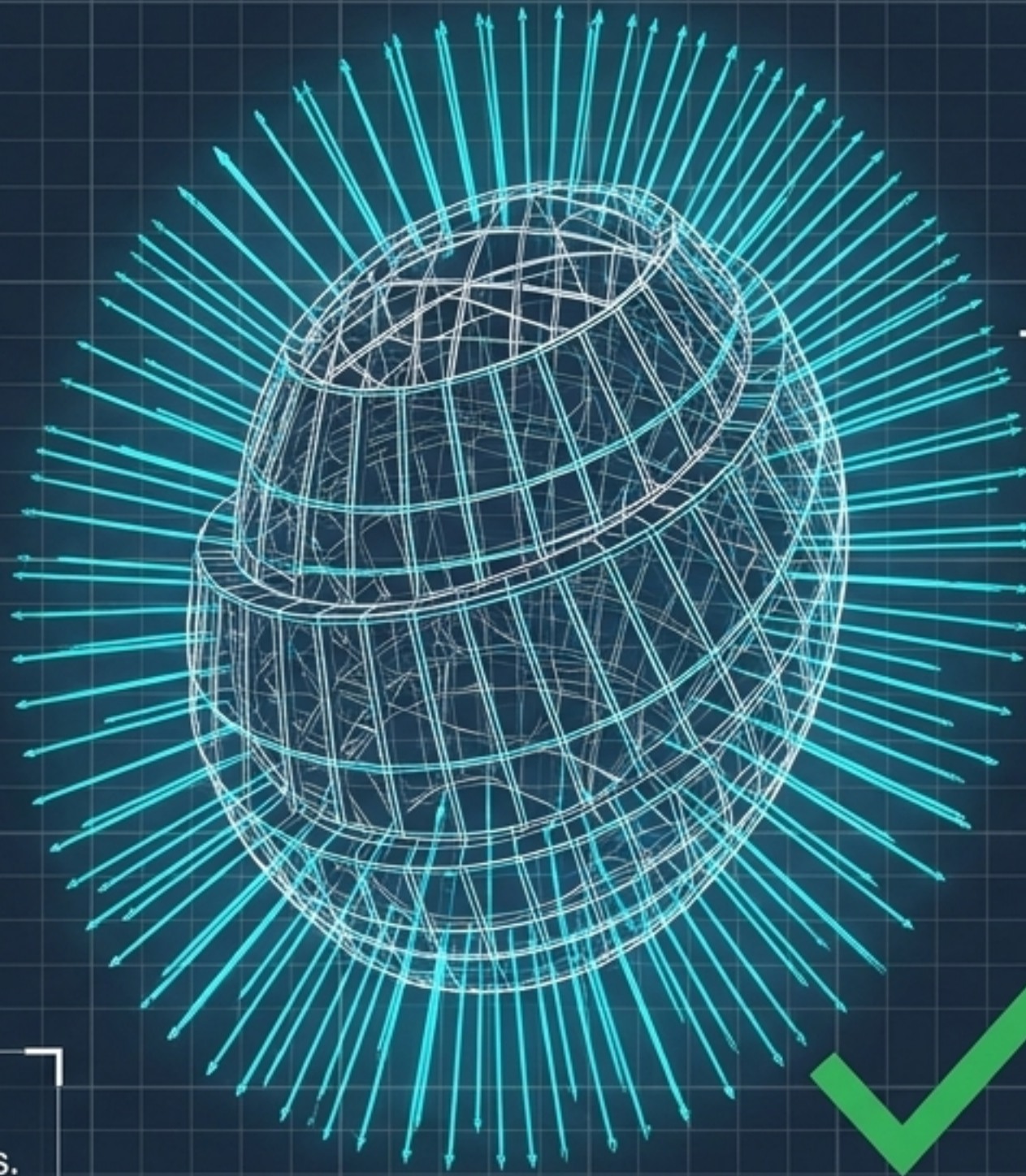
Visual Permeability Engine Diagram



Tuned to the urban sphere, not the flat grid



Fails to direct light to targeted public viewpoints.

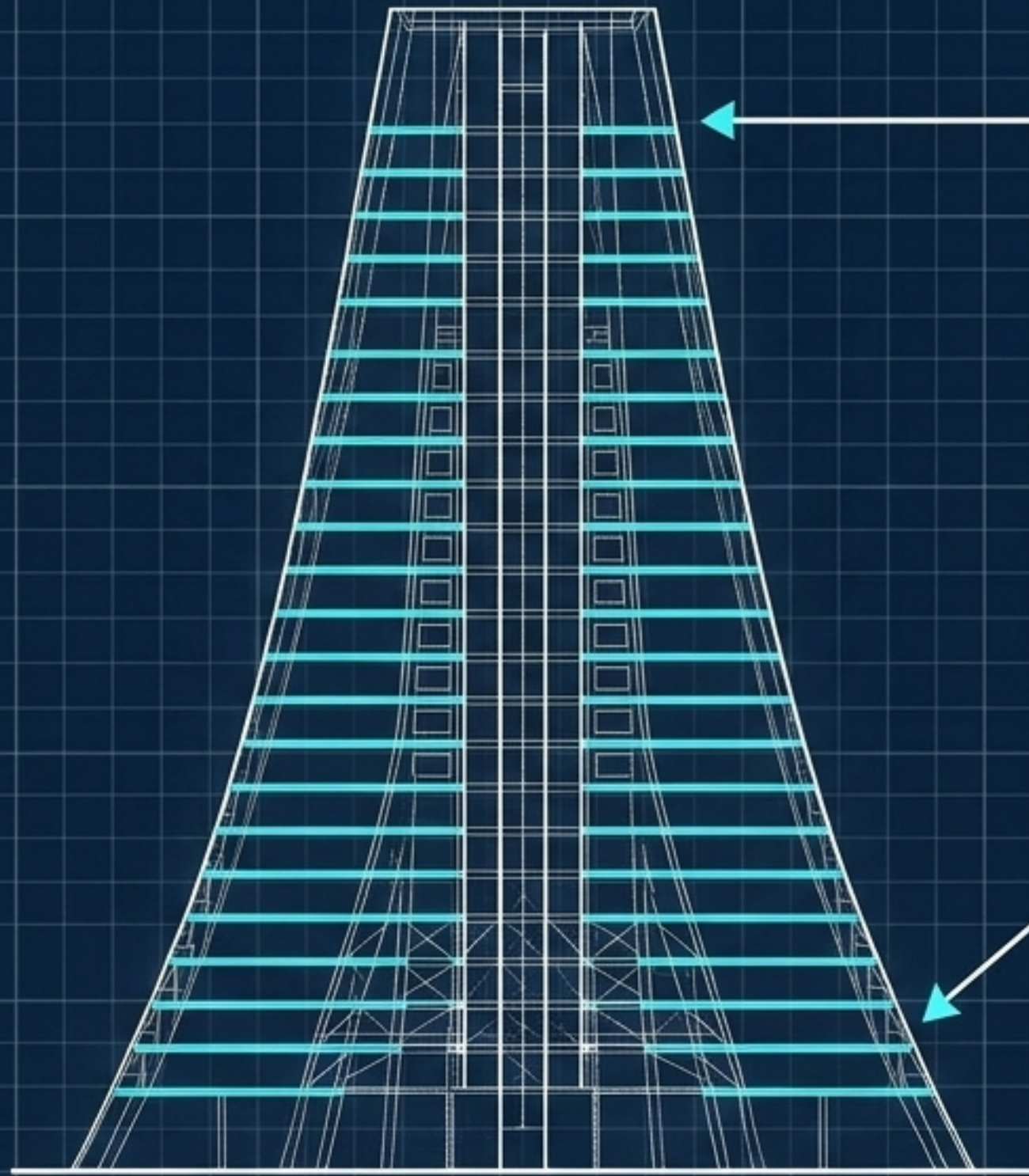


Radial Organization:
Exterior stairs,
balcony bands, and
optical cells spiral
around the core.

Spherical Normals:
Panel angles are
precisely calibrated
to these radiating
vectors. Each optical
cell points toward an
exact source vector,
relay path, and
viewing zone.



Vertical logic and tapered unit distribution



Upper Levels (Narrow Peak)

- Tapers into fewer units.
- Maximizes massive outward view exposure.
- Minimizes the overall skyline footprint.

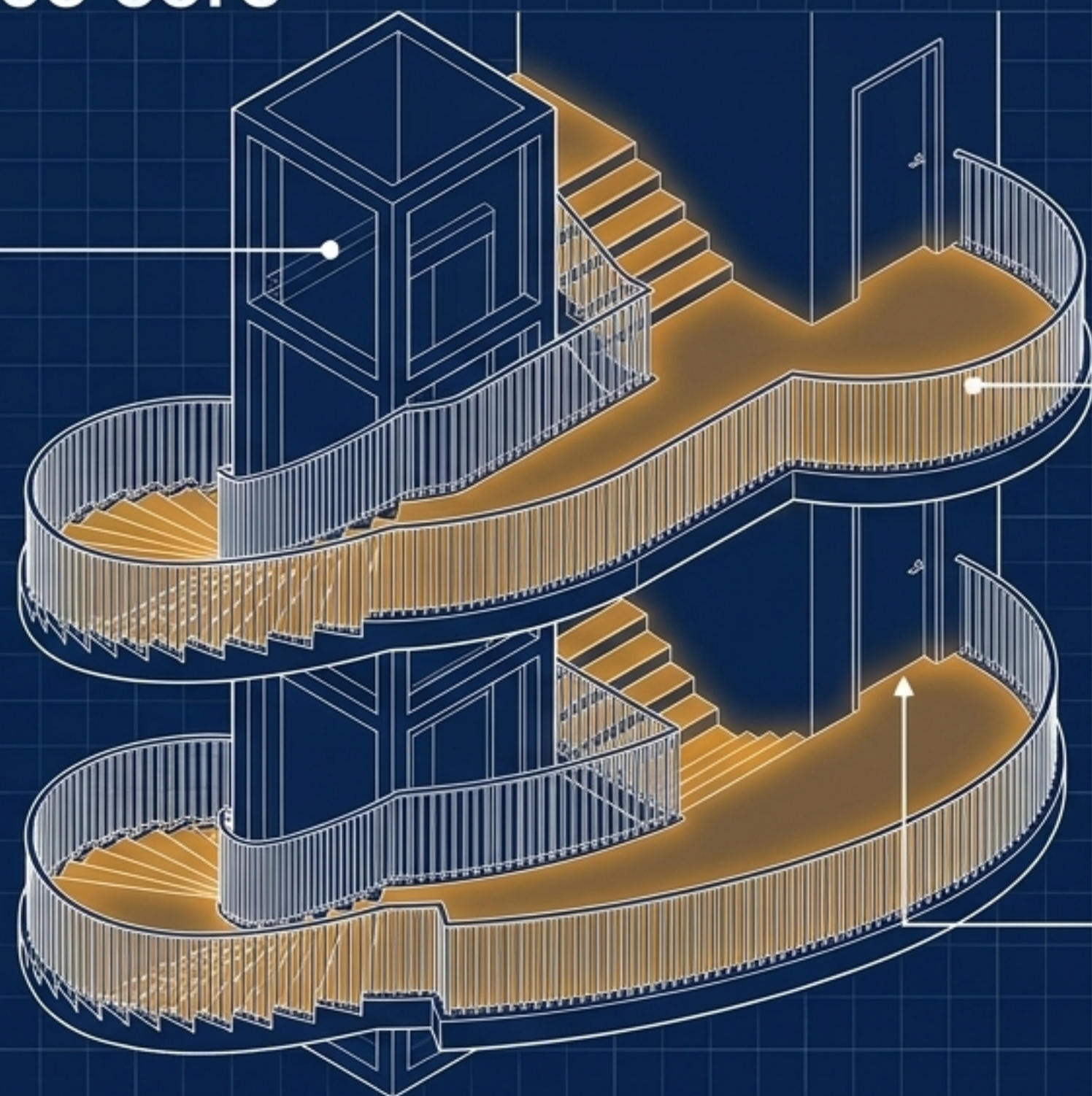
Lower Levels (Wide Base)

- Houses a wider occupied ring.
- Higher density of individual housing units.
- Maximizes immediate urban housing yield.



Rescuing circulation from the hidden service core

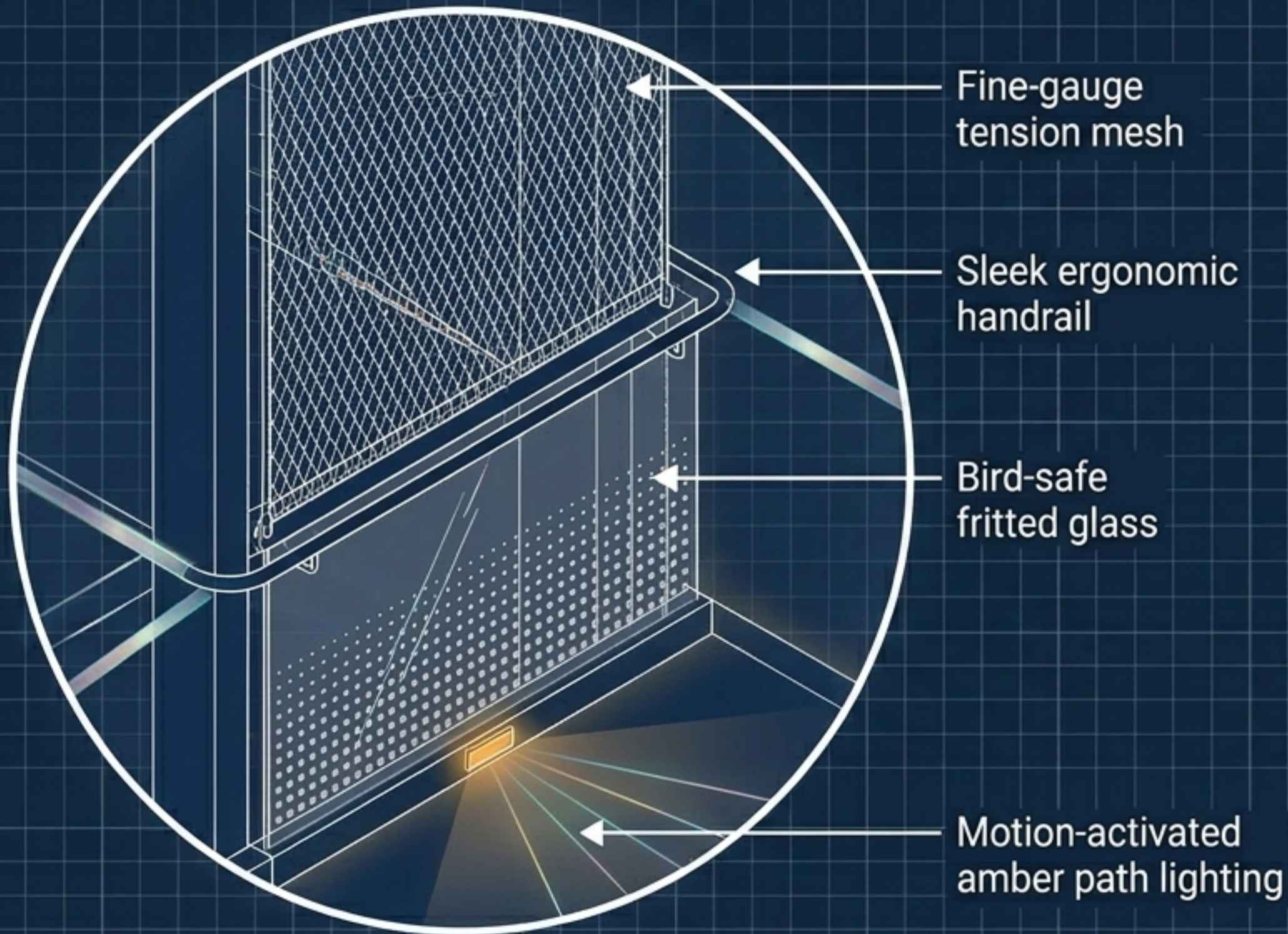
Ascent Options: Residents choose between the high-speed central elevator core or the exterior spiral walk.



Civic Sequence: Landings intentionally expand into pause points and partial public overlooks.

Thresholds: The circulation path acts as a personalized threshold into internal properties, turning movement into a civic viewing sequence rather than a dark, internalized stairwell.

The spiral safety envelope



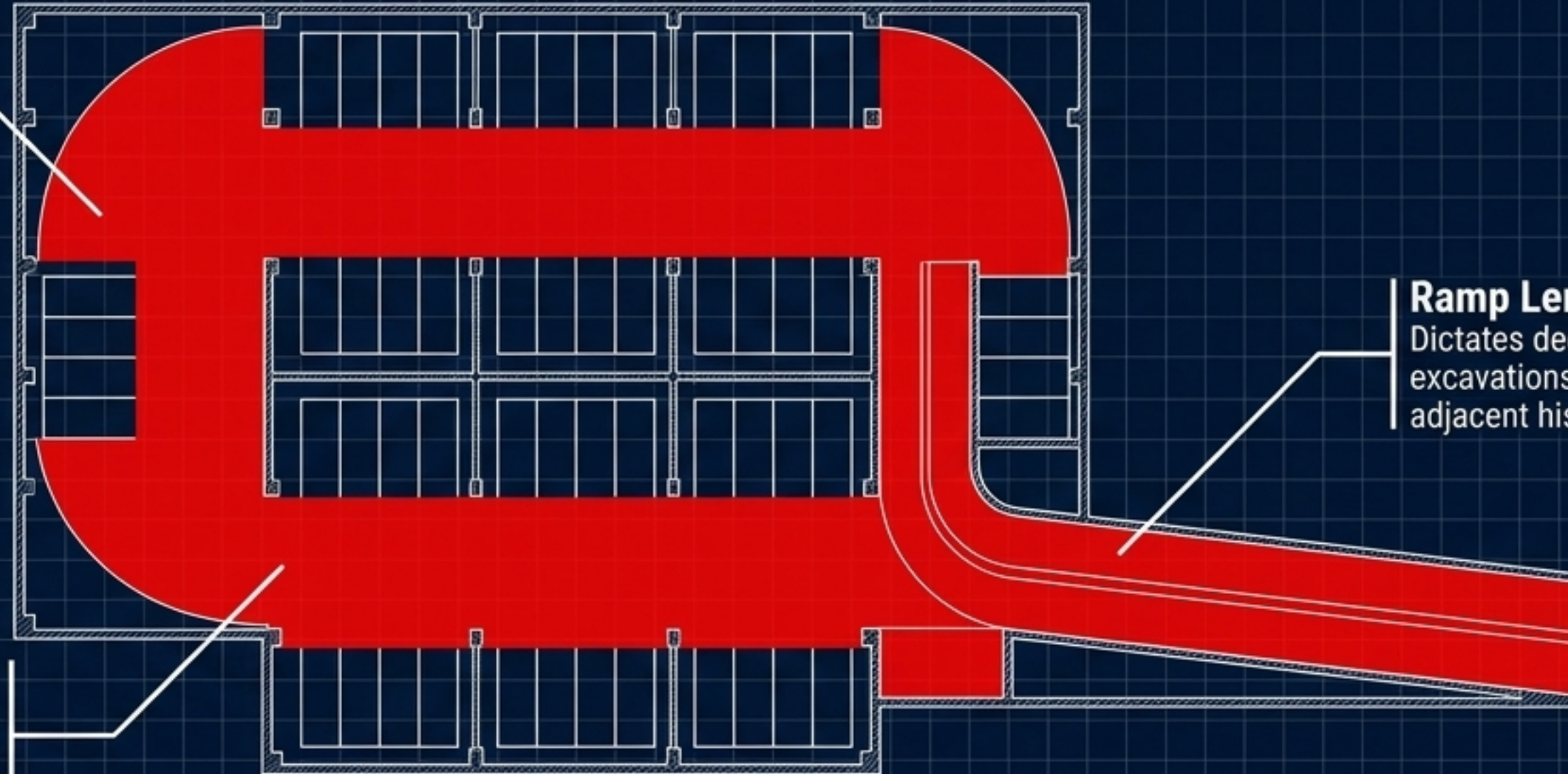
- ☒ **Fine-gauge stainless tension mesh:**
Replaces heavy guard walls, preserving visual permeability while preventing falls.
- ☒ **Calibrated openings & bird-safe fritting:**
Protects urban wildlife from dangerous glass collisions.
- ☒ **Continuous ergonomic handrails:**
Ensures absolute pedestrian stability during ascent.
- ☒ **Motion-activated path lighting:**
Low-intensity amber lights illuminate landings and thresholds only when occupied, keeping night circulation safe without turning the spiral into a bright skyline nuisance.



The bottleneck of traditional excavation

Turning Radii:

Massive spatial waste required for human vehicle maneuvering.



Ramp Lengths:

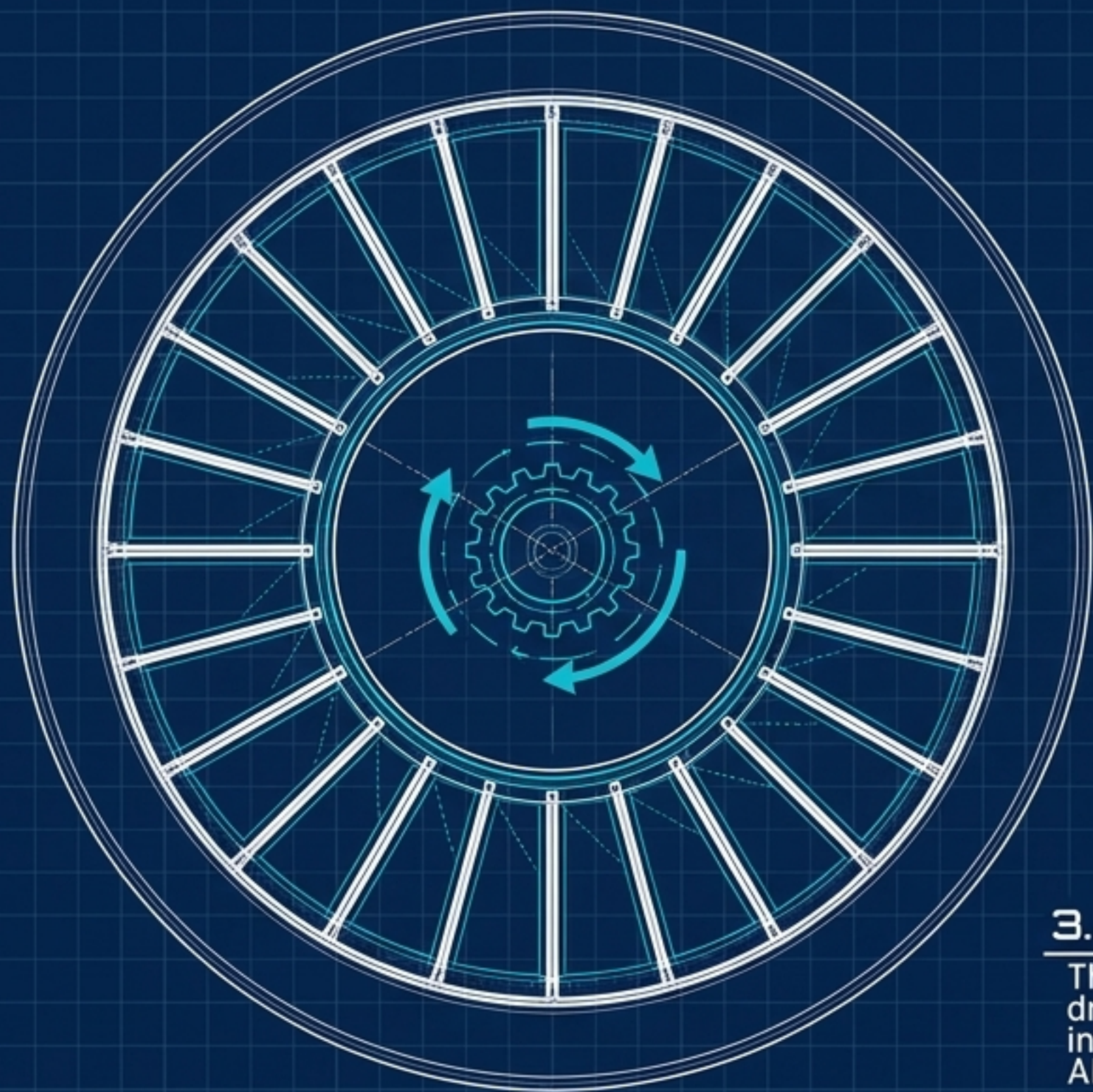
Dictates deep, expensive excavations that threaten adjacent historic foundations.

Structural Spans:

Requires heavy, wide-spanning support systems to keep aisles clear.

In compact historic lots, the space required for human drivers to maneuver often kills the project's financial and structural viability before it begins.

Compact radial pod system



1. Placement Bay

Driver enters a single, controlled entry throat at street level.



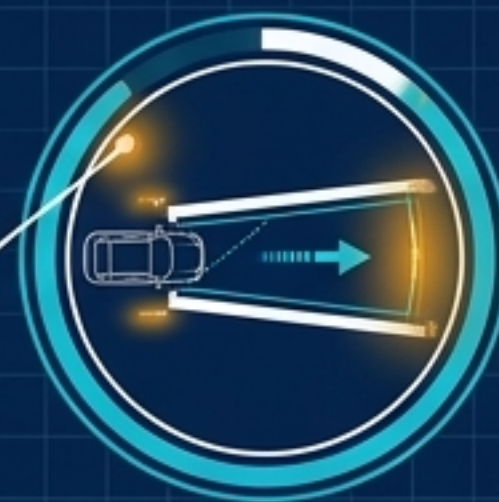
2. Turntable Alignment

The central circular platform mechanically rotates to precisely align with the assigned radial pod angle.

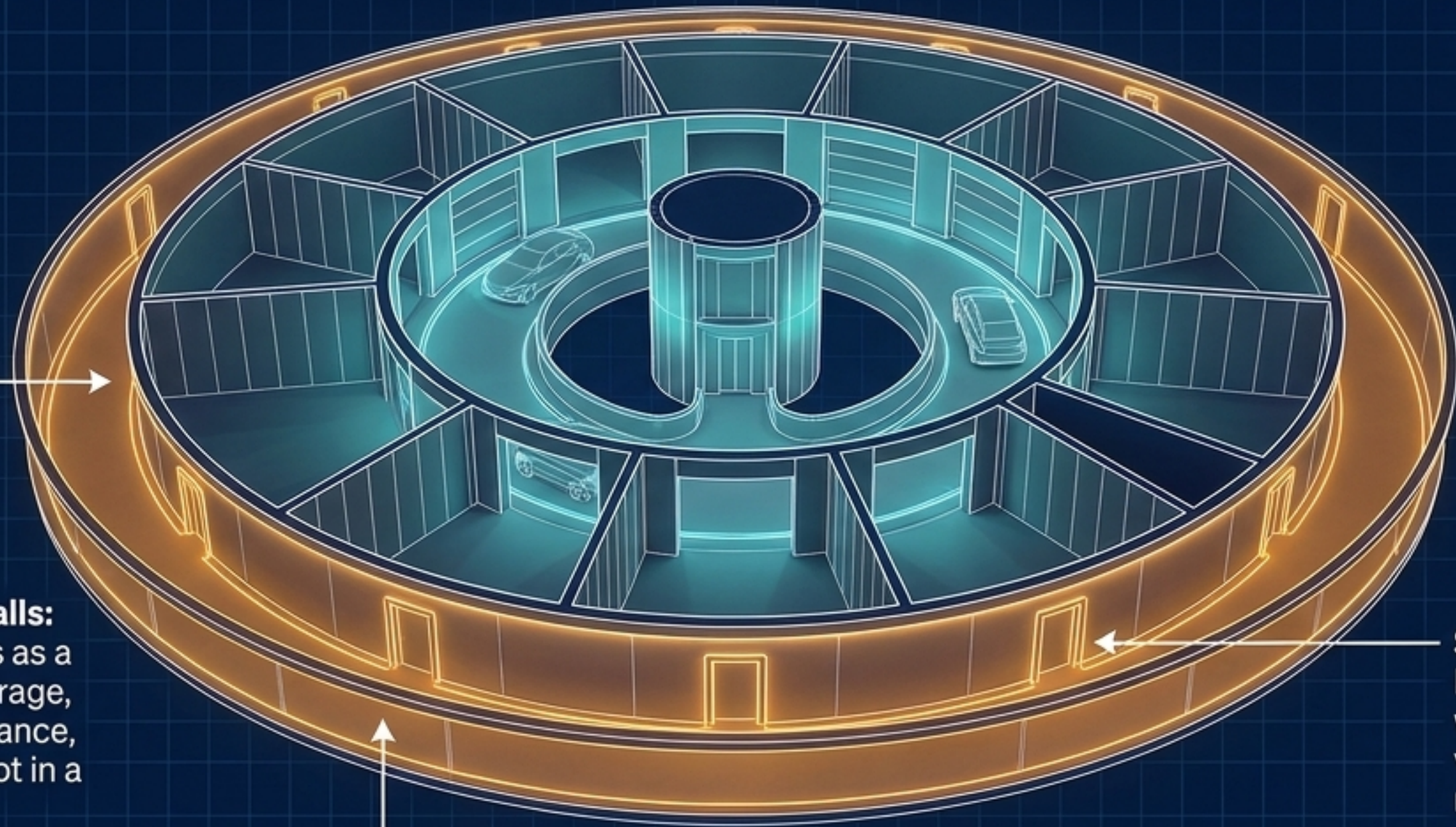


3. Forward Movement

The gate releases, and the driver moves directly forward into their private pod. Absolutely no reversing or maneuvering required.



Separating pedestrian logic from vehicle movement



Assigned Rooms, Not Stalls:





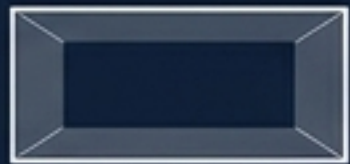





Each vehicle bay operates as a private pod for secure storage, EV charging, and maintenance, rather than an exposed slot in a shared driving field.

Safety by Design:

Residents never have to walk through the central vehicle elevator throat to reach their cars.

Perimeter Access: An outer hallway provides car owners a dedicated doorway to the rear of their pod for direct, safe pedestrian access.

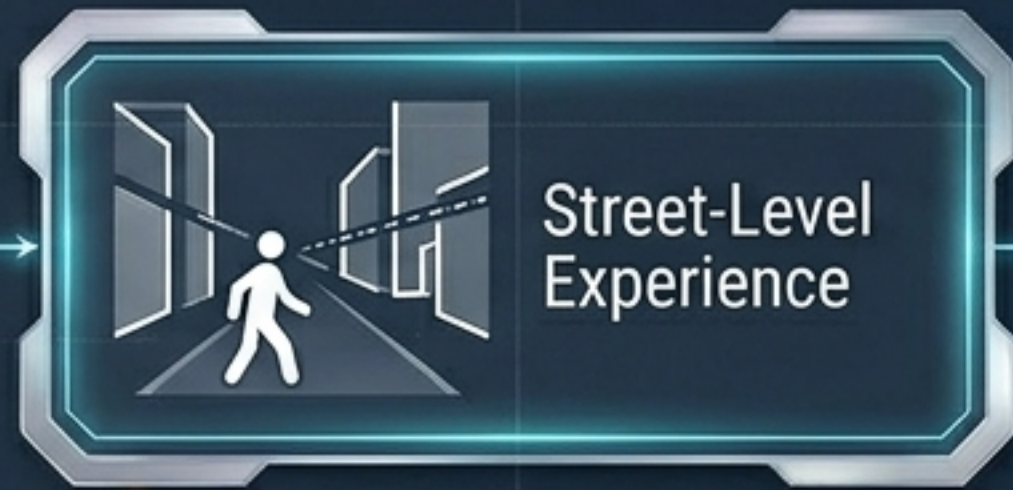
Space efficiency: Ramp garage vs. Turntable platform

Metric	Conventional Ramp Garage	Turntable Radial Platform
Movement Type	Driver Maneuvering 	Controlled mechanical alignment 
Spatial Waste	Extensive driving aisles & ramps 	Single central elevator throat 
Excavation Volume	Massive footprint, deep digging 	Minimal, highly consolidated radius 
Unit Type	Shared, open driving field 	Private, assigned, enclosed pods 
Adaptability	Fixed to immediate parcel footprint 	Can be fed by lateral drives under adjacent parcels 

Unlocking preservation overlay zones



Verifying the preservation of historic skyline ratios.



Testing pedestrian scale and civic integration.



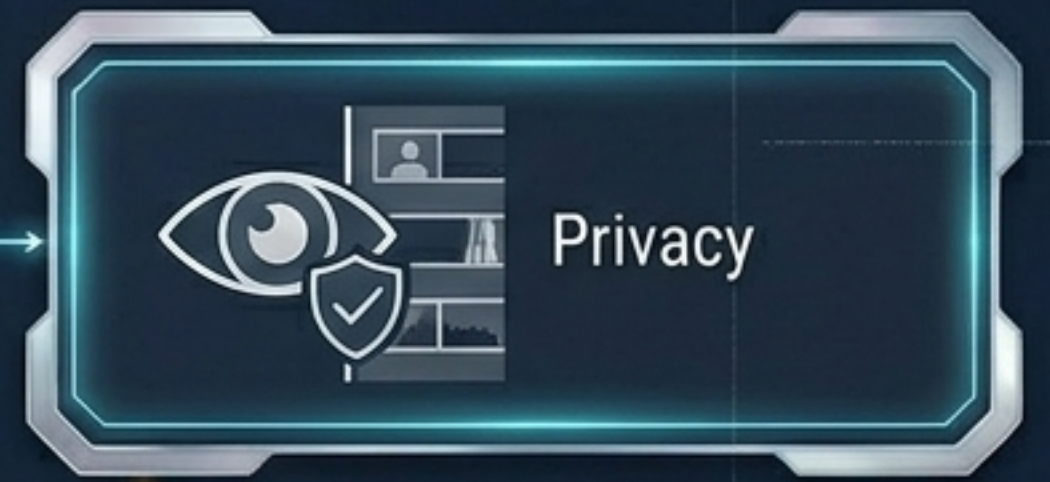
Ensuring optical relays do not create hazardous reflections.



Auditing the barrier fritting and tension mesh systems.

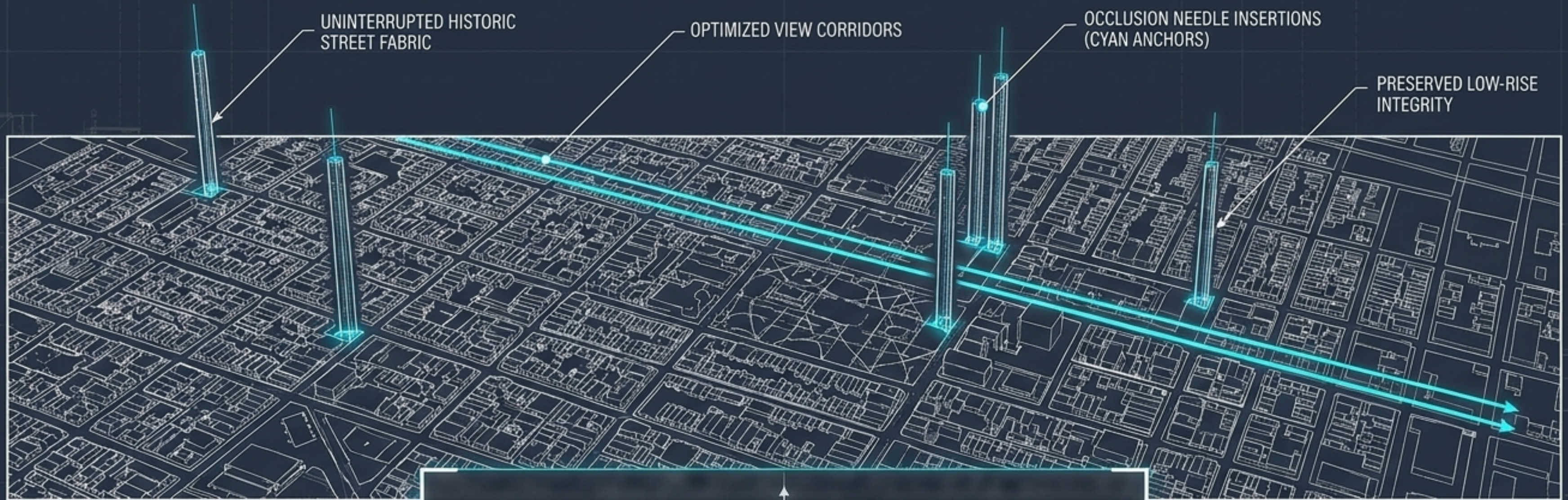


Simulating the amber lighting to prevent skyline light pollution.



Public-viewpoint simulations to ensure relayed light doesn't expose internal residential spaces.

Preservation integrated with redevelopment



Synthesis Callout: By treating density as a visual impact problem—and leveraging analog optics alongside mechanical excavation efficiency—the Occlusion Needle proves that high-capacity housing and historic neighborhood legibility are no longer mutually exclusive. It is a replicable toolkit for the urban sphere.



ANALOG OPTICS + EXCAVATION EFFICIENCY = URBAN PRESERVATION