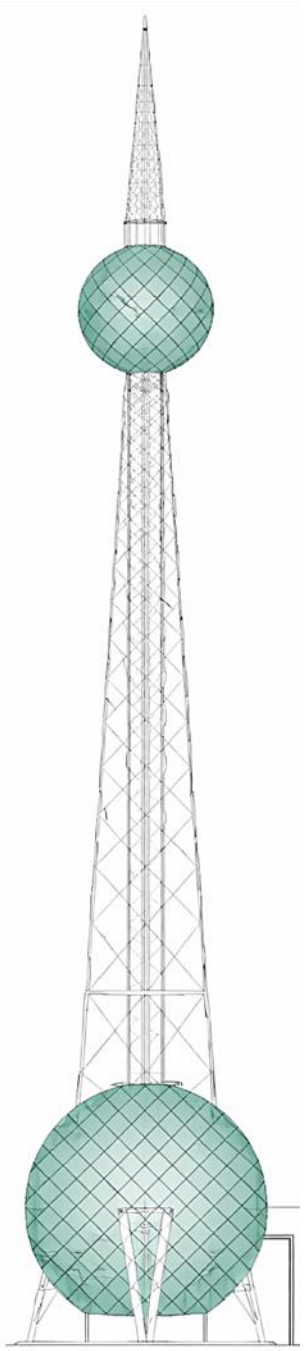
•INDUSTRIAL ARCHAEOLOGY PROJECT TOWER + BRIDGE

FUNDACIÓN DEMOCRÁTICA ITALO AMERICANA,
FDIA -REPRESENTAÇÃO PERMANENTE

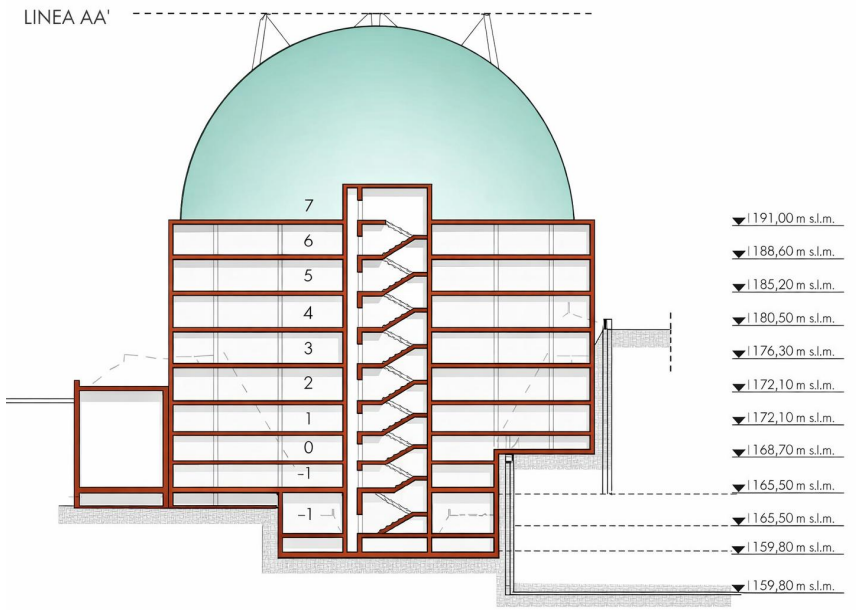
- **Project overview**
- Adaptive reuse of a former high-voltage transmission pylon as a landmark “Mediterranean Tower+bridge,” transforming an industrial heritage asset into a tourism, culture, and education destination.
- **Torre del Mediterraneo con ponte**
- Location: in future in the area of the heart of Mediterraneo /to be defined), within a wider site of about 50 hectares.

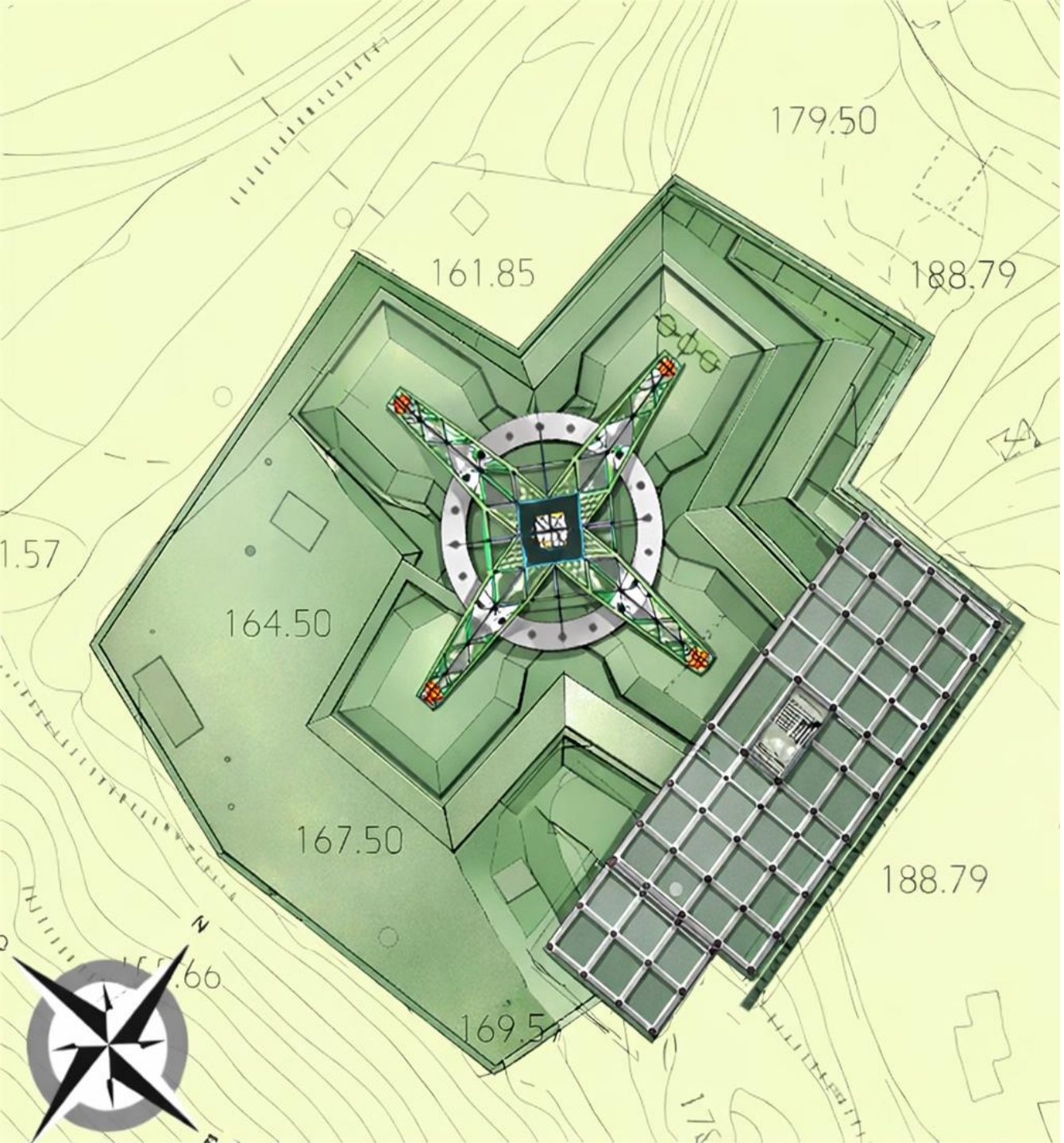


•NEW ARCHAEOLOGY PROJECT TOWER + BRIDGE

•Key figures: approx. **232 m** (tower + base), designed for strong wind and seismic resistance; requires extraordinary maintenance and upgrades (access, service elements, protective coatings)

The lower sphere has a 50 m diameter and is anchored to the columns both vertically and horizontally. Inside, it accommodates ten floors, connected and served by a helical ramp. Each floor has a clear height of 4.00 m. Its primary function is tourism-oriented, hosting public activities such as cultural, touristic, social, exhibition, and gastronomic events, including national and international initiatives. All levels can be dedicated to temporary exhibitions as well as permanent displays of contemporary art. The space is also intended for the staging of exhibitions showcasing arts and crafts. In summary, it will serve as a multifunctional hub for promoting and disseminating the Mediterranean heritage. **The pylon rises to 232 meters**, making it the tallest tower in its territory, and it stands on a hill at **165 meters above sea level in** an extraordinary presence in the landscape and a strong visual impact across the wider metropolitan coastline.



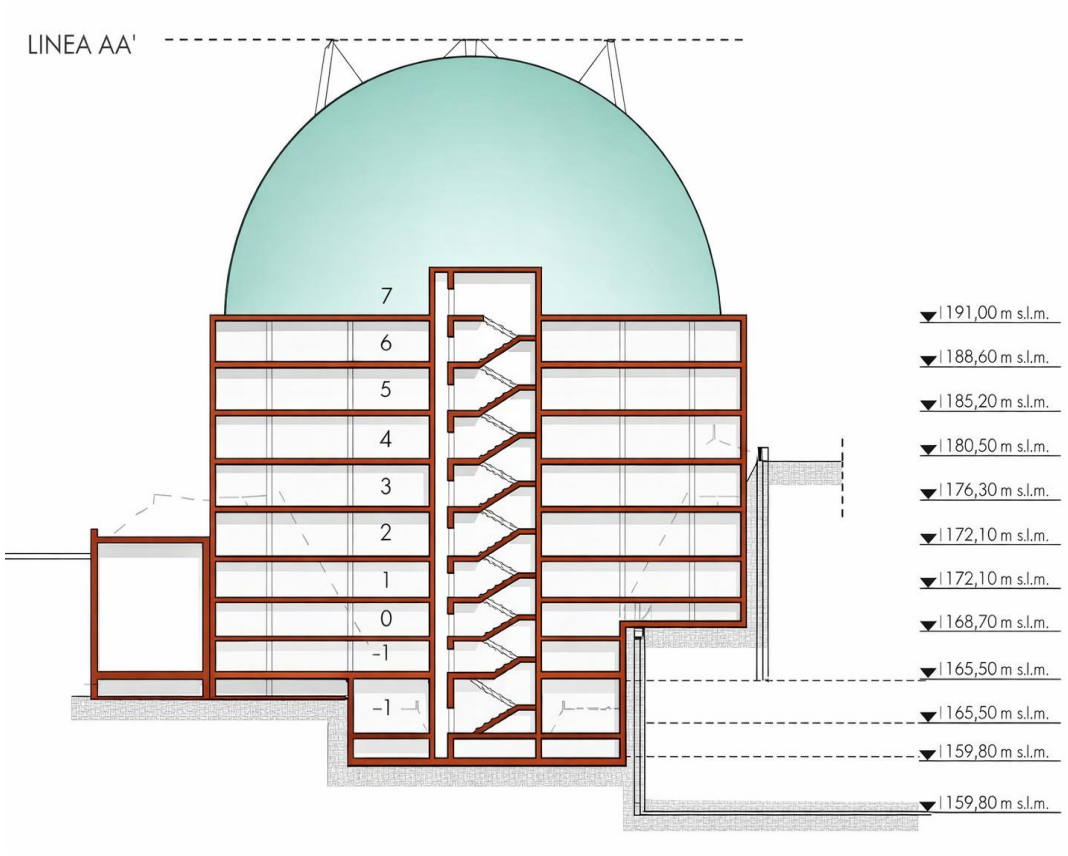


Vision and goals

•Strengthen the area's appeal by combining **landscape, history, and innovation**.

•Create a multifunctional destination: panoramic experiences, events, exhibitions, training, and nature-based tourism.

SEVEN-STORY TOWER WITH ELEVATOR



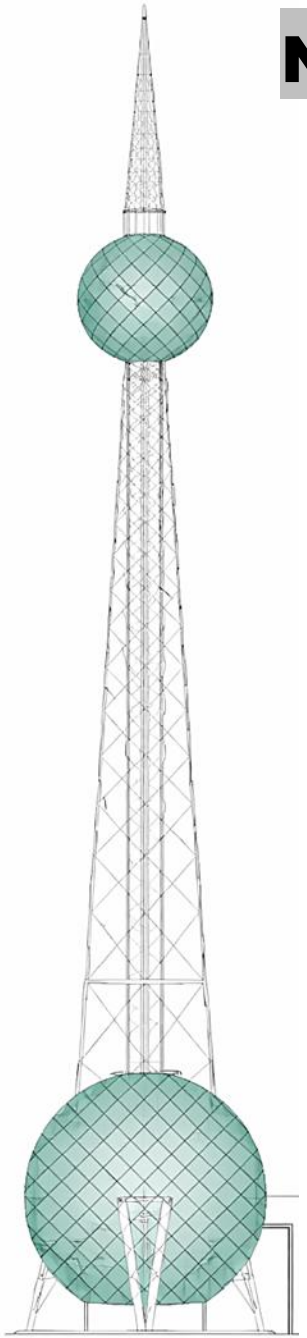
The **Future Mediterranean Project** represents a **strategic and forward-looking initiative** aimed at the **integrated, sustainable, and innovative development of the Mediterranean region**. The project is conceived as a **flexible and adaptive framework**, capable of evolving in response to **future environmental, economic, social, and cultural dynamics**.

The **intervention area will be identified at a later stage**, based on **in-depth analyses, feasibility studies, environmental assessments, and socio-economic evaluations**, ensuring the **optimal balance between territorial potential, sustainability criteria, accessibility, and long-term resilience**.

The project will focus on the **promotion of sustainable tourism, scientific research, technological innovation, environmental protection, cultural heritage enhancement, and international cooperation**, fostering **synergies among institutions, academic bodies, research centers, local communities, and private stakeholders**.

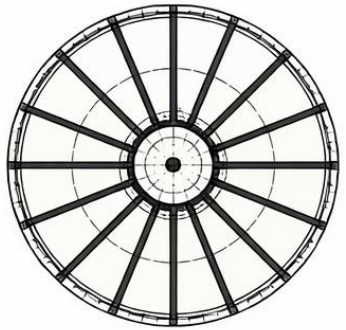
Through a **multidisciplinary and participatory approach**, the initiative aims to create a **model of integrated Mediterranean development**, capable of generating **economic growth, social inclusion, environmental preservation, and cultural exchange**, in line with **European and international sustainability strategies**.

NEW ARCHAEOLOGY PROJECT TOWER + BRIDGE



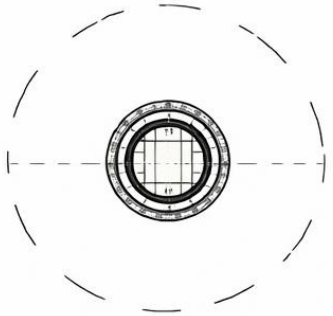
PIATTAFORMA SUPERIORE

raggio 10,00 m - ø interno Ø5,00 m - Ø20,0 m



ANELLO SFRICO

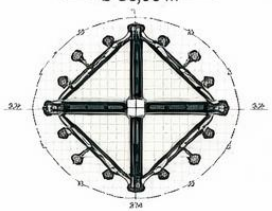
raggio 8,00 m - Ø interno Ø12,0 m -estern Ø6,0 m

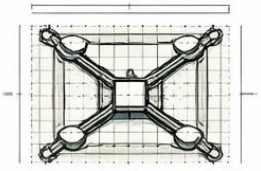


NUCLEO ASCENSORI

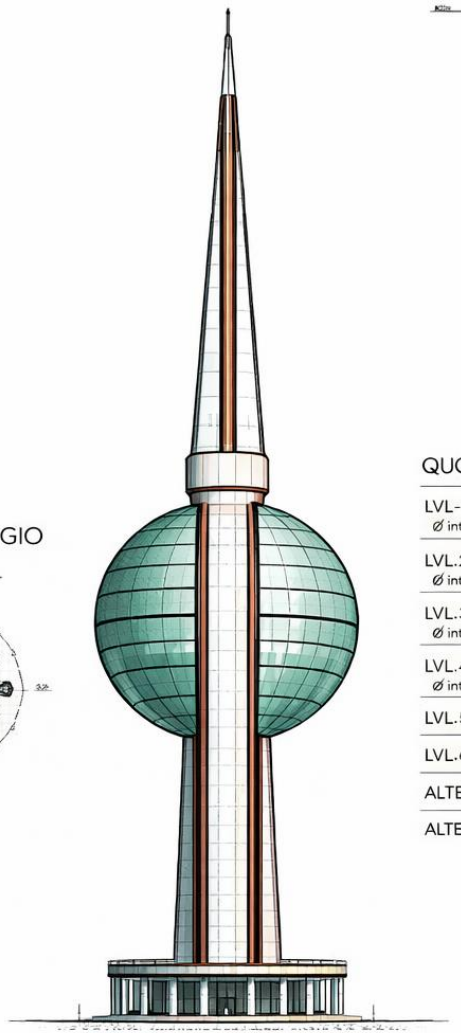
BASE DI ANCORAGGIO

ø 00,00 m





BASE DI ANCORAGGIO



QUOTE

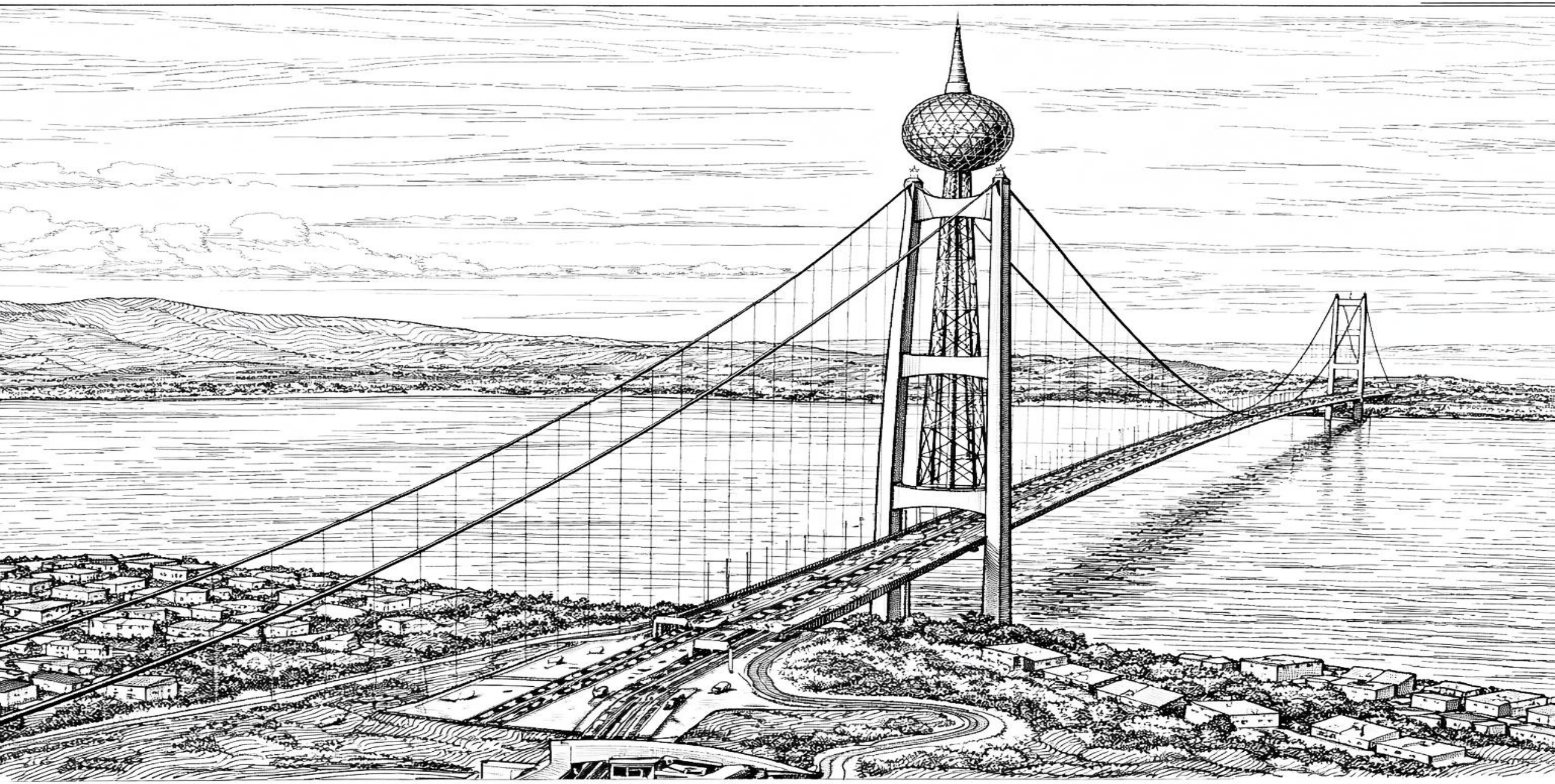
LVL-1	+10,00 m
ø interno	Ø 8,00 m
LVL.2	+24,00 m
ø interno	Ø 12,0 m
LVL.3	+60,00 m
ø interno	Ø 16,0 m
LVL.4	+84,00 m
ø interno	Ø 80,0 m
LVL.5	+170,0 m
LVL.6	+210,0 m
ALTEZZA TORRE	
ALTEZZA	+300,0 m

VIEW FROM THE SEVENTH FLOOR RESTAURANT PHOTO RENDERING

SEVEN STORY TOWER WITH ELEVATOR FOR 2 DOMES

TRADITIONAL BRIDGE

NEW ARCHAEOLOGY PROJECT TOWER + BRIDGE









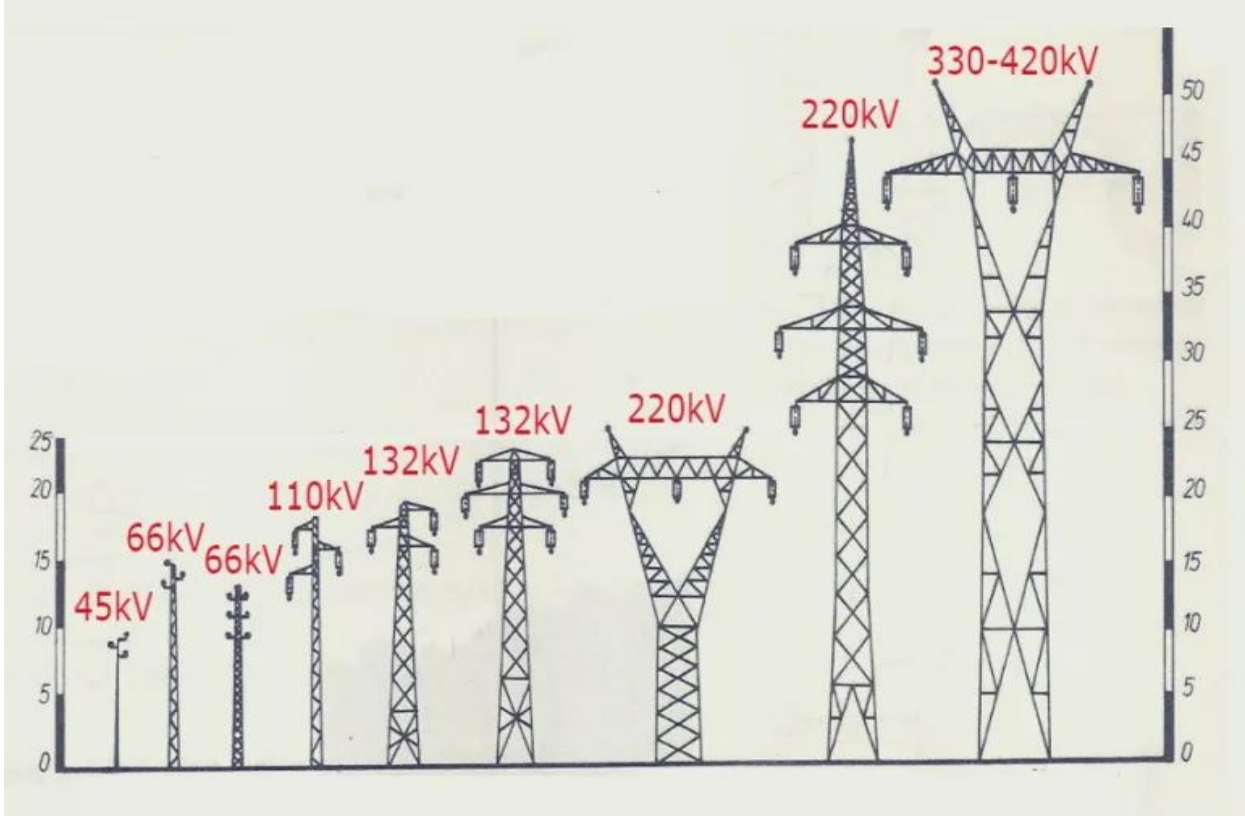
CONSTRUCTION OF HIGH, MEDIUM AND LOW VOLTAGE TRANSMISSION LINES

Voltage Range (kV)	Classification
Beyond 132 kV	Extra super voltage cables
From 33 kV to 66 kV	Extra high-tension (E.H.T.) cables
From 22 kV to 33 kV	Super-tension (S.T.) cables
From 1 kV to 11 kV	High-tension (H.T.) cables
Up to 1 kV	Low-tension (L.T.) cables

THE TYPES OF TRANSMISSION LINES BASED ON VOLTAGE

Transmission line types based on high, medium, and low voltage.

1. **Short transmission lines:** These are lines having a maximum length of 50 km and a maximum voltage of 20 kV.
2. **Medium transmission lines:** These lines feature overhead cables that are between 150km and 50km in length. The permitted voltage varies between 20 and 100 kV.
3. **Long transmission lines:** are overhead transmission lines with voltages exceeding 100kV and lengths larger than 150km (330KV<X>420KV).With regard to the study of lengthy transmission lines, line constants are regarded as scattered components.
4. **Overhead power transmission line:** 500 kV <x> 765 kV transmission lines belong the extremely high voltage level and are operated with three-phase alternating current.



Mode of Wave Propagation	Type of Transmission Line
TEM	Co-axial line, two-wire line, parallel-plate line, stripline, microstrip line, multi-conductor lines, and coplanar waveguides
TE or TM	Metal or optical fiber waveguides, cavity resonators
Hybrid wave mode	Optical fibers, open conductor guides

Giants of Energy: Towers for Great Crossings

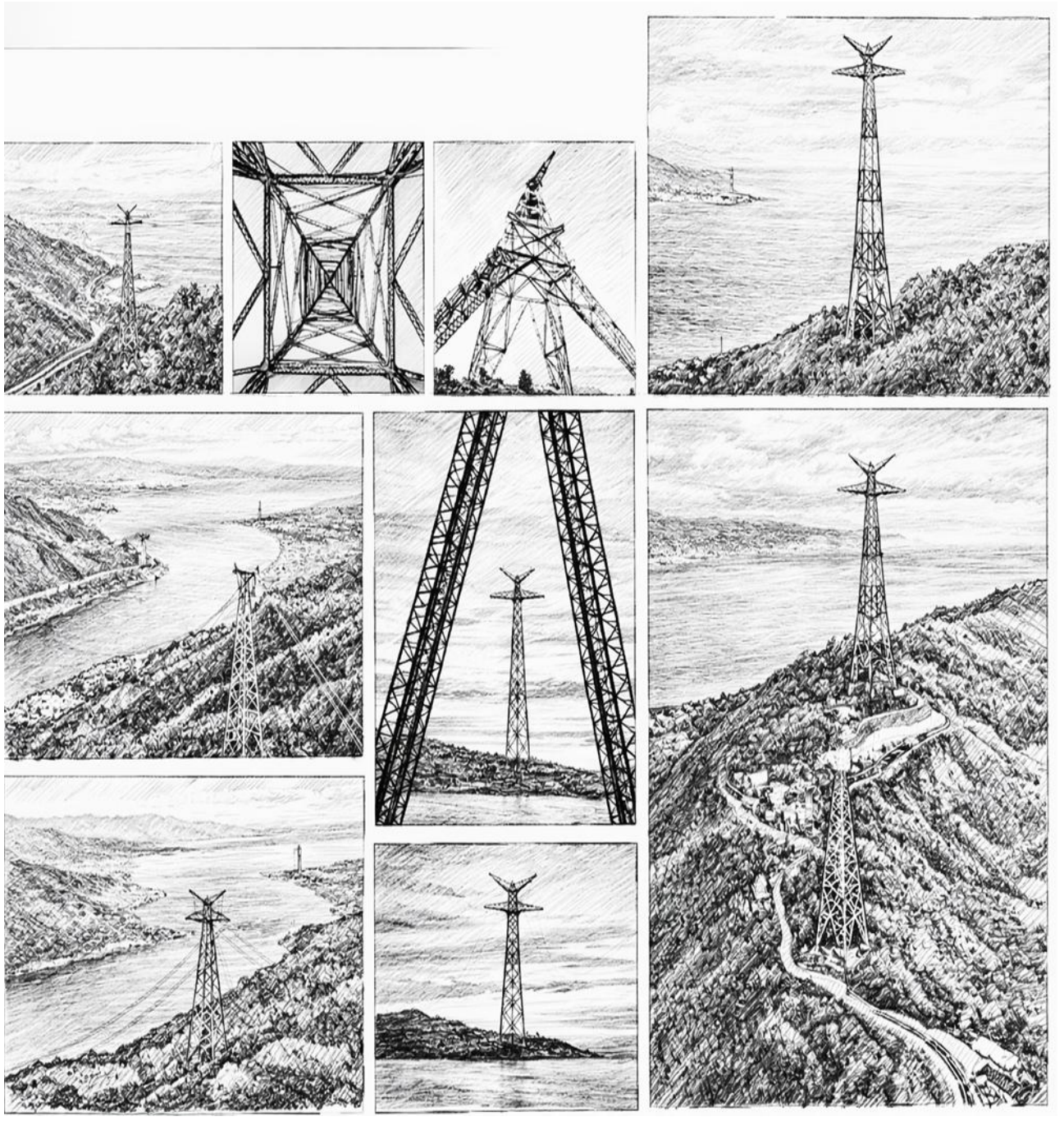
They are designed to support and carry high-voltage power lines across vast distances, often in extreme environments: these are the **towers used for major overhead power line crossings**.

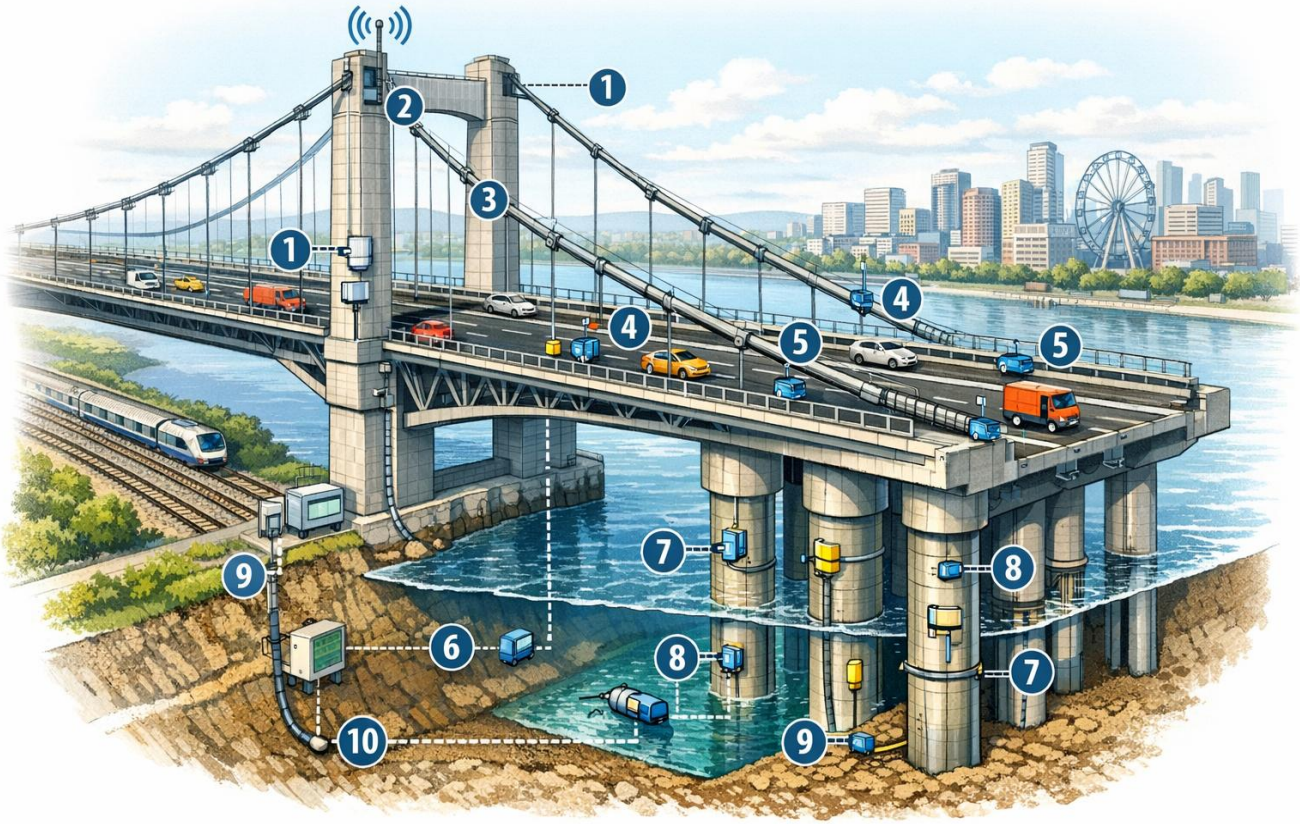
These impressive structures keep electrical cables suspended high above the ground, enabling the transmission of energy between distant shores and across challenging natural obstacles such as **seas, deep valleys, and mountain ranges**.

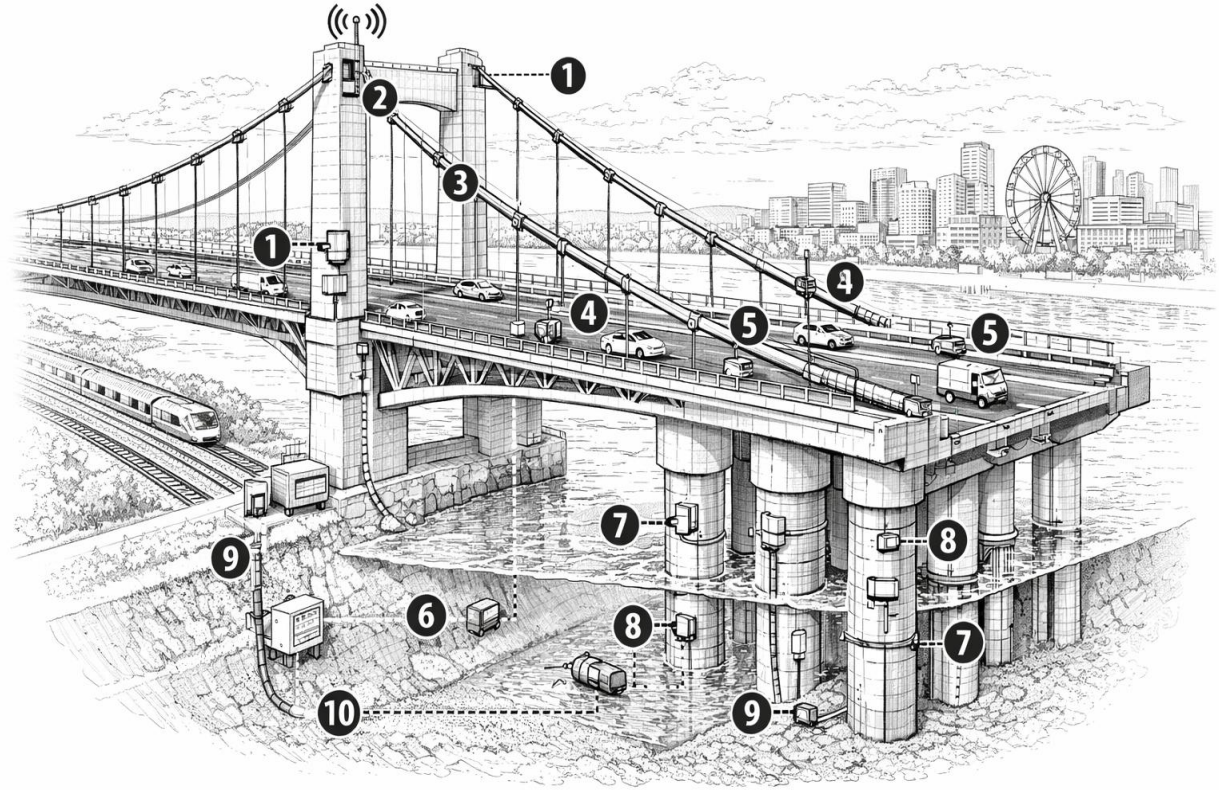
Thanks to their exceptional height and strength, they ensure **safety, stability, and sufficient clearance for maritime traffic**, even along the busiest navigation routes.

The towers built for long-span crossings are among the tallest of their kind and represent outstanding examples of **engineering excellence, innovation, and respect for environmental constraints**. True technological landmarks, they tell the story of humanity’s determination to deliver energy, development, and connectivity even to the most difficult and remote territories.

Understanding these structures means gaining deeper insight into the importance of **sustainable infrastructure, energy security, and the balance between technological progress and landscape preservation**.








Main Cable Monitoring Unit

Tower Strain Sensors


Hanger Cable Strain Gauges


Deck Vibration Sensors


Traffic Load Sensors


Subsoil Deformation Sensors


Pier Health Sensors

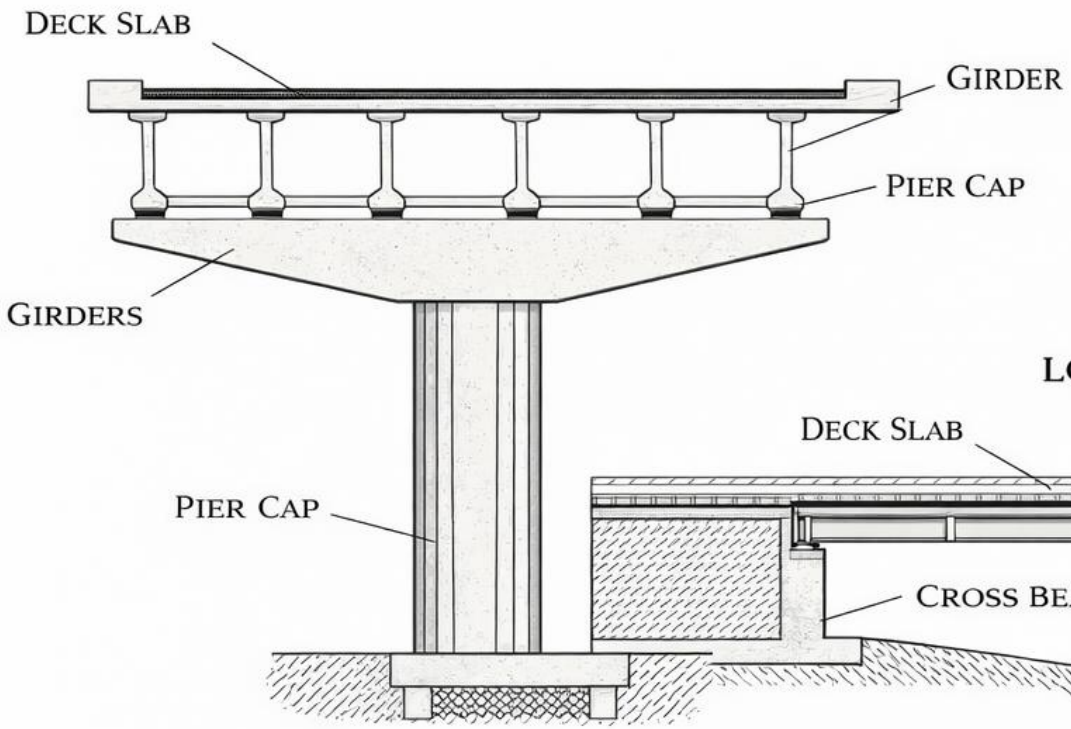

Underwater Foundation Sensors


Environmental Sensors


Central Data & Communication Unit

STRUCTURAL ELEMENTS OF A BRIDGE

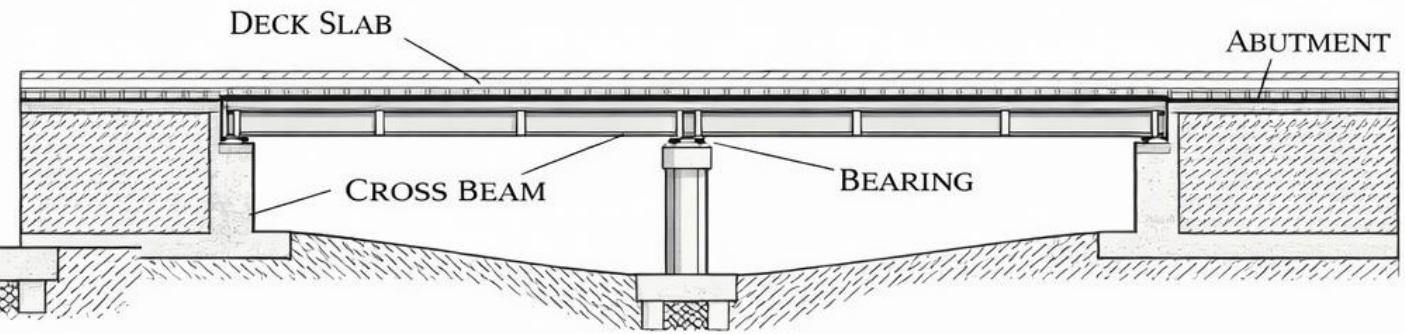
TRANSVERSE SECTION



STRUCTURAL ELEMENTS:

- Deck Slab
- Girders
- Cross Beams
- Bearings
- Pier - Pier Cap - Footing
- Abutments

LONGITUDINAL SECTION



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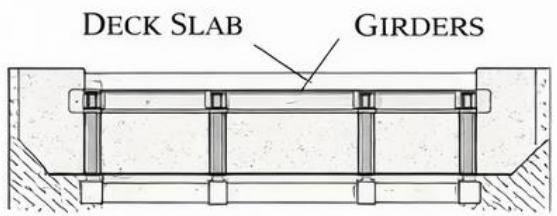
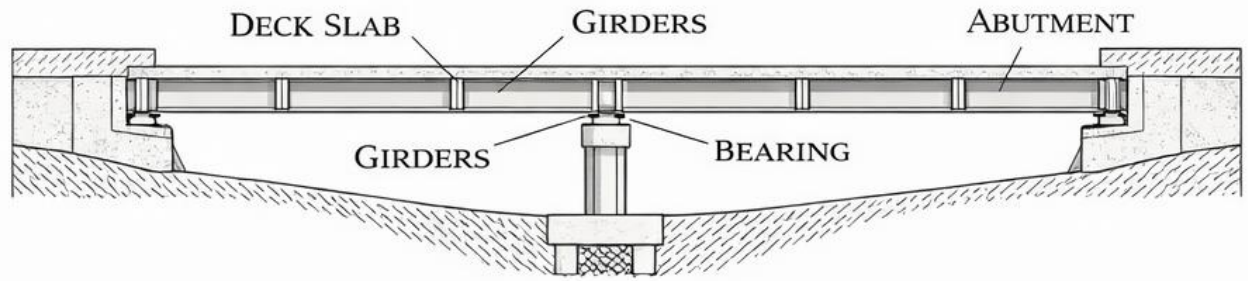
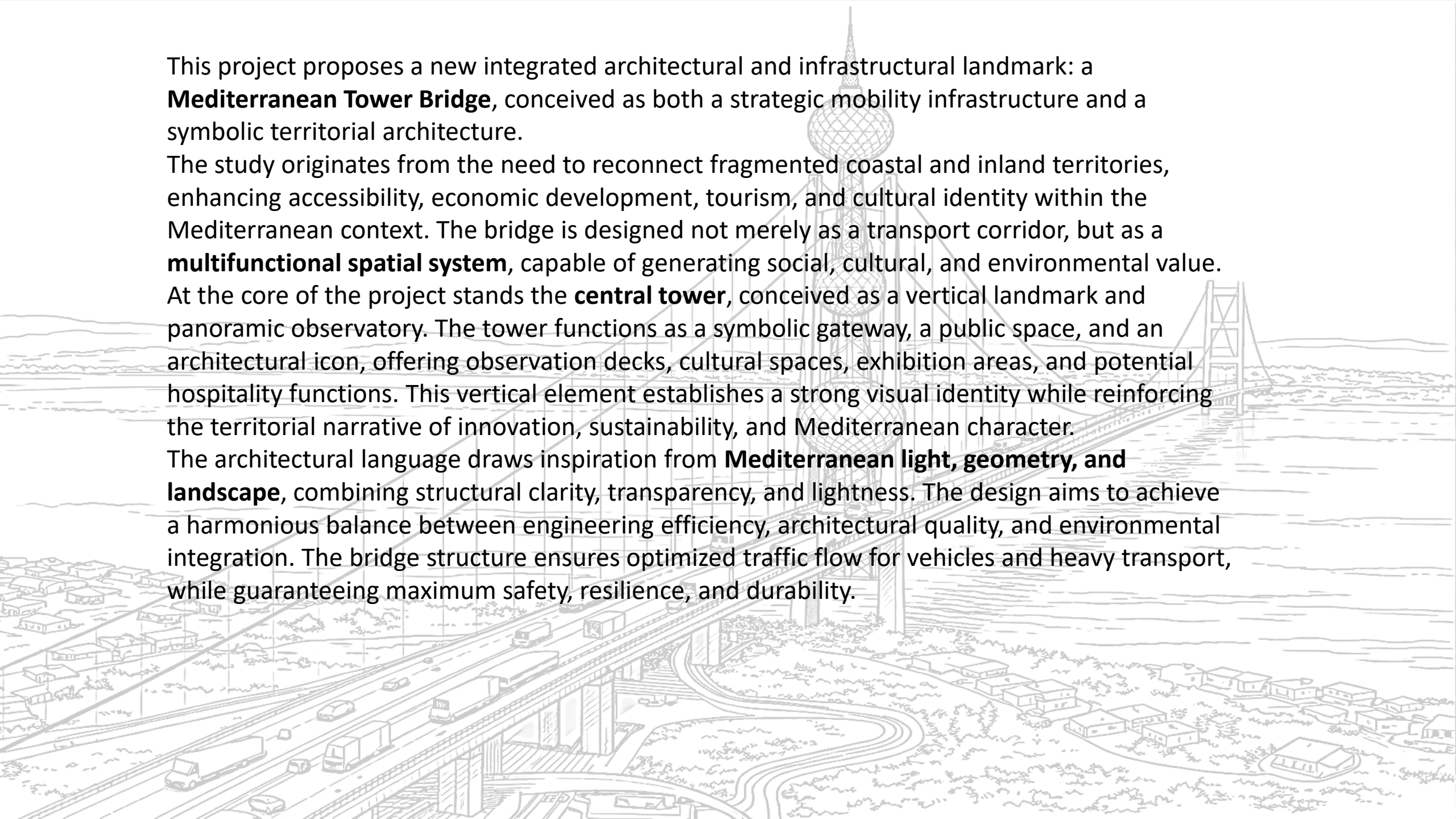


FLOOR PLAN

FLOOR PLAN





This project proposes a new integrated architectural and infrastructural landmark: a **Mediterranean Tower Bridge**, conceived as both a strategic mobility infrastructure and a symbolic territorial architecture.

The study originates from the need to reconnect fragmented coastal and inland territories, enhancing accessibility, economic development, tourism, and cultural identity within the Mediterranean context. The bridge is designed not merely as a transport corridor, but as a **multifunctional spatial system**, capable of generating social, cultural, and environmental value.

At the core of the project stands the **central tower**, conceived as a vertical landmark and panoramic observatory. The tower functions as a symbolic gateway, a public space, and an architectural icon, offering observation decks, cultural spaces, exhibition areas, and potential hospitality functions. This vertical element establishes a strong visual identity while reinforcing the territorial narrative of innovation, sustainability, and Mediterranean character.

The architectural language draws inspiration from **Mediterranean light, geometry, and landscape**, combining structural clarity, transparency, and lightness. The design aims to achieve a harmonious balance between engineering efficiency, architectural quality, and environmental integration. The bridge structure ensures optimized traffic flow for vehicles and heavy transport, while guaranteeing maximum safety, resilience, and durability.

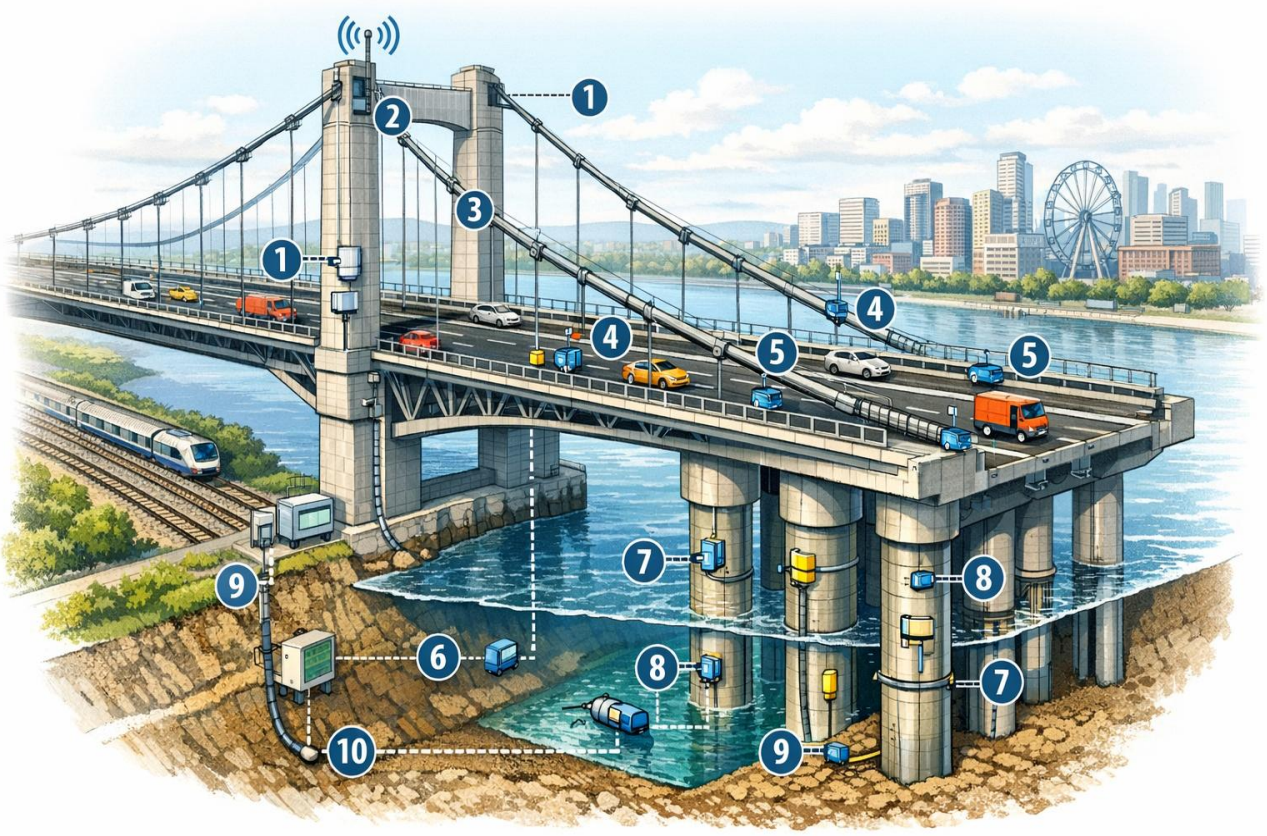
Wood
The oldest construction material. It is easy to work with and low-cost, but it is subject to wear, decay, and weather damage. Today it is mainly used for small bridges.

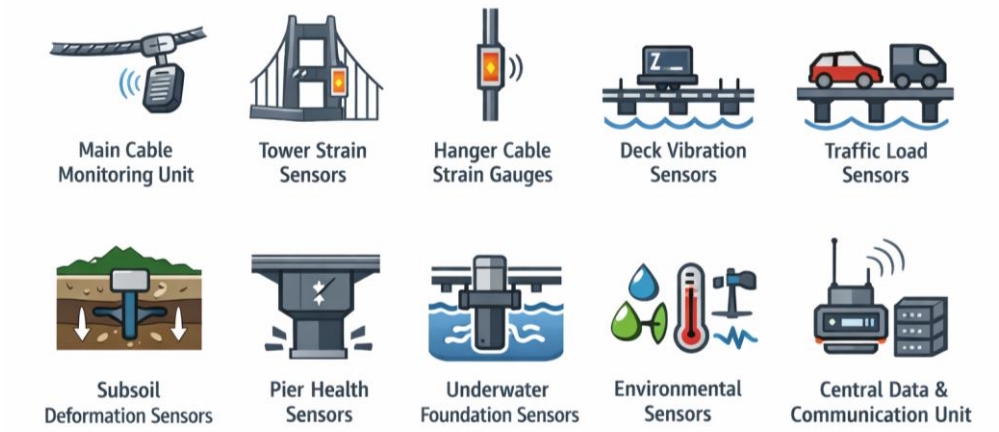
Masonry (Stone and Brick)
Used since ancient times. It offers high durability and strength in compression, but it is heavy and suitable mainly for short and medium spans.

Metal (Iron and Steel)
Introduced during the Industrial Revolution. It allows long spans and high load capacity, but it requires protection against corrosion and regular maintenance.

Concrete (Reinforced Concrete)
The most common modern material. With steel reinforcement, it provides high strength, durability, and low maintenance, making it ideal for most bridges.

Mixed Materials
Combination of different materials, such as reinforced concrete for piers and steel for the deck. This solution optimizes strength, cost, and design flexibility.





1 – Main cable monitoring unit
Wireless monitoring unit installed on the **main suspension cables** to measure **tension, vibration, and dynamic response**.
2 – Tower strain and displacement sensors
Sensors installed on the **bridge towers (pylons)** to monitor **structural deformation, stress, and vertical displacement**.
3 – Hanger cable strain gauges
Strain gauges mounted on the **vertical hanger cables** to measure **tensile forces and load distribution**.
4 – Deck vibration sensors (accelerometers)
Accelerometers installed on the **bridge deck** to monitor **traffic-induced vibrations, dynamic loads, and structural response**.
5 – Traffic load and movement sensors
Sensors used to detect **vehicle weight, speed, and dynamic loading effects** on the bridge deck.
6 – Subsoil deformation sensors
In-ground sensors measuring **soil displacement, settlement, and underground movement** beneath the bridge foundations.
7 – Pier structural health sensors
Sensors mounted on the **bridge piers** to monitor **cracks, stress, tilting, and structural integrity**.
8 – Underwater foundation sensors
Sensors installed on **submerged piles and foundations** to measure **scour, corrosion, vibration, and structural degradation**.
9 – Environmental monitoring sensors
Environmental sensors measuring **water level, temperature, humidity, wind, and seismic activity** around the bridge.
10 – Central data acquisition and communication unit
Data logger and control unit that collects, processes, and transmits sensor data to the **monitoring center**.

PROJECT OWNER/PROJECT DEVELOPER

FUNDACIÓN DEMOCRÁTICA ITALO AMERICANA, FDIA - REPRESENTAÇÃO PERMANENTE REPRESENTED BY:
PRESIDENT: LAWYER VINCENZO CORTEGIANI
GENERAL DIRECTOR: DR. FABIO ROSATI,
GRAPHIC DESIGNER:DR.LUCA ROSATI

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Email: incubator@fdiangopermanente.pt
Email:eu.secretary@fdiangopermanente.pt