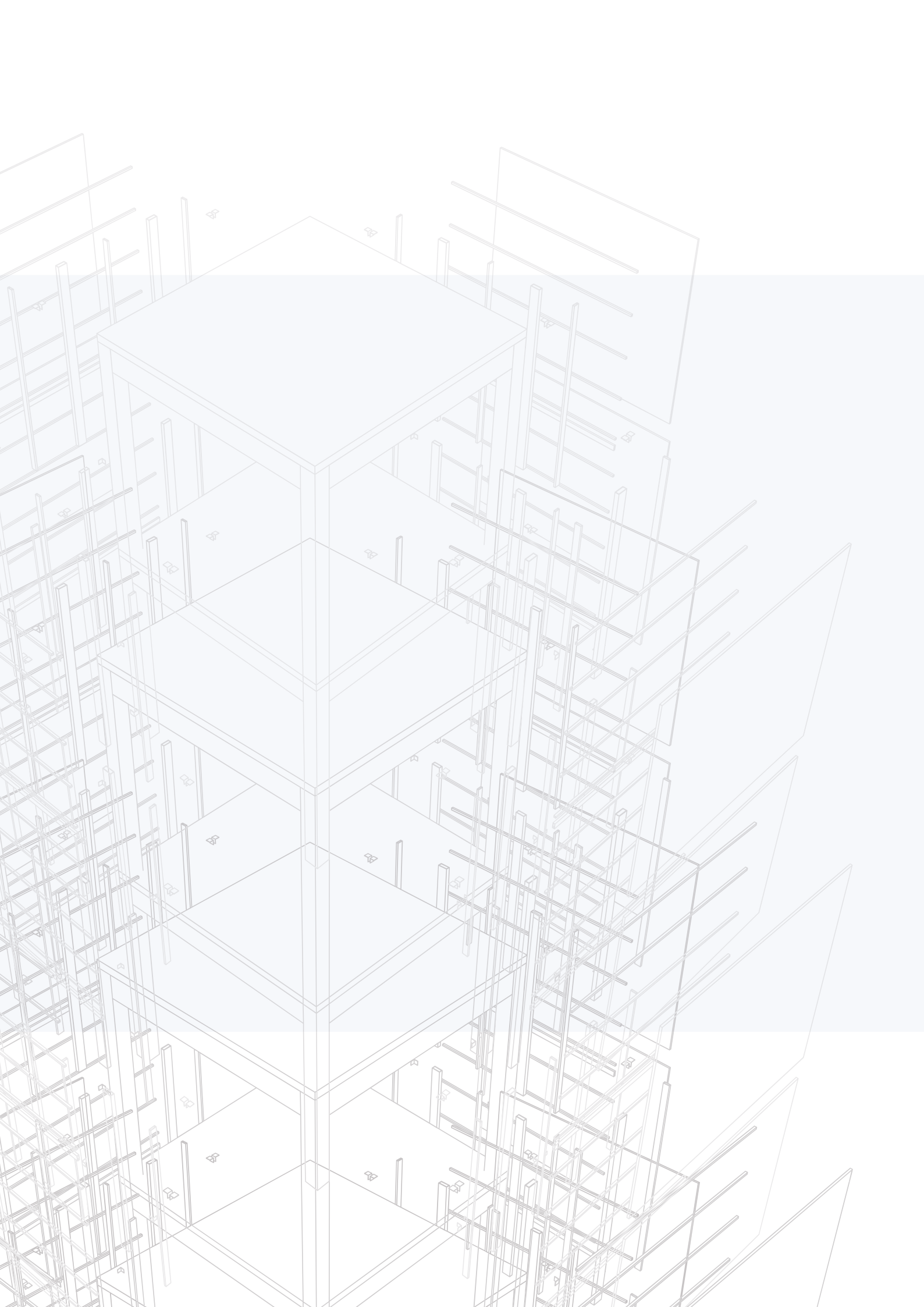




BBOX[®]
STRUCTURAL MONITORING

Structural Safety

Knowledge to Prevent
Monitoring to Protect



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Who we are and Know-how



Our History

MOSI Srl specializes in the design and development of advanced systems for **structural monitoring**, covering continuous performance assessment as well as response analysis after critical events.

With more than a decade of experience in the field, we have cultivated deep technical expertise and developed **innovative solutions** that set new standards for safety and performance.

Our engineers and technicians draw on a long-standing tradition of excellence in structural safety management, successfully applied across a wide spectrum of civil and industrial projects.

We also bring decades of expertise in prefabricated construction — a distinctive strength that enhances our integrated approach to the safety, resilience, and long-term durability of structures.



Innovation and reliability

BBOX is our innovative system for continuous structural monitoring, now available in its 2.0 version. Renowned for its effectiveness and reliability, BBOX today represents the core of our business — while remaining just one of our many areas of expertise.

Through continuous research and a strong spirit of innovation, we consistently develop **new technologies and tailor-made solutions** that meet even the most specific needs of our clients.



Mission and objectives

Our primary goal is to **ensure safety and operational continuity in buildings**, civil and industrial structures, as well as infrastructure such as bridges, viaducts, and dams.

Driven by constant research and a spirit of innovation, we design and deliver advanced monitoring systems and customized solutions, tailored to the most specific needs of our clients.

Every day, we work to **minimize risk exposure, optimize maintenance strategies**, and **guarantee the ongoing operational continuity** and resilience of the structures entrusted to us.



The System: BBOX 2.0

BBOX 2.0 is an **advanced system for continuous structural monitoring**, designed to **track over time the structural health of buildings and infrastructure**, detecting any anomalies, deterioration, or variations.

Moreover, in the event of earthquakes, floods, or other critical environmental events, it delivers **objective data** for the prompt assessment of structural integrity.

Benefits of Structural Health Monitoring:

- Continuous monitoring of structural conditions to detect anomalies and early signs of deterioration.
- Support for dynamic analysis (OMA) to identify variations in vibration modes and mechanical behavior over time.
- Prevention of critical damage through the progressive assessment of structural performance.
- Targeted maintenance planning based on real data, reducing costs and extending the service life of structures.

Monitor structural conditions in real time!





Benefits of Seismic Monitoring:

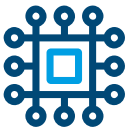
- Immediate assessment of structural condition after an event, minimizing downtime for buildings and infrastructure.
- Streamlined insurance procedures for faster claims processing.
- Optimized allocation of resources for restoration.
- Rapid and safe resumption of full use.





Technology and innovation

The BBOX 2.0 system combines **next-generation triaxial MEMS sensors** with a **high-performance central datalogger**, creating a scalable and reliable platform for advanced structural monitoring.



BBOX 2.0 Sensors:

- Triaxial MEMS accelerometer with sampling rates up to 1000 samples per second per axis.
- Adjustable sampling: 32 / 62.5 / 125 / 250 / 500 / 1000 Hz per axis.
- Inclinometer function with resolution up to 0.001° and accuracy of 0.01°.
- Measurement range for accelerations: -2 g to +2 g.
- Noise density: 22.5 µg/√Hz.
- Integrated temperature sensor.
- IP68 protection for operation even in extreme environments.
- Operating temperature range: -40 °C to +105 °C.
- Acquisition of acceleration, displacement, and inclination data.



What makes the BBOX System unique

Thanks to its modular architecture, BBOX 2.0 **adapts seamlessly** to diverse project requirements, delivering **fully customizable solutions**. **A single datalogger can integrate accelerometric sensors together with additional devices** — such as environmental, thermal, humidity, inclinometer, or vibrometer sensors — to provide truly comprehensive monitoring capabilities.

Processing up to 60,000 data points per second from 20 accelerometric sensors (1,000 samples per axis, per sensor), the BBOX 2.0 datalogger ensures unmatched precision and reliability in structural monitoring.

All sensors are connected through a single daisy-chain (serial) cable, greatly simplifying both installation and long-term maintenance.

BBOX is therefore a fundamental tool to **safeguard structural safety and integrity**, while enabling **efficient management of civil buildings, industrial facilities, and infrastructure**.





BBOX 2.0 Datalogger:

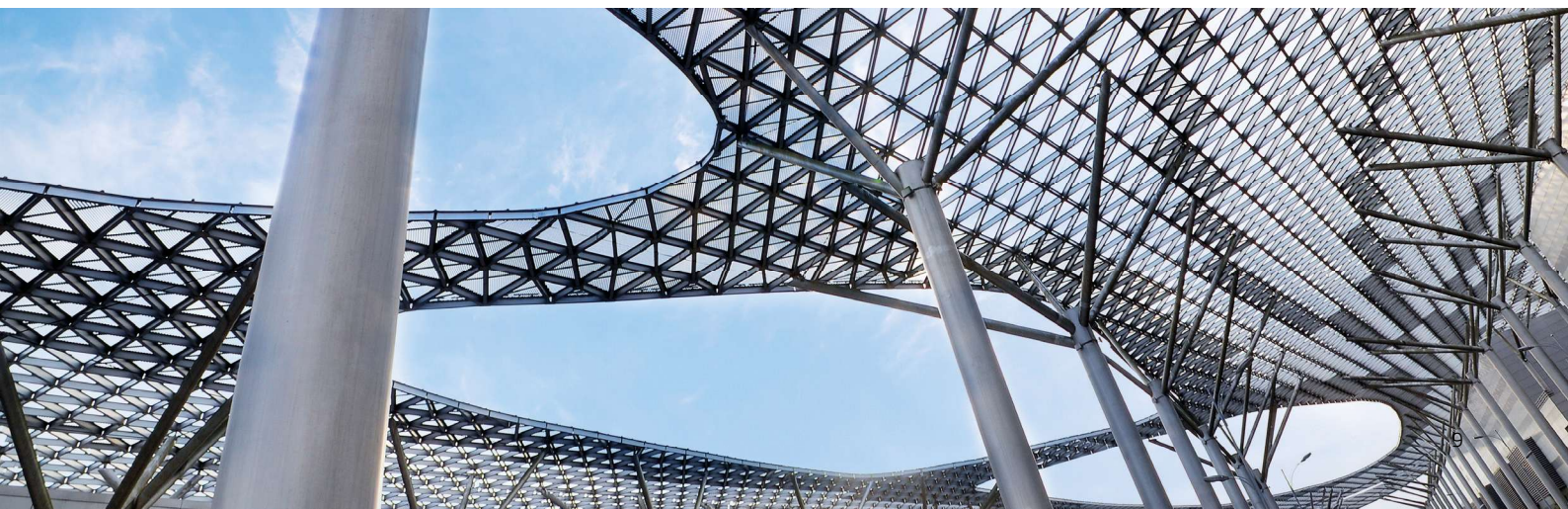
- Connects up to 20 BBOX accelerometric sensors.
- Real-time processing of 60,000 data points per second.
- Automatic detection of critical values with remotely configurable thresholds.
- Compatibility with all types of sensors, including environmental, thermal, humidity, advanced inclinometers, vibrometers, and more.
- Data transmission via LAN or 4G/5G module.
- Add-on external UPS unit, supplied with the system, to ensure operation during power outages.
- Remote configuration of system parameters, including thresholds, data sampling, and more.
- Remote diagnostics and updates.



Remote Data Control and Management

The BBOX system can be **fully managed remotely** through a proprietary web-app developed by MOSI Srl. The cloud platform allows users to:

- Perform daily system checks and diagnostics.
- Visualize and compare structural data (accelerations, displacements, inclinations).
- Download and archive monitoring data in standard formats.
- Adjust system parameters remotely (thresholds, sampling frequencies, operating modes).
- Retrieve peak measurements right after seismic or other dynamic events.



Selected BBOX Use Cases

Factory 4.0, Florim Ceramiche Fiorano Modenese (MO), Italy

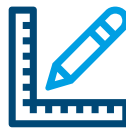
A highly automated facility spanning more than 48,000 m², dedicated to the processing and logistics of Florim's large ceramic slabs, located next to the company's headquarters.

Given its high degree of automation and strategic role within the production chain, Florim Ceramiche implemented the BBOX system to **continuously monitor the structural response** of the facility, ensuring **immediate action** in case of seismic events.

The system enables:



Drastic reduction of production downtime



Optimization of restoration activities



Enhanced safety for personnel and assets





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New INRCA Hospital of Camerano Camerano (AN), Italy

Currently under construction, the new INRCA Hospital of Camerano is designed with the most advanced anti-seismic technological solutions.

Equipped with seismic isolators that significantly reduce the impact of earthquakes, the structure is designed **to guarantee uninterrupted operations even after seismic events.**

The BBOX system was selected to:



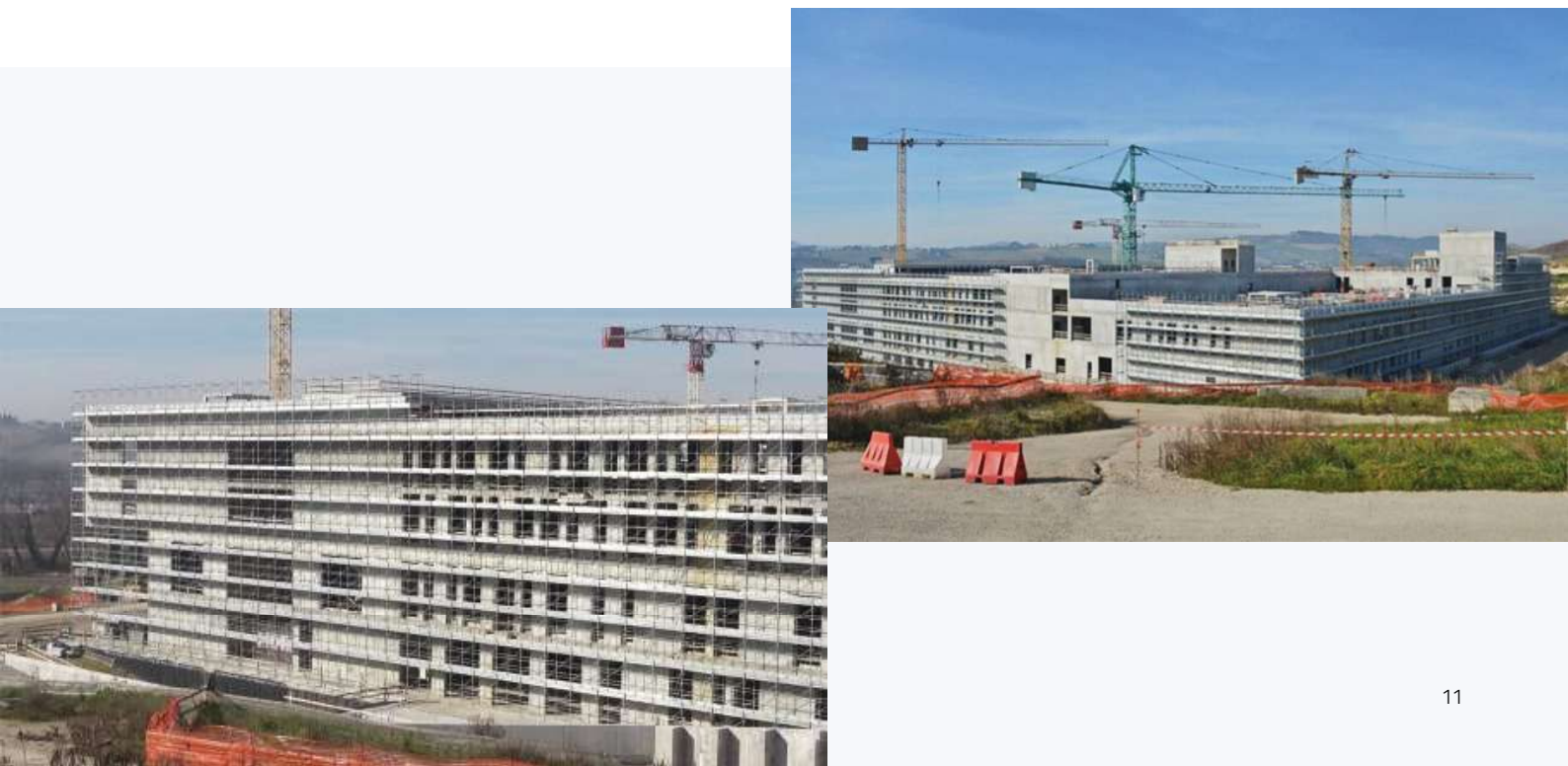
Evaluate over time the performance and effectiveness of seismic isolators



Provide objective support for structural assessments after earthquakes or other critical events



Ensure the ongoing safety and operational reliability of the hospital



Selected BBOX Use Cases



Church of San Nicola di Bari Camposanto (MO), Italy

Built in the 16th century, with a bell tower dating back to 1741, the Church of San Nicola di Bari is a landmark of high historical and architectural value for the region.

After suffering severe damage during the 2012 Emilia-Romagna earthquake, the church was restored in 2016.

To safeguard this cultural heritage and mitigate future risks, the BBOX system was installed with the following objectives:



Continuous seismic monitoring of the bell tower



Long-term monitoring of structural inclination



Supporting preventive preservation with objective technical data





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ALER Residential Complex via Lazio, Rozzano (MI), Italy

Located in via Lazio, Rozzano, the ALER residential complex underwent a major energy and seismic retrofitting project, supported by the Italian *Superbonus 110%* national incentive program.

To **further enhance structural safety** and ensure a prompt response in the event of an earthquake, the BBOX monitoring system was installed in every building of the complex. The system makes it possible to:



Provide immediate and objective data on the structural behavior of the buildings during seismic events



Ensure tangible protection for residents and property assets through continuous long-term monitoring



Promptly assess the safety and usability of the buildings, reducing waiting times and post-earthquake uncertainties



Selected BBOX Use Cases

Bridge of Concordia over the Secchia River Concordia sulla Secchia (MO), Italy

Built in 1885, the Concordia Bridge is one of the most significant historical infrastructure assets in the Province of Modena.

After being damaged by the 2012 earthquake, it underwent extensive consolidation and restoration works.

As part of these interventions, the BBOX 2.0 system was installed **to monitor the ongoing evolution of the bridge's structural condition**, integrating triaxial accelerometric sensors and high-precision digital inclinometers, with continuous data transmission via mobile networks.

The system provides:



Prompt detection of structural anomalies or settlements



Reliable data to support design and maintenance decisions



Long-term protection of a strategic regional landmark





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Villalunga Bridge Scandiano (MO), Italy

Built in 1977 along Provincial Road 467 (S.P. 467) in Scandiano (MO), the Villalunga Bridge is a 430-meter-long strategic structure affected by erosion and natural degradation.

To monitor its condition over time and support scheduled inspections, the BBOX 2.0 system was deployed, featuring triaxial accelerometric sensors and digital inclinometers, with continuous data transmission via mobile network.

The system enables:



Early detection of structural degradation or instability



Improved traffic safety along a major road corridor



Optimization of maintenance operations



They Chose BBOX

Ceramic

SILCERAMICHE
SASSUOLO - ITALY

FLORIM

PANARIAgroup
INDUSTRIE CERAMICHE S.P.A.

Building

iti ITI IMPRESA
GENERALE S.p.A.
Edilizia / Tecnologia / Service

baracit

 Società Cooperativa
L'INTERNAZIONALE

ROGERGROUP

Logistics

SNATT
LOGISTICA

Clothing



BRUNELLO CUCINELLI



Industrial



Croce Rossa Italiana



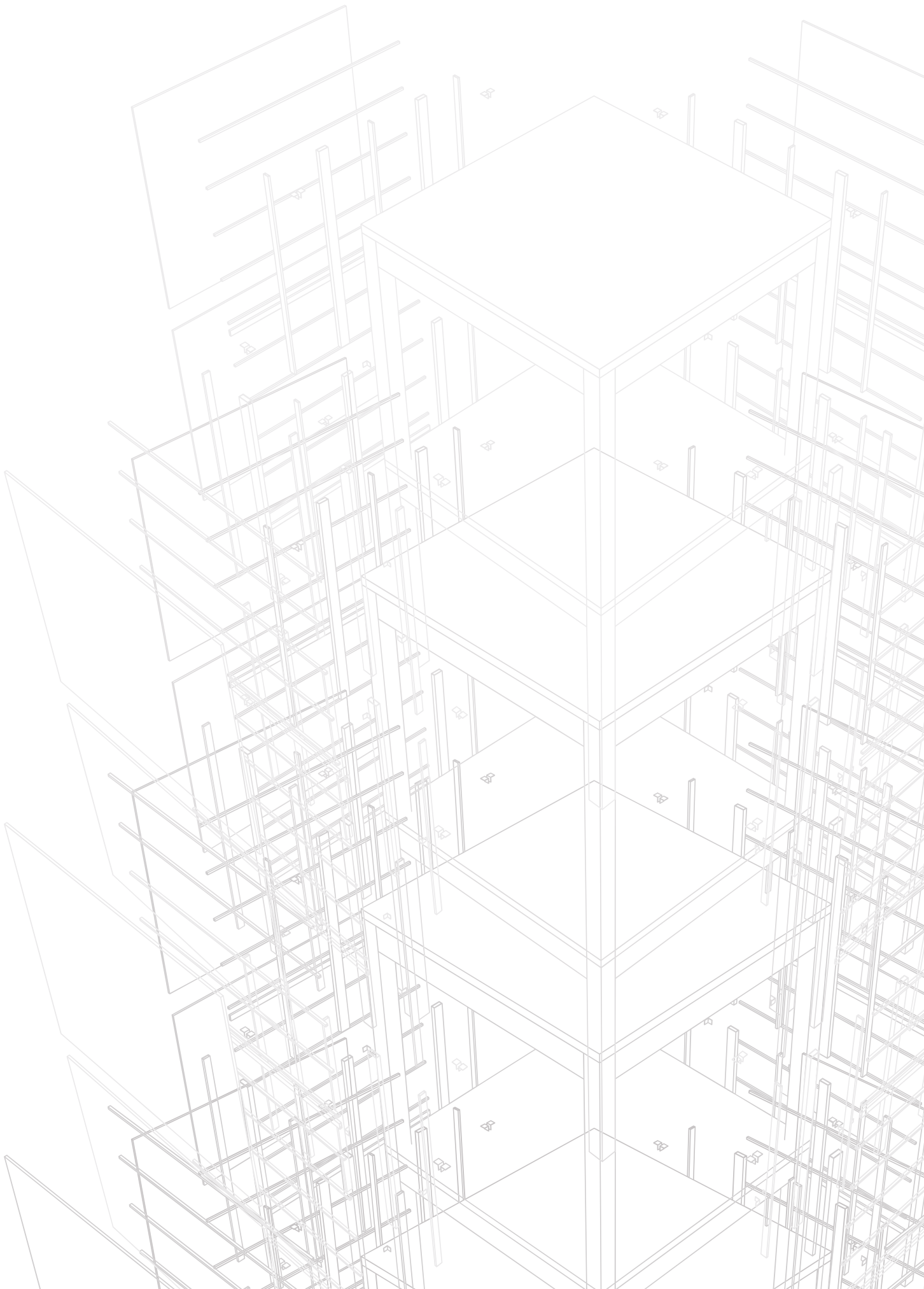
Public bodies



Real estate



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