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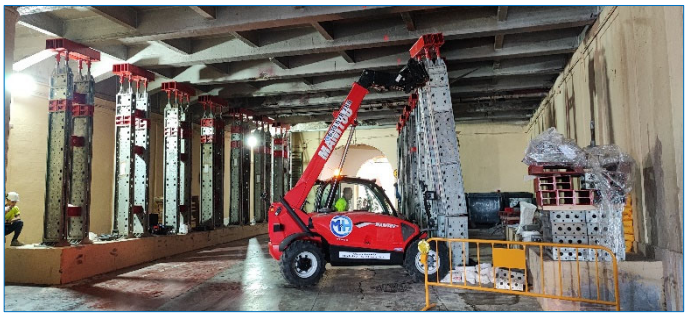
CASE STUDY



Structural monitoring of Ceuta Central Market during its partial demolition and refurbishment, whilst in service

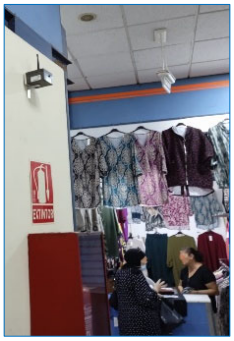
CLIENT: ACC

THE CHALLENGE

The construction of Ceuta's Central Market began in 1933, starting from the Almina Dry Ditch. The written chronicles tell that the first prestressed concrete beams were used in this project in Ceuta, transported from mainland Spain.

As of May 2022, and due to the age of the building, the Government of Ceuta decides to thoroughly refurbish the structure and takes a series of emergency measures, including the reinforcement of La Almina's New Bridge. These works come with transferring about thirty fish stalls to a new location, within the Market.

The Market must stay open to the public during these upgrading works, not affecting users and public safety.



THE SOLUTION

In order to understand the behaviour of the structural components in the Market during the refurbishment works, the company Africana de Contratas y Construcciones contacted InGeoLAC.

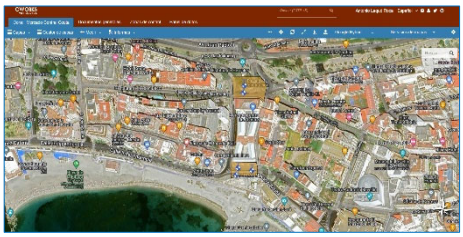
With the obligation to immediately alert about any anomaly in the integrity of the Market skeleton, InGeoLAC proposes the use of triaxial tiltmeters including laser distance meter, wireless, with readings' frequency every thirty minutes.

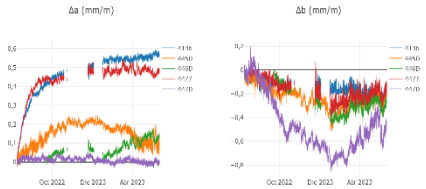
Following the installation of five measurement systems in as many beams on early May 2022, InGeoLAC provides access to monitoring data in CivilWorks, accessible 24H/7D; this includes real-time warning thresholds, SMS, and emails, for one year.

THE OUTCOME

Deformations measured in Bahía Sur match demolition phases of the various Market floor slabs in Playa de Ribera. At Plaza de la Constitución around Bahía Norte, values showed stability during the refurbishment and replacement works of the existing, old beams.

The chosen wireless monitoring solution made it possible to control, at all times, real deformations occurring in the almost one hundred years old Market structure, resulting in no disturbance to everyday activities during Ceuta Central Market's partial renewal.





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