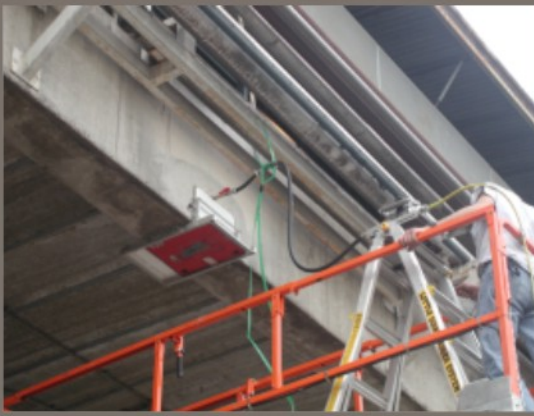


THASA

TOMOGRAFÍA DE HORMIGÓN ARMADO S.A.
REINFORCED CONCRETE TOMOGRAPHY



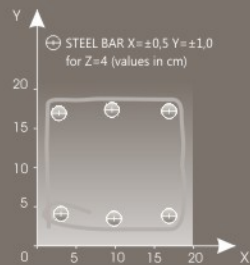
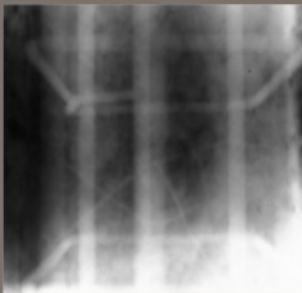
Inspection of concrete structures



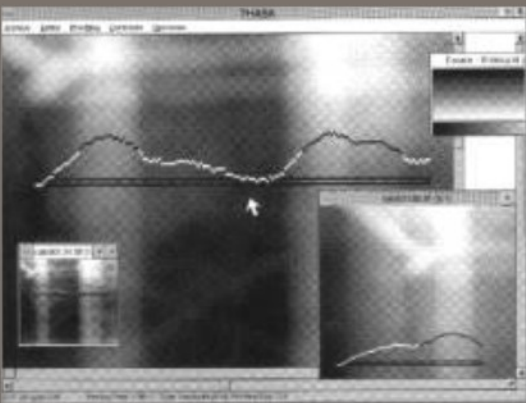
Recording a gamma-ray image of a beam. The portable equipment allows the study of structures at elevated locations or difficult access.



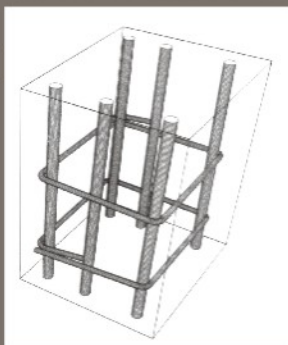
Recording a gamma-ray image of a circular column.



Gamma-ray image of a concrete column showing the reinforcement.



The three dimensional reconstruction of the reinforcement in the examined section of the structure is obtained by computations based on digitized gamma-ray images.



With the Reinforced Concrete Tomography is possible to:

Determine position and size of rebars and stirrups.

Detect and measure corrosion in rebars.

Observe and measure defects, voids and honeycombing in concrete

Detect voids in pre-stressed concrete.

What is a Reinforced Concrete Tomography?

It is the three dimensional reconstruction of rebars in a concrete structure from the information registered in one or more gamma ray images which we call "gammagraphies".

The gammagraphies are 35 x 43 cm (14 x 17") radiographic plates that register gamma rays (instead of X rays) traversing the structure under examination.

This technology allows the observation of the interior of concrete and masonry structures with photographic accuracy. The subsequent *tomographic*¹ analysis provides the diameters and positions of rebars and stirrups with an accuracy of about 1 mm (~1/32") and 5 mm (~3/16"), respectively.

Gamma rays do not induce any radioactivity or damage in the exposed materials and do not require electrical power. The equipment is easy to carry and quite suitable for field work in bridges and various types of complex structures. With the new digital technology data can be transmitted immediately to a remote laboratory for analysis

Who are we?

THASA is an Argentine corporation established in 1992 that developed the reinforced concrete tomography, a technology successfully applied² to the analysis of thousands of structures such as beams, columns, slabs, etc., in government offices, apartment buildings, industrial establishments, bridges, power stations, in Argentina, Uruguay, Portugal and the United Kingdom.

The reinforced concrete tomography is the only non-destructive technology that provides the information about the reinforcement with the accuracy needed to determine the load that a structure can sustain. Its non-destructive characteristic is particularly important in the case of inhabited buildings, monuments of historical value, computing centers and others places where cleanliness is important. It also saves time, materials and labor and avoids reparation costs.

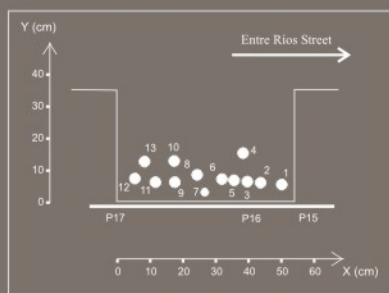
¹ Patents, US Patent 5,828,723 (10/27/1998) & PCT /US2007/22868 (10/31/207).
² The Reinforced Concrete Tomography has received various awards, among them it has been distinguished by the Tech Museum, California (2002), the United Nations Industrial Development Organization (1995) and Mercosur City Network Award (2001).



This technology is the most adequate for the study of buildings with historic and cultural value, as in the case of a Jesuic Chapel in Córdoba (Arg.).



The Reinforced Concrete Tomography is used to study balconies in apartment buildings.



Results of the determination of the reinforcement in a 55 cm (22") wide beam.




Big cracks were found 12 m (~36 ft) below sea level in 120 cm (~50") diameter pillars of Ushuaia harbor (Tierra del Fuego, Arg.).

N. S. da Guia Bridge, Ponte de Lima, Portugal.



Zarate Brazo Largo Bridge, Argentina.



Recycling and refurbishment of buildings

Analysis of structures in unfinished construction sites

Localization of interior structures, pipes and cables in buildings lacking documentation

Preventive maintenance of buildings, sport stadiums, factories, bridges and monuments

Control and verification of materials used in concrete structures

Evaluation of building for insurance purposes

Technical studies of structures under litigation



THASA. Buenos Aires Office: Reclus 2017, B1609DQG Boulogne
Buenos Aires, Argentina.
Tel./Fax: (+54-11) 4719-5132

THASA US Inc. New York Office: 15 Seeley St, Brookhaven
11719 New York, USA.
Tel.: (+1-914) 410-6526

E-mail: info@thasa.com - Web: www.thasa.com