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**Experimental program for masonry walls
built with ceramic blocks with hollows**

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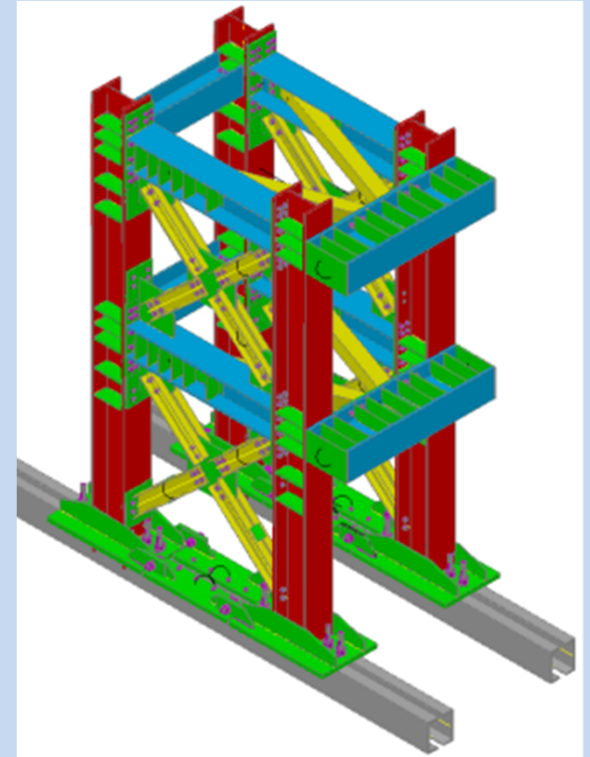
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Introduction

- Presentation of experimental program:
 - experimental stand;
 - experimental wall specimens.
- Purpose:
 - Determine the shear capacity of the masonry walls;
 - Differences between unreinforced and reinforced masonry walls.

Experimental stand

- Braced steel frames;
- Designed for a horizontal force of 1500 kN;
- Reactions are passed on to the foundations from the ground floor of the Civil Engineering Department Laboratory.

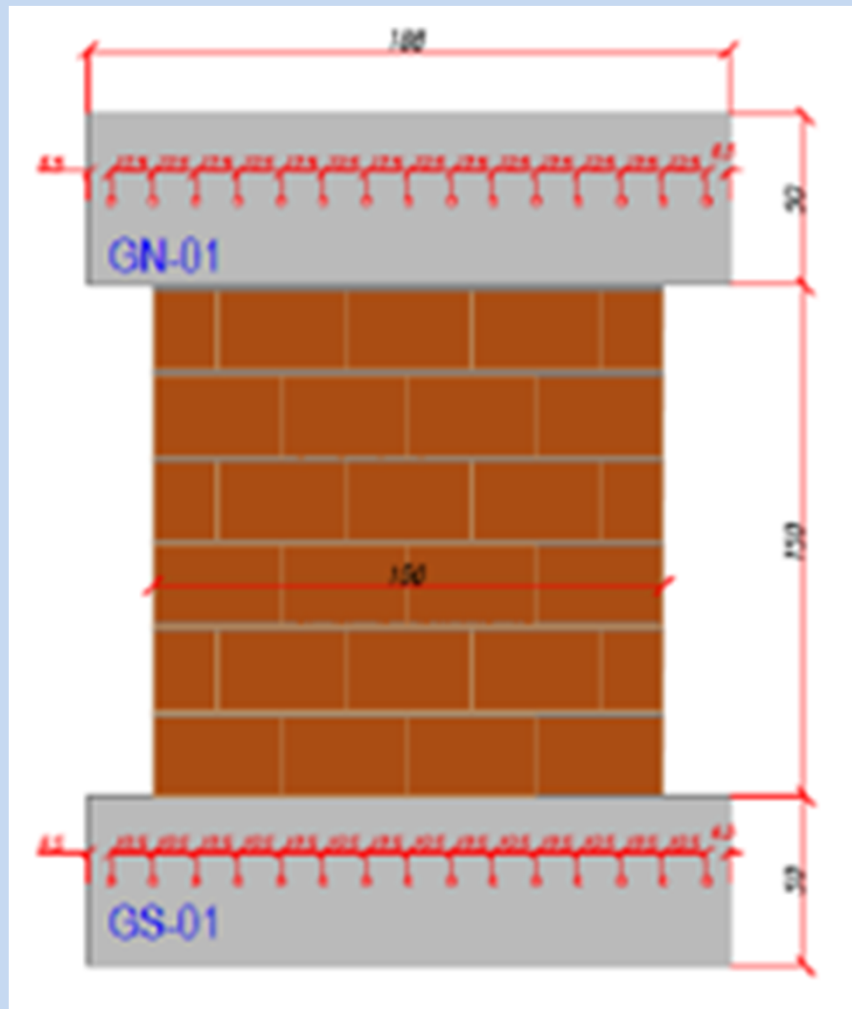


Experimental stand

- For the horizontal loads we purchased two Walter-Bai actuators, having the maximum capacity of 1500 kN;
- For controlling the actuators will be used the special software DION 7.

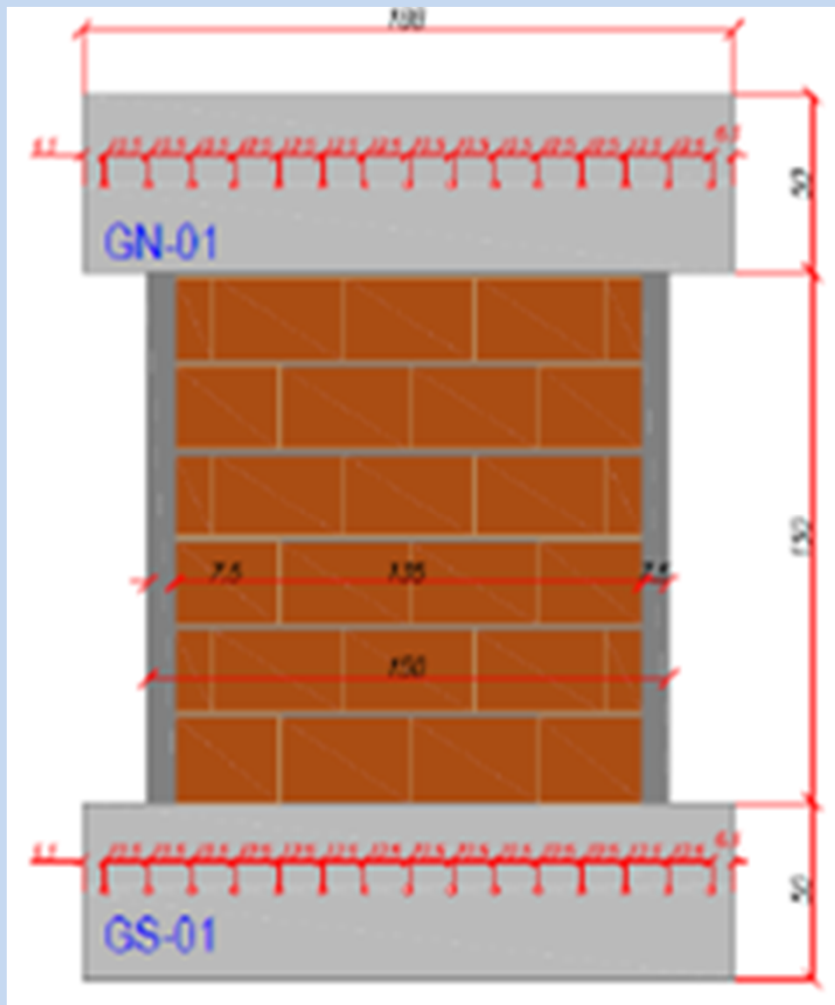


Experimental wall specimens



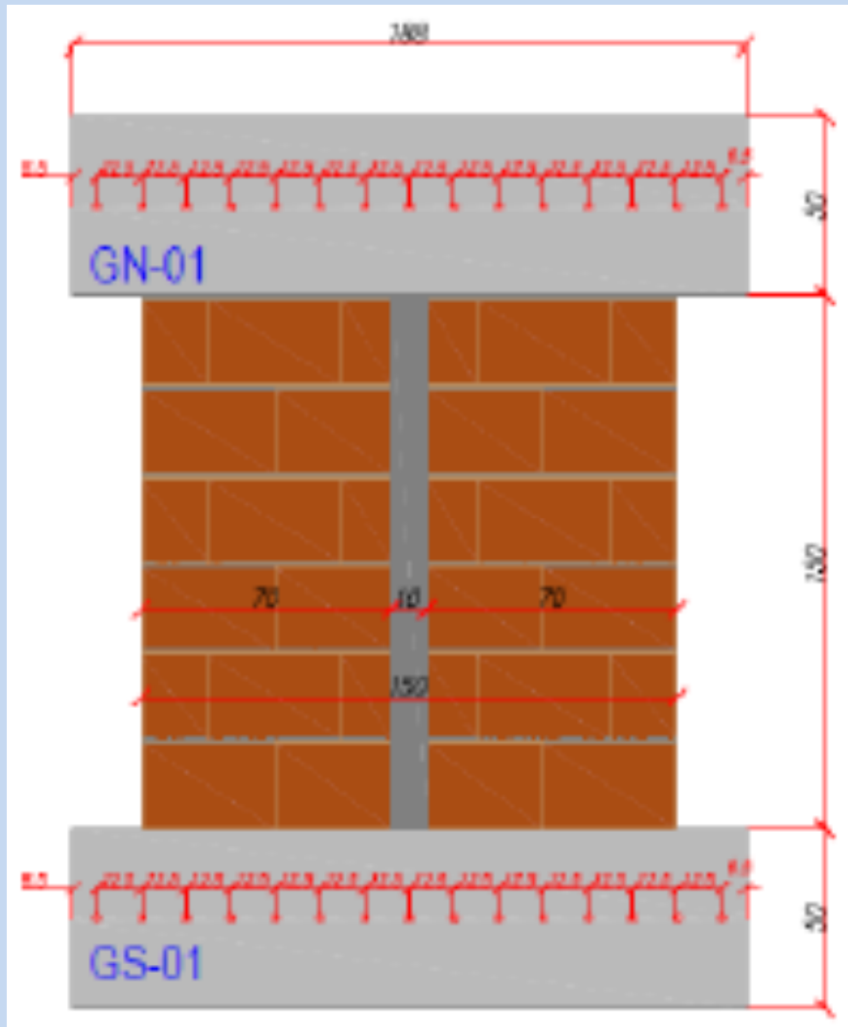
- Unreinforced masonry wall URM;
- Dimensions: 1,5x1,5 m;
- Porotherm 25 with BxLxH: 250x375x238 mm;
- 2 pieces.

Experimental wall specimens



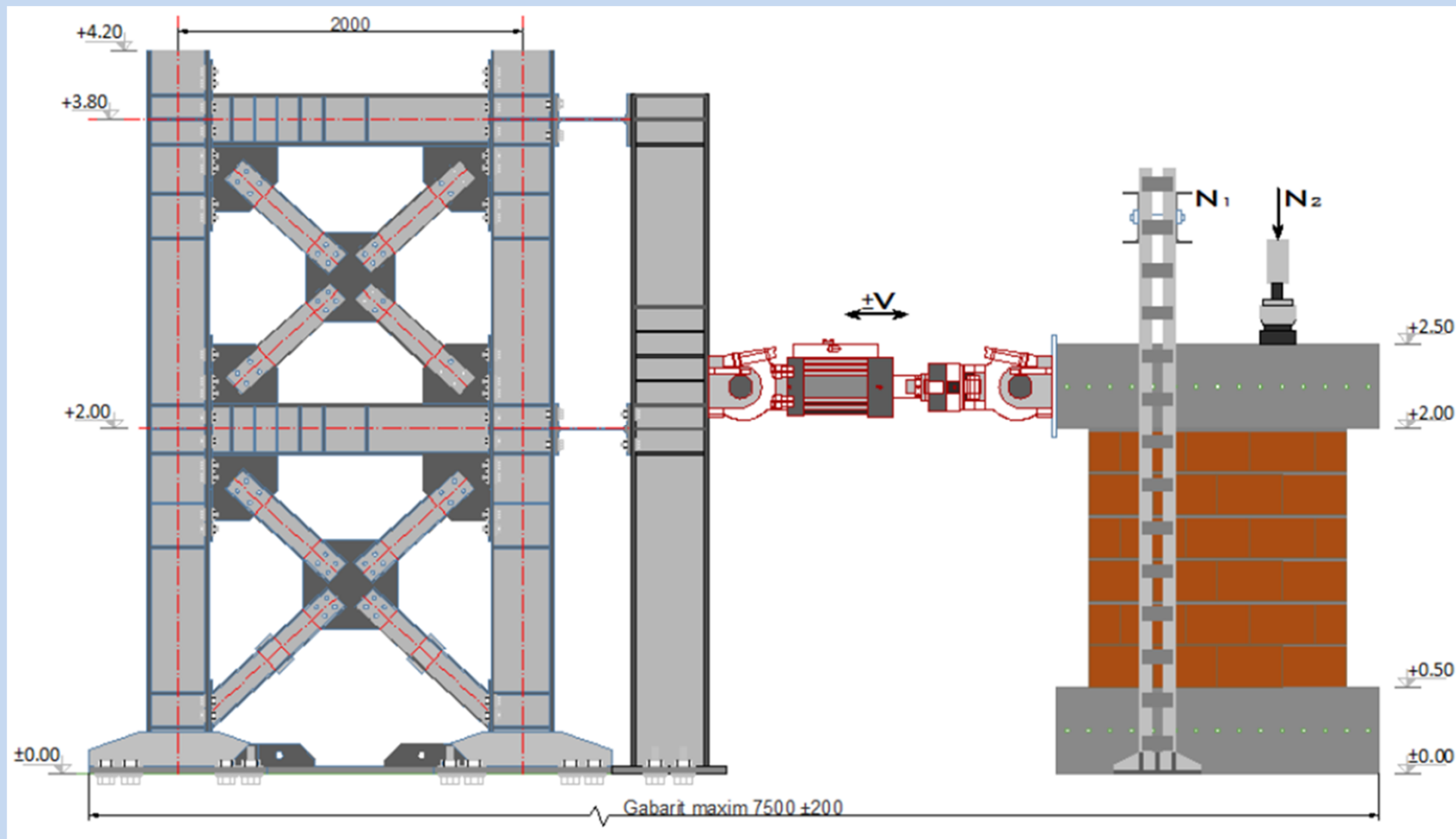
- Reinforced masonry wall RM1;
- Dimensions: 1,5x1,5 m;
- Porotherm 25 with BxLxH: 250x375x238 mm;
- 2 pieces.

Experimental wall specimens



- Reinforced masonry wall RM2;
- Dimensions: 1,5x1,5 m;
- Porotherm 25 with BxLxH: 250x375x238 mm;
- 2 pieces.

Experimental tests



Material tests

- Compressive strength for the ceramic hollow blocks was determined in authorized laboratories with specialized equipments.



Material tests



- Mortar specimens were tested in our department laboratory.

Material tests

- For all the wall specimens were taken material samples (concrete, mortar, ceramic blocks and reinforcement bars) for testing before each wall test.
- The material strengths obtained will be also used for the numerical analysis that will be made with finite element program ATENA 3D.

Conclusions

- The experimental program is still on the phase of building the experimental stand, but in the next few weeks we will begin the wall specimen testing.
- The first specimen tested will be the unreinforced masonry.
- After testing the wall will be strengthened with CFRP materials and then tested again.
- The results will be compared with the results from the numerical analysis in ATENA 3D program.