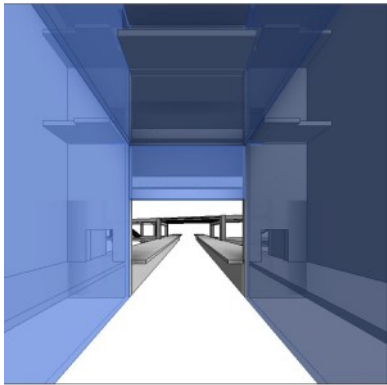


## SANTO ANTÓNIO HOSPITAL STATION

PRELIMINARY STAGE, CONCEPT AND EXECUTIVE DESIGN - STRUCTURAL ENGINEERING



**Client:** Metro do Porto – Project Division

**Location:** Porto, Portugal

**Design date:** 2018 - 2019

**Design by:** Daniel P. Sousa / Pedro B. Carvalho

**Services:** Preliminary Stage, Concept and Executive Design - Structural Engineering

**Summary:**

Given site the conditions identified, namely the Carregal Garden (and the need for preservation of trees of public interest), the Ceuta Road Tunnel and the crossing of this area by the Frio River, as well as the depth of the new subway line, Santo António Hospital Station (HSA) is a mining station with 2 caverns. The station consists of: 1 shaft with two emergency accesses (one for each platform) and 3 floors for technical areas; 1 deep mining cavern with 2 levels - subpier and piers, crossed midway through the Mezzanine floor; 1 shaft located at the end of the Mezzanine Cavern in which two floors for ventilation rooms are inserted; Mezzanine Cavern (with a bias of 66° from the previous one with 3 levels: subpiers, piers and Mezzanine), where the access galleries begin. The HSA station occupies a total deployment area of 4,490 m<sup>2</sup> and a gross building area of 10,960 m<sup>2</sup> corresponding to 6 different levels and has a total volume of 79,700 m<sup>3</sup>. It is estimated that the new line will be used on average by around 28,000 passengers per day.

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