

## DETAILED DESIGN OF THE URBAN TUNNELS UNDER *LAS GLORIAS* SQUARE, BARCELONA

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### Abstract

Barcelona's urban planning foresees a big green pedestrian area at *Las Glorias* Square where, nowadays, a capital hub of rail and road communications is located. One of the most important access to the city is the Gran Via street, which nowadays runs through the square at the same level, and will become underground in the future under four of the main railway tunnels in the city. The tunnel, in urban ambit, is being built between diaphragm walls which are connected between them under the existing railway's tunnels. The new tunnel will be built using an innovative method by jacking horizontal steel tubes, that will configure the horizontal protection during the digging works, and will allow to maintain the service of the existing railway tunnels without interruptions, that are daily used by thousands of citizens. The execution of the transverse box section is divided in two phases.

**Keywords:** Tunnel, urban, jacking, diaphragm wall, phreatic level