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Abstract

This paper shows the effectiveness of the techniques chosen for the rehabilitation of the historic "Sant'Andrea" masonry bell-tower in Venice. The achieved rehabilitation projects based on the indenting technique consisting in removing and replacing bricks in bad conditions, and on the isolation of the bells at the belfry quote, respect all the constraints represented by the aesthetic and structural features of the building. Moreover, the experimental analyses used to define the existing state of the structure are described in detail. The tower is also an interesting case study for the validation of the proposed method to determine the global young's modulus in a rehabilitated masonry bell tower. Rayleigh's method, using as input data the natural frequency obtained with an experimental accurate validation like the dynamic identification, was utilized to determine the global Young's modulus.

Keywords

masonry; bell tower; rehabilitation; Rayleigh's method; experimental analysis; Venice.