



FID-ASLAN 100 GFRP

NON FERROUS STRENGTHENING REINFORCEMENT

Strengthening of masonry structures

During the restoration of an Ex 1400's Cloister to become a five stars luxury hotel in Orvieto, a small town situated in the heart of Umbria in Italy, ASLAN 100 GFRP bars were used to strengthen and consolidate several masonry arches instead of using traditional externally bonded FRP sheets that would have compromised the aesthetics of the façade, by reconnecting the masonry bricks, creating an "active retrofit" to prevent any cinematism in case of an earthquake shock.

The ASLAN 100 GFRP bars were also used to strengthen the masonry bell tower of the convent. In this case as well it was possible to implement externally bonded laminates and in addition, an active retrofit was needed.

Internally installed prestressed GFRP bars, was the best solution for realizing the retrofit connecting the top of the bell tower with the bottom without compromising the architecture of the masonry structure.

Durability, excellent bond surface and mechanical properties called for choosing to reach the optimum cost/benefit ratio justifying the engineering choice.

The application consisted in: drilling the holes, inserting the rebar as per design indication, prestressing the rebar using an in-house simple steel device and finally injecting with fluid epoxy resin to ensure that the bar would not loose the low design prestress load.

Once the resin cured the bar was cut and the prestressing device removed.

Prestressing load was computed respecting maximum values to prevent creep rupture.



For more Information please contact:

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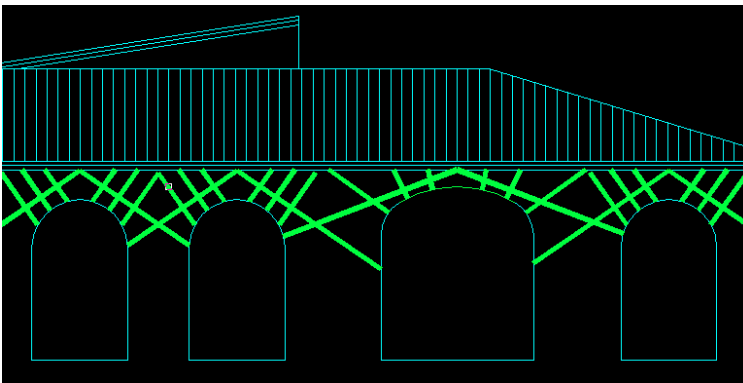
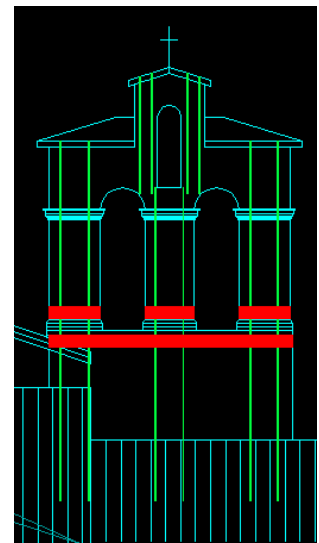
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*Nuove tecnologie e materiali speciali per l'Ingegneria Civile e l'Architettura.
New technologies and innovative materials for Civil Engineering and Architectural applications*

FIDIA S.r.l. Technical Global Service offered design assistance and material supply to the Engineer and Specialty Contractor following the guidelines provided by the National Research Council document CNR-DT 200/2004.



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