

## **Assessment of the Seismic Response of a Strengthened Cross-Vault**



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### **ABSTRACT**

With the purpose to assess the seismic behaviour of a subassembly under un-strengthened and strengthened conditions, a series of bi-axial shaking table tests are executed using the shaking table facility of LEE/NTUA. The subassembly consists of a cross vault resting on two parallel piers. After the completion of the testing campaign of the as-built-specimen, the sub-assembly is strengthened using horizontal elements in the base of the arches of the cross vault and external prestressing in the piers, as well as grouting of masonry. Then, the specimen is re-tested and the overall behaviour of the strengthened specimen is compared to that of the original one. The results of this project clearly highlight the positive effect of the selected intervention techniques to the dynamic behaviour of the model.

**Keywords:** Shaking table test, three-leaf masonry, grouting, steel/timber element.