

The survey for the documentation of stratified instability: preliminary results from the archaeoseismological analysis of the historic centre of Siena

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In particular, when implemented in the historic town centre of Siena, the technology has produced results that enabled the detection and, at times, the interpretation of instabilities and restorations, both ancient and modern. This type of documentation offers two positive outcomes: firstly, it improves the knowledge base; by linking the stratigraphy to damages and instabilities, it offers a first appraisal of the effects of earthquakes on buildings, facilitating the interpretation or providing preliminary data that can be later compared to the written sources. Secondly, it provides a clear understanding of the state of preservation of the structures under investigation, especially in view of the planning of suitable interventions with a ranking of priorities that varies for each building. The experimental protocol proposed in our paper has shown the enormous potential of the application of the archaeo-seismological method to a building, especially if integrated with a correct and complete topographic survey, aimed at recording, identifying, and periodising the instabilities that have occurred over time. The ability to accurately characterise individual instabilities and periodise them through stratigraphic reading and the analysis of historical sources provides us with a profound knowledge of the fabric of buildings and their construction and mechanical history.