

Terrestrial Laser Scanner for Controlling the Deformations and Damage of Buildings .

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SUMMARY

The paper presents the use of terrestrial laser scanner for the study and verification of buildings damaged by natural events or intentional events. The terrestrial laser scanner provides the ability to detect the 3D model, to high-resolution, of a building without contact with the structure. Knowledge of the 3D model will allow the opportunity to study the deformation and the lessons of the building and thus provide the structural engineers and experts to restore the ability to make their own studies of an accurate 3D model.

Four case studies are presented relating to buildings damaged and/or unsafe. This is the Castle Sivillier (Villasor - Sardinia- Italy), the bell tower of Mores (Sardinia-Italy), the church of San Giovanni di Cagliari (Italy) and industrial building (Cagliari - Italy).

The first three cases concern the buildings of historical and architectural importance that present a state of conservation compromise, the last is an industrial building compromises by fire. In all cases was performed a laser scanner survey that allowed not only knowledge but highlighted metric deformations and degradation of the structure damages.

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