Building Response Due to Ground Movements

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Prediction of ground deformations due to excavations works and consequently the determination of potential building damage of the adjacent structures forms and important part of settlement risk management for underground works in urban surrounding. The requirements of the surroundings form a crucial boundary condition to the design of underground construction works in urban environment. Building Response due to Ground Movements focuses on prediction methods, which can either be used in the design engineering stage to predict building damage due to imposed ground deformations by excavation works, but can also be applied from a post-diction to analyse relations between excavation works and claimed building damage. Due to the great variety of excavation sources, foundation and type of surrounding buildings in the engineering practice, it is decided to focus in this work on the building response of masonry structures, founded on shallow foundations, due to TBM-tunnelling induced ground deformations. However the principles of the developed damage prediction methods also apply to other sources causing differential ground deformations on adjacent buildings.
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