

Complementing the Codes - Managing Ground Risk in Urban Environments

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The pressures on urban construction are continuously increasing in the European arenas. It is not only because of serious competition, still often based on solely lowest price. Also the ever-increasing complexity in urban environments, with many stakeholders and their often-conflicting interests, puts pressure on construction projects. Often rather poor ground conditions and vulnerable existing buildings and infrastructure complete the challenge. Finally, not to forget the tolerance of citizens for the inherent nuisance of construction activities reduced to a minimum over the years.

Recently the European geotechnical community made major steps forward, by drawing and implementing the Eurocodes, such as EC-7 and EC-8. These codes highlight the role of comparable experiences and harmonise geotechnical design in different European countries, with due attention to safety and reliability of geotechnical constructions.

However, a worrying tendency is arising in our societies. Like a lot of other disciplines, also the geotechnical profession appears to become frozen in codes and standards. Monkey-proof geotechnics, by just applying codes and standards, remains however an illusion. For example, simply applying geotechnical parameters of tables in codes and standards may probably result in a safe and reliable construction. However, we need to move beyond codes and standards, obviously without neglecting them, for real innovations, cost-optimisations and management of the unavoidable ground-related risk of urban construction. Professional independent and project-specific thinking and acting remains essential. Still too often urban projects run out of time, budget and pre-set safety and quality standards, with a lot of annoyance for the involved professionals and affected citizens, unless or thanks to a rigorous application of codes and standards.

This paper presents ground-related risk management as an essential complement to the actual ruling codes and standards paradigm. Risk management deals with the inherent uncertainty in any urban construction project, for instance because of unforeseen and unfavourable ground conditions, which can not be replaced by any codes or standard. Effective risk management, together with the application of codes and standards, is therefore a key success factor for any safe, profitable and sustainable construction operation in urban environments. A major element within effective risk management is the risk-aware attitude and behaviour of the involved professionals, both individually and in teams. Not just by avoiding each risk, but by dealing with uncertainty, risk and opportunity in a responsible manner, by balancing the interests of the many stakeholders in urban construction projects. This paper demonstrates how the combination of codes and standards with rigorous ground-related risk management provides a winning team for any construction project, small or large, in any type of urban environment.

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