



## **Predicting impacts of environmental change on subsurface-surface hydrological interactions in sensitive urban environments where in situ archaeological preservation is a key issue**

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Many European cities are built on layers of organic archaeological deposits. These deposits are preserved *in situ*. A holistic approach to subsurface hydrological understanding in urban sites of international archaeological importance is required and this poster proposes such an approach. These sites are subject to environmental change that may cause underlying organic deposits to decompose. This archaeological loss may also cause changes in downstream water quality, land stability, terrestrial carbon and water storage capacity. This will result from changes in: surface-subsurface flow partitioning caused by climate change; upstream land and water management; maintenance of potable supply lines; commercial building development and materials; artificial urban drainage and flood defence. For example, building construction does not just effect preservation directly below the site but it also impacts on lateral subsurface flow and hence on archaeological preservation at great distances from the construction site. The project aims to develop a methodology and gain public sector and commercial support for predicting preservation potential, flowpath routing and geochemical change under environmental change scenarios. The study has focussed on the internationally important site of York as case study for research development and the poster presents results from the site. The overall aim is to develop a model of subsurface water flow that incorporates parameters of importance for archaeological preservation. It is hoped that the spatial model will allow prediction to be made about likely future

preservation under management scenarios (e.g. new building development) in urban areas.