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Interdisciplinary landscape research in a medieval mound in one of the oldest Dutch towns, Vlaardingen, the Netherlands

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In Medieval times the city of Vlaardingen (the Netherlands) was strategically located on the confluence of three rivers, the Meuse, the Merwede and the Vlaarding. A church of early 8th century was already located here. In a short period of time Vlaardingen developed into an international trading place, the most important place in the former county of Holland. Starting from the 11th century the river Meuse threatened to flood the settlement, and as a reaction to it inhabitants started to raise the surface. This resulted eventually in an enormous mound, surface: 200 by 250 meter, built up in a four to five meter thick sequence of clay and manure in which organic rests of former occupation are extremely well preserved, e.g. wooden posts, mesh walls, but also leather objects. Early 2002 graves were found in the city centre, dating 1000-1050, in which not only the wooden coffins, but also the straw that covered the deceased. In human teeth DNA appeared to be well preserved, classified as the oldest in the nation, turning the church hill into a large database of human DNA. To secure the future of this vulnerable soil archive currently an extensive interdisciplinary research (mechanical drilling, grain size, TGA, archeological remains, osteology, hydrology, dating methods, micromorphology, microfauna, molluscs, diatoms) has started in 2011 to gain knowledge on the internal structure of the mound as well as on the well-preserved nature of the archaeological evidence. In this presentation the results of this large-scale project are demonstrated in a number of cross-sections with interrelated geological and archaeological stratification. Results of GSA (including end-member analysis EMMA), TGA, XRF and micromorphology analyses are presented. Distinction between natural and anthropogenic layering is made on the occurrence of chemical elements phosphor and potassium.
Results of this research are also applied in the construction of the 3D model of the subsurface (this session, abstract Roozen et al.).