

## **Art and geology – anthropogenic strata and latent soils of Vienna**

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The multidisciplinary project “The Anthropocene Surge – evolution, expansion and depth of Vienna’s urban environment” looks at the anthropogenic grounds of Vienna from a geological, geostatistical, archaeological, and artistic perspective. Data are used from more than 1,200 archaeological excavation sites and the well logs of the Baugrundkataster, ca. 63,000 well cores drilled over the past 190 years (datasets are provided by the Stadtarchäologie Wien, Wien Museum and MA 29 Brückenbau und Grundbau, Stadt Wien). Kira Lappé uses geostatistical methods to make human intervention in Vienna’s ground visible by interpolating the lower boundary of anthropogenic ground, quantifying its volume, and creating digital models. Through this method, the development of anthropogenic accumulations in this city and their expansion are traced in space and time. Well log descriptions allow to quantify and localize new “anthropocene” materials. Owing to Vienna’s history and its local database, Vienna functions as an ideal ground for the purpose of this study. The Viennese geologist Eduard Suess (1831–1914) was the first earth scientist to publish a geological map and description of a city – his hometown Vienna. By witnessing the razing of the old sixteenth-century city fortifications between 1858 and 1864, he recognized what massive layers of earth could be of human origin, and Suess created the term Schuttdecke or “rubble layer” for these geological unit(s). Katrin Hornek creates artistic formats that allow recipients to imagine and, at best, sense the newly forming urban layers. According to the artist, the aim is to give a body to this “difficult-to-access, complex, constantly changing artificial strata of the city.” This spatio-temporal entity emerges in the reception of the multimedia installation Latent Soils, with the individual parts of the case study enabling different approaches. At the center of the artistic part of the project is the video and sound installation “Der Boden von Wien”, which allows the viewer to hear and see all the words that have been used since 1831 in the City of Vienna’s Well Core Cadastre to record the human-modified ground of Vienna. The 87,963 material entries – including errors, variant descriptions, abbreviations, and combinations with punctuation marks – were ranked by frequency and read in an eight-hour session by performer Sabina Holzer. The long list of designations makes the extent of human intervention, its rapid acceleration in recent decades and its materiality tangible. The reshaping of urban ground can be grasped in videos like “Latent Soils”, with thousands of images from the city’s archaeological archive fed into the Style Generative Adversarial Network of the platform Runway. This algorithm used deep learning methods to synthesize pictorial elements and thus created possible datasets to come. Endless sets of image streams are opening a space of countless futures to unfold. With Algorithmic forms casted in disturbed soils, Hornek transfers this potential back into analogue space and into the present by materializing digital objects created in the process of synthetic image generation as sculptures. The artist uses as molds accumulations of modified Viennese ground—the very material from which the images have emerged.