

## Decontamination methods used on the IN Campus location in Ingolstadt

The location is revitalized in an environmentally friendly manner using groundbreaking decontamination technologies.

- **Air sparging – using air to get rid of contaminants:** Air sparging removes highly volatile contaminants from the groundwater and soil. Using hundreds of giant "straws", air is injected into the water and travels through the contaminated area. The injected air absorbs the contaminants that have dissolved into the groundwater, before being extracted via vacuum points set up just under the ground surface. The contaminated air is then released into the atmosphere, but only after being thoroughly cleaned. Over an area of 100,000 square meters, up to eight systems can operate fully automatically at the same time. With this setup, 400,000 cubic meters of ground are cleaned, removing all of the highly volatile contaminants. At the same time, the ground is supplied with oxygen in order to facilitate the natural breakdown of non-volatile contaminants.
- **Excavation – decontamination using the honeycomb method:** This is a low-emission method for replacing contaminated soil. Hexagonal steel honeycombs measuring ten meters in length and two meters in width are placed in the ground, and the contaminated soil material within the honeycombs is removed and replaced by uncontaminated material. The honeycombs are then taken out of the ground again. This process guarantees the removal of all contaminants in 600,000 tons of contaminated soil material from the polluted sub-surface areas without leaving any residues behind.
- **Soil washing plant – cleaning the soil one step at a time:** This plant is similar to a gigantic washing machine, with around 1,200 tons of contaminated material able to be washed every day. In total, more than 90% of the contaminated soil material is cleaned in accordance with the limits determined by the authorities and can subsequently be filled back into the ground. Less than 10% of the soil materials input into the plant is disposed of as waste.
- **Effluent treatment – a series of wells protects the surrounding area:** A series of ten wells ensures that contaminated groundwater does not flow into the surrounding area. These wells extract over 200 cubic meters of contaminated water from the ground every hour. A multi-stage groundwater treatment plant cleans the contaminated water prior to it being reintroduced into the groundwater cycle via huge seepage reservoirs located in the north east of the grounds. The plant technology features a 4.5-km-long pipeline network and guarantees a cleaning performance of 99.9%. The fully automatic plant operation for this hydraulic effluent treatment runs 24 hours a day, seven days a week and presumably for the next ten years.
- By order of IN-Campus GmbH, the redevelopment work is carried out by ARGE IN Campus GbR, a joint venture set up by ZÜBLIN Umwelttechnik GmbH, Geiger Unternehmensgruppe, and STRABAG Umwelttechnik GmbH.

c/o AUDI AG  
Audi Communications, Ingolstadt Site  
Christina Floss, 0841 89-38230  
christina.floss@audi.de