

UNDERGROUND UTILITIES AND STORAGE TANKS MAPPING GROUND PROBING RADAR

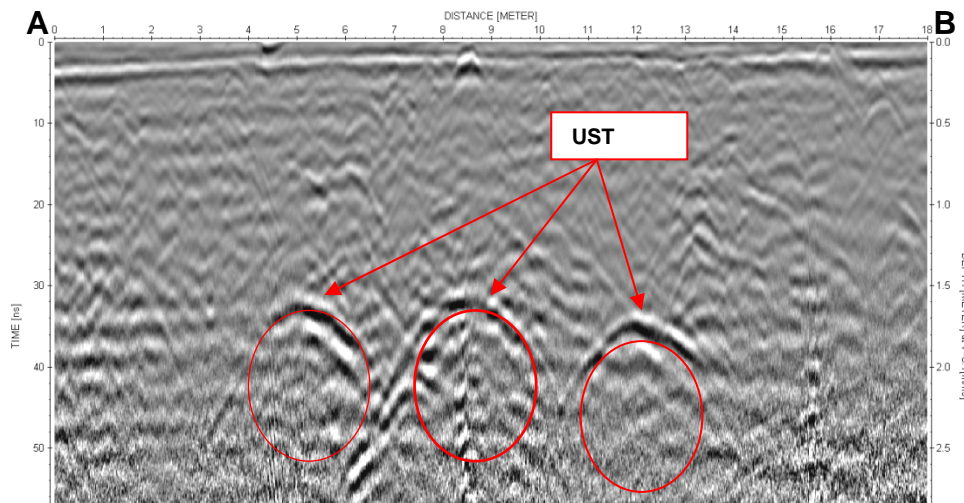
The foreknowledge on the type and position of underground utilities and of underground structures in the urban environment is of fundamental importance for each intervention of excavation, whether it is finalized to the laying of new pipes or, in general, of underground structures. The position of underground structures is not, in fact, always known or is not sufficiently detailed.

Among the indirect method of investigation, GPR is the more appropriate, because it combines fast survey and high resolution results.

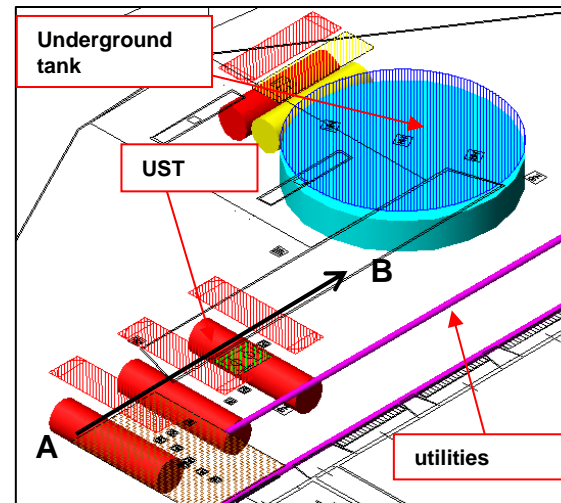
The GPR method is based on the reflection of electromagnetic waves generated by elements different dielectric characteristics, and highlights "shapes" easily associated to artifacts buried (for size, continuity, etc..). The metallic elements, in particular, determine strong reflection of the electromagnetic signal, and are easily recognizable. The survey according to a regular grid of GPR sections allows a precise reconstruction of the underground structures

The example below refers to a survey into a big petrol station . The survey GPR has allowed to detect the precise location of three metallic tanks for the storage of fuels and a tank in reinforced concrete currently out of use (historically known but not more localizable). We have also identified two unknown and hidden tanks. These indications have optimized the excavation works, preventing damage to structures and risk of pollution

Georadar section



3D reconstruction of the buried structures



GPR equipment



Progetto: Detection of Underground Storage Tanks and utilities in a major petrol station (Italy, 2007)

Survey details:

400 MHz with grid lines of 0.5 x 0.5 m on an area of 1200 m².