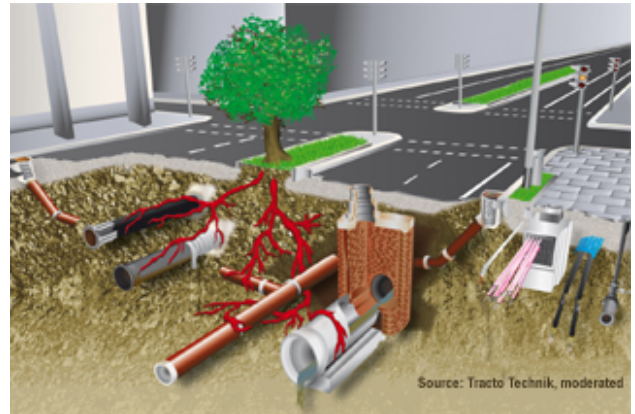


Crowded Underground – soil and in-fill material requirements



The underground space, showing its diverse uses in urban areas

Things are getting tight under our towns and cities! Germany has more than 2.7 million kilometres of supply and disposal cables and conduits installed underground. There are drains, sewers, gas, water and district-heating pipes, plus electricity and telecommunications cables under our streets and pavements.

The use of underground space

We must also add higher requirements for seepage drainage of rainwater, while streetside trees and other vegetation also demand space underground for healthy root and plant growth.

Every utilisation requires corresponding ambient conditions. This is true both of the civil-engineering and horticultural properties of the soils and in-fill materials used, and of the natural functions of the soil. In practice, this can result in overtaxing of the underground, with significant conflicts and development bottlenecks as the consequence. Appropriate

solutions are needed both in planning and in civil engineering. Important lines of argumentation and developments for the German-speaking regions are examined below.

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