

Florence, Italy
30th September – 2nd October 2019

(2387)
Trenchless
Technology Case
Studies

Consideration in
planning
successful
trenchless utility
installations

Paper Ref #
(the paper ref# will be supplied to authors)

Consideration in planning successful trenchless utility installations

Loui Thomsen¹, and Karina Buus²

¹ Project Manager, Department of Water and Nature, COWI A/S, Denmark

² Project Director, Department of Water and Nature, COWI A/S, Denmark

ABSTRACT: In the northern part of Europe many no dig installations are done on a slim baseline of preliminary investigations, assessments and planning.

It's not just about choosing the right trenchless technique but also considering many other factors in the planning phase to insure a successful installation. Based on more than 10 years of experience COWI has developed a good praxis for this which we would like to present.

The presentation will be centered around:

- Overall assessment of client demands to installation
- Mapping of relevant authorities
- Mapping of geological conditions
- Conceptual design of installation
 - Evaluating of relevant installation methods
 - Overall risk outline
- Planning of final investigations of geology
- Detailed assessment of recommended installation practice and alinement
- Detailed assessment of the effect of the installation in consideration of authorities demands
- Detailed risk assessment

During the presentation varying cases will be discussed:

- Pipelines by HDD for cooling water to the Danish museum of Art through the protected Royal Garden of Rosenborg palace in Copenhagen. Restrictions from authorities, short time window and narrow work conditions was some of the challenges.

- Pipelines by HDD for cooling water in Copenhagen, under narrow work condition, passing underground constructions such as an historic tunnel, water tunnel and bridge foundations and finally a rail track. An 3D planning tool¹ were used to make it possible to find the possible route.
- Establishment of two sewage pipelines under Mariager Fjord in extremely soft soil. Initially planned as HDD but the detailed analyze showed a trenching method to be the right method.
- A ø1600 mm sewage pipeline in the center of Randers, established by micro tunneling.

Figure 1: Clip from the 3D model tool used to find the optimal pipeline route.

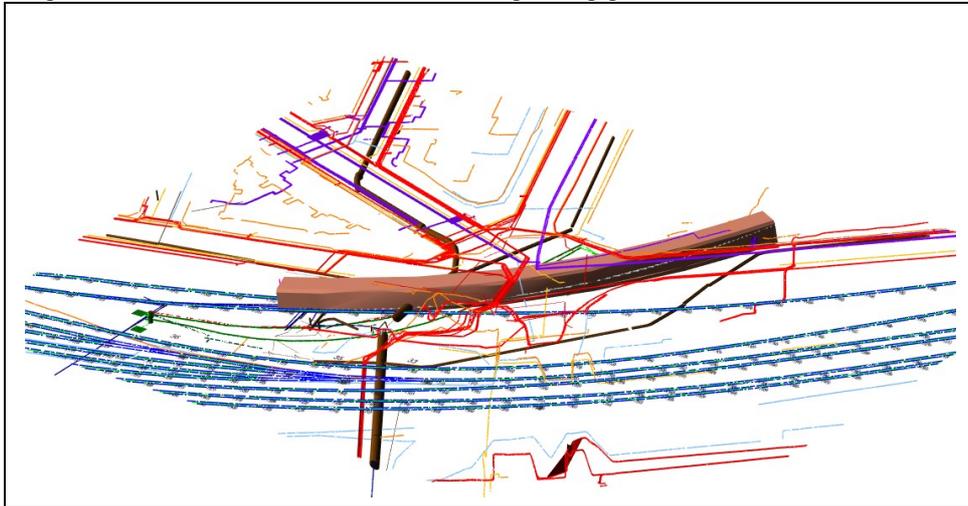


Figure 1¹:3D planning tool

Figure 2: A few fotos to enlight



Figure 2: A few fotos to enlight