

Foundation improvement of historical buildings by micro piles Museum Island Berlin, St. Kolumba Cologne

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structuring

1. introduction

2. micro pile as foundation improvement element

3. case histories

3.1 Museum Island, Berlin

3.2 St. Kolumba, Cologne

4. conclusions

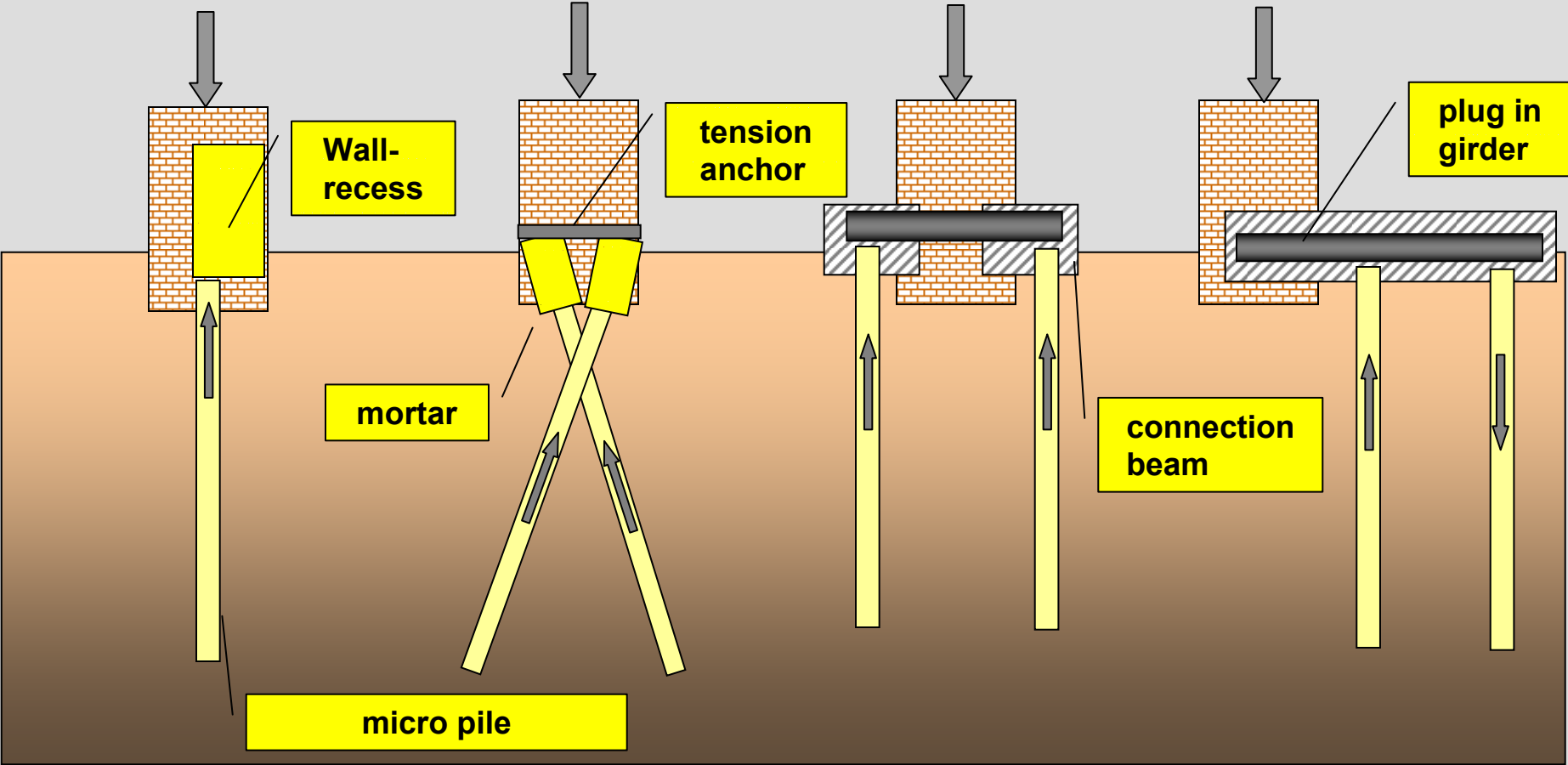
Stump-system steel-tube pile

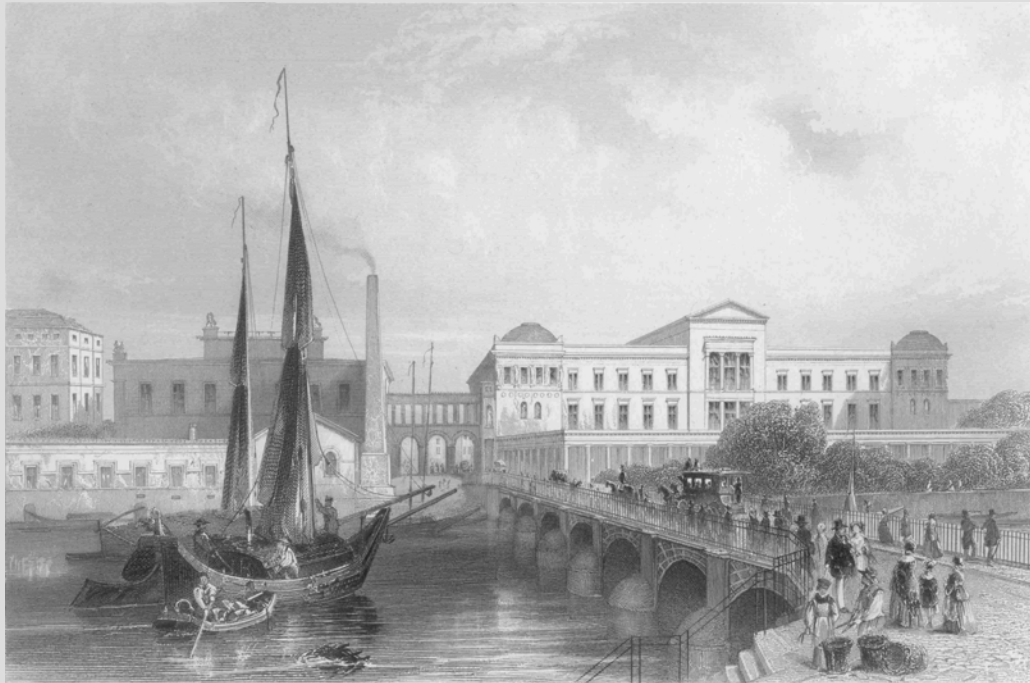


Stump-system composite pile



Load bearing systems and wall connections





Museum Island, Berlin New Museum

Erected 1841 – 1855

Destroyed WW II

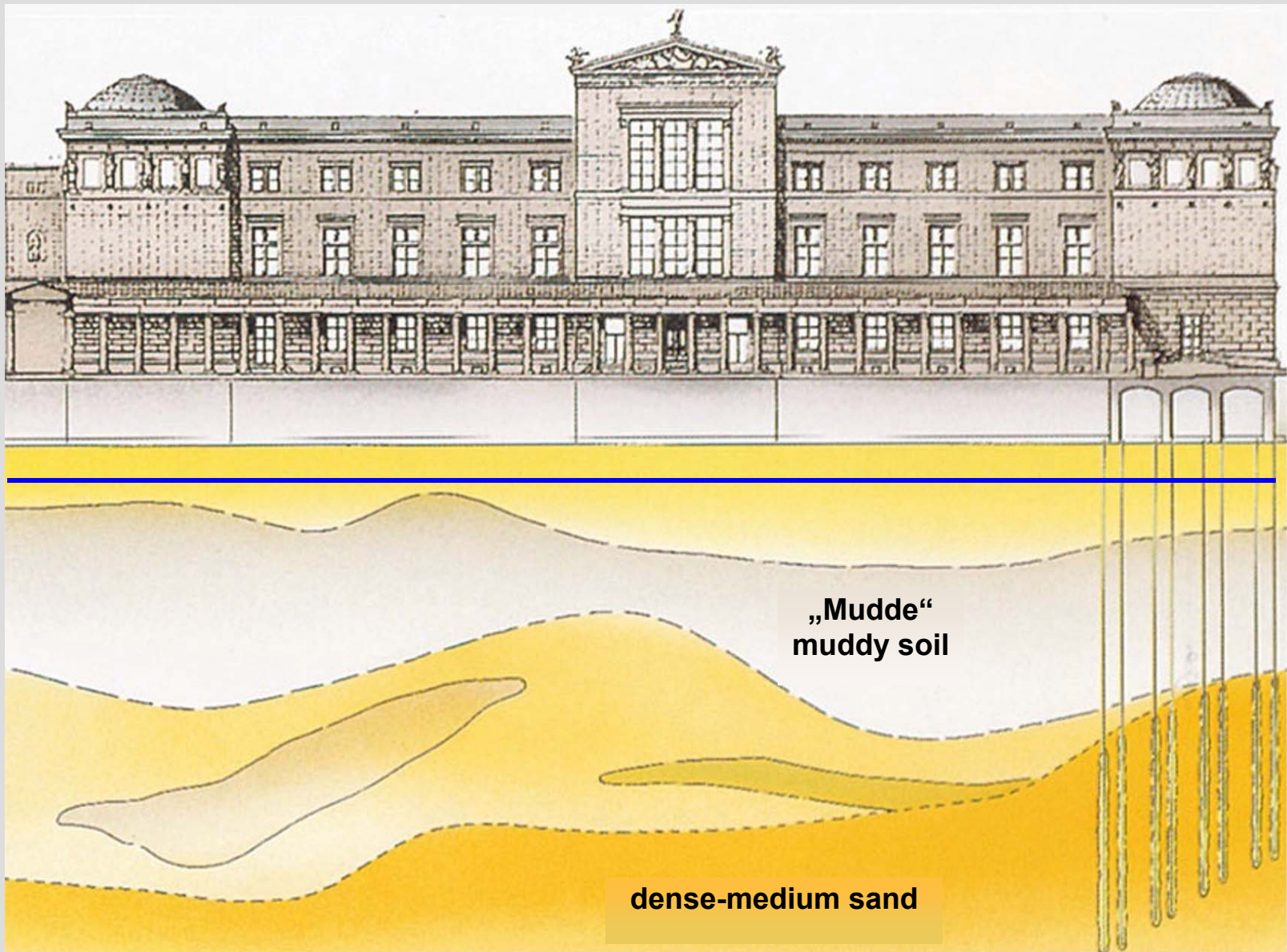
Renovation 1990 - 2009



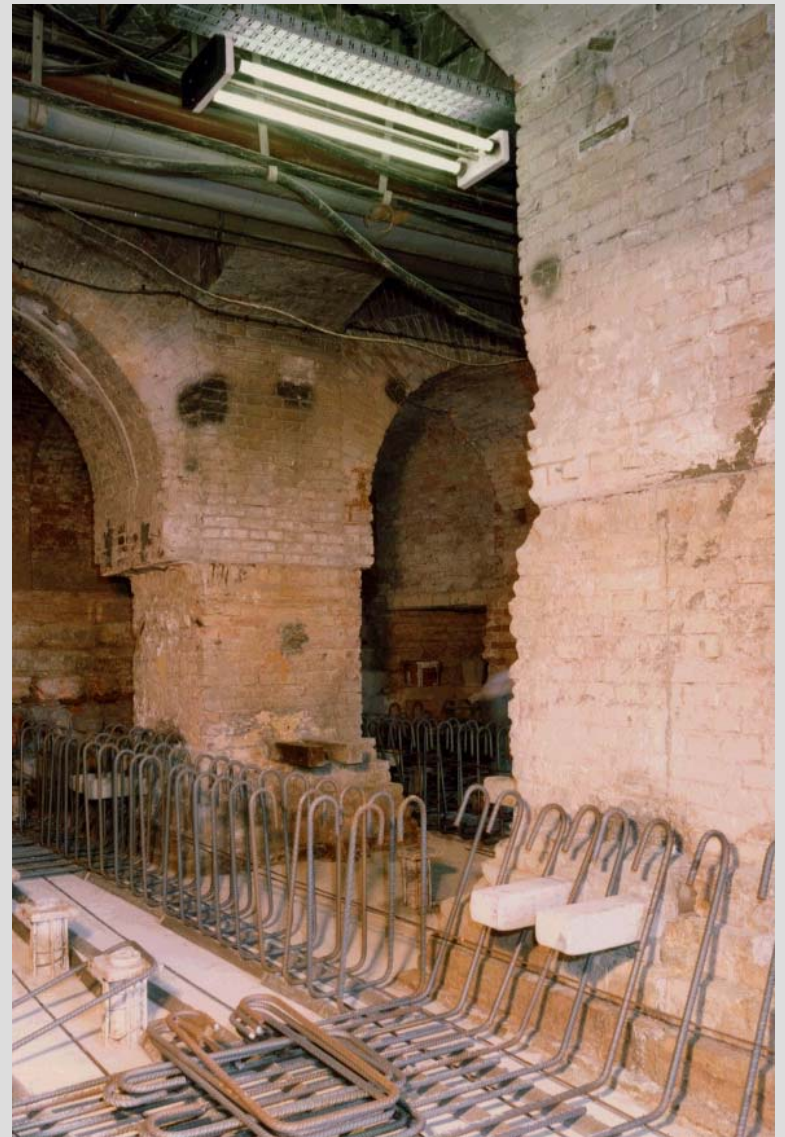
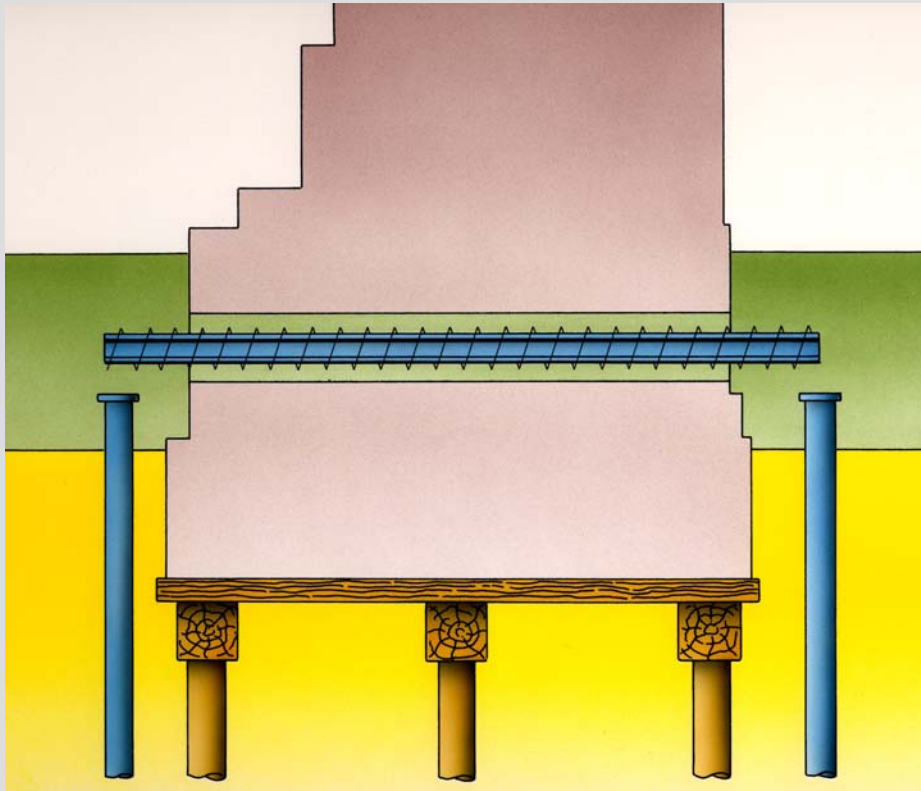


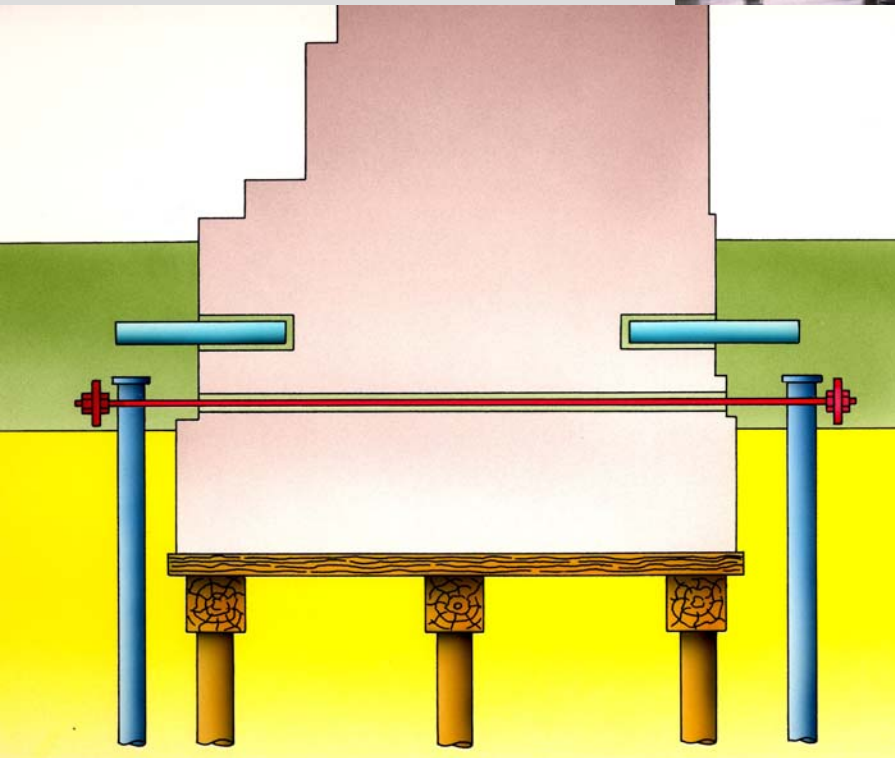
Museum Island, Berlin New Museum











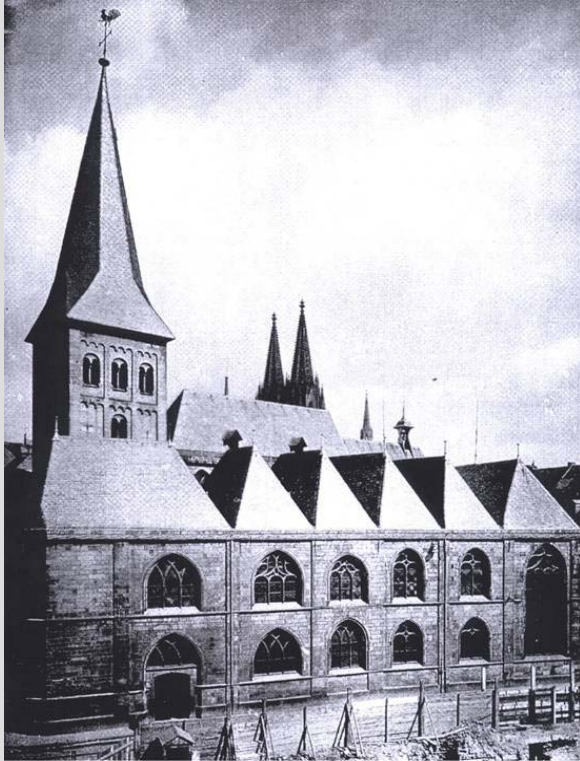








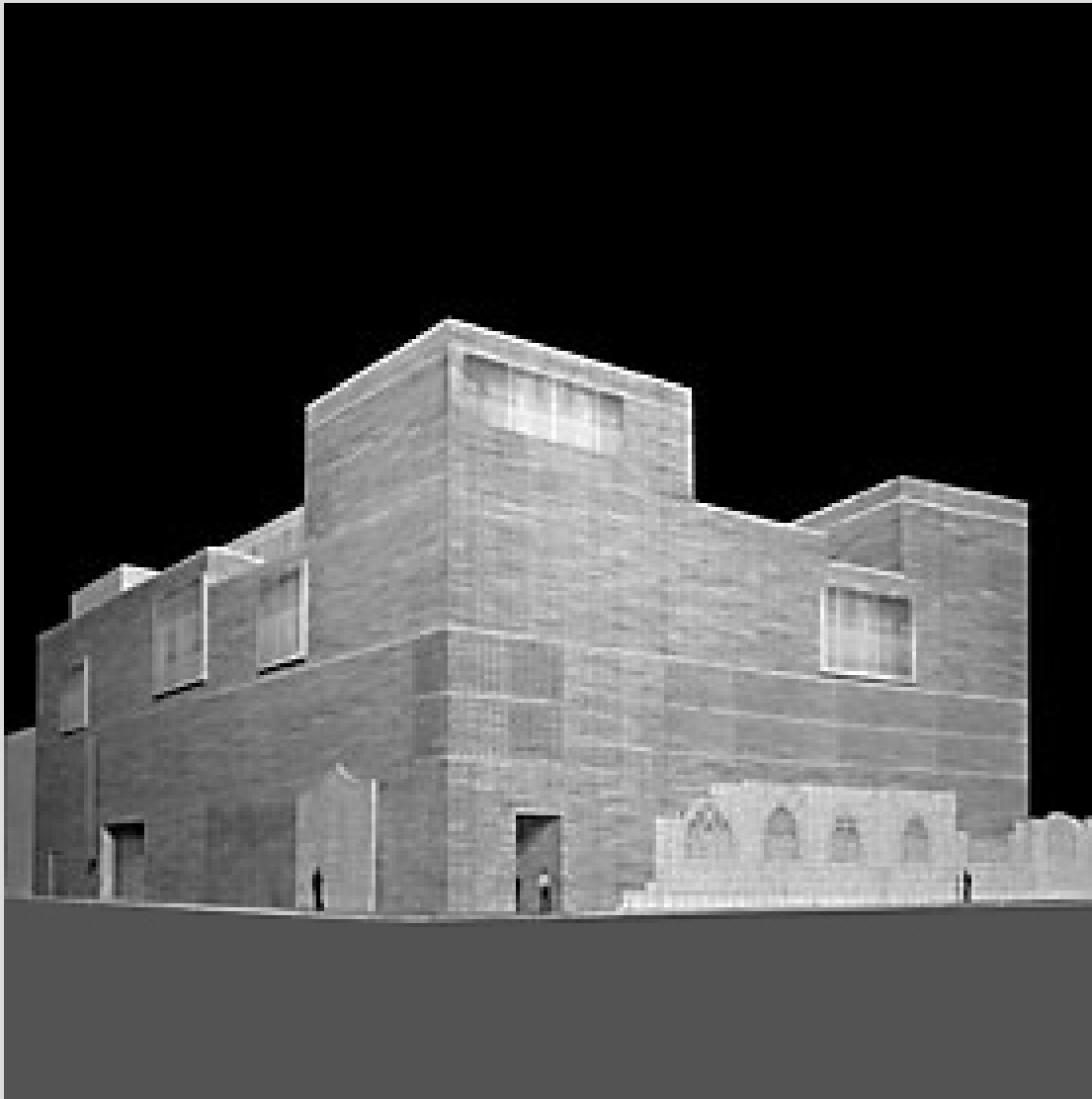
History of St. Kolumba



church before WW II

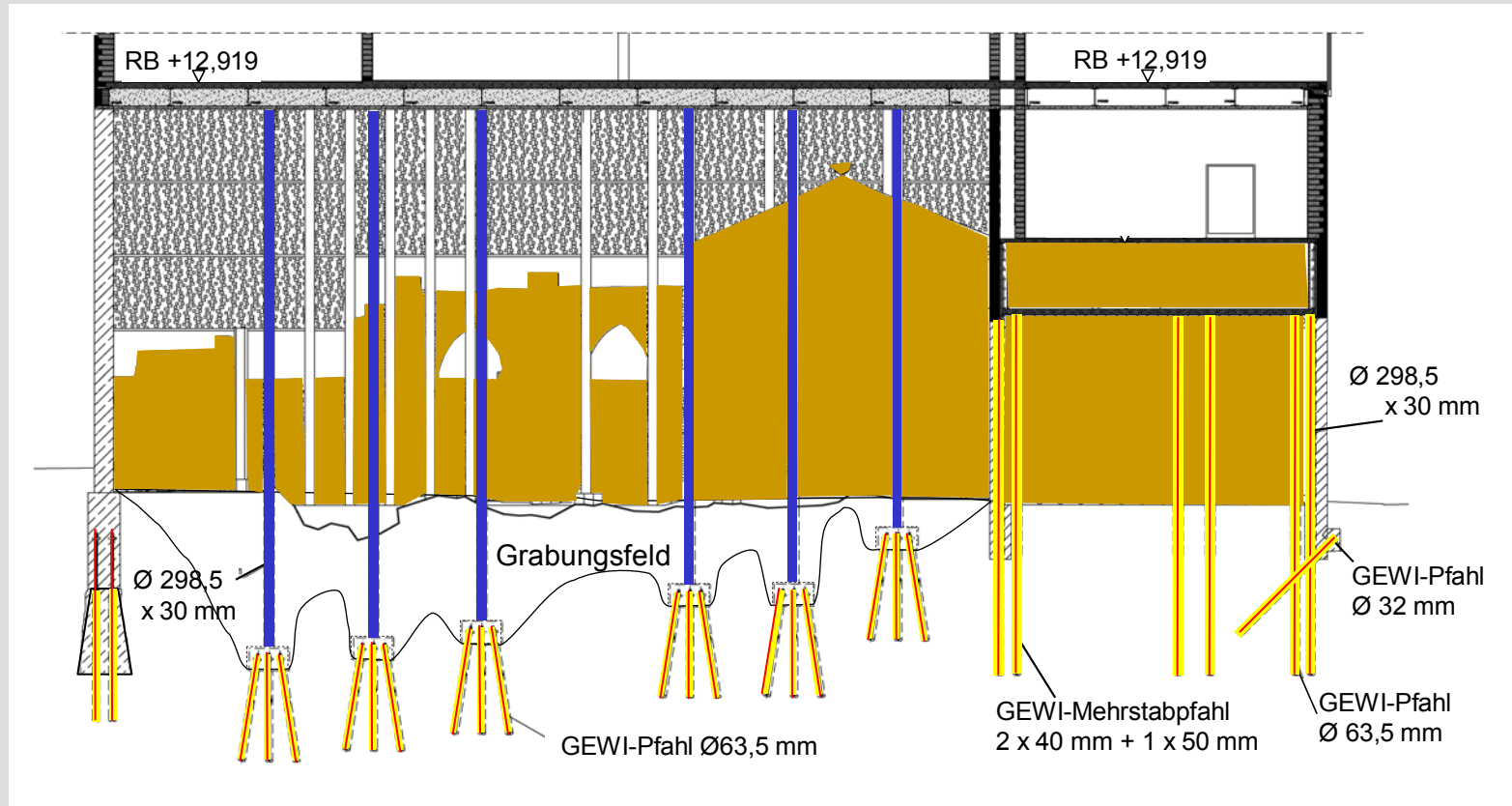


church short before renovation



concept of new
Diözesanmuseum
above the ruins
of St. Kolumba
by
Peter Zumtor

Foundation concept new Diözesanmuseum



cross section digging field

preparing investigations



test drilling



before

masonry core

after grouting



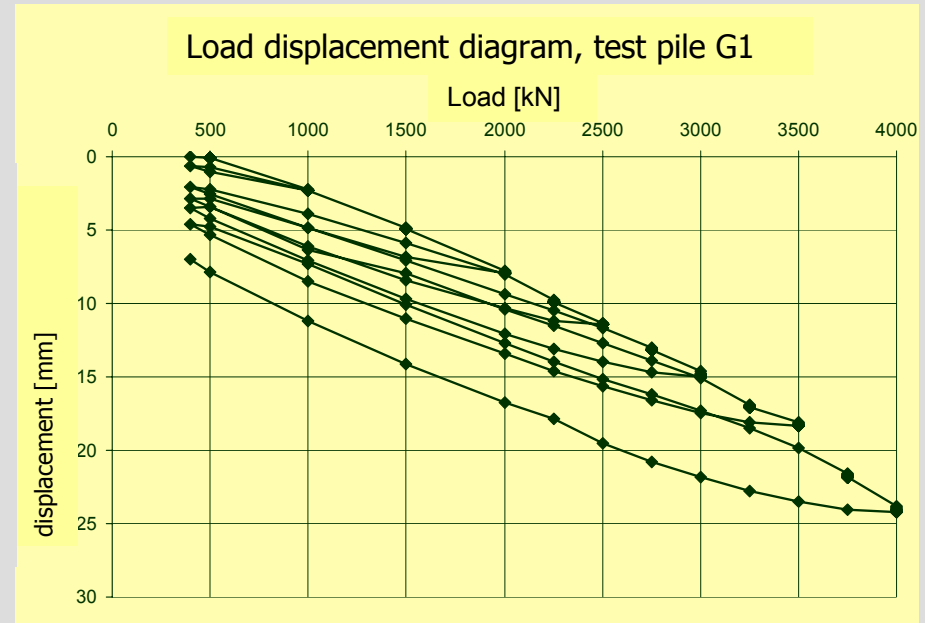
preparing investigations



execution of pile test

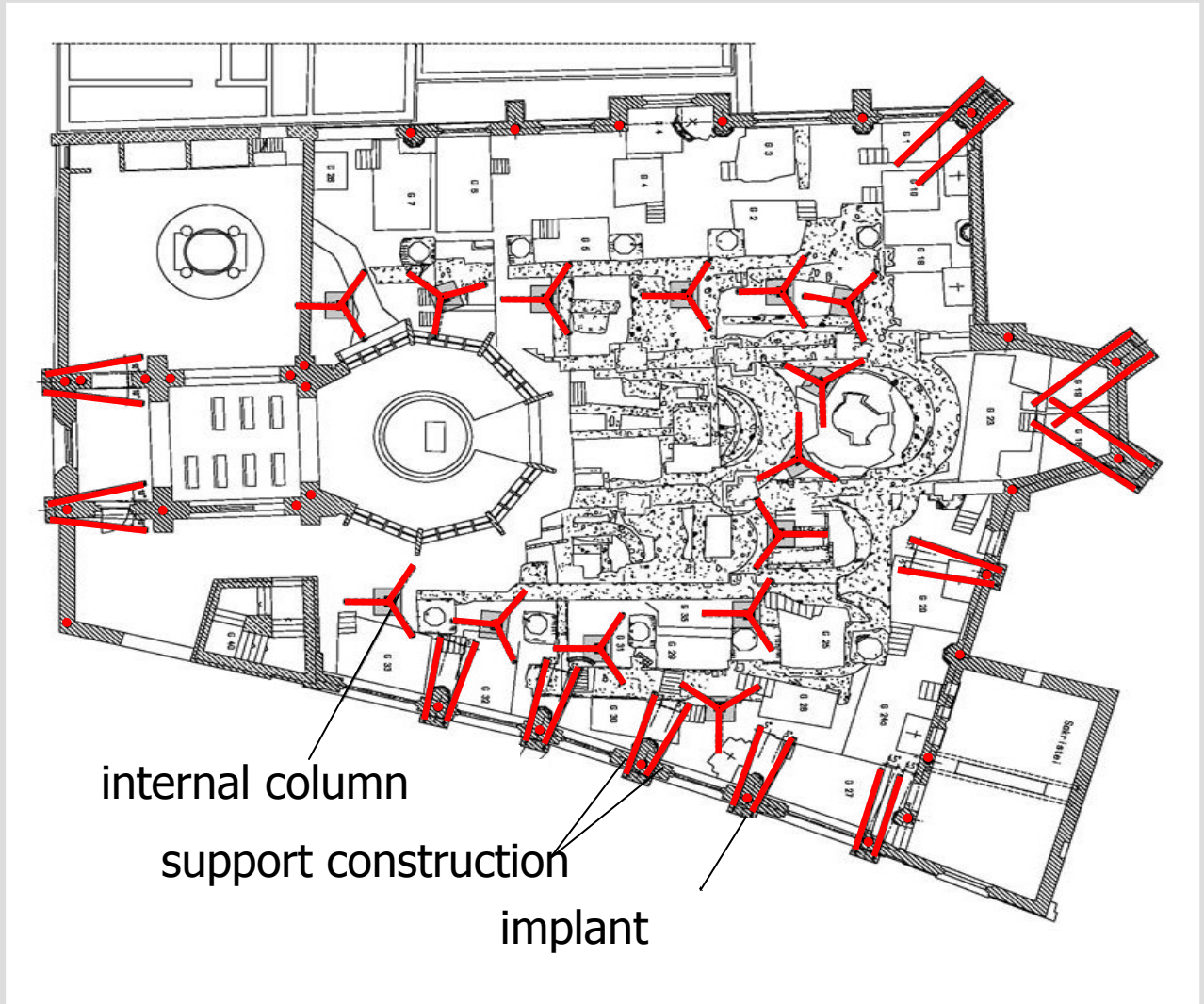


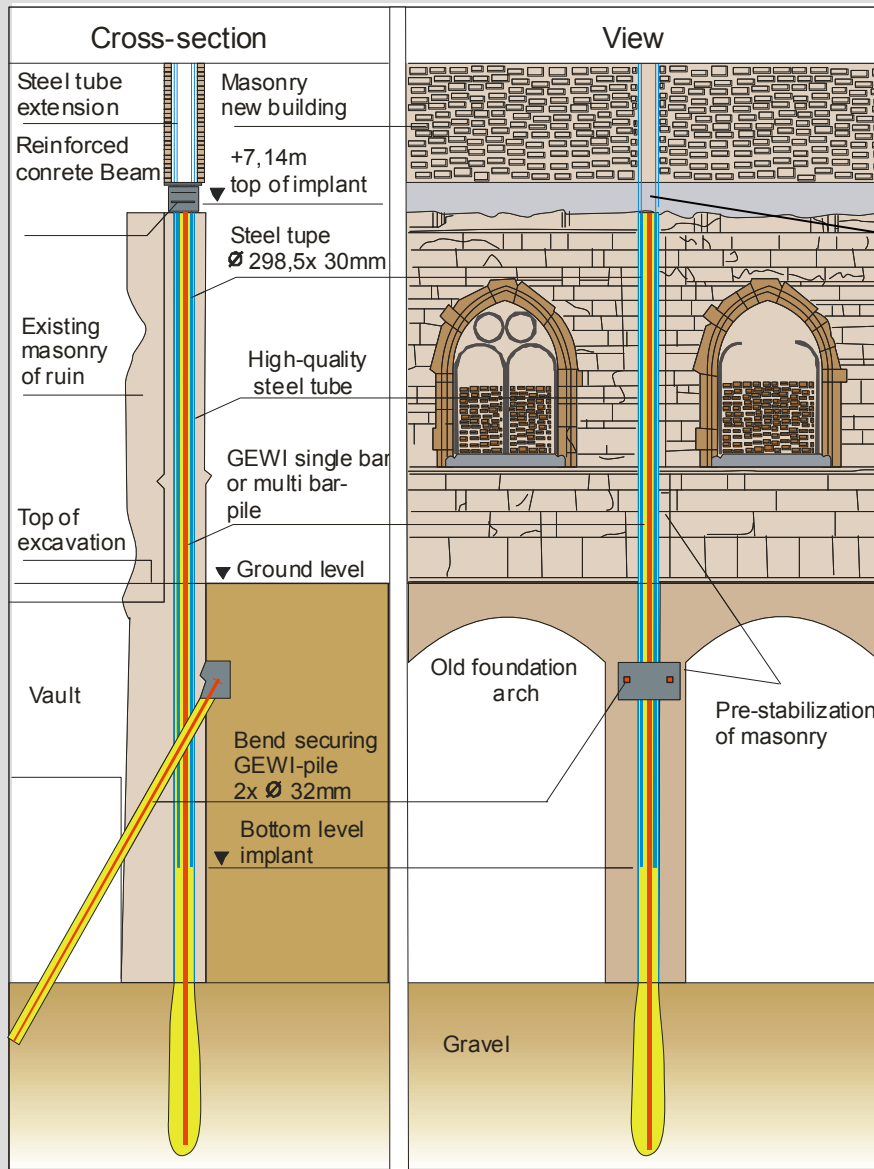
pile test equipment



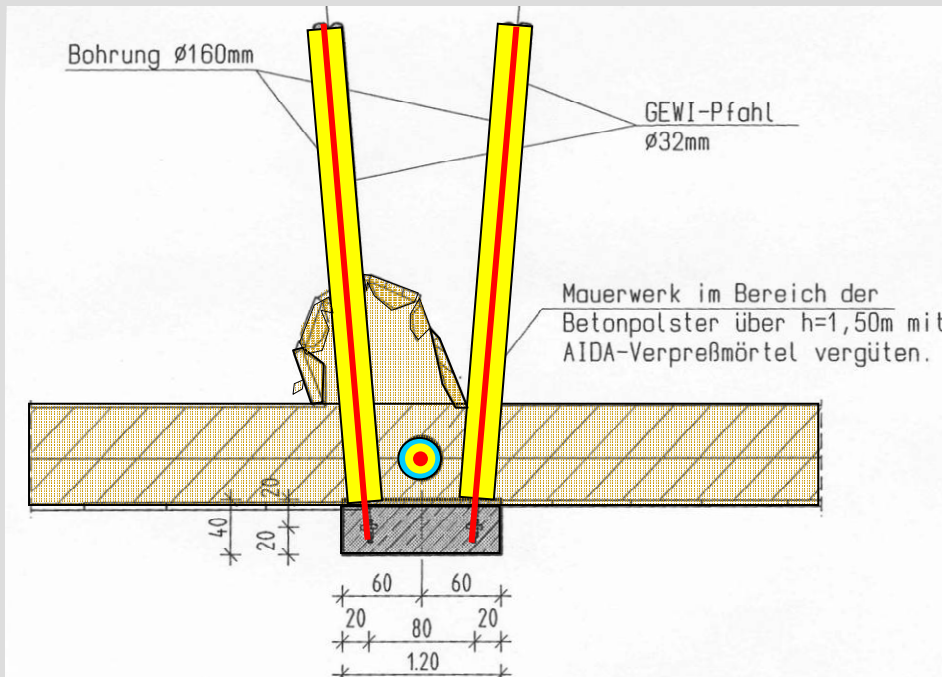
proof load 4000 kN

View arrangement of implants and nailcolumns

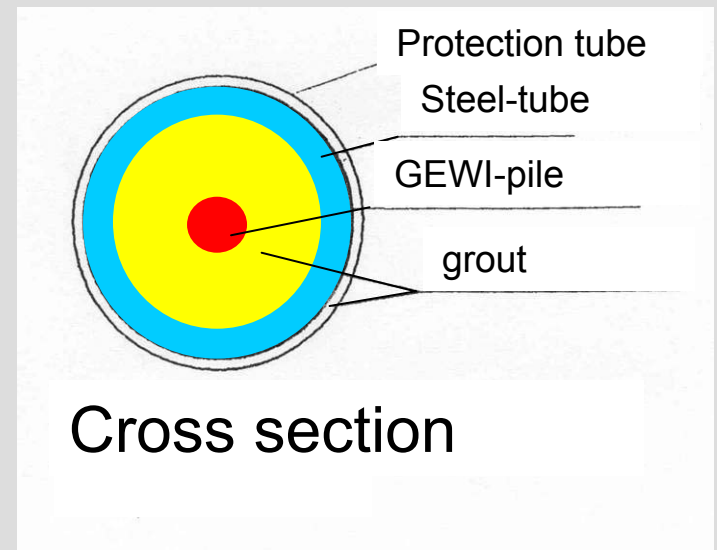




implant in the
outside walls
(cross section and view,
detail implantcoupling)

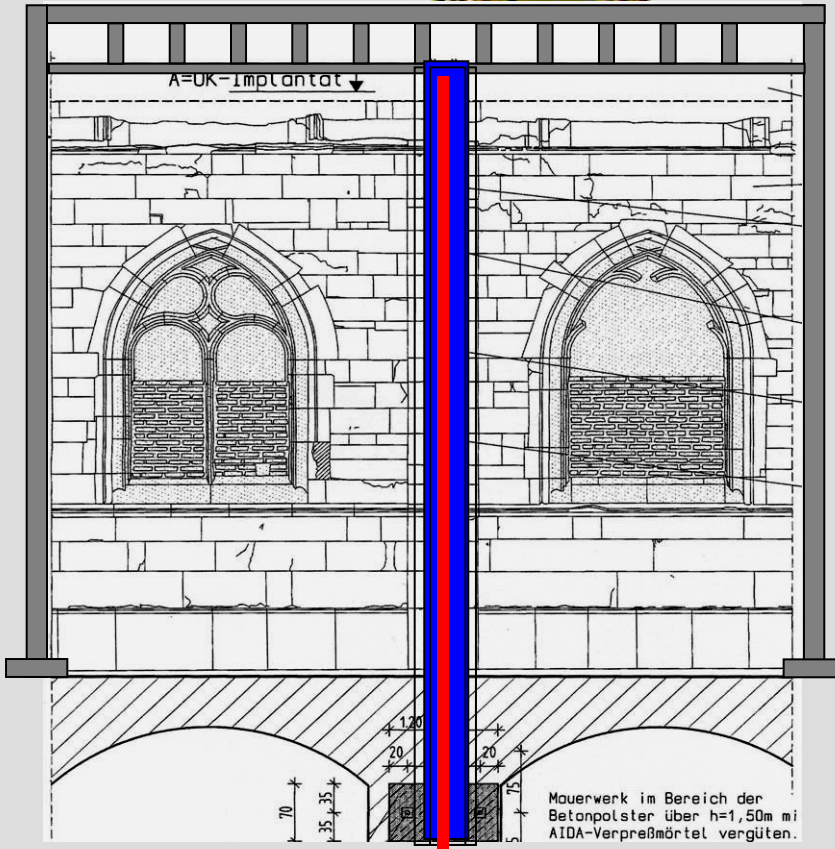
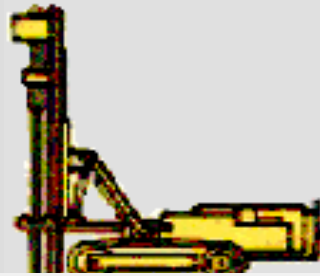


Steel tube (298,5 x 30 mm)
 Special-steel-protection tube (330 x 5 mm)



view masonry column and cross section implant

Pile production



1

installation drilling platform

2

core drilling 350 mm

3

implant tube 298,5 mm x 30 mm

4

GEWI-pile drilling 219 mm

5

GEWI-pile installation



Core drilling through the old walls

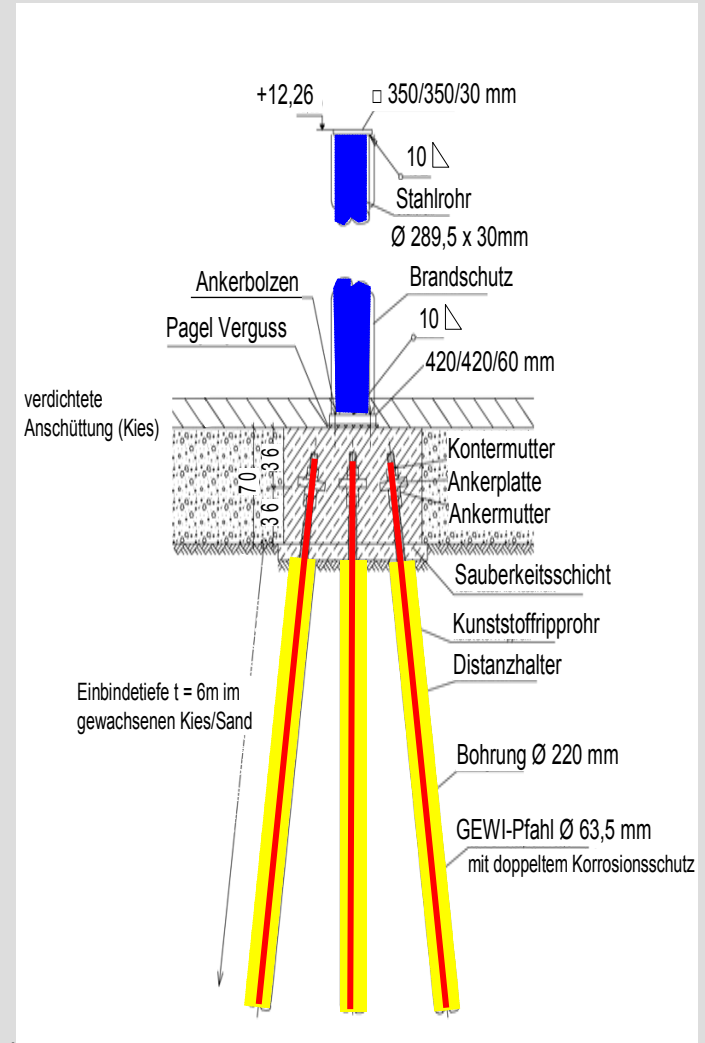


drilling for pile installation





foundation
nailcolumns
digging field





Drilling for micro piles at the chapel and on the digging field

conclusions

- introduction of project specific measures
- quality safety programme

**Thank you for your
attention**

