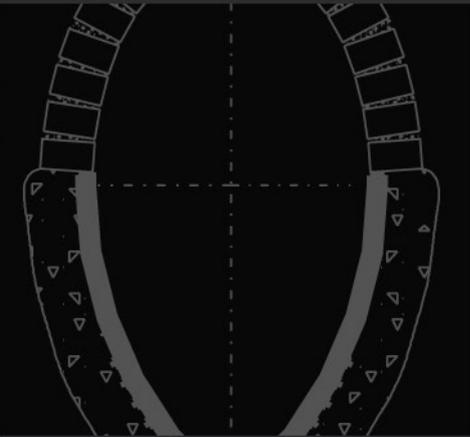




Sewer Rebuilding Solution for Flood Damage Repairs

underneath Pařížská Street Prague



Sewer repair and reconstruction

underneath Pařížská Street



phase 1
The original worn lining system
at the bottom of the sewer.



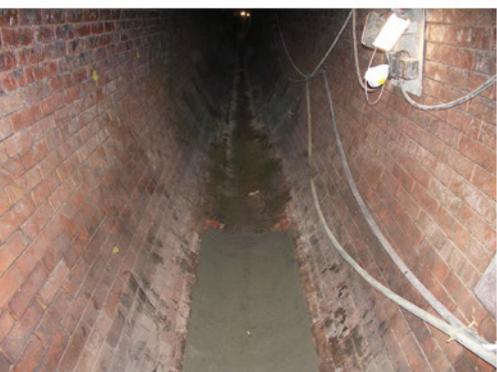
phase 2
Filling in the voids behind the original lining
with new mortar.



phase 3
Removing the original bottom gutter section.



phase 4
Excavating original bottom liners and
2 rows of bricks.



phase 5
Back filling in the voids with concrete where
damaged gutters and bricks were removed.



The "A" sewer, commissioned in 1907, flows directly underneath and through the Old Town Square in the historical centre of Prague. Here, beneath Pařížská Street, the water is sent under the river, through an inverted siphon, and then on to the waste water treatment plant.

Following the 2002 floods, faults were found with the system that needed to be rectified immediately. In addition to the voids behind the lining which had been caused by the floods, there was also considerable wear of the gutter and brickwork that made up the bottom of section of the sewer.

Cast basalt was selected to repair the bottom of the sewer because of its excellent durability, chemical resistance and abrasion-resistant properties.

Technical parametres

Length	608 m
Profile	1 600/2 400
Gradient	0,2%
Sewage flow rate	250 l/s
Storm-water flow rate	5 500 l/s

Description of the Sewer Repairs

- Upon initial assessment of the original brickwork in the sewer it was found that, once the voids behind the lining had been back filled with cement or concrete, the structure would be sufficiently load-bearing.
- Damaged gutters from the bottom of the sewer were removed and replaced with new cast basalt guttering.
- The sidewalls of the sewer were refurbished by bedding and bonding cast basalt segments over the original brickwork.
- The cast basalt lining system was tied into the structure by installing an L shaped finishing block, the shorter side of which was fixed and bonded into the milled groove in the existing brickwork.
- The cast basalt blocks were fixed and bonded using a special chemical and water proofed adhesive compound.

phase 6
Bedding in new cast basalt liners using special purpose mortar.



phase 7
Cutting the groove into the brickwork to hold the interlocking cast basalt 'tie in' L shaped liner.



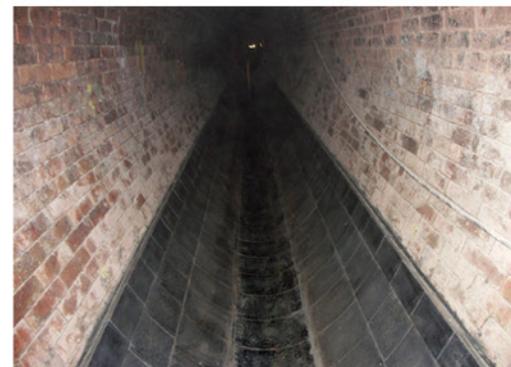
phase 8
Groove cut into existing lining ready for finishing L shaped basalt liner.



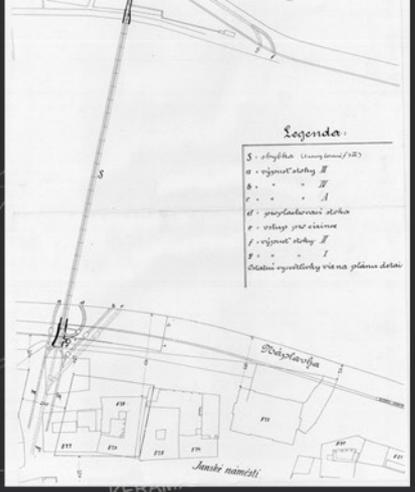
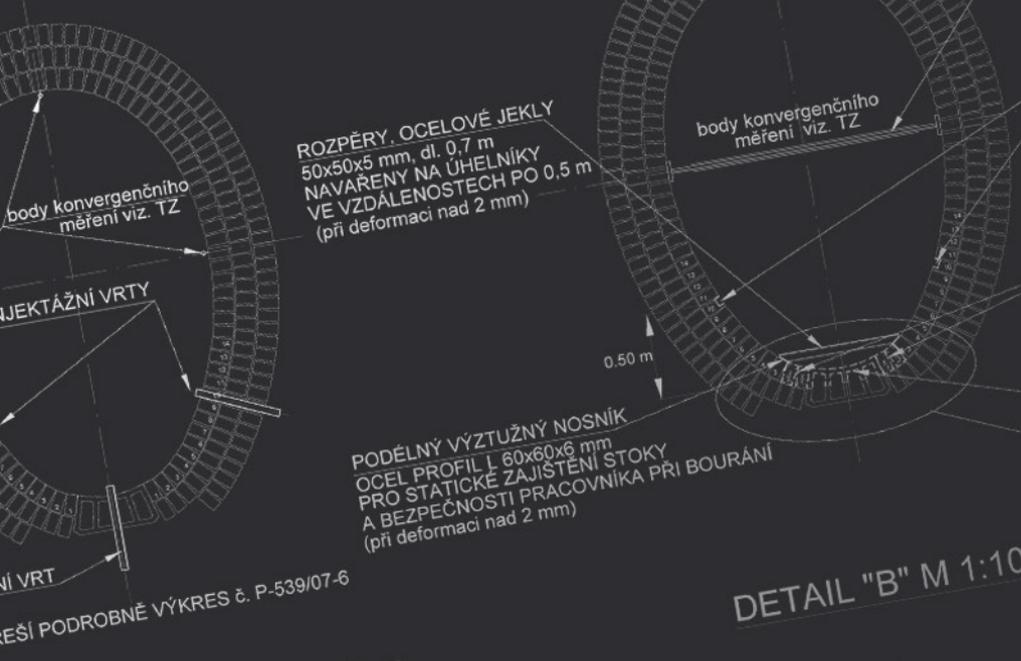
phase 9
L shaped basalt 'tie in' tile fixed in the prepared groove.



The bottom section replaced with basalt lining system.



élce 229 m



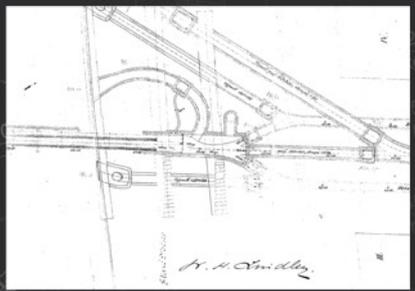
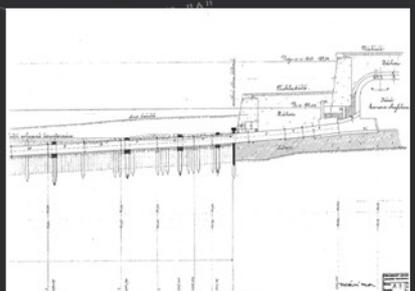
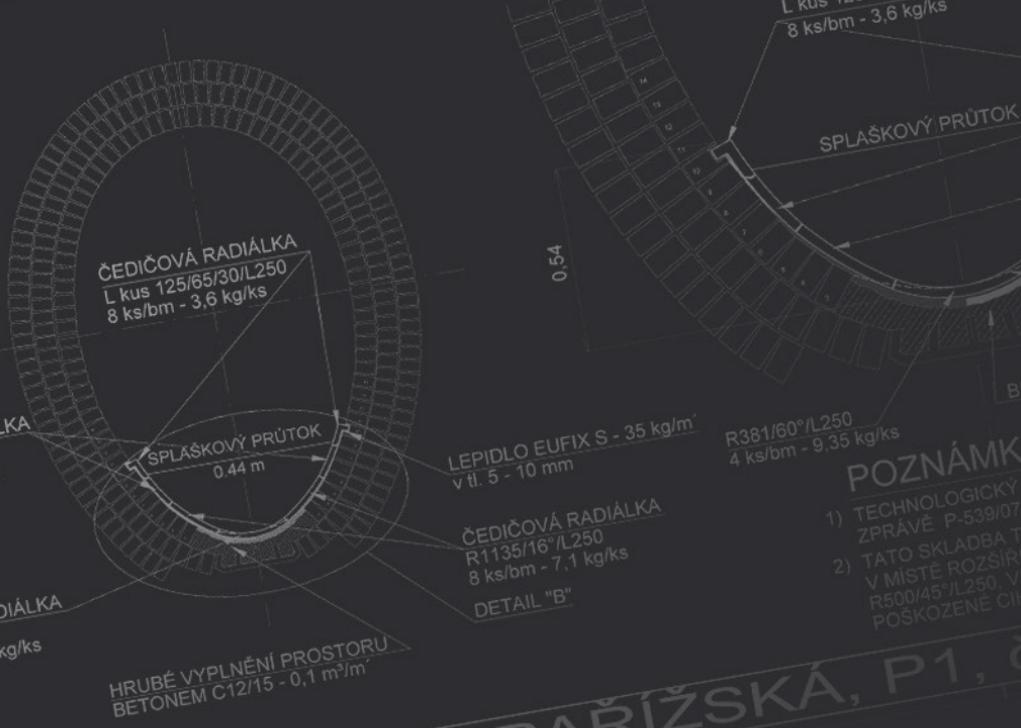
PODÉLNÝ VÝZTUŽNÝ NOSNÍK OCEL PROFIL L PRO STATICKÉ ZAJIŠTĚNÍ A BEZPEČNOSTI (při deformaci nad 2 mm)

POZNÁMKA

KROK BOURÁNÍ KROK ROZŠÍŘENÍ

ROZŠÍŘENÍ

ŽLÁBEK V DÉLCE 588 m



A copy of the original drawing signed by W.H. Lindley.

British Civil Engineer William H. Lindley has left his footprint all across Europe: from St. Petersburg to Bucharest, from London to Baku. In Prague he contributed in a significant manner to the successful resolution of the city's unsatisfactory sanitary conditions. Lindley oversaw the construction of the sewage system in Prague built between 1895 and 1906, which is still in use today. Today's use of basalt will further extend the use of the system well into the next century!

POZNÁMKA
1) TECHNOLOGICKÝ ZPRÁVĚ P-539/07
2) TATO SKLADBA TĚLA V MÍSTĚ ROZŠÍŘENÍ R500/45°/L250, VÍŠE POŠKOZENÉ CIHLY

STOKY "A" ul. PAŘÍŽSKÁ, P1, Č



Greenbank Terotech
Hartshorne Road
Woodville
Derbyshire DE11 7GT
United Kingdom
T. +44 (0)845 0707 097 E. info@greenbankgroup.com

