

## New Cross shaft

New Cross, London

Keller was called in to reduce the permeability of the chalk in a shaft which was to be a starter pit for a new power cable tunnel beneath the River Thames.



### The project

As part of a new deep tunnel to house electricity supply cables between New Cross and Wellclose Square substations, ground improvement was required to allow the New Cross shaft to be constructed safely in stable ground conditions.

### The challenge

To improve the shear strength and reduce the permeability of the chalk surrounding and beneath the shaft location.

### The solution

The works were undertaken by drilling 71 small diameter rotary percussive boreholes through the chalk. Grouting was carried out by way of injection of a low viscosity microfine cement-based grout under high pressure. This was undertaken in controlled stages to target the fissures within the chalk. Target overall permeability was reduced in line with the specification to 2 to 5 Lugeons.

## Project facts

### Owner(s)

London Power Networks

### Keller business unit(s)

Keller UK

### Main contractor(s)

J Murphy & Sons

### Solutions

Groundwater control

### Markets

Infrastructure

### Techniques

Permeation grouting

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