TOOTING POLICE STATION

London, UK

Keller was appointed to deliver specialist geotechnical solutions for the sensitive redevelopment of the historic Tooting police station, a five-storey Grade II listed building dating back to 1939.

The project

The transformation of the site into residential apartments and community space required extensive structural upgrades, including the installation of two new lift pits, an additional storey, and the strengthening and underpinning of existing foundations. Keller's scope included the design and installation of 24 restricted access bearing piles to two new basement lift pits and 31 Pali Radice foundation strengthening minipiles to 8 more heavily loaded existing columns, all executed within the constraints of the existing basement structure and heritage structural framework

The challenge

Working within a confined and heritage-sensitive environment presented significant logistical and technical challenges. Pile installation had to be carried out from the basement level (16.5mOD) with restricted headroom, requiring bespoke rig access and careful coordination to avoid clashes with existing structural elements. Many pad foundations were only accessible from one side, necessitating raked pile solutions to achieve symmetrical load distribution. Additionally, the presence of shallow groundwater, legacy infrastructure, and variable ground conditions – ranging from Made Ground to Taplow Gravel and London Clay – demanded precise geotechnical modelling and robust risk mitigation strategies.

Project information

Application
Heritage building underpinning

Technique
Restricted access piling
Pali Radice (root piles)

Sector
Heritage building (housing)

Client
Perega Ltd

Main contractor
K2 Consultancy

Contract value
£235,000

Keller companies
Keller Geotechnique

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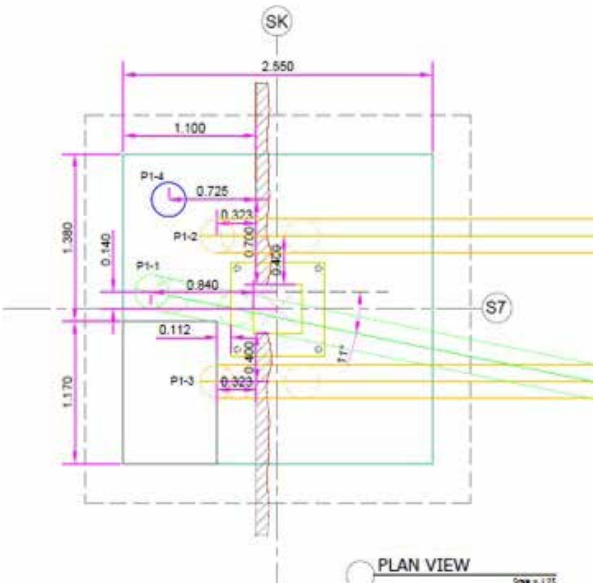
The solution

Keller delivered a fully engineered piling solution tailored to the site's constraints and structural demands. Using a combination of vertical and raked Pali Radice minipiles, Keller ensured effective load transfer and minimal disruption to the existing structure. Bonded connections between piles and existing pads were achieved using a roughened cutting crown technique, with grout-to-concrete bond stresses carefully calculated and verified. The design incorporated Eurocode-compliant load combinations, high-strength grout, and reinforced cages to meet both serviceability and ultimate limit states. Keller's collaborative approach with Perega and K2CM ensured seamless integration of piling works into the broader redevelopment programme, enabling the successful delivery of a structurally sound and heritage-respectful transformation.



Quote

Steve Attwood, Keller Technical Manager, said: "Working in a restricted basement within a listed Art Deco structure is never straightforward and with shallow groundwater and old infrastructure beneath the site, we had to be absolutely confident in our methodology."

Key achievements

Bespoke solution
Engineered and installed bespoke solution – including raked and vertical Pali Radice piles – within restricted headroom basement, ensuring structural integrity without compromising the heritage fabric.

Reliable adhesion
Designed and bonded piles directly into existing pad foundations, using roughened cutting crowns to achieve reliable grout-to-concrete adhesion.

Seamless integrattion
Delivered Eurocode-compliant geotechnical and structural designs, integrating seamlessly with redevelopment plans and enabling the safe addition of new lift pits and an extra storey to the Grade II listed building.