

London Expanding - Adding Value Through Fine Engineering

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Associate at WSP London's team, responsible for delivering some of London's most iconic buildings. Since the beginning of his career in 2009, Nello has delivered projects of varying scale.

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Since joining WSP in 2014, Brandon Eastwood has developed a passion in building design by contributing to the ever-growing city skyline through working on projects like TwentyTwo and Principal Tower.

1 Abstract

London combines a rapidly expanding population with ever-decreasing land availability. This equation continues to attract property investors and allows developers to deliver high quality buildings.

Typically, developments must respect local site constraints. London's rich construction archaeology – from Roman times to the post-war period – and the need to future-proof new infrastructure, create a unique blend of challenging constraints.

Unlocking such highly constrained sites by devising finely-engineered, sustainable and cost-efficient solutions has generated some of London's most iconic buildings. A typical example is the recently completed Principal Tower, a 50-storey residential development on the edge of the City. Sited between existing 19th century railway tunnels and a protected viewing corridor that restricts building heights, the tower also sits above provision for a future rail tunnel.

WSP overcame these extreme constraints by forming a deep 'concrete box' through the building's basement to support both the tower and the future railway tunnel. Adopting solutions associated more with heavy civil engineering adds significant costs, but enables high value developments on otherwise unremarkable sites.

This paper will examine some of London's most technically challenging sites, such as Principal Tower, 22 Bishopsgate and Shard Place and the advanced engineering solutions that have made these iconic buildings possible. Further details in the design of 22 Bishopsgate are given in Paper No 16601: *Twentytwo Bishopsgate, London*.

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