

## **Channel Tunnel Rail Link for High Speed 1 - Regenerating of St Pancras station.**

Technical Talk hosted by IStructE North Thames Branch.

Presented by Ian Gardner of Ove Arup and Partners.

The presentation provided a fascinating insight into the scale of such a project, the plethora of engineering disciplines involved and the intricacies of interweaving them within the site and project timescale. It also gave a view into the design philosophy of the original St Pancras Station structure along with its development history.

Ian began by identifying the commercial requirement for a high speed link between Central London and the Channel Tunnel. Previously, journey times onward from the tunnel were too long and the additional burden imposed on the South London Rail Network was problematic. These factors along with the project's potential to act as a catalyst for regeneration at Stratford and for a future high speed rail link to the North drove the project through, finalising its route to the East of London, through to St Pancras. The decision to surface trains 'for air' at Stratford broke up the long tunnel span, which negated the need for a third bore and enabled development of the area to what is to be the Olympic Village.

From here, Ian's presentation focussed on St Pancras station and the Kings Cross Lands. Although the site is relatively large for Central London, as expected, it is densely populated with city infrastructure including rail, road and canal links, sub surface river tributaries, gas pipes, electricity cables and even a cement works. This posed massive logistical challenges for the designers as it was necessary to keep all facility and transport services running as close to normal as possible throughout works to the entire site. This not only heavily influenced the design, but also had a massive impact on enabling works, the construction sequence and related deadlines.

Other topics addressed were relating to the philosophy governing the design of the original train shed and hotel. This included some interesting snippets of information from their history, details of the way in which the main structural arch worked both before and after the works and the relationship developed between the design team and English Heritage. This remarkable relationship ensured that best use was made of the original structure, highlighting its beauty and rich history, whilst developing a building for the future, both practical in its use and commercially attractive.

Overall, I found the presentation fascinating and thought it was exceptionally valuable to have been made aware of the project along with the experiences gained from undertaking it, especially as the end result was delivered on time and within budget.