

BYRNE LOOBY

AN **ayesa** COMPANY



PROJECT FACTSHEET

THE SILVERTOWN TUNNEL

London, UK



SILVERTOWN TUNNEL

London, UK

Client:	TfL, Riverlinx
Date:	2018-Ongoing
Capital Cost:	GBP 2B
Sector:	Geoscience / Transportation
Status:	In Construction

OVERVIEW

The Silvertown tunnel is a new 1.4km twin-bore road tunnel with 0.6km of access ramps, which will run under the Thames and link Silvertown to the Greenwich Peninsula in East London. The new tunnel will reduce chronic congestion at the 122-year old Blackwall tunnel and allow for better public transport links, including cross-river electric bus journeys and will bring regeneration to the derelict area of Silvertown with new walking, cycling and public realm areas close to the tunnel entrances on both sides of the river. Construction of the scheme must follow the Silvertown Tunnel Code of Construction Practice (CoCP) with construction-generated carbon emissions must be kept to a minimum, by utilising the river as much as possible to transport construction materials and on-site machinery must meet the Mayor's Low emission zone standards.

PRIMARY ROLE

Ayesa was appointed to provide the geotechnical design for the project which includes the shaft, cut and cover, damage assessment, instrumentation and monitoring. Separately, COWI was appointed to design the bored tunnel. Whilst there was no contractual relationship for our two consultancies to collaborate, we saw an opportunity to coordinate shared interfaces to find value. Despite the lockdown occurring during our project work, Ayesa and COWI collaborated across multiple teams in multiple locations (Madrid, London, Vancouver, Delhi) to develop the optimum solution for each design scope. Initially, teams met face-to-face at the client's UK office, however, the pandemic necessitated a rapid switch to digital collaboration with virtual meetings and secure file-sharing platforms. By driving collaboration, we enhanced workflow efficiencies: assessing team strengths and assigning tasks based on capabilities and experience: younger project team members developed models and coordinated shared inputs and senior staff shaped and optimised the solution. Agreement on common procedures/tasks reduced the review times making it easier for the client to validate the preferred methodology and reducing client costs, as consensus had already been reached and agreed upon by the two design teams. Ayesa and COWI collaborated on several damage assessments, exploring available options for each asset, according to complexity and level of risk. These included a DLR viaduct that crossed the cut and cover work, for which Ayesa were assessing the foundation movements and COWI the superstructure. Our combined complex analyses incorporated potential ground movements due to dewatering, excavation and construction. We analysed our models at various stages of the project and assessed their interaction, refining solutions with mitigation scenarios where critical behaviours were found.