### Northern Line Extension

#### Key Issues

- Consideration was given to the disruption to existing Northern Line services during construction. In addition, the temporary impacts to existing busy road junctions (from construction traffic) as well as pedestrians and cyclists were highlighted.
- The project is anticipated to have a major beneficial effect on public transport accessibility levels, making the area more characteristic of central London and provide existing and new communities with better public transport choices.
- A risk assessment to understand how Ground Settlement may affect buildings directly above and along the route was undertaken. In addition, a detailed ground-borne noise and vibration assessment was undertaken to understand the potential issues to residents during construction and operation, and to inform the design of mitigation measures.
- An assessment of the risk of contamination of groundwater and the River Thames as a result of disturbance to contaminated land and creation of new pollutant pathways was undertaken.

#### Purpose of the Project

- The Northern Line Extension works comprise the construction of an underground railway to form an extension of the London Underground Northern line (Charing Cross branch) from Kennington to Battersea.
- The primary aim of the extension is to improve transport links and encourage economic growth, through enabling the sustainable regeneration as part of the wider redevelopment of the Vauxhall and Nine Elms Opportunity Area.

#### Description of the Project

- The new route will be approximately 3.2km in length, diverging from the existing railway south of Kennington station. An intermediate station will be located at Nine Elms. The terminus will be at a new station located at Battersea.
- Other works include intervention and ventilation shafts with head houses at Kennington Green and Kennington Park, provision of power supply, additional cross passages at platform level at Kennington station and works related to highways, footways and utilities.
Lessons Learnt

- URS was involved in the early stages of this project. Early work included producing a Preliminary Environmental Assessment, which helped the design team to understand the key potentially significant effects of constructing and operating an underground railway in this area. This was supported by the production of two EIA Scoping Reports (the second one specific to the preferred route) which identified the main potential impacts and proposed methodologies for assessing these.

- A positive aspect of URS being involved from an early stage of the project was that the environmental, design and sustainability implications and opportunities could be explored in parallel with the emerging engineering design, rather than once the scheme was fixed. This included providing input to the optioneering process, which allowed the EIA to influence the development and thus avoid or minimise many environmental impacts even before the preparation of the Environmental Statement.

Lessons Learnt cont. -

- URS were fully integrated within the project team, and chaired fortnightly EIA and Sustainability Working Group meetings, which brought together members of the client team, engineering and other specialists to discuss if and how specific measures could be incorporated. As the broad scope of works covered several disciplines, use of a single dedicated URS project manager was helpful to minimise the points of contact with the rest of the project team.

- Mitigation measures used in the Jubilee Line Extension, such as the use of a vibration isolating track form to reduce the ground-borne noise levels, were applied in the project.

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