

Design and Engineering - Our projects

The Copenhagen S-train Circle Line Client: Rail Net Denmark

The establishment of the S-train network circle line started in 1996 and ended January 2007 with the opening of Ny Ellebjerg Station. Atkins was lead consultant, responsible for the entire project management, rail engineering design, preparation of tender documents and performance planning.

The 13km long circle line consists of a reconstructed previous freight/ S-train line, and a new double-track line. A large part of the assignment concentrated on the railway engineering design and preparation of the optimal traffic outline design. Atkins was responsible for the preliminary feasibility studies, where S-train, light-rail and metro solutions, respectively, were reviewed. In addition, Atkins was responsible for the subsequent EIA analysis and public consultations.

Docklands Light Railway – Stratford Station Reconstruction, London

Docklands Light Railway (DLR) identified a need to reconstruct the existing single faced platform to the southern end of Stratford station (East London) between the heavy rail and underground services. The existing platform was a major capacity constraint both in terms of passenger capacity and circulation and operational capacity. Atkins teamed up with Alsop Architects and won the commission to design and engineer the new island platform linking into the main Jubilee Line Extension station concourse at mezzanine level. Three possible solutions were developed that created an island platform around the physical constraints, but at the same time complied with the minimum space requirements of the new DLR station. Risk and value workshops with the client and design team evaluated options and brought out some key points that enabled DLR to select the best scheme and move the project forward.

DLR opened the first of its two new platforms at Stratford station on 18 June 2007.





Hong Kong KCRC: Shatin to Central Link, Admiralty to Central West

This project involved scheme and detailed design for two major underground stations and the connecting tunnel on the Shatin to Central Link. Admiralty station will provide a major interchange with the existing MTR railway network. Central South station will be constructed in cavern with adit and shaft links to ground level. The 1km tunnel will be excavated by drill and blast methods. Atkins is providing a full range of services from project management and station planning through to system assurance.

Hull Trains, new train procurement

Hull Trains commissioned Atkins to undertake this branding application and create a coherent design that met all relevant regulations.

Hull Train's delivery of 4 new Class 222 train sets from Bombardier provided the essential platform to launch an interior scheme and exterior livery that would embrace the corporate identity and advance customer expectations.

The design brief demanded distinctive and unique interior schemes to be developed. The design team created bespoke fabrics with imagery having resonance for the residents of Hull.

Dubai Metro, JT Metro JV and Dubai Rail Link (DURL)

Atkins was appointed as the lead designer responsible for all civil works associated with the Red and Green Lines of the Dubai Metro – currently regarded as the world's largest transport infrastructure projects under design and construction.

The Atkins role included the full multidisciplinary design and management of the civil works including geotechnical and site investigations, bored tunnels (using earth pressure balancing Tunnel Boring Machines), cut and cover tunnels, viaducts and bridges (utilising post-tensioned, segmental bridge construction), route alignment, elevated, at-grade and underground stations (utilising top down constructed station boxes with diaphragm walls), depots and additional specialist services such as fire and ventilation, environmental impact, concrete durability, noise and vibration reduction, and landscaping.

Our role also included design coordination with the rail systems side (track, signalling, rolling stock and power) and close working with the contractor to facilitate timely construction to programme. The metro, which will be the single longest automated driverless system in the world, aims to ease traffic congestion, reduce travelling time and improve mobility within the burgeoning city of Dubai.



Glasgow Airport Rail Link (GARL)

GARL is a £220M enhancement project that will allow four services per hour to travel between the airport and Glasgow's Central Station. Leaving from a new platform at Central Station, the service requires 8km of new electrified track installed along an existing wideway and 2km of elevated branch line into a new station linked to the main airport terminal.

The scheme includes many challenges, notably a 140m tied arch bridge over the M8 including link roads, the integration of signalling with type A renewals at Central Station, the development of a new airport station building in a progressive architectural style and the sensitive design of a viaduct across a local sports field that houses 22 football pitches.

GARL is a truly multifunctional project with Atkins drawing on expertise throughout the business including Architecture, Planning, Landscape, Heritage, Water, Geotechnics, Process and Highways.

Gautrain Rapid Rail Link

Described as the largest new railway project in the world, Gautrain Rapid Rail Link is a high speed, 80km-long system which will link Johannesburg, Pretoria, Sandton and Johannesburg International Airport. As well as helping to facilitate commuter travel on the Southern Hemisphere's busiest highway, the project was also vital to South Africa's World Cup bid.

Atkins' role comes in the form of a contract win for major permanent way design and adds to an earlier design contract awarded to Atkins' Design and Engineering Solutions business. Briefed with developing detailed alignment design for the 80km of track and a depot at Marlboro, Atkins was appointed by Bombardier, which is part of a joint venture responsible for electrical and mechanical work.

As part of an earlier contract, Atkins will deliver three detailed design packages incorporating 15km of new tunnels, three new underground stations and a new portal at Marlboro.

Gautrain is not unfamiliar territory for Atkins, as preliminary design work for the project was delivered in early 2006.

Sheffield Supertram
Client – Stagecoach

Atkins was commissioned to create an interior design scheme that would transform the tram fleet and realise a vision of a stylish, vibrant, comfortable and efficient mode of transport.

New features include new light fittings which feature prismatic diffused lenses which add to the quality and uniformity of light distribution; a range of new furnishings and fittings including newspaper and leaflet display frames; door push button housing; perch and tip-up seats; and in the low areas, a dedicated area for wheelchairs.

Atkins' commission includes support throughout the life-cycle of the project.