

The rail sector is a key part of WSP's operations in the UK and Sweden. By bringing together the operations within WSP Rail, we are able to provide in-depth, broad-based expertise extending across all parts of the rail planning process. Our rail-related expertise is within permanent way, track power supply, signalling, telecommunications, civil engineering and structures. The skills of WSP in other technology sectors means we can assume overall project responsibility, regardless of the scale of projects. Our surveys and design services are complemented by skills in project management, construction management, co-ordination, modelling, inspections, operational and maintenance planning, as well as simulation. Some 250 WSP staff are currently engaged on rail-related assignments.





Permanent Way

Permanent way engineers are involved in all phases of the design process, undertaking modelling of track geometry, points, speeds, connections, rail lifting and platform design. Our specialists have in depth experience of complex track geometry design and permanent way material issues, providing input to multidisciplinary teams working on major rail projects.

Track Power Supply

Track power supply encompasses overhead line and power supply systems for rail operations. High track speeds imply challenging standards on the interaction between catenary and overhead rail collectors. Modern automated and computerised signalling and telecommunications systems for track traffic demand and high power supply reliability. Auxiliary power systems must be supplemented by back-up systems to avoid power outage.

Signalling and Train Control

Rail signalling encompasses safety technology that monitors and controls rail traffic to enable safe operation. Safety systems monitor and control rolling stock movements, provide information to drivers and traffic managers. Our schemes include the design of safety installations such as railway signal gantries, block systems and highway protection.

Our assignments include the survey and design of signal plant, including safety reviews for relay and computerised signal towers, block systems, level crossing protection systems and ATC.

Telecommunications

This sector includes telephone and radio systems, computer and cable networks for communication between systems, as well as for staff and rail users. The systems transfer control, display, telephony and data traffic through media such as traditional copper or optical fibre cables laid alongside track work, and include modification and interconnection equipment. Our activities include surveys and design as well as contracting inspections of pre-installed telecommunications systems.

WSP Rail is able to offer services throughout the rail sector. This includes all phases of a project - surveys, planning, design, construction and management. We have extensive resources and broad geographical coverage. In addition to technical issues, all our professionals include consideration of ethical, humanitarian and ecological values. WSP Rail's sphere of knowledge is wide-ranging, our engineers, landscape architects, community planners, surveyors, environmental engineers, geologists, geo-scientists and other disciplines, all work in collaboration.

To achieve the best results for our clients and their customers, these teams draw from other WSP skills such as bridge engineering, geotechnics, rock mechanics, surveying and mapping.



Bothnia Line, Sweden

190 km of railway, 150 bridges, 30 km of tunnels

Client: Swedish National Rail Administration



Ashford International Station

International and domestic passenger stations and associated infrastructure at Ashford in Kent

Client: European Passenger Services



West Coast Line, Sweden

300 km of railway, 40 km of double track, 600 m tunnels

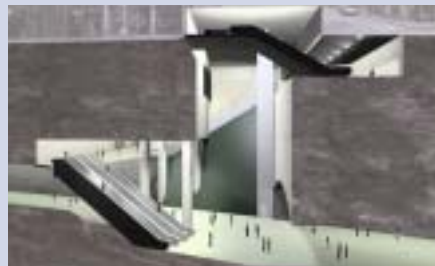
Client: Swedish National Rail Administration



Oresund Fixed Link, Malmo

10 km highway and double-track railroad, a railway station, three interchanges and 50 bridges

Client: Swedish National Rail Administration



City Line, Stockholm

Commuter train tunnel, double-track line. Two underground stations, 6.5 km of tunnels, 350 m submerged tunnel

Client: Swedish National Rail Administration



Foto © Sveth Tideman

Arlanda Express, Stockholm

20 km of double-track railway between the Central Station and Arlanda Airport, three underground stations, 7 km of tunnels

Client: The Consortium Banbryarna



Kallhall-Kungsängen, Stockholm

7 km double-track line 2.3 km tunnels, four bridges

Client: Swedish National Rail Administration



Bedford Station

WSP provided design and supervision of installation of a platform, footbridge and lift

Client: Railtrack Great Western



Hallsberg Marshalling-yard, Sweden

32 tracks, 100 sidings and 4 km long

Client: Swedish National Rail Administration



Foto © Bo Hjertstrand

Tvarbanan, Stockholm

Light-rail train line that connects the commuter train and the metro lines. 11.5 km of Light Rail and 17 stations

Client: Stockholm Local Traffic



Canning Town Station, London

A transport interchange between three rail lines - London Underground's Jubilee line extension (JLE), the Docklands Light Railway (DLR) and Railtrack's North London line - and a 14-stand bus station

Client: London Underground



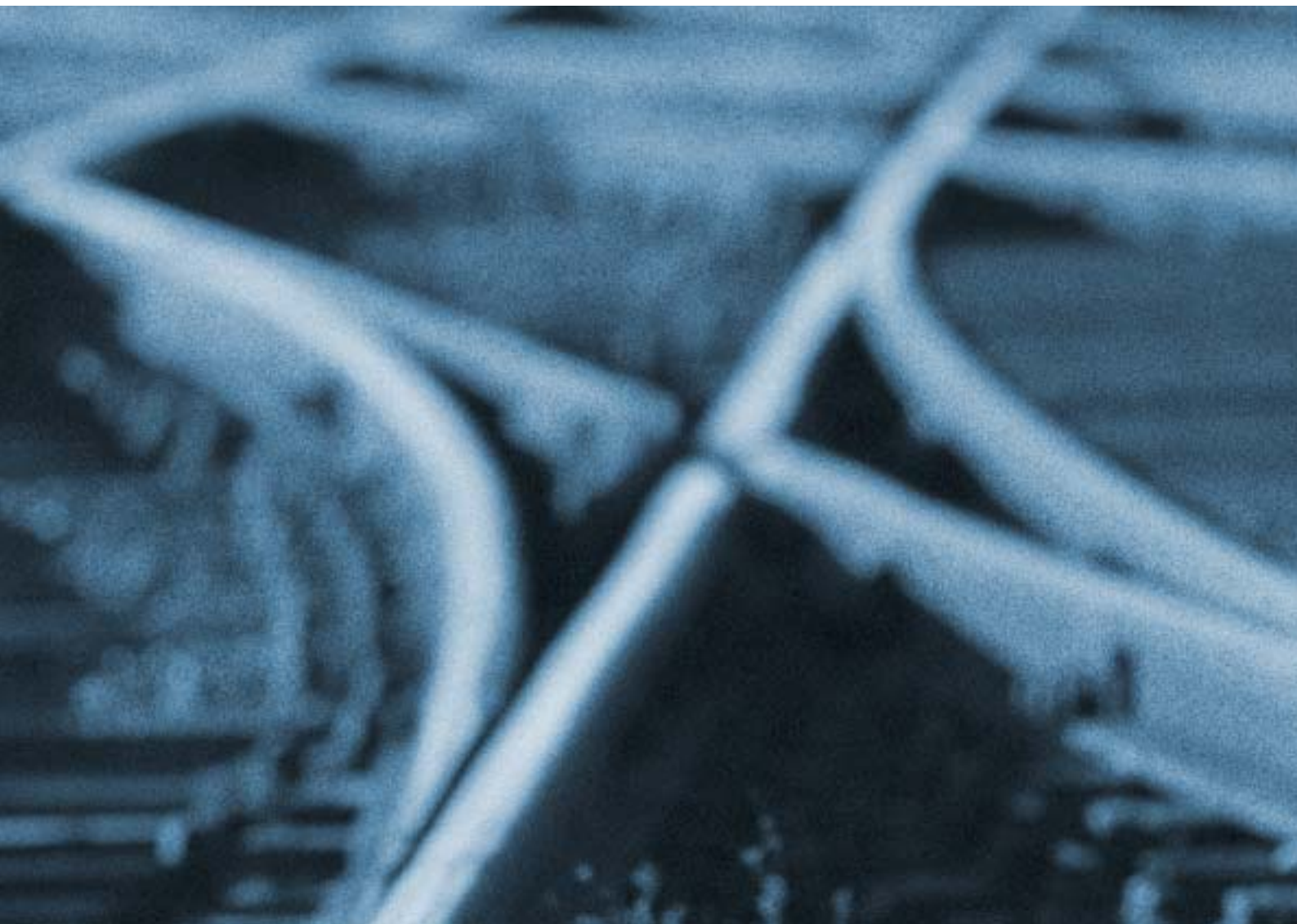
Westminster Bridges, London

Inspection and structural assessment of four major road bridges crossing mainline and underground railway lines close to Paddington Station

Client: Railtrack Great Western

KEY SERVICES

Safety	Civil and Structural Engineering
Risk & Reliability	Permanent Way
Transport Planning	Stations, Depots, Freight Terminal & Equipment
Transport & Works Order	Mechanical & Electrical Systems
Operating Planning	Plant & Equipment
Environmental Matters & Management	Stations & Building Structural Engineering
Public Enquiry	Stations & Building M & E Engineering
Town & Country Planning	Fire Engineering
Railway System Integration & Modelling	Cost & Commercial Management
Strategic & Investment planning	Planning Supervision
Project Management	Disability & Discrimination Acts Audit
Signalling & Train Control Systems	Supervision of Contractors
Telecommunications	IT & Virtual Solution
Customer Information Systems	Rail Asset Management
Track Power Supply & Control Systems	Property / Asset Help Desk Management



WSP Group plc is an international business providing management and consultancy services to the property, land and construction sectors. We are one of Europe's largest consultants employing 4,600 people worldwide.