

rail



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introduction

For over 60 years we have successfully delivered numerous physical and social infrastructure solutions, and engineering design projects to our clients in over 100 countries in Africa, Asia, Europe, Latin America, Middle East, the Caribbean, and the Pacific.

Our dedicated and experienced staff are key to the successful delivery of the services we provide. As a result we have earned an enviable reputation for innovation, efficient and cost effective design solutions and project delivery.

Our mission is to be a multidisciplinary consultant of choice, recognised for the excellence and effectiveness of our services, by combining our experience, rich heritage and world-class skills, supported by our specialist knowledge, quality and safety systems and understanding of the built and natural environment.

Our Vision is to exceed the expectations of all our stakeholders and to be at the forefront of consulting excellence.

Our independence ensures a personal business relationship with Clients. We recognise that the key elements of service include:

- Sound technical knowledge of the services involved
- A high level of co-operation, co-ordination and communication with both Client representatives and end users
- Fast and effective response
- Development and implementation of cost effective solutions to the diverse problems that may be encountered
- Ensuring that all works are carried out to programme and within budget
- Maintaining the highest standards throughout the project life time
- In-depth understanding of complex specifications and project environments



overview

At Roughton we are well versed in the challenges and advantages presented within the railway environment.

We have extensive in-house resources, business partners and associates allowing us to offer a comprehensive range of services to all our rail and infrastructure clients.

The following pages give a brief insight to our extensive track record in the UK and overseas. From major national infrastructure schemes in Abuja to minor track drainage design projects in London, we have developed an enviable capability in the rail sector.

We work with national Governments, private contractors and rail operators to ensure that projects are executed to the highest standards. This is illustrated by the levels of repeat business we have achieved over the past three decades with clients such as London Underground Ltd and government bodies in Nigeria.

Roughton is constantly updating its knowledge-base and keeps abreast with technological advances, in order that our clients can benefit from the most up to date methods.

In recent years, the issues of sustainability and energy efficiency have grown in importance. We believe that investment in rail transit is key to many countries not only achieving their carbon reduction targets, but is a major step in improving rates of economic growth. Taking freight and passenger loads off the roads, through the provision of railway alternatives is beneficial commercially, socially and environmentally.

Assessing the feasibility and viability of rail projects creates a range of unique challenges which are well understood by our economists and engineers whether for mainline (freight and/or passenger traffic), commuter or mass transit systems (heavy or light rail). We have the resources and experience to develop practical and cost effective planning solutions for all types of main line railway including upgrades and new lines.

Our larger infrastructure projects utilise our ability to take a holistic view of a region's transportation strategies and ambitions. We present sustainable and realistic engineering and management solutions to our Clients, enabling the planning, design and construction of rail and road systems across all terrains, turning what can initially seem insurmountable, into the possible.



overseas rail expertise

Internationally, Roughton is focused on building on its local presence in Africa, Eastern Europe and Asia.

Over the past 30 years we have undertaken commissions in Nigeria, Sri Lanka, Sudan, Swaziland, Tajikistan, Tanzania, India, Bangladesh, Botswana, and Fiji. From transport masterplanning to railway bridge inspections and over rail bridge construction supervision, Roughton has provided numerous services to public and private clients in the rail and light rail sectors.

Wherever possible, we train and employ locals to undertake the construction stages of a project, with the aim of leaving a legacy of a skilled and knowledgeable work-force to manage and maintain transport routes, long after completion and adoption has taken place.

Recently we have been engaged in the rehabilitation of Nigeria's entire rail network, which is described in more detail among the following pages.



● Leadership position in PPP & PFI

Roughton has also established a leadership position in developing countries with the breadth and depth of experience generated within the company of PPP and PFI projects, with a particular expertise in the transport infrastructure sector.

We have the capability to review and analyse a project's financial and commercial feasibility and funding requirements; to provide bid documentation and evaluate commercial bids; to advise on the raising of finance, to participate in the negotiation of financial loan agreements and commercial contracts, and to conduct monitoring and supervision of a project during the construction stage.

Our economists are fully familiar with the demands and requirements of the standard appraisal methodologies and frameworks employed by many of the international funding and bilateral aid agencies. This familiarity allows us to quickly identify the peculiarities of a project and identify their relative importance within the appraisal.

Using advanced economic modelling methods, we are experienced in deriving diversion curves to model the attractiveness of alternative routings and modes of transport.

uk rail expertise

Roughton has been providing services to the rail sector in the UK for many years, particularly to London Underground Limited (LUL). In 1991 Roughton was awarded a two year commission for civil engineering services by LUL and has been providing technical assistance as an approved consultant ever since.

Since 1991 approximately 1000 commissions of varying types and sizes have been completed successfully for various clients. Services provided include:-

- Structural assessment and inspection
- Geotechnical investigations
- Track drainage schemes
- Civil and structural design
- Construction supervision

In addition to London Underground Ltd, our UK client list for the past 15 years has included:

- Tubelines Ltd
- Skanska UK
- Infracore JNP/SSL/BCV
- Birse Construction Ltd
- Lovell Construction Ltd
- YJL Construction Ltd
- Transport for London
- Metronet Rail BCV Ltd
- Lanes Group plc

rail sector clients

● Federal Ministry of Transport - Nigeria

Roughton is proud to be currently playing a key role in the revitalisation of Nigerian Railways which will become a key driver in support of economic growth.

The Federal Ministry of Transport has embarked on a project to rehabilitate the entire 3000km of Nigeria's railway network. This includes repair and re-installation of permanent way, tracks, ballasts, sleepers, signalling, and reparation of the bridges and drainage structures.

The project encompassed the Western Line: Lagos to Kano; the Eastern Line: Port Harcourt to Maiduguri; and Signalling network renewal from Port Harcourt to Maiduguri.

In June 2012 we were commissioned to provide the following services:

- Detailed condition survey of the rail network
- Develop the scope of work
- Prepare bills of quantities
- Prepare tender documents

On commencement of the works, Roughton provided the additional construction supervisory services:

- Checking quality of work
- Reviewing and certifying interim payment certificates
- Management of contractors programme
- Management of compensation events
- Management of time extensions
- Health and safety

In July 2013 Roughton attended the ‘flagging off’ ceremony for the third Lagos-Kano-Lagos intercity passenger train service, where the Managing Director of Nigerian Railway Corporation (NRC), Engr. Adeseyi Sijuwade, addressed a distinguished audience at Ebute Metta Junction Station (EBJ), Alabomeji, Lagos.



rail sector clients

- London Underground Ltd

Throughout our working relationship over the past three decades, we have undertaken hundreds of projects for LUL. These have included the provision of the following services, across the majority of the London underground network of track and stations:

- Track drainage renewals
- Topographical surveys
- Lux levels surveys
- Photographic surveys
- Conceptual and detail design
- Mechanical and electrical engineering
- Public health and drainage engineering
- Structural engineering
- Building surveying
- Project management
- Procurement of contractor services



● Tube Lines Ltd

Between 2002 and 2008 Roughton carried out numerous structural engineering and surveying projects for Tube Lines Ltd, including:

- Knightsbridge Station survey and design of LMC control panel relocation
- Cockfosters Depot roof drainage design
- Stanmore Station – detail design for foul and surface water drainage for new 3rd platform
- Technical and assurance review of Category 1 Civil Engineering Standards and Manuals of Good Practice
- Wembley Park sidings – design of new gravity track drainage
- Heathrow Terminals 1, 2 and 3 – Survey of existing tunnel to check location of pipe brackets
- SMEP Railway Station Assessment Programme structural assessments, inspections and surveys at nine stations
- Northern Line Station Modernisation
A programme to produce detailed design packages to update and/ or refurbish the stations drainage systems



rail sector clients

- African Finance Corporation

In March 2011 Roughton was commissioned by the African Finance Corporation to carry out an assessment on 8 critical transport projects in Nigeria which formed part of a decision making process to recommend appropriate options for funding and commercialisation of these infrastructures in the country.

They included: Highways, bridges, light rail and rail projects. An overview of each of the projects focussed on technical information, cost estimates, project implementation schedules, commercialisation, risks and options for funding.



● Railway Property Management Co Ltd

In 2012 we were employed by the Railway Property Management Company Ltd, to carry out two projects. The first project involved carrying out an investment appraisal for four locations owned by the Client, located in Lagos, Ibadan, Port Harcourt and Kano State, for commercial purposes.

The locations consisted of old rail stations, empty land and old buildings owned by the Client. Each were situated in strategic locations, suitable for commercial returns.

Roughton provided the following consulting services: Site investigations; conceptual design of asset; high level investment appraisal of the site; and recommendations for appropriate specifications moving forward to carry out a complete and comprehensive investment appraisal.

The second project involved the provision of management soft skill training to selected employees within the Railway Property Management Company. The training was held over 5 days on each programme in Kaduna, Enugu and Abuja and covered; office administration and record keeping; estate management, law, marketing and negotiation; project management, leadership, procurement, ICT and public relations.

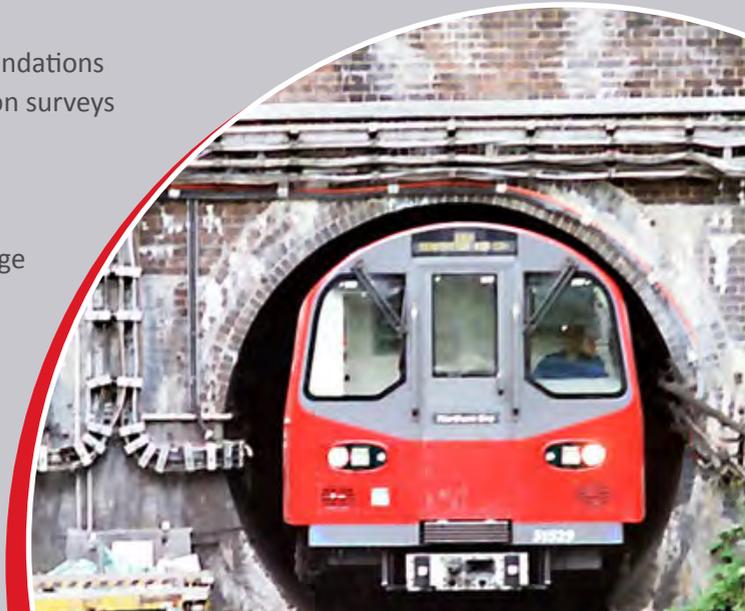


rail sector clients

● Metronet Rail BCV Ltd

Between 2003 and 2008, Roughton carried out over 75 projects for Metronet Rail on the Bakerloo, Central and Victoria Lines, providing the following services:

- Floor drain and channel surveys
- Water ingress investigations
- Sub-station Drawings
- Below ground drainage PGI surveys
- Drainage system remedial works quality audits
- Preparation of O&M manuals
- CCTV survey of foul drainage systems & Jetting
- Drainage cleaning audits
- Drainage contract specification reviews
- Structural surveys
- Remedial works recommendations
- Planned General inspection surveys
- Condition surveys
- Options reports
- Foul water investigations
- Design of remedial drainage
- Pipe surveys



● Infraco BCV

Over a three years period, between 2001 and 2003, Roughton was commissioned to carry out fourteen separate projects for Infraco on the Bakerloo, Central and Victoria Lines, at the following stations:

- Victoria
- Bank
- St Paul's
- West Ruislip
- Mile End
- South Woodford
- Monument
- Nottinghill Gate
- Oxford Circus

These projects involved the preparation of drainage drawings, general inspections of pumping systems, investigations into causes of flooding, planned general inspections, sub-standard condition surveys and reports for 12 stations on the West Central Line.



rail sector clients

- Asian Development Bank - Sri Lanka

Roughton was commissioned by the Asian Development Bank, as part of a multi-modal transport project in 2011.

The aim of the project was to relieve traffic congestion on Colombo city roads that service the port, as well as improving freight movement. The project includes the development of the dry ports/ICDs, new and upgraded rail connections between the port, dry ports and the rest of the rail network, road links to the dry ports, and upgraded logistics facilities.

Roughton was commissioned to review previous studies and implementation of additional studies and surveys of the freight movement and demand in and out of the port, of the existing infrastructure, and of candidate dry port/ICD sites. Selection of candidate sites for feasibility study, including preliminary design of the dry ports/ICDs, rail infrastructure and operational requirements, road links and logistics upgrading together with environmental and social impact studies and economic evaluation. A review of PPP options for implementation was also included.



● Government of Swaziland

In July 2012 the Government of Swaziland employed Roughton to prepare a 20 year Transport Master Plan. The Swaziland Transport Master Plan (STMP) is to guide policy-making, investment, regulation and institutional strengthening in the transport sector, including rail, road and air, over the next 20 years.

The STMP will cover the road, rail and air sub-sectors both within Swaziland and major transport links with neighbouring countries. Preparation of the STMP included the following:

- A review of the national transport policy at the sector and sub-sector levels
- Progress made in implementation, and its relevance to current and future needs
- Review of organisational and institutional arrangements
- Assess the transport sector performance over the past 5-10 years
- Conduct traffic study and forecasts of traffic growth over the next 20 years under different scenarios
- Review the current project selection and prioritisation procedures
- Prepare a phased investment programme in each sub-sector including actions to improve transport integration
- Recommend an organisation and institutional development plan
- Recommend a transport policy implementation plan

roughton services

- Air quality
- Asset management
- BIM
- Bridge engineering
- Building services
- Building surveying
- CDM coordinator
- Civil engineering
- Contract administration
- Contract supervision
- Due diligence
- Drainage design
- Economic feasibility
- Energy efficiency
- Environmental impact
- Expert witness
- Facilities management
- Feasibility studies
- Flood risk assessments
- Highway engineering
- Hydrological studies
- Infrastructure design
- Intermodal appraisal
- Landscape architecture
- Masterplanning
- Pavement engineering
- Planning
- PPP & PFI advice
- Procurement
- Programme management
- Project management
- Public health engineering
- Quantity surveying
- Rail economics
- Rail engineering
- Rail infrastructure design
- Risk management
- Structural engineering
- Track inspections
- Transportation planning
- Wastewater treatment design
- Water resources



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