

PPP capability



global vision ■ local knowledge

summary

The following pages give an illustration of Roughton's background, technical expertise and the sectors in which we serve our clients.

It also gives a broad outline of our PPP and PFI transaction advisory roles on major infrastructure schemes in Africa, Eastern Europe and South Asia, and our unique approach to PPP funding and procurement.

Brief descriptions of the projects listed are given at the back of this booklet:

- PPP for Construction of the 2nd Niger Bridge and its Link Roads, Nigeria
 - PPP for the Improvement of Apakun-Murtala Muhammed Airport (MMA) Road, Nigeria
 - Modernisation of Onitsha - Enugu Road, Nigeria
 - PPP with Logistics Service Providers, Nigeria
 - River Katsina Ala Bridge at Buruku - PPP Study, Nigeria
 - Preparation of Feasibility Study and Business Plan, Georgia
 - Multimodal Transport Project, Sri Lanka
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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.

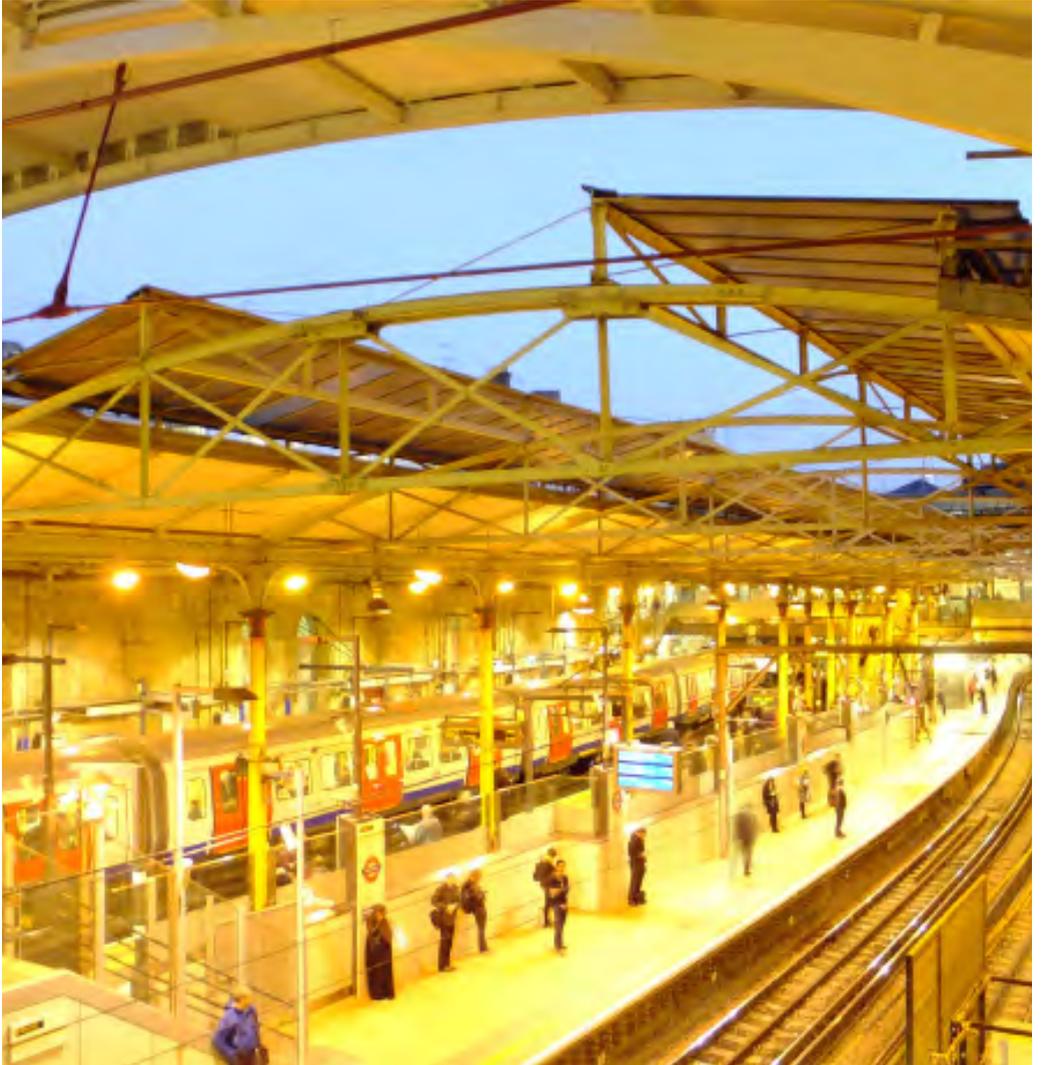
Our dedicated and experienced staff are key to the successful delivery of the services we provide. As a result we have earned an enviable reputation for innovation, efficient and cost effective design solutions and project delivery.

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
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who are we?

An independent organisation founded in 1952, Roughton has built a reputation for efficiency, value for money, innovation and timely project delivery.

Excellent client relationships and long term fostered business partnerships worldwide have made Roughton a unique brand.

In the UK our public sector client list includes numerous NHS trusts, local authorities and ministries. Banks and major construction contractors are found amongst our growing private sector list.

Further afield, Roughton has successfully delivered projects funded by all the major IFIs. Projects include an urban development project in Lagos in Nigeria, asset management projects in Uganda, development of the Jamaica Inner City Basic Services, Institutional Strengthening projects for the Frontier Highways Authority of Pakistan, the China to Europe highway in the Republic of Kazakhstan, various infrastructure projects in India, Sri Lanka and over 100 other countries.

We have provided Transaction Advisory services on PPP and PFI projects for several governments and private developers in a number of countries including Georgia, Nigeria and Sri Lanka.

An important element of our working practices are the relationships we have built with Contractors. We recognise the value in collaborating with the construction experts and know from first hand experience that the most successful projects are those where the project team members and stakeholders have shared objectives and work within an honest, cooperative and efficient framework towards those goals ■



sectors

■ buildings and infrastructure

We provide a full range of in-house buildings expertise including structural engineering, building services and quantity surveying.

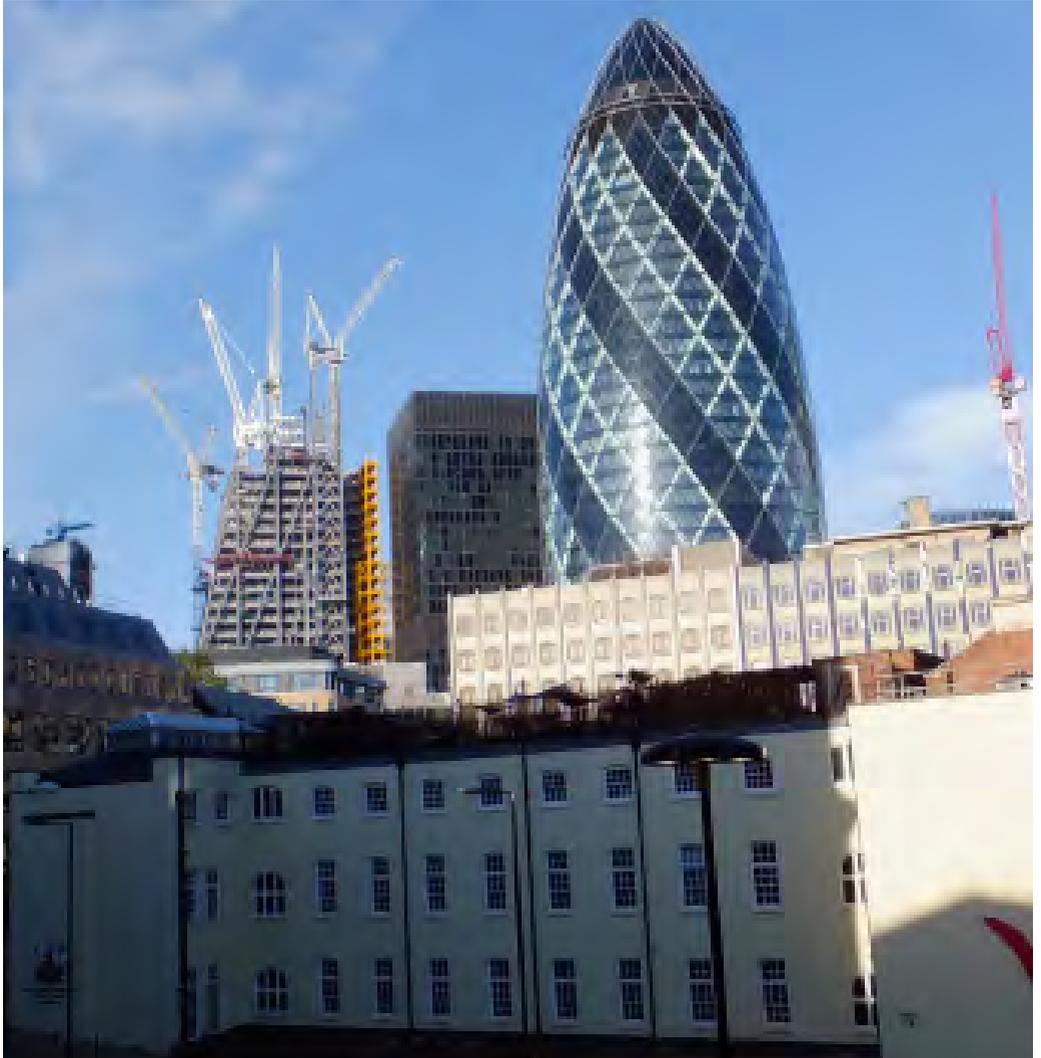
A significant proportion of our buildings workload is comprised of public sector clients such as local authorities and ministries.

We have particular understanding of the special requirements of the health care sector for environments and engineering services which do not put patients or staff at risk. We are familiar with the regulations applicable to laboratories, operating theatres, medical gases and complex hospital environments. We also have a track record in projects for residential care, health centres, clinics and outpatient departments.

In partnership with other consultants we provide input to the preparation of Private Finance Initiative (PFI) bids, and feasibility studies for DBFO and BOOT projects. We understand the nuances and needs of local authority developments in obtaining private funding.

Our international experience in social housing encompasses projects with wide variations in design requirements and socio-economic impact, including refurbishing inner-city apartments in the UK, upgrading squatter settlements in Malawi and rehabilitating government housing in Bhutan. Our aim is to produce relevant buildings and infrastructure design using appropriate technology to produce a sympathetic environment for owners, users, and visitors.

Our approach to engineering project management means that a director is closely involved from the start of the project through to completion ■



sectors

■ environment, natural resources & energy

The debate over the degree to which human activities are affecting global warming still rages but at Roughton we are focused on practical realities, such as the consequences of the depletion of irreplaceable fossil fuels, the cost of inefficient energy use and flooding caused by inappropriate landscaping. Our services are therefore based on a practical, common sense approach. In doing so we also aim to benefit the local ecology and environment.

Roughton has a detailed understanding of the value of infrastructure relating to energy production, transmission and consumption minimisation. Our civil engineering expertise has delivered many major energy projects in the UK and overseas with core strengths in the power, nuclear and water sectors.

With energy production, the need for responsible use of energy arises. The combination of our sustainability consultancy services, energy market experts and building science teams means we can provide valuable advice to our clients regarding the most economic and efficient uses of energy. This often results in a more efficient and sustainable overall scheme design ■



sectors

■ water

A clean water supply is the single most important determinant of public health. Roughton has extensive experience of water development projects throughout the world in both developed and developing economies and provides specialist technical assistance at all stages of the project cycle.

Roughton offers a multi-disciplinary, fully integrated development approach to planning, design, operation and maintenance in the following areas:

- Water Supply
- Sanitation
- Surface water
- Flood Water



■ public private partnerships



Roughton has established a leadership position in developing countries with the breadth and depth of experience generated within the company.

PPP consultancy is among the core services available to our clients including; national, regional and local governments; transport authorities; public organisations such as health and education authorities; and private companies.

Roughton's success lies in its ability to innovate continually across the full range of its PPP consultancy activities. Roughton has a track record of leading and delivering PPP advisory services with widely differing degrees of complexity from small project finance transactions to large, multi-faceted projects.

The Early Partner Involvement (EPI) philosophy Roughton is developing forms one of the key characteristics of our approach to PPP and PFI services. EPI is based on the early introduction of private sector partners into the PPP process to foster productive dialogue and optimise processes across the PPP project cycle. Our EPI philosophy is also supported by the utilization of our in-depth technical know-how to achieve efficient delivery of earlier project preparation stages ■

sectors

■ highways & bridges

Roughton provides a comprehensive highway engineering service encompassing project planning, design, implementation and operation within the UK, Europe and internationally for all aspects of road transportation and traffic management schemes including environmental and traffic impact assessments. Our experience includes the design and implementation of projects of regional and local importance, taking account of the preparation of complex traffic management schemes.

Our road experts work as a team with a holistic approach that identifies innovative ideas at the early stages of a project. Our appropriate design software and approach ensures accuracy and, with project management skills, provides cross discipline collaboration where we typically demand cost effective sustainable solutions to meet our client's goals and aspirations.

Extensive project experience in developing countries with a range of bridge designs enables us to determine cost-effective solutions appropriate to the use of the bridge, its location and the experience of the constructor. The design and materials specifications will be appropriate to the level of supervision anticipated.

Our expertise includes:

- preparation and management of a bridge inventory
 - bridge inspections
 - prioritising a maintenance works programme
 - management and supervision of maintenance and construction work
 - bridge assessment for structural integrity and load capacity
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■ transportation & transport planning

An efficient, sustainable and environmentally sensitive transport system is vital to the functioning of any community. Roughton has extensive experience of transportation development projects throughout the world in both developed and developing economies and provides specialist technical assistance at all stages of the project cycle.

Roughton offers a multi-disciplinary, fully integrated development approach to planning, design, operation, supervision and maintenance for rail, roads, bridges and structures ■



sectors

■ rail

Roughton engineers have a sound knowledge of the issues and limitations of the railway environment.

Rail projects create a range of unique challenges which are well understood by our economists 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.

Roughton has 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. See project page below, outlining our role in the rehabilitation of Nigeria's entire railway network.

The company is ambitious to expand its professional services offering in the rail sector and is currently exploring a number of further opportunities both in the UK and overseas.

Internationally we are focused on building on our local presence in Nigeria, Africa, Eastern Europe and Asia.

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

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



projects

The following pages show a selection of the PPP experience Roughton has accumulated in recent years in relation to transportation infrastructure:

- PPP for Construction of the 2nd Niger Bridge and its Link Roads, Nigeria
 - PPP for the Improvement of Apakun-Murtala Muhammed Airport (MMA) Road, Nigeria
 - Modernisation of Onitsha - Enugu Road, Nigeria
 - PPP with Logistics Service Providers, Nigeria
 - River Katsina Ala Bridge at Buruku - PPP Study, Nigeria
 - Preparation of Feasibility Study and Business Plan, Georgia
 - Multimodal Transport Project, Sri Lanka
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NIGERIA: PPP FOR CONSTRUCTION OF THE 2ND NIGER BRIDGE AND ITS LINK ROADS

Client:

The Federal Government of Nigeria, Federal Ministry of Works

Services Provided:

Transaction advisory services

Start/End Dates:

September 2012 - ongoing

Partners:

Peter Davidson Consultancy – Traffic Modelling
 Pinsent Masons – Legal Due Diligence
 Detail - Legal Due Diligence
 Allot (Nigeria) Limited – Survey Design

Roughton was awarded the contract for the Transaction Advisory Services for the Design, Build, Finance, Operate of the 2nd Niger Bridge between Onitshe and Asaba by the Federal Ministry of Works of Nigeria. Our services on the project so far have covered Stages 2 to 4 of the PPP Project Cycle as outlined below:

Stage 1: Project Concept Not included

Stage 2: Feasibility

- Needs analysis and summary of project strategic objectives
- High level options analysis, setting out the range of technical, legal and financial choices
- Detailed economic and financial analysis to assess project economic viability and suitability
- Legal due diligence
- Environmental screening and environmental and social impact assessment
- Statement of project's desired outcomes and output specifications
- Review of project site and evaluation of outline designs
- Identification and analysis of expected costs under different design scenarios
- Traffic studies and traffic demand forecasting

- Optimum toll analysis and traffic revenue forecast

- Risk assessment and risk quantification through sensitivity testing

- PPP options analysis and PPP reference model

- Value for money analysis

- Recommendations on PPP procurement options and financial structure

- Submission of an Outline Business Case (OBC) report, including all of the above studies

Stage 3: Tender

- Management of and support to the tender process

- Maintain project risk register

- Preparation of tender documents, including the concession Request for Proposal (RfP)

- Preparation of draft concession agreement

- Preparation of evaluation criteria

- Assistance in the evaluation of tender documents and preparation of evaluation report

- Preparation of bidders' conferences and site visits, clarification and negotiation meetings

Stage 4: Negotiations

- Regular communication with preferred bidder

- Review and recommendations on materials and reports presented by preferred bidder

- Facilitate negotiations with preferred bidder to finalize technical project design and project financial structure

Stage 5: Implementation

Not included

2nd Niger Bridge



NIGERIA: PPP FOR THE IMPROVEMENT OF APAKUN-MURTALA MUHAMMED AIRPORT (MMA) ROAD

Client:

The Federal Government of Nigeria, Federal Ministry of Works

Services Provided:

Transaction advisory services

Start/End Dates:

September 2012 - ongoing

Partners:

Peter Davidson Consultancy – Traffic Modelling
Detail – Legal Due Diligence
Pinsent Masons - Legal Due Diligence
Allot (Nigeria) Ltd - Survey Design

Roughton was awarded the contract for the Transaction Advisory Services for the Design, Build, Finance, Operate of the Apakun-Murtala Muhammed Airport (MMA) Road in Lagos, Nigeria by the Federal Ministry of Works of Nigeria. The project is currently at the beginning of Stage 4 of the PPP Project Cycle. Our services provided

on the project so far are outlined below:

Stage 1: Project Concept *Not included*

Stage 2: Feasibility

- Needs analysis and summary of project strategic objectives
- High level options analysis, setting out the range of technical, legal and financial choices
- Detailed economic and financial analysis to assess project economic viability and suitability
- Legal due diligence
- Environmental screening and environmental and social impact assessment
- Statement of project's desired outcomes and output specifications
- Review of project site and evaluation of outline designs
- Identification and analysis of expected costs

- Traffic studies and traffic demand forecasting
- Optimum toll analysis and traffic revenue forecast
- Risk assessment and risk quantification through sensitivity testing
- PPP options analysis and PPP reference model
- Value for money analysis
- Recommendations on PPP procurement options and financial structure
- Submission of an Outline Business Case (OBC) report, including all of the above studies

Stage 3: Tender

- Management of and support to the tender process
- Maintain project risk register
- Preparation of tender documents, including the concession Request for Proposal (RfP)

- Preparation of draft concession agreement
- Preparation of evaluation criteria
- Assistance in the evaluation of tender documents and preparation of evaluation report
- Act as point of contact with short-listed bidders throughout the tender process

Stage 4: Negotiations

- Set up project management and communication procedures and work stream meetings schedule
- Preparation of draft project execution plan
- Regular communication with preferred bidder

Stage 5: Implementation *Not included*



NIGERIA: MODERNIZATION OF ONITSHA - ENUGU ROAD

Client:

The Federal Government of Nigeria, Federal Ministry of Works

Services Provided:

Transaction advisory services

Start/End Dates:

May 2011 - ongoing

Partners:

Peter Davidson Consultancy – Traffic Modelling
 Allot (Nigeria) Ltd - Survey Design



Typical toll system

Roughton was commissioned to provide advisory services for feasibility and viability study for the Onitsha-Enugu dual carriageway under the Public Private Partnership (PPP) scheme by the Federal Ministry of Works of Nigeria. Our services on the project so far have covered Stage 2 of the PPP Project Cycle, with an

outlook to be extended further throughout Stages 3 and 4 as project development resumes. Services provided so far are as outlined below:

Stage 1: Project Concept

Not included

Stage 2: Feasibility

- Needs analysis and

summary of project strategic objectives

- High level options analysis, setting out the range of technical, legal and financial choices
- Detailed economic and financial analysis to assess project economic viability and suitability
- Legal due diligence
- Environmental and social Impact assessment
- Statement of project's desired outcomes and output specifications
- Review of project site and evaluation of outline designs
- Identification and analysis of expected costs
- Traffic studies and traffic demand forecasting
- Optimum toll analysis and traffic revenue forecast
- Risk assessment and risk quantification through sensitivity testing
- PPP options analysis and PPP reference model

- Recommendations on PPP procurement options and financial structure

- Submission of an Outline Business Case (OBC) report, including all of the above studies

Stage 3: Tender

To be undertaken

Stage 4: Negotiations

To be undertaken

Stage 5: Implementation

Not included



NIGERIA: PPP WITH LOGISTICS SERVICE PROVIDERS

Client:
Nigerian Railway Corporation

Services Provided:
Transaction advisory services

Start/End Dates:
September 2013 - ongoing

Partners:
Infranet Consulting Ltd



Roughton was awarded the contract for the Transaction Advisory Services to the Nigerian Railway Corporation (NRC) on Public Private Partnership with Logistics Service Providers in September 2013. The project is currently at the beginning of Stage 2 of the PPP Project Cycle. Our services provided on the project so far include:

Stage 1: Project Concept
Not included

Stage 2: Feasibility

- Identification of information and resources required
- Preparation of project programme
- Facilitation of stakeholder workshop

- PPP concept options report
- Legal framework and constitutional analysis
- Data gathering, market share analysis and network capacity review

Stage 3: Tender
To be undertaken

Stage 4: Negotiations
To be undertaken

Stage 5: Implementation
Not included



NIGERIA: RIVER KATSINA ALA BRIDGE AT BURUKU - PPP STUDY

Client:

The Federal Government of Nigeria, Federal Ministry of Works

Services Provided:

Transaction advisory services

Start/End Dates:

March 2011 - ongoing

Partners:

Peter Davidson Consultancy – Traffic Modelling
Allot (Nigeria) Ltd - Survey Design

Roughton was commissioned to provide advisory services for feasibility and viability study for the procurement of a permanent river crossing of the Katsina Ala River at Buruku in Benue State under the Public Private Partnership (PPP) scheme by the Federal Ministry of Works of Nigeria.

Our services on the project so far have covered Stage 2 of the PPP Project Cycle, with an outlook to be extended further throughout Stages 3 and 4 as project development resumes. Services provided so far are as outlined below:

Stage 1: Project Concept
Not included

Stage 2: Feasibility

- Needs analysis and summary of project strategic objectives

- High level options analysis, setting out the range of technical, legal and financial choices
- Detailed economic and financial analysis to assess project economic viability and suitability
- Legal due diligence
- Environmental and social Impact assessment
- Statement of project's desired outcomes and output specifications
- Site condition survey and evaluation of outline designs
- Identification and analysis of expected costs
- Traffic studies and traffic demand forecasting
- Optimum toll analysis and traffic revenue forecast

- Risk assessment and risk quantification through sensitivity testing
- PPP options analysis and PPP reference model
- Value for money analysis
- Recommendations on PPP procurement options and financial structure
- Submission of an Outline Business Case (OBC) report, including all of the above studies

Stage 3: Tender
To be undertaken

Stage 4: Negotiations
To be undertaken

Stage 5: Implementation
Not included



GEORGIA: PREPARATION OF FEASIBILITY STUDY AND BUSINESS PLAN

Client:

Road Department of Georgia

Services Provided:

Analytical study
Detailed analysis
Strategic business plan

Start/End Dates:

April 2010/January 2011

Associates:

Wings & Freeman Capital LLC



Feasibility study to determine the need for roadside facilities (25 to 30) and to recommend economically feasible PPP option for the provision of these facilities along Georgian network of transit highways and at major border crossings.

Based on the recommendations of the

feasibility study, a second phase consultancy to assist in developing and implementing the selected PPP arrangement for provision and operation of services and rest areas system.

Roughton was commissioned to undertake a study consisting of the following parts:

- Analytical study to determine the need for roadside facilities
- Prepare development guidelines and standards for service/rest areas
- Detailed analysis for transit highways systems to identify and evaluate potential sites
- Estimate development and operating costs over 20 year period
- Strategic business plan for implementation of integrated service and rest area plan
- Assessment of appropriate forms of PPP
- Regulatory and organisational arrangements for administration of the recommended PPP modality



SRI LANKA: MULTIMODAL TRANSPORT PROJECT

Client:
Asian Development Bank

Services Provided:
Study review
Freight movement survey
Site selection
Preliminary design
Review of PPP options

Start/End Dates:
May 2011/May 2012

Associates:
Engineering Consultants Ltd
Nippon Koei Co Ltd



The development of dry ports/ICDs north and south of Colombo connect to Colombo Port by rail. The project is to relieve traffic congestion on Colombo city roads serving the port, as well as improving freight movement. The project included the development of the dry ports/ICDs, new and

upgraded rail connections between port, dry ports and the rest of the rail network, road links to the dry ports, and upgraded logistics facilities.

Roughton was commissioned to undertake a review of 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.

In addition, we undertook the following activities;

- selection of candidate sites for feasibility study
- preliminary design of the dry ports/ICDs
- preliminary design of the rail infrastructure and operational requirements
- preliminary design of road links
- logistics upgrading together with environmental and social impact studies
- economic evaluation
- review of PPP options for implementation



services

- Air quality
- Asset management
- BIM
- Bridge engineering
- Building services
- Building surveying
- Capacity strengthening
- CDM coordinator
- Civil engineering
- Construction supervision
- Contract administration
- Due diligence
- Drainage design
- Economic feasibility
- Energy efficiency
- Environmental impact
- Expert witness
- Facilities management
- Feasibility studies
- Flood risk assessments
- Geotechnical investigations
- Highway engineering
- Hydrological studies
- Infrastructure design
- Intermodal appraisal
- Landscape architecture
- Masterplanning
- Pavement engineering
- Planning
- PPP & PFI
- Programme management
- Project management
- Public health engineering
- Quantity surveying
- Rail engineering
- Risk management
- Secondment of professional staff
- Structural engineering
- Transaction advisory
- Transportation planning
- Wastewater
- Water

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