HOLISTIC DELIVERY FOR ROADS

WWW.RAMBOLL.CO.UK/ROADS
Ramboll is a leading engineering, design and consultancy company employing 13,000 experts. Our presence is global with a strong representation in the Nordics, UK, North America, Middle East and Asia-Pacific. We constantly strive to achieve inspiring and exacting solutions that make a genuine difference to our customers, end-users and society as a whole.

www.ramboll.com

13,000 PEOPLE
300 OFFICES
35 COUNTRIES

BUILDINGS
Buildings form a fundamental part of our lives by shaping our communities and daily activities.

For these reasons, Ramboll’s design philosophy is to always make room for the human experience. As one of Europe’s top 3 buildings designers with decades’ of experience in the global market, we create visionary, sustainable, and award-winning buildings that improve life for users and enhance the surrounding landscape. Read more at: www.ramboll.com/buildings

TRANSPORT
Mobility fuels economic and social development and with 50% of the world’s population now living in urban areas, efficient and reliable transport systems are essential.

To meet this need, Ramboll has been working on some of the world’s largest, most innovative infrastructure projects and is the leading consultancy in the Nordic market. We create value for transport authorities, contractors and local authorities by providing multidisciplinary technical excellence and minimising resource usage. Read more at: www.ramboll.com/transport

ENVIRONMENT
Industrial development, urbanisation, the extraction of natural resources and extreme weather events all call for sustainable and responsible environmental solutions.

As the leading environmental consultancy in Northern Europe and one of the top-20 globally, Ramboll’s environment experts help customers across the mining, water, buildings, transport, energy, and oil & gas markets to address these issues. We take a comprehensive view of each project to optimise every step of the process and deliver solutions that are technically resilient, environmentally sustainable, and valuable to society. Read more at: www.ramboll.com/environment-and-health

ENERGY
Security of power supplies, climate change, energy efficiency and resource scarcity are top priorities on the global agenda.

Ramboll is at the forefront of addressing these issues as the global market leader in offshore wind, waste-to-energy and district heating consulting and the leader in Scandinavia for large-scale thermal power consulting. We also have a specialist competence in designing power transmission masts and offshore wind met masts. Read more at: www.ramboll.com/energy
PLANNING & URBAN DESIGN
Ramboll’s holistic approach to urban development encompasses strategy, planning, and world class technical design services and is based on an integrated multidisciplinary skills base.

We have an extensive track record working with a number of the world’s largest cities to create liveable, sustainable, and implementable urban development solutions that are fully adapted to the local context. Read more at: www.ramboll.com/planning-and-urban-design

WATER
Water is essential to life and one of our most precious resources. Working with municipalities, utilities, and industrial clients, Ramboll draws on proven multidisciplinary expertise to manage the most challenging water resources, wastewater, and storm water issues. We integrate treatment process selection and engineering, operational services, and regulatory management and planning to deliver innovative solutions that benefit both industries and society. Read more at: www.ramboll.com/water

OIL & GAS
To make it in today’s fast paced and competitive oil and gas market, companies depend on advanced technical solutions that combine economic efficiency with stringent health, safety and environmental (HSE) safeguards during the production and distribution processes.

These elements form an integral part of Ramboll’s independent and multidisciplinary consultancy service, which covers the entire project cycle. We excel in onshore consultancy and have designed offshore structures for industry giants such as Maersk Oil, DONG Energy and Statoil since the 1970s. Read more at: www.ramboll.com/oil-gas

MANAGEMENT CONSULTING
National, regional and local authorities are responsible for issues that affect us all; from health care, education and day care to strategic planning of infrastructure and climate initiatives. Drawing on 500 management experts, Ramboll acts as a trusted partner to public administrations, creating the insights needed to make informed strategic decisions that promote stronger societies.

With unprecedented levels of competition in the global economy, Ramboll focuses on empowering private sector customers with expertise and powerful management tools. Read more at: www.ramboll.com/management-consulting

ROAD SERVICES
Ramboll has the expertise to work across all aspects of a roads project, from strategic planning, route design and feasibility studies, through to early concept and detailed design, design checks, specialist inputs and site supervision. We provide services spanning the whole life cycle of a project.
ROADS
ABOUT US

Ramboll brings decades of experience in the design, construction, management and upgrading of roads, highways and motorways. We bring a deep understanding of the ever complex demands on modern day infrastructure projects and appreciate how a road network fits into the broader infrastructure landscape and the impact on local and national economic, environmental and social prosperity.

We have worked with contractors, private finance initiatives, developers and local authorities across procurement types including; early contractor involvement, design and build, and direct client approval. We are known for providing holistic solutions that serve the whole life cycle of a project, whether for new strategic routes, extensive widening schemes, minor improvements works or large asset management programmes.

Our expertise and portfolio
We bring expertise that spans: road and motorway engineering; structural, civil and bridge engineering; transport and urban planning; traffic engineering; environmental consultancy; ground, water and sewerage engineering; project management; construction management and monitoring; road asset management; gantry system design and visual communications; landscaping and lighting design; and risk analysis.

Working in close cooperation with our clients and their supply chain, we devise solutions that successfully tackle economic and technical complexities, as well as environmental sensitivities and have gained industry recognition for our collaborative efforts and environmental solutions.

Our experience spans award-winning projects such as the extensive widening works on the M25 and M1, the A477 improvement works in Wales, the improvements to the A380 South Devon Link at Kingskerswell, being responsible for 95% of all gantries in the UK, working on all projects in Highways England’s Smart Motorway programme, and advising Highways England on improving the sustainability of strategic highways.

OUR TEAM
We have 13,000 people in 300 offices across 35 countries.

RECENT AWARDS
Ranked 15th in NCE’s 2016 Top 100 civil engineering practices encompassing contractors and consultancies
Chartered Institution of Highways and Transportation (CIHT) South West 2016 award winner for Large Transportation Project.
Post Tensioning Association - Special Recognition Award 2016 for innovative engineering solutions
George Gibby Award in the ICE Wales Cymru Awards 2015 recognising our environmental solution.

A477 RED ROSES TO ST CLEARS
The improved section of the A477 road forms part of the Trans European Road Network (TERN), a strategic route linking mainland Europe with West Wales and Ireland. Image Simon West.
OUR SERVICES

INTEGRATED MULTIDISCIPLINARY DESIGN, ENGINEERING AND CONSULTANCY THROUGH THE PROJECT LIFECYCLE

- Project Management
- Strategy and planning
- Environmental management
- Ground engineering
- Road engineering
- Structural engineering
- Traffic engineering
- Gantries and communications
- Lighting design
- Asset management

Strategic advice and planning
Our strategic advice for highways balances funding, stakeholder, environmental and sustainability needs to deliver innovative, pragmatic and cost effective solutions. Our expertise includes: Preparation of Business Cases; Transportation Engineering and Planning; Traffic and Transportation Assessment; Environmental Impact Assessments; Traffic Management and Calming Schemes; Temporary Traffic Management; Parking and Traffic Studies; Internal Roads Engineering; Travel Plans; Expert Witness and Safety Engineering.

Structures
From bridges and tunnels to retaining walls and gantries, we have the ability to deliver all structural elements of roads projects, throughout the entire project lifecycle. Our expertise extends from the performance of existing structures and how to save, strengthen and improve them, to the appropriate application of new materials, design processes and off-site manufacture. We have a reputation for designing innovative, efficient and elegant solutions that meet the needs of both our clients and the projects stakeholders.

Highway engineering
We work in partnership with our clients to develop all aspects of road and motorway projects, whether undertaken in the public or private sector. Our integrated highways and environmental designs in ECI and D&B contracts has seen us regularly create competitive edge for our clients in the quality and environmental aspects of their solution. We also provide specialised services such as the design of special pavements, the design and management of widening schemes, and the implementation of Intelligent Transport Systems (ITS).

Asset management
We advise operators on achieving strategic objectives by adding long-term value and optimising the performance of built highway assets. We combine expertise in road and bridge design asset management with advanced testing methods and IT to offer complete solutions. Ramboll RST is the leading provider of consulting services and equipment for efficient pavement management. We use our expertise and analytical methods to optimise road asset management and to the benefit of road authorities, contractors, and end users.

M25 JUNCTIONS 27-30
We provided a suite of multidisciplinary services into this award-winning project.
OUR APPROACH

FOCUSED ON CUSTOMERS, PROGRAMME AND COLLABORATION

“IT really was the best working environment I have ever experienced and should be a model that all projects would do well to follow.” TfL’s Technical Approval Authority on STIP, commenting on his experience on the Hammersmith Flyover Phase II strengthening project.

Constructing Excellence in Wales (CEW) Awards, Integration and Collaborative Working category

Programme and safety focussed
On time and on budget. We have nothing short of complete focus on project success and use our firm grip on commercial realities, whole life costs and buildability to inform our designs from the outset, ensuring designs are right first time and reflect the programmes needed outcome, budget and schedule. Health and safety is a natural part of our entire design process with health and safety in buildability, usability and maintainability considered throughout. We aim to remove or significantly reduce risk through design and enjoy a culture that puts health and safety first.

Sustainable solutions for customers and stakeholders
Ramboll is committed to creating a sustainable future with solutions that enable people and nature to flourish, this is the position we take as a leading sustainable society consultant. We measure our success not only on how well our clients are served by what we have done, but also by how well road users, residents, communities and society have been served. We bring enviable skills in producing progressive solutions that deliver both commercial advantage and safe sustainable outcomes.

Forming close relationships
We know what it takes to work in integrated teams. We are highly collegial, collaborative and communicative. You will find us completely engaged and fully committed. We listen to the individual circumstances of a project and bring agility of thought to devise appropriate solutions. Our goal is to bring a deep understanding of the desired customer experience and clients’ needs and vision, and to create close relationships with the end client, contractors and supply-chain. Our track record in securing project gains through joined up thinking has won us industry recognition and the trust of our clients.

Driving efficiency through BIM
Our expertise in BIM will bring added value to any project and allow us to provide a fully coordinated scheme. We have a huge amount of experience working on multi-discipline projects across multiple organisations, collaborating in the BIM environment by sharing models, co-ordinating design, and delivering information. Ramboll’s involvement in this development combined with the emphasis we place on collaboration, puts us in a unique position.
The Queensferry Crossing is the UK’s tallest bridge and we are proud to lead the Design Joint Venture. As well as boasting the longest three tower cable-stayed bridge in the world, the project encompasses a 22km footprint that includes substantial improvement works on the surrounding road network.

There have been many innovations from the project team, including re-configuring the specimen design for the FerryToll junction where Ramboll’s suggested approach reduced a 7-span to a 2-span structure, with further efficiencies in slip road design and embankment work.

Our unwavering commitment to innovations is focused on ways to bring about programme benefits as well as improved outcomes for end-users and society as a whole.
01 A380 AT KINGSKERSWELL
The major new road was opened to traffic in December 2015, removing 95% of traffic away from Kingskerswell and providing a safer, less congested and faster route for through traffic. The project includes three road structures over the Torquay rail line, nine major road bridges, four flood culverts and highly praised environmental and geotechnical measures that went above and beyond the industry norm, garnering awards for considerate practices.

02 EXTENSIVE WORK AROUND THE M25
Ramboll has worked extensively on the M25, including widening of several sections including the J12-15 and T5 spur and J27-30. The work on J27-30 which was carried as part of a JV with WSP for Balfour Beatty/Skanska, attracted particular praise when in 2013 the project won the 2013 Major Project Award, with judges’ commenting, “The team faced one of the biggest challenges in widening one of the busiest motorways in Europe. Despite difficult conditions, cost savings of 18% were achieved and the quickest road widening rate of 1.8km pm.”

PROJECT PORTFOLIO

Our knowledge of the roads market, together with our appreciation of commercial realities and whole life costs means we know how to ensure that what we design is what gets built.
03 M1 JUNCTIONS 25-28
The M1 widening scheme covered a 25km section of motorway, bringing it to dual four-lane standard. Our road engineers worked on the main contract with co-designers WSP on the replacement of overbridges, the widening of underbridges, extensive lengths of cutting and embankment retaining walls, new sign and signal gantries, new lighting and communications, and landscape works, with our environmental team providing services for ecology, contaminated land, water quality, and waste and resource management.

04 A477 ST CLEARS TO RED ROSES
Ramboll provided environment design and management, and highways, structures and geotechnical design for the improvement of a 9.6km section of the A477, part of the Trans European Road Network (TERN). The scheme won the George Gibby Award 2015 for ‘significant improvement to wildlife habitat and community space while resolving a potentially serious flood risk.’ In 2014, the project won the CEEQUAL Excellent Whole Project Award and the Integration and Collaborative Working (CEW) Award.
WORLD CLASS PROJECTS

05 HIGHWAYS ENGLAND SUSTAINABILITY ADVICE
Ramboll provides sustainability and environmental support to Highways England and is now the organisation’s key consultant in these areas, working on a series of projects that will help make strategic highways infrastructure more sustainable. We have delivered a new carbon accounting tool and management framework; developed innovative designs for noise barriers that incorporate photovoltaic cells and air quality mitigation measures; and revised methodologies and approaches to assess and mitigate water quality impacts from highway runoff.

06 A58 BLACKBROOK BYPASS
The A58 Blackbrook Bypass runs through one of the most environmentally important areas in St Helens, requiring the Ramboll and Birse Civils team to meet 27 planning conditions before proceeding to detailed design. A Sustainable Urban Drainage System was adopted, and a number of attenuation ponds installed to store surface water and relieve flooding as well as creating wildlife habitats. The project received CEEQUAL Outstanding Achievement Award for Ecology and Biodiversity.

07 TENNISON ROAD BRIDGE
The largest bridge replacement project over the rail network in the UK’s South East region in a decade delivered a new road bridge to serve commuters with wider roads and footpaths, and greater load capacity. Ramboll’s innovative design approaches demonstrated that, with technology and engineering expertise, it is possible to keep trains running and passengers travelling whilst a new road bridge is being launched into position. Winner of ICE London Evening Standard’s People’s Choice award 2016. Image: GRAHAM.
SHINFIELD EASTERN RELIEF ROAD
Ramboll provided a full range of design services covering highway, bridge, geotechnical and environmental engineering for part of a road scheme designed to relieve congestion in the village of Shinfield in Berkshire and also provide access to land for development of new housing and a science park. In addition to a 1.8km single carriageway, junction and roundabout design, the project also involved a new dual three lane bridge over the M4.

HAMMERSMITH FLYOVER STRENGTHENING
TfL appointed a Ramboll / Parsons Brinckerhoff JV to design remedial works that will see the Hammersmith Flyover though at least 60 years without requiring major maintenance. In addition to award winning strengthening works, the project involved new surfacing, waterproofing and new drainage system, with road engineering spanning highway realignment, a new central reserve vehicle restraint system, a bespoke surface water above deck drainage system, and design of kerbs, paved areas, signs and road markings. Image: Daniell Shearing.
10 STRUCTURES AND TUNNELS INVESTMENT PROGRAMME (STIP)

STIP forms part of TfL’s £4bn Road Modernisation Plan, which represents the biggest investment in London’s roads in a generation, including hundreds of transformational projects within the existing road network. A Ramboll / Parsons Brinckerhoff JV was awarded design work for all three packages, with Package 1 including the replacement of four road-over-rail bridges for the A1 Upper Holloway Road Bridge, A1 Highbury Corner Bridge Deck, A127 Ardleigh Green Bridge (pictured), and A406 Power Road Bridge.

11 GANTRY AND SMART MOTORWAY DESIGN

We are responsible for the design of 95% of all gantries in the UK and are working on all of Highways England’s Smart Motorway projects. Ramboll has been a leading designer of gantries since the mid 1970’s and has worked at the forefront of emerging motorway management dating back to the introduction of Controlled Motorways on the M25. We were instrumental in the initial trial pilot scheme of dynamic hard shoulder running on the M42 and have provided gantry solutions for all of the projects in Highways England’s Managed and Smart Motorway programmes.
Winston Churchill Avenue is the only road linking Gibraltar to mainland Spain, and the Gibraltar Airport runway was built across it in 1941. Ramboll was commissioned to produce an outline strategic brief for a scheme to provide for a free flow of traffic. Our engineers recommended constructing a new 2.3km dual carriageway road around the airfield’s eastern side, a proposal that was accepted leading us to prepare an outline design for that scheme. Image: RAF Command photographer.

Ramboll provided technical expertise to the Employer and supervision of the works for highways, structures, geotechnical and environmental aspects of the A487 Glandyfi improvement works to widen and straighten a 1.3km stretch of road surrounded by steep hill slopes, an estuary and rail line and running through a highly environmentally sensitive area. The scheme includes new carriageway construction with associated drainage, earthworks, traffic signs, carriageway markings, safety barriers, retaining structures, and hard and soft landscaping together with statutory undertakers’ diversions.
14 MERSEY GATEWAY
As lead Technical Consultant, Ramboll has played a significant role in the Mersey Gateway. The project includes a new six-lane cable-stayed tolled bridge across the Mersey Estuary between Runcorn and Widnes, modifications to the existing highway networks, and the connections into them for the new crossing. The total length of highway works is approximately 9.2km. Our services have spanned: environmental impact assessments; bridge, highway, structural and ground engineering; transport planning, traffic engineering and traffic safety; construction and contract management; ports and marine structures.

15 QUEENSFERRY CROSSING
The Queensferry Crossing is the largest civil engineering scheme in Scotland for a generation. The focal point is one of the world’s largest cable stayed bridges with a total length of 2.64km. The overall scheme has a 22km footprint, including substantial road and bridgeworks to make and improve connections with the surrounding road network, also integrating smart motorway technology, the first implementation in Scotland. Ramboll leads the design JV for the contractor FCBC on this £1.35bn Transport Scotland project. Image courtesy of Transport Scotland, Photographer Bastian Kratzke.
16 E18 MOTORWAY, FINLAND
Ramboll supported the planning for the development of European road, E18, which is the most significant international road connection in Finland. The route connects the growing areas in southern Finland with the metropolitan area and the important export trade terminals. Ramboll worked on the project for six years, providing a suite of road and highway, tunnel and hard rock engineering services. Image: Erja Mutanen.

17 FEHMARNBELT FIXED LINK, DENMARK-GERMANY
Scandinavia and the rest of Europe will be connected by the world’s longest road and rail tunnel, the Fehmarnbelt Fixed Link. The immersed tunnel will be more than 18km long and carry a four-lane motorway alongside a twin track-electrified railway, with motorists having a journey time of approximately 10 minutes through the tunnel. The immersed tunnel solution challenges existing tunnel building standards and improves functionality through its pioneering longitudinal ventilation system and state-of-the-art safety and security features.

18 NORDHAVNSVEJ, DENMARK
Nordhavnsvej is the largest road construction project in Copenhagen for 50 years and will be a new approximately 3km long road link between Nordhavn and Helsingør motorway. The new stretch of road will pass through densely populated city areas and pass under three heavily trafficked railways and several roads. Ramboll has provided a suite of multidisciplinary services throughout the course of this project, with construction beginning in 2011 and completing in 2017.