We are engineers, scientists and consultants who believe in the power of design to create a better future.

We are passionate about developing innovative design solutions, and we strive to put the best of ourselves in every solution we deliver. We do this as a matter of professional pride. We are reliable, responsive, and committed to understanding project drivers, and we are not afraid to challenge the project brief. To us, the most important thing is a happy customer.

At its best, good design can regenerate communities, protect natural environments, and connect people across vast distances; it can provide new energy solutions and create buildings that people feel happy to be in. Good design fulfills a certain purpose and maximises the asset’s performance. Good design is also robust and long-lasting.

Our design philosophy is to always make room for the human experience. Ultimately, we measure our success by how well people and communities are served by what we have done.
We are a global practice of engineers, designers and consultants who share a commitment to excellence in everything we do.

Ramboll is a leading engineering, design and consultancy company founded in Denmark in 1945. The company employs close to 13,000 experts in the Nordics, North America, the UK, Continental Europe, Middle East and India, supplemented by a significant representation in Asia, Australia, South America and Sub-Saharan Africa.

With more than 300 offices in 35 countries, Ramboll combines local experience with a global knowledgebase constantly striving to achieve inspiring and exacting solutions that make a genuine difference to our customers, the end-users, and society as a whole. Ramboll works across the markets: Buildings, Transport, Planning & Urban Design, Water, Environment & Health, Energy, Oil & Gas and Management Consulting.

RAMBOLL MIDDLE EAST

We are a global practice of engineers, designers and consultants who share a commitment to excellence in everything we do.

Ramboll in the Middle East specialises in structural engineering, building services, sustainability and environmental services, transport services and oil & gas services. We have five offices located in Dubai; Abu Dhabi; Doha, Qatar and Riyadh, Kingdom of Saudi Arabia.

Our biggest customers include Presidency for Meteorology and Environment (Saudi Arabia), Qatar Foundation/Mshereib Properties (Qatar), Government of Fujairah (UAE), Damac Properties (UAE) and Al Naboodah National Contracting Group (UAE).
FACTS

MISSION
Through the inherent ability of our people, our decency and exacting business principles and values, Ramboll strives to create solutions to our customers that balance human and commercial needs and are genuinely insightful and progressive.

VISION
Ramboll is committed to helping create inspirational and longstanding solutions that allow people and nature to flourish.

OWNERSHIP
The Ramboll Foundation is the main owner (97%) of Ramboll Group A/S. The remainder of the company is owned by Ramboll employees.

HEAD OFFICE
Ramboll’s Group Management and head office are located in Copenhagen, Denmark.

REVENUE
Ramboll Group 2014 revenue was EUR 1.1 billion.

GEOGRAPHICAL SPREAD
The Nordic market is considered Ramboll’s home market and includes Denmark, Sweden, Norway, and Finland. We also have a strong presence in the UK, India and the Middle East.

RAMBOLL PROJECTS PER YEAR
Ramboll participates in approximately 40,000 projects per year.

STRONG CUSTOMER RELATIONSHIPS
We have worked with each of our top ten customers for an average of 50 years.

VALUES
• Insight
• Integrity
• Empathy
• Enjoyment
• Empowerment
Ramboll’s background in this field makes us uniquely positioned to assist our hospital and healthcare customers to modernise and optimise their facilities.

Our achievements in this area include the reform of the Norwegian healthcare system, merging private hospitals in Belgium and designing the new Hospital in Aarhus, Denmark – the largest hospital project in Northern Europe.

We understand how the healthcare sector operates. We offer our customers all of the engineering skills required for the design, construction and operation of all types of healthcare and pharmaceutical sector buildings.

**Improving efficiency**

Ramboll offers a broad range of expertise that helps our customers in the hospital and health sector improve their efficiency.

Our consultants have experience with working in the hospital sector. This means we can assist our customers with a range of services, including clinical pathway analysis, workflow analysis, and structural planning.

We also offer a unique healthcare system, Ramboll CARE, which supports nursing and home care specialists when they visit handicapped and elderly citizens in their homes. CARE allows personnel in the field to access key information such as medical records, medicine schemes and emergency alarms. CARE also manages human resources, visiting plans, time schedules and route planning to secure continuity and regularity for the handicapped or elderly. About half of Denmark’s municipalities use CARE today.

**A new wave of wellness spaces**

All over the world, people are demanding new physical settings and ways of improving their health, their well-being and their lives. The new recreational centres combine sports, quality family time, and elements from the traditional spa. Ramboll helps its customers respond to this growing trend with innovative solutions for diverse and modern wellness spaces.
SERVICES

We offer a comprehensive range of services to the healthcare sector covering the full spectrum of engineering disciplines.

We provide multidisciplinary services on healthcare projects of any scale, and at any stage of the project life cycle. From planning and feasibility to structural engineering to specialist disciplines such as acoustics and vibrational analysis – our service coverage is both comprehensive and detailed.

Digital Design is a key Ramboll strength. Our specialists lead the way in computational engineering, advanced use of laser modelling and BIM. Collaborative working in the BIM environment is increasingly becoming essential to hospital projects, where the integration of complex mechanical and electrical systems is crucial. At Karolinska Hospital, we are working on what is likely to be the largest BIM model ever created.

OUR SERVICES

- Civil and structural engineering
- Infrastructure, energy, traffic and environmental engineering
- Building services engineering
- Healthcare planning
- Fire engineering
- Healthcare acoustics
- Vibrational analysis
- Geotechnical engineering

BIM MODELLING EXAMPLE
FIRE ENGINEERING
Our fire engineering team works closely with the design team to develop a fire strategy that enables design flexibility and achieves best value.

The fire team identifies the means by which value can be realised by analysing the structural, services, facade and fire-fighting elements of the building and managing the fire safety approvals process. Our portfolio of work includes significant projects in all building sectors with some of our most impressive work in sectors which are amongst the most challenging to fire engineer. These include high rise, education, sports facilities and healthcare – in which we lead in the UK.

ACOUSTICS
Our acoustic specialists provide innovative solutions that are well integrated with overall project aims.

For over 20 years we have been responsible for the successful acoustic design of numerous healthcare projects both in the UK and overseas; we have also been closely involved in the development of national design guidance. Key to our approach is a fundamental assessment of value. Our acousticians work closely with others in the design team to rationalise space planning and partition layouts, optimise patient privacy and dignity, while ensuring a positive healing environment with due regard for infection control and overall clinical value.

DIGITAL DESIGN
We are at the forefront of digital design, offering the most advanced intelligence in computational analysis, laser aided modelling and BIM.

We are skilled at applying advanced computational analysis to the design of structures, delivering value beyond what would have been possible using traditional engineering techniques. Recently we pioneered the integrated use of laser scanning with other modelling techniques within the BIM environment. Ramboll’s Headquarters building in Copenhagen is a standout BIM project, where the use of a single integrated model produced major energy savings and cost benefits.

VIBRATIONAL ANALYSIS
Ramboll uses detailed analysis to underpin efficient and robust solutions for vibration sensitive areas.

We have developed an innovative approach to assessing the performance of a structural system for vibration, allowing a number of options to be considered early in the design process. We use finite element analysis to fine tune the design to achieve the level of performance required. We then use our bespoke vibration modelling software to reveal the vibrational impact of the design on each area of the building. Space planning can then be coordinated to maximise the efficiency of the structural solution – delivering project value and functional flexibility.
Ramboll was appointed as a specialist structural sub-consultant to Diwi to provide engineering services on the new medical facility located in Doha that houses dental, dermatology and other specialty outpatient clinics.

The facility consists of six interconnected buildings that will house the new dental, dermatology and other specialty outpatient clinics.

The buildings are situated in two clusters, each incorporating three buildings. With a proposed ground floor area of 58,000 sqm, the facility is spread over ground and four upper levels and approximately 67,000 sqm is of basement parking over three levels.

Ramboll has provided the following engineering services: Fire & life safety, Sustainability / Global Sustainability Assessment System (GSAS) Consultancy and Traffic Impact Study, Acoustics and Design management.

The client Hamad Medical Corporation (HMC) shares the same vision as Qatar’s 2030 vision which focuses on four pillars namely; Human Development, Social Development, Economic Development, Environmental Development. In line with this vision it was HMC’s aim to achieve the GSAS 3-Star rating for this premise.

The GSAS Healthcare Version 2.1 was sought for the project assessment and certification. Ramboll assisted the design team and the client to meet the 3-Star target by organizing integrated sustainable design workshops, providing the compliance reports and reviewing GSAS tools to streamline the GSAS.
The National Centre for Cancer Care and Research (NCCCR) by the Hamad Medical Corporation (HMC) will be located in Doha, Qatar.

The total gross built-up area is approximately 90,000 sqm.

The NCCCR building includes facilities such as Ambulatory Care / OPD Centre, Triple Assessment Service, Chemotherapy Unit, Inpatients, Intensive Care Unit and many other facilities.

Ramboll’s fire engineering team is involved in developing a fully coordinated fire strategy and in obtaining authority approvals.

The NCCCR will include a total number of 216 beds, including Intensive Care Unit (ICU). The total design duration is more than 18 months.

Ramboll’s fire engineering division will be involved in developing a fully coordinated fire strategy and in obtaining authority approval from the Qatar Civil Defence.

LOCATION
Doha, Qatar

ARCHITECT
Stantec

ENGINEERING SERVICES
Fire & life safety services
MILITARY HOSPITAL, SHARJAH

A state of the art medical and educational facility

This 200-bed hospital, consisting of two residences for medical staff, a mosque, an emergency helipad, air conditioned ambulance garage, an armoury, chemical storage facility and security gatehouse will be offering state of the art facilities in Sharjah.

As well as providing medical services, the hospital will function as a cutting edge medical education facility, with an entire floor comprising three lecture theatres, a library and associated offices, offering the very latest research and excellence in medical education.

The hospital will also cater for dignitaries by providing VIP medical suites.

As a Military Health Facility, the hospital has been designed to double the bed capacity in case of emergencies to accommodate up to 440 patients at any one time. The overall built up area of the complex is 75,000 sqm at five-storey height, and it will house 3,000 visitors, staff and patients at capacity.

Ramboll has created a fully integrated design that incorporates the latest technology, enabling this market leading facility to support its full range on-site infrastructure, ensuring that fire safety, site security, patient comfort and the latest communication technology is built into the design.

LOCATION
Sharjah, UAE

CLIENT
Department of Military Works

ARCHITECT
RSP Architects

ENGINEERNG SERVICES
Structural engineering
Building services
Fire & life safety
CLEVELAND CLINIC
Cleveland Clinic, Abu Dhabi is the future of healthcare in the Middle East

This 7 star, state-of-the-art, 22-storey facility promises to set the benchmark in this sector for years to come and in the UAE such a beacon of progress deserves to be eye catching. We were commissioned to check all engineering of the façade systems, including complex double skin arrangements, glass fin walls, skylights etc. As is often the case in a project of this scale, with a rapid building schedule, the design remit evolved. Flexibility and the ability to respond intelligently and intuitively to design challenges have long been by-words of the Ramboll brand.

NEW MAFRAQ HOSPITAL
High-rise hospital with 749 number of beds

Ramboll Middle East has been awarded the life safety and fire protection peer review subconsultancy, by a Canadian Architectural Firm, Burthill - a Stantec Company. The task is to provide the life safety and fire protection strategy guidance for the construction of their new Al Mafraq Hospital project, a new modern hospital located in the New Abu Dhabi Central Business District. The hospital will contain 499 beds, and is considered for an internal expansion of up to 749 beds depending on the operational demand and growth of the population at this community.

AL MAKTOUTM ACCIDENT & EMERGENCY HOSPITAL
This 300 bed, 95,000 sqm facility includes a four-storey inpatient unit, a large clinical space, emergency department and dedicated support area

The highly integrated design provides significant flexibility and focus on patient care and family needs, utilizing the most advanced medical technology, international design and healthcare planning solutions available. Ramboll’s Fire Engineering team were commissioned to produce a peer review of the fire and safety designs for the building, identifying and assessing non-compliant and high risk aspects of the design. The Ramboll team provided advice and practical solutions on how to meet international safety standards and obtain fire authority approval, while maintaining the integrity of the architectural design.

KING FAISAL SPECIALIST HOSPITAL & RESEARCH CENTRE
Ramboll provided a sustainability review during the masterplanning stage of this project to help our client achieve LEED Accreditation

Our holistic approach to design and operation was valued during the early stages of this project. We focused on improving the energy and environmental performance of the design, which was viewed as the most effective way of achieving LEED Accreditation. We also undertook high level energy modelling as part of the exercise. This helped to educate the design, and also ensured that the architect understood the impact of his design decisions during further design stages. Following the masterplanning process, the project is continuing to pursue LEED rating based on the recommendations made by Ramboll.
The extension of the King Saud University Medical City comprises several new buildings for the university covering an approximate area of 350,000 sqm.

The first stage includes a new National Diabetic Center, a new dental college and an expansion of the medical college.

Medical college extension

The medical college extension project includes teaching facilities, lecture halls, public spaces, a full scale skills lab, mosques and a spectacular main auditorium with audience capacity of 1,400.

National Diabetic Centre

The National Diabetes Centre will be a national institution for diabetes, containing research and central functions, as well as treatment for complicated cases. It will in effect be a miniature hospital, offering outpatient facilities, radiology, a large polyclinics department, bed wards, counseling and education.

Dental College extension

The administration of KSU has been constantly committed to equipping the school with the state-of-the-art facilities beneficial to advance dental education.

The extension to the existing Dental College will provide these facilities, including the very latest technologies.

The design team

Ramboll has been entrusted with the building design for this project. In order to ensure high class delivery we have created project teams bringing together our experts from Ramboll in the Middle East, Sweden, Denmark, Norway and United Kingdom.

All together we have around 80 dedicated competencies involved. Ramboll Group is the lead consultant bringing together all of the resources to ensure a smooth design and construction process.
KING ABDULLAH MEDICAL CITY,
Transportation planning consultancy services for a medical city near Makkah, Kingdom of Saudi Arabia

King Abdullah Medical City is located on the Jeddah - Makkah highway, which covers an area of approximately 4 million sqm. The project represents one of the major healthcare development projects in the Kingdom of Saudi Arabia, providing a high degree of healthcare to the population of the holy city of Makkah and other cities in the country. The development consists of a main hospital building of 1000 beds, administration building, research building, rehabilitation building, academic affairs education centre and residential buildings. Ramboll provides transportation consultancy service for the project.

JOHN RADCLIFFE HOSPITAL
This project is part of a Procure 21 framework, with BAM Construction as the principal supply chain partner, to build a new Acute Vascular Imaging Centre (VIC) at the John Radcliffe Hospital in Oxford.

Ramboll has designed several projects as part of the Procure 21 framework. Technical challenges included the building’s location above a road providing access for deliveries and the fire brigade. Due to the MRI scanner’s close proximity to hospital corridors and wards, suitable protection for patients and members of the public had to be incorporated into the Centre's design. The challenge of enabling the scanner to be moved and replaced after construction was overcome by including a removable panel to the rear of the building.

RADIUMHOSPITALET, OSLO, RADIATION BUILDING
We provided multidisciplinary engineering services on this state of the art new facility which houses five radiation treatment bunkers

Part of Oslo University, the Radiumhospitalet is Northern Europe’s largest centre for the treatment of cancer. Ramboll provided multidisciplinary services on a new building on the hospital campus, designed to provide world-leading radiation treatment facilities. The 8,000 sqm facility houses five radiation treatment bunkers, an MR simulator, as well as examination rooms, offices, laboratories and lecture rooms. We were responsible for civil, geotechnical, structural design as well as traffic planning.

ST OLAV’S UNIVERSITY HOSPITAL,
LABORATORY CENTRE AND WOMEN/CHILD CENTRE
Two new buildings enhanced this major Norwegian hospital’s services to its patients – Ramboll provided structural engineering for both

We engineered two new major additions to the St. Olav’s hospital campus. The laboratory centre provides facilities for laboratory services, research and teaching. The woman/child centre offers dedicated maternity and early child medical services. It houses 14 birthing rooms, 22 newborn intensive care beds, 22 monitoring beds, 40 outpatient beds as well as nine operating theatres, three Xray rooms and MR facilities.
This massive €1.4 billion scheme will see the existing Karolinska hospital replaced with a new development comprising five buildings including a multi-storey car park. The total new floor build is 320,000 sqm. Our structural, civil and environmental engineers are working on the 14-storey main hospital building, which is to house casualty departments and intensive care units, operating theatres, as well as hundreds of single bed wards; we are also working on the adjacent 12-storey research centre.

Very strict vibration limits have been specified in order to accommodate highly sensitive medical equipment.

The challenge to the structural design is further complicated by the presence of a planned extension to Stockholm’s underground beneath one corner of the hospital building, and a helipad on the roof. We have designed a post-fixed solution that allows the client future flexibility in their selection of medical equipment.

All our designs are being submitted in a BIM-suitable format, and monthly multidisciplinary model reviews support thorough clash detection and design integration. BIM coordination is a key element in an efficient phasing strategy that should see the hospital completed to an incredibly fast-track programme, by 2017.
LEWISHAM HOSPITAL
In April 2008 the Riverside development was named Best Operational Health Scheme at the Public Private Finance Awards – we provided multidisciplinary engineering services.

This Phase 3 development at Lewisham Hospital was carried out under a PFI contract with Carillion Construction (Mowlem). The weaving ‘S’ shape of the Ravensbourne River led to the design of an ‘S’ shaped building which maximised the square area available for the new hospital. This presented its own set of challenges both with the internal design and with on-site logistics. The curved nature of the building meant that each room was not square, resulting in the need to carefully plan the position of beds, storage space, worktops and equipment.

SW LONDON LIFT
We worked on three of the NHS’s groundbreaking LIFT schemes in London, involving a total of eight healthcare centres.

These new, integrated facilities house GP practices alongside related services such as dentistry, physiotherapy and X-ray. South West London LIFT incorporates St John’s Health Centre in Battersea and Green Wryth Lane Health Centre in Richmond. A prime objective was to optimise the efficiency of the buildings, using passive features to provide acceptable temperature, lighting and ventilation levels. We also worked hard to standardise our solution across LIFT projects, reducing capital and throughlife costs.

BARKING CHILD AND FAMILY CENTRE
Sustainability was a key driver on this award-winning health centre, on which we provided multidisciplinary services.

The building is five-storey high, with the lower three floors dedicated to health services and the top two floors providing 22 affordable housing apartments. Sustainability was a central focus with 20% of energy being provided through a renewable source. Our design included biomass boilers serving hot water and heating to the centre and apartments, natural ventilation where possible to the clinical spaces and heat recovery ventilation to the apartments. The sustainable drainage scheme incorporates a green roof and rainwater harvesting.

FORTH VALLEY ACUTE
Largest NHS construction project ever in Scotland.

The new hospital will have approximately 860 inpatient and day beds and will replace existing hospitals at Stirling and Falkirk in Scotland. The fire strategy for the hospital was entirely non-sprinkled. This pioneering concept was subsequently ratified and led to revised guidance from NHS Scotland (CEL 25 2008) supporting the principle that hospitals do not require sprinklers if appropriately designed. Further benefits were achieved by specialist fire engineering design of the atrium (toughened glazing to the atrium facade rather than fire-rated glazing) and rationalisation of fire and smoke dampers.
NORTHUMBRIA HOSPITAL

With senior consultants in all medical disciplines on duty 24 hours a day, this will be the first dedicated specialist emergency hospital in the UK.

Located on the edge of Cramlington to the north of Newcastle, this new build facility will provide a uniquely comprehensive range of emergency care to patients in Northumbria. Specialist consultants and senior doctors will be available at all times to deliver expert emergency diagnostics and treatment to A & E patients. Our structural, geotechnical and civil engineers, along with our environmental consultants, have worked on the concept design.

At the centre of the development is a three-storey hub housing laboratories, radiology and operating theatres.

The hub is flanked by a series of ‘cogs’ that house wards on one side, and the entrance and ambulance podiums on the other. A concrete frame solution has been specified. The floor slabs vary between 200 mm and 400 mm in depth, depending on the vibration criteria in specific rooms - the theatres, MRI and scanner rooms are the most vibration-sensitive.

Our work on this project is wide-ranging, and includes intensive ground investigations and the design of a sustainable drainage system. We are also contributing to the design of a mounted helicopter pad that rises on take-off and landing to allow for early elevation in flight, enabling clear flight paths.

LOCATION
Cramlington, Newcastle

CLIENT
Northumbria Health NHS Trust

ARCHITECT
Keppie

VALUE
£70m

COMPLETION DATE
2014

ENGINEERING SERVICES
Structural engineering
Civil engineering
Geotechnical
Environmental
Vibration design
ALDER HEY CHILDREN’S HEALTH PARK
We were appointed as structural and civil technical advisors for this £250m PFI hospital scheme in Liverpool

Alder Hey Health Park is one of the largest specialist children’s hospitals in Europe, covering a total catchment population of 7.6 million. Alder Hey Children’s NHS Foundation Trust is seeking to vastly improve the current estate. The new hospital of approximately 43,000 sqm will be constructed on a new Greenfield site adjacent to the existing hospital, which will then be demolished and returned to public park. The proposals also include a new multi-storey car park for 1,000 cars. Ramboll is acting as technical advisor to the scheme.

MUSSELBURGH PRIMARY CARE CENTRE
Sustainable construction was a key driver on this scheme to create facilities for three GP practices as well as podiatry, physiotherapy, speech and language therapy and community dental services

Our infrastructure and geotechnical engineers worked closely with the architect and client to outline a sustainable approach to the redevelopment of this brownfield site. We devised an engineering solution that minimised the extent of existing concrete slab that has to be broken up and removed from site; this reduced noise, dust and disruption to residential neighbours during redevelopment, and also minimised waste-disposal and vehicle movement requirements.

ROYAL BERKSHIRE HOSPITAL
Our structural engineers worked on this consolidation project which created a new build floor space of 30,000 sqm and refurbished accommodation of another 30,000 sqm

We worked on the integration of existing hospital services from two sites onto a single site in central Reading. The new build works comprised a main entrance building with a multi-storey car park for 820 cars, while new and refurbished facilities provided space for maternity, accident and emergency, ophthalmology, obstetrics and radiology units, plus associated ward areas and care of the elderly. The scheme was constructed in a phased sequence to enable normal running of the existing hospital site.

INSTITUTE OF DEVELOPMENTAL SCIENCES (IDS), SOUTHAMPTON GENERAL HOSPITAL
Ramboll was responsible for the detailed design of the Mechanical and Electrical services and structural solutions on this sensitive research facility

The IDS houses research laboratories, office and lecture room facilities. The laboratories are heavily loaded with research equipment which produces significant heat gains. Low energy techniques, such as the use of heat recovery air handling plant, have been incorporated where appropriate and separate air handling plants serve a group of laboratories on each floor rather than larger units serving the whole building. This allows the services plant to be run efficiently to suit the hours of occupancy and environmental needs of each space.
AARHUS UNIVERSITY HOSPITAL

Ramboll is part of the winning consortium to design and lead the construction of the New University Hospital in Aarhus, Denmark

The new hospital will be an extension of the existing Aarhus University Hospital in Skejby. The hospital has been designed to accommodate future requirements with regard to technology, forms of treatment and work routines.

The hospital site will be modelled after an existing Danish town, Ribe, with low buildings on the outside and increasingly taller buildings as you approach the centre.

The site will also have neighbourhoods, streets and squares providing the basis for a diverse, dynamic and green urban area.

The complex will be divided into seven professional communities, each with its own specialist services. The hospital town will contain a six-storey building with treatment departments and beds, and a central arrival area. Three high rise buildings will house the administration department, research facilities and a patient hotel. The ground floor will house a reception area and facilities such as a conference hall, shops, a bank and a cinema.

LOCATION
Skejby, Aarhus

CLIENT
Region Midtjylland

ARCHITECT
C.F. Møller

VALUE
€1bn

COMPLETION DATE
2020

ENGINEERING SERVICES
Engineering design
Project management
Environmental management
CRANLEIGH HEALTH CENTRE
We helped develop a cross laminated timber (CLT) solution in line with a BREEAM excellent rating for this new health centre in Surrey

The new health centre at Cranleigh is to replace an existing structure with a two-storey building which will house doctors' consultation rooms as well as rooms for minor surgery. We worked closely with the architects to design an efficient CLT structure that delivers on the client’s aspirations for sustainability and cost effectiveness. The CLT structure is entirely prefabricatable, making it both more buildable and quicker to construct than a typical steel or concrete solution.

ST GEORGE’S HOSPITAL REHABILITATION CENTRE
This Procure 21 project involves the construction of a new rehabilitation services facility at the existing St George’s Hospital campus

An outmoded care facility will be demolished to make way for this new development. The proposed scheme incorporates three wards for rehabilitation therapy and a ‘hub’ area which will provide shared facilities such as a café, a gymnasium, community spaces and offices. This development benefits from several sustainable initiatives including extensive natural ventilation, low carbon technology energy supply, rain water harvesting and on-site storm water attenuation. Ramboll is providing civil, structural, geotechnical and environmental engineering.

GLOUCESTER ROYAL HOSPITAL
Working closely with the contractor, we helped define a fast-track approach to the concrete frame construction that saw this project completed earlier than scheduled

Part of the Procure 21 healthcare initiative, this scheme comprised a new three-storey maternity wing on the existing hospital site. Work also included the design of a new 40m-long link bridge structure at first floor level spanning from the new building to the existing tower block. Our engineers worked together with the contractor to agree an early striking strategy for the concrete formwork. The concrete frame was consequently completed earlier than programmed, allowing Costain to agree an early handover of the building to the hospital.

CHELTENHAM GENERAL HOSPITAL–LINEAR ACCELERATOR (LINAC) AND ENDOSCOPY UNIT
Ramboll engineered this specialist medical facility, which included massive bunkers that provide radiation shielding to the Linac facilities within

This development consisted of a two-storey extension to the Oncology Department of Cheltenham General Hospital under a Procure 21 framework. A steel frame building provides new reception space, workshops associated with the Linac facility and a new endoscopy suite on the first floor. While the new building is a conventional structure, the two additional Linac bunkers are extraordinary in their massive construction, required for radiation shielding. We contributed structural, geotechnical and civil engineering services.
TUNBRIDGE WELLS PFI HOSPITAL

This is the first hospital in the UK made up entirely of single room wards, ensuring greater patient privacy and cutting the risk of infections spreading

The redevelopment consolidates Pembury Hospital and Kent & Sussex Hospital into one new, modern facility on the Tunbridge Wells Hospital site at Pembury. The new facility, which includes 512 bedrooms, is the first hospital in the country to have completely single room wards. In total the new development has 1,200 car parking spaces while it also includes a helipad to cater for air ambulances on the upper part of the site.

With a total floor area of approximately 66,000 sqm, the main hospital building consists of an in situ concrete frame on reinforced concrete pad foundations with flat post-tensioned floor slabs and traditional in situ concrete columns and retaining walls. The structure is braced by concrete shear walls to the stair/lift cores, while its height is squeezed between the rock line and a maximum planning restriction level.

The site is set in an environmentally sensitive area, bordered by designated sites, and was developed while maintaining the existing facilities. As a result phasing issues were critical, involving complex species translocation programmes throughout construction.
ROYAL ALEXANDRA CHILDREN’S HOSPITAL
Royal Alexandra Children’s Hospital is one of only seven dedicated paediatric hospitals in the UK.

It is an eight-storey hospital designed to maximise space on a very tight site. A key component of the design is the central atrium, which binds all levels; delivering natural light and acting as a social hub. The objective of the fire strategy was to enable the architectural and operational ambitions for the hospital (which were markedly different from the standard FIRECODE solutions) and achieve best value for money. Furthermore, the construction of the hospital on a tight site required careful consideration to ensure the safety of the existing operational buildings. The RACH has been independently cited at international healthcare conferences as an exemplar hospital; where fire engineering has been best used in hospital design.

ODENSE UNIVERSITY HOSPITAL

TAMPERE UNIVERSITY HOSPITAL
Tampere University Hospital, Finland was extended to provide better facilities for the department of cancer diseases. The gross floor area of the building is 20,100 sqm and the volume 91,300 m³. The hospital has been designed to accommodate future requirements with regard to technology, forms of treatment and work routines. The frame structures are principally made of precast concrete. Ramboll provided structural and geotechnical design in support of this project. Our 3D design of frame structures created a significant co-ordination benefit. The cost of the project was estimated at €41.4 million and was completed in 2007.

ST CATHERINE’S HEALTH CENTRE
A major new health centre, intended to achieve a BREEAM Excellent rating, will improve healthcare provision to residents of Birkenhead

Situated between Derby Road and Church Road in Birkenhead, the project site is approximately 3.1 ha in size. Many of the existing hospital buildings are to be demolished and replaced with a single 12,721 sqm building providing health care facilities, a pharmacy and community centre. We are providing structural, geotechnical, and highways engineering, as well as environmental analysis. The ambition to achieve a BREEAM Excellent rating is a key driver to the design.
RECENT AWARDS

Over the years we have won hundreds of awards recognising excellence across all our services. Listed below are a few highlights of recent achievements.

Project Manager of the Year - Brian Sweeney
Construction Week Awards 2016

Highly Commended
Mechanical Project of the Year - The Green Planet
MEP Consultancy of the Year - Ramboll

Project of the Year
- The Green Planet
PREVIOUS AWARDS

01  MEP Middle East Awards 2015  
**Electrical Project of the Year**,  
Jeddah Corniche Towers,  
Jeddah KSA  
Highly commended: **Young Engineer of the Year**, Rana Itani, Senior Building Physicist

02  MEP Middle East Awards 2014  
**Mechanical Project of the Year**  
- Khalifa University, Abu Dhabi, UAE

03  MEP Middle East Awards 2013  
**Specialist MEP Consultant of the Year**  
- Khalifa University Phase 1, Abu Dhabi, UAE

04  MEP Middle East Awards 2012  
**Sustainable GCC Project of the Year Award**: The Change Initiative, Dubai

05  GCC Construction Week Qatar  
Awards 2012 **GCC Engineer of the Year**: Andrew Darlington  
- Doha Marina Mall, Qatar Project

06  GCC Construction Week  
Awards 2010 **GCC Tower Project of the Year 2010**:  
Shining Towers, Abu Dhabi

07  GCC Construction Week  
Awards 2009 **GCC Engineering Consultancy of the Year**: Eco-Arish, Liwa Oasis, Abu Dhabi

08  Ground Engineering Award:  
**Consulting Firm of the Year 2012**: BBC Broadcasting House W1 and Ferrari World Theme Park, Abu Dhabi

*photography — HOK Architects, RSP Architects, JKMM Architects  
photography, U+A Architects*