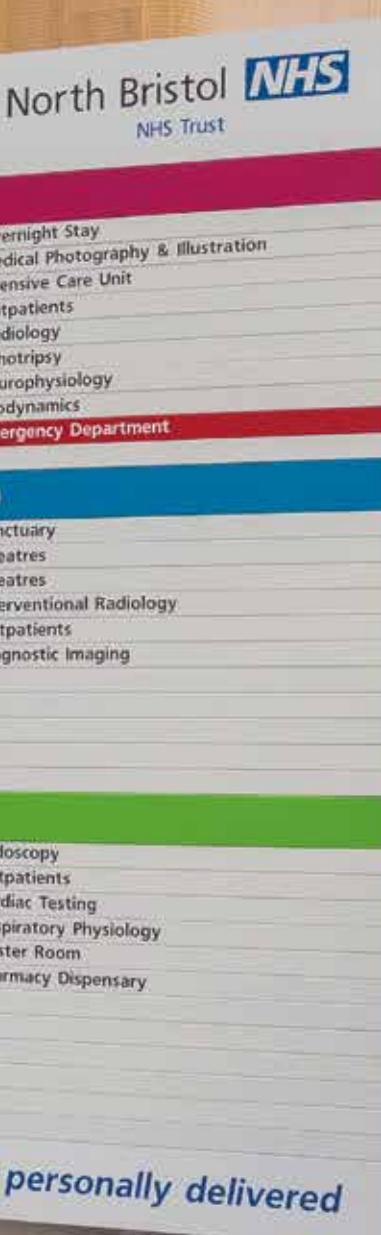


The UK: Your partner for healthcare solutions

# Infrastructure for health



 **HEALTHCARE  
IS  
GREAT**  
BRITAIN & NORTHERN IRELAND

# HealthcareUK

## The vital partner in global health

The UK is internationally renowned for delivering excellent healthcare. Our National Health Service (NHS) is the world's largest integrated health system. It has provided high-quality services for nearly 70 years, supported by academia and innovative commercial healthcare companies. This partnership creates breadth and depth of expertise that no other country can match.

Healthcare UK is your route to accessing this expertise. Whatever type of health facility, service or training programme you are planning, we can bring together the right UK organisations to meet your needs.

Our position in government gives us an excellent platform to support and promote international collaborations, working with UKTI's international network of offices in 107 markets around the world. As a joint initiative between the UK Government's Department of Health, the NHS and UK Trade and Investment (UKTI), we connect UK expertise to business opportunities, drawing on our broad network across the NHS, the private sector and academia.

This brochure is one of a set of five that explains the benefits you gain by partnering with UK healthcare organisations. The full set comprises:

- Education and training
- Infrastructure for health
- Digital health
- Clinical services
- Health systems development.

To find out how you can draw on UK expertise to extend, improve and transform healthcare provision in your country, contact Healthcare UK:

Call: **+44(0) 20 7215 5000**  
 Email: **healthcare.uk@ukti.gsi.gov.uk**  
 Visit: **www.gov.uk/healthcareuk**

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## The UK - home of healthcare infrastructure expertise

Great infrastructure is the foundation for efficient healthcare. Nowhere is this more evident than the UK, where the excellence of our designers, planners and engineers underpins the success of our National Health Service. Governments and healthcare organisations worldwide draw on UK expertise to support infrastructure projects of all sizes, from state-of-the-art medical cities to front-line community facilities.

You too can benefit from this expertise. UK companies are ready to work with you to deliver healthcare infrastructure that:

- is designed around patients' needs to improve health outcomes
- facilitates high-quality, responsive, accessible and safe services
- makes the most efficient use of resources
- motivates staff
- inspires public confidence.

Your simplest way of finding the right partner is through Healthcare UK, the UK Government's specialists in international healthcare partnership working.

## Why partner with the UK?

Outstanding infrastructure development starts with clinical priorities. British companies have the know-how to turn your priorities into flexible, sustainable facilities. They use the latest technology to support operations and management, but always with patients at the heart of the system. UK companies are innovation leaders in all aspects of healthcare infrastructure, from modelling, financing and design to construction and operation.

You can draw on this wealth of experience gained from projects both in the UK and overseas to deliver healthcare infrastructure that:

- enhances care pathways
- maximises the efficient flow of information
- takes a whole-system approach to improving outcomes
- builds sustainability into every aspect of design and operation
- is based on an affordable and value for money funding model
- minimises safety and security risks
- is usable for as long as possible through a whole-life approach to asset use.

## UK capabilities

**Public private partnerships in the UK**

**22**

years of experience.

**>130**

major healthcare projects.

**£12bn**

of capital value.

The UK has the expertise to support every aspect of infrastructure development, including:

- strategic service and business planning
- project financing
- design
- civil/structural engineering and construction
- resilience and security planning
- project management
- equipment planning, procurement and installation
- commissioning
- management and operation
- refit and reuse.

### Strategic service and business planning

UK companies can provide the full range of planning and modelling services needed for successful, resource-efficient infrastructure projects. This includes mapping of existing services and facilities, forecasting future healthcare needs, designing new models of care and developing business cases, financial models, funding packages, masterplans and feasibility studies.

### Project financing and management

The UK is a world-leading innovator in project financing, particularly through its pioneering approach to public private partnerships (PPPs). These partnerships harness the best in public and private sector skills for the cost-effective provision of modern, high-quality public services.

You can work with UK organisations to develop your own models of PPP, assured by our track record of delivering successful programmes for acute, primary, community and mental health facilities. You can use our integrated PPP offering as a one-stop service, from strategic advice and project management to securing finance.

### Design services

UK creativity is behind the design of some of the world's most innovative hospital buildings. We also lead in the design of sustainable, energy-efficient and low-carbon buildings. You can work in partnership with UK architects, project managers, engineers and construction firms to realise your vision for revolutionising the hospital and clinical environment.

### Construction services and equipping

UK expertise can improve the cost-effectiveness of your construction programme, for example by providing services such as temporary relocation, modularisation and off-site construction. The UK's extensive medical equipment supply chain can provide everything needed to fit out a hospital, from scanners to surgical supplies and pharmaceuticals.

### Planning and delivering clinical services

The National Health Service (NHS) and UK companies collaborate successfully to set up or improve services. This expertise is available to you - the UK's tried and tested approach is an excellent way to analyse current delivery and identify ways to improve efficiency, patient experiences and clinical outcomes. If you seek a total healthcare solution, the UK has internationally renowned organisations whose services encompass the planning, development and operation of projects in international settings.

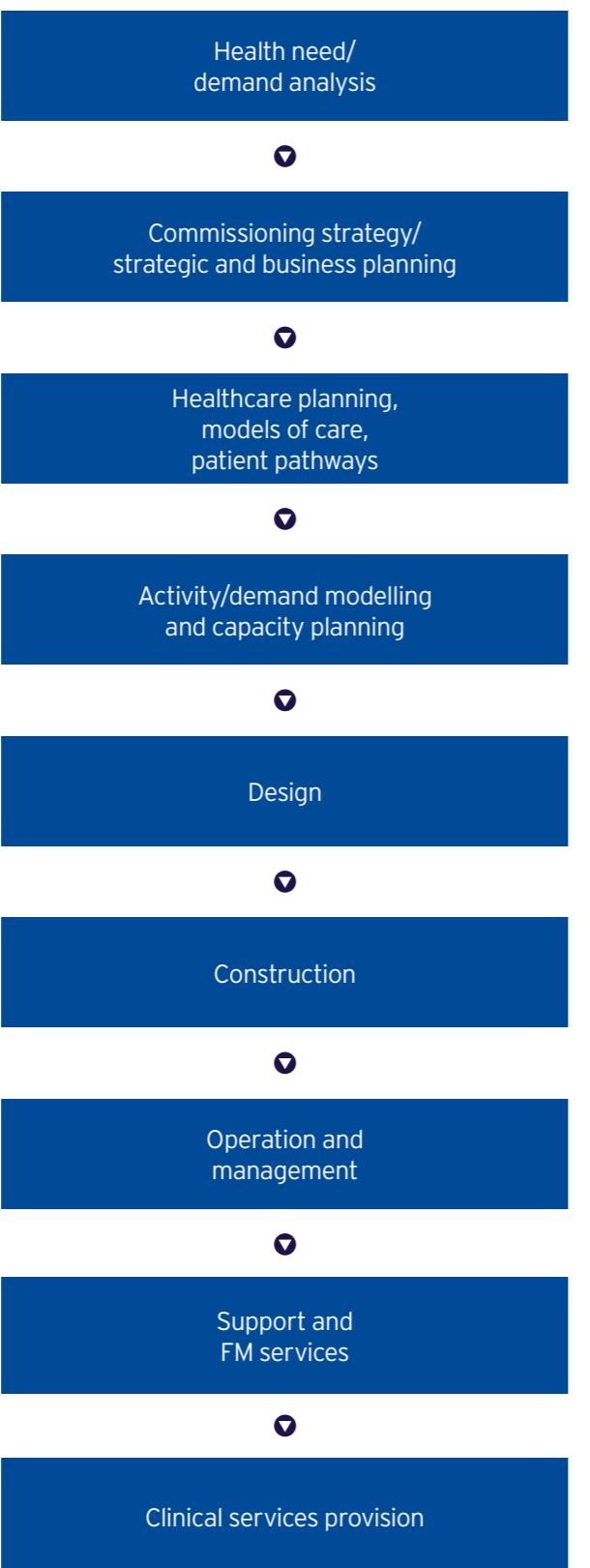
### Hospital management and operation

Turn to the UK for hospital management and operation services and you can benefit from the combined expertise of the UK's NHS and private hospital support services. UK consortia can help you improve financial performance and the quality of clinical care and support services. You can also take advantage of our capability in property and facilities management to maximise the cost-effectiveness and sustainability of your premises.

### Retrofit and upgrades

The UK's large stock of hospitals of varying ages has promoted the growth of a sector specialising in the maintenance and refurbishment of medical buildings. These companies are ready to provide retrofit and regeneration services to update your existing healthcare facilities and equip them for new clinical services. UK architects and engineers are also skilled at future-proofing the design of buildings so they can be adapted easily to respond to changing needs.

## Components of a healthcare infrastructure project



## UK partnerships in action



Queen Elizabeth Hospital,  
Birmingham

### New hospital building for integrated services: BDP

Queen Elizabeth Hospital in Birmingham needed a new building with 1,200 beds to support delivery of its innovative care model. The hospital commissioned UK interdisciplinary design practice BDP, one of the country's leading designers of healthcare facilities, as master planner, architect, interior designer, landscape architect and acoustic consultant for the project. BDP's design ensured that clinical departments can deliver care when and where it is required, and promotes clinical care innovation. The hospital was kept fully operational by splitting the new construction into zones, and state-of-the-art construction techniques and materials ensured it was built on time and to budget.



Cleveland Clinic,  
Abu Dhabi

### Designing one of the world's biggest healthcare clinics: Aedas and AHR Architecture

The design and production work for the new Cleveland Clinic on Al Maryah Island in Abu Dhabi, one of the largest healthcare projects in the world, was a hugely complex task for architectural consultancy companies Aedas and AHR. Billed as the first 'seven-star hospital' in the world, the clinic measures 420,000m<sup>2</sup>.

The task was made more challenging as the Aedas and AHR team had to complete the design of the hospital based upon the outline design information provided by the concept designer HDR. Aedas and AHR reviewed over 6,000 architectural, structural and MEP drawings in a month and developed another 8,000 drawings from scratch in just six months.

Aedas and AHR harnessed expertise from around the globe to mobilise a team of 100 people in just two weeks. Their expert knowledge of the culture in the UAE and the challenges of building in a desert, plus their skill at getting all the partners to work seamlessly together, were key success factors. The use of the latest Building Information Modelling technology meant the design team could identify and eliminate potential conflicts early in the process.

The result is a hospital that sets pioneering standards for patient-focused design. Light-filled and with a very high standard of interior finishes, patients and visitors enjoy extensive public space and generous waiting areas. The overall feel is more luxury hotel than hi-tech hospital. This extends to the patient bedrooms, designed to mimic hotel rooms with medical gases, equipment and services discreetly incorporated into headwalls to ease anxiety.



St Bartholomew's Hospital,  
London

### Planning for a successful PPP bid: HCP Social Infrastructure (UK) Ltd

The £1.1 billion redevelopment of St Bartholomew's and The Royal London New Hospitals is the largest public private partnership hospital scheme to be undertaken in the UK. It involves the reconfiguration and re-provision of clinical accommodation across two major inner London acute hospital sites. Private sector companies are also supplying the hi-tech equipment, all facilities management and central sterile services.

HCP Social Infrastructure (UK) Ltd provided planning services to the consortium undertaking the design and construction project. This included advice on the development control plans for the two hospitals, as well as the detailed planning of clinical departments. HCP also worked with the contractor to build the aspirations and needs of clinical users into the design, including the phasing of the project to maintain the highest standards of care during the construction period.



Alder Hey Children's Hospital,  
Liverpool

### New hospital design and build: the Acorn consortium

The Acorn consortium, comprising John Laing, Laing O'Rourke and Interserve, is building the new £167 million Alder Hey Children's Hospital in Liverpool. The hospital will have a floor area of 51,000 square metres, with 270 beds and 16 state-of-the-art operating theatres. Laing O'Rourke Construction will design and build the new hospital and Interserve will maintain the infrastructure.

The unique, iconic design by architects BDP integrates the hospital with Springfield Park, ensuring that the majority of bedrooms have open views and easy access to green space. Wards have access to play decks so children staying in the hospital can enjoy outdoor play.

**UK partnerships in action**

Pingtan Union Hospital,  
China

**Sustainable and energy efficient design: Arup**

Located in China's Fujian province, the Pingtan Union Hospital was built not only with the very best medical facilities, but with the latest technology for sustainable operation. Arup carried out the architectural and mechanical, electrical and plumbing (MEP) layout designs. Energy and resource efficient features include:

- a central utility plant to improve overall sustainability and reliability
- measures to enhance daylight use and reduce water use
- high-efficiency chillers with heat recovery
- demand control of fresh air supply
- heat energy reclaim of exhaust air
- a building energy management system
- a high-performance façade to reduce cooling load.

**Designing greener hospitals: Steffian Bradley Architects**

Steffian Bradley Architects designed the new Baystate Medical Center in Springfield, Massachusetts, as a model for the balance between emerging technology and the environment. The designers used the Green Guide for Healthcare, the healthcare sector's first quantifiable sustainable design toolkit, for this 60,000m<sup>2</sup>, US\$259 million project. This ensured a sustainable approach throughout, from overall site plan and layout decisions to the details of infrastructure design, materials selection and construction techniques. The design also focuses on the quality of the patient and visitor experience, for example by separating staff traffic from the public. The staff's environment is enhanced by collaborative workspaces and abundant natural light from a five-storey central light well in each medical wing. Awards for this design excellence include:

- winner of the Grand Prize in Building Magazine's America's Best Building of the Year
- 'honorable mention' in the Acute Care Category of the Healthcare Environment Awards run by Contract Magazine and the Center for Health Design.



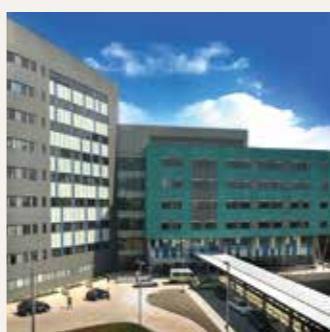
Baystate Medical Center,  
Massachusetts



Hong Kong Sanatorium  
and Hospital, Hong Kong

**Upgrading and expanding a large hospital: Arup**

Established in 1922, Hong Kong Sanatorium and Hospital has more than 400 beds and numerous specialty centres offering diagnostic and therapeutic services. As part of a major redevelopment project, Arup provided structural, civil engineering and geotechnical services for the schematic design. Arup also provided the MEP engineering for the enabling and upgrade works in preparation for future expansion. This included the detailed survey of the hospital and the diversion of all services to enable the construction of a site access road.



Leeds Cancer Centre, Leeds

**Providing radiotherapy services worldwide:  
Leeds Teaching Hospitals NHS Trust**

Leeds Cancer Centre (LCC), part of Leeds Teaching Hospitals NHS Trust, provides some of the most advanced treatment and care for patients with cancer. The centre is one of the largest in the UK, providing comprehensive cancer care services to a regional population of 5.4 million. The centre offers state-of-the-art diagnostic services in radiology, pathology and leading edge surgery to achieve the best possible outcome for patients. It offers some of the most innovative treatments in both radiotherapy and chemotherapy.

With 12 machines, Leeds Cancer Centre has one of the largest concentrations of highly complex linear accelerators (linacs) in Europe. The commissioning and maintenance of those machines is supported by a large multidisciplinary team of physicists and technologists, whose expertise is in regular demand both in the UK and internationally. The team can advise on the selection and commissioning of high-value equipment and provides mentoring and training to medical professionals. Support to other centres has also included commissioning of infrastructure and equipment to international (IEC) standards and the provision of quality assurance documentation and protocols to ensure safe and effective work practices.



## UK partnerships in action



Serco's centralised helpdesk  
at Fiona Stanley Hospital

### Quality, innovative non-clinical services: Serco plc

Serco provides non-clinical services to Fiona Stanley Hospital in Western Australia as part of its global healthcare portfolio. Cutting-edge design, equipment and facilities support a full range of clinical services, making Fiona Stanley Hospital the state's flagship public hospital. Almost 1,000 Serco staff are involved in developing and implementing 25 operational services, including sterilisation, ICT, catering, human resources, estates, and management of hospital assets. Innovative technology lies at the heart of Serco's approach. This includes:

- a centralised helpdesk, with real-time monitoring of 480 key performance indicators
- using automated guided vehicles in service corridors to improve the efficiency of deliveries and reduce staff injuries
- an online meal ordering system that allows patients to see nutritional details of their meal options
- an asset tagging system that uses real-time location technology to increase efficiency and reduce loss of hospital property
- a highly responsive system for addressing building or equipment faults that automatically alerts appropriate staff to attend to an issue.

By taking such an innovative approach to integrating non-clinical services, Serco works in partnership with the Western Australian government to provide patients with the best possible environment and ensure the smooth running of the whole hospital.

### Resilience and security planning:

#### the National Security and Resilience Consortium

No other organisation in the world has the expertise offered by the UK-based National Security and Resilience Consortium (NS&RC). This group of international experts works together to provide security and resilience solutions to every type of natural and man-made threat. It protects governments, corporate organisations, major events, transport systems and critical national infrastructure, including healthcare infrastructure. The NS&RC works with these partners to understand the challenges, design the appropriate solution and then plan, co-ordinate and prioritise the response. Recent projects include the security planning for the internationally acclaimed London 2012 Olympic Games and the co-ordination of safety and security measures for the hugely successful 2014 Brazil World Cup.

**For innovative, integrated and sustainable healthcare solutions, choose the UK, home of the NHS.**



The UK is creating a stand-out Pavilion and global events programme under the theme Grown in Britain, to promote UK capabilities and leadership in business, science and culture. Milan Expo 2015 takes place from May to October 2015 and aims to highlight the challenges of feeding the planet.

Visit [www.gov.uk/milanexpo2015](http://www.gov.uk/milanexpo2015) to find out more.



Official Participant

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