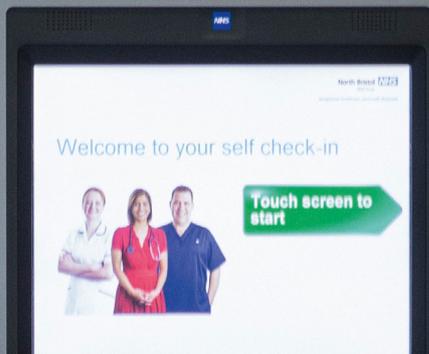


The UK: Your partner in healthcare solutions

# Healthcare infrastructure services

Withdrawn on 20 November 2020

Patient Check In



# 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 UK Trade and Investment's (UKTI) 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 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 can gain by partnering with UK healthcare organisations. The full set comprises:

- Education and training
- Healthcare infrastructure services
- 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.gov.uk**

Visit: **www.gov.uk/healthcareuk**

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## The UK - home of coordinated healthcare infrastructure

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Great infrastructure is the foundation of efficient healthcare. Nowhere is this more evident than in the UK, where the excellence of our health planners, architects, engineers, equipment manufacturers and facility operators and managers underpins the success of our National Health Service (NHS). Governments and healthcare organisations worldwide draw on UK expertise to support the design and delivery of efficient 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 planned and designed around patients' needs to improve health outcomes
- facilitates high-quality, responsive, accessible and safe services
- makes the most efficient use of space and 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.

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## Why partner with the UK?

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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

### Project planning and clinical needs analysis

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.

### Health planning and needs analysis

Health Needs Assessment (HNA) is the systematic approach to ensuring that the health service uses its resources to improve the health of the population in the most efficient way. Hospitals and primary care teams should both aim to develop services to match the needs of their local populations and deliver the best possible care in the most appropriate location.

Health planning uses the output of the HNA to establish an achievable process that will deliver safe, effective and affordable care. UK companies have unrivalled experience in the study, planning and proposal of effective care, and can use their significant experience to demonstrate how the decisions taken and implemented by a healthcare provider will definitively and permanently guide its activities and structure.

### 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 in 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 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.

### Commissioning

Effective commissioning guarantees that a healthcare building suitably reflects the policies, procedures and requirements that were used to justify the original project investment. Commissioning also prepares the new building to deliver high-quality services and initiates a significant programme of staff and user training and education.

The commissioning process may begin at the design phase, continue through the construction phase, and end with the start-up and verification of successful system operation. Extended monitoring during the project's first two-to-five years of operation, including the end of the equipment and building warranty period, can be of significant value to the project owner.

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## Public Private Partnerships (PPPs)

*Public private partnerships in the UK*

**22**

years of experience.

**>130**

major healthcare projects.

**£12bn**

of capital value.

**PPPs offer innovative and entrepreneurial approaches to providing the infrastructure and services demanded of 21st century healthcare by creating a mechanism for governments to procure and deliver public infrastructure and/or services using the resources and expertise of the private sector.**

PPPs balance the skills and resources of both the public and private sectors through the sharing of risks and responsibilities, which enables governments to focus on policy, planning and regulation by delegating real-time operations to the private sector.

Although there is no fixed definition of PPPs, they are usually defined as a long-term contract between a private party and a government entity, for providing a public asset or service, in which the private party bears significant risk and management responsibility, and reward/ return is linked to performance.

PPPs need to be structured correctly to benefit both the public and private-sector partners. Combining public-sector governance and private-sector capital, technology, efficiency and know-how is at the heart of a successful PPP project.

### Benefits of PPP

- an alternative source of funding for public infrastructure and services
- improved operation and efficiency by adopting private-sector technology and innovation in public services
- projects delivered on time and to budget through incentivisation of private-sector partners
- long-term value for money created through appropriate risk sharing throughout the whole life of the project.

### The UK - the pioneer PPPs

The UK is the acknowledged world-leader in healthcare PPPs, harnessing the best in public and private sector skills and innovation to provide outstanding healthcare facilities. The UK Government has successfully implemented a range of PPP programmes for acute, primary, community and mental health facilities with a high degree of engagement with clinicians and the public.

The projects range from the massive St Bartholomew's and Royal London Hospitals project, which is the largest single PPP hospital contract in the UK at £1.1 billion, to a residential care home costing £2.8 million.

The UK's integrated PPP offering means that it can act as a one-stop service on projects, providing everything required for successful completion, from strategic advice and project management to securing finance.

Since 1991 the NHS, working with British advisors, has developed considerable expertise in managing the process of specifying, procuring, contracting and running a PPP project. This includes developing efficient procurement, with standard form contracts to minimise costs. At the same time, the UK private sector has gained a wealth of experience in bringing together consortia comprising architects, planners, engineers, building contractors, facilities managers, medical equippers and financiers.

The UK offers a deep knowledge about how to put a deal together, to manage the tender process, to organise delivery of the new facilities during the build phase and to manage the service contract during the delivery phase. UK professionals excel in managing the complex working relationships that are common in PPP today. This promotes efficiencies, creativity and innovation not readily to be found in the more restricted practices in many other countries. The financial knowledge that UK consultants have developed offers a comprehensive understanding of the needs of the investment community, and the ability to interpret this within the local framework of the individual countries in which they work.



St Bartholomew's Hospital, London

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### Turkish hospitals PPP programme Advisors to major capital schemes: Mott MacDonald

The integrated health campus programme in Turkey is currently the largest pipeline of PPP hospitals in procurement anywhere in the world. Many of these multi-billion lira hospitals will have more than 3000 beds, with one hospital planned for Istanbul with more than 400 beds. Although the exact number of hospitals to be built under this programme is yet to be finalised, it is expected to be greater than 30. The programme represents a national investment requirement of many billions of dollars.

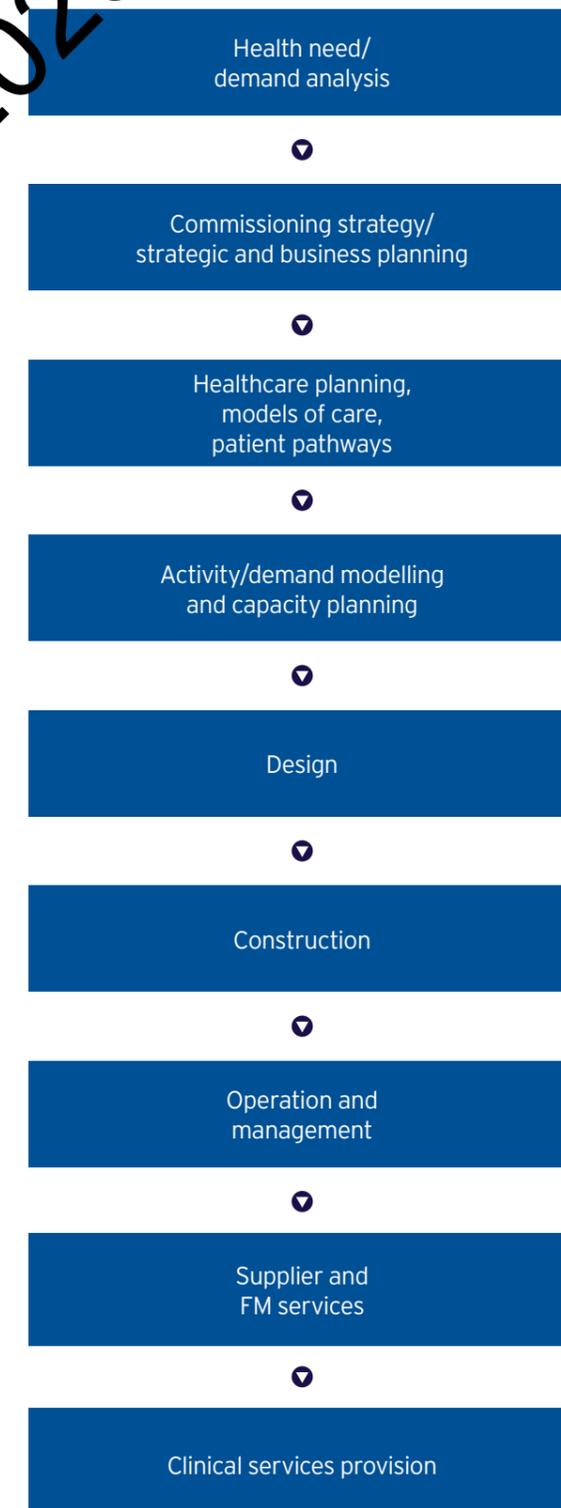
The design of these hospitals will follow a modern Turkish Ministry of Health modular approach. Each new healthcare campus is sized carefully to suit local demographics and functional needs. Differing numbers of towers are positioned evenly around a central core with specialist hospital services provided in more isolated buildings. Around the central services core, a typical healthcare campus comprises a general hospital and individual hospitals for women, children and specialist areas such as cardiovascular, oncology, rehabilitation and psychiatry. This programme represents a significant step change in the modernisation of healthcare delivery across Turkey.

To date, preferred bidders have been announced for 16 hospitals in the programme and another three are in the early stages of procurement. Since late 2011, Mott MacDonald has been providing lenders with advisory services on the first six of these schemes (Kayseri, Etilik, Bilkent, Ikitelli, Gaziantep and Adana) and it is anticipated that two or three of these should reach financial closure this year. Mott MacDonald has also been assisting bidding sponsors and the Ministry of Health in Turkey in developing the PPP procurement documentation so that this is acceptable to all partners and is attractive to potential debt funders and investors.

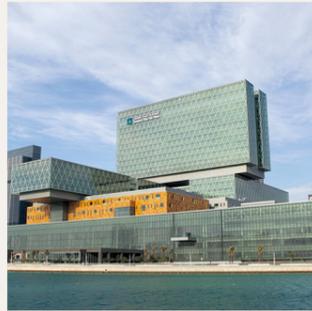
[www.mottmac.com](http://www.mottmac.com)

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## Components of a healthcare infrastructure project



## UK partnerships in action



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 developing 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.

[www.aedas.com](http://www.aedas.com)

[www.ahr-global.com](http://www.ahr-global.com)



Midland Metropolitan Hospital  
© Carillion plc

### New hospital planning and design: Strategic Healthcare Planning (SHP):Midland Metropolitan Hospital

SHP is part of the Carillion consortium constructing this new £350 million hospital on a brown field site close to the centre of Birmingham. The hospital replaces all emergency and in-patient services currently located at Sandwell General Hospital, West Bromwich and City Hospital, Birmingham.

The MMH will contain 683 beds in a 10-floor building with a floor area of 84,000m<sup>2</sup> that will support the emergency department, intensive care beds, acute medical unit, specialist outpatient facilities and medical imaging facilities.

The design benefits from:

- full separation of public, facilities management (FM) goods and clinical flows, both externally and internally, to support privacy, dignity and efficiency
- optimal adjacencies between and within departments to reduce travel distances
- staff and FM support facilities (hubs) strategically distributed to support groups of clinical services to maximize opportunities for sharing and reduce multiple handling
- variable provision of isolation rooms within the standard generic ward footprint without decreasing the number of beds or increasing area
- dedicated automated goods vehicle (AGV) routes providing transportation of all FM goods from single point of receipt
- simple public wayfinding with all departments accessible within 20m of a lift
- enhanced clean and dirty flow separation to all interventional departments including the introduction of a dirty core in theatres
- single structural grid from car park through to roof enabling efficient construction and maximum future flexibility
- undercroft parking for 1,800 cars providing direct access for visitors and staff in under 3.5 minutes to any department
- over 60% of the 4,200 rooms are standard/ repeatable, maximizing flexibility and efficiency.

[www.shp-uk.com](http://www.shp-uk.com)

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## UK partnerships in action

### Majadahonda Hospital, Madrid, Spain

#### Technical analysis and advice to PFI investors: Arup

Majadahonda is the first hospital in Spain to be developed using a Private Finance Initiative (PFI) model. Arup's experience in engineering design in PFI hospitals - particularly in the UK - made the firm a natural choice to act as the funding body's technical advisors for the project.

Majadahonda's new 172,000m<sup>2</sup> hospital is equipped with 900 beds to service the 520,000 people living in the town's surrounding area.

The hospital is being funded through a PFI availability payment model. This method accounts for both the cost of the capital used to build the hospital and the lifecycle capital cost of the new facility.

Arup's work was vital in ensuring that Majadahonda Hospital can continue to provide adequate healthcare facilities and services for the next 30 years.

Arup provided a technical inputs audit to ensure that the risks for investors are mitigated as much as possible. This included analysis of the construction aspects of the contracts and a Monte Carlo computer simulation of the penalties involved. Arup also studied the operation and maintenance costs initially planned by the consortium and recommended they increase these in order to achieve a better performance.

As the project progressed, Arup carried out analysis of Majadahonda Hospital's design, construction costs, planning, maintenance and life cycle costing, logistics and sustainability, and considered its operation and maintenance, including soft and hard facility management.

Before the financial close, Arup validated all the technical aspects of the project to ensure that the investors' risk is mitigated. During the construction phase, the firm monitored risk, costs, timing and contracts for three years until the hospital reaches its operational stage. The firm also carried out a due diligence survey.

[www.arup.com](http://www.arup.com)



**UK partnerships in action**

The Bexley Wing, Leeds Cancer Centre

**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, LCC 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.

[www.leedsth.nhs.uk](http://www.leedsth.nhs.uk)



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.

[www.arup.com](http://www.arup.com)



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.

[www.arup.com](http://www.arup.com)



Alder Hey Children's NHS Foundation Trust

**Alder Hey Children's Hospital redevelopment: John Laing, Laing O'Rourke and Interserve**

The Acorn consortium, comprising John Laing, Laing O'Rourke and Interserve, constructed the new Alder Hey Children's Hospital in Liverpool. The new £167 million hospital enjoys a floor area of 51,000 m<sup>2</sup>, 270 beds and 16 state-of-the-art operating theatres. John Laing and Laing O'Rourke each hold 40% of the total investment equity in the project with Interserve holding 20%. Laing O'Rourke Construction designed and built the new hospital and Interserve will maintain the hospital infrastructure for the contract period. The unique, iconic design by architects BDP will integrate the hospital with Springfield Park, ensuring that the majority of bedrooms have a natural view and easy access to the park. Wards have access to play decks so that children who cannot leave the ward can benefit from outdoor space.

[www.laingorourke.com](http://www.laingorourke.com)

[www.laing.com](http://www.laing.com)

[www.interserve.com](http://www.interserve.com)

**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.

[www.serco.com](http://www.serco.com)

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**Healthcare UK**

Healthcare UK is your route to access the expertise within the UK's healthcare sector. Whatever type of health facility, service or training programme you are planning, we can bring together the right UK organisations to meet your needs. Healthcare UK is a joint initiative between the UK Government's Department of Health, the NHS and UK Trade & Investment.

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**Published January 2016  
by UK Trade & Investment  
URN: UKTI/2016/02**



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