

North Bristol 
NHS Trust



NEW DATA CENTRE FOR NORTH BRISTOL NHS TRUST

A £430m new PFI hospital building project designed to upgrade the North Bristol NHS Trust's facilities and build a modern new super hospital complex on the Southmead site meant that major IT and communications infrastructure works had to be carried out to pave the way for site clearance and new building programmes.

NextiraOne helped North Bristol NHS Trust to assess its ICT requirements and decide on building a new data centre that would consolidate all the ICT requirements for both Frenchay and Southmead sites into one dedicated facility. Working with the Trust, its architects, building contractors and other third parties, NextiraOne's Intelligent Building Services team has been on hand throughout the feasibility, design, planning and building processes to supervise and undertake necessary works to keep the building project on target

THE CLIENT

North Bristol NHS Trust is one of the largest Trusts in the UK and serves a population of around 500,000 in North Bristol and parts of South Gloucestershire and North Somerset with a staff of 9,000. The Trust provides medical and surgical services and care from two large hospitals – Frenchay and Southmead – and from a variety of smaller community based sites. It is a specialist acute Trust and, in 2008/9, its staff delivered over 6,000 babies, cared for more than 82,000 people through its emergency departments, treated nearly 371,000 outpatients, over 75,000 inpatients and 41,000 day case patients.

Many of the Trust's buildings are old and in poor condition with services split over different locations. The buildings are currently poorly configured and no longer suitable for the delivery of quality patient care in the 21st Century. As part of the Bristol Health Services Plan, a substantial investment of £430m has been allocated to upgrade the Southmead facilities by 2014. Plans are underway to reconfigure services at Frenchay.

THE CHALLENGE

As part of the Bristol Health Services Plan, North Bristol NHS Trust confirmed the need to change and improve its facilities in order to deliver the best possible healthcare to its patients by building a new state-of-the-art acute hospital at Southmead and transforming Frenchay into a community facility. However, various buildings and services had to be re-located to create a space in the development site for the new Southmead building. This required a major re-design of the Trust's entire communications and IT infrastructure.

Historically IT services had been split across the two sites, creating difficulties in providing robust, reliable and efficient services. As part of the new hospital building enabling works – the Trust needed to relocate its Southmead computer room from the Silver Building to vacate the part of the site required for the development of the new hospital – using the opportunity to bring together the existing Southmead and Frenchay computer rooms into one single purpose-built facility. The new centralised ICT infrastructure needed to provide robust data centre management, ensuring reliability/availability of voice and data systems and also critical clinical applications, such as the GE Ultra Pathology system and the PACS digital X-Ray system.

The solution had to be future-proof and able to facilitate change as the building project progresses and functions move from Frenchay to the Southmead site and as new medical and other applications come on stream and new technologies, such as blade technology are introduced. At the same time it had to allow for the Trust to continue expanding its operations with the potential to expand hosting services for other NHS Trusts looking for low cost, high quality systems hosting services.

WORKING WITH NEXTIRAONE

"NextiraOne has been with us from the very start of this critical building project and has played a major role in helping us to design and plan our new dedicated, purpose-built data centre. Their knowledge and understanding of the whole building process from feasibility studies, room specifications and planning considerations to IT installation and the planning of transfer of services has been instrumental in making this complex building project smooth, efficient and relatively pain-free. NextiraOne's team has augmented our in house skills and become part of our team."

*Martin Bell, Director,
IM&T,
North Bristol NHS Trust*

CUSTOMER REFERENCE

UNIFIED COMMUNICATIONS - DATA CENTRES - CONTACT CENTRES - MOBILITY- BUSINESS PROTECTION - EXPERT SERVICES



THE SOLUTION

NextiraOne has been involved in the project from the outset, providing a continuous range of advice and services: from the initial definition and scoping of the project to the construction and fit-out of the new Data Centre and ultimately the moving in of equipment, services and staff.

NextiraOne's dedicated team of Intelligent Building Services experts worked continuously with the North Bristol NHS Trust, in the initial stages to assess the existing infrastructure and define what would be required in the future. The team provided guidance on the location and design of the new data centre and worked with the Trust's architects and other third parties to design, plan and implement a solution that would pave the way for the new hospital development and provide the ICT services it would need in the future.

The three-year planning process included a full option appraisal to establish the most suitable site for the relocation of services from the Silver Building. This resulted in the design and construction of a new dedicated, purpose-built £5M data centre facility and project which will house the data and voice service requirements for the whole hospital complex. NextiraOne is also providing new voice and data cabling, IT ducts and the replacement of a major core network node that covers both sites. Included in the project has been the relocation of all infrastructure from the proposed PFI development site, new equipment investments, as well as the cost of the actual building.

From an early stage NextiraOne engaged the services of Johnson Fellows, who provide building consultancy services, particularly for healthcare/NHS projects. Johnson Fellows helped NextiraOne to provide a range of different options for the building of the data centre with plans, elevations and budget costs. NextiraOne then submitted proposals for the design and associated work to provide specifications for the Trust to be able to go out to tender.

Competing against a strong field at open tender, NextiraOne was able to win the ongoing contract for the project management of the building working alongside the Trust's architects and other third parties. NextiraOne is also responsible for designing and implementing all of the IT infrastructure and the internal fit-out, including:

- Air conditioning
- Chilled water-cooling in-row solution
- UPS (Uninterruptible Power Supply) system
- Fire suppression
- Raised flooring
- Electrical services and standby generator
- Data cabinets and passive infrastructure
- Server infrastructure migration services
- Associated network switching and patching
- Physical security design and planning.

MANAGING THE PHYSICAL MOVE

NextiraOne continues to work on the project, helping the Trust to move equipment progressively into the data centre and transfer and consolidate services. The implementation plan envisages the migration of services and equipment over a number of weekends so as to reduce downtime. Once the data centre is fully operational the company will continue to be on hand to help with additional enabling works as other parts of the hospital organisation move during the major building programme.

WORKING WITH NEXTIRAONE

*"In working with NextiraOne we found a partner we could rely on and trust not only to give good advice based on extensive experience of major building projects, but also in applying their knowledge and expertise in practical ways. The Intelligent Building Services team has helped us to design, plan and deliver, working with many suppliers to make the project a success."
"NextiraOne provided us with additional expertise we did not have in house and their guidance in the early stages helped us to focus on what we really needed."*

*Martin Bell, Director,
IM&T,
North Bristol NHS Trust*



BUSINESS CONTINUITY AND DISASTER RECOVERY

Whilst the built-in fire detection and suppression systems, UPS and standby provision and state-of-the-art environmental control systems provide a high level of protection against potential threats to the provision of services, the new Data Centre also provides complete resilience with replication of services to allow business continuity and Disaster Recovery.

REDUCED CARBON FOOTPRINT

One of the key factors built into the design is the ability to support the Trust's objectives of reducing its carbon footprint. NextiraOne has incorporated new energy-efficient technologies in the Data Centre, including energy efficient cooling systems that reduce power consumption by 40-70%, consolidation of servers and the use of blade technology where appropriate, together with environmentally sensitive lighting to reduce general electrical consumption, amongst many other aspects of the physical infrastructure.

STRATEGIC APPROACH – A FUTURE-PROOF INFRASTRUCTURE TO SUPPORT NEW APPLICATIONS

NextiraOne designed and built the new consolidated ICT infrastructure in order to support the Trust's new digital and analogue voice solution and other new applications as and when they are introduced. These include Unified Communications, which will allow enhanced collaborative working, virtualisation, and Microsoft Active Directory. The design also facilitates the Trust's ambition to offer to host services for external healthcare organisations, thus generating an additional revenue stream for the Trust.

CUSTOMER BENEFITS:

- Partnership with NextiraOne's highly experienced team, with extensive expertise in complex building projects and data centre implementations effectively provided a 'Turnkey' solution - Partnership with NextiraOne
- Consolidation into one centre removes duplication of services and allows a more efficient utilisation of resources
- Reliability and availability of critical clinical applications and administrative functions - purpose-built facilities provide reduced risk of downtime
- Enhanced security with access control and CCTV
- Reduced carbon footprint – from new technologies built into state-of-the-art data centre
- Operating efficiency and reduced costs
- Data centre and ICT infrastructure design allow it to be future-proof – flexible to new demands as additional applications emerge
- NextiraOne solution facilitates change at the Trust, as functions are moved from Frenchay
- Hospital to the Southmead site and new applications are added
- Built-in business continuity and disaster recovery
- Capacity to allow the Trust to offer hosting to third parties, generating new revenue streams.

NextiraOne are Europe's leading experts in communications services. The company designs, installs, maintains and supports all of its customers' communications needs from voice to mobility, security and applications. NextiraOne provides seamless, end-to-end communications solutions working with the leading technology vendors in the industry to deliver maximum business benefit to customers.

DISCOVER MORE AT WWW.NEXTIRAONE.CO.UK