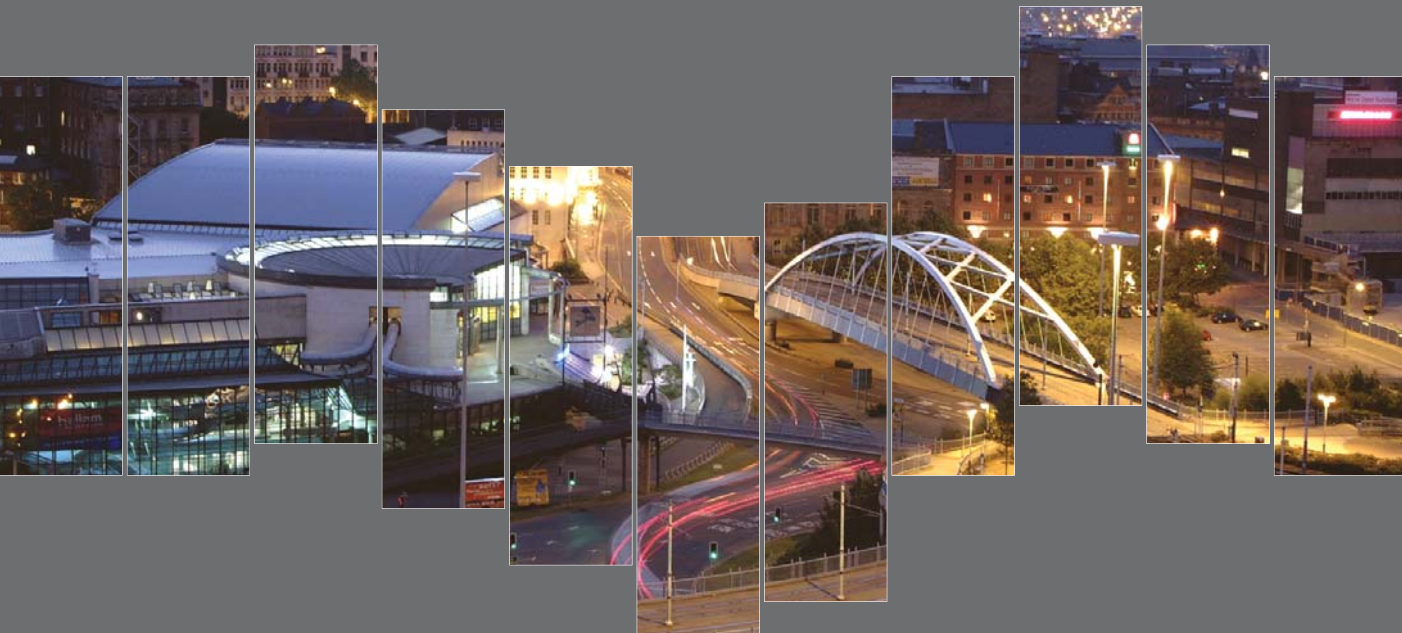


Connecting Cities, Connecting Services, Connecting People

Core Services





Turnkey Service Overview

Networks by Wireless have been creating bespoke network solutions since 1998. Our full turnkey service ensures complete life-cycle support.

“ A live demonstration at NbW's R&D facilities in Sheffield clearly illustrated that aggregated bandwidth between ourselves, Rhondda Cynon Taf and Monmouthshire councils was achievable without compromising the integrity and security of our IP communications. Without NbW's unique services we would never have been able to proceed with such a beneficial and unique solution. ”

Chris Williams I.C.T. Strategic Manager,
South Wales Fire Service

1. Wireless Consultancy

Requirements capture

Understanding client requirements to determine the feasibility of the project

Requirements rationalisation

Applying our expertise to define the content of the project brief document

Options identification

Identifying the technical and financial options available to fulfil the brief

Solution optimisation

Designing a solution that will best deliver the client's requirements, including a schedule of works and budgetary costings

Pre-installation staging

Confirming that the equipment to be used in the network will interoperate and work in field conditions

R&D

Dedicated, state of the art R&D facilities are available to test equipment before it is underwritten as part of NbW's network solutions

2. Network Plan & Design

RF link routing and link design

Planning software uses extensive databases to provide transmission planning and radio frequency coverage predictions

Line of sight

Engineers provide visual confirmation of desktop design predictions

Site build surveys

Engineers determine the physical installation parameters of the site

Ofcom licences

Experience ensures correct and quick licence applications

Site acquisition

Site finding and landlord engagement

Site share agreements

Provision of legal contracts with tower operators and landlords

Planning applications

Thorough knowledge of planning regulations aids liaison with local planning authorities to facilitate quick network construction

Mast design

Design and project management of mast construction

3. Network Procure & Build

Project management

Experienced, qualified project managers ensure smooth delivery of the network

Quality, schedule and time

Achieving project milestones on time and to budget

Best value sourcing

Large supplier database ensures best fit technology in terms of specification and value

Site installation

Multi-skilled in-house engineers provide network installation

Site and system commissioning

Commissioning and on-site testing of network links via NbW's exclusive MAAT systems

Acceptance and handover

Full process documentation for client with handover of each site to achieve sign-off

Online progress status

Online access for the client to view link deployment progress

4. Network Manage & Support

Helpdesk

Expert support for clients with Maintenance or Service Level Agreements (SLAs)

Fault-identification

Automatic identification and notification of faults, generated by the network and actioned by the helpdesk

Online reporting

A bespoke SLA to the client's requirements via NbW's exclusive MAAT systems

UK-wide field engineers

A dedicated team of engineers provides on-site maintenance support to achieve agreed SLAs

Logistics support

A network of secure offices provides nationwide access to spares and equipment

Asset audits and management

Providing up-to-date records of all installed network components

Manufacturer interfacing

Supply chain management of equipment and spares



Wireless Consultancy

NbW has an unsurpassed track record in delivering reliable and cost-effective wireless networks, on time and to budget, across the UK.

The company has forged long-lasting and successful partnerships with a wide range of clients who reap the benefits of our commitment to delivering the highest standards of service.

At NbW we deliver the solutions we promise because our experience in the industry is second to none.

“ NbW exceeded all expectations in the design, delivery and subsequent support of our IP WAN infrastructure. I would not hesitate to recommend other councils or any other public sector body to engage with NbW to deliver their ICT priorities in a cost effective, professional and pro-active manner. ”

Leigh Gripton,
Service Director for Customer Care and e-Government at Rhondda Cynon Taf County Borough Council

For a new client, the benefits of that experience are rapidly apparent. After ascertaining their requirements, we can quickly identify the technical and financial options that are available to meet their needs.

We will then optimise the solution by the creation of a project brief document that will include a network design, schedule of works and budgetary costings.

Wireless Expertise

NbW has the utmost confidence in our ability to deliver the brief because our experience in every element of the process is unmatched. That expertise extends to an accurate understanding of the capabilities of every piece of equipment to be used in the solution.

The efficiency and reliability of an IP network is determined by the quality and suitability of its components.

At NbW, dedicated R&D facilities incorporating a wide range of state-of-art analytical and networking equipment ensure that the solutions we design and build best meet our customer's expectations.

Before any product is included in one of our network solutions, it is subjected to exhaustive testing by our R&D department. Our facilities include:

- Extended Range of RF test plates
- Digital MW system analysers
- PDH/SDH/ATM frame analysers
- Spectrum analysers
- Hardware and Software Ethernet traffic testers
- Rotary Vane Attenuator
- Large range of routers and switches
- High specification servers and PC's

NbW's R&D testing programme - undertaken for each product set that we sell - ensures that the manufacturers' specifications are questioned and verified and that NbW understand and subsequently sell the systems as they perform in real life environments. In fact, NbW's R&D facilities are so effective that we are asked by manufacturers to carry out independent testing of equipment they have earmarked for release.

These exhaustive assessments also include streaming tests for the suitability of equipment to deliver client requirements such as video conferencing, IPCCTV, VoIP and IPTV.

Extensive tests are carried out on each product that NbW has or wants in our portfolio, with all of the results fed back into our planning software to ensure accurate real life results are obtained when performing link planning and RF coverage predictions.

Our R&D facility is also used for proof of concept exercises that ensure that the proposed solution will provide a network infrastructure capable of delivering and sustaining the client requirements in a variety of scenarios.



Network Plan & Design

RF Link Routing and Link Design

A thorough, accessible model of terrain profiles and regional clutter is critical to the delivery of a fully-functional, effective wireless network.

NbW is unrivalled in our ability to tailor a solution to the area it will cover thanks to our significant investment in extensive information databases. We use a range of RF planning software, based on Oracle SQL databases, to provide both transmission planning and RF coverage predictions.

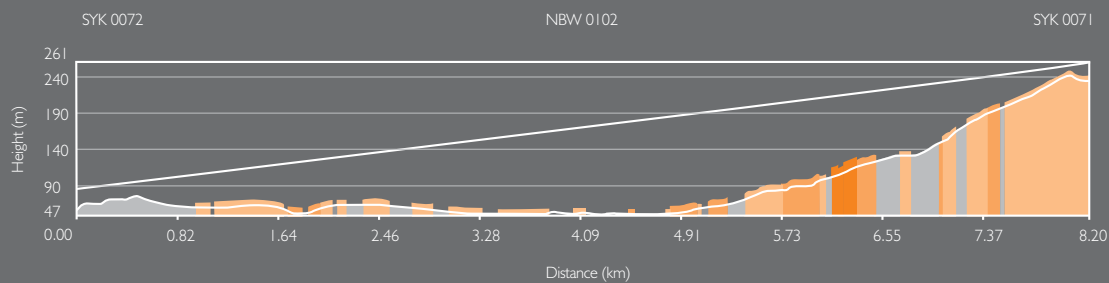
The availability of this wealth of accurate information, which is regularly updated, means that our planners can achieve typically 90% accuracy on the desktop, before physical surveys are carried out. This enables us to perform actual surveys at a much quicker rate, allowing design verification and commercial sign-off early in the delivery process.

Our terrain databases provide height accuracy to within a few metres for the entire UK. This is supplemented by a Building Vector database providing a complete record of heights and edges of buildings to enable us to accurately model RF propagation within any UK town or city.

In addition, a tower database provides heights of towers along with details of ownership and shows whether we can rent space on them, so helping our planners to design the network. This database represents over 40,000 sites from operators including Arqiva, NGW, O2, C&W, BT and Police & Fire services.

NbW can also plan networks for any area of the world once terrain data is acquired. Our software includes RF propagation characteristics for Tetra, ISM, UMTS, GSM and all authorised ETSI and FCC modulation plans.

As an infrastructure provider, NbW is unique in providing such an extensive planning service as part of our turnkey solution.



Site Surveys

Our engineers provide physical line of sight confirmation of our desktop predictions using high intensity starlight torches. The engineers are highly trained and have extensive safe working practice and health and safety certification, enabling them to work in any environment and on any third party site.

In preparation for installation, they conduct a thorough build survey of each site, measuring steelwork for clamps, providing sketches of cable runs, taking photos for point of entry and identifying special circumstances such as the presence of asbestos or concrete flooring.

Such thorough attention to details means that our installation teams arrive on site with all the equipment required to complete the task, keeping any risk of delay to a minimum.

Third Party Liaison

Once NbW has engineered a network for our client and confirmed this via physical surveys, we will apply to Ofcom for licences to construct the parameters of each link. A thorough knowledge of the licensing process is critical to avoid unnecessary delays and expense. NbW has a good working relationship with Ofcom, ensuring that the process is a smooth one.

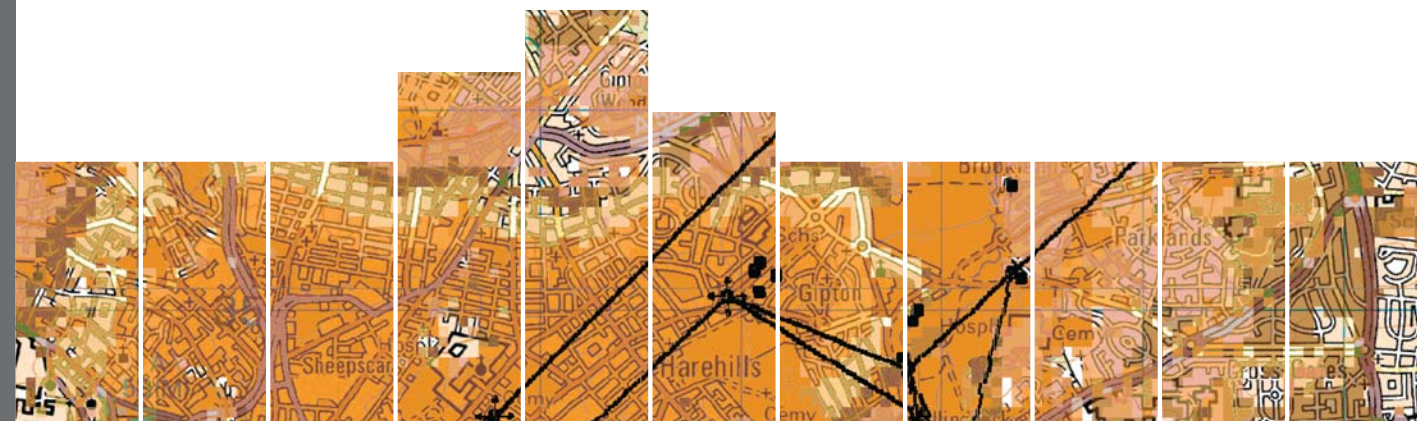
NbW is also accustomed to liaising with local planning authorities and has a thorough knowledge of legislation such as the Town and Country Planning Act and General Permitted Development Orders.

Our master site sharing agreement contains terms and conditions agreed with all the major tower operators. We are also skilled in securing legal agreements with owners of other sites.

As in other areas, our experience and depth of knowledge regarding site share and planning procedures adds considerable value to our client relationships, both in terms of reduced delivery timescales and reduced costs.

“ At LCC we have set a number of unique and challenging objectives for the way we will deliver service innovations. NbW clearly showed us that they understood our way of thinking and that they could demonstrate an intimate knowledge of their technology portfolio. Excellent pre-sales planning and survey services coupled with unbeatable experience and credibility allowed us to go to contract with a high degree of confidence. ”

Doug Sutherland – Head of Innovation, Leeds City Council



Network Procure & Build

NbW's project managers are experienced in wireless technology and therefore understand the delivery processes ensuring efficiency and effectiveness are maximised from day one. All are trained to Prince2 standards, which is a specific pre-requisite for local and central government work.

Our commercial department works hand in hand with our project managers during the early stages of a project, to ensure we maintain the best rates from the many suppliers involved in building the network.

Multi-skilled teams of NbW engineers are certified in health and safety, roof top awareness, tower rescue and all the other skills required for safe and effective site installations.

Each project manager ensures that all engineers and riggers required for the installation have all of the necessary skills, certification and training required to meet our health and safety guidelines.

As health and safety plays an important role in maintaining our high levels of service and support, NbW is assessed by independent experts every six months.

Engineers arrive on site with the build survey results and everything required to complete the task and the skills to affect change to the installation if necessary.

All NbW engineers are fully trained and experienced in installing Wi-Fi, WiMAX and Licensed Radio systems, as well as IPCCTV and optical wireless solutions. All can commission RF, power, customer traffic and network management and in normal circumstances will stay until the site or link is completed for handover.

Once the hardware is installed on site, our engineers use GPRS-enabled PDA devices to access the NbW central database via a secure, encrypted link in order to carry out configuration and commissioning activities.

This technology forms a secure mobile extension of NbW's unique Maintenance and Administration Toolkit (MAAT), providing a live, real time link with our Network Operating Centre and planning teams in Sheffield.

A Link Deployment Form (LDF) is displayed on the PDA showing the parameters to be achieved. As this is provided directly from the database, it will be up to date and more accurate than any paper copy the engineer may have on site.

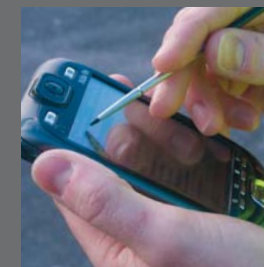
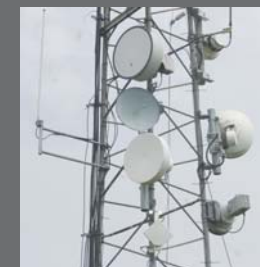
Parts and serial numbers of the installed equipment are also registered on the database via the PDA and details of the RF installation are confirmed.

Any areas of non-compliance will be highlighted both to the engineer and also to the planning department via their view of the system. Adjustments can then be made on the spot to achieve compliance.

Once link acceptance has been achieved, the documentation required to hand over the link is immediately available for download and submission to the client.

“ Since we have engaged NbW on our innovative and challenging programme to deliver our IPCCTV and mobile IP infrastructures, I am further convinced that our partnership will strengthen over the coming months and indeed years. ”

Doug Sutherland – Head of Innovation, Leeds City Council



Network Manage & Support

Comprehensive network management and support is facilitated through NbW's bespoke and unique Maintenance and Administration Toolkit (MAAT) for link and site data recording, logistics administration, report generation and fault handling.

The MAAT database provides customised reports tailored to the client's service level agreement, running on a very stable Linux/Apache/MySQL platform, secure and safe from virus infection.

The database is regularly backed up to a stand-alone machine and daily back-ups are retained off-site in a secure and fire-proof safe.

Clients entering into maintenance and Service Level Agreements (SLAs) are supported by a helpdesk manned by engineers who work proactively with either the end user or network operations centre.

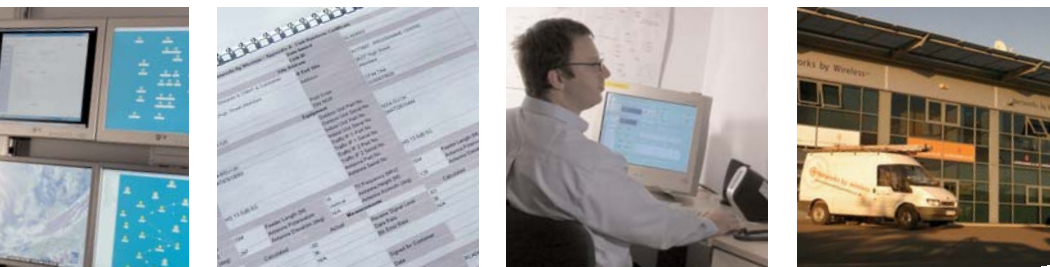
Helpdesk operators have web access to the database, which is used to record details of supported links and sites, as well as recording and logging faults. Calls received are entered on the system so that all support staff are aware of active faults. Staff are also notified of new faults by email and text.

Quick fault notification and subsequent identification is key in NbW's abilities to deliver to strict service level commitments.

Auto-identification of faults is a key feature of the MAAT system, enabling fast and effective resolution and minimising disruption. All of the equipment utilised will generate an email alert if a fault is starting to develop. Our helpdesk engineer can then dial in remotely to the equipment to identify the problem and potentially rectify the fault. If this is not feasible, a maintenance engineer will be dispatched to the site by the time the SLA is triggered.

Information is also available to the client in near real time. They can view the progress of their faults via a secure web interface and can receive regular email updates if required.

NbW is able to offer service level guarantees unmatched by other companies because we have engineered the solution from start to finish.



Full Solutions or Individual Services...

A partnership with NbW is a sound investment in quality, reliability and value for money.

The company has been providing tailored solutions to public sector organisations since 1998 and is now the largest wireless infrastructure provider in the UK. We have also helped to deliver projects across the world, from the Canary Islands to Pakistan, Barbados to Ukraine.

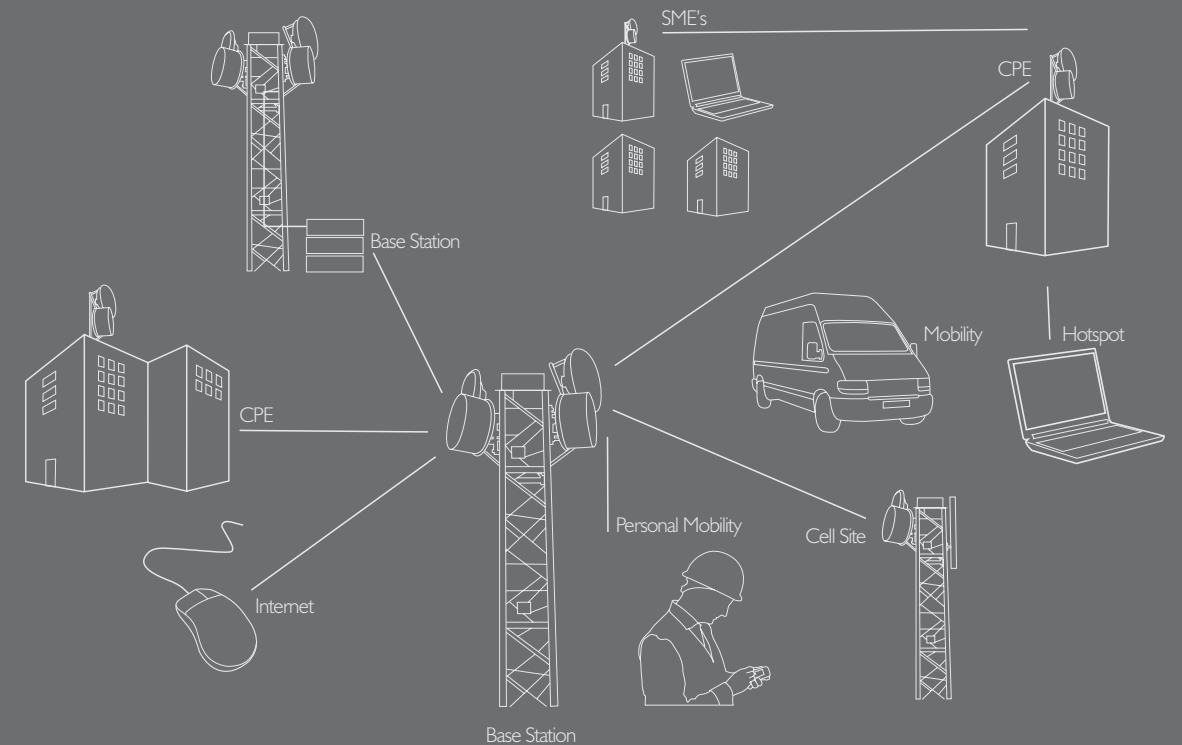
Such an impressive track record is due in no small part to NbW's attention to detail at every stage of a project, ensuring a full turnkey service that is second to none.

As this brochure demonstrates, NbW is able to offer service level guarantees unmatched by other companies because we engineer solutions in their entirety.

Clients are assured of expert advice and support from the first planning meeting to the commissioning of the network.

NbW's flexible SLAs also ensure access to unparalleled state-of-the-art support, ensuring the maintenance of the network for years to come.

Such continuing close support also offers easy access to NbW's expertise should the client require any future extension or development of the network – a truly bespoke solution.





Who we are

NbW has spent many years developing industry-leading IP solutions and processes in wireless technology and has designed and implemented some of the largest and most complex high-capacity networks in operation in the UK today.

NbW is at the forefront of converged fixed-mobile broadband infrastructure solutions and has access to a unique portfolio of products and services to ensure delivery of converged IP applications such as voice, video, data and CCTV solutions.

The company's track record is also inspiring confidence overseas, where it has been licensed to build a national wireless network in the Ukraine. In a highly-competitive and fast-moving industry, NbW remains on the cutting edge.

Full Turnkey Service for Bespoke Solutions

- Licensed Radio Solutions & Services
- WiMAX Solutions & Services
- Wi-Fi Solutions & Services
- IP CCTV Solutions & Services
- UPS Solutions & Services



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