

Case Study

CableFree Rural Broadband Wireless solves Digital Divide Installing High Speed Wireless Rural Broadband in The Cotswolds, UK



About Wireless Excellence

Founded in 1996 and with headquarters in Oxford UK, Wireless Excellence Limited is a leading designer and supplier of outdoor and indoor Broadband Wireless communication products.

With a complete range of solutions including Radio, Microwave, Millimeter-Wave, Free Space Optics, WiFi and 4G/5G/LTE, customers in over 80 countries have chosen Wireless Excellence as the "one stop shop" solution of choice for dependable wireless networking.

Installing High Speed Wireless Rural Broadband in The Cotswolds, UK

Start-up operator Rural Broadband has been installing CableFree equipment to deliver Broadband Internet services in The Cotswolds, UK.

In the UK, rural communities suffer poor Internet from fixed line providers such as BT, due to slow roll-out of fibre internet and poor quality copper lines. Residential users experience slow or unreliable broadband connections and have no alternatives. Wireless Broadband presents an excellent alternative: High speed & Reliable connections, at low total cost of ownership.

Ideal solution for Rural Broadband

In this village of population under 1000 residents, a CableFree MIMO Radio Base station is installed on the local Church tower. The Base Station has over 800Mbps total capacity on two sectors. The sector antennas each provide 90 degree coverage to ensure seamless connection to all key locations in the village. The front of the sector antennas are painted to blend in with the historic stone of the church tower, making them invisible from ground level

"Simon Craker, Chair of Rural Broadband and resident of nearby Wickwar says: 'This is a community project to offer the village an ultrafast, economical and reliable internet service. Speeds unmatched by the traditional suppliers – up to five times faster than BT – will roll out in the village.' "



The "Invisible" Base station

Mounted high on the Church tower, the sector antennas are the only items visible – with the outer edges carefully colour-matched to the stone of the historic church tower. Founded in the 13th Century, the Church spire dates from 1500s. The installation was planned using non-invasive mounting methods to respect the structure, sitting on the parapet to ensure no damage to the historic structure, which is a Grade II Listed Building. Looking from the ground, the entire Base Station is almost invisible to the eye and was approved by planners.



Core Internet Feed

For core internet backhaul, a 1Gbps Fibre Optic service from a major national provider was installed at the local village school. This feed is connected up to the Base Station on the Church Tower by a dedicated Point to Point radio link with up to 867Mbps capacity. Higher capacities are available up to 10Gbps if needed.

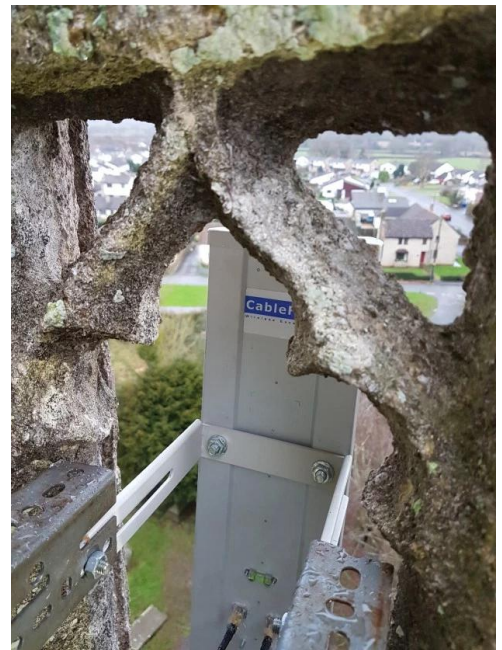
Compact, Low Cost CPE Devices

Each residential subscriber has CableFree Pearl CPE devices installed. These are small, compact, low cost and low-visual impact: much smaller than a satellite TV dish, the CPE can be mounted at almost any location on the buildings. These CPE devices are pointed at the base station and receive the wireless broadband signal with distances up to 5km or more range. The CPE is capable of delivering up to 500Mbps capacity, which in typical use is limited to around 50Mbps to provide "fibre equivalent" services and avoid saturating the backbone feed, with capability for future capacity upgrades. For sites at longer distances, higher gain devices are available with larger antennas. An indoor residential router gives the subscriber wired Ethernet LAN and Dual-band WiFi connections inside their home.



Licensed vs. Unlicensed Radio technology

The CableFree MIMO radio range is available in both licensed and unlicensed bands. Some operators have access to licensed bands such as 2.3 or 3.5GHz. However outside cities in low-density rural locations, the unlicensed/semi-licensed (rules depends on country) 5GHz band is perfectly usable, with no or low levels of other signals in the area. For this project we selected 5GHz knowing that the spectrum was clean. CableFree equipment uses the very best hardware, antennas, link margins, chipsets and software to deliver signals without interference or slow-down.



Summary

Broadband Wireless is an ideal technology for connecting Rural communities where traditional Fibre Optic and Copper broadband technologies are often unavailable, too slow, uneconomic or unreliable. A village can be enabled with Broadband wireless in as little as a single day, with suitable planning. Total costs are lowest of all broadband solutions. High capacities are available up to 500Mbps per subscriber or more.

Recommended Products

CableFree AC-MIMO-BS	MIMO OFDM Radio Base Station up to 4x550Mbps, range up to 5km or more
CableFree Pearl	MIMO OFDM CPE Radio up to 550Mbps, range up to 5km or more
CableFree FOR3	Microwave links up to 880Mbps between base sites, range 100km
CableFree HCR	Microwave links up to 6Gbps between base sites, range 100km
CableFree MMW	Millimeter Wave (MMW) links up to 10Gbps+ between sites, range 10km or more

For More Information

Please contact Wireless Excellence Ltd for information on the complete range of CableFree products and services

T: +44 (0)870 495 9169
E: sales@cablefree.net
W: www.cablefree.net

Wireless Excellence Limited
The Oxford Science Park,
G6, Magdalen Centre
Robert Robinson Avenue,
Oxford OX4 4GA