Agile provisioning: a local government brings remote construction sites online in minutes with 4G

The Highland Council in Scotland administers public services to the United Kingdom's largest local government region. With a geographically diverse land area nearly the size of Belgium, much of the Highland community is sparsely populated. These remote communities are connected by vitally-important roads, bridges, harbours, and other infrastructure that the Council develops and maintains. With such a large area to maintain, the Highland Council must deliver tens of millions of pounds' worth of infrastructure projects each year.

Like all local authorities in the United Kingdom, the Highland Council has a duty of "best value"—a mandate to deliver increasingly high-quality public services while reducing costs year over year. Best value means the Council actively seeks innovative solutions and technologies that help it deliver more value efficiently.
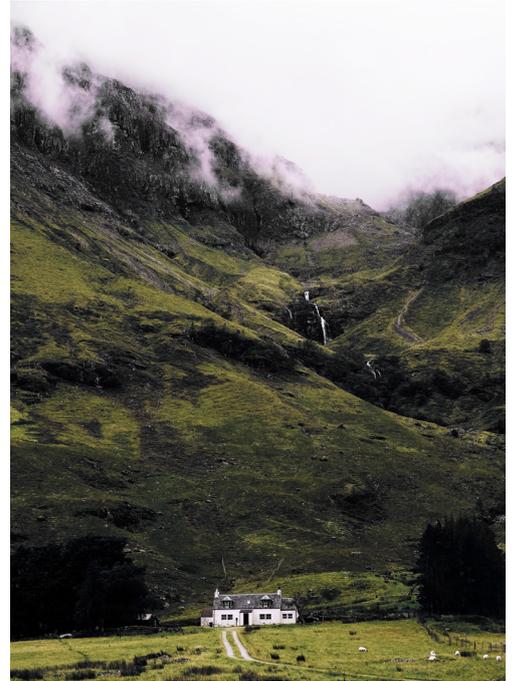
Challenge

Workers at the Council's multiple constructions sites must communicate easily with colleagues at other sites and with staff at the Council's head office through email, file sharing, and printing.

The high volume of paperwork required to administer projects and related contracts means construction sites need to be online from Day One. "When we're delivering a multi-million-pound project, we handle thousands of documents across multiple administrative functions. The need is greatest in the month after the start of a project," says Dave Barber, Principal Engineer in the Council's Development and Infrastructure Service.

Fixed lines are notoriously difficult to procure for Council construction sites due to the remoteness of the territory. In fact, fixed lines are either not available until late in the project, or not available at all. For example, BT can take up to nine months to deliver a fixed line, while the average Council civil infrastructure project is completed in under six. Scottish WAN, or SWAN, are rarely able to deliver a fixed ADSL line to site in under 70 days, so the Council typically has relied on satellite connections. Satellite connections are costly, though, and subject to speed and latency problems, as well as signal attenuation resulting from high winds and sometimes snowfall.

Solution

In 2014, Barber heard an acquaintance talk about an innovative technology, a router that creates a reliable link by using multiple simultaneous connections and connection types. He immediately contacted the distributor to arrange a demo. "Wired Broadcast came to one of our sites, set up one of their multi-WAN routers, and our site was online in five minutes. That was a 'Wow!' moment for us."

After the demo, the Council's IT department led more than one proof of concept with assistance from Wired Broadcast, using a router with three simultaneous cellular connections. After these initial projects, Wired Broadcast introduced the Council to XCommNet, Wired Broadcast's partner for ongoing sales and support. XCommNet also provides antennas and SIMs, pooling cellular data across the Council's devices to deliver cost savings

The Council gradually built up a stock of multi-WAN devices with which it brings sites online quickly, even in the most remote areas. The Council recently deployed the solution at a site in Acharacle in the remote Ardnamurchan Peninsula in the Lochaber Area, for construction of a sports pitch (playing field) at a local primary school. Cellular signals in this area are weak, but that's not a problem with the new solution. "In the past, we might have put in a satellite link, but those installs are costly, and the connections are slow. With this solution, we now can get a decent connection by using four cellular connections from multiple carriers, using sensitive antennas. It's the first time we've achieved that," says Barber.

In 2018, the Highland Council purchased Wired Broadcast's ultra-portable Mediaport®, a self-powered router than uses up to four simultaneous cellular connections with a fifth connection of any type (ADSL, satellite, cable, cellular, etc.).

For projects lasting nine months or longer, the Council still may opt to add a fixed line to the mix when available, but it is no longer dependent on fixed line or satellite providers, and no longer constrained by lengthy provisioning timelines. In addition to enabling agile provisioning, the new solution takes advantage of recent improvements in cellular data rates, signal quality, and coverage in the Highland Council region.

> "Wired Broadcast came to one of our sites, set up one of their multi-WAN routers, and our site was online in five minutes. That was a 'Wow!' moment for us."
>
> DAVE BARBER, PRINCIPAL ENGINEER, DEVELOPMENT & INFRASTRUCTURE SERVICE, HIGHLAND COUNCIL

Results

» **Efficiency gains make public money go further than a country mile**

In the past, whenever on-site connectivity was a problem, construction team members were forced to leave the site and travel to the nearest Council offices or town centre to reproduce drawings or other documents. Now, they can do everything on site quickly. For Barber, the difference in workflow is unequivocal. "This solution has been nothing short of transformational in terms of how we work on site." With cost-effective solutions from Wired Broadcast and its trusted partner XCommNet, the Council's construction sites are online from Day One, in turn enabling the Council to deliver projects faster and complete more projects in a given period. Analysing data from past projects, Barber estimates that these solutions have led to an efficiency gain of between 15 and 25 percent, depending on the type of project. Such efficiency gains provide a clear win that demonstrates the Council's commitment to delivering best value to its constituents.

About Wired Broadcast Wired Broadcast is an international provider of agile connectivity for mission-critical applications and a trusted provider of end-to-end broadcast and live event facilities and services. Since 1992, we have served hundreds of influential clients in broadcasting (BBC), construction (RG Group), banking (Royal Bank of Scotland), live events (Live Nation Entertainment), defence, and more.

We manufacture Mediaport® multi-WAN solutions and distribute related products. Our wide range of multi-WAN solutions provides reliable connectivity for mission-critical applications in fields as diverse as security, law enforcement, the military, construction, education, live streaming, and of course, TV and radio.

To learn more about our multi-WAN solutions for remote operations and rapid deployment, contact us at sales@wiredbroadcast.com or give us a call at +44 20 3376 7710.