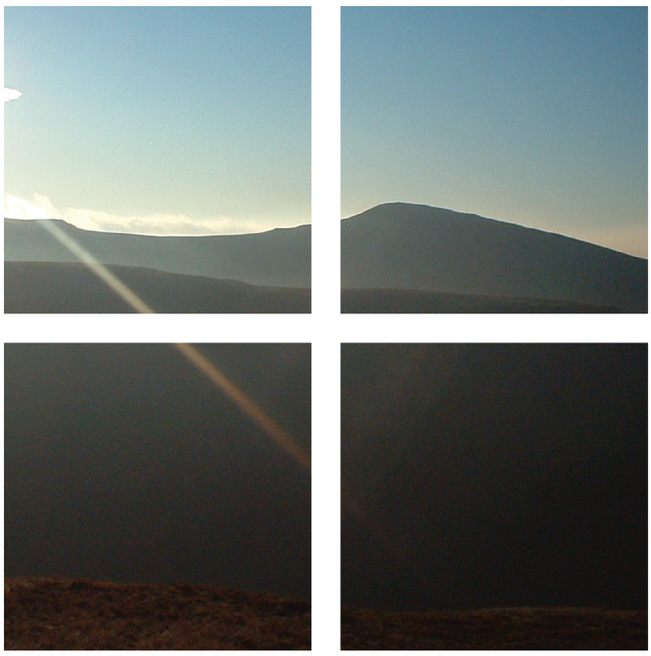
CORNING

CASE STUDY

Cybermoor Networks LTD

FTTH for Alston Moor - The UK's First Co-operative Fibre Optic Network

Alston Moor is a rural community located in the North Pennines Area of Outstanding Natural Beauty in Northern England. It is the most sparsely populated parish in England, centred on the small town of Alston with surrounding villages and hamlets.



At a time when first-generation broadband was not available to remote communities and people had to travel a distance to access basic Internet services, the community set up its own broadband initiative called Cybermoor. The original project and funding provided a wireless broadband network to approximately 350 homes and businesses in Alston and nearby communities as well as a community website.

Building on the success of Cybermoor, a new social enterprise was established, Cybermoor Networks Limited (CNL) to provide a basis for investment in a next-generation broadband infrastructure for the Alston Moor community. As a social enterprise, its aim is to keep control of this vital digital infrastructure for the benefit of the community.

The Need for Next-Generation Access

The existing broadband wireless network was challenging to maintain in the harsh environment, and users typically achieved download speeds of up to 2Mb/s. This performance was inadequate for the next generation of services to citizens and local businesses. Higher speeds and high-reliability access was needed to ensure the community was not left behind the urban areas of the UK. The infrastructure needed to support increased multimedia and bandwidth-hungry applications from multiple user devices as well as important services such as e-learning and e-health. A next-generation infrastructure deployment within the community needed to meet the following objectives:

- Provide a network infrastructure to facilitate faster and high-broadband connections to homes and businesses: initially 25Mb/s, with capacity to provide higher bandwidths in the future.
- Improve the productivity of Alston Moor's businesses, enhance children's education, enable access to the latest Internet applications at home and provide elderly and other residents with telehealth services.
- Attract people and businesses who want to live in a rural area and need access to high-speed connections.

An initial fibre dig was carried out to understand the challenges and issues when providing broadband services over fibre which allowed Cybermoor to sensibly plan the rollout of next-generation access. This step was quickly followed with an evaluation of fibre cabling solutions from two leading suppliers.

A decision on which fibre solution to deploy was to be based on the following criteria:

- A solution that minimises the capital cost of deploying the cabling infrastructure, specifically the civil engineering work and engineer time.
- A solution that minimises operating costs, specifically installation and support at point of delivery – the final few metres across to the customer's premises and through the wall of the house.
- A solution where individuals from within the community can be used in the deployment with minimal needs for upskilling.

The FTTH Solution

Cybermoor chose to deploy Corning FTTH preconnectorised outside plant system. This decision enabled Cybermoor to significantly reduce the costs of network design and deployment as well as the customer installation. The modular, preconnectorised solution provided a faster and easier way to deploy the network and for individual customer connections to be made.

> *"We chose the Corning FTTH solution because it was easier and less costly to design, deploy, support and manage."*
>
> Daniel Heery, Project Manager, Cybermoor

Alston has many small cobbled streets that are costly to excavate and reinstate at around £200 per metre. In addition this would have caused significant disruption to citizens and businesses and is difficult to undertake during winter due to snow and ice. As such, they chose aerial deployment of the optical fibre within the town, running from a headend at the town hall, along the rear facades of buildings and cascading the distribution points along the way. This approach enabled Cybermoor to minimise the civil engineering work and reduce infrastructure deployment costs by 50 percent.

With the community as stakeholders and a less disruptive deployment, it was easier for Cybermoor to negotiate wayleaves with property owners and the housing associations. Where wayleaves could not be negotiated, the modular nature of the Corning solution enabled quick and inexpensive changes to the network design and deployment.

Preconnectorisation is employed at the distribution point (DP) where network access is provided to each customer and at the customer premise. The DPs use Corning OptiSheath® multiport terminals which carry the environmentally hardened OptiTap® connector adapters. The drop cables are supplied preterminated with OptiTap connectors for connection to the DP, and OptiSnap™ connectors are used for field termination at the customer premise. Cybermoor deployed the drop cables coiled up at the DP ready to install to the customer premise. A Corning small wall terminal is then placed just inside the home terminated with an OptiSnap connector.

> *This simple "plug-and-play" approach with drop cables allows customer connections to be provided quickly with reduced labour costs providing significant operational cost savings over the lifetime of the network.*
>
> Daniel Heery, Project Manager, Cybermoor

The Corning solution enables Cybermoor to deploy the FTTH network using staff with no optical plant experience, specialist knowledge on network design and without any specialised installation equipment. Four individuals from the community carried out the whole design and deployment after being provided with a half-day training course – providing jobs for the local community.

Outcomes and Benefits

Following receipt of equipment and training, the network was deployed section by section taking the community six months to install. 300 homes have now been passed, most of which are within one mile of the point of presence at the town hall, and a pilot service has commenced to a small number of customers.

The advantages of Corning preconnectorised FTTH solution for Cybermoor include:

- Fast, simple and low-cost installation particular for the customer drop.
- The majority of the fibre jointing is carried out in quality-controlled factory environment providing preassembled components supplied fully tested for high reliability.
- Lower operations costs with easier network configuration and fast access to optical network for testing and maintenance purposes.
- Modular network build for easier deployment with easy swap out of components for future network upgrades.

Cybermoor is planning for a strong take-up of the service with many customers switching from their existing wireless broadband service. Residents and businesses will be able to choose their next-generation access with different bandwidth packages and have a choice of a phone service provided through the co-operative.

Future plans include extending the reach of the fibre network to the surrounding villages and remote properties as well as providing wholesale access to provide choice of ISPs. Cybermoor is also working on a number of community-led initiatives, such as e-health and e-learning projects, which will provide remote patient care and a virtual learning environment for the benefit of the rural community. As a social enterprise, its aim is to keep control of this vital digital infrastructure for the benefit of the community.

> *"The rural town of Alston Moor is a great example of what communities can achieve through a social enterprise model and innovative technology. Residents and businesses can now take advantage of high-definition video streaming, faster downloads, teleworking and new community services that will help transform the local economy."*
>
> Daniel Heery, Project Manager, Cybermoor

Corning Optical Communications GmbH & Co. KG
Leipziger Strasse 121
10117 Berlin, GERMANY
+00 800 2676 4641
FAX: +49 30 5303 2335
www.corning.com/opcomm/emea

Published in the EU. OUT-0414F-BEN / April 2014