

Chapter 9

Back to Phase I - Lowgill / Tatham Fells

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Phase I.



The very first parish council B4RN chat, as Tatham Church.



Barry presenting at the Lowgill meeting.



Phil Stone from Lowgill digging at Quernmore.

Tatham

Tatham is one of the longest parishes in the country. From Wennington in the Lune Valley it wends its way right up into the rural uplands.

The people up at the top had terrible connectivity and some were paying exorbitant amounts for a very poor satellite service. Some of them could not even get a dial-up connection because a lot were on DACS, which splits a phone line into two. Those who could get dial-up found it failed more than it worked.

Phone lines were strung across masts and often broke in the winter, only to be left un-repaired for weeks, trailing in the hedges.

Some customers just put up with it as the price for rural living, but some were determined to get a connection for their businesses, especially the farmers, who needed it to comply with regulations. A trip to the local auctioneers to use their connection took up too much time in the day.

Lowgill had tried to join the WenNet wireless network in the Lune valley in 2004, but had no line of sight for a connection to work well.

After the village meeting many Adopters were recruited, and they worked their magic on the Apathetic ones, with only a few not getting inspired.



Beyond the book

[The Tatham website](#)

A volunteer from Thrushgill recalls:

The meeting in our area was terrific. The turnout was fantastic and Tatham Fells School's large classroom was full. No-one knew Barry Forde and no-one really knew what to expect, especially after the rumour mill had been grinding. What we got was a clear, professional presentation explaining the theory, the reality and the possibilities, backed up with maps and financial information. We were shown pieces of ducting and fibre optic cable. The whole scheme seemed to make unbelievably simple sense. A core route would be a priority, like a main artery, and as many spurs as necessary would come off it. There were some very sharp and knowledgeable questions from the floor, all fielded with technical info and efficiency. It looked as if this was a goer and as we all enjoyed tea and biscuits from the school kitchen, the positive vibes in the room were almost palpable.

There was much jargon to learn and various thicknesses of ducting to be matched to service and terrain. The core route is thick, orange ducting carrying a myriad of fibres, but when a spur is required to connect a hamlet, a thinner duct is necessary - and less costly to purchase. 16mm, 7mm, purple pre-populated, multicore... It was amazing just how quickly locals became experts and were able to share their knowledge with authority and confidence.

Volunteers began to find their niche and develop an aptitude for certain tasks. There is something for everyone to do, whatever their level of competence and or confidence. Many hands make light work is a simple truth.

I happened to be around on the morning of a blow near Abbeystead. It was a clear, fresh morning and several people had turned out to help. The ducting was safely in the ground and now the hi-tech bit of blowing the fibre through the duct was the job in hand. The fibre arrives on a big reel and can be grubby, so it is important to make sure it is squeaky-clean before it gets blown. The team had the high tech blowing thingy (please note, I have all the relevant technical terms at my fingertips), plenty of cloths to clean the cable and the huge reel on a reel trailer. The men of grit had done this before and had a practised method to minimise fuss and faffing. It is difficult to slot into a team, especially when the core team is established and I felt as if I was wandering about rather aimlessly, being a bit of a nuisance. Actually, it is the standing back, observing and talking to people that is most important. If you are happy to do that, even if you are feeling a bit surplus to requirements, then next time you will be au fait with the routine. The fibre had to be peeled off the reel steadily, so that there would be no snagging or stuttering as it was blown. There was a bit of a break as the blower was set up on a trestle table and the compressor was hauled into place. Rolling the cable off a reel is surprisingly hard work. (Note - very good for an upper body workout and completely free.) You have to keep the reel turning steadily so that the people in front can pass it through a cleaning cloth and on to the blower. There is a bit of a knack to keeping it running smoothly and not going too fast. If it goes too quickly a loop of cable can drop down beneath the reel and get tangled. If you miss a beat, it throws everyone out so it is a good plan to anticipate when you are getting tired and mention it well before you run out of steam. (No pressure then.) Also, it is best to wear gloves, as the edge of the reel can be a bit vicious and splintery.

The route planned by B4RN was inspected, and some farmers thought they would get it quicker if they came another way. Both ways depended on getting the core to Wray first, so they went and helped out on that route and learned the ropes.

Getting to Lowgill turned out to be a two-pronged attack with two routes for the core. This is ideal as it gives the cabinet more resilience, but is not often achieved in the early stages. The Lowgill folk did it.

One of the most remote farmers, Andrew, had been kept in the loop by his brother Robert, who was doing some digging for Abbeystead. They got the bit between their teeth, and got going on the route that was going through to Thrushgill from Wray.

Meanwhile the group in Millhouses via Wray, and Old Moor via Wennington did not want to be left out, nor did the Old Wennington people, who were on the Wennington route to Low Bentham, so they all got going too. At the Lowgill point in B4RN's history we still did not have a depot for supplies other than a farm, nor had we got many staff, but more were being taken on.

Old Moor Road project

This part of Tatham was on a route of its own out of Wennington. It did not join the Lowgill line. Tatham, being such a big parish, ended up being served by three different cabinets.

Jim Harrison from Old Moor Road met up with Wennington's Jim Murphy, and discussed how to get the feed up the Old Moor road, and back down to the Wennington cabinet.

Jim M's biggest problem was the main road crossing, but Jim H's problem was a railway, and the two could not join at the place they needed to.

One landowner would not give permission as she did not 'hold with that internet rubbish' and this meant many detours, but it saved crossing the railway which is always an impossible job (see the Wennington chapter for the details of the detour).

In the meantime the diggers were coming the other way to meet them from Wray (again, see the previous chapters).

Constructing a network core with duct means that different bits can be dug in when weather or crops permit.

Another issue is areas where wildlife have to be protected at certain times of the year, so on the ground coordination is essential. This is where local knowledge is such a blessing.

The Wennington farmer/contractor, Brian, had done a lot of the detour dig to start with, and the Old Moor tribe picked up the link from his last chamber near the Tatham Bridge Inn. Andy McClements took over the digging.

Wennington had given them a good start.



Volunteers from Old Moor road helping Alistair with the blow.



Andy McClements digging and volunteers help with backfilling..



Andy McClements gets his spade at the end of the digs.



The finished job to the Greenfold houses where Jim H lives.

Jim Harrison and his tribe joined in with the Wennington blowing and fleeting after learning what to do.

Jim had moved into the area a few years earlier and joined the WenNet wifi network. When the WenNet network started supporting B4RN, he and his neighbours got involved, and Jim set forth, knocking on doors to get registrations, wayleaves and finance.

He met with Carl Hunter (from B4RN and the WenNet project) and Bruce from B4RN and they advised him how to get the routes through to all the houses in his area.

Kay (Jim H's wife) John and Melinda Elder, and John Walker followed the digger and sieved the soil back into the trenches, and buried the duct. The indefatigable team of sod lifters/re-layers, hand diggers, and sifters on the OMR route were also Andy McClements' partner Julie, and Janet and Nick Cookson.

The photos show the dig approaching his house.

They had not got a mole plough so Andy dug it all. Jim's house is the one in the middle. The farmer in the house on the left had hosted the kit, and beamed the wifi signal to them from WenNet. He was more than happy to grant wayleaves.

The house on the right was a young family, and they joined in and helped with the digging because they really needed it too.

John Elder fitted a lot of the house kits and Jim says there was fantastic community spirit and support. He says B4RN has been a great service since then, and is a well-organised and helpful broadband provider.

All the volunteers turned out and helped Alistair and Bruce with the blowing and fleeting when the time came.



Millhouses.



Mike Winstanley helping with the Wray Blow.



In a darkened room.



Bronwen Osborne brings tea to the blowing team.

Millhouses

Mike Winstanley had been involved in the Wray/WenNet network during the satellite trial, as his tiny hamlet of Millhouses had very poor internet, and no mobile signal. He wanted fibre for his community and was prepared to work to get it. He had been to Wray to volunteer to see how it was done, and had experience of fibre blows and what could go wrong if the duct was not laid properly.

A lot of his community were already shareholders, so he knew they would all be supportive. He attended lots of meetings at Bronwen Osborne's house where everyone in the area worked towards the same goal, getting B4RN to their community. This particular route through Millhouses was the one that would reach her patch. Bronwen kept them well supplied with tea when they got going.

Mike got the route plans off Barry, and immediately walked the routes to find they could not be done. He met up with all the farmers and they came up with much better routes, so he got the routes altered to where they knew they would work.

He got Keith Sykes to dig up from Wray to Millhouses as he knew all the farmers and what they wanted. They all took the service and were delighted with it.

Once they got to Millhouses Tony Swidenbank came and got it under the road. 'My 65th birthday was spent helping Tony Swidenbank get under the road in Millhouses. I did not have enough cable so had to go searching, eventually finishing up at Iain Robertson's at Lower Thrushgill where there were spares'.

All the people dug their own gardens, and Richard Wilson from Lowgill fitted a lot of the house kits for them.

The summer came and the land was dry, and he



Tony Swidenbank's directional drill rig at Millhouses.



The UU man keeping an eye on Clive Story.



Going through the fields between Millhouses and Ashleys.



Clive doing trench works.

used Kenny Hunter and the mole to take it up the hill to Ashleys, where the Lowgill team would pick it up.

He remembers trying to locate farm water mains. 'I always knew where the Haweswater Aqueduct went, more of an issue was precisely where the privately laid water supply extension from Millhouses to Ashleys went. UU provided a plan!

'United Utilities just appeared as if by magic as we were approaching the aqueduct and advised us to hand-dig. They sent someone up to observe the next day and Dr Clive Story helped with the trenching'.

Clive was going to try to get B4RN to his community and was learning the ropes. The UU man stayed and watched as they went over the aqueduct to make sure no damage was done. They made great progress once they got back to mole ploughing, and one sunny day they were working at the top of the hill and the two nearest householders came out and said their electricity had gone off. They were near the pole, but had not cut anything, but they were held to blame. They investigated when they noticed an electric company van down the road, and it turned out a tree had fallen and broken the line, so they breathed a sigh of relief.

They had no trouble at all with wayleaves, apart from one field that was for sale, and they had to wait until the purchase (by a local farmer) was complete and then they got their wayleave.

Mike says the moleplough jobs were a lot easier than the digging ones and looked much better too. The Burrows brothers and Keith Sykes moled dry fields. Keith also dug when it was too wet to mole or where the farmer wanted a dig instead of a mole. Graham, Peter and James dug the track. Two different types of mole were used. The impact mole that Tommy had bought could smash or move rocks as it went, the drag mole was more for easy ground.

Pneumatic mole and a drag mole. Mike's photos from the Millhouses dig.



Nearly at the houses with Big Bertha, Tommy's mole plough.



A mole plough with a tractor.



Tommy's mole being put to good use.



A tractor mole plough.



A neat mole trench.



Kenny's mole worked well.



Tommy Hartley's mole plough in action.



Diggers are often needed to finish off trenches.



Hand digging under tree roots near the houses.



Putting the sod back on.

Once the ducting was in, Bruce came to blow the fibre. Volunteers from Lowgill helped with the blows and fleeting. Later in the summer the rest of the blows up the hill started, with many of the Lowgill tribe coming to help there too.

James Gorst, a local farmer, won a Lindsey spade for pulling the trailers out of boggy bits.

Mike always had his plans on site to estimate the length of fibre to fleet to the next bullet. His



The dig across the track to the houses.



Reeling the fibre into the blowing machine.



The fibre blow with Richard Turner on the reeler.



Mike consults his maps and notes for fibre lengths.



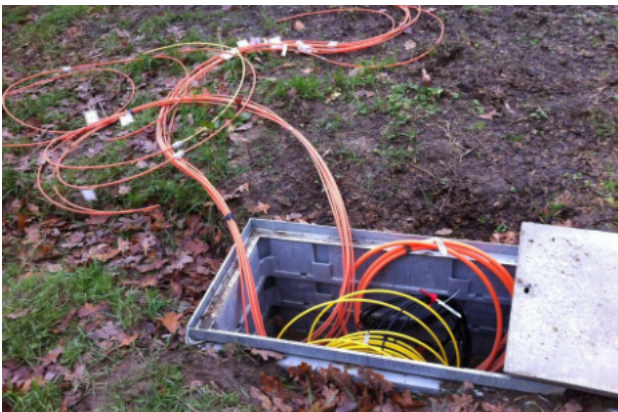
Graham catches the fibre. Mike's measurements worked.



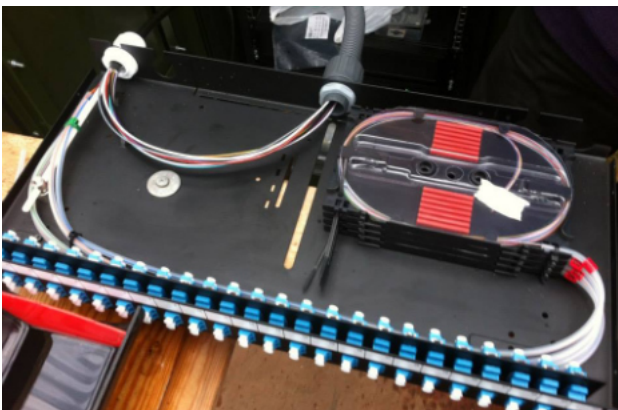
Alistair fusing a bullet in the trailer.



James Gorst and his spade award. He moved the trailers around.



20 metres of yellow fibre, and house ducts ready to blow.



The tray in the cabinet that will feed them is completed.

calculations must have been right, because Graham caught the fibre as it arrived at their houses.

The blowers then blew the house fibres to each property, with all the ducts labelled up ready for the fusers.

First of all one end of the core fibre had to be fused in the cabinet at Wray. Then the fusion team could come and join all the houses on in the bullets.

Alistair came to fuse the first bullet of the day, and as the day progressed he had to walk back to the road to his car and get the farmer to move the fusing trailer to the next site. Mike escorted him, bringing the brews and biscuits.

Meanwhile the route from Lowgill to Millhouses was arriving, and it joined up at Ashleys, and fibre was blown the other way, with all the volunteers out in force to help Bruce blow it, and leaving Alistair with a lot of bullets to fuse.

24km of duct had been used on this route.

At the same time the house fusers were visiting different areas and some volunteers learned how to do their own. Nigel and his wife did theirs. Others had a go at fusing too. The photo gallery shows Val doing hers, watched by Mike, and photographed by Nigel, and together they brought their Gig to Millhouses.

The first customer connected was Ray Burrow, which was great because his farming family owned most of the land leading to Millhouses, and his best computer scored 967Mbps. Mike was there when he tested it and can still remember the joy of the new route coming live.

Another group of people, at the other side of Millhouses, wanted to be connected, so the next summer Mike started the second part of the project. Paul Taylor at Parkside could not watch anything on YouTube, and neighbouring kids could not do their



Val's fancy teapot.



Millhouses junction.



Paul Parsons fusing on the moor with Richard Wolfendon helping.



Andrew Taylor digging for Bank End.

homework, and they were desperate. He encouraged his neighbours and some bought digging shares, and that enabled Mike to pay the diggers.

The route to Parkside was moled by Keith and his brother but from there to Moorhead and Russells it was done by Tom Hilton.

Mike says he really enjoyed meeting all the different people and getting to know them. There were never any days where he did not want to get out of bed and get stuck in.

Mike had taken his dig to Ashleys. Andrew and Robert Taylor had already started from there, and were getting into Lowgill village (19 houses), and to the church where the cabinet was situated. Fanning out from there it went to many farms, often digging miles for one property. Millhouses is fed from the Wray route, and Lowgill joined on to the network there. Lowgill had been given a good start.

The farmers were happy to dig, and were paid £1.50 a metre in what we called 'digging shares' to do it. There were very few issues with wayleaves in Millhouses, and they all helped each other.

Finally they were on top of the world amongst the heather, bringing a gigabit connection to properties without mains electric or piped water.

While the other Phase 1 groups had been busy, so had Lowgill itself. A lot of the main core routes were in, and their cabinet was ordered.

The volunteers' stories follow, they had a mighty tribe of determined people

About this time (2015), when the network was getting bigger and storage of supplies a problem, B4RN moved to new premises. As we started to get an income from connections, and more people bought shares or invested, we could afford to buy more stock at a time, to keep the costs down.

Millhouses fusing gallery



The fusing trailer at the far end of a field.



The farmer moves the trailer round to chambers.



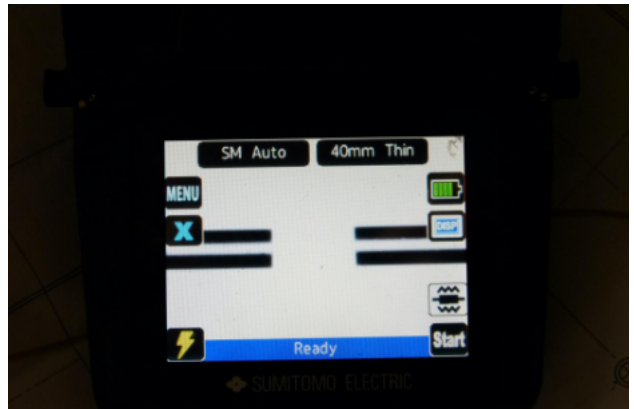
Tea time at the trailer.



Mike and Alistair walk to the next chamber.



Fusing the houses.



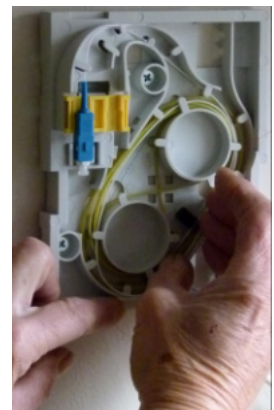
Val's fuse, fibres lined up nicely.



Val fusing her own fibre.



Wrapping a fused pigtail into the FTU (Fibre Transmission Unit).





Old Moor Road sign.



The beast of Lowgill.



The tracks of the beast.



Richard Wilson helping on a blowing day in Arkholme.

Lowgill

Lowgill are the only group who have used a 'beast' and if you are on Facebook you can view the video of ['The beast of Lowgill'](#). The Beast was a weird trencher, but it certainly did a good job. They could do half a kilometre in a day, it beats digging with a spade!

Geoff Higgin's background in his working life was building networks between computers. He recalls how awful the broadband was where they lived, and he attended several meetings, specifically the one in Hornby where a fledgling B4RN had challenged the NWDA's decision to give the government funding to the county council and BT Openreach.

They had more meetings at Edward Mason's house, and then a big one at the school organised by Bronwen for the parish council with Barry explaining it all and answering all the questions.

Bronwen 'woke them all up'. They had many meetings at her house.

Richard Wilson had been volunteering on other village projects and had a pretty good idea what to do. He was a great help when it came Lowgill way. He was always there at blowing time too, and helped the contractors fine-tune the routes. Blowing days are a lot faster if a local champion is there, they know how to get into fields, where to park, who the landowner is, etc. Richard was indispensable to Bruce and the team.

Kate Stone, Edward Wilson, Richard Wilson, Andrew Taylor and Geoff Higgin formed a team to take it all forward. They did not have a leader, they all just worked together and had regular meetings themselves 'in a darkened room'. Geoff was methodical, and that is why we have such a good photo archive.

**SOME PEOPLE WANT
IT TO HAPPEN.**

**SOME PEOPLE WISH
IT WOULD HAPPEN.**

**SOME PEOPLE
MAKE IT HAPPEN.**

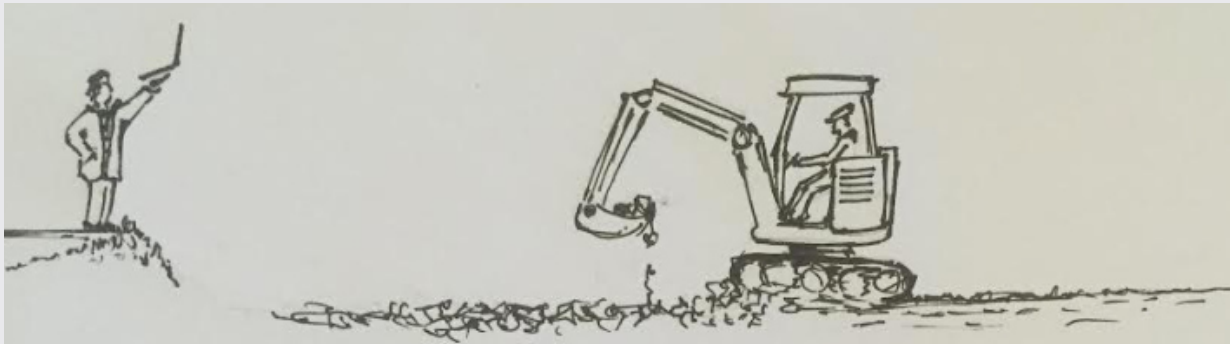
A volunteer remembers:

An awful lot depended on a few individuals who were committed and actually stumped up and bought cable, thus gambling their own money with no guarantee of return. Thank heaven, all angels, gods, tree sprites or whoever one feels must be thanked for the bravery and generosity of these people, as without them, B4RN would still be on the back of Barry's envelope having never seen the light of day.

It was a scary investment, particularly at the start of the decade when the financial crisis was still raw and money was not that easy to come by. In a bizarre way the fiscal climate was a plus. Nothing was happening, little building work was being undertaken, road repairs were pretty much non-existent, no one was daring to spend money, and that locked down mentality in some ways gave fertile ground for the seeds of B4RN to germinate.

It was blindingly obvious that no public body was going to help rural areas – not out of spite (which is sometimes how it appears) but simply because they jolly well didn't have the resources. Of course, any public investments should be made in well-populated areas thereby benefiting the most people possible. Us rural folk couldn't expect anything, as we were just a handful of people, whilst in the towns and cities any infrastructure upgrade would benefit hundreds, if not thousands of people.

That wasn't a message we could overlook and it was completely understandable, but it did create an attitude of 'get on and do it yourselves, 'cos no one else will'. So, entirely based on trust (and a well-researched, watertight blueprint) – stuff began to happen, and happen it did.



As things began to gather momentum, all the theorising and modelling began to become reality. Never mind digging trenches, there was a bit of pretty technical stuff that had to be learned and executed. Our volunteers, so filled with optimism and enthusiasm during the meetings and discussions, now had to get their wellies on and get out into the field.

Lots and lots of brilliant, visionary people had bought what we called 'Earlybird' shares that helped to get things going financially. £1,500 of shares promised you a free connection and the first year's service, but even if you'd pitched in with cash, it didn't mean that you were excused being in the field in the mud, and the rain and the wind.

As most of us know, farmers are a savvy, capable bunch, well-used to problem-solving and generally happy to share their knowledge and equipment for the greater good. So, when the men of grit appeared with the huge coils of cable and blowing machines, after the initial hilarity and 'it'll never work' banter, the overriding attitude was 'good on you for trying'. And with that in mind tractors and diggers and mole ploughs were made available along with detailed knowledge of the local terrain. It was, as they say, a huge learning curve.

Digging ducting into the ground is one thing, but it had to be done in a certain way. Big stones and rocks were to be avoided. Sharp grit and gravel was best kept away from the duct as if, a tractor was to drive over the land and compact the soil, we couldn't risk any likely stone damage, which could fracture or break the duct. A smooth run was vital, as any angled bends, steep drops or rises would make blowing the fibre almost impossible. Break out chambers had to be installed so that any problems could be isolated and fixed, without having to dig everything up again. All this (and these were just the basics) had to be learned on the hoof, without any training or former knowledge and without any equipment, other than garden spades.



During the weeks preceding Christmas 2014 it was common to see groups of people, well wrapped against the weather, beavering about with spades and ducting. Coils of orange cable peeped from behind walls and hedges all over the district and it was a joy to see the fantastic work in progress. People power got most properties connected in and around the village before the festive season kicked off.

Because of the importance of broadband almost everyone got on board and pitched in, from kids with froggy wellies to grandmas and granddads. Residents made time to get together, help, rekindle old friendships and forge new ones. Whether it was sharing a shovel or co-ordinating lifts to the bus stop, neighbours were working together and talking face to face.

This community cohesion seems like an ironic legacy of the fastest broadband system in the world, with its ability to access folk on the other side of the globe in seconds and chat to people that you'll probably never meet. But somehow it seems rather poetic – after all, the whole project has communication at its heart, whether near or far.



The core carries on round the back of the school room.



And there is time for tea.



Phil Stone setting the ducts into the chamber next to the plinth.



The finished plinth.

Geoff photographed all the routes for wayleaves.

He remembers a farmer who was not keen on the dig going through his patch. One day he was out for a walk and the farmer was doing some hedging so Geoff stopped to chat. He admired the good laying of the hedge, and nattered for a bit, then Geoff mentioned that it would be great to go through the field, so they could get the broadband into the village, and the farmer was happy to give wayleaves.

Once the main core duct was dug in to Lowgill, it was time for the hub to be built. So at the Old School, the families took over to build the plinth for the cabinet to sit on.

It all got done, and the cabinet arrived.

It was now time for the blowing to start. The dig via Millhouses was the first to reach Lowgill cabinet. The route fibre was already at Millhouses, so the blow started back down from the cabinet to meet it,



And time to scowl at the photographer.



The cabinet arrives.



20 metres of fibre in each chamber.



The fibre blow down to Millhouses from White Pits Lane.



Helen Wilkinson and Carole Butcher, fibre queens with spades in hats.

with many fleets on the way. Some portions were blown up, some were blown down, with 20 metres left in each chamber to join them together.

Phil and Carol and the other volunteers carried on helping to blow the fibre, cleaning the fibre as it left the fleet or the reel, to go into the blower. In those days the fibre was stored outside at a farm, so it was muddy. It had to be clean to go in the ducts, so it went through towels and rags in the hands of the volunteers.

Bronwen had the honour of catching the first sponges prior to the fibre arriving. She had been at the very first parish council meeting in 2011, and inspired many people to join in the project.

Now the cabinet is in, the route from Wray via Thrushgill can join on too, and other routes going out of the area are getting completed by the teams. The fibre finally arrived at Lowgill after Bronwen caught her sponge.



Carole Butcher and Phil Stone cleaning the fibre.



Bronwen Osborne catches the sponge at the cabinet.



The fibre being blown from the cabinet to new routes.



The fibre blow from White Pits hits a blockage. Find it.



Carole and Helen did very tidy fleets.



The belts on the blowing machine playing up. Bruce fettling.



A fibre blow from the cabinet to Sea View and Botton Head.



Bruce and Richard Wilson turning a fleet.



Edward Mason and Bruce turning a fleet.



Making sure it is all tidy after the duct has gone through.



Finishing touches to the plinth.



The Lowgill families dug the duct round the school rooms.



Bruce Alexander, aka Bruce the Blow.



Andrew Taylor digging from Bank End Farm to the core route.



A spade for Andrew and one for Bank End.

Once the fusing was done the cabinet came live. This project set off other areas out of Phase 1, and Keasden and Clapham took up the challenge. (See their own chapters). From Lowgill the fibre feeds all the remote farms on the fells, and then the core carries on to further villages. Geoff got many wayleaves sorted, and took photos of all the routes they dug, mostly very long routes.

He said he thought a lot of the farmers dug for shares, but had not been involved in the finances. He remembers some very long digs out to remote farms and houses. He helped out on many, and says the householders did their bits.

Bank End dig for Ted Lester was a good example. Andrew Taylor from Botton Head is in the photos, doing the digging. Ted's house has no mains water or electricity.

His four sons were at secondary school and they really struggled on the satellite for homework. They had no phone or mobile signal and they missed out on the social life as they only got their weekend texts on the school bus on a Monday morning. Teachers would not believe they could not download their homework and they got detentions. Ted was a software specialist and had to rent some space in a town to upload his work.

Once he got B4RN in he could easily work from home and his company saved a lot of money. Ted and Andrew dug Ted's connection in from the nearest chamber to his farm, about a kilometre away.

Phil Stone and Richard Wilson did most of the house installs where the householders could not do it themselves. Phil had learned a lot from volunteering in Quernmore, and Richard Wilson had volunteered at Arkholme.

They all thought it was a bit like Grand Designs and they would 'have it all done by Christmas'.

Lowgill photo gallery, most photos by Geoff.



Mighty long digs to reach the village.



Rough dig avoiding productive land.



Rough dig.



Finished trench.



Sub-ducted ducts under walls and fences.



Many hands.



Finished job.



Trench ready for duct.



Farmers got the fusing trailer into fields.



Home made reel stand.



Mole ploughing.



Laying duct out over the fields.



Laying out the duct.



Pulling the right length of duct off the reel.



Group dig.



Hole for the mole.



Tommy's mole gets through.



Mole trench.



Carole Butcher and Helen Wilkinson.

They designed and welded their own reel holder to facilitate reeling out the multiple strands of the duct for the trenches. For the larger reels they used scaffolding. The community volunteers helped get it laid out ready for the diggers, and then helped backfill the trenches.

When they came to a road they called out Tommy Hartley, with his mole. They made a hole each side for him and he got under the road and sub-ducted it for them, so they just had to push the duct through.

Eventually they got all the duct in, and Bruce arrived to blow their fibre and connect them all up to their chamber. Then the core team arrived to connect their chamber to the cabinet at the Old School. Not all the blows went well. Blockages are a fact of life, but after much debate and scratching they get fixed.

Belts wearing out on the blowing machine are another issue.

Some extremely long blows were involved in Tatham Fells, but Tommy was always available to help Bruce fix things.

The farmers were all supportive, and often helped get the B4RN trailers on site in bad weather.

Once the core was in, Bruce blew all the house fibres ready for the fusers.

Geoff says he missed the best bit of all as he had not got a camera with him, and it was priceless. The first big blow brought out the ladies with tea towels to clean the fibre. New to the game, Carole turned up in pristine gear, just like Margo in *The Good Life*. He wishes he had that photo! Carole and Helen were part of the Lowgill team and were awarded the silver spades for their efforts in getting the fibre to their village - and another volunteer got the photo of her.

We also got a photo of their tidy fleets, and one on the coldest wettest days of the year, where they were



Phil Stone gets his MBE spade award.



Richard Turner tidying up the chamber.



A tidy chamber.



Fusing the fibre at Ivah.

again present with their tea towels. Phil also got his spade award, and has carried on over the years in the Computer Club, helping people with battery backups, and extending wifi in their homes.

Richard Turner helped on many of the digs and blows to get to Lowgill, and then the route carried on to his house, and Geoff's, at Ivah.

Bruce came to blow the fibre and then the bullet was done to bring their cluster of properties online. The route carried on to connect even more. The photos show a long day's work, where the fusing was done and finished as the sun set.

The route from Thrushgill to Lowgill was also completed at this time, in the most awful conditions.



Ivah's bullet being fused.



Close of play on fusing day.



So near now.



Alistair Iain and Judy blowing fibre approaching Thrushgill.



A Thrushgill fleet.



Walter and Fibre (the dog) catching sponges.

Walter

By a fan

Another great help in our Lowgill project was Walter Willcox. RIP.

Although not a spring chicken, Walter thought nothing of hammering up the motorway to attend early meetings and discussion groups. His enthusiasm was infectious and his knowledge invaluable. As the project developed ‘Walter from Surrey’ became a well-known figure and he very quickly got to know all our twisty lanes and gated shortcuts.

Leaving his wife Jo at home in Surrey and neglecting his duties as a grandfather, Walter would arrive with his car stuffed to the gunwales with useful equipment and pitch camp for a week or so. His boundless energy put younger folk to shame. Not content to simply relax after the horrors of M6 he would begin his networking straight away to discover which B4RN area most needed his help the following day. After a good, hearty breakfast he’d be off into the fells with his wellies and foul weather gear at the ready. He was happy to dig, problem solve, trouble shoot, deliver kit, in fact anything that needed doing – at full speed until the light began to fade in the evening. Then he went back to the B&B for supper, a glass of wine and on with the evening tasks of letter writing, communicating and devising solutions for the problems the day has delivered.

Just as a side note, Walter then designed and built his own network, B4SH, which is still run by volunteers in the Surrey Hills. He was B4RN’s first shareholder, and also held the millionth share. See chapter 1 for more of his escapades in B4RNland.



Walter and Iain got the fibre to Thrushgill and then through to Lowgill. They blew the smaller fibre to houses, and installed the equipment in them. Iain and Alistair then fused and patched the fibres and everyone rejoiced. After years of satellite and dial-up they joined the high speed digital world.

Richard Wilson had originally come to the Wray/WenNet group in around 2006 to see if he could get a wireless connection up to Lowgill.

When B4RN first started he was one of the first supporters and shareholders, and despite what he says below, we know how much time, effort and enthusiasm he gave to us all.

Richard recalls

Until this trawl through the archives (my diaries) I had not really appreciated how much time I put into B4RN in 2014 and 2015. I know many other Tatham residents were equally, if not more, committed to the project. The best thing about it was the sense of shared community purpose that it created; B4RN brought together people – even neighbours - who might otherwise never have met. I made many friends, and felt by the end that I had met nearly everyone in Tatham!

A Case Study

Securing wayleaves was the biggest headache. The difficulties were compounded by B4RN's newness, which prompted scepticism about its chances of success; to be honest, even I was doubtful, until December 2013.

There was also a widespread lack of appreciation of the future importance of a fibre connection, and a feeling amongst many householders that they were happy with what they had got from BT, so why change? Several landowners questioned why they should let their land be dug up if they themselves did not need or want B4RN. As a result, the desk-study route-maps, with which route-walkers were initially provided, underwent some major and often inconvenient changes.

This is best illustrated by Property M, which should have been an easy dig from the core route, in fields beside a road. This option was blocked by an uncooperative landowner, so the route junction was moved back down the core route, and a less direct line fixed, taking in a few properties in a reversal of the original plan for connecting them. Whilst this change solved the problem of getting to Fourstones – later to become the gateway to the Clapham project – the obvious way to Property M was blocked by another intransigent landowner, at Property F. A road crossing might have got round the impasse, but this route was blocked by yet another refusal, over a mere 20 yards of sheep pasture!

Back to the drawing board, and the only remaining option was to get there from well beyond Property M - a chamber nearer the far end of the route to Fourstones. This new strategy required a road crossing. We knew there was a culvert there although we could not use it. Its upper end was in a morass, easily located; the other end, in land owned by property M, took me two days to locate and expose. But we now knew where it was, so it could be avoided when we made the road crossing.

The fun did not stop there. There was enough 7mm to cross the road but it did not go much beyond, so I needed two 400m lengths to reach the buildings, and confirmed that it could be taken from a reel sitting in a barn at a nearby farm; as it was so close, I decided to transport it on foot. I reeled out the two lengths in a straight line up the public footpath from the farm towards Property M. Just as I finished the second length I realised that the farmer, who had not been within hailing distance when I started, had arrived. Not realising I was still there, he moved the reel end of the lengths of duct 'out of harm's way' (his tractor), creating a big pile of orange spaghetti.

After an hour of disentangling, I set off up the footpath, dragging the duct behind me. The path goes through Property F, whose owner spotted me. Unfortunately this owner was, for reasons unrelated to my interpersonal skills, ferociously anti-B4RN. On seeing the 400m of duct trailing behind me, he tried to prevent my passage. I explained that footpath law allows users to take with them anything that is a "reasonable accompaniment", and that furthermore, as it was necessary for my work, the duct was a reasonable accompaniment. I was allowed to proceed, and the duct was then laid out, ready for digging in by Robert Taylor.

Days later, we learned that the culvert (blocked, hence the morass) was about to be replaced by Lancashire Highways. When the workmen arrived I went along to beg them to avoid damaging the nearby duct ends on either side of the road, explaining how much the frail, elderly occupants of Property M needed B4RN to keep them connected and safe. Expecting a 'not my problem' reply, I was flabbergasted when they volunteered to install a small pipe next to the new culvert specially for the duct, thus saving B4RN the cost of a road crossing.



At last a happy ending!

But the tale has one final twist. Two years later, Property F was sold, and the new owner promptly signed up for a B4RN connection.



Iain using his portable stile sign.

Iain Robertson

By a fan

Tapping into the zeitgeist of iPhone, iPad, and iTunes, iRobertson could be construed as quite a cool name. However, known throughout B4RN simply as Iain, he saw the fantastic potential of fibre and was completely hooked before the end of the initial meeting in Lowgill. As fairly recent residents in our parish, Iain and his wife Judy took up the cause and waded in where others may

well have feared to tread. Unencumbered by too much local knowledge and politics, their ‘can do’ attitude was both refreshing and infectious.

At that point Iain and Judy were semi-retired with far too much energy to rest on their laurels. An accomplished carpenter and furniture designer, Iain was used to problem-solving. It was not unusual for customers to present him with a squiffy, unworkable sketch on a bit of scruffy paper and expect him to magic a sideboard or cupboard out of wood – which with a lot of thought and skill he would do. So, ‘can’t’ was not a word in his vocabulary. In fact, the very mention of can’t made him more determined to succeed. B4RN was a challenge and a worthwhile one at that.

Straight after our inaugural meeting at Tatham Fell School Iain was on the phone asking how, where and when? The concept of Do It Yourself was top of the list. There was no tried and tested formula and we were all on a steep learning curve. Everyone had to discover for themselves a way of getting fibre to their area and making it happen. So, with little to go on Iain and Judy got on. This learning process was occurring in other areas at the same time, but early in 2011 Wray and its environs were the largest areas that needed coverage.

The tea and coloured pencil phase came and went – championed by Iain, with Judy and Millie the terrier offering stalwart support. There was much tramping across fells, knocking on the doors of

remote farmhouses and trying not to be a nuisance but at the same time talking to people and getting them on board. Wayleaves were vital and needed sanctioning. Iain became a bit of a secret weapon. Used to dealing with woodworkers and talking to people but not a well-known face in the parish, he developed a neat way of approaching anti-B4RN folk and winning them round. Some people had dug their heels in and said a flat ‘No!’ to letting fibre cross their land, but after a candid chat with Iain lots of



Iain with his portable canopy and B4RN banner.



Iain and Judy collecting duct.

landowners caught his enthusiasm.

Once the digging began Iain took on the job of logistics. Ducting needed to be taken hither and yon as most of it was delivered straight to a farm at Wray, where there was enough space to store it. There were not many days when Iain was not to be seen towing the reel trailer loaded with varying sizes of orange ducting, with Judy riding shotgun. Initially it was a bit frustrating as there was not a lot of cohesion and the parishes that had taken off were all digging at the same time, so

there were an awful lot of miles to be covered, from Dolphinholme to Wennington. Nobody wanted to wait and nobody wanted anybody to have to wait as capturing the wave of volunteer enthusiasm was vital, and if people lost impetus it would be really tough to regenerate it.

I discovered a reel trailer is a splendid thing and a wonderfully practical bit of engineering. It has clever hydraulics operated by a handle at the front so that no one has to lift a reel or shove it about too much. If you are clever, you can put two reels side by side – and reels can be of varying sizes, you just have to jack up the hydraulics to accommodate the biggest one. Ducting was supplied to all who needed it and Iain's mobile was seldom quiet. Now he probably knows the local lanes and short cuts better than most natives and certainly much better than me, but then, I've only been here for 27 years.

Splicing was the next duty on the list. There was an expensive qualification that could be attained involving lots of paperwork and study, but, at retirement age Iain didn't want to go back to school, he just wanted to get on with the job in hand. So, teach-yourself-splicing was the order of the day. It was around this time that Alistair came on board with B4RN, (Alistair's story is in Chapter 1–Ed).

Splicing fibre is a high-tech job and is exactly what the name suggests – but fibres are pretty much the width of a human hair so it wasn't a case of twirling a bit of wire together and adding insulating tape. It involves a scientific screen, important kit and loads of patience. Not an easy task when the wind is blowing and the rain is dripping down your neck, often at the same time. As mentioned, hedges, boot



Todds tent.

lids and windbreaks were employed to attempt to dodge the elements but Iain quickly realised that something more substantial was needed and so designed a special tent that hooked onto the back of a vehicle for stability.

Todds the Saddlers of Kendal were pressed into service and a durable, square tent was commissioned. The bespoke tent made an enormous difference and felt like huge progress



The Todds tent in action.

at the time, but there was still the problem of iced feet on soggy or frozen ground and of keeping the high tech splicing gear squeaky clean and safe from mud. As more digging and blowing was accomplished, more and more splicing became necessary and the task at some points became almost overwhelming.

In November 2013, after a lot of behind-the-scenes work, filling in of forms and jumping through ever-decreasing hoops, B4RN was given

the use of a top of the range Freelander by the Prince's Trust. This was a terrific bonus. Not only was it an endorsement of our extraordinary commitment and achievement, but it was also probably one of the most practical boosts we could have hoped for.

We'd got to the stage where people were risking damage to their own vehicles by taking them to the fields in a determined effort to get the job done. My 1962 Series II Land Rover was pressed into service and for a few weeks was very helpful - but also rather amusing and a bit distracting. Towing with a 50+ year old vehicle to do a day's work is not everyone's idea of a good time and the rattley-bang ride and lack of power steering quickly wore a bit thin. So, when the shiny and magnificent chariot arrived, it was nothing short of a treat.

B4RN was to have use of a vehicle for a year, but due to an administrative muddle we actually had it for almost 15 months. The first one arrived all clean and sparkly with the aura of a Chelsea Tractor - surely something so posh couldn't be that practical? But Iain quickly modified its space and fitted it with purpose built drawers and easy access stuff so that everything was neatly to hand in the field. Life became a bit simpler. Trailers were easier to hitch using built-in snazzy cameras, and beep-beep things and power steering made the need for the shoulders of a navy unnecessary. Almost immediately everyone wondered exactly how we'd managed without it at all. The Todds Tent fitted neatly on the back and way-hay - job's a good'un.

But, Maslow's Hierarchy of Needs and all that. Very quickly something better became the must-have piece of equipment. The tent was splendid but there was still the cold, wet, slippery ground to contend with. No one really felt like dying in the attempt to get us a proper, reliable internet service and things were still staffed solely by volunteers - who deserved to be looked after. A weatherproof something was needed to enable all-weather splicing and to keep all the kit in one place and make it accessible at all times. It was just another little problem that needed to be solved, ideally without spending any money. Every penny raised and donated by the community was going to fund ducting and fibre - thrift of the highest order was imperative.

There was a bit of subterfuge around the acquisition of the next bit of kit - much below-the-radar research and costings so that any questions could be answered with the minimum of fuss. And what



Iain with the new trailer and the Prince's Trust Freelander.

joy, when early in 2014 a smart trailer materialised on the yard with a non-slip ramp and/or doors at the back and a door at the front. Iain calmly customised it and fitted it out with drawers, benches, a generator, lights and a kettle, not to mention spades, shovels, ropes and all the sort of stuff needed in the field. Everything was designed to be portable and not shuggle around during journeys. It meant that the whole splicing caboodle could be easily transported to the required spot, set up and sorted.

It made a fantastic difference to the progress of B4RN.

The weather was no longer a key factor and even on the shortest of winter days work could go on until at least five o'clock. Sometimes it went on for much longer but, enthusiasm apart, it had to be remembered that most volunteers had loved ones to return to and nobody wanted to create B4RN orphans or widows.

Iain and Alistair made a good team from the start. Both are utterly dependable and in possession of a dogged, can-do ethos; 'I've started, so I'll finish'. They could work steadily together without getting side tracked—completely focussed on the job in hand—and in this manner the splicing was achieved.

Looking back, it was a monumental effort, as in the early days they were the only people doing it, and if blowing went well, it could create a huge amount of work to keep on top of. Lesser mortals could well have been daunted, but the lion's share of core splicing now fell to Iain and Alistair.

It was a long time before Iain and Judy actually got a B4RN connection at Thrushgill, as the route was very tough and the weather rather unhelpful. But, at no time was their enthusiasm dampened and although they were pretty much at the end of the line, it never prevented them from soldiering on in other areas, ensuring that the network expanded as swiftly as people wanted.

The Prince's Trust chariot retired to the yard every night with the beautiful new splicing trailer behind it and Iain maintained and looked after it at weekends, adapting glitches and solving any problems encountered in the field. The rig was also washed and tidied regularly. When the Freelander was eventually returned, despite its rough duties and serious off-roading, it was still an asset to the Trust.



Alistair and Iain fusing in the new trailer.



Alistair and Iain fusing in the new trailer in Quernmore.



Alistair and Iain fusing in the new trailer. With tea.



Iain showing John Doyle at the showtell day how small a fibre is.



Iain and Bruce getting the duct into a bullet at close of day.



Fourstones area, where Keasden would take up the baton.

Iain was one of the first volunteers to accept a position as a staff member, he was a valuable asset that could not be lost. He made all the fusing tables we use, the bullet holders and the fleeting table. His woodworking skills were amazing. He trained other new engineers how to fuse and assemble the enclosures (bullets).

He retired in June 2020, and we made a film about him. You will see him on many photos throughout this book. We made him a little film, the link is in the blue box below.

Iain was also responsible for getting the dig through from Wray to Thrushgill, and onwards to Lowgill, designing a wonderful method for getting across the mill stream. It consisted of strong pipe and cages of stones. An engineering miracle.

Iain negotiated wayleaves with all the farmers on the way, and advised them how to dig the duct to their farms, and he delivered the supplies they needed. The first half of the digging and blowing process had been in the summer months, then there was a lull while issues were sorted, so the final fibre blows to Thrushgill were in January 2015, the depths of winter, but nothing stopped them doing it. From Thrushgill it went over the valley and joined Lowgill, making two lines into the village and connecting homes and farms on the way, giving the village its resilience.

From Lowgill cabinet another route went to the end of the parish at Fourstones, where the Keasden tribe were to pick up the route that would eventually end up in Rathmell, via many villages in between.

Lowgill dug over 28 km of trenches.



Beyond the book

[Iain's film](#)

[The beast of Lowgill](#)



We meet Paul as a volunteer at Yealand Conyers on a blowing day.



Paul reeling the fibre at Caton.



Paul's first experience with an enclosure (bullet), with Bruce.



Paul on the mammoth blow to Leck Fell House.

Paul Parsons

Like Iain, Alistair and others, Paul appears in quite a lot of the chapters, so here is his story.

Paul drove a forklift at a local company whilst a student at university. He kept the job on when he left uni, as he had not found anything else. Then he volunteered for B4RN. He started on a big blow day at Yealand Conyers and was Very Useful. Despite wearing gloves he got blisters but he really enjoyed himself.

This photo was a major blister day as he was the reeler on a mammoth blow to the new Caton cabinet.

Before long he had been recruited to the blowing team by Bruce, and the photo shows him halfway up Leck Fell blowing the fibre to our remotest farm. He was the second engineer to be taken on as staff after Alistair.

But the fusers also had their eyes on him and they got him. They showed him how the process worked and he was a natural. He was what Iain called dextrous.

For the next couple of years Paul smashed his way through many hills and dales fusing the bullets, often working on his own and then training more youngsters.

He would not go home until the job was done, and the youngsters had to stay and learn.

Paul and Alistair fused the cores as soon as they were blown. They sort-of got into a competition with each other as to who could do the neatest bullet in the most professional way, and set the standard for others to follow.

More youngsters were recruited and trained by them. Many are still with us and have their own teams now. They are all certified by Lucid training



Night shift to bring Killington live.



Fusing at Borwick.



The first bullet Paul did on his own.



Fusing at Killington.

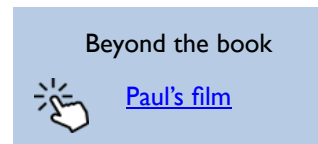
and have good careers with us or within the industry.

This photo (left) is when he was bringing a very remote group of properties live at Killington, watched by the local volunteers.

Paul was also interested in the network side of things as much as the practical side, and he ended up working with the B4RN NOC (network operations centre) and guiding the data through the myriad of wet strings that is the internet.

He was eventually headhunted to join a much larger telecoms company and he moved on with his career. We are very proud to have assisted him in reaching such a high skill level while he was with us.

We made him a little film too.



Paul's first day volunteering at Borwick.

A few memories of the origin of B4RN from a Tatham farmer and parish councillor.

By Andrew Taylor

Botton Head had a long distance phone line from BT that frequently caused problems, sound familiar?

Tatham Fells school 2 miles down the valley had a CLEO wireless connection that cost the school £3000 per year, so I knew better things were possible if enough money was available. A thing called the internet became available to some; it looked like the future, but not on our phone lines. You could get a 52-bit connection on a very good day, almost good enough for an email.

We tried a dongle from Vodafone. This was not much better and completely cut out in school holidays due to congestion.

Then we started looking at the wireless system in Wray and Wennington with a view to doing something similar in the Hindburn valley above Lowgill, and trying to get support and funding. I was tasked with this but as ‘nothing was happening’ someone else would try, with the same result. Chris Conder, who was my contact with this, commented that no-one is going to help us, and we would have to do it ourselves. Shortly after this she was having a go at laying duct and fibre just to see how difficult it was. Her success with this somehow led to a call asking if a fibre network could be built, and did I think Lowgill would be interested. As if I needed asking!, but it led into discussions of funding from the community. The project was going to be a leap of faith with the dig starting in Quernmore, 18 miles away by road, a few miles shorter cutting a few corners.

Meanwhile we had acquired a satellite dish. This was far better with a possible 8Mbps download 0.5Mbps up with limited data. The first dish cost £750 which became obsolete so we had to buy another. To be fair this dish did give us the means to be connected with the outside world and most importantly with the community, sending a message and not having to wait for someone to answer the phone.

Taylor Environmental Groundworks (TEG) were involved at an early stage in Quernmore and Littledale, Robert doing quite a bit on his own, when one remarkable young chap fresh out of university came to help in Abbeystead, I think for something to do. One particularly wild wet morning Robert was expecting to have to jump out his digger cab and lay the duct himself, but Alistair appeared in the trench and just got on with it. The duct was heading for Wray, and with Botton and Tatham looking more likely, it inspired us to be digging up here with Wray 3 being my preferred route as it had to come by Higher Broadwood. Robert was also featured in the Xtreme dig over Roeburndale. (See chapter 1)

More funding was needed so another round was put in motion; we could not go too soon as some were questioning if it would ever happen. So with a large amount of digging for shares and loans we managed to bury the duct round the top of the valley back towards Lowgill to meet the teams digging the Wray to Lowgill route at Ivah. TEG were also involved in some of this with volunteers all the way. It was a bit of a tussle getting duct out of Chris, ‘that’s for Dolphinholme, etc’.

All landowners that could see the community benefit were keen to donate wayleaves. There are still a handful of the 200-plus properties in Tatham without a B4RN connection. But we can proudly say we built and paid for it ourselves, with a bit of assistance with some technical stuff and a donation towards advertising from Forest of Bowland Area of Outstanding Natural Beauty (National Landscape).

We didn't get involved with the Arkholme cabinet digs but one comment about Silverdale had me wondering why they were digging so far away from the planned area. I had a measure and discovered Silverdale is 3 miles nearer to Arkholme and slightly nearer by road to Quernmore than we are.

There was an attitude of 'How can we help, can I start digging towards you, would you like a cup of tea? latterly it seemed more of 'When are you coming to me, why am I not connected yet...?'

In many cases B4RN has been a life saver; work from home during the pandemic lockdowns was possible, communication with distant relatives can be achieved at very little cost. The only downside to B4RN is power outage, but with a bit of planning that too can be overcome.

The next project is to sort out mobile phone signal availability. It will come at a cost, but with a fibre connection and some remote power (sun or wind) batteries, it should be possible.



Andrew and Robert Taylor.

None of this would have been possible without the knowledge and remarkably accurate costing of the project at the beginning.



Taylor Environmental Groundworks (TEG) completing the dig to Abbeystead.

Beyond the book



[Extreme diggers](#)