Chapter 7

Table of Contents

Keasden / Clapham / Newby / LEWFA

Keasden and Clapham

The area to the east of Lowgill was very poorly served by the long copper phone lines, and many farmers and businesses were suffering. Families were cut off from their social lives, and children from homework.

What became the Keasden and Clapham projects were initiated by parish councillor Nicola Saward in November 2013 through a call to arms in the local newsletter.

The project's first meeting was at the New Inn in February 2014 and comprised Sue Cowgill who was trying to run Open University lectures online, Keith Blondel who had just moved out of Clapham village to a property on the edge of the fell below Ingleborough, and Simon Peach who had recently moved from Berkshire to a converted barn in Keasden.

The objective of the project was getting super-fast broadband to the parish with three qualifications: the solution had to be available to every property in the parish, the solution had to be future-proof, and the provider had to be a viable business.

The project members undertook a survey to confirm that there was an appetite for better broadband in Clapham and that residents would be willing to invest to make it happen.

A number of possible solutions were considered but which were not feasible or not yet proven technologies. The most promising from an ease-of-implementation point of view was to extend the community wifi broadband network from the neighbouring parish of Austwick, but it soon became apparent after several meetings that the ongoing maintenance workload was not one the project members were willing to take on.

Keith Blondel stumbled across B4RN when doing his research and the first contact was made between him and B4RN volunteers in early June 2014. They suggested that the Clapham team attend one of the Emtelle 'show and tell' days. This they did in July 2014 when Keith, Simon and Ann Sheridan attended the day at the Lancaster House Hotel and were taken to the Dolphinholme project to see fibre being blown and to talk to the local volunteers. Ann had joined the project having been elected to the parish council in the May of that year.

The parish council were concerned, and Ann, Simon and Colin Price the chairman, were determined to join on to the network somehow, even though it was not part of B4RN network expansion plans at the time. They met local councillors and MPs.

Another branch of the tree started to grow and a new tribe formed.

Ann Sheridan.

The showtell day - the 'gigabus' which had an appropriate number plate.

Sarah Moorcroft from Bentham, Simon, Ann, and Julian Smith MP meet.

Colin Price did TV interviews on behalf of the farmers.

There is more about B4RN showtell days in a later chapter, but it was how B4RN was sharing its knowledge to other local groups and to the wider industry. It was sponsored by our suppliers, mainly Emtelle, who supplied our duct and fibre.

Simon and Ann had climbed aboard the 'gigabus' trip on the showtell day and cornered Barry. They explained their problem, and he told them that they were not included in our phased plan, and we were already overstretched, with limited staff, and many villages already digging. Duct, fibre, time and money were in very short supply. He agreed that if they managed their own project, and did all the work, and raised all the money, that B4RN could help them.

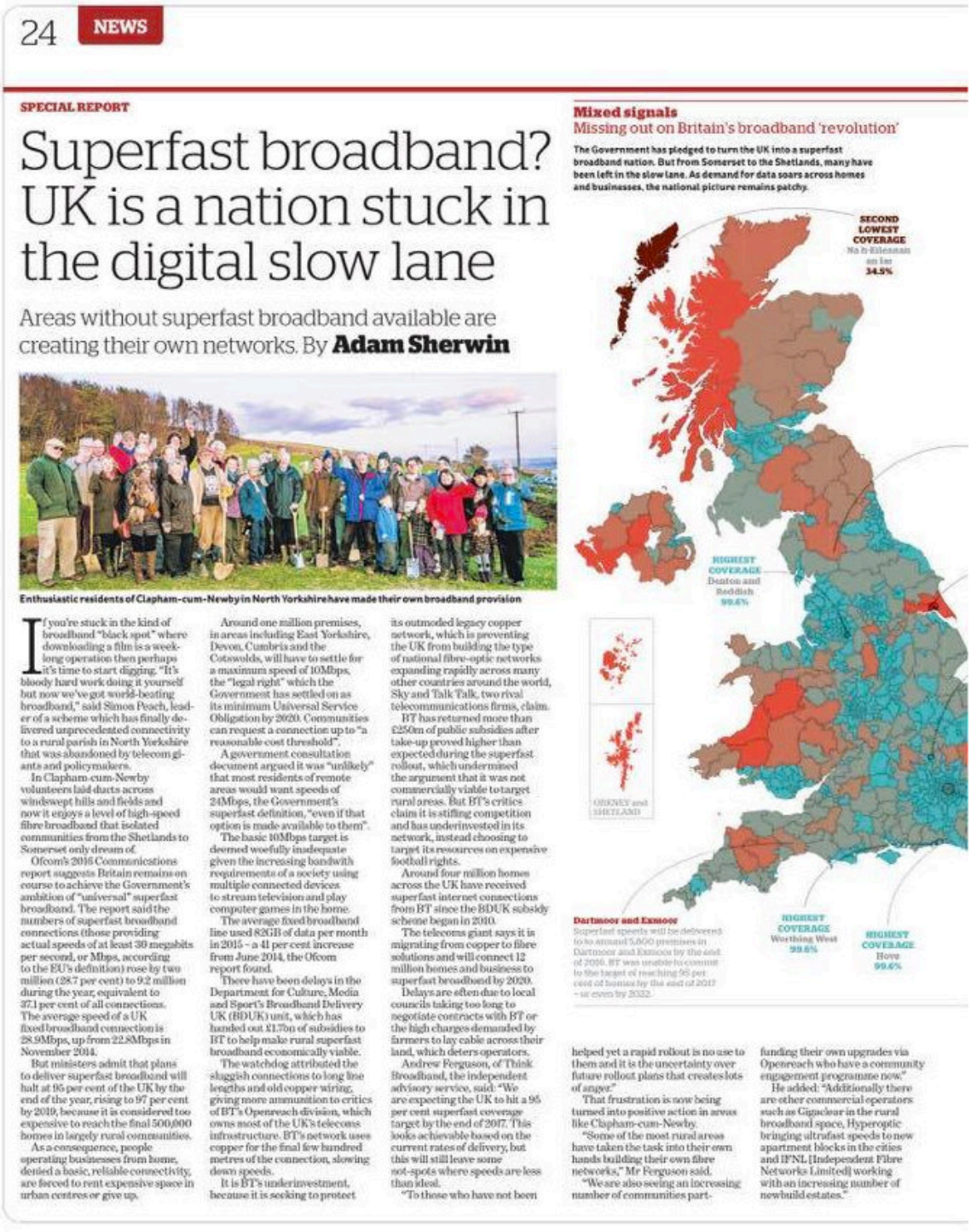
The initial quote was for joining the core at the east end of the Lowgill core at Fourstones, and to take it to Keasden to start the Clapham project. The quote was the standard £5 a metre, so £25k was needed for the core and the dig. What Simon had not realised was that this did not include all the spur digs to remote farms, nor the cabinet and equipment. But maybe that was a good thing, or the initial cost may have deterred them. In those days as with all the previous villages, there were no vouchers, nor help from government or councils. They started their own project, knowing they had to do it themselves.

Simon recalls: 'Immediately after the 'show and tell' day, Barry Ford supplied maps and information on how to build the network to Keith, and the serious thinking began. The project quickly evaluated the final options other than B4RN and by August had narrowed the choice down to B4RN itself.

It also turned out that a group of residents in the neighbouring parish of Bentham, who lived on the route that the Clapham project would need to dig, had already been in communication with B4RN during 2013. They swelled the numbers of the Clapham project team. Simon and Ian did all the route planning for the Keasden part of the project, including doing the fibre counts and chambers etc.

in the B4RN spreadsheet. Barry Forde scrutinised their work before digging could start and, in the main, it proved to be correct.

Ian Jones from Mewith got involved; he had been a project manager for a telecoms company so had a fair idea of what to do, and he knew all the farmers locally. This was the main core into Keasden and so they planned their routes to connect as many customers as they could on the way. They raised enough in shares and investments to get going.



24 NEWS

SPECIAL REPORT

Superfast broadband? UK is a nation stuck in the digital slow lane

Areas without superfast broadband available are creating their own networks. By **Adam Sherwin**

Enthusiastic residents of Clapham-cum-Newby in North Yorkshire have made their own broadband provision

If you're stuck in the kind of broadband "black spot" where downloading a film is a week-long operation then perhaps it's time to start digging. "It's bloody hard work doing it yourself but now we've got world-beating broadband," said Simon Peach, leader of a scheme which has finally delivered unprecedented connectivity to a rural parish in North Yorkshire that was abandoned by telecom giants and policymakers.

In Clapham-cum-Newby volunteers laid ducts across windswept hills and fields and now it enjoys a level of high-speed fibre broadband that isolated communities from the Shetlands to Somerset only dream of.

Ofcom's 2016 Communications report suggests Britain remains on course to achieve the Government's ambition of "universal" superfast broadband. The report said the numbers of superfast broadband connections (those providing actual speeds of at least 30 megabits per second, or Mbps, according to the EU's definition) rose by two million (28.7 per cent) to 9.2 million during the year, equivalent to 37.1 per cent of all connections. The average speed of a UK fixed broadband connection is 28.9Mbps, up from 22.8Mbps in November 2014.

But ministers admit that plans to deliver superfast broadband will halt at 95 per cent of the UK by the end of the year, rising to 97 per cent by 2019, because it is considered too expensive to reach the final 500,000 homes in largely rural communities.

As a consequence, people operating businesses from home, denied a basic, reliable connectivity, are forced to rent expensive space in urban centres or give up.

Around one million premises, in areas including East Yorkshire, Devon, Cumbria and the Cotswolds, will have to settle for a maximum speed of 10Mbps, the "legal right" which the Government has settled on as its minimum Universal Service Obligation by 2020. Communities can request a connection up to "a reasonable cost threshold".

A government consultation document argued it was "unlikely" that most residents of remote areas would want speeds of 24Mbps, the Government's superfast definition, "even if that option is made available to them".

The basic 10Mbps target is deemed woefully inadequate given the increasing bandwith requirements of a society using multiple connected devices to stream television and play computer games in the home.

The average fixed broadband line used 82GB of data per month in 2015 – a 41 per cent increase from June 2014, the Ofcom report found.

There have been delays in the Department for Culture, Media and Sport's Broadband Delivery UK (BDUK) unit, which has handed out £1.7bn of subsidies to BT to help make rural superfast broadband economically viable.

The watchdog attributed the sluggish connections to long line lengths and old copper wiring, giving more ammunition to critics of BT's Openreach division, which owns most of the UK's telecoms infrastructure. BT's network uses copper for the final few hundred metres of the connection, slowing down speeds.

It is BT's underinvestment, because it is seeking to protect its outmoded legacy copper network, which is preventing the UK from building the type of national fibre-optic networks expanding rapidly across many other countries around the world, Sky and Talk Talk, two rival telecommunications firms, claim.

BT has returned more than £250m of public subsidies after take-up proved higher than expected during the superfast rollout, which undermined the argument that it was not commercially viable to target rural areas. But BT's critics claim it is stifling competition and has underinvested in its network, instead choosing to target its resources on expensive football rights.

Around four million homes across the UK have received superfast internet connections from BT since the BDUK subsidy scheme began in 2010.

The telecoms giant says it is migrating from copper to fibre solutions and will connect 12 million homes and business to superfast broadband by 2020.

Delays are often due to local councils taking too long to negotiate contracts with BT or the high charges demanded by farmers to lay cable across their land, which deters operators.

Andrew Ferguson, of Think Broadband, the independent advisory service, said: "We are expecting the UK to hit a 95 per cent superfast coverage target by the end of 2017. This looks achievable based on the current rates of delivery, but this will still leave some not-spots where speeds are less than ideal.

"To those who have not been helped yet a rapid rollout is no use to them and it is the uncertainty over future rollout plans that creates lots of anger."

That frustration is now being turned into positive action in areas like Clapham-cum-Newby.

"Some of the most rural areas have taken the task into their own hands building their own fibre networks," Mr Ferguson said.

"We are also seeing an increasing number of communities part-funding their own upgrades via Openreach who have a community engagement programme now."

He added: "Additionally there are other commercial operators such as Gigaclear in the rural broadband space, Hyperoptic bringing ultrafast speeds to new apartment blocks in the cities and IFNL [Independent Fibre Networks Limited] working with an increasing number of newbuild estates."

Mixed signals

Missing out on Britain's broadband 'revolution'

The Government has pledged to turn the UK into a superfast broadband nation. But from Somerset to the Shetlands, many have been left in the slow lane. As demand for data soars across homes and businesses, the national picture remains patchy.

The Examiner, Yorkshire Post, and Saga magazines carried their story.

Ann reeling out lengths of duct for a dig with her quad bike.

The quad bike gets the duct to where it is needed on a dig.

The start of the route from Fourstones to Keasden.

CAT scanning for utilities before digging.

They met their MP Julian Smith, and went on TV and did magazine interviews to raise awareness.

Ann bought herself a quad bike to help pull out the duct and get it to remote moors, and she collected duct with her 4x4.

Ian Jones' part of the project was from the connection with the existing network near Fourstones, through to the new cabinet at Keasden Church, including the connections to the various

Ann and the volunteers collecting duct from the farm.

properties along the route. This was known as the Keasden Mewith Route KM1.

The KM1 build was split over two years, with the first year concentrating on the core route connecting the new cabinet to the existing network, and the second year installing the spur connections that had not been installed alongside the core route.

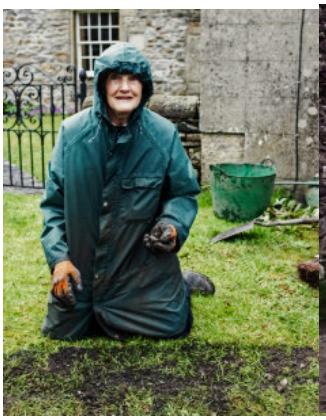
The first year of digging also saw the completion of the core routes and spurs from the Keasden cabinet heading south and east, KM3 and KM4 respectively. These digs were led by Simon and Ann using Michael Johnson as the contractor. Michael had been working for Ian on KM1.

They employed contractors to do the main digs, and sorted out digging shares to pay them. Utilities were located, and the routes decided upon by Ian and the local farmers.

Ian Jones helping with digging and moleing, April 2015.

The dig from Lowgill to Keasden.

A map of the area. Lowgill to Keasden by road is 10.2 miles.



Ann Stewart in a trench to the community shop.

Simon guiding Brad through a gap.

Ian used two contractors, Steven Foster and Colin Price. Steven did any preparation work, including access points, chambers, wall, beck, hedge and road crossings, together with any short lengths of open cut that were required. Steven was paid on a day rate for all work except road crossings, for which he received two rates, one for minor crossings and side roads, and a slightly higher rate for major crossings and highways. Colin carried out the ploughing ops. and was paid at an hourly rate.

Ian had spoken to other villages, notably the Lowgill team, and figured out that it would be more efficient to pay contractors rather than try to get each farmer to dig their own. He told B4RN and his group that he could bring it in more quickly and on budget if he did it this way.

In total they installed 9kms of core route, including 0.5km of the Lowgill project, 6kms of spur route not in a shared trench, and a further 2.5kms of Routes 2 and 3 which were done out of sequence. Ian estimated that no more than 1km was open cut.

Excluding household properties, they received wayleaves from 24 landowners. They received only one refusal. They avoided one known awkward landowner and diverted around another, who had a string of requests that made it easier to find a different route.

Many times they were held up with the weather, or with timings for crops, but Ian used the time to install the houses with John Hibbert, or helped the householders do their own to the B4RN spec. He had his own drill so he helped a lot of people. They also did all the installs for the elderly folk. They did not charge anyone.

Mike Johnson, a contractor, was taken on by the group to do the majority of the installs for the businesses. This eased the workload of the volunteers.

B4RN contractors doing a road crossing. Late 2015.

B4RN civils team in Clapham.

They bought their own cable reeler.

Colin bought a mole plough.

The biggest obstacle, apart from sod and rocks, was the North Yorkshire Highways. The route went through many little roads, and they were hounded all the time by a 'man in a little white van' who always turned up when they were digging. This turned into a 'Lesson Learnt' for B4RN HQ, so it was not necessarily a 'Bad Thing' in the long run. What it meant for the Clapham project was that they needed a streetworks licence, and a streetworks supervisor. Two of the group went off to get qualified... Ann sent George, her husband... and even though the authority had slowed the project down, so it ended up with winter digging and blowing, they finally triumphed and got the duct through to Keasden Church where the cabinet was sited.

Shortly afterwards B4RN got code powers and its own streetworks staff. The roadworks were done and the core got through. This also helped the Clapham project move forward.

The business voucher scheme started up during this project. Thanks to their tenacity and Amy Lis, a new B4RN employee, they managed to get business vouchers which greatly helped their finances.

They bought a cable reeler as the B4RN ones were always somewhere else.

Simon and his team reeled out the duct ready for the trenches. And the digs commenced. Ian supervised all the volunteers on the first route to Keasden, and they all turned out to deliver the duct, reel it out, and get it in the trenches Ian had planned out.

Phil and Geoff from the Lowgill project advised them about all the snags they had encountered and they took it all on board. They had also 'buddied up' with John Hamlett from Gressingham who taught and advised them and was always available for advice. The 'buddy up' idea was also part of the ethos of B4RN at that time, sharing the apples, the fruits of experience.

George walked many miles behind the plough

Moleing in the duct.

One of the reasons to keep a digger handy.

Colin Price on a moor mole issue.

Simon reeling out duct for the trenches

Cable reeler with more supplies.

Simon working in a trench.

Laying duct in a very wet trench.

Two residents being helped by Simon.

Brad Tooke joined the contracting team.

Simon laying duct in the trench.

Clapdale farm dig

The route was beset with farm tracks and lanes, and Ian talked Stephen Foster the contractor into buying a mole that would go under the tracks without digging them up and having to reinstate them. It could also be used under the little streams.

Sometimes the going was easy, through meadows, but often it was through the moors, and the diggers had to be used to get past obstacles.

The diggers often had to help the moleplough which could struggle on the tough moor grass as well as the rocks. A digger could make holes under the stone walls and fences so the mole could carry on without cutting the duct and using a joiner, as they were expensive and often the fibre could stick on them.

Simon had enjoyed working with the diggers, but paperwork and organising took over most of his time. He remembers the camaraderie the most, the team working together to build something useful. 'A bunch of amateurs having fun, and getting the best

Route to more farms.

Walter comes to help on the route to Clapham.

A neat mole plough.

The duct in the bottom of the mole trench.

More farms to reach on the way to Clapham.

Working late to get the job done.

broadband in the world'. He involved the householders in the whole process. He also remembers the sense of achievement when people finally got connected, and being 'able to stick two fingers up to the system'.

On the way from Lowgill to Keasden they connected the farms.

In the meantime Ann and Simon were starting more core subroutes in Keasden including to Newby. They started the other routes to Clapham, using the mole when they could.

Simon, Ann, and Michael Stephenson carried on raising shares. The costs were escalating. It dawned on them that eventually they would rise to £300k. They were determined not to leave anyone out, but no matter how they tried no funding was available. The government vouchers for businesses helped, but it was an enormous administrative burden that B4RN and the project team had to learn to cope with.

The Ingleborough Estate in Clapham was marvellous.

First they had to get it to Keasden though. They did presentations in the village halls to raise awareness and shares/investments.

Simon's downsides of the project were similar to Ian's and other parishes. They had been sure they could take on the project themselves and succeed, which indeed they did, but it was a lot harder than they had anticipated. The delays were down to the weather, the farmers' crop rotations. and the North Yorkshire Highways department. None of these could be ignored and had to be accommodated. Simon got savvy as to which field was meadow and which was pasture, and got routes diverted into pasture land which is not cropped, but is grazed.

In 2016 they concentrated on getting the core routes on the go to Ingleton and Newby, and

Carl Lis presented Simon with the YDNPA cheque.

The tea and cake team on a Keasden blowing day.

Famous for its 'hot boot' food at Keasden.

Bruce fusing customer connections into a bullet, despite his bad leg.

returned to the main Clapham installs in 2017 to complete their massive project.

The final hold-up he remembers is the fact that B4RN took on the Dent project. This caused a lack of resources, both materials and staff. Clapham worked around that too, even though B4RN was seriously overstretched, with so many villages digging at once.

Bruce pulled out all the stops to get the fibre blown for them, and by then he had Paul Parsons helping. He had been taken on as staff, after volunteering at Yealand, another village busy with their network.

B4RN learned a lot from this project, and were amazed at the determination of this group of people. Digging on through the rough and the smooth took real grit.

The loan from YDNPA (Yorkshire Dales National Park Authority) was to partially fund the core route around Clapham village and came right at the end of the project.

Eventually enough money was raised for the fibre, and the blows commenced, some of them in very bad weather. But the crews turned up, and the volunteers and blowers regularly were treated to hot snacks from the boot of various vehicles.

By now Bruce had his own 'B4RNmobile', to get his trailer into difficult places. So he tested it to the hilt. A lot of fleeting was done on the long routes, and volunteers helped Bruce and Paul with that.

The B4RN civils team also did some of the core blows on the sub-routes to the other villages on the project once Bruce, Paul and the volunteers had got it over the moors. This freed Bruce up to do house blows.

Even when Bruce bust his leg it did not stop him coming to Clapham to help with the blowing and fusing!

Robert Staveley splicing at sundown.

Paul Parsons splicing Simon's bullet.

Cabinet arrives at Keasden.

Cabinet on its plinth.

Tom Rigg working on a bullet.

Keasden cabinet came live on 16th December 2015.

George and Bruce did a lot of house blow days. It is easier with one person at each end of the blow. Bruce often managed on his own, but some of the blows in Keasden were very long, so one person at each end with a radio was best.

Paul and Alistair had by now trained another employee, Robert Staveley. He became a core fuser too, and he came to do bullets to get the whole network live.

By the time all the street works were done it was winter, so many of the fibre blows and bullets were done in very bad weather. Work was often done in darkness as the days got shorter. Tom Rigg, who was the new B4RN COO at the time, came out to help clear the backlog of fusing. Simon says:

'The first property came live just before Christmas 2015 and was Clapham Woods Farm, ironically the former home of Nicola Saward who had instigated the project.'

Keasden dug 35 kilometres of trench.

Beyond the Book

The Hyperfast Clapham Facebook page.

News report in the Examiner

The Conversation. Article.

From Fourstones to Keasden Head video

Blowing days, spring, summer and winter – a photo gallery *by Ann Sheridan*

A fine blowing day.

Blowing to Newby.

Fleeting in Keasden.

Keasden blow.

James Taylor and Nick Hall blowing core from Keasden to Clapham.

Bruce' s new 'B4RNmobile' could get the trailer almost anywhere.

James Taylor and Sam Brown blowing fibre to Clapham cabinet.

Paul Parsons fusing the fibre.

This is just one story from the Clapham Hyperfast ″project″ on Facebook:

A remote farmhouse in the Forest of Bowland, built in the 1660s and now lived in by a wonderful farming family′s grandmother. A mile long track reaches the farmhouse and the broadband really is not very good. In fact it is very poor.

The state of the broadband is not a surprise. It comes along copper wires from a cabinet that is about three miles away. We have seen the wire several times during the summer. Sometimes when we have had to carefully dig around it, twice where the cable is on the surface by farm tracks and once where it lies on the ground near another farmhouse, its coating frayed, about three yards from where they are having their bonfire.

The farmhouse, and the grandmother, deserves and wants better. So a gang of volunteers, helped by a contract digger, have spent five days this week taking fibre duct to her doorstep.

It has been tough: long, steep slopes on either side of the dale, heavy rain swelling the river, curious sheep trying to chew the duct as soon as we laid it out, an emergency call to fix a water pipe the mole had knocked - at nine o′clock at night, in the rain - ground near the river that was full of boulders and sharp, Bowland shale meaning we needed a long pipe to protect the duct.

But the volunteers never moaned, kept laughing and were delighted to see the keen anticipation of the grandmother now awaiting her world class, fibre, internet.

So, Prime Minister (David Cameron at the time), superfast broadband is not a human right, to be enacted in law, it is something you get off your backside and make happen. Come up to Clapham and we will show you a community just flipping well doing it. If you have to pass a law, place a statutory duty on public bodies to support, not hinder, community broadband. It used to be called the Big Society, remember?

The long dig across the valley to Keasden Head - photo is Mike, digging through Bowland shale.

The Keasden Head job.

Entrance to the long road to Keasden Head.

George looking after the compressor on the Keasden blow.

The chamber at the half way point, where others connect as well.

The fibre being blown from house, down to the intermediate chamber.

An extremely difficult and long blow was undertaken, up to the very remote Keasden Head, where a special learning centre is located. The fibre arrives inside the property, and then the fusers take over. They fuse one end at the house, and the other in a chamber. Simon Peach mades a little video that was shown on the day, a flyover from Fourstones to Keasden head. Click the link on the blue box to see it.(on page 316)

Julian Smith the MP came to see it for himself and make the final connection to the school area. He tested the wifi on his phone and said it was faster than he had in Westminster.

Julian Smith MP and Sheila bringing the school room live.

The start of LEWFA, John Elphinstone (right) joins the tribe.

The duct threaded into the old water pipe.

Colin Price and George getting the duct to go under the railway.

Steve Foster getting messy.

The focus of the group then moved to finishing the routes to Clapham, and beyond, with Newby included. The two projects ran in tandem, but the Keasden one was vital in the route to Clapham so that was completed first.

More digs, and big fibre blows started.

Getting from Keasden to Clapham meant crossing a railway and a river. Railways have proved to be very unhelpful. In reality they could easily provide the link to all the villages, as fibre already runs down the tracks for signalling, but they can not or will not help. The railway was crossed by having a road cut under the bridge that avoided Network Rail land and assets. (At great expense to the project)

Colin Price then had a brainwave. They were all members of the Keasden Historical Society. They knew that many years before the water main had gone under the river, and this pipe was redundant. They spoke to Yorkshire Water, who said that if they could find the ends in the fields they could use it, as they did not want it and could not remove it. With no more ado they found the ends a long distance from the railway and fed the B4RN duct through it. This saved them paying for an expensive directional drill under the river.

The join from Keasden to Clapham, LEWFA and beyond was done. It got a bit messy as water was still in it...

The Keasden to Clapham join. Love from Keasden to Clapham.

The joiner on the duct.

Simon demonstrates the join done.

George and Ann carry on helping Colin with the mole ploughing.

Sometimes a mole just can't get past some rocks. Bring on the digger.

Simon, George and Ann carried on helping and organising the routes from Keasden into Newby and Clapham. John Elphinstone from Newby joined them, to help out and learn the ropes; it would be his turn next.

Special care was taken when joining the reels of ducting, to make sure they were done properly. If the edge of the duct was not cut cleanly it would leave an edge, and this could stop the fibre blowing through. Simple enough to sort if you had not buried it, but sometimes a route had been dug weeks in advance, and the ground had healed up. It was quite a job to dig down and find a bad join.

They had learned their lessons well in Keasden and most Clapham routes blew well.

As they finished each route they rang Bruce, who sorted out a team to come and blow the fibre.

By this time we had recruited the Cantsfield champion (Frank Brown) as a blowing contractor who was happy to work for shares.

We had also taken on more staff, both on the civils team and the fusing team and they came in turn to get the fibre through to Clapham.

Frank and Rob blew a lot of it, with help from civils when there was a really big blow to do.

Robert Staveley and Frank Brown blowing to Clapham.

Frank delivers the cabinet to Clapham.

Walter taking photos at the Hearse House, the cabinet's new home.

The cabinet has landed and is getting coupled up.

Simon celebrates with champers.

Once the fibre got to Clapham it was all systems 'go'.

Frank delivered the cabinet to the Hearse House in Clapham where it was installed to serve the community.

Walter had been helping out on the project and was busy taking photos of everything, including the chamber outside the Hearse house.

Duct for the project was also stored there.

Simon and the team installed all the Clapham houses and businesses who wanted a connection, and left duct ready for the rest.

The houses and businesses on the route to Clapham all got installed, with many of them volunteering and helping Simon get them connected.

They had to wait until the cabinet came live, but they were done as the route went past them. Caravan sites were amongst these, and were very grateful to have a good internet service to help keep their customers happy.

Spades were awarded to very helpful volunteers.

Simon and the team celebrated with champagne instead of the usual tea.

They were interviewed by an Oxford University researcher who wrote an article about them. (link on the blue box, 'Beyond the Book'.)

Simon and some of his team.

George Sheridan, Simon Peach and John Elphinstone.

Wayne with Brutus.

Colin Price and his MBE spade award.

Simon, George and John received a Craven Digital Innovation award, on behalf of all their community's work on the Clapham project.

One of the first repair call outs B4RN received from Clapham was to a property whose connection had gone down. Investigation by the engineers found that the fibre was broken right next to the property.

By this time we could measure the fibre light to where it stopped, so we knew within a metre of where the damage was. The house was very old, it was actually mentioned in the Domesday book, which was completed in 1086. There was no sign of any damage inside the house, so we checked outside. Where the fibre enters the house there is a little grey plastic box. The house holder wanted to hide this box on his ancient property, so had carefully covered it with stones. This looked great.

But.

Brutus the Jack Russell had other ideas.

The mice had other ideas.

The mice thought it was a lovely cosy place to make their home, but they held too many parties and Brutus heard them. He dismantled all the stones so carefully placed, and tore into the ground to find the party. In the way was a harmless little bit of black 7mm plastic. He tore it apart. He wasn't even sorry when his crime was exposed. The engineer repaired the damage and all was well.

But Brutus bit back and got the engineer's leg, meaning the second entry in the B4RN accident book was logged, as a tetanus shot was needed. The only other person recorded as a Brutus victim was Simon Peach, but he is quoted as saying he enjoyed every day of the project, adding 'once a volunteer, always a volunteer'. He is currently volunteering as a chair of governors at a local school. Ann still volunteers at the B4RN user group club.

Newby

Diane and John Elphinstone remember being at a parish council meeting where everyone was complaining about the state of their broadband. They had a man from Craven district council there who told them basically that there was nothing that could be done, only people near FTTC cabinets could rely on a service.

They looked at satellite solutions but didn't like the idea. Then Simon Peach talked about B4RN and sold it to the Clapham and Newby areas.

A bad few winters had convinced them that something had to be done about their poor broadband. Simon and Ann had their hands full and had already done miles of duct work. They needed someone to take over the Newby run. John says he is not practical or technical, but he and Diane were pressganged into taking it up, when Simon came round to their house and laid it on the line.

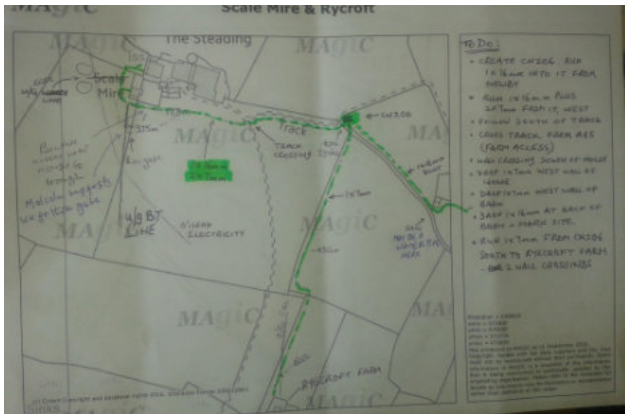
Diane sprung into action with Angela (Simon's wife), Ann, Rachel, Sarah and Lorraine and they did the Clapham Hyperfast Facebook page with Simon and Ann keeping it updated (click on the blue box for the link). The Clapham Hyperfast website and Facebook pages were implemented at the start of the Keasden phase but served Newby as well.

Pre-GDPR Ann had an email list to keep everyone updated. Diane is also an information gatherer, and she heard and saved the stories from Keasden to tell John.

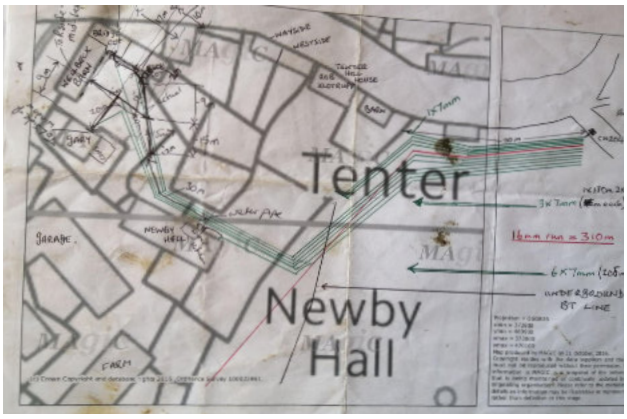
John and Simon went round all the landowners to plan the routes and get wayleaves. John kept maps updated for B4RN and the landowners. Most farmers were okay with the project, because John Dawson (of TV fame), at Bleak Bank, was desperate to get it and they trusted him.

John remembers one landowner going ballistic when they called to discuss the B4RN project. John said he was quaking in his boots, but Simon just spoke calmly to him and eventually he realised they were not Jehovah's Witnesses or snake oil salesmen and he came on board. They also encouraged people to take shares if they could afford it.

Keasden passed on contractor information, and Mike Johnson, Colin Price, Ian Witherspoon (also known as Tog) and Steve Foster did most of the work, and John did most of the duct laying with them right up to the remote houses and farms.



John's plans.



Sorting out who owns what.

Mike's mole - a hole starts a mole trench.

Mike Johnson, Colin Price, Rachelle Blondel, John Elphinstone.

Tea break.

Mike Johnson.

John had helped out at Keasden to learn the ropes. He remembers a lot of mud and wet days.

Diane says when he came home after dark each night she would strip him off in the kitchen as he was so muddy.

They started the Newby dig in the field next to the Hearse House in Clapham, and continued it to where it joined on to Ingleton, connecting all the properties on the way, with 95% take-up.

John also kept the maps right, and supplied copies to all the landowners as well as back to B4RN. His route maps contain comments like '5 metres from holly tree' and '2 metres from wall'

He kept records, and labelled the ducts for Frank and Bruce, the blowers. John invented the bike pump and wine glass method of testing for air, and Diane assisted him in making sure he got the right ducts. Diane held a container of water and he coupled a bike pump to the customer duct and if bubbles of air came out they would know which way each duct went.

John sorting out the ducts and labelling them.

The Newby spade.

John Elphinstone and Ian Witherspoon (Tog) get their spade awards.

Newby village green with the village's spade firmly fixed to the pole.

John and Diane's spades.

Simon continued to collect money for it all, and also reported back to the parish council at their monthly meetings.

Mike and Tog continued digging virtually the whole of Newby. Often they dug right up to the house but some people did their own gardens.

Most of the house kits were fitted by Mike Johnson and the people paid him individually. There were not many handymen volunteers available in this neck of the woods, so contractors were essential.

It was not all mud though. On rare sunny digging days they all stopped for tea and cake, although John says his feet by this time were webbed. He says B4RN is 'an earthy project that got into our veins'. He still walks his dogs every day round the routes and checks they are okay. Everyone knows him and waves. He gets to know new people and makes more friends on his walks.

John and Tog got their spade awards for all their hard work.

The large circle of people they met whilst building B4RN turned into a support group during Covid and are now also part of the community emergency plan.

The networks they built will survive for a very long time.

Newby village came live in January 2017 thanks to all their hard work. There were no vouchers available for these projects, the community funded it all.

They reaped the benefits during Covid, with online church services, and a Facebook support group, Clapham Cobra.

Clapham laid 39km of trench including Newby.

Keasden did 35km.

Beyond the book

Clapham Cobra

LEWFA

(Lawkland, Eldroth, Wharfe, Feizor and Austwick)

This community is a cluster of small villages/hamlets which share a vicar with Keasden, and very poor internet access. Austwick ran a community network using a satellite feed, but it was run by volunteers and had insufficient capacity for their needs. The other villages had nothing, apart from Keasden which now had gigabit B4RN and a free service to the church.

This is their story:

PREAMBLE By Michael:

In 2004 the Austwick Community Broadband Association (ACBA) was founded by a far-sighted Austwick resident, Barry Brooke. The system worked by radio signal, originally from a satellite dish on the village school, through 'line of sight' to residences in the area. The capital cost of this system came from government which was providing money to rural communities which had suffered with the foot and mouth outbreak in 2000. The system was set up, and run, by two 'techies' in the community who ran it free of charge. The cost to users was a remarkable £8 a year! After 11 years of running this service, we had about 120 members (some in far flung places), the techies were running out of puff and we were hunting around for how we could proceed for the future.

It was at this time that we heard about B4RN and, in particular, that the B4RN network was being extended to the parish of Clapham. It did not take us long to realise that once B4RN reached Clapham we could hook up to the network and use it to replace our existing system.

LEWFA

The ACBA committee (of which I was chairman at the time) quickly decided that we should explore the implications of joining B4RN and we invited Barry Forde and Simon Peach (who was the driver for B4RN in Clapham) to come and talk to us. We were easily convinced that this was the way forward for us.

ACBA was therefore wound up and a new group formed, to be known as LEWFA, to cover the areas embraced by the villages/hamlets of Lawkland, Eldroth, Wharfe, Feizor and Austwick.

It was clear that to get the project off the ground we needed a planning group to drive it forward and a committee of enthusiasts (about 6 in number) was established in the summer of 2015.

We were already off to a running start in the sense that the existing ACBA membership recognised the need for change and were ready to switch to fibre broadband to their homes.

FUNDING

B4RN provided us with an estimate of how much money we would need to raise to fund the work involved (for materials and contractors for specialist operations, like crossing rivers and roads). I think the budget

they came up with was £180K. We initially approached all our ACBA members and asked them whether they could commit to raising the money by buying shares in B4RN or making loans. We quickly reached our target of £180K, and indeed ended up with about £215K committed. The funds were provided by about 63% of the households who said they wanted a B4RN connection, and ranged in size from £500 to £10,000. About 40% of those households providing the cash opted to invest £1,500 for which they received a free house connection.

BUILDING THE NETWORK

It took us just under 2 years to build the network – starting in early summer 2016 and finishing digging in 2018. We appointed project leaders for each discrete area and these guys organised everything from getting wayleaves from landowners to supplies of materials from B4RN to arranging for contractors with mole ploughs etc. The project leaders were key components of the successful roll-out of the network. The work was coordinated by periodic meetings of these guys, which I would generally chair.

Some of the most difficult work was actually in the village of Austwick itself where it was sometimes difficult to get access to all the properties wanting a connection. I think, in the end, there was only one property which we could not reach because we could not persuade a landowner to grant a wayleave. In many instances we would run a duct to a property boundary, even though they had not requested fibre, in case a future owner decided they wanted a connection. We made connections to many remote properties, perhaps one of the furthest being the farm at the head of Crummackdale – quite a challenge as the terrain up the valley is extremely rocky in places.

The LEWFA project leaders and contractors.

THE PEOPLE

The success of the project is a testament to the commitment and skills of perhaps a dozen or more people, along with help from many more willing volunteers. The skill base ranged from fundraising capability, to communication skills (we kept everyone advised by newsletters and periodic open meetings), to project management to practical skills (mole ploughing, burrowing under walls and rivers). It was a real team effort and in many ways brought people and communities together which otherwise would have little contact with each other.

Michael with his MBE spade award.

IN CONCLUSION

There is no doubt in my mind that the B4RN Project for LEWFA will be a lasting legacy for the future residents of the area and is a classic example of how the 'impossible' can be achieved by ordinary people when they set their minds to it.

Michael Southworth

Veronica Caperon and Mike Southworth had decided to 'Do Something' when they heard of the work going on in Clapham, and thought they may be able to join on. Mark and Steve, who ran the village wifi network, encouraged them to try. They all knew a fibre to home connection would be faster and more reliable than wifi, and people were becoming very dependent on internet access.

Simon Peach from the Keasden/Clapham project came to a meeting in the Eldroth village hall, and gave them the benefit of his knowledge, and they decided to get going. (Simon continued to give them help and tips throughout the project).

They formed a committee, which took up the challenge. Lawkland, Eldroth, Wharfe, Feizor and Austwick each had their own coordinator, and Michael took the chair to organise funding etc. Mike explained that the reason each area had to have its own leader, was because they knew their landowners and farmers, and the geography of the routes the duct would have to take. He regarded this as crucial to the project succeeding.

Chair - Michael Southworth

Area Digging Coordinators were: Lawkland - James Hickson; Eldroth - Julian Cairns; Wharfe - Geoff Hall; Feizor - Dean Stockwell; and Austwick - Alec Rigby & Stephen Wright.

Veronica did all the publicity and Facebook accounts to keep the community up to date. They also used a TinyLetter to communicate and update.They also inspired Rathmell at a public meeting they held.

Below are the key points Rathmell and Wigglesworth BroadBand published to their community. (more about them later):

LEWFA expect the whole project to take 2 years, from start to finish. They identified three key ongoing tasks, and allocated each one to a member of the LEWFA team, so that the workload would be manageable. The tasks were:

1. promotion of the project and communication of progress within the community
2. route and network planning
3. fundraising and finance

All three of those tasks, running in parallel, were essential to get the project with B4RN started. Local enthusiasm was raised, and gauged, by talking to households and neighbours about the idea; those interested were then asked how much they might roughly be willing to invest in the project (for more on why this community investment is key to all B4RN projects, see here); an initial network map covering all properties in the 5 villages allowed B4RN to calculate an approximate cost for the LEWFA project, to check that the cost wasn't likely to be in excess of what the community was prepared to pay for it.

Money was only asked for when LEWFA were sure that the cost was within the community's reach. When enough money had come in for LEWFA to be sure that the project would be successfully funded, they gave the go-ahead and work started in earnest... i.e. material was ordered and digging started.

Members of the community signed up for smaller or shorter roles in the project, such as talking to landowners to agree wayleaves for the cable to go under their fields, or co-ordinating the digging with landowners, farmers, contractors and volunteers, or helping on dig days (whether with preparation, digging under walls, feeding cable through the mole plough and so on... or with sandwiches, tea and moral support).

Almost all landowners in the LEWFA area have been extremely supportive of the project, and getting their permission for cable to run under their land has been relatively straightforward, with few exceptions. This is a key factor in the success (and in limiting the cost) of a B4RN project; landowners need to see and be sympathetic to the benefits of bringing broadband to their wider community, since they aren't paid for cable crossing their land (though they can be "paid" in shares for digging in the cables themselves).

In summary, LEWFA were enthusiastic about their project, and are happy with their experience with B4RN so far. Their advice and experience (which they were very willing to share with us, and which we were very grateful to receive) gave those of us from Rathmell and Wigglesworth considerable hope that a similar project could work well in our villages.

Thanks again to LEWFA for their hospitality and openness. Facebook page here.

Author *ribblebroad* Posted on July 6, 2016 Categories B4RN, Lawkland and Eldroth, updates and news

They kept having local meetings and worked together to get the project started. Michael took on the job of raising the investment as there was still no government support at this time. The Clapham project was a success, and all the locals were hearing about it, and Michael says there was not a problem getting the shares and loans they needed. They had met Barry, who had told them what they had to raise, and they did it and were off.

Michael says they had a very skilled community. The idea of putting a duct from A to B across fields, rivers, roads etc completely baffled him, but the contractors and farmers insisted it was 'not a problem' and they sallied forth to do it. Two of the main contractors from the Clapham project, Brad Tooke and Colin Price did a lot of the work. The volunteers helped tremendously and fitted all the houseboxes for free. They did not bother with a 'community pot' as Michael recalls, they all just mucked in and did their own patches. He says they had a broad range of skills, good movers and shakers both for spreading the word and also practical capabilities. They had house kit training and a few of them learned how to do it.

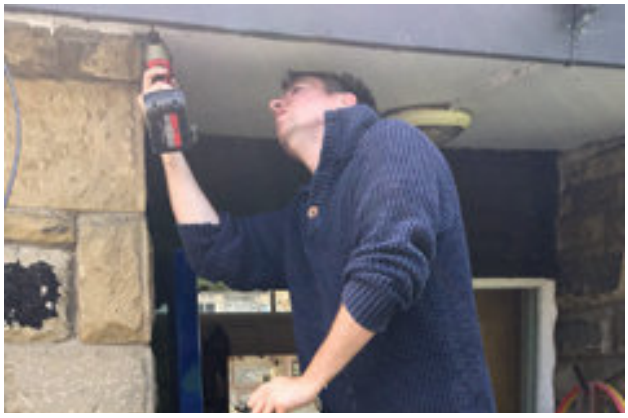
House kit fitting.

He says it was a brilliant project to be involved in, and it was so very socially rewarding, meeting all sorts of people across the hills and dales, and all the time he was aware that the community appreciated what they were doing. 'To get a project like this up and running you needed the spirit and skillset of the community, and we had this. To get under 200 metres of concrete farm track, the farmer knew of a massive tunnel. We tried to get terriers to go through with string, but that did not work, but the local caving community stepped in and got it through for us so we could get the fibre to the farm. It was all such fun.'

Stephen and the team at the training day.

Austwick

Stephen moved to Austwick in 2014, and as he worked in IT he needed a good internet connection. At the time, Austwick was part of a community satellite network. This had worked fine, and had got a community of its own. Alec Rigby was involved in getting B4RN, and he and Stephen got chatting, and wanted to get involved. Michael Southworth was negotiating with B4RN and Stephen, Alec and Graham Cleverly, became the team connecting Austwick. They had regular meetings with the other elements of the LEWFA project, and shared information, equipment and supplies. Michael managed to get £180k in shares/investment fairly quickly.



Fixing up the house installs.

Stephen and Graham get their spade awards.

Brad gets his spade award at last.

Stephen doing a training day for the group on house installs.

The LEWFA digging team got going. James Hickson in Lawkland, Julian Cairns in Eldroth and Dean in Feizor had regular meetings.

Colin Price and Brad Tooke did the digging of the cores. Steve Foster did the crossings and walls, and Tony Swidenbank did the directional drills under the main roads.

Stephen helped people dig through their gardens and either helped them fit house kits or did it for them. At that time Vonage were doing an offer where you got £50 for a referral and Stephen told the householders that if they used his link he would do their installation. The ones who wanted a VoIP phone service took the offer, and that helped Stephen pay for his drills.

He also had Rob, a local landscape gardener who did some of the harder house digs, or Brad with his mini digger if it was heavy work. Brad was only 18 at the time, but on the back of all this experience he now runs his own business landscaping gardens etc.

If the house holder did not need a landline phone service, Stephen asked for a donation and the Local Rotary group donated £150. This meant they could buy a really good SD drill.

Stephen says they did it all 'on a shoestring' but they did it, and they are very proud of what they accomplished. He says the service is second to none, and his work is now so easy with such a good connection.

Graham and Stephen from Austwick got their spades when they went live. They also trained other groups in house kit fitting.

Eldroth sign.


Julian with his JFDI spade.


Gordon with his JFDI spade.


Digging to go under a wall.

Eldroth and Lawkland

The LEWFA project is pretty unique in the way the five communities worked together and yet are separate.

Michael managed to get a coordinator for each area. Julian Cairns has always been a sitting target for community volunteering and parish council work, but he did not really want to take on such a big project. He had been the secretary of the ABCA wifi network and they couldn't find anyone else to run Eldroth so eventually he gave in as he 'couldn't say No'.

Mike had already sorted the funding, but Julian's first job was to organise the wayleaves and visit all the properties, and he got to know everyone in the area. Pretty near every property signed up for it. He had a marvellous team mate, Gordon Higginson; together they organised supplies and contractors.

They used Mike Johnson and Brad Tooke as contractors, and had Steve Foster for road crossings. They laboured for them and got very good at repairing old stone drains and occasionally a water pipe...

They were given an extra bit of Lawkland to finish when the coordinator there had to go back to work and travel, and they worked with Colin Price on that bit.

Steep banks where contractors could not work like Kettlesbeck they dug by hand. They had little pockets where other volunteers helped each other, but he and Gordon found it easier just to do most of it themselves rather than organise people. They just 'got on with it'.

They worked from 2017 when it all started, and through the summers of 2018/19.

Brad at work.

Labouring for Steve Foster.

Hand-diggers tea break.

During the dig.

The terrain in the area was heavy boulder clay, and they could not work on the land when it was wet.

A few of the spurs did not get connected until during Covid, and the ACBA network helped to get very remote places connected by putting a router for them in a property across a valley and using their own wireless equipment to 'beam it across the valley to them' until they could get a dig to them. After that their router was popped in their own house in a seamless transfer. Steve Ward helped them 'beam a service' . He also did some house kit fitting for them. Julian and Gordon did most of the house kits though, as they wanted to 'get it done' and then move on.

If they missed the opportunity to dig a field due to cropping then it could be another 6 months before they got another chance.

Julian kept records of the stages every property was up to and ticked them off as they got completed. He updated Ed Wilman at B4RN planning who was very supportive and adapted routes to reach everyone.

Once the service came live, there were not many problems that folk had not encountered with the ACBA network. They had also learned to understand a lot of technical things, but he was often the first port of call, but he coped okay with that too.

After the dig.

Yay, it is working!

Downloading their game, at last.

Trench ready for duct to go in.

Stephen Ward with his B4RN spade award.

Thanks to mainly senior citizens a little family is very happy.

These boys had waited for two years to update their Xbox! Now with B4RN there is no problem.

Lawkland

James Hickson was a sitting duck when Veronica got him on board with the project. A farmer with a lot of contacts, he 'volunteered' at the Eldroth meeting which Veronica had organised. He thought the whole thing was a brilliant idea, and he knew most of the farmers in the area. He did not need a lot of persuading and ended up as the area coordinator. The connection they had in the area through the old phone lines 'was crap', and he and the farmers liked the idea of 'being in control of their own destiny'.

He organised the wayleaves and the diggers and the project gained momentum. Brad was the main mole plough contractor, and James helped him with the

The LEWFA Tribe and contractors.

ducting and maps. Stephen Wright from Austwick and Stephen Ward came to help with the house installs. James thought of the other villages as 'separate but together' and says it was the best thing they ever did, especially when Covid appeared and proved they had been right to do it. He is grateful to Julian from Eldroth, who completed most of James's routes for him when business took him out of the area for a while. The power of the Tribe. One community helping another. Five communities working together.

Julian says: 'As you probably know, the Lawkland and Eldroth area is very rural; the houses are mainly former or working farmhouses and barn conversions. The local ground is largely heavy boulder clay with one small area of thin subsoil above limestone. I have had a look at my project management database and the stats are as follows:

- 140 properties listed of which:
- 8 owners said they didn't want a connection
- 2 (former ACBA members) were outside the Lawkland / Eldroth boundary so we passed them on to the Giggleswick project when that started.
- 20 owners asked us to get ducting to them pending a decision to develop the property in the future

When we finally wound up the Lawkland and Eldroth area of LEWFA in late 2022 we had completed all of the work apart from two landlocked houses where I had not managed to agree a workable route with the local landowner.

Quite an achievement looking back!'

Wharfe

Geoff Hall was nabbed by Michael, and set about building a team out of people he knew. He had also been targeted by Veronica at the first meeting in Eldroth. He volunteered to be on the digging team. He ended up being the coordinator.

Bill Smith and Geoff Hall from Wharfe get their spade awards. Feb 2017

His main issue he recalls were the conditions at the time, due to bad weather and the terrain. They had very heavy clay and farmers were reluctant to let them through in the winter months, and the summer months were busy with cropping, so they tried to stick to pastureland. He encouraged one of the contractors he knew to buy his first vibrating mole plough, and Stephen Foster must be very glad he did, because he has ploughed hundreds of miles with it now.

Steve Foster and his vibrating mole plough.

They tested it out in Wharfe, and the farmers were all very impressed by the low impact on their land. Geoff and Stephen undertook a massive dig to Crummack that everyone had said was impossible to reach. Geoff walked the route several times looking for dead grass. This appears in hot weather. It showed him where rock was near the surface and was to be avoided if a mole was to be used. It took a long time to choose a good route to the farm, which was 4.5km away over terrible ground, but they moled it together in a week thanks to the forward planning.

In Wharfe itself they managed to use some disused water pipes in some places, and they dug to every home. Bill Smith and Geoff did all the house installs using their own little mini diggers.

They had no wayleave issues and had 100% take up over the 18 months they worked. Geoff walked all the routes prior to digging to find the best ways round obstacles. Most had to be redesigned to fit the terrain. There were delays to cope with cropping, and then the weather would always chip in to make it harder, but they coped with it all.

Geoff says the main thing they did wrong, which they would not do again, is leave too long a gap between chambers, but the blowers just dug in and fleeted and got the fibre through.

He continues to act as B4RN liaison for any issues in the area as he knows where everyone lives and where the routes are buried. Geoff and his team feel they are doing a job that is very important to do, and that a major telco could not do. It is People Power in action.

Feizor

Dean Stockwell had moved into the area in 2014 and did not know anyone. He had bought a large house and a thriving B&B business.His broadband was terrible and he was searching round for a better service when he heard about B4RN. He then found out that Veronica and Michael were already on the case, so he joined the LEWFA team as the coordinator for Feizor. There were only 20 scattered properties in his patch, but he got wayleaves sorted and installed all the houses himself. Samantha Hird from the farm had already done the maps, and Paul Watt-Wood and Chris McKenzie were on the team too. Jonathan Knowles helped with route planning. The main obstacle they had was a concrete path in Jonathan's yard. They had some help from the Clapham cavers who were brilliant and found a way under it, but in the end they re-routed it round the concrete.


Feizor. Photo by Ken Larkins

The concrete path.

Colin Price from Keasden and Steve Foster did all the contracting. Dean did not have anything to do with fundraising as Michael had sorted all that, he just sent the invoices to B4RN for the work the contractors did. He has very happy memories of the time spent on the project, all 5 communities working separately but helping each other, and he got to know everyone. He has since moved house, and misses his good broadband but he says the fact it was there was a major factor in getting a good price for it.

The caveman.

Route 5 went on to connect to Giggleswick, picking up Knight Stainforth on the way.

Knight Stainforth

Knight Stainforth's spade displayed.

For nearly 100 years Little Stainforth has hosted both local and national campers at Knight Stainforth Hall Camping and Caravan Park in the Yorkshire Dales. Knight Stainforth is one of the oldest sites still run by the same family - the Maudsleys.

Set in the Yorkshire Dales National Park, the park stands on the 45 acre estate of Knight Stainforth Hall, just two miles north of the market town of Settle. Nestled on the banks of the River Ribble, Knight Stainforth Hall is a 1672-dated manor house. A much earlier building here belonged in Norman times to the Knights Templar.

Kira watching Frank blow fibre to Will Dehany, way up the hill.

Frank Brown watched by Kira, blowing house and caravan fibre.

David Evans from Norfolk doing his first fuse at the Caravan office.

The Knight Stainforth spade.

The Maudsley family - a Ribble Valley farming family for more than six centuries - diversified into tourism in 1927 by accommodating a Scottish Scout group for their summer camp.

The park is now run by the third generation of Maudsleys involved in tourism - Chris and Paul, with help from their wives Linda and Gemma.

Kira, a research fellow from Oxford University was there to record the core blows to Knight Stainforth, done by Frank and Will. They blew the core from LEWFA and then blew the businesses, homes and caravans house connections.

Several farms on the route were also lucky to get a connection and wayleaves were not an issue.

David Evans from the newly-started Norfolk project was visiting and he learnt to blow and fuse on the job.

The LEWFA team also mentored the Rathmell group, attended their first meeting to give advice and support, and showed Roger Vincent the 'ropes' to give him a head start on the next village 7km away.

Rathmell

Roger Vincent had heard about B4RN when there was coverage about Prince Charles' visit in 2013. He thought it was too far away to attempt to join on to it, but he kept an eye on it. Wigglesworth were also looking into it too.

When it got to the LEWFA group he met up with them to find out more. At that point it was only 7 km away and he thought 'this is now in the realms of possibility'.

He contacted B4RN and talked to Barry and they

Richard Frankland, Mick Dugdale, Richard Maudsley, Adrian Procter, Ian Wright, and Nick Hall from B4RN explaining how chambers work.

Pneumatic mole plough.

Steve Foster's rig.

Digging and moleing,

looked at distances, and Barry said £50k should get it underway.

In 2015 he spent time looking at routes, and talking to landowners, to get an agreement in principle to dig through their land.

He could not get the final wayleave to join on to LEWFA because of one landlord, so had to plan a totally different route to avoid that land. Once he had a route that was approved by the farmers and B4RN, he called a public meeting, and the LEWFA guys came. B4RN sent David Ryall who did a presentation and they filled the Plough pub in Wigglesworth with interested people. Many were very keen, but it was a big area to cover.

At first they did training sessions, so the farmers who were very keen to get connected, could dig their own fields, but in the end they decided not to, and they were reassured that any contractor doing it would not make a mess, so they were happy to leave it in the hands of B4RN.

Roger started a campaign raising money and interest among the residents, and got his £50k so he went back to Barry, got the routes approved, and permission to start digging on the 24th April 2018.

He had by this time worked with Julian and the LEWFA group, so had learned how to do it. They joined on at Armistead Farm at the edge of the parish, and Mike Johnson carried on digging for them, right through Mike's aunt's land, so the first 2km were done that summer. Then it quietened off and they could not get a contractor to continue.

Eventually Steve Foster had a window in his work routine, and he was grabbed to continue the dig, route 1 into Rathmell village, in 2019.

Their Facebook page carries the updates:

RWBB - Rathmell, Wigglesworth and Giggleswick Broadband

The planned route to get to Rathmell from LEWFA.

Richard and Charles Frankland digging and moleing at Swainshead farm.

Holly Dene and New Hall work.

'A fantastic update from Roger and the RWBB digging team:

'We have made major progress in the last couple of weeks, and over half of the main trunk route has already been dug! We have also laid nearly 500m of duct to individual houses and properties'.

'In the image, what has been done so far is in orange and the remainder of the main route still to be dug is in blue. B4RN now need to do a few road crossings so we can link up sections.

'Many thanks to all who have been involved so far, especially considering the extremely hot temperatures out in the fields during this time'.

'Best regards,

Roger'

In Dec 2018 Roger reported:

'We are back underway with digging! Despite the occasional biblical downpour we have managed to get through a couple of tricky areas around the back of Holly Dene and New Hall during last week. Next week we are looking to plough ahead across the bottoms from New Hall to get joined up to the existing ducting at Paley Green Lane'.

'Many thanks to Steve Foster, our new B4RN contractor, and all those who have helped out during this week - Paul Baxter, Bryan Gorst, Anna & Steve Howarth, John Rushden, Chris & Richard Frankland'.

Farmers Richard and Chris Frankland moled and dug the duct in to Swainstead Farm, which is one of the Frankland farms, of which there are three on Route 1. The Franklands also now have four houses using the B4RN service.

A garden dig with step 1, remove sod.

Garden dig volunteers.

Step 2, dig out trench and place spoil on the groundsheet.

Step 3. The BDUK team having a go at trenching a garden with alkathene.

Four or five volunteers were involved at any one time, and Roger did most of the house installs for the elderly, as a volunteer, with Keith Mothersdale helping. They also had a couple of electricians, which some householders paid to install their equipment. He, Keith, and the others helped those who couldn't dig their own duct through their gardens, so that all would be ready when the main core got there. The routine sequence of events was:

Step 1, remove sod prior to trenching.

Step 2, place spoil on groundsheet.

Step 3, lay duct and use alkathene pipe to protect it if necessary.

Sep 4, backfill carefully and replace sod.

The BDUK team came to help with the trenching and see what was involved in a rural fibre installation. They came in time for step 3.

In April 2019 the RWBB tribe reported:

'As most neighbours will know from Roger's latest update emails, Trunk Route 1 is now all dug in, apart from road crossings scheduled for the coming weeks. The control node cabinet is in place at the Reading Room, and with good news in from the DCMS voucher application, fibre blowing along Route 1 will proceed as soon as possible. Digging also continues around Swainstead towards Sheepwash and Wham!'

In the village where the hub was, there were a lot of houses in a small space, and everyone came out to help that day, Keith said there were so many ducts to manage, and the more hands had hold of it the smoother it all went.

The cabinet came live on the 4th July 2019 (our BT independence day!), celebrated by a visit from BDUK on the day, to watch as the first customers came live. Jorj and Roger arranged a blowing, fusing

Robert Staveley and Kit Mackereth fusing a bullet, watched by BDUK.

Rob and Kit fusing another bullet to bring the cabinet live.

Jacky is overjoyed to get connected at last.

The first speed test at the old school in Rathmell. 940 Mbps symmetrical.

and speed testing day for them, and they watched how houses got fused, Roger demonstrated how the fibre was fused and wrapped and a router installed.

Rob and Kit from B4RN fused the bullet the fibres came from. They also fused core bullets, including Jacky's connection to her farm.

The BDUK team even got to lay their own duct in a trench to a customer. They all went back to the school for lunch. They also had a route walk, to see where the fibre had been laid.

They visited some of the main businesses in the village, and heard from them first hand, about the difference that fast broadband would make to them.

They watched blowing demonstrations and fusing the fibre, and then went into the old school, to watch it come live. They did a speed test in the school and Justin Leese, the head of BDUK, tweeted the photo.

Jacky Frankland was supposed to be sorting the buffet lunch for the visitors but she came to watch her long awaited service going live. She was very excited to see all their hard work paying off at last.

She watched the speed-test with the BDUK team and one of them said 'It is faster than what we get at Westminster.' He was repeating exactly what the MP said who visited Keasden. We are faster than our capital city.

Justin immediately used the connection to tweet a photo of the speed test to Westminster.

The BDUK team had a lot of information to take back with them.

Jacky runs the facilities in what used to be the school at Rathmell. This houses a community venue, with several small businesses having offices there. Her previous internet service was awful. Her family have three farms and all of them suffered. They could not upload files, do the VAT online or register cattle.

The BDUK visit to B4RNland

The BDUK team with the volunteers.

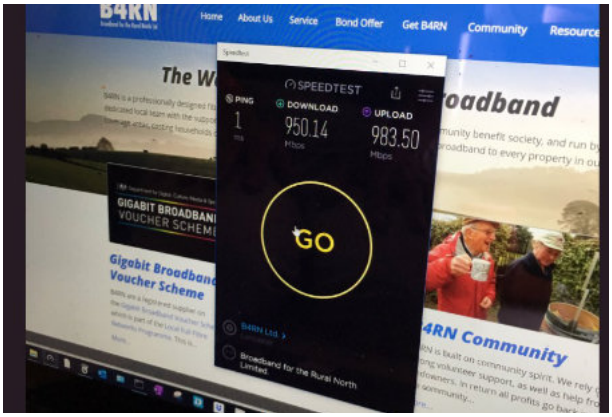
Jorj explains all about the ducts and labelling.

The BDUK team arrive at the Old School.

BDUK watch a house fibre blow supervised by Alistair.

Jorj and the B4RN team demonstrate house fibre blowing.

A route walk, through a meadow with hardly a scar.



A great speed test once the school came live.

Alistair putting the final patches in place to bring Rathmell cabinet live.

Roger Vincent and Jacky Frankland with their spade awards.

The BDUK team and Jorj, who gave them their spade awards.

The B4RN boys enjoyed their lunch outside.

Justin from BDUK has a closer look in the cabinet.

They could not do online shopping, socialise online or watch videos. Jacky says the coming of B4RN has been transformational and she takes it all for granted now.

Everything she wants to do now is accessible. whether it is moving large documents in her fight to stop the Church Commissioners taking the school off them, doing the farm records, or buying a toothbrush.

Roger and Jacky both got MBE spade awards for the work they had done to get the service to Rathmell.

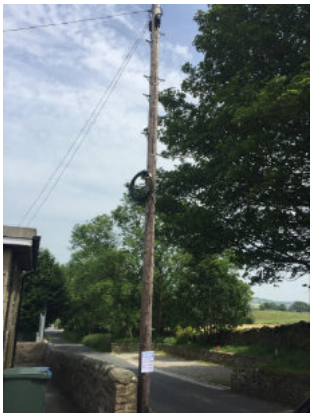
Jorj awarded the BDUK team honorary spades as a souvenir of their visit.

By this time Rathmell had overspent their budget, but luckily vouchers came back in 2019 (due in part to the impression the project had made on the BDUK team), and many of the small businesses managed to get them, and that really helped, as they had road crossings to pay for, as well as the cabinet and contractors.

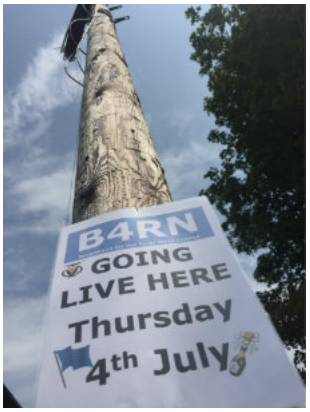
Many parts of the project were affected by proposed projects from BT, which meant that vouchers were not generally available in some postcodes, including the main postcode which covered 90% of the village. It is worth noting that none of the proposed BT projects have ever got further than some fibre hung on some of the poles in the area. You could see the coil of fibre on the pole in 2018 and it was still there in January 2025 in an unused enclosure unconnected to any customers.

After the BDUK visit, Roger carried on installing and fusing the rest of the houses and properties around Rathmell.

Then came Covid, and Frank and Will carried on helping Roger get people connected, coming and blowing fibre for him each time he got an install done.



2018, BT fibre on pole outside the old school. 2025, still there.



2018, B4RN live at Old school.

The BT pole and its B4RN spade.

Roger about to fuse one of the village pubs.

Roger fusing the house fibre in the pub.

One lady worked for the National College of Policing, and was part of the Police's National Covid Silver Command team, and the Chief Constable of Cornwall wrote to Roger on the 25th March 2020, asking for her to be connected urgently. 'Please pull out all the stops to get her on'.

Roger obliged, and contacted Jorj and Tom at B4RN, to push things forward. He had already made sure duct was left at the boundary of every property, the garden dig was done, and the house kit was fitted, and fibre had been blown, and all that was needed was for the splicing to be done, and a router fitted. B4RN were quick to respond, and by the 9th April 2020 the property was live, along with a number of other neighbouring properties.

During Covid, Roger and Keith continued to work on a number of garden digs, and house kit installations, where residents were willing to be visited, whilst maintaining strict social distancing.

B4RN continued to bring properties live to provide good broadband coverage, at a time when it was a lifeline for many people. It was also during this period that the B4RN routers changed from Genexis to Zyxel. and a few properties waiting to come live had to be retrofitted with new style house kits.

One road crossing was booked, and at the last minute, the landowner changed his mind, and a new route had to be found round the top of the village, to get to another batch of residents and businesses. Luckily the landowner moved, and the road crossing was rebooked before any extra money was spent/ wasted. The new owners were more than happy to help B4RN and get the service.

Roger ran the project off Google Docs, keeping records of everything, and using the B4RN spreadsheets, to make sure the right amount of duct went in the trenches. As at 2025 they have dug nearly 27km of trench, with still more to do, but Wigglesworth has been ringed by BT fibre, with

Roger wrapping the fused fibre into the backplate.

Finished installation with the router on the backplate.

Keith Mothersdale.

Keith's amazing speed test. Over 9Gbps!

FTTC subsequently being installed. This has led to a significant drop in the level of interest there to get B4RN in, despite most of that route still being eligible for vouchers, under the current incarnation of the voucher scheme.

It is immensely frustrating that an area that has had FTTC installed is still eligible for vouchers whereas other areas in the project, where BT purport to have 'commercial plans' (which have never come to fruition), have been, and continue to be blighted by unavailability of vouchers.

B4RN's route 3 is planned to join Wigglesworth, and splits off to Tosside, which joins Slaidburn, to complete a resilient ring for them.

Route 2 splits off route 1, and goes to Wham, picking up the houses and businesses that should have been on the original route 1 out of LEWFA.

Route 1 also supplies the core feed to another project in Giggleswick, bringing a gigabit to the school there.

Route 2 has an issue with the main high pressure gas pipeline, as rules have changed and now the pipeline cannot be crossed except in highways, which adds more time, money and paperwork to a project, so can cause delays. The planned route to join to Tosside will now need to be re-routed via a longer route to reach a point where the gas pipeline crosses one of the few roads, and will make getting 7mm duct to one of the farms on the 'wrong' side of the pipeline a long way from the road crossing a much more expensive task, rather than the direct route which could have picked it up along the way.

Keith Mothersdale has been a stalwart volunteer on this project, both with the normal B4RN tasks of garden digs and house kit installs and has also gone the extra mile, using his professional expertise to help residents to get world class connectivity inside their homes. He helps them to make the best of the

world class connectivity to the outside world, supplied by B4RN. Keith has diagnosed issues with wifi, due to foil-backed insulation reflecting the signals, to helping people set up power-line adapters and meshes.

He has also trialled B4RN's 10Gb service, buying himself a new water cooled PC that was capable of housing a 10Gb ethernet card, and looking to see just how quick a speed-test result he could achieve from a single computer. He achieved a result of over 9 Gbps symmetrical which we believe remains a B4RN record to this day and probably a record for the whole country for a residential service.

Rathmell dug over 26km of trenching, with a further 48km to do if Wigglesworth wanted to join on.

Rathmell is due to join on to the Slaidburn Core in the future, when routes are finalised through Tosside and Gisburn Forest.

The BDUK team. All of whom have been replaced by a new team and all they learned has been hopefully passed on.

Beyond the Book:

Keith's instruction video for ethernet.