



Monk Fyston and Hillam Community Buildings

Go for Sustainability



Monk Fyston & Hillam
Community Association



Thank you for your Help... so far



About 18 months ago, we wanted to do something to make a difference, no matter how small, to reduce our communities carbon emissions and provide hope for everyone and especially young people. We were not alone; the Community Association (CA) members had already decided in 2019 that whenever possible everything they did in the future should be Sustainable. A year before the Beer Fest 2018 committee, which is drawn from the CA, the school PTA and others agreed to use sustainable materials wherever possible and recycle all waste from the event.

Our journey had begun and we soon found we had the support of all the leaders and management groups of our five community buildings. They supported our aim of making the facilities carbon neutral and agreed to become partners in the project. We soon discovered we had other things in common: no money, no expertise and a passionate desire to see what we could do.

With the guidance of a hastily formed steering group, the partners made rapid progress. Despite the pandemic, a community survey established we had strong support for the project and the application for a feasibility study grant. Our application was successful.

This booklet outlines the key findings of that study along with an update of the excellent progress and some of our learning along the way.

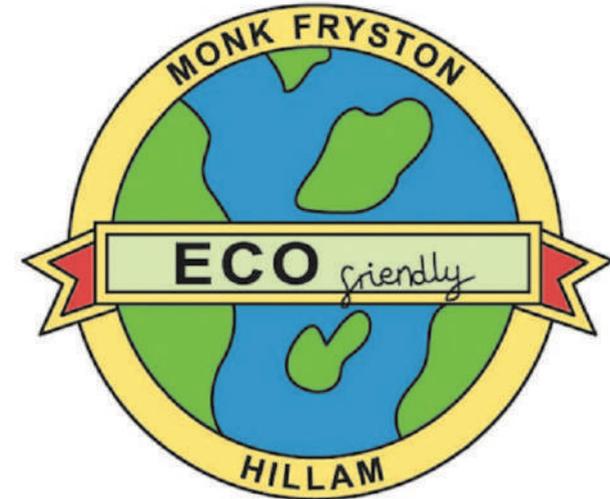
Now we have taken the first steps, we need to continue by implementing the report. Perhaps more of you would like to come on the journey with us. We share with you in this booklet what we have learnt and how you might want to reduce your carbon emissions.

We thank you for your support so far and as you will read our project is looking into sustainable solutions for buildings and providing hope for our youngsters as we all learn about how to live sustainably.

Ray and Sue Newton

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***When answering the question in the Community Survey
To what extent do you support the notion of our Community
Buildings becoming Carbon Neutral by 2022?
Over 96% of more than 200 responders either strongly
supported or supported the idea***

The RCEF Feasibility Study

We were successful in obtaining a grant for £32,060 from The Rural Community Energy Fund (RCEF) to undertake a professional feasibility study to assess if the aim of making our community buildings carbon neutral was realistic and to make recommendations about renewable energy systems that we could adopt. Locally the fund is administered by the Tees Valley Combined Authority on behalf of the Department for Business Energy & Industrial Strategy (BEIS) and the Department for Environment Food and Rural Affairs (DEFRA). RCEF recommended, Locogen, a consultancy based in Edinburgh to undertake the study for us.

The first phase was a desk top assessment to see if our project was feasible and then to select from a list of potential solutions the best options to examine in detail.

It was clear at an early stage that, given the dispersal of the buildings around the villages that we could not have a shared power generation system or a community heating scheme. We also had to overcome some physical and legislative restrictions if we were to be successful. A further factor became apparent which was the change from the electricity Feed-in-Tariffs to Smart Energy Guarantees, this limited the potential solutions available.

The first phase was carried out in October followed by more detailed work in phase two between November and March this year which provided comprehensive guidance and business cases. Their report highlights the benefits to our community and others further afield of our project.

The Locogen reports can be found on the Community Association website at www.mfhcc.com/sustainability-project/



www.neyenergyhub.com/funding-and-investment/rural-community-energy-fund/

The Feasibility Study – Community Benefits Locogen’s view of the Community Benefits of our Carbon Neutral Project

Locogen state -

The Client is looking to decarbonise the operations of the buildings, in particular their energy consumption, in order to facilitate financial, environmental and social benefits for the local communities.

In all cases, operating costs are reduced and the projects have a positive net annual income, providing opportunity for each site to invest in further energy saving measures or to support further projects in the community.

All projects have positive environmental benefits, reducing or removing fossil fuel use significantly for the respective site. The heat pump options immediately decrease the localised pollution from the existing boilers, helping to raise the air quality in the area.

The Church project in particular would be an exemplar in highlighting the potential to develop renewables on, or near to, historic assets discretely and considerately.

Another key benefit is the opportunity for the local community to gain an understanding of renewable technology and how it can be used to replace fossil fuel sources. The installation of heat pumps, solar PV and energy storage represents an educational opportunity for the community, whereby the system can act as a demonstrator project for similar buildings in the community and as an exemplar project for other small-scale installations locally. The transition to a net zero society is one that will take place over the next few decades, and it is extremely important to educate people on the subject and the solutions available.'



www.locogen.com

The Feasibility Study Which Technologies do Locogen recommend?

Having discounted 'big multi-premises solutions' such as a generating system fed from a solar array, wind turbine or biomass generator; other options of a neighbourhood heating system or water power from the nearby River Aire, were also cast aside, the focus was on surveying each building and its individual requirements and then developing a customised solution for each one.

The outcomes were interesting as the recommendations are what most people will want to consider if they convert their home to a sustainable heating system.

It is proposed that all the community buildings will have roof mounted solar panels with the Cricket Club and Community Centre recommended to consider the additional option of an electricity storage battery, ensuring more self-generated power can be used in their building.

Heating a building in a sustainable manner is more challenging. All were recommended to have heat pumps of one type or another. The school, with its extensive grounds and big heating load was recommended a ground source heat pump; while the Community Centre and Cricket Club, which are more akin to domestic properties were recommended air source heat pumps. The recommended solution for the Grade 1 listed Church and adjacent Church Hall was a large air2air source heat pump installed in such a way as to minimise the infrastructure work required.



Underlying all of these recommendations was the important understanding that current energy demand would be reduced by 25% through energy efficiency measures.

The Feasibility Study The Challenges

At present, Government thinking is that sustainable energy will be powered by electricity. This may change over time as research into the viability of hydrogen as a clean fuel for heating homes progresses. For the purpose of our feasibility study, the focus was on electricity and that is where our first challenge occurred. Our villages, like many rural villages have an old and limited power supply network.

This was brought to light when Locogen made enquiries about cable capacity into and out of our buildings, as not only would they all need more power, but from time-to-time the site-generated solar electricity would need to be exported to the grid. Cable upgrades have been recommended for the Church, the Community Centre and the Cricket Club before some elements of the project can be carried out at those sites.

Moreover, our attractive villages of Hillam and Monk Fryston include conservation areas with many listed buildings and they are surrounded by green belt. Both villages have to meet strict criteria when considering any developments. As an example, Locogen discussed these issues around the Church with Selby District Planners and they indicated that we can carry out their recommendations.

Two further options were considered, firstly a ground mounted Solar Photo Voltaic (PV) array shared between the School and the Community Centre; this was rejected as it would have occupied the Centre's grass recreation area and secondly solar PV car ports at the Community Centre and the School; this option was rejected on cost grounds.

Our biggest challenge is how to fund all of the recommendations.

From the outset we have been clear that the only way we can make any options reality is to find and secure grants to do the work. We will explain how you can help us win those all-important grants later under the section

– What do we do next?

Study assessments and recommendations The Community Centre

A bit of History

In the 1960's some residents decided a Community Centre was needed so they formed a charity and converted a piece of land known as the Cherry Orchard into the modern Community Centre which is used extensively today.

Users

Just about everyone in Monk Fryston and Hillam use the Community Centre in some way be it for car parking, visiting the playground, using the drop off recycling centre, the kickabout area or attending one of the events like the Annual Firework Display or the Wise Owl Quiz. The Centre provides something for all ages from baby sensory groups, yoga, drop-in library, local history to essential services such as the Before and After School Club.

The challenges - building and operation.

The biggest challenge has always been finding enough money to do everything you want to do in an ideal way. It has always been spending the minimum for an adequate but not the best job! Consequently, whilst the Centre was rebuilt in 2014 and the new work was done to building regs, elements of the 1970s original building still remained and required upgrading. For example; the recent EcoWall insulation transformed one of those original walls as part of this sustainability project. The heating system and its controls are 'bog standard'. The Community Centre has a high turnover of people and equipment moving in and out of the building daily and has no method of managing the subsequent heat losses so a vestibule or lobby (just think of McDonalds) could help significantly.

The Solution

For the Centre and all the partner buildings to become carbon neutral, they will need to reduce energy consumption by a quarter of their current demand by making efficiency measures. This means more insulation, a new heating system and automatic lighting controls, as centre users are not good at switching off the lights. The main thrust can be achieved by installing roof mounted Solar panels, which we have already done thanks to a grant from the Peoples Postcode Lottery and by replacing the existing gas heating with an Air Source Heat Pump in the future.

Further measures such as adding a lobby, providing more equipment storage in the building, upgrading emergency exit doors are very aspirational, but if you don't know what is needed, you'll never achieve it.

The Cost

The Centre has already benefitted from the retrofit WSP grant for the EcoWall insulation and the Post Code Lottery Solar PV grant, the remaining costs are estimated at approximately £10,000 for energy efficiency work and £13,000 for the Air Source Heat Pump.

How will it be paid for?

The CA is a self-funded charity and consequently the major items will have to be paid for by grants whilst some of the lower cost energy efficiency measures will be paid for out of running costs.



Study assessments and recommendations St Wilfrid's Church and Church Hall

A bit of History

Our Grade 1 listed Church lies at the heart of the village in the Monk Fryston conservation area. It was built over the centuries to different styles from the local limestone. It was restored in 1897 when the floor was lowered and later the cast iron piped heating system was installed in the early 1900s. Both villages came together to raise funds to repair and restore the church again in 2013.

By comparison the Church Hall is a relatively new but hardly modern structure. It was built in part of the grave yard in the early 1970's and extended around 2000 when the Methodist Chapel on Water Lane closed and moved to the Church Hall for services and meetings.

Users

St. Wilfrid's is our historical treasure and heritage asset to be protected; it has served us for over a millennium for many things besides regular worship, baptisms, marriages and funerals. Most village families have celebrated Christmas, Harvest Festivals and school leaving ceremonies here. Social and musical events have been regular features, as well as Christmas Fayres and Carol Concerts.



Just about every child who has grown up in the village has spent time in the Church Hall as it has been home to Preschool and Playgroups for well over 50 years; this means that Mums, Dads and carers have all benefitted as well – as have many others users. Dancing, exercise, slimming and art groups show how our villages can provide worthwhile local facilities accessible to all. The phrase 'an integral part of our community' springs to mind.

The challenges - building and operation.

Everyone can imagine the challenge of heating and lighting a large historic building, where the fabric must be conserved at a reasonable cost... and just for good measure it must be kept open five days a week to allow casual visitors to enter and then only needs regular heating on a Sunday for a short period of time or for other occasions. The Church heating system has been fuelled by gas since it arrived in the village around 1990. The lighting system was overhauled around 2009 and has many switches but no automation nor much respect for energy efficiency.

The Church Hall is a well-designed building and benefits from a vestibule/lobby which is a big plus. It has a time-controlled gas central heating system and manually controlled lighting. Whilst it is used extensively through the week, it is only used for special events and church needs at the weekends.



The solution

Despite being in a conservation area, the south facing roof of the Church Hall offers a good platform for Solar panels to generate electricity, particularly for day time use when both Church and Church Hall are used most. Selby Council planners advised that Solar roof panels would be permitted in the conservation area as they would be facing away from it. Whatever is done to replace the heating system it is going to be problematical. The solution proposed by Locogen is a large Air to Air Source Heating (A2ASHP) system which could be switched, as required, between heating the Hall or the Church with the heat being delivered by a series of smart, discreet hot air blowers, which would not have an aesthetic impact on the fabric of the building.

As can be expected, energy efficiency measures would be required throughout both buildings, with lighting and control systems being a start point after improvements to insulation where possible.

The cost

This is not cheap. St.Wilfrid's is the biggest building in the village and the Church Hall is almost as big as the Cricket Pavilion. Locogen estimate the cost of a large A2AHSP and Solar PV system including upgrading the power supply to be around £100,000. The estimated cost for the energy efficiency work would be in the region of £30,000.

Paid for how?

The only way will be by obtaining grants.



Study assessments and recommendations The Cricket Club and Junior Football Club

A bit of History

A little known 'story' is that at the end of WWII, when times were very hard, there were not enough resources to pay for the upkeep of both cricket grounds at Hillam and Monk Fryston. The two clubs decided they should merge but where would they play and what would it be called? What better way to settle the matter than a match – and Hillam won.



The long tradition of cricket played on one of the most picturesque grounds in Yorkshire continues. The new combined village team adopted the name of Hillam and Monk Fryston Cricket Club.

The Junior Football Club (JFC) took up residence next door by acquiring a large field in the green belt and converting into an excellent multi pitch football ground in the noughties but without mains services to begin with. Over time, the Monk Fryston and Hillam Community Sports Association was formed as an umbrella organisation leading to mutual cooperation between the two independent clubs.

Users

for over a century the Cricket Club has been a centre for local sport, and hosts both open age and mixed sex junior cricket teams. The refurbished Pavilion is now popular for social events and is the home of an essential village service; a children's nursery, as well as the venue for Hillam Parish Council meetings and other leisure groups. In combination with the JFC and others it has staged the spectacular Proms at the Pavilion event, sporting fun days and private events such as wedding receptions. The JFC is now home to thriving junior age group football teams with over 200 players.

The challenges - Building and Operation

In 2011 the members decided to build a new pavilion with showers in the changing room and a kitchen cum bar. It is another case of local self-help supported by grants but again not quite enough money to make it an all-year round building, after all cricket is a summer sport. The Pavilion sits at the south end of the pitch and providing services to the new club house has proved to be challenging. Today, neither Clubs are on mains gas or sewers. As the Football Club continued to expand its membership, electricity was supplied from the Pavilion and waste water was connected into the Pavilion cess pit. After major improvements in 2018 to make the building useable all year through, the increased footfall has made the shared cess pit unsustainable and expensive to run.

Going forward, the challenges faced by both clubs are to future proof their facilities, to identify the best renewable energy solutions, to retrofit energy efficiency improvements and to understand how new developments such as floodlighting the football pitches and providing a sports barn can be done sustainably.



The most important immediate requirement is to invest in a sustainable waste water treatment system, such as a biodigester to replace the cess pit.

The solution

The Pavilion is well placed following its 2018 upgrade and the need for energy efficiency work will not be too great. However, as always, some sort of lobby or entry vestibule to minimise heat loss would help. Locogen recommend a combination of roof mounted (RM) Solar panels and an Air Sourced Heat Pump (ASHP) with new radiators to meet present energy demands.

The Football Club are looking into a solar powered floodlighting system, and Locogen provided a case study for a potential solar farm, which prior to the changes in the Feed-in-Tariff would have been a good solution but currently this is not financially viable.

The Cost

The estimated cost of the biodigester would be £20,000, the energy efficiency work would be a maximum £10,000 and the Solar PV and ASHP system would be in the region of £25,000.

Development costs for a sustainable floodlighting system are being sought by the Football Club. The estimated costs of a RM Solar PV installation using the potential sports barn development would be around £100,000. The details of this can be found with the rest of the study reports at www.mfhcc.com/sustainability-project/



Paid by

Both clubs are self-financing and therefore the only conceivable way of funding the renewable energy systems and biodigester is by obtaining grants. Likewise, the football field floodlighting would have to be funded by the Football Club by whatever means they can conjure up – donations, sponsorship, or a stand-alone grant.

The RM Solar Farm is interesting. The market for locally generated sustainable electricity is not currently viable, but this might change and if it did, we have the costings and might lead to obtaining commercial loans.

Study assessments and recommendations Monk Fryston CE Primary School

A bit of History

Education has been important here, in Monk Fryston, since 1794 when the Foundation Field was established to provide income for a teacher. The first school was opposite the Church, near Swallow House and when it became overcrowded a new school on Water Lane was built on part of the Foundation Field set up 60 years earlier. Move forward to the late 1990's and that two-room school with its two portacabin classrooms was again over-crowded and today's school was built on Chestnut Green. The pupil numbers had doubled to around 230 in a couple of years.

Users

The school has over 250 staff and pupils and is also visited everyday by parents and carers. It is the biggest employer in our community and every family has probably been involved in one way or another with the school or its activities over the years. Just ask yourself, has a member of your family been a pupil? Or have you ever enjoyed the fireworks at South Milford, attended the Beer Fest or Village Fayres, or perhaps watched the Tour de Yorkshire coming through the villages? All these events were supported by the school and the benefits to our community are substantial to say the least.

The challenges - building and operation.

The school was new over 20 years ago and was built before energy efficiency was on the radar.

Consequently, there is much to do in this area. Sadly, due to terrorist tragedies at schools elsewhere, our school has to adopt policies and practices which although necessary are wasteful of energy.

Most of the school has an underfloor heating system and is a large space to heat.

Doors are opened frequently as kids need regular exercise to let off steam between classroom sessions.

The solution

Locogen identified that the school was blessed with enough land suitable for a Ground Source Heat Pump (GSHP) to replace the ageing gas-fired boilers and connect it to the existing underfloor heating system and upgrade some



of the radiators. The south facing roofs could have Solar panels and supply electricity for its core activities; particularly useful as there is a year-round demand for power. Energy efficiency work has already begun with a new heating control system installed and a behavioural change programme in place with the school achieving Environmental Green Flag Status.

The cost

Locogen estimate the costs for the 60Kw GSHP system and the Solar panels to be in the region of £155,000. The Energy Efficiency measures are still being costed.

Paid for how?

The Green Flag programme has incurred some costs as you can read elsewhere but they will be covered out of the school budget together with some of the energy efficiency measures. Apart from that, it is hoped that most of the renewable energy and energy efficiency work such as low energy lighting will be financed through the Government Salix loan scheme; this provides finance upfront and is then repaid from savings in reduced energy consumption. Another option is finance from a government grant as part of a potential nationwide programme of Renewable Energy public building refits.



Sustainability in Action: Working towards the Green Flag Award

(by Rick Weights)

Monk Fryston CE Primary School is keen to achieve the Green Flag Award, which recognises the environmental work that pupils undertake. We are passionate about engaging our children in environmental action and we see this award as a positive step in this engagement.

The Green Flag Award is run by Eco-Schools, a charity that was founded in 1994 and now operates in 67 countries. They provide a simple, seven-step framework that guides, empowers and motivates pupils to drive change and improve environmental awareness in their school, local community and beyond.

After completing the seven-step process, our school can then apply for Eco-Schools Green Flag accreditation, which recognises, rewards and celebrates the environmental achievements of our young people.

In September 2020, we appointed an Eco-Committee of Eco Warriors from our pupils in Year 4 and Year 6. The challenges of Covid-19 restrictions meant that the children aren't able to work together in person, and many of their activities have had to be done separately but co-ordinated with adult support.

The Eco Warriors initially conducted a detailed environmental review of the provision in school in 10 areas: biodiversity, energy, global citizenship, healthy living, litter, marine, school grounds, transport, waste, and water. This recognised several successful strategies that are already working well, and enabled the team to focus upon three areas for further improvement: litter, waste, and transport.



www.eco-schools.org.uk



An action plan was created to identify specific things that children wanted to do in these three areas that could make a difference by the end of the year. Unfortunately, the school lockdown in January did delay some of these actions but this did not prevent our environment work from happening. Each week during the lockdown, all children were set eco challenges that they could do at home, and these contributed to our overall environmental work. Their efforts were incredible and some are on display in our hall. The progress up to this point allowed the Eco Warriors to apply for the Bronze Eco-Schools Award which we were proud to achieve in April 2021.

Since school returned to full operation, the Eco Warriors resumed their planned activities. They have introduced composting in every class, and are looking at ways to reduce waste. In order to reduce the effects of transport on the area around school, they ran a 2-week challenge to bike, scoot or walk to school as part of the Sustrans 'Big Pedal' event. This was brilliantly supported, and initially Monk Fryston School was 52nd in the whole of GB & Ireland for the number of pupils coming to school in a healthy way. Although other schools overtook us during the event, we were very proud to be placed 121st overall at the end. This is incredible for a rural primary school.

The Eco Warriors have been investigating the environmental links in our planned curriculum, and have listed all the opportunities we use in each year. They have developed their understanding of the breadth of activities we undertake and we are very proud to achieve Silver Eco-Schools Award in May.

They remain on track to apply for the Green Flag by the end of the academic year.

12 Months of Learning and Doing Getting Started – Helping Ourselves.

OK – so a group of people decide to do something about climate change. They know what they want to do but how do they make it happen? Generally, the answer is to find out who might have the expertise to guide and lead you, so this is where we asked for a ‘bit of help from our friends’.

The help came from Kate Urwin, the Yorkshire Energy Doctor and Chris Hailey-Norris, Chief Executive of Selby Association of Voluntary Services. Kate advised that we should establish our baseline data and we asked each partner to dig out a year’s power bills with details of how that power was being used for their heating and lighting systems and she suggested how these buildings could be improved and made more energy efficient.

Chris got us to think about how we would build a case to obtain funding in the form of grants, to get whatever work we needed done. This meant undertaking a community survey to assess what support there was amongst residents for a carbon neutral project.

This was the first step towards our goal of becoming carbon neutral by Energy Efficiency. We learnt later that typically most premises were capable of reducing their energy consumption by 25%. Kate analysed the energy data

	Community association	Church	Church hall	School	MFHCC	Football
ELECTRICITY						
Annual consumption/kWh	5,358	4,366		59,485	4,500	533
CO2 emissions, kgCO2e	1,884	1,535		20,913	1,582	187
Floor area	272	432.75		tbc	tbc	
kWh/m2	20	10				
Benchmarking as per CIBSE	Good	Good				
GAS						
Annual consumption/kWh	28,191	35,314	29,296	146,232	n/a	n/a
CO2 emissions	5,192	6,503	5,395	26,930		
Floor area	272	232	200.75	tbc		
kWh/m2	104	152	146			
Benchmarking as per CIBSE	Better than good	Typical	Better than typical			
LPG						
Annual consumption, litres	n/a	n/a	n/a	n/a	2,739	
CO2 emissions					4,131	

for each partners building and benchmarked us against national standards for the type of building activities and also shared with us data about our average local energy consumption.

An important stage towards helping ourselves was the sharing of data including purchasing costs and it came to light that the prices paid for energy varied considerably, mainly due to when and how those contracts were negotiated. Nevertheless, we had established openness and trust by sharing this information.

We had established a base line but what should we do next?

Kate suggested we apply for a grant from the Rural Community Energy Fund for a professional feasibility study of our project. To win this RCEF grant we had to conduct a community survey during the covid lockdown – a big ask. Nevertheless, with a lot of help from our village friends we did it – a survey was created both on paper and online with survey monkey and conducted in June 2020. It was funded by Hillam Parish Council with printing support from the school and distributed by a squadron of willing helpers.

Survey Results		
Answers Choices	Responses %	Numbers
Strongly Support	73.20%	148
Support	23.20%	47
Neither Support nor Oppose	1.49%	3
Oppose	0	0
Strongly Oppose	1.98%	4
Total		202

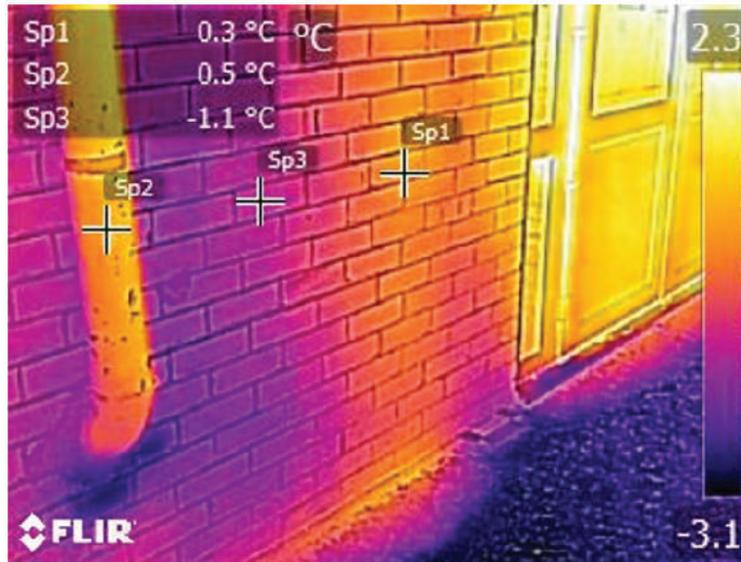
12 Months of Learning and Doing The WOW factor – Thermal Imaging reveals all

The first time we met Kate Urwin and talked about the project she suggested it would be really useful to acquire a Thermal Imaging Camera. She explained that a camera would show where in a building you and everyone else needed to focus your efforts if you were really serious about reducing energy consumption and energy costs.

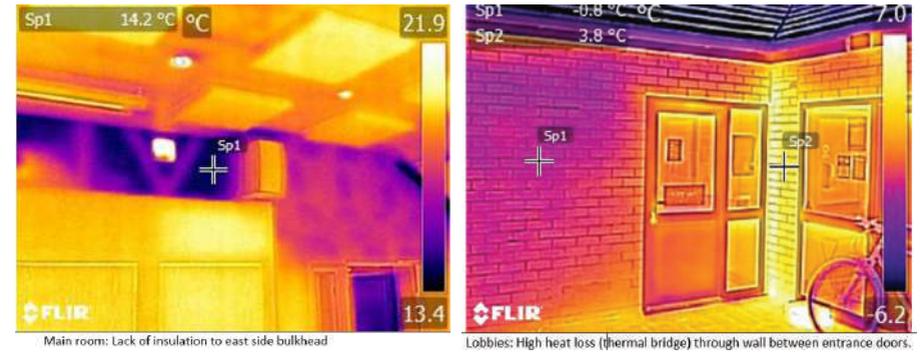


Fast forward to a year after the Peoples Postcode Lottery award and the Acutest camera finally arrived after by post-Brexit import delays but just in time to take the all-important before pictures for the WSP EcoWall project.

The Community Association has a new Building Manager, Jon Blaza, and he rapidly learnt to use it despite the covid challenges of everything having to be done remotely. After taking the before pictures, Jon went on to do a full building survey which highlighted various hot and cold spots around the Community Centre.



[Before] – Former soil vent pipe (SVP) much warmer than external face of wall – losing heat to outside. Appear to have been blanked off with plasterboard but not thermally insulated. Location of UFH pipes clearly visible|



For those who don't know, the Community Centre underwent a major rebuild during the six-week school summer holiday of 2014. It was a remarkable achievement doubling the building footprint. Underfloor heating and LED lighting were installed to the building regulations of that time. Remarkably, the main facilities have worked well since day one, but we were aware of some shortcomings due to the short construction time.

In the rush we overlooked a redundant soil pipe acting like a heat exhaust pipe from the main hall. Another area highlighted by the camera was the two bulk heads in the main hall which were not insulated.



Main Hall showing thermal bridging between floor and walls

12 Months of Learning and Doing The WSP EcoWall Energy Efficiency in action

In November, we were approached by local resident and Community Association volunteer, Ben Thompson, telling us his company WSP Engineering were running a competition for employees to put forward community schemes for a prize of £2,500. Ben thought our Sustainability Project fitted the criteria and did we want to 'have a go'. We answered Yes Please and then started to think about what we could do.



[Before] - Showing eastern extent of 'eco' wall at kitchen wall. Pipes for underfloor heating (UFH) clearly visible in wall. Note extent of UFH pipes

The answer was Fabric First and focus on energy efficiency to demonstrate the benefits of upgrading insulation by re-insulating the original north wall of the Community Centre. We had just heard about the grant for the Thermal Imaging Camera so it was perfect timing for some before and after pictures and combine the impact of both grants.

We knew we had significant heat loss through this cold

wall, particularly from the heating pipes that run from the loft down the wall to the underfloor heating layout but we didn't realise how much heat was lost this way.

Nigel, Danny and Jack Spofforth carried out the retro-fit insulation work. By sealing the soil pipe and drylining the inside wall with plasterboard they eliminated the cold bridge where windows and doors met the wall. Now the internal wall temperatures are the same for both that original north wall and the newer insulated extension to the main hall. The internal space dimension was reduced by a mere 50mm or 2 inches.

What next?

At the Community Centre, we will assess the costs of all the remaining insulation and energy efficiency work including dealing with the windows and doors and their adjoining cold bridges.

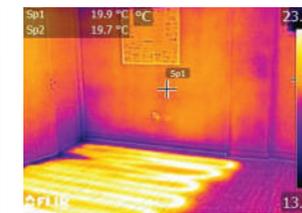
Thermal Imaging surveys will be undertaken at the other partner buildings. The Cricket Pavilion has done theirs and the school will be introducing and demonstrating the camera to the children this summer term.



Later we hope that residents will try the camera on their properties. Just like the Community Centre, you never know what might be happening on your premises, but we all suspect that letter boxes, doors and windows can be draughty and that these heat leaks can be addressed relatively cheaply – win-win! We look forward to hearing from you.



[Before] - Showing western extent of 'eco' wall at wall pier in centre of image. Note that the 'eco' wall (Sp2) is 3.3°C colder than the extension to the left of the pier (Sp1). Both images show considerable heat loss (thermal or cold bridges) at the wall ceiling interface.



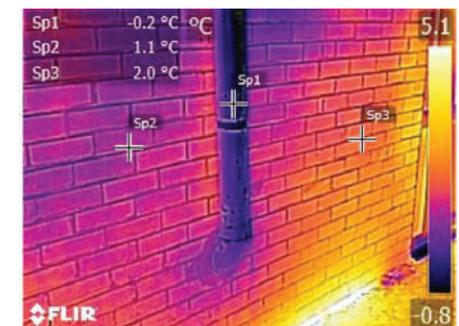
[After] Note Sp1 (extension) and Sp2 (ecowall) at similar temperatures.



[Before] - Wall open temp is 14.8°C i.e. 4°C colder than ambient temp. Note cold bridging at wall ceiling interface.



[After] - Sp1 is at ambient temperature, confirming the impact of the RW. [This is same doorway as image 3.] Note Sp2 showing cold bridge temp is 5°C below ambient temp. Cold bridge presumably due to lack of insulation at corners of loft void in localised areas. Note UFH pipes not as clearly shown now due to insulation. [Pipes were also lagged to reduce heat loss to outside]



[After] - SVP now insulated. UFH pipes location less clear, although still visible. Note Sp3 temp is higher than Sp1 (image 5) due to higher ambient temp for 'after' survey. This is reflected in different temp scales.

If you would like to learn more about a Thermal Imaging survey or become a surveyor, please contact Ray Newton on 01977 682084 or email thecommunitycentre@outlook.com

12 Months of Learning and Doing Solar Power, Storage Batteries and Smart Meters

At the first scoping meeting with Locogen Director Stuart Hamilton, he commented that 'given the changes in feed-in-tariff and the scattered arrangement of our village buildings it looks like your best options for sustainable power will be on-site generation and consumption'.



On that basis when the opportunity came from the Peoples Postcode Lottery to fund the purchase of solar panels and a Thermal Imaging Camera – we grabbed it.

We only had two weeks to obtain the necessary quotes before submitting our application. Three months later we had almost forgotten about it when we got notification of our success.

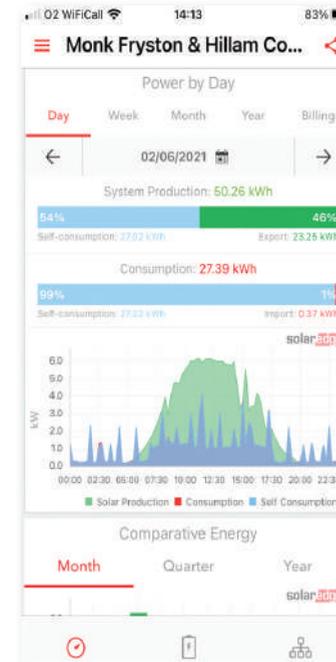
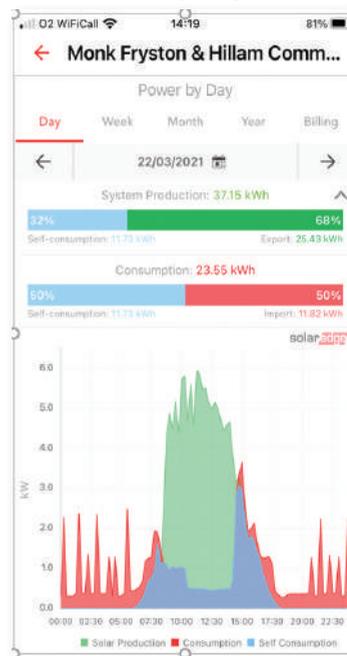
Then the real work started as we set up a procurement team, obtained competitive quotes, assessed their relative merits and discovered that we could buy an electricity storage battery to keep some of our surplus generation and use it for the darker hours or during peak demand.

The process was a big learning experience. Under consideration were the size of installation you could have, how to manage a larger than standard installation, what were the best angles for solar panels, how to measure their performance in real time and what were we using the power for?

The Community Centre is used from 7am to late most evenings and therefore there is a long consumption period plus overnight use for fridges, wifi and security.

The solar power generation system, apart from the battery, was installed in March 2021. It has functioned very well and to date we generate as much power as we use.

The beauty of the on-line information app



sewage pump. We found in the end an immersion heater switch linked to a pump was causing the spikes. One flick of this switch and the mystery was resolved and our power consumption dropped immediately.

Without the app information, we did not know of this problem; now we need a gas smart meter, to check if we have solved the hot water supply problem completely as we may now be burning gas instead.

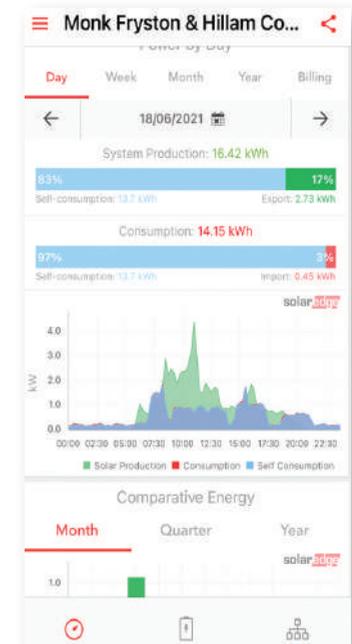


is that once you understand the data it is almost like reading a book with a daily story of consumption and generation activities. It has also revealed some energy consumption spikes which are still under investigation.

The installation of the storage battery during a rainy and cloudy May has been a revelation. Even on very dull days the Community Centre has been powered by self-generated solar electricity for a full 24-hour period.

We will shortly be able to record how many days the Centre has not drawn power from the grid.

As the days grew warmer, we started the process of systematically turning off items which were the potential causes of the energy consumption spikes, such as the heating system, the fridge freezer and the



Planning for the Future

Case study: The Community Centre's journey to become Carbon Neutral

The idea of a village Community Centre was conceived in 1969, building started in 1972 but stopped in 1975 when enthusiasm and resources had been exhausted before the building was finished.



The original Community Centre with Patio in 2011

It opened in 1982 when a group who ran the village Youth Club decided to finish the Centre. From there things steadily progressed and the Youth Club and other activities flourished. Energy efficiency and insulation were luxuries that were not available on a limited budget. By 2011 the time had come to extend. This is when Selby Council had a say and the new extension was built to the latest planning specifications with enhanced wall insulation.



Community Centre with first extension in 2013

No sooner than it was finished when plans were afoot in 2013 to extend again to house all the activities needed including the new Youth Club and Scouting groups. A stop gap was needed and a Conservatory was quickly added. This came with plenty of built-in insulation and energy saving LED lighting. In just two years, our knowledge of energy efficiency had moved on considerably. The Community Association decided to take a step towards becoming Carbon Neutral by installing underfloor heating and more enhanced insulation.

Neither the conservatory supplier nor the builder had installed underfloor heating before, so we were taking an innovative step towards a Carbon Neutral future.

The next step was the redevelopment in 2014. Out went the old lighting and in came zoned LED lights; out went the old overhead electric bar heaters (suntan anyone?) and in came a full retrofit underfloor heating system. The hot water to feed the underfloor pipes came later that year when a grant for a gas connection from Old Vicarage Lane and a boiler was obtained. We were entering the 21st century. All the new building works complied to the latest standards. The payback from all this new work was that the Community Centre was consuming far less energy in spite of more than doubling its size and its use!

Loan repayments were completed over for the next few years and in 2019 following a public meeting to discuss future developments at the Community Centre the CA Trustees agreed that any future developments should be sustainable ones.

Soon after in 2020 the CA decided to launch the Monk Fryston and Hillam Sustainability Project with the aim of making all the Community Buildings in Hillam and Monk Fryston carbon neutral by 2022.

We have made great strides since then as reported earlier... but the journey is far from over.



The Community Centre in 2014 with the Extension (2011) and Conservatory (2013)

Planning for the Future

A £100 million investment in Our Village – it's true!

The National Grid have announced a project called Yorkshire Green to upgrade and reinforce the high-voltage power network, so that more low-carbon energy reaches homes and businesses in Yorkshire and further afield from the big expansion of wind farm capacity by 2030. Their offshore output is planned to grow from the current 8.5GW output to 40GW and this will be enough to power every home in the UK.

The substation at Rawfield Lane Monk Fryston is an important link in the National Grid. It is proposed to build a new additional 400kV substation beside it and this will connect into the existing Monk Fryston substation. Part of the proposal will upgrade the existing overhead cable network.

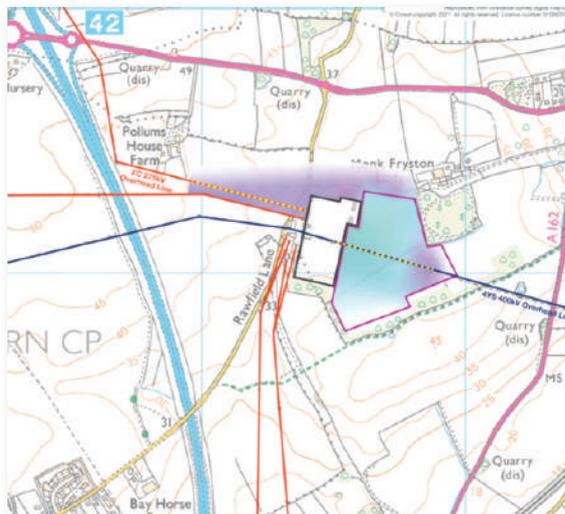
If all goes to plan it is hoped that the work will be completed by 2028 and will cost around £100m. A consultation process is underway which you can take part in; more details of the proposals can be found by going to the websites or following the links: -

www.nationalgrid.com/uk/electricity-transmission/yorkshire-green

or

What are we proposing in the Monk Fryston substation area? | National Grid ET

There are two more proposals for this site to improve the electricity supply network. These are for an electrical storage and management facility; namely an electrical battery farm and an array of eleven 4.5MW gas powered generation engines. Both these facilities are designed to meet surge and peak consumer demands, thus keeping the lights on.



Planning for the Future

Next steps - Carbon Neutral versus Net Zero

Anyone can be forgiven for confusion over the range of new terms commonly heard in day-to-day news items about climate change and energy concerns. Some of the more commonly used ones are Carbon Capture and Storage (CCS) and COP 26. The former means catching greenhouse gas emissions during power generation and locking them into something such as certain types of rock or injecting them back underground. COP26 refers to the Conference of the Parties. The 26th meeting of the countries that signed up to the United Nations Framework Convention on Climate Change. COP26 takes place this November in Glasgow and will be an important event for all of us.

Two more phrases frequently heard are 'becoming Carbon Neutral' and 'aiming for Net Zero'. Our Sustainable Buildings Project has been set up to make our Community Buildings Carbon Neutral. So how does this differ from Net Zero?



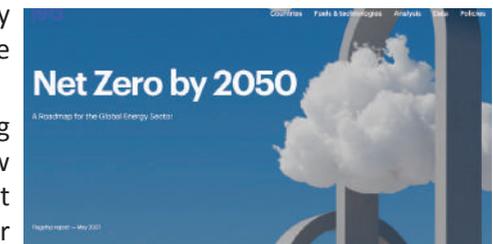
Our aim is quite narrow but achievable in the time frame we have chosen for Community Buildings. The Carbon Neutral aim is to operate our buildings in such a manner that we do not discharge any

greenhouse gases into the atmosphere. This can happen by a combination of several approaches;

- **reducing how much energy we use**
- **generating our own energy**
- **decarbonising our heating systems by using sustainable energy**

Sustainable energy means electricity from a source such as the sun, the wind or Biomass.

Net Zero is a much more challenging target and it involves all of us and how we live our lives. The Government has set a target of making our



country Net Zero by 2050 and various percentage targets on progress towards that goal by 2030 are announced regularly as policies are developed. Net Zero is the sum of all our collective UK greenhouse gas emissions that can be offset or mitigated. These targets sound impossible but already various technologies are being developed to meet these targets.

Technology is wonderful and the International Energy Agency (www.iea.org) provides an excellent showcase of what is being developed but to achieve the Net Zero goal over the next few years, we will all have to change what we do and how we do it and reduce our personal emissions. This might involve how we heat and light our homes, what sort of cars we drive and how we travel, but also what type of food we eat and how frequently we throw things away rather than repair them.

The encouraging thing is that by achieving Net Zero we will bequeath a more sustainable place for our young people and future generations to live in.



Planning for the Future Finding and Securing Grants – How can you help?

Finding Grants and then persuading Funders to award you their grant requires a combination of tenacity and skill. However, no matter how diligently you do your research and how well you write the application you must keep three key components in mind in order to succeed .

Your application must meet all of the Grant criteria.

Your application must stand out from the competition and provide excellent reasons why the grant should be awarded to you as most funds are oversubscribed.

Your application must demonstrate that you have the overwhelming support from your community for your project.

Everyone is busy nowadays, but it is easier than ever to take part in surveys even if you are going to say you don't support the project. They are available both on line or by scanning a QR code and paper surveys are always available too.

So - How can you help?

Next time there is a survey please take part.

hold a community meeting to showcase what we have done so far; explain how we hope to go forward and hear any ideas you have for the project.

Look out for more details on local facebook and nextdoor sites or contact us and we'll keep you informed.

Planning for the Future What do WE and what do YOU do next?

From the outset the partners objective was to do something to reduce the amount of greenhouse gas emissions from their buildings and to give young people hope for the future. The project is making our buildings carbon neutral, thereby 'Future Proofing' them. At the same time, they wanted to provide models for our community and others like them as preparation for the day when we all have to change to sustainable energy solutions.

We have made a start in Hillam and Monk Fryston and are already learning lots of things that we want to share honestly with anyone who cares to know.

Generally, heating is responsible for a third of UK emissions. Most people are already aware that gas central heating boilers will be phased out some time in the near future. We don't know yet with any certainty when that day will come. Currently, the Government is undecided whether the best solution will be air source heat pumps, perhaps hydrogen gas boilers or some other solution.

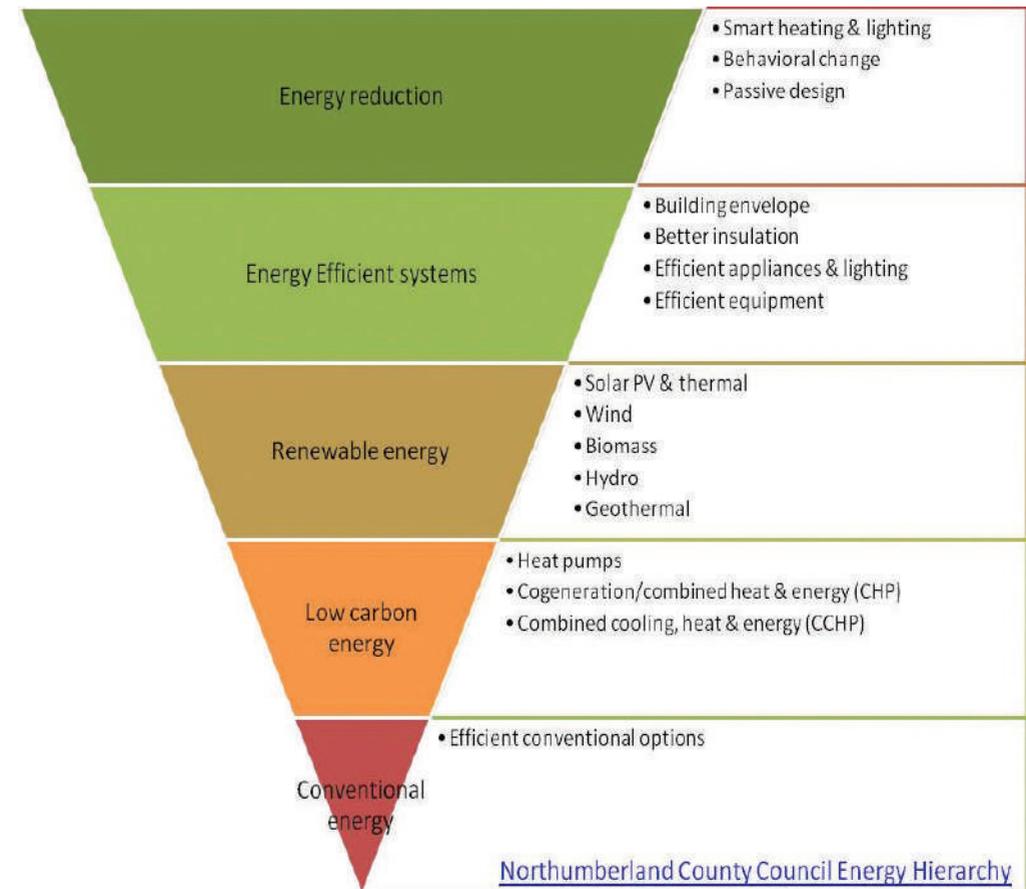
They do want to encourage everyone to improve the energy efficiency of their homes or business premises. The mantra is Fabric First. Meanwhile they will build the capacity to supply and fit the heat pumps and promote energy efficiency work. Anyone who has recently tried to get a quote for these types of work however will have struggled as the new industry is in its infancy.

The focus initially will be on investing in improving the energy efficiency of our social housing stock, encouraging the rental sector to make energy improvements and supporting the public buildings sector to champion the change to sustainable energy solutions. For most of us, there is no need to rush our decision making, instead we should start to understand what our options are and undertake the Fabric First work and if our gas boilers need replacing, consider a sustainable energy replacement.

Our next step is to continue future proofing our Community Buildings and provide working sustainable solutions so we can share the learning and knowledge as we acquire it.

Your next step could be to sign up for a Thermal Imaging Survey of your home, then at least you will know where you can make a start.

Planning for the Future How to becoming Carbon Neutral? Fabric First!





Want to know more? Have some feedback to give?

If you have questions about anything in this booklet, want to get involved with the project or simply give feedback – please contact

Ray Newton - Project Manager on **01977 682084** or **07706 795334**
or email

www.mfhcc.com/sustainability-project/news-about-us/contact-us/