

# THE HEAT IS ON

*The changing climate is already having an impact on organisations' buildings and operations. Here, four members of the Fit for the Future network reveal what they are doing to build charities' resilience for the future.*



Anna Frizzell is sustainability manager at the RNLI and a board member at Fit for the Future

“SUSTAINABLE” IS a word found in the strategic discourse of most charities, whether it relates to financial sustainability, sustainable resource management or having a future within a wider social and environmental context. It concerns the intention to continue operating for a long time, and is central to realising organisational visions, whatever those may be.

“Environmental sustainability”, on the other hand, is often an outlier, sometimes seen as being “nice to have” in terms of honouring wider social responsibilities and ethical considerations, rather than being integral to achieving core missions and goals. It is, however, increasingly clear that environmental sustainability, rather than being an add-on, is crucial for securing a long-term future for our organisations, and is at the heart of achieving our missions, even if they seem unrelated on the surface.

## SUSTAINABILITY AND MISSION

The RNLI's core mission is to save lives at sea, and we can continue to do this over the coming decades only if we build resilience, adapt to changes and ensure our operations are efficient and reliable. In a world of finite resources and a changing climate, this means moving towards practices that: we can trust to truly sustain the organisation over the long term; ensure our donations and funding go as far as possible; and guarantee our assets and resources will stand the test of time.

These things also tend to benefit the wider environment, which is inevitably the context in which we need to operate over the years to come.

Back in 2012, the RNLI knew its volunteer lifeboat crews' lifejackets were due to be replaced with a new design, and that there would be 5,000 old ones to dispose of. It was an iconic piece of kit but was at the end of its service life and expensive to maintain. The jackets had been there for medal-winning rescues, thousands of lifesaving moments ... We owed them (and the environment) something better than landfill. So the RNLI's “235 Made for Life” range was developed, with products such as bags, wallets and tablet cases made from the lifejackets worn by our brave volunteer lifeboat crews. This turned a potentially negative disposal impact and cost into a positive opportunity for people to own a real piece of RNLI history, and provided additional income to invest in our activities.

## WHAT DOES RESILIENCE LOOK LIKE?

We are seeking to build resilience in a number of ways, one of which is switching to generating our own renewable energy where possible. By the end of 2018, we had installed 26 solar photovoltaic (PV) arrays – collections of solar panels – totalling 640kW, along with 28 heat pumps and a wind turbine.

The ways in which these technologies are “sustainable” are three-fold:

- They generate energy for us and thus reduce our dependence on external energy providers and fossil fuels;

importance and, at the RNLI, we have undertaken projects to ensure we are not unnecessarily wasting resources

## “Some charities are already counting the costs of extreme weather events”

- They create an income as we are paid for electricity that is supplied back to the National Grid via the feed-in tariff, as well as save us money on the energy we would have used. During 2018, our renewable energy sources generated a total output of 840,000kWh, equating to £160,700 in earnings and savings;
- They benefit the environment – these technologies are helping to address climate change by switching polluting fuels to clean, renewable fuels. It's a win-win.

such as energy and the associated budget that goes with it. By replacing energy-intensive and expensive air conditioning in our computer server rooms in Poole with EcoCooling evaporative cooling systems for example, we saved 451,300 kWh of electricity, 199,650 tonnes of carbon and £45,000 a year. Again, a win-win scenario.

We also carry out refurbishments on our coastal lifeboat stations, improving the building fabric, upgrading the lights and installing heat pumps and solar PV where feasible. The results are more user friendly, comfortable buildings and a reduction in heating loads of 72 per cent.

## BECOMING FIT FOR THE FUTURE

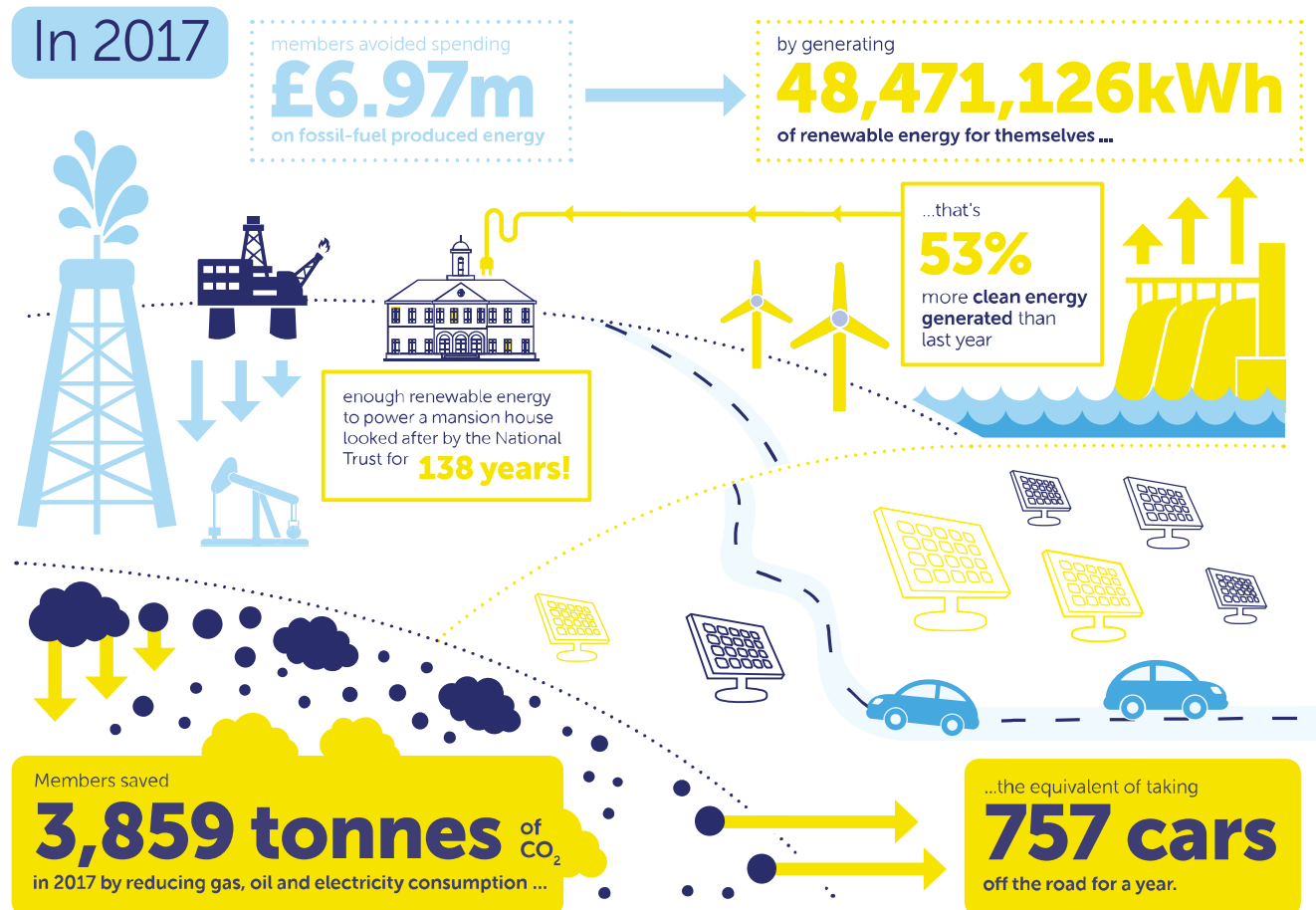
Embedding sustainability can seem a complicated task, especially for organisations that are just starting out on the journey and trying to connect all the dots together. There is so much to think about: where to start, ensuring funds are invested wisely, being able to present a solid business case for sustainable options and getting senior buy-in. That's where Fit for the Future, a network for environmental practitioners that the RNLI has been part of since 2013, comes in.

Fit for the Future is a solution-sharing network. It enables an honest and open exchange of practical solutions, knowledge and advice as organisations seek to become more sustainable. No organisation should be spending precious time and money reinventing the wheel when, more often than not, the solutions are already out there. Neither should practitioners need to work in isolation.

Fit for the Future provides a personal support network of hundreds

## OPERATING EFFICIENTLY

Being efficient with the money and resources we have is of huge



| How Fit for the Future members have made a difference

of people from a diverse range of organisations who are committed to sustainability and able to help and offer advice to each other.

There are more than 100 organisations in the network including charities as diverse as Cancer Research UK, Guide Dogs, the Field Studies Council, the RSPB and Amnesty International. The common ground is that all want to continue to operate into the future – all want to be sustainable. Fit for the Future also has organisations from the heritage, public and cultural sectors in its membership, which creates a huge pool of knowledge and resources to tap into. By working together, charities are saving time, money and resources that can be redirected towards their core purpose.

Fit for the Future was set up by the National Trust and the sustainability charity Ashden in 2012. Its vision is that all organisations become climate friendly, adaptive and resilient. “Climate friendly” means that organisations reduce negative environmental impacts that could exacerbate climate change and increase

positive ones. “Adaptive” means having the tools, knowledge and resources to successfully adapt to present and future impacts of climate change.

“Resilience” means future-proofing land, buildings and operations, and making money and resources go further by ensuring efficiency.

### WHAT HAS CLIMATE CHANGE GOT TO DO WITH CHARITIES?

Climate change is one of those topics that can seem too big and abstract to relate back to what we are doing now as charities, particularly when there is so much else vying for our attention.

But the latest UK climate projections from the Met Office reveal that the UK is being affected and will continue to be affected in tangible ways over decades to come. Broadly, the projections show increasing summer temperatures, more extreme weather such as heat waves and flooding, and rising sea levels.

These changes mean that buildings of all types will be put under pressure and land is likely to be affected. For example, in 2013, RNLI stations in

north Wales, and the east and north-west of England reported damage after severe flooding caused by a storm surge that swept across parts of the UK coastline.

Some organisations are already quantifying the financial costs of increasingly extreme weather events. The number of insurance claims made by the National Trust, for example, increased from three in 2005 to seven in 2015, according to its *Forecast Changeable* report and, over the past decade, its monthly claim values have risen more than fourfold.

By working together through Fit for the Future, charities can better prepare for the climatic changes to come by adapting their buildings, land and operations. The network has been working with the Met Office to bring its members the most up-to-date information about projected changes and how these might affect their organisations, with an event at the Met Office HQ taking place on 1 May. The key message is that this is a complicated topic, but we achieve much more by collaborating and working together rather than in isolation. ●

## OUR HOLISTIC APPROACH TO ENVIRONMENTAL IMPACT



Mark Bolland is *director of operations at the Field Studies Council*

THE FIELD Studies Council (FSC) is an environmental education charity with 19 permanent bases across the UK. It is trying to take a holistic approach to reducing its environmental impact through the following actions.

**The FSC Carbon Management Plan.** Developed in 2012, the plan details ambitious targets and actions to reduce the FSC's carbon footprint by

40 per cent per learner by 2020. This is being achieved by improving the carbon and energy performance of buildings via a mixture of energy conservation and renewable energy generation, as well as changing systems and processes including transportation, environmental management systems, energy/fuel purchase and supply, and sustainable procurement – as well as behaviour change among staff and visitors.

**Investing for the future.** The FSC's focus has deepened over recent years towards a more all-inclusive environmental model. It is not just about burning fuel and the resultant impacts on global temperatures; there are also water, waste, food, pollution, community, carbon sequestration, biodiversity, supply and material use, and climate change adaptation to consider. The FSC is investing in an Environmental Plan, which will bring all of this work together.

**The Green Fund** encourages environmentally passionate staff to realise inventive ideas that will boost environmental sustainability at FSC centres. Via the fund, the FSC has fitted renewable energy-powered charging stations for visitor mobile phones, sun pipes in internal rooms to improve levels of natural daylight, nature trails through woodland and meadows, and polytunnel projects to support a drive towards sustainable food.

**Renewable energy.** The recent procurement of an organisation-wide renewable electricity supply contract means that around 50 per cent of the FSC's energy use comes from renewables. The next step is to identify ways to increase this figure to 100 per cent. The barriers are mainly due to infrastructure beyond the FSC's control as well as a need for transport; however, finding ways around limitations is the purpose of the Environmental Plan.





*Twizy electric cars are fun and engaging, and save the FSC 50p-£1 per journey*

The FSC currently has:

- Biomass (wood-fuelled) heating at eight sites;
- Solar thermal systems, which work by heating water, at four sites;
- Air and ground source heating at three sites;
- A hydroelectric turbine at Blencathra;
- An Archimedes screw in the former wheelrace at Flatford Mill to generate electricity from the river flow;
- Solar panels at eight locations.

The FSC buys all of its remaining electricity from a renewable supplier.

The off-grid nature of the FSC's locations means it still relies on fuels such as oil and propane gas for heating and catering, although there is recognition that it could become completely self-reliant with continued investment.

**Biodiversity.** As an environmental education charity, the FSC is keen to promote biodiversity and educate visitors about it. We observe and record biodiversity and contribute to national data sets which are used by scientists and environmentalists

to understand biodiversity changes and trends. Daily observation of moth populations have been going on at some FSC sites for as long as 50 years. Via £1.2m of lottery funding, the FSC is also running a project called Biolinks, which is about bringing biodiversity data sets together and encouraging those who record biodiversity to combine their knowledge for a wider purpose.

**Procurement.** FSC's sustainable procurement policy is applied across the board for everything the organisation buys, and is helping to improve the organisation's environmental footprint. The policy is largely centred on buying local, ensuring "food for life" and sourcing materials responsibly. There is also a process of encouraging sustainable practices, and engaging

“ Sustainable procurement is applied across the board for everything the organisation buys ”

All centres have some form of manmade habitat to encourage biodiversity, and there is active support for certain species. For example, at FSC Orierton, there is a bat roost which is known to be one of the biggest maternity roosts in the UK, and the FSC's property processes continue to work around that and invest in making sure that remains the case.

with companies and suppliers to see how environmentally supportive their own processes may be. The use of the policy has led to mixed results but, over time, the FSC can use these enquiries to benchmark their supply chain impacts and drive wider consideration of sustainable practices throughout all of the products and services it uses.

**WHAT'S NEXT?**

The biggest opportunity the FSC has can be found through its staff, who tend to have concern for the environment at their core. It is felt that anything can be achieved when there is a big desire for best practice, and the FSC believes it can demonstrate environmental best practice at its uppermost limits while continuing to educate and influence environmental passions further afield.

The biggest challenge the FSC faces will be about resilience to climate change. The FSC has coastal sites and buildings in remote and exposed locations, so future design will very much be about ensuring its infrastructure is capable.

or manage. The centre was awarded a grant from the Rural Carbon Challenge Fund with match funding from the FSC and the Lake District National Park Authority to install the hydropower plant in 2012.

**Water.** Blencathra is fed by a natural spring located remotely from the centre. The water is filtered, treated and distributed to the centre and the adjacent farm as part of a community project. Natural water can become less available in the summer, so the FSC is considering further water sources, perhaps via a dedicated borehole located in the centre grounds. The centre's waste water is also treated on site using a filter bed system and processing tanks, which

challenges such as single-use plastics. The centre also works to encourage visitors to support sustainable resource use. The centre's food and green waste is separated and processed separately, with some on-site composting.

The next drive at Blencathra will be to encourage a reduced impact from its food chain. It already aims to buy local, although the more food that is generated on site, the lower the effect the centre will have.

**Biodiversity.** Recording and encouraging biodiversity is central to the work the FSC does. Aside from offering education on biodiversity and living ecosystems to school groups and members of the public, manmade habitat and microclimates are built to enable certain species to flourish. Observation points have been set up so visitors can view nature first hand. There are active bat roosts at Blencathra, which are protected, and staff aim to engage visitors at all levels to relay the importance of supporting natural ecosystems.

“It is felt that anything can be achieved when there is a big desire for best practice”

**BLENCATHRA FIELD CENTRE**

The FSC's Blencathra centre is a fully off-grid, residential environmental education centre in the heart of the Lake District that runs entirely off renewable energy.

**Renewables.** The installation of solar PV, biomass and hydropower plant has led to a 90 per cent reduction in grid-supplied energy.

- The 300kW woodchip biomass boiler replaced the old oil boilers to provide heat, and this reduces CO<sub>2</sub> emissions by 155.5 tonnes per year while saving more than 20,000 litres of oil.
- The majority of the site's electricity is provided by a 35kW hydroelectric turbine in a stream approximately 1km away from the site. The hydro system is supported by a 10kW solar panel array.
- At times, the centre needs no electricity from the network, and whatever is needed to supplement the site is provided by Ecotricity.

**Challenges.** The main challenge involved with the hydropower system was land ownership and the availability of a suitable water source. Through negotiation with local land owners, the FSC was able to secure access to a stream on land they did not own

naturally remove pollutants through bacteria and makes Blencathra's water needs completely off grid.

**Electric vehicles.** A charging point was installed at Blencathra to enable two “pay as you drive” low-emission vehicles to operate from the site. The electricity used to charge the vehicles is generated by the hydro, making this a particularly green way to travel.

These vehicles can be hired by anyone, encouraging car-free visits to the area and enabling people to explore the Lake District in a cleaner, quieter way. Each “Twizy” has a top speed of 50mph and range of up to 56 miles. The cars are also used by FSC staff to access local goods and services. Just one 8km round trip avoids 1.74kg of carbon dioxide entering the atmosphere and, because the energy that powers the vehicles is free, the FSC saves between 50p and £1 each time a Twizy is used.

The Twizys are considered fun and engaging, and they are widely known within the community, which helps to encourage sustainable activities further afield.

**Waste.** The centre recycles virtually all possible wastes, and actively works to educate visitors about global waste

**WHAT'S NEXT?**

The next phase for the centre is adaptation to climate change and building resilience. There is an increasing need to consider how rising temperatures and adverse weather patterns might affect the delivery of education and affect how the FSC might continue to function at the centre. A borehole system might be the most appropriate course of action to take to ensure water resilience.

The stream's water flows can also have a significant impact on electricity generation via the hydro plant, and there are times where the plant cannot function. The more the centre can do to reduce energy use, the more the FSC can do to support the UK's drive to become 100 per cent renewable.

Blencathra is considering future projects such as battery storage, but the most likely focus will remain energy efficiency – reducing the amount of electricity that is needed is far more sustainable. Consideration is also being given towards anaerobic digestion, and working more closely with the community to consider what else might be fed through FSC infrastructure to support local sustainability and resilience. ●

## WE MUST ADAPT OUR PROPERTIES TO A NEW CLIMATE



Keith Jones, *national specialist on climate change at the National Trust*

MITIGATION AND adaptation are two words that are commonly used when considering climate change, and it might help to start out with a general definition.

- Mitigation is the lowering of our impact on the climatic systems, eg reducing CO<sub>2</sub>, methane, NO<sub>x</sub> and so on. These are the main players in what are called greenhouse gas emissions.
- Adaptation is about accommodating the impact that climate change is already having and will continue to have in the future. Examples of this are adapting sites and buildings to cope with higher and lower temperatures, storms, pests and diseases, poorer air quality and so on.

For an accountant, mitigation is a much simpler concept. Having a target and lowering emissions by a certain percentage based on simple input, throughput and output factors is an easy concept to convey. The UK is committed to an 80 per cent reduction in CO<sub>2</sub> emissions by 2050, for example – this is a simple concept (even if it is easier to say than do).

Adaptation – living with the impacts of a more dynamic climate – is a much more complex issue. The dynamic nature of the climate and the impact of this on assets, management processes and natural systems that were developed, built and grown in a different climate is a bigger psychological leap.

In many cases, managers are basing their decisions on the absence of historical impact, and assuming that impacts will not happen in the future – such as building in a flood-risk zone based on the frequency and probability

of flooding historically. There is a risk but they reason that, if it has not happened before, then it will not happen. But factors are changing, and changing quickly. Examples of this are rising river-level extremes. Drying out in summer means that large deluges sweep down a valley, and an impact on a site becomes more likely.

Ensuring the longevity of any new structure or infrastructure means taking projected local climatic changes into account. It also means that the assets we already have might need adapting to cope with new extremes, whether that is better drought and heat management as record temperatures continue to be broken, or better drainage and flood management strategies to cope with higher volumes of rainfall and increased risk of flooding. Or, perhaps, even withdrawing from some assets and letting nature take its course.

### “ Looking after natural and built assets that were constructed to deal with a different climate is a challenge ”

The National Trust has made it clear in its *Playing Our Part* strategy that climate change poses one of the biggest threats and challenges for the charity. Looking after natural and built assets that were constructed to deal with a different climate is a challenge. Times this by 21,000 built structures and it becomes huge. It is not about just historic structures but modern buildings as well.

The core purpose of the National Trust, which is to look after special places for everyone, is not under threat, but how we do this will have to evolve as pressure from our changing climate forces all of society to change.

Here are a few examples of how the extreme is affecting the bottom line, or the income the charity uses for this core purpose.

- The Beast from the East cold wave last year caused a significant

reduction in visitor numbers at the start of the year (more than 25 per cent down) with the resultant impact on various income streams. Twelve months later and the shift in temperature to over 21°C in February would challenge any visitor-based business model.

- Wind incidents are affecting property access; for example, Penrhyn Castle in north Wales had to close to visitors for 14 days in 2017 because of high winds and the risk to safety posed by the tree-lined drive.
- Conversely, we are seeing evidence that very hot days mean people are loath to get into a hot car, and instead take a hot walk to a cooler mansion or castle.
- Meanwhile, the infrastructure at coastal properties, such as car parks, is being put under pressure. They were built to cater for a certain volume of visitors.

The interwoven factors will force us to look at business planning in a different way in the future. Uncertainty will be the only certainty, but we can use projection models provided by the Met Office to give us a better understanding of the local changes that are likely to occur. A Fit for the Future event in partnership with the Met Office this May will explore this very issue, and how charities can make use of the data.

The scale of the changes is often difficult for people to relate to, but we can bring this down to a simple, local level to demonstrate tangible impacts and how practical action can be taken to adapt. Take the example of a National Trust holiday cottage in Snowdonia, a listed structure that was suffering from a quite significant damp problem. The damp was being caused by the increasing wind-driven



rain affecting the structure in a new way and, for the first time, the building was not drying out in summer. The solution for the holiday cottage was to use a traditional technique that could be seen in the area: basically, building a vertical slate roof on the exposed end of the house to protect it from the penetrating rain. This is an old technique on an old building, but was also a challenge for the planning authority because of it meant a significant change to a listed building.

Finding the best practical solutions

is the challenge, which is where collaboration comes in. We work with many other charities and NGOs looking at stress-testing elements through Fit for the Future. One of the member organisations, for example, has stress tested its pension investments in terms of climate change factors, looking at how vulnerable the fund's returns are to climate change impacts.

Modelling overheating in new visitor buildings will be a growth area because of stock spoiling, increased energy costs for cooling, and reductions in

dwelling time in a hot building.

Sustainability in its true form is about managing change to ensure a resilient future, and this will become more of a challenge as the rapidity of climate extremes grows. We usually build or make commercial decisions based on a climate that is as certain as it has been over the previous decades. The years 2040 and 2050 are not far away, though, and ongoing climatic changes will mean a different environment to the one we are building into today. ●

## HOW TO GET STAFF AND VOLUNTEERS INVOLVED



Hannah Laywood is sustainability engagement officer and Mark Hyatt is head of technical services and sustainability at Guide Dogs

AT GUIDE Dogs, environmental sustainability has always been about encouraging staff and volunteers to change their behaviours and make the right choices. This is not because they have to, but because, deep down, they know it is the right thing to do. Sustainability means we can reduce our impact, build resilience and ensure we make the best use of funds.

Communicating these benefits has been key to success, but there is another important consideration. As a sustainability team, we have focused on what staff care about and value most, and ensure that they understand how sustainability has a positive impact on these things.

### WORKING WITH VALUES

In 2013, Guide Dogs introduced an environmental and sustainability policy and developed the A Different Way of Thinking strategy. We took time to understand our staff and what they valued and considered important

in their day-to-day roles. A common theme was a passion for dogs and how, through them, they could help people with sight loss to gain independence. We concluded that if working sustainably was seen to have a negative impact on this work, it was never going to be successful. So the objective was to allow staff to do what they do best, but encourage them to find ways to do this with the minimum impact on the environment. All that was asked was that they think a little differently about everything they do.

Savings made from efficiencies are converted into relatable items such as dog food, supporting a puppy in training or perhaps a guide dog partnership, to make them more realistic and tangible. We find this helps staff engage more with the benefits and values.

### FUN, CREATIVE AND EMPOWERING

The ethos behind the strategy is that thinking differently is cost free and therefore we have opted not to set a budget. Instead, we decided to invest in people and created the role of sustainability engagement officer to lead on the implementation of the strategy through a behaviour-change programme.

The initial focus was on engaging with the grassroots of the organisation, taking a bottom-up approach. The journey began with an awareness tour, introducing sustainability at team meetings across Guide Dogs. Staff were

encouraged to volunteer to be part of "green teams" or become the rep for their site, and managers were asked to support the initiative by allowing individuals to get involved. The emphasis was on making sustainability meetings fun and creative, and giving staff the freedom to make changes.

The very first sustainability implementation team (SIT) was based at the National Breeding Centre. The team comprised staff from different departments and their aim was to find ways to work more sustainably and minimise environmental impact. They began by introducing a recycling programme and reducing energy consumption.

In the first year, the efficiencies generated over £30,000 in savings. The overall success of the trial led to the rollout of SITs across Guide Dogs and the start of some fantastic projects.

### THINKING SMALL

An important message has been that even the smallest initiatives can make a big difference. Examples include reusing coffee cups, recycling crisp packets and rolling out a printing reduction challenge. The team in the Guide Dogs leather workshop were inspired to find a use for offcuts of leather left over from the production of harnesses. They are now used to make small gifts, such as key rings and coasters, which are sold in the onsite shop.

There is always an enthusiastic response to projects relating to



biodiversity, for example creating wildlife gardens, growing sunflowers or planting trees. We also set up an annual Green Bin award, which provides an opportunity to highlight successes and reward staff.

#### UNDERSTANDING SYSTEMS AND DATA

One key area in reducing environmental impact has been managing the energy consumption of buildings and highlighting the energy used in business travel. This has not always been easy and there has been a need to challenge old ways of thinking. Some buildings have complicated systems and staff are reluctant to make changes for fear of creating problems, so helping them understand how the systems work and what difference the changes make is key to reducing energy and saving costs.

Energy reduction targets have been in place at all sites for several years now. We have centralised utilities and transport data, report and publish results on the intranet and encourage an element of competition between sites. Data is shared through a live energy dashboard, and facts and figures are circulated in the monthly sustainability newsletter, *Green Matters*.

“Momentum has grown as successes have been highlighted and communicated across the organisation”

This has helped staff to see the difference they have made and how much they have saved.

#### FACTS AND FIGURES

- Electricity consumption has reduced by 29 per cent since 2012.
- Heating fuel consumption has reduced by 15 per cent since 2012.
- We printed 13 per cent less in 2018 than 2017, saving 414,141 sheets of paper or 50 trees.
- All freehold and 25 per cent of leasehold sites send zero waste to landfill.

#### CHALLENGES AND NEXT STEPS

The challenge over time has been keeping people interested and engaged in the environmental sustainability message. A new initiative has been an environmental management system which helps share out responsibility. Everyone is under pressure so it is not always easy and it has, therefore, been important to support, encourage and

help teams make change happen. Momentum has grown as successes have been highlighted and communicated across the organisation.

We have found being part of Fit for the Future very useful on our sustainability journey. We have developed a good network of contacts and the assistance we have gained has been invaluable. It is also great to be able to share our experiences and provide support to others who are trying to make a difference. ●

*Fit for the Future is offering all Charity Finance readers the opportunity to try out the network. Contact project officer Hannah Mann on [info@ffif.org.uk](mailto:info@ffif.org.uk) for a chat about where you are at on your sustainability journey, and to find out which organisations and practitioners might be able to offer you advice based on their own experience. You can check out the network's upcoming events and read more at [www.ffif.org.uk](http://www.ffif.org.uk) or follow on Twitter at @F4F\_Network*