



SUSTAINABILITY IMPACT REPORT 2019

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CHAPTER 1

**STAFF
ENGAGEMENT**

London North West University Healthcare (LNWH) NHS Trust

The London North West University Healthcare NHS Trust has been focusing on better management of waste, including recycling and diversion of waste from landfill, as well as improving communications and waste education.

Brenda Brown, Facilities Contracts Manager for Northwick Park, St Mark's Hospital and Ealing Hospital, chose to work with Grudon Waste Management, which provides a Total Waste Management service.

She said: "The Trust is very keen to improve on sustainability and is proactive in its support in improving waste management. The most important thing for us is to achieve a cost effective, environmentally friendly, sustainable waste management operation and delivery of reduction in waste, as well as raising awareness around responsible use of resources."

The project has included appointing dedicated waste team leaders at each acute hospital site as well as waste awareness training to engage with both NHS employees and the public. Practically, this project focused on improving signage and posters to help increase segregation and reduce contamination and implemented waste carts for all clinical waste streams. This project enabled advice and support to be provided by the on-site waste teams and improved liaison with infection control teams and the relevant department managers.



Successes:

Cardboard

Increased training has seen a year-on-year projected 61% increase in the amount of cardboard now segregated and baled on site at Northwick Park Hospital, prior to it being sent for recycling. In addition, where it is practical, cardboard is removed from general waste to avoid incorrect disposal.

Statistics show:

April 2017-March 2018 – Total of 47.780 tonnes of cardboard recycled

April 2018 – January 2019 – Total of 64.120 tonnes of cardboard recycled

*61% is based on assumption that 6.4120 tonnes per month will be achieved throughout the full 12 month period, therefore by March 2019, the figure should be 76.944 tonnes

Offensive waste

Grundon worked with the Infection Control team, ward staff and departments to help them understand how to implement diversion of offensive waste from the infectious waste stream. Trust-wide, this has led to a 3% increase 2017/18 vs 2018/19 in taking offensive waste from the infectious waste stream.

Statistics show:

April 2017 - March 2018 there was a total of 618.22 tonnes of Offensive Waste which was 37% of the total amount of Clinical Waste produced on site (1,635.29 tonnes).

April 2018 - December 2018 (only nine months recorded to date) there was a total of 473.352 tonnes of Offensive Waste, which was a 40% total of the Clinical Waste (YTD) for the same period, which is 1,180.047 tonnes.

Toners

Staff training helped ensure the success of a trial installation of extra toner recycling boxes at different locations throughout Northwick Park Hospital, resulting in an impressive 300% increase in the diversion of toners and cartridges from the general waste stream.

Zero waste to landfill

General waste is now sent to Grundon's Energy from Waste facility, where it generates green electricity for export to the National Grid.

Going Forward

Given the success of the toner recycling at Northwick Park, this will now be rolled out across other sites with the necessary training provided.

Grundon is in discussion with catering contractors with a view to further segregation of food waste at ward levels and diverting it towards Anaerobic Digestion facilities, where it is processed to generate

green energy and bio-fertiliser.

To keep on top of progress and ensure all necessary training is in place, all wards and departments are audited three times a year, enabling the monitoring of trends and to ensure standards are maintained.

The next 12 months will see increases in overall dry waste recycling, as Grondon plans to implement additional mixed recycling, and a reduction of bulky waste through utilising re-use scheme 'Warp-It'.

Royal United Hospitals Bath

The Royal United Hospitals Bath have been focusing on 'Plant Room Tours' which were carried out during a national sustainability awareness week in 2018. The aim of the tours was to engage wider hospital staff in the work that the Estates and Sustainability teams carry out on a daily basis and to educate staff of the complexities which the teams face. It was a great opportunity for the Sustainability team to collaborate and share their plant room technology, including the Combined Heat & Power (CHP) and demand side response schemes.

Energy Management

The tour started at the Boiler House and showed staff the boilers used to provide steam on site, focusing on the water treatment process. The team also explained the benefits of having a CHP on site.

Staff were taken to see one of the new generators to learn what they are used for and how the hospital can continue to provide safe care for patients in the event of a power failure. The Sustainability team then described the demand side response scheme which is in place with two of the hospital's generators and the associated benefits for the Trust.

Water Management

Z Level contains equipment which converts steam to hot water and heating. This gave the opportunity for conversation about leaks on site and how to act if one is identified.

The Sustainability team explained that consumption on site is equivalent to 40 continuously running taps and the amount of water saved through the leak busting campaign was equivalent to 18.6 Olympic sized swimming pools.

It was hoped that this would encourage staff to report leaks through the 'Don't Walk By' initiative.

New Initiatives

The team took staff to the Theatre plant room, showing them the 17 air handling units working solely for the operating theatres. Staff learned the importance of air changeover in theatres and it was an

opportunity for the Sustainability team to explain about some of the current projects. For example, the upgrade to LED lighting, and the BMS control panel upgrades which included occupancy control to save energy.

Staff were shown the pneumatic tube (POD) system, showing how samples get around the hospital without the need for porters. Finally, staff were shown the south duct, which runs under the main corridor of the hospital, carrying all types of services. This aimed to provide a visualisation for staff, reminding them when they walk over the corridor of what they had learned.

This project demonstrated imagination and ambition and showed that anything can contribute to efficiencies on site, including the necessary plant required to run hospital services safely. Not only would staff have never seen this enormous equipment before, the team would be taking the opportunity to raise awareness of sustainable practice and therefore reduce costs and carbon relating to energy use and leaks on site.

The strategy was to make sure that information about sustainability was embedded within the tour and that this was easy to understand in order to encourage questions and dialogue. A key part of these messages was to promote the 'Don't Walk By' initiative, encouraging staff to turn off lights, close windows if the heating is on and report leaks. Staff are now far more aware of our demand side response scheme and the CHP, and understand the value of turning off their lights and reporting dripping taps, as well as not opening the windows when the heating is on.

The project was well managed by the communications team and had a clear communication strategy. The team created posters, in line with the rest of the week's suite of resources, which were distributed via the post room and engaged with the communications team to advertise the programme through all other channels. The team made sure to ask participants for emails to include in the write up and provided an article on the success of the tours in the staff newspaper. Following the exceptional response after the tours, the team can demonstrate the change in staff engagement and awareness via the plantroom tours programme.

The deputy director of HR provided this feedback:

“I went on a plant tour today – it was amazing to see behind, below and above the scenes. I think that the more we understand, the more we can appreciate. I found this tour to be very informative and it puts a whole new perspective on the role of the Estates Department - so much complex and important work goes on behind the scenes. Our guides explained the operation of the equipment from the gas fired boilers, CPHU (Combined Power and Heat Unit) and Z level, to the emergency power generators and Air Handling Units for Theatres. They explained the test procedures, maintenance frequency and what was being done to update some of the plant to make it more efficient. The service ducts with kilometres of pipe work and cabling that are right under your feet as you walk along the corridors, plus an explanation of the pod system for delivering samples around the hospital and the problems they encounter, was a real eye opener. It was particularly useful to have a little more insight as to how the hospital got heated etc. and it was good to find out that the Trust is also starting to use solar panels for energy production, which was going to be one of my questions.”

Due to the success of the tours, the team have collaborated with the Education Centre, offering the tours on some inductions such as the graduate training scheme induction. We have also looked to set up tours for specific groups, such as theatres and have been generating a 'Don't Walk By' scheme with posters for each department/ward to encourage them to report estates issues which have a direct impact on energy and water consumption.

North Bristol NHS Trust

This year the North Bristol NHS Trust has focused on diverting a very specific waste stream- small, colourful clinical plastics generated in North Bristol NHS Trust's (NBT) theatre environments- from energy-from-waste, to recycling.

The issue of plastic waste coming from operating theatres was first highlighted by a clinical staff member, Malcolm, in early 2018. At the time, due to China's halt in recycling intake, a large percentage of previously accepted materials were being declined.

Subsequent research highlighted the following issues:

- Some items were not labelled with a recycling logo so it cannot be determined whether they can or can't be recycled.
- Some items generated had no actual use (e.g. anaesthetic face mask hooks which are automatically supplied as part of a pack but are not required at the Trust.)
- Some items were recyclable but were too light and small to be accepted at our waste contractor's sorting plant.

From here, the Sustainable Development Unit at NBT approached Children's Scrapstore in Bristol to ask if they would like to be an outlet for this type of material and sell the items on to their customers- many of whom are schools, artists and youth clubs looking for craft materials. They agreed, and the scheme took shape as follows:

In each operating theatre there is a small box in the anaesthetics corner allowing staff to segregate these small pieces of plastic from the rest of the waste. The contents of these boxes are collected, inspected, packaged and sent to the Trust's waste store by theatres staff, and from there are collected by Children's Scrapstore.

To raise awareness of the issue beyond theatres and to support our agenda to engage the public on our work, the same materials have also been used in staff/patient/public workshops making jewellery and Christmas decorations. The project has also been filmed and used by the BBC as part of their digital series and served to raise awareness further.

Economic benefits

Although the overall annual tonnage of the plastic waste collected is relatively small (approximately 900kg), this waste would otherwise had been binned as clinical or domestic waste which is expensive to dispose of (saving approximately £328). This project also results in a small reduction (0.02 tonnes CO2e) in carbon emissions from incineration.

The main accomplishment of this project is that it has resulted in increasing awareness among theatre staff about correct segregation and resource use in general. This in turn has resulted in

increased pressure on the supply chain and awareness of the problem via social media. Following pressure from NBT staff via Twitter, at least one supplier (Intersurgical) has confirmed that it will be adding the recycling symbol to its i-Gel cradles. Malcolm's work to promote North Bristol NHS Trust's efforts via the Facebook ODP Forum has also resulted in other hospitals (40+) wanting to pursue the same segregation using the national Scrapstore network.

The project has directly contributed to the development of a 'Environmentally Sustainable Theatres Working Group' which meets monthly and is looking to tackle issues such as PVC recycling, reducing the use of high carbon footprint volatile gases such as desflurane and scavenging those gases that are used. The SDU have given multiple presentations to theatre/anaesthetic teams to highlight how their contributions are building on the Trust's wide-ranging sustainability work which has enthused them further and culminated in the recent creation of a Green Impact team for this area.

From its inception this project has been inspired, led and delivered primarily by the theatre staff themselves, with support from the Sustainable Development Unit team in producing graphics and posters to increase awareness, liaising with Scrapstore, supplying the containers to go into theatres and organising awareness events. However, without Malcolm's original vision and his dedication in searching through and sorting this waste by hand, this project would never have gotten off the ground. The Chair of the Association of Anaesthetists' 'Environment and Sustainability Committee' is one of North Bristol NHS Trust's anaesthetists and she has ensured the national promotion of our work and encouraged anaesthetists everywhere to follow suit, via their quarterly publication 'Anaesthesia'.

Future Plans

We have recently expanded the scheme to include our ICU and Interventional Radiology teams which has diverted a variety of new clinical plastic items from incineration. We intend to continue to put pressure on key suppliers and via the supply chain to review the need for single-use plastic items, push for the introduction of better labelling and raising awareness of unnecessary wastage such as face mask hooks. We will also continue to support the regional work on plastics through membership of the Southern Region Sustainable Health & Sustainability Network's Plastic Action Group.

In the short term, whilst this plastic waste continues to be produced and without an outlet for recycling being available, Scrapstore will continue to collect these items allowing the local community of Bristol to create colourful pieces of art from waste. We intend to commission a larger scale piece of artwork for display on the Southmead Hospital site to create a permanent visual reminder of the issues posed by hospital waste and provide a conversation starter and engagement tool.



Barts Health NHS Trust

This year, Barts Health NHS Trust's Waste Management Team partnered with Skanska's Waste Contracted Management Service to reduce domestic and clinical waste quantities and to increase recyclable waste.

At Trust merger [an amalgamation of five hospital sites], back in 2012, only two hospitals had converted the majority of its soft bagged infectious clinical waste over to the offensive waste stream - a 2/3rds cheaper disposal method. At three hospitals, no staff training or waste auditing at the point of disposal was undertaken. With buy-in from Senior Trust Managers and FM Managers, additional resources were employed to electronically map every clinical room; in the process, obtaining lead clinician's contact details from their responsible area, so that all clinic rooms would be audited for conversion over to the offensive waste stream, thereby educating staff at the point of disposal, to change behaviour.

At the end of 2018, our current offensive waste totals 71.2% [1741 tonnes] v's infectious clinical waste total of 28.8% [703 tonnes]. We successfully implemented and continue to implement our projects aims, delivering value for money, which we re-invest into the teams' continued deployment, so self-generating its essential service to the Trust.

The main goal was to transfer all hospitals sites over to the offensive waste stream; with a threshold set at 60% of all clinical waste, reclassified as offensive waste, to this waste stream and sustain it.

In 2014, we sought accreditation for the newly created Carbon Trust Standard for reducing waste; with no guarantee we would attain it. We were the 1st NHS Trust in the UK to receive the Carbon Trust Standard for reducing waste, receiving 2 years' worth of National recognition - a truly shared achievement in staff engagement.

Through advances in greener waste solutions / processes, the WMT continue journeys in staff engagement, reducing unnecessary waste. For example, the reverse vending machines [re-vending]; developed, by the "reverse vending company" to encourage customers to recycle, the machine crushes and separates empty, used plastic drink bottles or metal cans, holding 10 times the volume of uncrushed bottles and cans, allowing vendors to recycle two virgin materials in large quantities.

The machine rewards depositors with vouchers, incentivising the recycling initiative. We are the first NHS Trust to use re-vending machines; using them in three hospital restaurants. These machines actively encourage everyone using them, to recycle hundreds of thousands of bottles and cans.

Further staff engagement unveiled another massive waste impact on housekeeper's time / use of waste bags, portering time / logistics and domestic waste compaction machine costs / empties. At two hospitals, we have three renal dialysis units, generating an average 200 empty 6 litre HDPE bottles between them, per day, 6 days per week. Another light bulb moment! Collaborating with the inventor's re-vending concept, we developed renal bottle re-vending machines. With buy-in from staff teams, engaging in a genuinely collaborative project; renal staff / housekeepers feed the machine, help crush 200 x 6 litre recyclable bottles per day, reducing bag waste, portering time, transportation moves and compaction machine empties. These bottles are further compacted by baling and collected as virgin HDPE recyclables.

Since 2013's project inception, to 31st December 2018, Sust-N has:

- Completed 560,650 bin audits.
- Sent 32,200 waste audit reports, detailing audit findings / actions.
- Completed waste audits add value to cost savings / increasing waste segregation compliance from 83.3% [2013] to 92.2% [2018] Trust wide.
- 12,082 staff have received dedicated waste behavioural change training, adding value to the Trust; providing evidence of training records / continual assessment of staff waste compliance / awareness, following CQC visits.

In 2018, the WMT contacted Recomed to potentially be part of their fully funded PVC recycling "take back" scheme. This project further gained wider clinical team engagement with theatre staff / anaesthetists, to work collaboratively in capturing, disposed of, used PVC masks and tubing from patients, in Theatre Recovery areas, to recycle via this scheme.

From 2013 to 2018's end, waste compliance / staff behavioural change on this project, has delivered cost savings of £1.5 million, by implementing, sustaining and surpassing our 60% KPI threshold, in reclassifying infectious waste to offensive waste. Barts Health's 2018's percentages for these two clinical waste stream tonnages are: Offensive waste 71.2% [1741 tonnes] and Infectious clinical waste 28.8% [703 tonnes].

Continuing staff engagement by the WMT's interventions / dovetailing Sust-N's auditing processes, will continue to deliver average savings of £250,000 for future years, if ratio levels of offensive waste v's infectious clinical waste are sustained at percentage levels, above.

Advances in waste innovations, greener waste processes and best practice waste treatment methods, led the WMT to collaborate with Eurotec Environmental, who, after 2 years of trials, Trust Board / Environmental Agency approval [lots of internal / external staff engagement], built the 1st UK approved "sterilwave" waste treatment plant at Whipps Cross Hospital - 1st NHS Trust to use it. The plant started processing waste at the beginning of 2017, rendering "safe", over 90% of the hospitals clinical waste, taking away over 17,000 kilometres of road journeys every year, reducing the Trusts carbon footprint by 375 tonnes / improving the air quality of this hospital site / its local community. The plant actively engages / encourages hospital staff to visit, along with regular flows of NHS Trust staff, interested in this new innovation.



Sandwell and West Birmingham Hospitals NHS Trust

Sandwell and West Birmingham Hospitals NHS Trust have this year focussed on implementing a number of programmes around environmental sustainability, good corporate citizenship and healthy eating to help us excel in this area. Alongside a number of benefits, they have (importantly) brought people together as well as involved and engaged our local community.

This included...

Public Health Plan

Led by the Chief Executive and in partnership with Sandwell Metropolitan Borough Council, this Plan is a 'living' project, aiming to be an active partner in the local community and improve long-term wellbeing.

Community Greenhouse Project

Previously derelict greenhouses at City Hospital have been rejuvenated and the Trust works with local volunteers who run the project, growing fruit, vegetables and plants. Produce are sold to the local community, staff, patients and visitors.

'Go Green' Campaign - encouraging patients and employees to make healthy choices

The 'Go Green' campaign incentivises healthy ('green') food options with lower pricing, whilst at the same time disincentivises unhealthy ('red') food options with higher prices. 'Loyalty Card Scheme Vouchers' have been implemented to incentivise green and amber meal choices.

'Live and Work' Apprenticeship Project

This scheme is a fantastic initiative that partners with youth homelessness charity St Basil's, and works to provide apprenticeship opportunities to young people. It also seeks to provide youths who were previously homeless or at risk of homelessness a safe place to live. It is a training scheme that simultaneously provides housing.

Sustainability Champions and Green Impact

A network of 120 Sustainability Champions help with campaigns, events, and sharing of information on how areas more to make energy efficient. An annual 'Sustainability Garden Party' showcases what has been done and asks staff to 'do their bit' to help.

A staff campaign called 'Leave your Footprint' asked staff to take a pledge to be more sustainable. The Trust is currently working on plans to alleviate period poverty. 'FreeFlow' will introduce free menstrual products in a selected number of our female and gender neutral bathrooms for staff and visitors, from March 2019 to February 2020.

It will operate from Sandwell General Hospital, City and Rowley Regis Hospitals. The aim is for 'FreeFlow' to be socially inclusive project on a sensitive matter.



Cawleys Waste Management & Northampton General Hospital

Cawleys Waste Management has been working on a campaign called 'Small Action Big Impact', working to highlight the power of the individual. They believe that this project is also the essence of staff engagement.

The 'Small Action Big Impact' (SABI) project encourages people to make an environmental pledge to change their behaviour. People who make a pledge join an online community with its own dedicated website <https://www.smallactionbigimpact.com>

The project has been underpinned by a cohesive, well-planned range of communication across different channels from posters to screensavers, and reinforced through a consistent approach to staff meetings and business planning in different areas of the hospital, including clinical and domestic services. The aim was to use the Pledge Days to bring about lasting behaviour change to levels of waste recycling and reduction across the hospital.

The 'Small Action Big Impact' campaign has produced a three per cent decrease in the amount of general waste produced at the hospital site and helped to ensure that what waste is produced on site is clean and well segregated which supports higher recycling rates.

In addition, the campaign has seen over 500 individuals, one in ten staff, make a personal pledge to change their behaviour to help the environment resulting in up to 19,170 fewer plastic bottles and 750,000 fewer plastic teaspoons, straws, cutlery and salad boxes being used each year in the hospital.

The 'Small Action Big Impact' campaign concept and support is provided free to NGH so the first economic benefit is that it is delivered at no financial cost to the hospital. Its second economic benefit comes from improving and increasing recycling through better segregation of waste streams

The 'Small Action Big Impact' campaign includes educating staff during face-to-face conversations on the Pledge Days, and through website and email information about why and how recycling happens. This education is fundamental to changing behaviour and has a direct impact on recycling rates.

Since the Pledge Day and 'Small Action Big Impact' campaign was launched, not a single consignment of pre-sorted waste from the hospital has been marked as 'contaminated.' This compares very favourably across the healthcare industry where contamination is a major issue.

NGH can measure this economically in economic terms of rebates and cash rewards for higher quality recycle, and in terms of carbon reduction by prolonging the embedded energy of the waste materials through second life uses. Over 25 tonnes of cardboard, paper and plastic is recycled at NGH every year giving a carbon saving of 71.5 tonnes of carbon dioxide emissions

While the economic and carbon gain from the staff engagement campaign at NGH is important, the impact on staff well-being and engagement is as significant.

The success of the 'Plastic Pledge' was instantly measurable through a drop in the volume of waste collected on site. The total weight of waste year on year in January 2019 was down by 4.23 tonnes in 2019 following the first Plastic Pledge, saving 12.14 tonnes of CO2 emissions. The first 500 staff to make a pledge to end their use of single use plastic were offered a free, metal re-usable drinking bottle. Momentum and focus on waste reduction was continued with the second Pledge Day which was an WEEE amnesty, highlighting waste from discarded electrical items.

Before the Pledge Days took place, a report on waste levels would be presented and nodded through. Now however team members including clerks and nurses proactively present ideas, and lively discussion often takes place about what can be done to reduce waste, recycle more or end the use of single use plastic.

Plastics account for over 20% of waste streams coming out of hospitals. For this reason, reducing plastic waste has been the initial focus of our staff engagement campaign, and it has been enormously successful. Now, however, the aim is to place more emphasis on the 're-use' element of the waste hierarchy, so that the hospital is playing a more active part in the circular economy.

The Waste Group is a group of eight people from all areas of the hospital. Its remit spans domestic and clinical waste and it looks at plans for the next twelve months and audits and initiatives from the hospital. It meets six times a year and includes staff from infection prevention, pathology, pharmacy, intensive care, domestic supervision and portering supervision.

The 'Small Action Big Impact' campaign is perfect for the staff engagement task at NGH because of its ethos of individual empowerment and actions, working together to have a large cumulative impact, and this is exactly what the hospital will need to deliver results in the year ahead.



SMALL ACTION BIG IMPACT

CHANGING BEHAVIOURS AROUND RECYCLING

NWSSP Procurement Services - Sustainable Development Group

NWSSP Procurement Services offer shared procurement resources for all of the NHS Health Boards and Trusts across Wales. This year has seen an ambitious work programme where the SD Group has taken multiple steps to prioritise sustainability considerations in all of NWSSP's procurement activity. The group has supported training for all Procurement Services staff, centred around the Well-being of Future Generations (Wales) Act, Sustainable Risk Assessments, Welsh Government's Ethical Employment Code of Practice, ISO 14001:2015 and Community Benefits.

On top of this face-to-face training delivered to hundreds of staff, the group has been busy re-developing standard business templates so that wide-scale consideration of our sustainability programme is embedded within the entire contract portfolio, which represents hundreds of millions of pounds worth of NHS Wales' expenditure. This means that all staff will be taking into account the long-term impact of our procurement, and will be aiming to deliver more sustainable outcomes in everything we do.

During the year, online training modules have been developed that will soon be deployed through NHS Wales' e-training system; all carbon reduction targets have been met and the revised ISO 14001:2015 has been achieved. Commitments demanded from suppliers from our suppliers through our tenders with regards to carbon commitments, waste management, recycling, and corporate social responsibility have been improved.

Procurement Services contract portfolio represents over £500M/year of NHS Wales' expenditure. As a department all new contracts now include standard commitments to minimising carbon emissions, improving environmental outcomes, asking suppliers to think about the long-term impact of supplying goods and services to NHS Wales.

The SD group has very worked closely with NHS Wales colleagues to widen the impact of its activities, not only through systematic changes, but also by offering support to those undertaking complex projects where (e.g.) Sustainable Risk Assessments may prove challenging.

2019 sees immediate objectives including improving reporting mechanisms, partly via the development of a sustainability KPI dashboard where individual contracts and suppliers are monitored in terms of their use of eco-labels, fair trade, EMS accreditation etc.

Other plans include an engagement strategy for third sector businesses, and improving links with NHS Wales' Health Boards and Trusts by holding sustainability roadshows and other engagement activities across the country.



CHAPTER 2

CLINICAL

Manchester University NHS Foundation Trust (MFT)

In June 2017, Manchester University NHS Foundation Trust (MFT) launched a new behaviour change programme across two hospitals based at its Oxford Road Campus. Operation TLC is a dual-purpose programme, looking to improve energy efficiency whilst also creating healing environments for staff and patients. The TLC is also a reminder of the three key actions that underpin the project: Turn off equipment, Lights out, and Control temperatures.

The project was developed back in 2012 by Global Action Plan (GAP) and Barts Health Trust. Since Operation TLC started, there have been four outcomes evident across all participating Trusts: improved patient experience and staff satisfaction, reduced energy costs, and reduced carbon emissions.

With an energy bill of over £14 million, MFT are always searching for ways to save money, but also how to consistently improve the quality of care and experience for patients. Operation TLC offered a new approach to behaviour change which directly targeted clinical staff. The project followed a rapid spread methodology, using proven principals of mobilising and organising. A Delivery Group of staff was built to act as an assurance forum, providing steer and direction, as well as providing specialised knowledge in their area. 'TLC' champions were ward managers whose job was to identify and target specific actions and engage their ward staff.

The project ran for three months, with actions monitored weekly, ensuring they were embedded into daily activities, and therefore sustained long-term. To calculate the impact of the project, robust data collection was needed. Over three months, sub-metered data was collected weekly, informal walk rounds took place, and feedback was given from the wards via email and surveys. Finally, full behavioural audits were completed on all wards before, during and after the project.

Over the three months there was a cumulative 500 kWh/day decrease in consumption, so if the actions were maintained over 12 months the yearly electricity savings would amount to over 180,000 kWh. This equals roughly 52 tonnes of CO₂e annually. If the actions were maintained over 12m and using most recent electric costs of £0.11/kWh, then the annual savings would amount to £20,000.

Running the project in partnership with GAP, the cost of the project was £25,000. Taking into consideration salaried time, the ROI for the first year of the project would be just less than two years. Delivering it for a second time would not incur the GAP fee, so the return on investment would reduce by half to a year.

The majority of the savings were identifiable through the significant improvements of turning off lights and switching off equipment. There was a 66% decrease in lights left on in empty areas, a 63% decrease in lights left on unnecessarily (ample natural light), and a 61% decrease in computers and screens being left on unnecessarily.

From the qualitative data, staff were pleased with the impact that the project had, and found wards more comfortable working environments for them, and nicer for the patients. They reported feeling more in control of estates related issues, and more confident in reporting issues, which has a positive impact on staff satisfaction.

The project was initially proposed to the Group Director for Estates and Facilities, who immediately was very interested in Operation TLC and the expected savings it would bring. The Director was interested to see if a focus on one area, which in this case was energy, would lead to greater staff engagement and better behaviours in comparison to asking them to cover a multitude of different topics at once. Although the Operation TLC trial finished at the end of October 2018, progress of the twenty wards who participated continues to be monitored.

Due to the success of the project, MFT is currently in the process of scoping out the next location to deliver Operation TLC. LitelP technology: remotely controlled presence and daylight sensitive LED lighting is about to be rolled out across certain wards, as during Operation TLC staff identified the difficulties they had in controlling the lighting. This is a problem which could have taken a long time to spot, but due to the legacy of Operation TLC, new energy efficiency projects can now be started which benefit both staff and patients.



Royal Berkshire NHS Foundation Trust

Royal Berkshire NHS Foundation Trust provides acute medical and surgical services to patients across Berkshire and beyond and this year has been focusing on waste management, working with Grundon Waste Management.

James Killick, Grundon's Compliance Advisor, says: "The Royal Berkshire Hospital is by far and away Grundon's standout performer for collection of this specialist material and Lauren and her clinical team have done a tremendous job in recognising the opportunities to recycle."

A focus on clinical waste has seen a successful programme to segregate offensive waste from clinical waste. This has been supported by clinical teams and a Grundon awareness programme, with the result of cost savings and reduced carbon emissions.

Additional measures introduced by Grundon with regard to clinical waste, have included improved signage, recycling of baby bottles from new-borns on the maternity ward, the organisation of a Waste Awareness Day and adoption of a 'KISS It Better' motto (Keep It Simple, Segregate), alongside the theme of Reduce It, Sort It, Bag It, Tag It, Bin It, Lock It. The PVC RecoMed take-back scheme has been so successful that since May 2017, staff have recycled 1.831 tonnes of PVC masks and tubing, saving the Trust over £1,000 in disposal costs and reducing carbon emissions by approximately 2.825 tonnes of CO₂. The programme to segregate offensive waste from clinical waste has also delivered impressive financial savings.

Statistics show that the percentage of offensive waste sent to Energy from Waste in April 2016 was just 13%, whereas 12 months later in April 2017, it had risen to 29%, making a major contribution to the Trust's overall waste management savings of £5,300 a month.

Offensive waste is sent to Grundon's Energy from Waste facilities which offers a cost-effective solution for the Trust. Clinical and infectious waste continues to be sent to Grundon's Alternative Treatment facility and/or its High Temperature Incinerator for energy recovery.

Steve says staff engagement has been important, explaining: "Engaging with our employees about recycling and segregation has been the most challenging element because historically, there has been limited choice when it comes to disposal." He added the Waste Awareness Day in February 2019 proved successful in explaining how the offensive waste scheme works and led to 20 new Waste Watchers being signed up. Both Lauren and Steve are now keen to extend recycling to other items that would normally have gone into clinical waste bins and say IV fluid bags, plastic wrappings for dressings and recyclable plastic trays for drugs - none of which will have been in contact with patients - are now on the target list, as well as rolling out PVC recycling to other departments within the hospital.

Steve concluded: "I consider Grundon an asset because James Killick and his colleagues are engaged and are in a position to give advice and help solve any waste problems and secondly, the fact that they handle all of our waste streams means it is so much simpler for me to manage the contract."



GRUNDON

what happens to my
general waste?



General waste
is collected in one of Grundon's
certified CarbonNeutral® vehicles



Taken to an
Energy from Waste
(EFW) facility

Waste sent to EFW can be
used to recover energy
generating green electricity



GRUNDON

Frimley Health NHS Foundation Trust

The Frimley Health NHS Foundation Trust is saving hundreds of pounds monthly on waste disposal after implementing a system which separates out clinical waste destined for treatment from clinical waste for high temperature incineration.

Across its three hospitals, the Trust now segregates infectious waste into orange sacks and sends it to an Alternative Treatment facility instead of for High Temperature Incineration (HTI). Playing a critical role in the success of this scheme has been Paul Whitehill, the Trust's Assistant Hotel Services Manager, who looks after the Wexham Park site, and Dr Renata Arszulowicz, consultant anaesthetist at Wexham Park.

Working with Grundon Waste Management, Dr Arszulowicz has also been a driving force in the segregation and collection of single-use PVC items from hospital theatres.

In addition, the Trust has also implemented a number of other clinical waste-related improvements in its ongoing goal to improve recycling which includes better labelling and signage for clinical waste bins, posters explaining the do's and don'ts of clinical waste recycling, staff training and awareness days and the collection of empty aluminium anaesthetic gas bottles.

Paul Whitehill says: "Our previous waste management supplier incinerated all our waste which was not only expensive, but it also wasn't good from an environmental point of view. Our waste priority now is all about recycling and what I like about Grundon is that they give us their full support and help engage our employees." By segregating infectious waste and diverting it to an Alternative Treatment facility Trust's Wexham Park Hospital site alone has achieved clinical waste savings of at least £900 a month.

The Trust-wide implementation of PVC take-back scheme RecoMed, for single-use PVC items such as oxygen tubing and masks, has so far seen nearly 700kgs of PVC collected and sent for reprocessing. This has saved the Trust around £200 since August 2018 and reduced carbon emissions by removing these items from the incineration waste stream. Nearly 500kgs of PVC alone have been collected at Wexham Park Hospital.

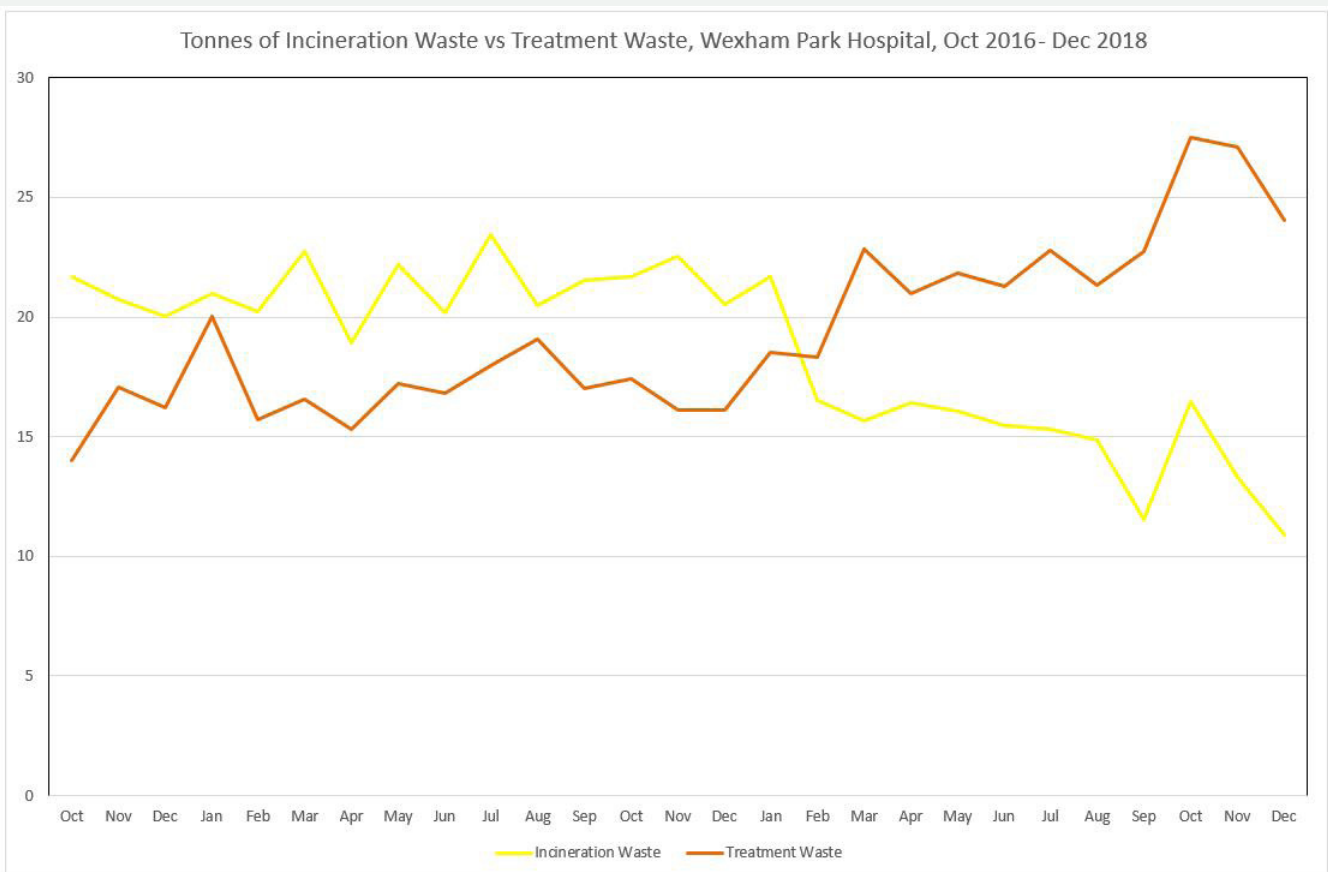
Engagement with the clinical teams and nursing staff has been critical to these recycling successes. Dr Arszulowicz has been a key driving force in encouraging her clinical colleagues to improve their recycling and she says: "Overall, I am very passionate about recycling and I also wanted to do more to help reduce clinical waste.

People were worried and fearful of being fined for non-compliance so they would throw everything into one bin. Talking to the nursing staff about increased segregation, I found they were quite receptive and people are now coming up with their own ideas about recycling, which is really encouraging. We have collected almost 500kgs of PVC here so far and I am very proud of the difference my nurses are making."

Paul Whitehill and his team have worked hard with Grundon to improve awareness and training of issues around waste and recycling. Becky Lillywhite, Contract Manager - Clinical, at Grundon said:

“Holding the Waste Awareness Days and visiting the wards to talk to people has really helped. Where we identified waste going into the wrong bins, we explained why it was incorrect and organised training to help understanding. People were very keen and I put that down to the ‘Blue Planet effect’: everyone realises they can do their bit to help with environmental issues. We also take a partnership approach to compliance and, if bins arrive badly contaminated at our Knowl Hill clinical waste facilities, we take photographs and work with the hospital’s waste team to trace it back to ward level. By doing so, we can then provide any further training and help spread the message about correct recycling in the future.”

With innovation in mind, Paul Whitehills says his team is always looking for new ideas and trials are currently taking place around the collection and recycling of empty aluminium anaesthetic gas bottles.



Royal Devon and Exeter NHS Foundation Trust

In the Emergency Department of the Royal Devon and Exeter Foundation Trust, a group of clinicians were looking at ways of reducing the carbon footprint of the service. They noticed that a large number of intravenous cannulas and Bionectors (an infusion device) were being fitted routinely to patients after triage then not being used. The devices were then removed sent to clinical waste at great financial and environmental cost. Additionally, un-necessary cannulation puts the patient at risk of harm from infection and discomfort.

Results of an audit of this practice demonstrated that 56% of cannulas and 53% of cannulas fitted were not being used in the department. The reasons for insertion were recorded and these were most frequently “just in case” or just to take blood. A four-week programme of intensive re-education and support to colleagues was implemented and re-audit showed a 66% reduction in cannulas fitted but not used, and a 79% reduction in Bi-onectors fitted but not used. This has significant carbon and economic benefits, as well as health benefits for patients. Departmental culture has changed, and cannula insertions are now routinely questioned by both junior and senior staff. Ongoing education is taking place to maintain the improvement for new members of staff.

Insertion of a cannula can be painful and any procedure that breaks the skin and blood vessels can be a risk for infection and thrombosis. By reducing unnecessary cannulation, patient’s benefit by avoiding pain and risk of infection, and the potential harm of unnecessary intravenous medication, as well as promoting wellbeing and independence.

The reduction in unnecessary cannulation and Bionector use resulted in annual savings of £27,830 in the Emergency Department alone from purchasing and waste disposal and saved 8,403 kg of CO₂, calculated by the Centre for Sustainable Healthcare.

After an initial audit, the project initially focused on engaging consultant and senior nursing colleagues within the Emergency department through meetings and education. Senior clinical staff acted as champions to help promote the project to the wider healthcare team and to lead by example. Before the re-audit, awareness of the project was raised at the three departmental clinical handovers every day and with a poster campaign around the department and attached to the cannula trolleys.

Clinicians were encouraged to think about why they were inserting a cannula and to weigh up the risks and benefits. After a month of education and promotion, the second audit was carried out, showing significant improvement. The Trust is now in the process of engaging senior clinical staff in other Departments for the next phase of the project. This initiative was supported by the Centre for Sustainable Healthcare.

During this year, the Trust is initially focusing on high-admission areas ie. Acute Medical Unit, Surgical Assessment Unit, in order to give a better picture of the potential benefits and any concerns raised. Subsequently, a trust-wide educational campaign is planned to promote the “Just in Case is Waste” message.

Airedale NHS Foundation Trust

Over the last 10 years, the Airedale NHS Foundation Trust has been focusing on a clinical transition towards sustainability. An interest group into the environmental impact of healthcare was started at the Airedale Hospital on a voluntary basis.

Successful projects which the Airedale NHS Foundation Trust has undertaken include the introduction of domestic waste bins in scrub, anaesthetic and prep rooms (ten tons of waste a year now go to recycling instead of clinical waste), confidential paper recycling across the trust, 800+ trees planted across sites and T5 Low energy lighting were installed in Dec 2013, a £240k capital to replace approximately 2500 strip light fitting, giving a £10k a month reduction in electricity bills.

The most clinical aspects have been in teaching other anaesthetists to use Total Intravenous Anaesthesia (TIVA) which has a much lower environmental impact than vapours. 10 years ago at Airedale, there was only one set of TIVA equipment, and there is now one set in every operating theatre.

As well as friends at Airedale, colleagues from the NHS Sustainable Development Unit, the Centre for Sustainable Healthcare, the Coalition for Sustainable Pharmaceuticals and Medical Devices, Lancaster University and the Association of Anaesthetists have worked closely on the project, to further understanding of sustainability, to promote awareness of the issues and to produce tools for others to use.

Currently, Airedale is now looking to influence the health and social care system, working with the organisational Learning and Improvement team at Airedale to enhance collaborative working within and between teams and organisations.

The work at Airedale is still ongoing work with anaesthetists continues to further reduce the use of anaesthetic vapours by displaying usage statistics.

Bradford District Care Foundation Trust

The Bradford District Care Foundation Chanced has been working on a project called Orthochoice which has been developed by the Podiatry Biomechanics team (Podiatrists) who collaborated with Icare. This project offers service users an option to purchase additional pairs of orthotics which provides income generation to the Podiatry Department.

Within Biomechanics/ gait analysis, service users are seen for a specific foot problem/pain they are experiencing in the lower-limb that may be instigated by the altered mechanics of the limb. A Biomechanical assessment is then carried out to examine the lower-limb function and prescribe foot orthotics- specially made devices to wear inside the shoes to control, realign and or cushion the abnormalities. Service users are provided with one free pair of orthotics, but they frequently request for additional pairs and because of this, they are directed to external sources to make additional purchases. Therefore, Orthochoice was formed to give service users the opportunity to purchase extra pairs from the Podiatry biomechanics team which would also generate income for the department.

The biomechanics team worked extremely hard to create a business that generates income and provides an increased satisfaction rate for service users. This service is continually evaluated and there are action plans in place to carry out an audit on service users experience in using this service. The project was launched in Dec 2017 at two pilot sites and the 1st sale was made within the first month. Since then, sites have increased to 7 locations over Bradford Airedale and Craven and have successfully sold 80 pairs of Orthotics amounting to approximately £3000.

Initially we had to ascertain if there was a demand for this service. With help from System one administrator statistics were gathered of how many people had accessed the biomechanics service in the previous year at the two pilot sites chosen.

20% of 774 service users were contacted to do a short survey to ascertain the facts such as whether they required a second pair and whether the second pair had been suitable and value for money. Analysing this survey, the team picked out 9 top orthotics and the pricing was worked out by taking into account Podiatrist time, admin time and adding 20% profit. The process map was then worked out including a warranty as well. With help from the finance department all sales were recorded on a spreadsheet and taking banked on a monthly basis.

The establishment of orthochoice has allowed the Podiatry Biomechanics team to come together as a team to understand voids in care and initiate ideas as to how this can be addressed. Moreover, this project has increased knowledge on how a business can be set up allowing opportunities for staff to bring forward additional ideas to generate income.

Would you like additional pairs of orthotics?

Bradford District Care NHS
Foundation Trust Ortho Choice



Bradford District Care NHS Foundation Trust is pleased to offer you a choice to buy additional pairs of orthotics, using ortho choice. The orthotics is prescribed for you following a detailed specialist biomechanics assessment.

Please speak to your podiatrist for further details:

- Ayesha Aziz, Specialist Podiatrist - 07802 378836
- Leeroy Golding, Team Leader - 07535 654914
- Karen Baguley, Service Manager - 07984 480134

BDCFT Ortho Choice
Podiatry Department, Horton Park Centre, 99 Horton Park Avenue, Bradford, BD7 3EG
Tel: 01274 221165

CHAPTER 3



ENERGY



Manchester University NHS Foundation

Trust

The Manchester University NHS Foundation Trust (MFT) continues to focus on reducing energy usage and providing better working environments, as well as ensuring local and national carbon reduction targets are met. Trafford General Hospital was chosen as the site for a new smart lighting system in a refurbished office. A LiteIP system was installed, paired with Luceco light fittings to allow users more control over light levels and deliver energy savings.

Each light fitting contained a presence detector as well as a daylight sensor. The presence detection in each individual fitting communicated with other fittings, meaning groups of lights could be dimmed, turned off, or turned back on in sync, crucial for saving electricity. LiteIP also provided daylight sensors, allowing for dimming and colour tuning. All systems data from each individual fitting was collected in a central cloud-based location, allowing a Measurement and Verification analysis of the energy usage of each fitting and area on the project.

Initially, a small trial took place in a corridor in the main hospital building based at Oxford Road. A simple switch to LEDs would have saved 50% of energy, however when combined with the LiteIP technology, the trial area delivered savings of 95%.

The new office area was the result of the refurbishment of two wards. As such, it was difficult to get a like-for-like comparison of energy savings, however informed assumptions could be made. If the area had been value engineered, the installation would have included T5 fittings running for approximately 5,000 hours/year at an average power of 58W. This installation would have consumed approximately 59,445 kWh per year based on run time observed.

This reduction in energy use also provided a significant contribution to reducing carbon footprint.

205 x 25W LEDs were installed with intelligent controls. If they had just been LED like-for-like replacements, the installation would have saved 57% more energy, working out at around 26,000 kWh. However, the technology in the LiteIP system saved a further 46% through the presence detector and daylight controls. This translates to a cost saving from LED alone of £4,748 per year plus a further saving of £1,938 per year through the controls, meaning the annual savings from this one office space reached over £6,500.

Originally there would be an expected carbon footprint from the lighting of 16.827 tCO₂ emitted every year, however, from the installation of LED fittings 9.5 tCO₂ would have been saved per year, and with the LiteIP system a further 4.412tCO₂ per year can be saved.

Another driver for this project was staff health and wellbeing, trying to improve working environments. The temperature sensors in the lights identified hot and cold spots so conditions were kept at an optimal level across the room. As the lights are user-controlled with a dimming technology, staff were allowed more flexibility over lighting in their area and could work comfortably.

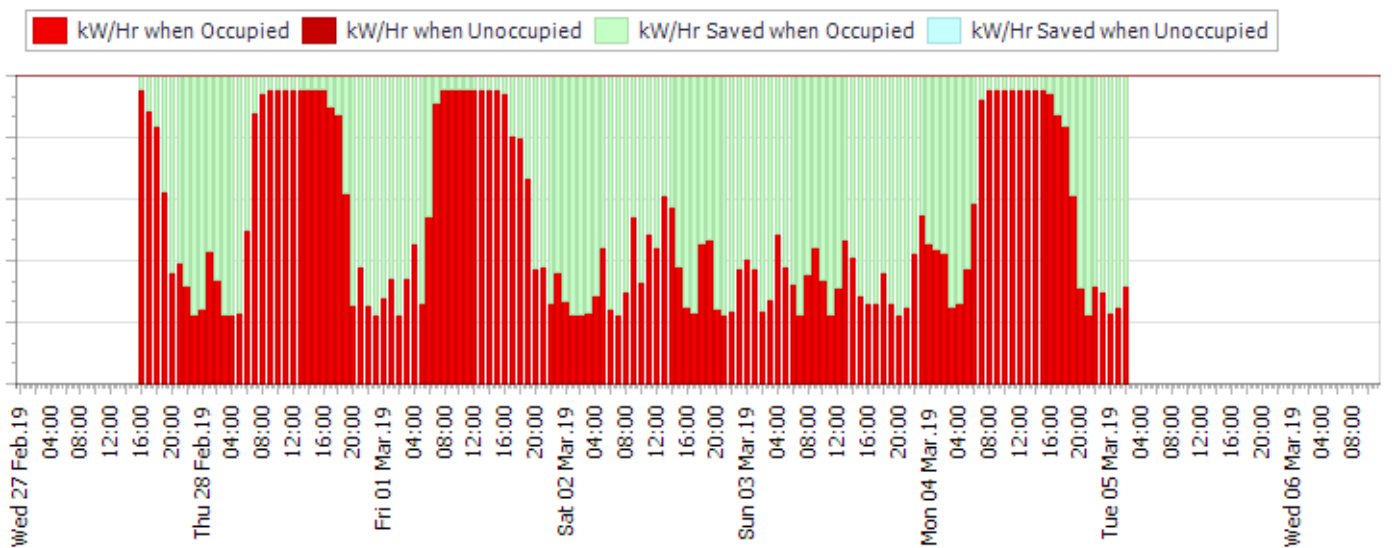
This project was done through collaboration. Firstly, the Trust's Property and Estates

development team were tasked with the redevelopment of Ward 17 / 18 into office space. Following the release of our new Sustainable Development Management Plan (SDMP) it is now Trust policy to work alongside the Energy and Sustainability Team for all capital projects.

After liaising with our team, Property and Estates wanted to install the technology, but could not fund the extra expense. The Energy and Sustainability team opted to fund the extra cost. This collaboration would be the example to follow for teams working together to both provide a benefit to each other, and to the staff who would be using the service. With these benefits, especially the significant monetary savings, there are future plans to roll it out across the Trust. Work has been done surveying multiple areas around our nine hospitals to identify key areas that would benefit from the new system and two specific types of locations were found to be ideal areas for the LitELP technology.

The technology is believed to be will be most useful in wards where the lighting is often on 24/7 which is extremely wasteful where there is natural light or no one is present in that area. The system can be remotely dimmed, reducing to 10% at night. With set times for lighting to be dimmed down, it will provide routine to patients, allow for better sleeping patterns, and therefore will benefit their recovery.

A further 26 lighting projects have been lined up across the estate. These projects with LED and LitELP capability have projected savings of over 1.6M kWh per year. This would provide projected monetary savings to the tune of around £230k per year plus further 420+ tCO2 of carbon savings.



Global Diagnostics Limited

Global Diagnostics Limited provides diagnostic imaging services to NHS and private patients at several community and static sites throughout England. This year is a big year for its flagship site, The Global Clinic, in Norfolk. The clinic supports local patients and acute trusts by offering direct access MRI and Ultrasound. The objective of the project is to reduce the carbon footprint by 50%. This will be achieved by building a static 3T MRI unit which will stop the reliance on a mobile 1.5T unit, currently in situ. The mobile unit has a greater reliance on energy and moving to a fixed magnet will significantly reduce energy consumption.

Service to patients can also be enhanced with a 3T MRI as examinations can be reduced and images will be more detailed. Whilst the addition of a static MRI is a solid headline, there are other objectives to deliver as part of this ambitious build.

New building

The Global Clinic is within the grounds of a historic Colney Hall. The current waiting rooms and consultation areas are housed within the old Pump House and Coach House. The build started on the 28th of March and will see these two buildings joined together in a glass atrium, offering an abundance of natural light.

The site has a strictly no smoking policy due to the natural woodland setting and the gases used within the mobile MRI unit, such as helium. This is also a reminder under Making Every Contact Count around the benefits of not smoking, particularly in a healthcare setting.

Rainwater Harvesting

For some appointments, patients are required to have full bladders. The consequence of this is lots of toilet flushes. Therefore, Phase 2 of the build will introduce a rainwater harvesting system for all toilets.

Patient transportation

Being in the grounds of a country estate, public transport access can be a problem, however Global Diagnostics uses a local taxi firm with an “electric only” fleet of cars. This not only supports the objective to reduce carbon footprint but ensures that patients have equitable access to our services.

Heat exchange units and LED low energy lightbulbs

All consultation rooms have heat exchange units within to make best use of energy consumption. All light bulbs on site will be LED and low energy. This is just the start for Global Diagnostics as they aim to deliver bespoke diagnostic centres across the country.

North East Ambulance Service NHS Foundation Trust

The NEAS' aim is to provide a superior patient experience with a reduced overall cost; both financial and environmental. They are now four financial years through a 7-year Carbon Management Plan (CMP) which commits the Trust to a challenging reduction in CO₂; 30% by 2020 from a 2012/13 baseline. Over the lifetime of the Carbon Management Plan, the cashable savings associated with the Plan amount to £10.6 million in diesel, electricity and gas. In the first year (2013/14) of rolling out the plan, low cost / no-cost and 'good housekeeping' projects

were completed, including improving heating controls, switching off heating in garage areas, along with improved insulation and draft proofing. These projects had exceptionally quick paybacks and created 'buy in' within finance department for producing further savings with higher cost invest to save schemes. By the end of the 14/15 financial year NEAS had accounted for a 15% reduction in electricity and a massive 38 % reduction in gas against the 12/13 baseline and total cost savings of £161k since the baseline year, with the average payback of projects less than 4 years.

In 2015/16 the estates team identified that the impressive gas savings to date would start to flat line, unless it was possible to install renewable heat into some properties. The Trust has a large estate, with many properties at the time having old gas fired boilers. There would be a need to renew many of these systems, however, updated efficient traditional gas fired combi boilers would not produce the level of savings in either cash or carbon to make them a sustainable investment.

The installation of an Air Source Heat Pump (ASHP) appealed as it required little space and wasn't dependent on any renewable fuel deliveries. The Trust enlisted the help of a mechanical consultant to ensure the design and specification was appropriate, along with confirming the savings. An Ambulance station at Hexham in Northumberland with an ageing heating system was chosen to pilot the technology. The property was already equipped with 13KwP of Solar PV which would help to power the 14kW pump, as well LED lighting, keeping the rest of the building load relatively low.

The main hurdle was that the ASHP would be double the price of a conventional combi boiler. Regardless of which option was chosen the pipework and radiators would need to be replaced as backlog maintenance at a cost of £17k therefore this was excluded from the pay back calculations of both a combi boiler and the ASHP. Around a 15-20% reduction in gas would have been seen with a new combi boiler, compared to a 100% reduction with ASHP, along with a renewable heat incentive income. The paybacks based on the cost of both the boiler and the ASHP (minus the pipework and rads) is shown in the table below.

As a result of the tender report the Executive Team approved the installation in August 2015 which was successfully installed in the September. The Trust went on to invest in 12 further installations and the number of ambulance stations now with renewable heating is over 22% of the NEAS property portfolio. From the established and reoccurring 'Invest to Save' budget an investment of £250k has been made over three financial years at the 13 ambulance stations. The average year one saving plus RHI income per ambulance station is £3500.

The installation of ASHPs is a massive contributor to the 53% reduction in gas seen across the NEAS (as at April 2018) estate since 2012/13. Looking at the 10 months' worth of 18/19 gas consumption data the gas consumption reduction is on track to reach 56% by end of the financial year.

Over a 20-year lifetime the cumulative savings & income for the Trust are over £850k. The carbon emissions reductions at all twelve properties are just over 136 tonnes which is a significant contributor to the Trust's CMP.

The feedback from building users after the original installation at Hexham was that the technology provided constant warmth and staff didn't experience the peaks and troughs in temperature associated with gas fired boilers.

To demonstrate the project, we can look at Coulby Newham Ambulance Station as a case study. This property had a running cost of around £10,000 year (gas and electricity) in 2011/12, before

solar PV was installed and the Trust still heated garage spaces. After installing 25kWp of solar PV and turning off garage heating the running costs were reduced to around £6k, with an income through the feed in tariff (FIT) of just under £2k per annum, essentially taking the running costs to £4k per year. Now the ASHP has been installed there is zero gas consumption, a 6.1kW wind turbine was installed at the end of 2017 at the property. These projects generate a further £4k in utility savings and £3.5k in income through FIT and RHI. The property no longer costs anything to run but instead generates an income for the Trust. This saving can be directed to providing excellent patient care and serves as a blueprint on how NEAS aspire to run the estate going forward.

The Estates Department is currently working on a project of work with the ambitious plan of producing a carbon neutral property in the foreseeable future at Coulby Newham Ambulance Station. In 2018, a feasibility study was completed, to determine whether battery storage for excess solar power is a viable 'invest to save' scheme at Coulby Newham but also at 24 properties which have solar PV. The Trust is committed to not only achieving our ambitious targets set out in the CMP but ensuring these are overachieved by exploring further renewable electricity and heating solutions.

Payback of combi boiler compared to ASHP

Option	Cost	Annual savings in consumption	Income through RHI	Total savings per annum	Payback (yrs)	CO ₂ saving
Combi Boiler	£10,000	£212.00	£0	£212	47	1
ASHP	£20,000	£1034.80	£1051.36	£2086	9.6	7



CHAPTER 4

CARBON

Gloucestershire Hospitals NHS Foundation Trust

This year, the Gloucestershire Hospitals NHS Foundation Trust are focusing on their carbon footprint. Around 5% of the carbon footprint of the NHS comes from expired inhalational anaesthetic agents (IAAs) which are potent greenhouse gases. The recently published NHS long term plan aims to reduce the carbon footprint of the NHS by 2% by 2025, via transforming anaesthetic practises. The contribution that a greenhouse gas makes towards global warming can be expressed in various ways but is most commonly expressed in terms of Global Warming Potential (GWP) with a GWP of 1 being the global warming caused by 1 mass unit of carbon dioxide.

The anaesthetic inhalation agent desflurane is very damaging to the environment, with each bottle of desflurane producing the global warming potential equivalent to 893 kg of carbon dioxide. Sevoflurane, the main alternative to desflurane, is still a greenhouse gas but is around 60 times less damaging, for the same anaesthetic effect, due to its higher potency and lower greenhouse effect. Total intravenous anaesthesia using the anaesthetic agent propofol is far less costly to the environment still, with best estimates considering it at least a few thousand times better than desflurane in terms of global warming potential.

Gloucestershire Hospitals NHS foundation trust was a very heavy user of desflurane. In 2017, the trust used 1278 bottles of desflurane, costing £107,000 and producing the equivalent of 1141 tonnes of carbon dioxide. In fact, the trust was the highest user of Desflurane in the entire south west region of the UK.

In June 2018, a presentation was given to the anaesthetics department of the trust, highlighting the environmental effect of desflurane. The financial cost of desflurane versus sevoflurane and propofol was also explained, however it was the environmental impact of desflurane that was emphasised. It was recommended that clinicians switch from desflurane to sevoflurane or total intravenous anaesthesia.

Change in practice amongst anaesthetists in the trust was stark following the presentation. Comparing the same six-month period in 2017 (July to December) to the six months in 2018 after the presentation, desflurane use fell by 69%. This caused an average reduction in the 6 months following the intervention of 77 bottles of desflurane a month. This will lead to a total yearly reduction in the carbon footprint produced by all inhalational agent use at the trust equivalent to 806 tonnes of carbon dioxide, even when increases in sevoflurane are considered.

The reduction in desflurane use has also led to a large financial saving. The trust spent £34,800 less on IAAs during the six-month period post-June 2018 compared to the same period in 2017, representing a saving of almost £70,000 a year. Reduction in desflurane use continues to be sustained in the trust. Progress reports every two months regarding desflurane use are being sent to all anaesthetists at the trust via email.

A competition to see who can reduce their desflurane use the most has been set up between Gloucestershire Hospitals NHS Foundation Trust and two other trusts in the region to encourage anaesthetists to reduce their desflurane use further.

The Christie NHS Foundation Trust

The Christie NHS Foundation Trust aspires to lead the way in tackling air pollution, reduce its effect on road traffic-related pollution and reduce its carbon footprint. The ultimate intention is for the Trust to have a significant positive impact on the local environment, local community, and within Greater Manchester.

The Trust corporate objectives provide an ethos to strive to go further regarding to sustainability. With respect to sustainable travel, current strategy is to target staff to transfer over from single occupancy vehicle use over to sustainable travel in a significant manner i.e. from 2005 to 2030 it has targeted 60% of staff (Circa 2,100 employees) to travel by sustainable modes.

The Christie Travel Plan communication and marketing strategy communications filter through the following channels: steering groups; a capital and workforce planning group; staff forums; a sustainable travel and car park group; capital, estates and facilities; soft facilities and a bicycle user group.

During any recruitment process, job adverts which include travel information solely promote sustainable travel and during Trust induction, the Travel plan coordinator attends Trust corporate induction to promote sustainable travel, including: Personal Travel backs, Walking Wednesday, Cycle scheme, Public transport corporate offers, Park and ride and EV charge points. Cycling events are fully funded by the Trust.

Internal promotion strategies include comprehensive staff travel pages and online forum the priorities sustainable travel in a positive and vibrant manner and bicycle user group mailing lists, sending updates monthly or when urgent matters need communicating. The Trust has developed a comprehensive communication and marketing strategy that has facilitated engagement with staff around healthier travel habits with great success. It has only been able to measure its success, in evidence perspective, via staff surveys and respective data.

Removing single occupancy cars from roads, with a preference to sustainable travel, is environmentally and socially sound, economically beneficial to all stakeholders and where, as a country, as a Government organisation, as a local authority, as individuals, a direction we should all be traveling. Staff members previously using single occupancy cars, who now walk, cycle and/or use public transport are the immediate group who have significantly identified their own financial savings.

The Trust is embarking on a cultural change. In the first instance, reducing pollution is of the utmost importance to all, for the reasons outlined in the Clean Air Strategy 2018. For staff, their wellbeing is considerably enhanced using sustainable travel modes of transport. The Trust is now in a position where 40% of staff travel sustainably, 21% commuting via active travel (14% walk, 7% cycle). This means that a fifth of the workforce now benefit from more active lifestyles, in addition to less exposure of harmful pollutants. Staff are further supported with wellbeing events inclusive of sustainable travel and its benefits.

The Trust internally has several steering groups that have facilitated the Trust in reviewing its thinking, start to believe that it can have a serious impact on the environment whilst still being able to deliver its unique main body of work in treating cancer. This has been fed through to a communication and marketing strategy that present sustainable travel as a positive lifestyle choice and something all staff can embrace. Furthermore, that information is easily accessible to all staff groups.

The Trust is in a unique location, sitting within many ward boundaries. The Trust set up a neighbourhood forum in May 2012, to provide an opportunity for residents and elected representatives to engage

directly with The Christie Executives. Furthermore, the Strategic travel management officer is an active member of Transport for Greater Manchester's Sustainable Journeys Team network, NPAG - NHS Car Parking & Travel Planning and NPAG –Sustainable Leadership network.

As part of these networks the Strategic travel management officer works with experts in the field of sustainable transport to:

- Provide subject matter expertise, best practice and advice
- Provide a channel for information exchange between member organisations and wider network and within own organisation.
- Identifies opportunities to contribute, add value and influence in a positive way, initiatives to support sustainable travel at the Trust and as a result, in Greater Manchester as a whole.

The Strategic Travel Management Officer has become the first representative from the NHS to sit on the Greater Manchester (GM) Walking Voice Steering Group. The group has been set up in response to several key strategies and plans which all aim to increase walking in Greater Manchester.

The Trust recognises that these strategies are opportunities for significant promotion of walking to improve health and wellbeing, reduce traffic congestion, make the environment more attractive and conducive to walking, make journeys safer and easier and improve air quality. The aim of the initiative is to support the local community by supporting the principle that there is a diverse and wonderfully community that is best enjoyed on foot.



Chesterfield Royal Hospital Foundation Trust

At Chesterfield Royal Hospital, there has been growing staff interest in environmental issues. In 2018, Sally Ludditt, waste and environmental advisor, officially formed a group of staff interested in making the Trust: 'the staff environment group'. The strategy of the group is to reduce waste and minimise the negative environmental impact across the hospital. Since the members span a wide range of healthcare roles from Ophthalmology Radiographers to Paediatric Nurses, they have a broad reach across the hospital.

Staff are now recycling paper, card, glass, cans and plastic. Prior to 2017, there were no paper and recycling bins (except for confidential waste bins). Two hundred and fifty paper recycling bins are now in use across the hospital. Plastic recycling from the x-ray and ophthalmology department rose from zero to 100kg per month since 2017. Overall recycling waste increased by 23 tonnes from 2016 to 2018.

There has been a wave of staff enthusiasm to reduce waste in Chesterfield Hospital operating theatres. Nurses in theatre recovery have been collecting clean oxygen face masks and oxygen tubing for PVC recycling by the Reco-Med PVC take-back scheme. This collection is free so the hospital cuts the cost of clinical waste disposal. 125Kg of PVC has been collected for recycling so far. In operating theatres, staff collect unused plastic 'bits and bobs' present in packaging to use for art & craft work in local schools. Similarly ward staff collect used pens to recycle them for free through the 'Terracycle' scheme.

Alongside the recycling, there has been a move away from disposable cups. In 2018, operating theatre staff held discussions about disposable cup use, used a quiz to generate interest in the topic and created a suggestions box. Together they decided to stop using disposable cups and held a countdown event for the switch to reusable cups and bottles. They have reduced the waste from 9000 disposable cups per month to zero at the end of 2018. For food catering, as part of the 'you said... we deliver' feedback initiative, staff suggested swapping polystyrene containers for recyclable food containers. Food is now served in paper, card or compostable containers in the main hospital restaurant.

The staff environment group publicise their activity and encourage others to get involved via the hospital staff Facebook page, their own Twitter account, via email and through articles in the staff online newsletters 'Communications' and 'Life@theRoyal'.

Staff have been enthusiastic about waste segregation, requesting recycling bins around the hospital and taking responsibility for moving recyclable waste from their own departments to the more centrally placed, larger recycling bins. This has been the main behaviour change facilitating the recycling collections provided free of charge from Battery Back, Terracycle and Reco-Med PVC take-back scheme to save the Trust costs in waste disposal.

Tradebe Healthcare awarded Chesterfield Royal Hospital the certificate of achievement for high-level compliant segregation of clinical waste in 2018 after scoring 'outstanding' in several audits.

Porters have made the different waste collection streams possible. They enabled a change in the collection system for clinical waste. An offensive waste compactor has been introduced, reducing the Tradebe collections at the hospital from five to two days per week.

Chesterfield Royal Hospital's CO2 equivalent emissions from landfill have fallen from 96 tonnes in 2016 to zero in 2018, partly due to a switch to energy recovery waste disposal. Recycling waste increased by 22 tonnes of CO2 equivalent (tCO2e) per year between 2016 and 2018. Total waste tCO2e for the hospital has fallen by 43% since 2016.

Chesterfield Royal Hospital Foundation Trust works with the Carbon and Energy Fund to implement energy saving strategies and reduce its Carbon Footprint. Staff collaborate with the NHS supply chain to lower the hospital's procurement costs and minimise carbon emissions in the transport of NHS orders. The hospital is currently working with Derbyshire County Council to promote green travel initiatives.

The Staff Environment Group is grateful for the recycling collection services from Veolia, the Reco-Med PVC take-back scheme, Battery Back and Terracycle. The Staff Environment group work with the reusable cup company KeepCup and Costa Coffee to promote the use of reusable cups and with Select Catering to sell food in recyclable & compostable containers instead of polystyrene food containers. For NHS sustainability day, the staff environment group (SEG) are hosting a stall in the main restaurant with games, prizes and engaging activities to attract staff, publicise the SEG's achievements and discuss ideas.

In 2019, the Trust aims to continue the excellent work that has been done with recycling and waste reduction. Next year will focus on the Bring Your Own Bottle (BYOB) campaign. Last year Chesterfield Royal Hospital bought over 500,000 disposable cups for use at water fountains and in staff rest rooms (not including those for the cafes and restaurants). The trust aims to reduce this number by 50% in 2019.

Alongside work with Derbyshire County Council for public transport initiatives, the Trust is also looking at a car sharing app with priority parking spaces for car sharers and promoting the electric car charge spaces that have recently been installed on site.



Join the cup conscious

CHAPTER 4

Infrastructure



Royal United Hospitals Bath

This year, the Royal United Hospitals Bath focused on building The Spiritual Care Centre, an ambitious and imaginative project reusing an internal courtyard which was no longer fit for purpose and transforming it to create both internal and external areas suitable for patients, staff and visitor use. The Spiritual Care Centre is part of a much wider site transformation strategy called 'Fit for the Future' which has seen a large proportion of the site redeveloped over the last 10 years.

The drivers for the project were to relocate the old 'chapel' to make way for the new Oral Maxillofacial Surgery & Orthodontics Dept. and to provide the new Spiritual Care Centre team with an accessible and contemporary facility which catered for and provided the requisite facilities for the promotion of all faiths and none.

The Spiritual Care Centre was an innovative project, as it aimed to move from the stereotypical 'chapel' which catered predominantly for Christian faiths, to an environment 'for all faiths and none'. The design included specific ablution spaces, separate from w/c facilities to respect the process of washing before prayer. The team worked closely with an Islamic volunteer in the chaplaincy team who helped guide this area of the design.

Design

The Spiritual Care Centre garden was designed to include a central feature (sculpture) designed to be visible from hospital corridor and so encourage use of external garden and the centre itself. The design also used Innovative LED light sheet technology for the back illumination of stained glass art work within the Spiritual Care Centre.

With regards to wellbeing, the design layout focuses on natural light and flexibility to the key spaces i.e. the Prayer Room and Quiet Room, as it was felt that Natural light was key to improve mood. This was achieved by using dual aspects including windows in the private garden and additional natural light from high-level clerestory windows.

The courtyard siting provided the Architects with an opportunity to develop a proposal which provided the privacy required for reflection and prayer. Design inspiration was taken from visits to Southmead Hospital and Dorothy House, the later providing the inspiration of bringing the outside space into the internal environment, encouraging the peace and tranquillity necessary for healing and reflection. In line with this, the garden was designed to facilitate bed access to accommodate all within hospital environment.

Environmentally, the design team included Modern Building Services including, underfloor heating, sound proof windows and multi-functional lighting which can be programmed to create the right ambiance, Energy metering for the monitoring of key loads in use, Passive ventilation systems and Zoned control of heating systems with input to the site BMS.

The Design team also utilised a pre-fabricated Timber frame. Timber frame construction also reduces the amount of concrete and mortar on site which is considered a more sustainable approach to construction. Timber frame construction also enables an increased amount of insulation to be used in comparison with masonry construction. In this case double the thickness of insulation was used

than would have been possible with traditional masonry construction, increasing the structures thermal efficiency and reducing heat loss.

Timber Frames also provide a cost saving, as the wall panels are fabricated off site and craned into position, this reduces labour on site and is a quicker process getting the building watertight. The local community also supported the Spiritual Care Centre, with the Rt Rev Ruth Worsley, Bishop of Taunton opening the Centre.

The transformation of the Chapel to the Spiritual Care centre has made a huge difference to people of all faiths and none who need guidance or support during their time visiting the Trust which can be devastating, if a loved one is lost or if a staff member has had a difficult day. The team are now able to look after their visitor's wellbeing in a better suited space with dedicated quiet rooms and a garden to allow for quiet reflection.

Lead Chaplain Narinder Tegally said, "it is a real privilege and exciting to be in this new space. We're looking forward to working in our modern, purpose-built centre, providing religious and spiritual care to people with diverse needs from all backgrounds, cultures, all faiths and none. It's a place where we can offer support not just to patients, but to relatives, carers and staff as well."



GRAHAM BAM Healthcare Partnership

Principal Contractors, GRAHAM BAM Healthcare Partnership (GBHP), have been working with client, Belfast Health & Social Care Trust, (BHSCT) to create a positive, natural space for healing within Belfast City Hospital, based at the new £30 Million 80 bed Replacement Acute Mental Health Inpatient Facility. (RAMHIF)

GBHP wanted to ensure that the build process was 'green' in terms of commitment to environmental protection during construction in a sensitive location and under tight programme requirements. Local architect RPP was appointed by the Belfast Health and Social Care Trust to design the new facility, following a successful design competition and interview.

Recognised as being core to the healing process, gardens feature in every aspect of hospital life. From first arrival, patients, staff and visitors experience the hospital as a journey between gardens rather than through dull corridors. The design team has worked at every level to create a human-focused, normal and uplifting environment.

The project value is £30M, construction works commenced in the late summer of 2016 and works are due to be completed with a handover in April 2019. The project bespoke CEMP (Construction Environmental Management Plan) was a major control mechanism to ensure our Site Team was legally compliant, adhered to our ISO14001 certified procedures, mitigated against pollution risk and sought to apply best practice and innovation at every opportunity.

Economic

As well as the project being delivered on time and within budget, we achieved a range of additional positive economic impacts for the project. 79 individuals have taken up employability training, placement or employment opportunities on the RAMHIF project.

Specific Employability Initiatives for target groups have been developed with:

- Youth Action (we developed a 'GET SET for Construction' Programme with them).
- Belfast Trust Employability Team/Include Youth (for young people in Care System)

Throughout the project timber was donated to alternative education providers Women's TEC & Newstart Education Centre, for use in their joinery courses.

Health

GBHP are signatories of the 'RSPB Pledge for Nature' Campaign and took advantage of the permissions from the Health Trust to incorporate swift bricks within the new build that were not in the original design. Specialist M&E contractors undertook the installation of the LED-based soft lighting which contributed to a more homely feel to the new facility. The lighting will also considerably lower the carbon footprint of the operational phase.

We also prioritised the health and wellbeing of our own work force during the construction phase; Personal development needs of the workforce were identified via a training analysis matrix. Skills training for the workforce provided e.g. first aid courses, NVQ's, e-learning, ESOL etc Occupational health risks were covering not only physical health, but also emotional and psychological issues to include debt issues and suicide.

Carbon

The nature of the works was inherently energy intensive and so GBHP used the 'energy hierarchy' to minimise the carbon associated with site activities, vehicle fleet and offices and were able to achieve 692.47 KgCO₂e per £100k Construction value – 46% below industry average benchmark provided by WRAP.

On RAMHIF, developing a brownfield inner city site, GBHP were pleased to achieve 2.5 Tonnes of construction & demolition waste generated per £100K construction value; this significantly exceeded the corporate KPI target of 98%.

GBHP's flagship charitable cause has been the Friends of the Cancer Centre based at the heart of the Cancer Centre at Belfast City Hospital. The charity's lifesaving and life-changing work in patient care, patient comfort and research makes a real and lasting difference to the lives of thousands of local people affected by cancer. To date GBHP has donated £40 000 to Friends of the Cancer Centre.

GBHP continues to successfully tender for work within the healthcare sector and deliver projects with the highest levels of sustainability, safety and environmental management standards. To drive our continuous improvement, GBHP are committed to achieving the following objectives and targets:

Ensuring Resource Efficiency

GBHP are committed to further develop recent successes around waste reduction and have identified the following steps to facilitate greater efficiency: input to pre-construction to identify opportunities to reduce waste at the design stage; review and influence how materials are delivered to site to reduce packaging waste; address waste from damaged materials; maintain approved list of waste management contractors; work on partnerships to enable reuse of materials in their original form; provision of guidance to relevant personnel on resource efficiency and waste management; audit at least ten Waste Management Contractors and develop a 'Water Management Strategy' for offices and sites.

Improving Energy Efficiency

To reduce energy impact GBHP will: utilise low carbon sourced electricity in all our offices; implement energy management plans on all contracts; undertake energy saving audits; trial relevant new initiatives, including efficient vehicles; encourage fuel efficient training for our higher mileage drivers; communicate 'Green-Travel-Plans' at our offices and investigate offsetting to secure carbon neutral activities.

Enhancing the Natural Environment

GBHP are signatories of the 'RSPB Pledge for Nature' and have adopted the swift as their priority species. GBHP have committed to a range of biodiversity enhancements including increasing the number of biodiversity actions by 10% and developing a quantifiable measure for creation of net biodiversity gain (through on and off-site measures) and establish a baseline performance across all projects.

The GRAHAM BAM Healthcare Partnership are committed to improving our environmental standards and have seen the positive impacts this brings to our projects. Our works to RAMHIF delivered a range of sustainability benefits of which we are particularly proud.



CHAPTER 5



REUSE

Barts Health NHS Trust

Barts Health NHS Trust's Waste Management Team (a working partnership with Skanska Waste Management Service) put time aside in 2014, to investigate ways of reducing unwanted bulk waste items being disposed of at five hospital sites.

The Trust's Waste Management Team [WMT] concluded that many bulk waste items found in our bulk waste containers were in reasonable condition, but obsolete for Trust reuse. The Trust decided to build links with Globechain, explaining our dilemma. Globechain had never engaged with the NHS and were very keen to develop their online "user vetted" portal, so they could help us and help them develop a Trust-friendly tool that could allow the NHS to connect with local, national and international charities and local community projects, which would reuse obsolete items.

Globechain allows the WMT to upload images of unwanted items into tailored categories, describe them in detail, explain where items are located and provide contact details. This expedites collection turnaround, maximising precious temporary storage space for shorter periods of time. Typical items diverted from the bulk waste containers include wheelchairs, hospital beds, examination couches, crutches, walking frames, metal trollies, chairs and tables. Today, the Trust continues to prove that waste prevention, via donation, is wholly sustainable, reduces disposal costs, increases social value and improves engagement with local, national and international communities.

Premier Sustain approached the WMT in February 2016 and asked if they could pilot and support the Trust's reuse idea, via renovation. Based locally to the Trust's five hospitals, Premier's Renew Centre seemed the ideal opportunity. Their award-winning service is the UK's only independent, commercial facility solely dedicated to remanufacturing, refurbishing and repairing desks, chairs and other furnishings.

To understand our health service requirements, Premier Sustain's team visited several Bart Health sites to view the types of furnishings being disposed of, the faults and the repairs required. Previously, Premier Sustain had only worked with non-NHS clients, in public and private sectors; Barts Health became a keen opportunity to make a repair service work for the NHS. Premier continues to renovate items and items destined for reuse within clinical areas are returned fully recovered in impervious vinyl, meeting infection control standards.

Since 2017, the WMT have built upon reuse successes and further expanded in to the provision of managing two reuse facility hubs, temporarily storing furnishings obtained, through staff no longer requiring items, space allocation reuse / relocation or refurbishment / renovation project upgrades, which invariably releases unwanted furnishings. These, the team now redistribute, encouraging reuse, rather than staff purchasing from new.

Since 2014 to the end of 2018, working with two partner organisations; combining their unique sustainable solutions for health service benefit; and now consolidating our reuse store facilities, the Trust will add further value to the project by reducing bulk waste container lifts by 175. The combined cost of not purchasing new [provision via reuse] and reductions in bulk waste container lifts, now stands at £293,130, bringing additional benefits of 110 tonnes of reduced CO2 emissions, using DEFRA's GHG conversion tool.

Costs saved are as follows: £183,890 in procurement savings and £109,240 from waste disposal processes, to the end of 2018.

Via Globechain, since 2014 to end of 2018, the Trust have donated over 13,760 items that have

benefited over 1,690 communities, helping over 40,500 people, whether, through providing furnishings, opportunities to learn new skills or items to help provide better healthcare environments. Donated items have aided Ebola Disaster recovery in Sierra Leone and Guinea, equipped a non-profit physical rehabilitation centre for the disabled, poor and elderly in Tripoli, Libya, supported disabled / disadvantaged youth football training in the UK and Nigeria and aided many local community projects, schools, social projects and enterprises.

Through Premier Sustain's unique reuse facility, the Trust have revitalised patient and visitor surroundings, replacing tired and worn public seating within hospital waiting rooms and resting places, improved patient care and safety by renovating examination couches and clinical seating. Now, the Trust workforce are engaged in the effort, enabling the Trust to seek rehoming reusable items, arrange collection, via swap in / swap outs with a Premier Sustain renovation.

Before any electronic procurement orders are processed, there are instructions, as part of the ordering process, advising direct referral to the Trusts Reuse Facility, via contact with the WMT, exhausting options first, before ordering new. Staff enquiries to Trust Procurement are now briefed by our Buying and Purchasing Team, who advise staff to contact the WMT, for furnishings supply; helping prevent disposal, expanding diversion to reuse, allowing renovated and inherited furnishings, like office swivel chairs, desks, patient chairs, internal public seating, get maximised, for reuse. At each site, hospital portering teams play a vital role in redirecting item disposal / or a prompt to the user, so that they are diverted to contact the WMT for further help and advice.

Where once, if staff did not want an item in their office / department / area, it became a porter request to remove for disposal; it now becomes a porter request to temporary store for assessment and reuse. Now staff are enlightened and empowered, not just by behavioural change themselves, but organisational change towards sustainable furnishing reuse.

As an extension of project success at Barts Health, the Trust hopes the NHS embraces sustainable bulk item reuse. This project success has only been achieved by a huge collaboration between the Trust, in partnership with Skanska's total waste management service provision.

Royal Free London NHS Foundation Trust

Over the last 2 years, the Royal Free London NHS Foundation Trust (RFLNFT) have set up a successful furniture and equipment reuse project, with many innovative aspects. The Trust assembled stakeholders to ensure that new behaviours were adopted quickly, against a backdrop of limited resources.

Sumal Karunaratne is Support Services Manager at the Royal Free Hospital. He was concerned about the amounts and value of surplus assets that were being skipped in 2014/15. There was no real system in place which meant the activity was not scaling across the organisation. Sumal assembled an implementation team made up of the various departments involved with reuse, such as procurement, facilities, space waste, sustainability etc and set about developing an action plan. The team set off on a programme of engagement which was focused on the end user, rather than NHS staff.

The team persuaded senior management that reuse was worth investing in. Noting the lack of resources in the Trust, requested savings could be ringfenced to pay for a software product and pay for an intern to run the system (once it had achieved a certain level of savings). The business case

was agreed. A software supplier was engaged on 04/07/2017.

The team wanted senior management to get behind the system. They sent the CEO an email and a follow up meeting to explain the benefits of reuse. The team understood also the power of influencers on the estate. They found influencers who could be relied upon to influence staff via word of mouth. A buy-in session attended was organised so they understood the objectives and what to do.

Working with the communications department the Trust created this video: <https://vimeo.com/253924289> . This innovative video shows reuse as a social norm, making it much easier to adopt. The team also undertook some policy tweaks. They developed an incentive to reuse: reuse transport was made free. If staff wanted to dispose of reusable assets- they were charged a fee. The team liaised with procurement and made sure any staff requesting new items were pointed to the reuse platform. Initial savings were impressive, so an intern was employed on a short-term contract. The Trust had found that engaging interns, apprenticeships or student placements were a common way to resource reuse programmes in the US via a Warp It study. This was an innovative way to resource a project and the Trust found that engaging the intern really boosted their impact.

6 months in, the team set a target that would give the community something to aim for, the £100K in 1-year challenge. The software also awarded the best users “user of the month”, which created a buzz. The trust have learned many valuable lessons on their reuse journey and presented their project at NHS Sustainability workshops

The Trust have saved £ 242,681 in avoided procurement and waste disposal charges in 19 months. (Initial seed investment for the project was only £4K.)

The Trust have diverted 50198 KG of waste from landfill, stopped 100965 KG CO2 by reduced purchasing and are the 2nd best performer on the Warp It network nationally. The Trust have claimed £4969 worth of assets from other organisations on the network and 782 staff are highly engaged in reuse.

Feedback gathered:

“An excellent way of saving the NHS some money, reduce wastage and use available funds on the important stuff, such as patient care!”- Toluleyi Sobande

“This is a great service. The first time I have used this and I have saved the Trust money.”- Angela Jukes

This project has been so successful that it is now a vehicle for other sustainability projects. Procurement department have seen a marked drop in purchase orders which has freed up time for their staff to give better quality support elsewhere. Porters used to have to dismantle and break up furniture for recycling. Now assets are reused so manual handling injury has dropped.

The software supplier Warp It was also the main key ingredient. Without that system the Trust could not have scaled this across the organisation. In the later stages of the project, SharpSmart took on the waste management contract and offered to pay for Warp It with a view to managing the system in the future.

The Trust continues to promote the system internally, building on previous good practice. A savings target for the end of the year will be set also. Learning will be shared with other Trusts and have given our permission for Warp It to use us as a case study.

CHAPTER 6

WASTE



NHS Business Services Authority

The NHS Business Services Authority (NHSBSA) is an Arm's Length Body of the Department of Health and Social Care, delivering a range of national services for the NHS, including the processing of prescriptions and payments to pharmacists. NHSBSA has made an overarching target to reduce waste by 40% by 2019/20 (against a 2009/10 baseline) and have made excellent progress to date, achieving 38% reduction despite expanding services.

Every year the NHSBSA processes over 1.1 billion prescription items on approximately 550million forms. These forms are transported to the NHSBSA to be sorted, scanned, processed, stored and sent for final disposal. An Electronic Prescription Service (EPS) has been in development for several years to streamline the processing of prescriptions whilst reducing this extensive waste stream. Since 2014, the NHSBSA processes approximately 360 million paper prescription forms (65.5%) electronically; providing impressive waste reductions to the NHS.

Patients between the ages of 16 and 65 years are required to complete a paper prescription token to record whether they are exempt from NHS charges or record payments made. The NHSBSA process around 140 million paper tokens each year and are now in the final stages of developing a Real Time Exemption Checking platform, which is set to be piloted in April 2019. Allowing dispensers to view essential exemption information through the platform will reduce the number of prescription tokens considerably; alleviating this waste stream.

0.1% of prescription items (approximately 1.1 million) can't be processed for reimbursement when first received. This is due to vital pieces of information being omitted from the prescription forms. When this occurs, items are returned to the pharmacy contractors to request the information needed. This is done by re-printing images of the prescription forms with a brief explanation of the information required. Throughout the year the NHSBSA have been developing a platform to allow additional information to be requested from the contractor electronically; reducing paper waste.

The final element of the prescription service revamp is the electronic submission of accounts to enable over 12,000 pharmacies, dispensing doctors and appliances to receive payment for prescriptions. An online 'Manage Your Service' system is currently being piloted with 88 pharmacies.

Electronic Prescription Services (EPS):

- Patients can collect repeat prescriptions directly from their pharmacy without having to visit the GP
- Provides a reliable, secure and confidential service for patients
- Patients spend less waiting time in pharmacies and GP practices
- Dispensers benefit from reduced waste and increased savings
- Dispensers spend less time on administration and collecting prescriptions
- Around 350 million forms processed digitally in 2018
- Reduced waste for the NHSBSA

Real time exemption checking:

- Reduces the risk of contractor loss by inadvertently submitting EPS prescriptions with a 'paid' status when the category should have been 'exempt'
- Enables reduction of EPS tokens which must be sent to the NHSBSA
- Reduces risk of prescription fraud due to a reduction in false prescription exemption claims
- Increases convenience for patients, as there will be less need for them to provide physical

proof of exemption

- Reduced waste for the NHSBSA

Manage Your Service:

- Reduces paper usage and building storage requirements
- Less room for errors in the accounts submission process
- Saves time for pharmacies and reduces NHSBSA operating costs
- Provides real-time eligibility tracking
- Account holders can manage submissions more easily and can easily review previous submissions all in one place.
- Reduces waste for the NHSBSA.

The NHSBSA works closely with other healthcare organisations including NHS Digital, the Department of Health and Social Care, NHS England and pharmacists to transform the prescription service to reduce waste, reduce paper usage and streamline operations.

Throughout 2019, the NHSBSA will continue to work with various partners to help prescribers and dispensers realise the benefits of increased EPS usage, particularly through Electronic Repeat Dispensing. The NHSBSA aims to increase EPS usage to 90% in 2019 which will reduce waste by an additional 10 million forms per annum.

The NHSBSA is also transforming the NHS Pensions Scheme to enable members to make applications online, instead of using a 12-sheet paper form. The new platform, which is set to go live in 2019, will enable users and NHS Employers to easily access more detailed pension information, process applications quicker and will also provide greater information security (as application forms cannot be lost in transit).

The NHSBSA Dental Services team process over 44 million dental claim forms (FP17) per annum, making payments of £2.2 billion to NHS primary care dentists. The service went digital in 1990 however not all dentists submitted FP17s electronically. The introduction of mandatory electronic FP17 submissions will save in excess of £500,000 per annum on paper processing costs and considerably reduce waste.



Business Services Authority

Royal Devon & Exeter NHS Foundation Trust

A “Green Ward Competition” was launched on NHS Sustainability Day in March 2017 at the RD&E. The Centre for Sustainable Healthcare (CSH) worked with clinical teams at the RD&E to identify opportunities for innovative ideas that would enhance the value of the services, in all aspects of the ‘triple bottom line’ (reduce the carbon footprint; increase the health & wellbeing of patients, staff & the community and make cost savings).

The winning team was the Housekeepers from Abbey, Otter and Dart wards, with their project to reduce single use plastics, on the wards. Kevin, Mary, Michelle, Amanda and Jason are Ward Housekeepers working across a variety of wards. As well as helping to care for patients as part of their day job, they wanted to make a difference to waste and recycling. They came up with a range of simple, achievable changes that could be made at ward level, which would reduce waste, reduce cost, and have a better impact on the planet.

The first of these was to reduce single use plastic, reducing domestic waste and cutting expenditure. Through research they discovered that the Trust could save:

£1,029 per ward by switching from single orange juice cartons to using reusable tumblers and large cartons (c.£30,000 per year across all 30 wards). £245 per year by switching from plastic teaspoons to metal teaspoons (c.£7,300 per year across all wards). In addition, by bulk-buying cereal, biscuits and sugar, wards could save over £1000 per year (c.£30,000 per year across all wards) and further reduce recyclable and general waste.

Trialling these changes on their own wards, and winning over nursing staff and housekeeping colleagues by talking through the benefits of the changes, the team have started to make real, sustainable improvements at ward level.

The goal was to replace plastic teaspoons with reusable metal spoons, and to reduce plastics waste from serving orange juice on the ward. On a 24-bedded ward around 100 plastic spoons were used each day for meals for patients & hot drinks for patients and staff. The housekeeping team suggested reducing waste by buying metal teaspoons and stopping the use of plastic teaspoons. Individual portions of orange juice are served in small plastic pots. Instead of buying individual portions of orange juice the ward bought hard plastic tumblers and 1 litre cartons of orange juice.

The cost of water and electricity used to run the dishwasher, the carbon conversion factors for the materials used to make the spoons and packaging, and the cost of the waste recycling, together with the weight of the two types of teaspoons/packaging was used to calculate environmental and cost benefits of this project.

Cost savings: The annual cost savings in single use teaspoons are £245 for a single ward (£7338 if this change was made successfully on 30 wards). The savings in reducing single use juice cartons are £1029 per year per ward (£30,876 if the change was successfully spread to 30 wards) and this will increase in future years as the cost of reusable tumblers were deducted in year 1.

Environmental savings: 42 kgCO₂e were saved by the change from single use to reusable teaspoons. Packaging & plastic use was decreased by the change from single serve orange juice cartons to larger cartons and reusable tumblers, with an associated positive environmental impact. Social benefits: Foil lids of orange juice can be difficult to open, so changing to tumblers may have made it easier for patients to drink orange juice and improved hydration levels.

The Housekeepers have worked effectively as a team, liaising, influencing and encouraging a range of staff across the multi-disciplinary teams that they work within to ensure that the reasons for the

changes were understood and that the changes were sustainably embedded.

Once the substitution of reusable spoons and plastic tumblers have been rolled out trust wide, the ward housekeeper teams have already begun identifying further small, incremental changes which can be made at ward level that contribute to a much greater impact when applied across all acute and community ward areas. This project demonstrates that if clinical teams are given the time and support to review the ways that they work, there are significant opportunities to reduce waste, reduce costs, and improve carbon footprints, while delivering great care for patients. The key factor is to create a culture where staff feel that they can drive change, and the ward housekeepers are already excited for the next round of improvements. Engaging staff at the front line pays dividends and the success of this work has inspired the CIP team to repeat this approach on a range of productivity improvements in the future.

Sherwood Forest Hospitals NHS Foundation Trust

The Sherwood Forest Hospitals NHS Trust is working on assessing their waste streams to make them more sustainable, across three hospital sites: King's Mill Hospital, Mansfield Community Hospital and Newark Hospital.

With 4500 staff working across the sites and more than 500,000 patients and their visitors every year, reviewing the Trust's waste processes was a very complex task.

SFHT set out to:

- Improve Waste Awareness in staff
- Improve compliance rates
- Reduce waste arising
- Reduce waste to landfill
- Re-use unwanted items
- Recycle more.

Working with Skanska, the Trust decided to embark on a ground-breaking and challenging programme of Waste Management. They started by undertaking a comprehensive internal audit and survey of waste streams to understand the location and contents of each bin across the Trust, to find out what type of waste is in it, how compliant that waste is and who was responsible for the area or department (over 151,000 waste bin audits.)

It was established that although the trust had adequate bins, they were either wrongly located or staff didn't understand how best to segregate. The Trust then embarked upon a waste training programme to over 5200 of key staff. Since the first year of the programme, a department from each hospital has been selected for their outstanding achievement in waste management. Presentations are made in the main hospital street as part of NHS sustainability day; with the Trust Chairman and the Head of Estates & Facilities presiding over the ceremony.

Zero amount of the Trust's domestic waste goes to landfill. The domestic waste is split into RDF (refuse derived fuel) and DMR (dry mixed recycle) waste streams. They sort and segregate waste, with only unrecyclable waste being sent to RDF as a fuel to be used for industry.

This year 458.04 tonnes have been sent offsite as RDF waste and 208.305 tonnes has been sent successfully as DMR. Cardboard is baled, baling 72.5 tonnes for 2017/18, providing a rebate of £4,216.80 per annum. Metal is segregated onsite and 32.97 tonnes were segregated for 2017/18 providing a rebate of £3,545.20. The Trust have safely segregated 68.501 tonnes of confidential waste in the last 12 months. All this waste is shredded on site, then for onward transport to a localised paper mill for recycling. With the work undertaken the Trust have increased recycled waste by 140% since 2014, reducing the carbon load that would have been noted via general waste disposal.

The Trust have been able to facilitate the alternative treatment waste stream. This waste is shredded, then moves through a Heat Disinfection Unit (HDU) that uses hot oil at 140°C, whilst generating steam which is reused to power the bin washing machine. Once cooled, the shredded disinfected waste is then compacted and bailed for use as an alternative fuel energy source for waste plants or cement kilns. This year 122.076 tonnes of waste has been sent for alternative treatment.

Furniture: Repurpose and Re-use

The Trust operates a repurposing programme that provides opportunity for re-use of unwanted furniture, thus reducing disposal costs and supporting conservation programs. A furniture repair programme delivers savings of £30k - £40k per annum against buying new furniture.

Future Plans

Discussions with the Trust's Procurement team have been undertaken for them to liaise with the current and new procurement frameworks from which products and services are purchased; to encourage greener purchasing practices to reduce waste coming to site from additional packaging, etc.

The Trust has held initial discussions to review the development of an anaerobic digestion plant, by which to treat food waste produced on the King's Mill site to produce energy. This will reduce the waste currently macerated and passed through the sewage system, reduce water usage and provide a product by which to fertilise the landscaped areas around the Trust sites. As well as the obvious benefit to the Trust, the reduction of environmental impact regarding water quality is noticeable.

Image: <https://nhssustainabilityawards.co.uk/wp-content/uploads/formidable/6/award.jpg>

Yorkshire Ambulance Service NHS Trust/ Mellors Catering

YAS is also taking up the challenge of their plastic waste stream by establishing the PL'YAS'TIC FREE initiative. Yorkshire Ambulance Service is starting the plastic reduction in conjunction with Mellors, the staff restaurant based in Wakefield.

To do this, plastic cutlery, plastic lined cups, plastic milk bottles, plastic bottles, plastic sandwich bags, sauce sachets and takeaway containers were removed from the staff restaurant. They introduced a Rent-a-Mug scheme, where you pay a deposit for your mug and return it to get your deposit back or keep the mug for reuse. This has saved 104,000 plastic lined cups from being disposed across the sites.

All plastic bottles have been replaced with returnable glass bottles. This has saved nearly 9,000 milk

plastic bottles a year from being disposed. Sauce sachets have been replaced with refillable bottles. Plastic window sandwich bags will be replaced with paper bags and labels. Takeaway containers have been replaced with compostable containers and wooden cutlery. The wooden cutlery is biodegradable and replaces 72,000 pieces of plastic cutlery disposed of per year.

The PL'YAS'TIC FREE initiative was launched in the restaurant via table-top advertising to promote the savings to be made. The event has been promoted through internal Staff updates, Twitter and Facebook.

Mellors are Yorkshire Ambulance Service's staff restaurant catering partners and have embraced the plastic free challenge. They have looked at the impact of the deliveries to site, the amount of packaging and reusable packaging. They have requested that their veg suppliers deliver without plastic. Many of their frozen products come in plastic but they have opted for cardboard packaging instead.

YAS are working with Public Health England to put on a 'Plastic Planet' conference specifically looking at plastic reduction within the NHS and how we eliminate it as well as ensuring that plastic is recyclable and recycled. YAS are also working with Refill (www.refill.org.uk) to look at how they can roll out refill points that are accessible to staff for refilling their water bottles and eliminating plastic bottles.

Image: https://nhssustainabilityawards.co.uk/wpcontent/uploads/formidable/6/Plyasticfree_trash-lesstakeaway.pdf

Derbyshire Community Health Services NHS Foundation Trust

Derbyshire Community Health Services Trust has been in the process of updating the Trust's Waste Management System to ensure that legal compliance is met as well as considering cost effectiveness and sustainability impacts.

The first task was to assess current practices to form basis for a new robust action plan, which included appointment of a dedicated waste manager, formation of waste management committee, development and implementation of waste management policy.

The final waste management Action Plan was launched in 2009, which then became part of the Trust's Sustainability Development Management Plan (SDMP). The overall carbon reduction target was set at 34% by 2020. A waste assessment exercise helped the Trust to identify waste categories and associated disposal costs, shown below.

Clinical infectious soft waste - yellow bag, (600/tonne)
 Sharps (£1000-£1200/tonne)
 Orange bag (£450/tonne)
 Offensive (£240- £300/tonne)
 General household (non-recyclable landfill) – (£160-£180)
 Recyclable (dry mixed recycling) – (£100-£120)

An annual nominal waste reduction target of 5% was set to bring about a gradual and sustainable behavioural change. During past 9 years Derbyshire Community Health Services Trust has achieved significant annual reductions, by developing excellent waste management operations in-

cluding overall waste reduction, better waste segregation, diverting waste from landfill to heat recovery. These actions have reduced waste disposal cost by £94k (34%), waste tonnage by 35%, and carbon emissions by 351 tonnes (84%).

DCHS can take a pride in the knowledge that they have reduced carbon emission by 84% through better waste management, contributing to a healthier environment.

Year	2008/2009	2017/2018
Clinical £ (000)	174	31
Offensive £ (000)	0	41
Landfill £ (000)	105	36
RDF £ (000)	0	74
Recyclable £ (000)	0	44

Waste £ (000) Trend and Analyses

Year	2008/2009	2017/2018
Clinical £ (000)	218	38
Offensive £ (000)	0	150
Landfill £ (000)	941	150
RDF £ (000)	0	282
Recyclable £ (000)	0	283

DCHS is one of the largest community trusts in the country employing 4500 staff. One of the main groups of staff is the Estates department. The department has virtually become paperless by using new technologies and eliminating need to print work dockets with the use of handheld devices and electronic information recording systems.

Other significant partners have been waste disposal contractors, through whom Trust has been able to implement successful waste segregation programme, delivering excellent results. One of the local waste contractors applied and was granted offensive waste storage licence from Environment Agency enabling the company to bulk up offensive waste at their facility and hence reducing the Trust's disposal costs, from £450 to £240 per tonne.

Future Plans

- To achieve zero landfill status
- Work with suppliers to reduce packaging waste, in particular single use plastics
- Banning of single use plastics, in favour of adopting alternative working practices or using biodegradable products
- Becoming a virtual paperless organisation, there is good potential to exploit this avenue
- Use of hand driers as opposed to use of paper towels
- Disposal of Out of date products is one of the major waste source for the NHS. Buying strategies need to change

CHAPTER 7

AMBULANCE

TRANSPORT



The Christie NHS Foundation Trust

The Christie NHS Foundation Trust aspires to lead the way in tackling air pollution, reduce its effect on road traffic-related pollution and reduce its carbon footprint. The ultimate intention is for the Trust to have a significant positive impact on the local environment, local community, and within Greater Manchester.

The Trust corporate objectives provide an ethos to strive to go further regarding sustainability. With respect to sustainable travel, current strategy is to target staff to transfer over from single occupancy vehicle use over to sustainable travel in a significant manner i.e. from 2005 to 2030 it has targeted 60% of staff (Circa 2,100 employees) to travel by sustainable modes.

The Christie Travel Plan communication and marketing strategy communications filter through the following channels: steering groups; a capital and workforce planning group; staff forums; a sustainable travel and car park group; capital, estates and facilities; soft facilities and a bicycle user group.

During any recruitment process, job adverts which include travel information solely promote sustainable travel and during Trust induction, the Travel plan coordinator attends Trust corporate induction to promote sustainable travel, including: Personal Travel backs, Walking Wednesday, Cycle scheme, Public transport corporate offers, Park and ride and EV charge points. Cycling events are fully funded by the Trust.

Internal promotion strategies include comprehensive staff travel pages and online forums, bicycle user group mailing lists, sending updates monthly or when urgent matters need communicating. The Trust has developed a comprehensive communication and marketing strategy that has facilitated engagement with staff around healthier travel habits with great success. It has been able to measure its success via staff surveys and respective data.

Removing single occupancy cars from roads, with a preference to sustainable travel, is environmentally and socially sound, economically beneficial to all stakeholders and direction in which we should all be traveling. Staff members previously using single occupancy cars, who now walk, cycle and/or use public transport, have significantly identified financial savings.

The Trust is embarking on a cultural change. In the first instance, reducing pollution is of the utmost importance to all, for the reasons outlined in the Clean Air Strategy 2018. For staff, their wellbeing is considerably enhanced using sustainable travel modes of transport. The Trust is now in a position where 40% of staff travel sustainably, 21% commuting via active travel (14% walk, 7% cycle). This means that a fifth of the workforce now benefit from more active lifestyles, in addition to less exposure of harmful pollutants. Staff are further supported with wellbeing events inclusive of sustainable travel and its benefits.

The Trust is in a unique location, sitting within many ward boundaries. The Trust set up a neighbourhood forum in May 2012, to provide an opportunity for residents and elected representatives to engage directly with The Christie Executives. Furthermore, the Strategic travel management officer is an active member of Transport for Greater Manchester's Sustainable Journeys Team network, NPAG - NHS Car Parking & Travel Planning and NPAG –Sustainable Leadership network. As part of these networks the Strategic travel management officer works with experts in the field of sustainable transport to:

- Provide subject matter expertise, best practice and advice
- Provide a channel for information exchange between member organisations and wider net-

work and within own organisation.

- Identifies opportunities to contribute, add value and influence in a positive way, initiatives to support sustainable travel at the Trust and as a result, in Greater Manchester as a whole.

The Strategic Travel Management Officer has become the first representative from the NHS to sit on the Greater Manchester (GM) Walking Voice Steering Group. The group has been set up in response to several key strategies and plans which all aim to increase walking in Greater Manchester. The Trust recognises that these strategies are opportunities for significant promotion of walking to improve health and wellbeing, reduce traffic congestion, make the environment more attractive and conducive to walking, make journeys safer and easier and improve air quality. The aim of the initiative is to support the local community by supporting the principle that there is a diverse and wonderfully community that is best enjoyed on foot.

Sandwell and West Birmingham Hospitals NHS Trust

In order to engage staff and encourage more sustainable modes of travel, the Sandwell and West Birmingham Hospitals NHS Trust carries out annual staff travel surveys to monitor behaviour change and have developed a detailed Action Plan with targets.

The Trust have been awarded a 'Top Cycle Location Gold Standard', 'Top Walking Location Gold Standard' and 'Platinum Top Active Travel Location' by the West Midlands Combined Authority for work the Trust has done to encourage and support the move towards more sustainable and active modes of travel.

To incentivise walking, the Trust have established lunchtime walks and have launched a 'Get Active, Eat Free' scheme in collaboration with our Health and Wellbeing department, aiming to get staff cycling and/or walking. This scheme encourages staff to participate in at least 5 lunchtime walks or cycle 5 return trips to work and in return they will be entitled to a free healthy lunch.

The Trust also inspires more staff to cycle and use public transport at an annual Sustainability Garden Party, also linking in with national events, for example Cycle to Work Week and Bike Week. The Trust also runs a successful Cycle to Work Scheme which is very popular amongst staff. To enable staff, patients and visitors to travel to site using low emission vehicles, the Trust have installed six 7KW electric vehicle charge points across three sites. This is helping reduce their carbon footprint and lowering air pollution levels.

To track progress and understand the travel habits of staff, the Trust carries out an annual travel survey. In the most recent survey (2017), at City Hospital, The Trust saw a further decrease in the amount of staff single occupancy driving to site from the previous year.

A Sustainability officer has set up a 'NHS Sustainable Travel Forum' where members of Midlands based NHS Trusts connect to collaborate on ways to encourage and support stakeholders in opting for active and sustainable modes of travel. The aim is that work allows colleagues to work together to reduce the carbon and health impacts of pollution by working to facilitate more active and sustainable modes of travel.

The Trust works with Halfords, who operate the Cycle to Work scheme, to promote and encourage cycling to/from work. The Trust offers staff regular purchasing windows so access to lower priced

bikes and cycling equipment is easily accessible.

The Trust works closely with the West Midlands Combined Authority, keeping abreast of local and regional travel updates and sustainable travel initiatives. Recently, the Trust has been working with officers, Councillors and the local authorities from Birmingham and Sandwell to help address and mitigate air pollution in Birmingham and the surrounding areas. Birmingham is set to implement a Clean Air Zone in 2020 and the Trust is keen to be part of the process to help improve air quality on a local and national level.

Future Plans

The Trust is rolling out their 'Green Impact' staff engagement programme which includes actions around encouraging staff to opt for active and sustainable modes of travel, aligning this with healthy lifestyles.

The NHS Sustainable Travel Forum is running well and will continue along with the 'Get Active, Eat Free' campaign. Finally, the Trust will continue promoting public transport and working with providers to offer staff, patients and visitors discounted tickets, as well as supporting cyclists.

When the new Midland Metropolitan Hospital goes live, the objective is for a 5% modal shift from single occupancy car travel towards more sustainable modes (compared with the baseline survey undertaken in 2008), with 12 electric vehicle charging spaces, the provision for 50 dedicated car sharing bays and plentiful cycle parking facilities.





CHAPTER 8

PUBLIC ENGAGEMENT

St Helens and Knowsley Teaching Hospitals NHS Trust

St Helens and Knowsley Teaching Hospitals NHS Trust celebrated Sustainability Day with a public engagement project to advocate the mutual benefits of sustainability. The project had two areas of focus: exercise and healthy eating, and re-use and recycling.

As part of the day, the Health, Work and Wellbeing Department and the local authority's Healthy Living Team worked together to promote the importance of exercise and healthy eating to staff, patients and visitors in Whiston Hospital's main entrance.

The Trust showcased two smoothie bikes and a selection of healthy fruits so everyone could make their own delicious smoothies. The participants had to pick their ingredients, hop on a bike and pedal to power the attached blender. Over the day, exactly one hundred smoothies were made, all served in biodegradable cups, made from corn starch. The bikes were a great way to combine the topics of healthy eating and exercise. The Trust also partnered with Eaves Primary School in St Helens and the Willowbrook Hospice in Prescot to engage the local community and encourage re-use and recycling.

Currently each month St Helens and Whiston Hospitals recycle hundreds of AA batteries that are still 50-70% charged. This is because the batteries are used in critical communications devices and early battery exchange is compulsory. Some of these used batteries were provided to Eaves Primary School and Willowbrook Hospice for them to re-use. In exchange, the school and hospice agreed to use this opportunity to educate and encourage their children and visitors to re-use and recycle.

Economic

Mckinsey Global Institute (2014) have found that obesity costs the NHS £5.1 billion each year. The NHS carried out 6,438 bariatric surgery procedures in 2015/16, which would have cost in the region of £36.6 million. If the Trust's campaign prevents just one of these procedures, it would save the NHS around £6,000.

Health

Obesity, or being overweight, significantly increases the risk of devastating, but largely preventable diseases, such as, stroke, mental health related conditions, type 2 diabetes, cancer, heart and liver disease. If this campaign enabled people to change their behaviour as a result, this behavioural change may significantly improve the length and quality of their life.

Carbon

The NHS Sustainable Development Unit have conveyed that pharmaceuticals represent the largest portion of CO₂e emissions into the atmosphere, around 5.6 million tonnes each year. 5% of the NHS pharmaceutical spend is on drugs to treat conditions associated with obesity. If this campaign enabled people to choose a healthier path, this may prevent tonnes of carbon from being unnecessarily emitted into the atmosphere over the course of their life.

Future Plans

Due to the success of this campaign, the Trust and its project partners plan to drive a similar campaign

in 2019. The Trust plans to incorporate a scheme which uses a mobile phone app to encourage building users to use the stairs rather than taking the lifts. The app will keep track of their step count and provide them with encouraging update and rewards.

The Trust will continue to develop strong, supportive and effective relationships with partners, staff, patients, visitors, schools and community organisations to engage the public and work together towards healthy and sustainable living.



The Christie NHS Foundation Trust

The Christie NHS Foundation trust participates in public engagement to an unprecedented level, particularly around the issue of new developments and the associated traffic implications.

The Trust set up a neighbourhood forum, in May 2012, to provide an opportunity for residents and elected representatives to engage directly with The Christie Executives about its role and impact on the local community. The Trust has built bridges with neighbours, who were originally cynical about the Trust sincerity regarding sustainable travel, and drawn them onto the Trusts objectives regarding sustainability. The forum ensures that any development benefits the neighbourhood, meeting quarterly at the Trust. The forum allows for updates to be provided on the progress being made on delivering the Trust ambitious Green Travel Plan targets – i.e. 60% of staff using sustainable travel by 2030. These updates include question and answer sessions to facilitate effective engagement.

Since 2015, the Trust has issued a newsletter (Neighbourhood News). Neighbourhood News keeps neighbours up to date with developments and news from the Trust and is distributed to around 4,200 households and businesses in the local community bi-monthly. The newsletter is developed in coordination with the Communications Team, Capital Team and the Strategic Travel Management officer to ensure it is informative and helpful.

The Trust is keen to involve all staff in neighbourhood engagement and developed an initiative called 'Walking Wednesday'. The walks allow staff to explore and gain a greater understanding of the surrounding community and its history. The walks motivate staff to consider themselves part of the local community and as appreciate the need to protect the local environment. The current neighbourhood forum committee membership includes:

- Residents for all surround wards
- Councillors
- The Christie Executive/Director:
- The Christie Director of Estates & Capitol
- The Christie Soft Facilities Manager
- The Christie Head of Estates and Facilities
- The Christie Strategic Travel management Officer
- The Christie Head of Communication
- The Christie Senior Project Manager
- Turley's Planning Consultation Team

In addition the Trust also has partnerships and public engagement projects with;

- Withington Regeneration Programme
- Friends of Fog Lane Park
- Withington Civic Society
- Transport for Greater Manchester
- Manchester City Council

As part of this, the Trust Walking Wednesday will be further enhanced to link in with the regeneration programme. This will include further enhancing staff members' appreciation of the rich history of Withington and visiting some of the local businesses. Upon incorporating the Withington Regeneration Programme into Walking Wednesday the intention will be to reach out to other local civic groups and councillors to further enhance the walking programme. As the Trust is situated between four ward boundaries, each with their own businesses, parks and history, there is potential to build a comprehensive package of walks.



Royal United Hospitals Bath

Air quality has been highlighted as a key issue across the UK, with several towns and cities identified as hotspots for particularly poor air quality, Bath being one of them. Public Health England suggest that 80 deaths a year in Bath are caused by poor air quality.

Bath has an Air Quality Management Area which has been in place since 2002, due to exceedance of nitrogen dioxide annual average levels. Traffic growth, coupled with the growing proportion of diesel vehicles as a result of government incentives, have meant that action plans have struggled to reduce nitrogen dioxide sufficiently to meet national objective levels. In 2017, the Government's own modelling predicted that Bath would be exceeding EU limit values in 2020 and as a result, the Government served a Direction on Bath and North East Somerset (B&NES) Council to undertake a Clean Air Plan, to meet the 40 micrograms per cubic metre annual average level by 2021 at the latest.

The decision to monitor nitrogen dioxide (NO₂) levels at the Royal United Hospital was as a result of the traffic counts included in the 2015 RUH Air Quality Assessment, and concerns raised about the impact of hospital-related traffic on local air quality. Since December 2017, the Royal United Hospital has been monitoring nitrogen dioxide levels on site to understand the level of pollution generated by on site traffic (staff, visitors, buses, patient transport etc). The data highlighted that even though the annual average doesn't exceed national guidelines, the area around the front of the hospital has relatively poor air quality and action needed to be taken.

Throughout 2018 the hospital continued monitoring and started discussing these issues with B&NES council, and other local Trusts. A campaign was launched, "Switch off when you drop off", replicating what North Bristol Foundation Trust had successfully implemented a few years ago. This campaign was launched in January 2019, with a social media campaign, with the intention to undertake a secondary launch on Clean Air Day in June 2019. The key drivers, and benefits of this work, are to improve the air quality and therefore health of our staff, patients, visitors and neighbours. Reducing nitrogen dioxide levels on site, will also reduce the carbon emissions for hospital associated activities, although this isn't quantified currently.

The hospital has worked very closely with B&NES Council, firstly with the Environmental Monitoring Team to ensure the implementation of a robust monitoring programme which compliments the councils monitoring. Secondly, the hospital has worked with the Clean Air Zone team, to discuss how they can work together to improve air quality.

The hospital has also worked with FirstBus to understand the engines being used, and to influence driver behaviour. All the buses which service the hospital are Euro V or Euro VI, all of which have a 2-minute idling self-cut out system as part of their environmental specification. The hospital has several patient transport operatives who drop off and collect at the main atrium on site. Through working with the companies, the hospital has tried to embed the anti-idling campaign to improve air quality.

Beyond 2019, the air quality monitoring will continue, and hopefully will show improvements in nitrogen dioxide levels on site. Working with the Capital Projects team, the hospital has started to review the layout of the front of the site in conjunction with the RUH redevelopment programme. The hospital has already engaged with FirstBus to ensure we are designing the turning circle and bus stops in an efficient manner. We are also looking to review, with the idea to reduce, the number of vehicles coming close to the main atrium of the hospital. This should improve the air quality directly outside the front of the hospital.

CHAPTER 9

SUPPLIER OF THE YEAR

Grundon Waste Management Limited

This entry focuses on the benefits achieved by Grundon through its provision of a Total Waste Management service to several NHS Trusts. This encompasses all healthcare waste, hazardous waste, domestic waste, recycling, food, WEEE and confidential waste.

When Grundon takes over a contract, its first goal is to understand the waste management goals the Trust wishes to achieve. Typically (but not exclusively), these will include:

- Zero waste to landfill
- The diversion of general (non-recyclable) waste to Energy from Waste facilities to create sustainable electricity for export to the National Grid
- Increasing recycling
- Achieving cost savings
- Meeting environmental targets, i.e. CO2 reduction
- Improving waste management education and training for employees
- Reducing contamination through improved segregation
- Ensuring compliance
- Identifying new waste streams and opportunities for reprocessing and reusing materials
- Improving issues such as signage, types of bins, storage and collections etc
- Provision of reports and quantifiable statistics which demonstrate change

Working closely with Trusts' facilities teams, Grundon carries out detailed audits of all waste streams, then produces a waste strategy to deliver against relevant criteria. Dedicated contract managers work closely with hospital staff including clinical teams, portering teams, ward staff and sustainability teams to ensure a co-ordinated approach.

Trust staff are invited to visit Grundon's treatment facilities to see how and where waste is disposed, and Grundon is proactive at holding events such as Waste Awareness Days. It supports the launch of Waste Champions and Green Teams which encourage individuals to share recycling best practice among their peers and offers practical training sessions for Trust employees.

As a result of the audits, Grundon will implement changes such as:

- New picture-led signage for bins
- Different bins and collections for newly-segregated waste
- Compactors and/or balers installed, i.e. for cardboard waste
- Waste handbooks
- Appointment of a dedicated on-site Grundon waste manager (if appropriate) and waste team leaders
- Ongoing training

Education and the ability to spot new ways a Trust can save money and improve its waste credentials is a priority. One major example of how this has worked for the NHS, is a successful programme to segregate offensive waste from clinical waste.

This achieves both cost savings and reduces carbon emissions as the offensive waste is now sent to Grundon's Energy from Waste (EfW) facilities, where it generates green energy for export to the National Grid. Clinical and infectious waste continues to be sent to Grundon's Alternative Treatment facility and/or its High Temperature Incinerator for energy recovery.

Another example is the introduction of PVC-takeback scheme RecoMed across several locations, enabling the recycling of items such as oxygen tubing and masks. This has been achieved with support from theatre staff and senior clinicians. In addition, because Grundon's vehicle collection fleet is CarbonNeutral® it means collections do not add to customers' carbon footprint.

By demonstrating success, Grundon believes it helps Trusts to maximise opportunities and deliver against targets and is therefore a worthy candidate for Supplier of the Year. By taking an individual approach to each Trust rather than a 'one size fits all' approach, Grundon has achieved excellent results for its Trust customers, as examples show.

Royal Berkshire NHS Foundation Trust

Since May 2017, staff have recycled 1.831 tonnes of PVC masks and tubing, saving the Trust over £1,000 in disposal costs and reducing carbon emissions by approximately 2.825 tonnes of CO₂. The amount of cardboard sent for recycling has increased from just under 1.5 tonnes collected in September 2018 to 6 tonnes in January 2019.

Frimley Health NHS Foundation Trust

At its Wexham Park site, the amount of orange bagged infectious waste being sent for Alternative Treatment has increased by over five tonnes a month, with a mirrored drop in the amount sent for incineration. This saves the Trust at least £900 a month.

Across the Trust's three main hospital sites, nearly 700kgs of PVC have now been collected and sent for reprocessing, a saving of around £200.

At Frimley Park Hospital, the introduction of dedicated food waste collections, which sees segregated food waste sent to Anaerobic Digestion facilities for processing into green energy and bio-fertiliser, has removed an average of 12 tonnes of food every month from the general waste collection, both saving cost and making a significant contribution to the Trust's recycling, which has doubled in the last year.

London North West Healthcare (LNWH) NHS Trust

Their landfill diversion target was achieved within the first year and a standout result has been the year-on-year projected 61% increase in the amount of cardboard segregated and baled on site, prior to it being sent for recycling. The increase is due to improved training and awareness for the Trust's staff, contractors and waste porters.

The installation of extra toner recycling boxes have seen a 300% increase in the diversion of toners and cartridges from the general waste stream.

An initial uptake in the diversion of offensive waste from infectious waste streams has continued with a further 3% increase from 2017/18 - 2018/19. This provides a more cost-effective solution for the Trust v sending it to an Alternative Treatment facility and has generated an additional c8.6564 MWh of green energy.

At London North West Healthcare (LNWH) NHS Trust Grundon appointed an on-site Waste Manager (NHS Trust) based at Northwick Park Hospital, whose role is to drive innovation, plus three waste team leaders, who handle day-to-day enquiries and supervise the waste porters.

Grundon worked with Infection Control teams and ward managers to ensure a streamlined approach

to increasing offensive waste and there is ongoing collaborative work with other Trust tenants to improve clinical and offensive waste segregation.

At the Royal Berkshire Hospital, Grundon works with Steve Sellwood, Facilities Manager, and consultant anaesthetist Dr Lauren Williams, who has led the clinical team in its recycling drive.

Dr Williams says: “We now have specialist bins with clear sacks for the PVC waste in our four recovery areas. It allows everyone to see what has gone into the bin and it is a credit to the theatre recovery nurses that they are taking the time to stop and do this. It has been a question of changing peoples’ habits, and now I think anyone would think twice about putting PVC waste into a yellow clinical waste bin.”

Steve has adopted the motto ‘KISS It Better’ - Keep It Simple, Segregate - to encourage staff to recycle more, while a Waste Awareness Day saw 20 new ‘Waste Watchers’ sign up. He says Grundon’s CarbonNeutral® vehicles are an added bonus as it means Grundon’s collections avoid adding to the Trust’s carbon emissions; while monthly waste reviews and statistics enable him to report regularly to senior managers.

At Frimley Health NHS Foundation Trust, Paul Whitehill, the Trust’s Assistant Hotel Services Manager, says: “Our waste priority is all about recycling and re-using items and what I like about Grundon is that they give us their full support and help us engage with our employees. They come on site, we talk to theatre staff, the pathology department and other teams, we hold training sessions and, bit by bit, we have chipped away at things. They support our Waste Awareness Days, we walk round the wards together and we seem to be making a difference, our pre-acceptance audits are getting better every year and our recycling statistics are increasing.”

Grundon is always looking to expand its waste management services through innovative ideas and practical changes. It also believes in sharing its innovative approach among its NHS customers, therefore ideas which are successful within one Trust will be trialled in other areas.

Future plans:

- Continued rollout of the PVC recycling scheme
- Further development of the baby bottle recycling scheme
- Identifying opportunities to recycle items such as IV fluid bags and plastic trays for drugs
- Extension of trials around collection and recycling of empty aluminium anaesthetic gas bottles
- Finding solutions for recycling medical plastic bottles from Renal departments
- Introduction of a dedicated Paper Cup Recycling service. Thanks to its partnership with CupCycling™ by James Cropper, one of the UK’s leading cup recycling facilities, Grundon can enable Trusts to recycle their paper cups and to buy back paper made from cups which have already been recycled
- The potential to supply reusable items such as mugs, to eliminate waste at source
- Engaging with Procurement teams at Trusts, to assist with sourcing goods that can be easily reused or recycled, rather than (for example) purchasing non-recyclable items, such as polystyrene takeaway containers

Salix Finance Ltd.

Salix Finance is a not-for-profit company which has been supporting the NHS to reduce their energy spend since 2007. Salix provide interest-free loans to the public sector for energy efficiency projects that will save on carbon emissions and financial spend. To date, Salix has provided £91 million of interest-free loans to the NHS, achieving annual savings of £22 million and carbon reduction of over 106,500 tCO₂e. For every £1 invested by Salix in the NHS, the sector is expected to save £3.7 throughout the lifetime of the technologies implemented.

This year Salix has provided over £10 million of capital for the completion of 12 energy efficiency projects at 7 NHS Trusts and Foundation Trusts. These innovative projects include the installation of smart control LED lighting, combined heat and power (CHP) and heat recovery technologies.

Some examples of projects completed in 2018/19 include a £2.1 million CHP and heat recovery project at St Helens and Knowsley Teaching Hospitals NHS Trust and a £1.48 million LED lighting upgrade at Maidstone and Tunbridge Wells NHS Trust, which covers phase 4 and 5 of their strategy to upgrade lighting infrastructure to LED.

Wrightington, Wigan and Leigh NHS Foundation Trust also recently completed an innovative £149,400 LED lighting project. The LED upgrade includes lighting level controls, motion detection and presence detection. These are linked to a digital energy management software that monitors and reports on the performance of the system and helps to tune the system further depending on the usage of the building.

The Sustainable Development Unit states 'air pollution is the top environmental risk to human health, and the fourth greatest threat to public health after cancer, heart disease and obesity'. By reducing air pollution, the UK government's recent Clean Air Strategy estimates up to £1.7 billion could be saved every year by 2020, rising to £5.3 billion by 2030. Implementation of energy efficiency projects reduces air polluting emissions, thereby supporting the delivery of the Clean Air Strategy and Trusts' own Sustainable Development Management Plans. From the 10 Salix funded projects completed in 2018/19, 6,862 tCO₂e has been abated.

As well as improving local air quality these projects have also improved the quality of care provided to patients. The increased efficiency and reliability of heating systems and improved lighting levels support a healthier environment for both patients and staff.

"All of the projects completed have performed exactly as required providing greater efficiencies and reductions in annual revenue expenditure. They have also been installed with little to no interruptions to patient care which has helped to provide a seamless healthcare experience for our patients," says Mark Hogan, Senior Operations and Energy & Environmental Manager, Wrightington, Wigan and Leigh NHS Foundation Trust.

The economic benefit to the NHS Trusts is evidenced through reduction in energy bills as a result of the energy saving projects. In 2018/19 Salix funding enabled 12 projects to the total value of £10 million to complete. These projects will save over £2 million in total on annual energy bills at the hospitals where the projects have completed. With an average return on investment of 4.5 years, the investment provides significant value for money.

Another indicator of excellent value for money is the lifetime savings of these projects, which is expected to be £38.6 million. These lifetime savings will make a huge difference in the cash-constrained NHS sector, and they are an astounding 3.7 times the investment that Salix has put into

the energy saving projects.

At St Helens and Knowsley Teaching Hospitals NHS Trust, the CHP and heat recovery project, funded by Salix, has already started to achieve financial savings on their energy bills. “Salix energy efficiency funding has allowed us to invest in a large CHP/Heat Recovery project. I found the Salix process for application and funding straightforward and the Salix team provided great support during this process and throughout our journey from feasibility study to completion. The scheme is already delivering what was expected and will allow us to generate substantial savings that financially will ease the burden on clinical services” says Graham Barlow, Cost Accountant, St Helens & Knowsley Teaching Hospitals NHS Trust.

Since 2007, Salix have developed long-term relationships across the NHS with partners and stakeholders, who share our values to improve energy efficiency. The Salix strategy in working with the NHS is to help the sector drive down their excess spend on energy that can in turn be reallocated for Trust clinical services.

The Salix strategy is also clearly communicated with NHS Improvement (NHSI) who are supportive of the innovative Salix invest-to-save model. In the recent NHS Energy Efficiency Fund (NEEF) for LED Lighting, Salix were named as a match funding recommendation. Following the awarding of this fund, Salix are now working with some of the Trusts whose bids were unsuccessful to ensure these valuable projects are delivered. Salix continue to work with NHSI on supporting the delivery of their target to reduce NHS annual energy spend by £150m, as well as their delivery of the Five Year Forward View.

Salix has currently offered commitment of funding to 11 Trusts looking to improve their energy efficiency by investing a combined £27 million in LED lighting upgrades, new combined heat and power (CHP) engines and connections to the CHP, boiler house upgrades, cooling and building energy management systems. Where possible, several NHS Trusts have taken a holistic approach by investing in a range of energy saving measures at their site through an energy performance contracting (EPC) provider.

These projects, when completed, will save the NHS sector 17,000 tCO₂e in abated carbon emissions and £4.38 million in financial savings annually. The annual financial savings from these ongoing projects, coupled with the financial savings from the completed projects over the last year, will help contribute to approximately 5% reduction in NHSI’s target of reducing the annual energy spend by £150 million in the NHS. In total, all the projects funded to date in the NHS by Salix have resulted in annual energy savings of £22 million which translates to a 14% reduction in the NHSI’s target.

The awareness of Salix has been increasing in the sector with more than 50% of the currently ongoing projects coming from Trusts working with Salix for the first time. In addition, the expected projects pipeline for 2019/20 comprises of 60% of new Trusts using Salix for the first time.

Salix continue to work closely with NHSI and provide them with a monthly overview of the funding uptake in the NHS sector. The recently awarded NHS Energy Efficiency Fund (NEEF) for LED lighting upgrades received a significant number of applications from several Trusts, highlighting their interest to improve their lighting infrastructure.

Salix will be working with Trusts that were unsuccessful in their NEEF bid and are still keen to improve their lighting to LED and reduce wasted energy by using Salix’s free support and interest-free finance.

Forward Waste Management

The Forward Waste Management Group incorporates its own waste handling equipment division, Enviroquip, established in 1998, which has developed into a leading UK supplier of waste compactors, balers, shredders, containers and other associated waste handling equipment.

This in-house facility allows the group to provide the very best equipment solution for each application, with in-house workshop facilities and a mobile engineering team. The group have recently completed a project for a health board based in Wales, where they manufactured and installed bespoke compactors for two of their hospital sites.

For the first hospital site, the requirement was for a static compactor with a bin lifter (to eradicate the need for manual labour transferring the waste from wheelie bins), along with a 32-yard portable compactor which had to be certified liquid retentive, due to the possibility of seepage of certain waste streams. For the second hospital site, the requirement was for two bespoke static compactors, complete with open splay hoppers and custom built to unique specifications to maximise capacity and to ensure maximum possible tonne press.

Each machine was manufactured and designed to the requirements specified by Forward Waste and the health board and built at the in-house engineering facility in Cardiff. Using compactors for processing wastes on site holds many economic, health and environmental benefits for the end user. Firstly, compacting wastes ensures that the maximum tonnage possible is collected. This reduces the number of collections that is required, which not only impacts the financial implication of collection charges (fewer collections = fewer collection fees charged to the hospital trust), but also lowers the carbon footprint generated by the wastes through the less frequent lifts of the containers. Less frequent collections will also improve health and safety on site, by reducing the vehicle movements that were previously required and therefore reducing the trusts carbon footprint.

Installing bin-lifters onto the compactors also aids health and safety. As opposed to hand-balling wastes into large containers, the wheelie bin is wheeled up to the compactor, a button is pressed, and the bin is automatically lifted and emptied – this significantly reduces the requirement for manual handling. The wastes are compacted into fully enclosed compactor containers. This not only ensures a smart appearance of the waste yard area and eradicates the chance of wastes blowing across the site during inclement weather conditions, but also means it cannot attract rodents and birds that present a health issue.

As part of the project, the group have purchased the legacy equipment, providing a source of income that was offset against the purchase of the new machinery. The equipment was at the end of its life and was no longer functional. Through the in-house facility, the group have been able to strip this machinery down and completely refurbish to 'brand new' standard. Not only has this relieved the trust of unwanted machinery and provided them with a source of income, it has also ensured the equipment is reused.

Forward Waste Management are leaders in managing waste. Starting with waste elimination at the point of waste production, the group devises and delivers the most appropriate waste management solutions for all applications and then integrates them seamlessly into daily operations.

The next steps for Forward Waste is to investigate all the waste management processes currently in use and drive through innovation and initiative by looking for areas where, through implementing the five-stage waste hierarchy, the group can apply innovation. The group plans to do this by investigating where wastes can be segregated at source to achieve maximum value, making sure

the right disposal cost (or in some cases, a rebate value!) is being achieved for each waste stream. By fully analysing current waste practices and demonstrating how, by doing things differently, and applying innovative solutions through segregation and the implementation of waste handling equipment to really maximise lift weights and reduce collection frequencies, Forward Waste are confident they can save NHS trusts across the country a considerable amount of money.

Chesterfield Royal Hospital & Tradebe Healthcare National Ltd

Chesterfield Royal Hospital has worked in partnership with Tradebe Healthcare National Ltd over the last 4 years to ensure a compliant clinical waste management service which offers cost savings while achieving zero waste to landfill and a reduction in haulage and its associated carbon footprint.

Tradebe Healthcare National Ltd conduct regular compliance audits to ensure customers are managing their clinical waste appropriately and in accordance with current regulations. These site-based audits also provide bespoke recommendations that often focus on minimising waste and maximising waste segregation, which in turn can reduce financial and environmental costs of clinical waste processing. Chesterfield Royal Hospital's last three pre-acceptance audits have been outstanding, with Tradebe Healthcare National Ltd suggestions and recommendations being internalised and actioned effectively.

One of Chesterfield Royal Hospital's most notable projects was the introduction of an offensive waste compactor. This resulted in the offensive waste being disposed of locally at an Energy Recovery Facility rather than being landfilled and enabled Chesterfield Royal Hospital to achieve "zero waste to landfill". The introduction of the offensive waste compactor has also reduced clinical waste collections in 770ltr containers, from five times per week, to two times per week.

Another project that was implemented was the introduction of affordable fibreboard boxes. This allowed the Trust to capture bulky pharmaceutical wastes and maximise the use of the reusable sharps management system, while delivering a cost saving in the packaging of healthcare wastes. These boxes were introduced using toolbox talk style training sessions, where departments were shown what the boxes were for and how to use them.

In 2018, Tradebe Healthcare National Ltd introduced a Certificate of Achievement that acknowledged customers who had shown high levels of compliant segregation of clinical waste over the past year. Chesterfield Royal Hospital is the first Trust to have been awarded this certificate. The following cost savings have been achieved by the Trust during the partnership with Chesterfield Royal Hospital: Offensive waste compaction - £10,000 per year; Fibreboard boxes -£15,000 per year.

The compacting of offensive waste has resulted in this waste stream being disposed of via energy recovery instead of landfill, providing a large carbon saving. In 2015/16 the total carbon emissions for offensive waste were calculated at 58.9 tonnes as all the offensive waste (241 tonnes) was disposed of via landfill. In 2017/18 the carbon emissions for offensive waste had reduced to 4.84 tonnes as all offensive waste (242 tonnes) was disposed of via energy recovery. The total reduction in carbon emission in 2 years was therefore 54.06 tonnes.

The offensive waste compactor project had support from facilities services and infection control.

The fibreboard boxes project had support from facilities service, infection control and the ward staff who use the boxes. The finance department also supported the projects as they achieved the requirements of the “cost improvement programmes” for the waste management budget. The clinical waste management contract currently in place with Tradebe Healthcare National Ltd is out to tender at the time of submitting this nomination. However, if the contract is awarded to Tradebe Healthcare National Ltd projects that could be explored include:

- Reprocessing of single use medical devices
- Curtain recycling
- Sterile packaging onsite processing.



