NHS
Manchester University
NHS Foundation Trust

Code Green

Delivering Net Zero Carbon at MFT 2022–2025

HEALTHIER
PLANET
HEALTHIER
PEOPLE

Version 1.0

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A Bit About Us

Manchester University NHS Foundation Trust (MFT) is the main provider of hospital care to approximately 750,000 people in Manchester and Trafford and the single biggest provider of specialised services in North West England.

We are an Acute Trust encompassing a family of 10 hospitals, which was formed in 2017 to create a 'Single Hospital Service' for the residents of Greater Manchester.

Around 3,000 members of our 28,000-strong workforce are deployed to Manchester and Trafford Local Care Organisations to provide community health services. By integrating services across the city region, we can provide consistent, high-quality care to residents, addressing historical local health inequalities.

MFT is also one of the major academic research centres and education providers in England. Research and innovation are at the heart of everything we do, enabling our patients to have access to the latest high-quality care and clinical trials.

Our Organisation Includes:

- Altrincham Hospital
- Manchester Royal Eye Hospital
- Manchester Royal Infirmary
- North Manchester General Hospital
- Royal Manchester Children's Hospital
- Saint Mary's Hospital
- Trafford General Hospital
- University Dental Hospital of Manchester
- Withington Community Hospital
- Wythenshawe Hospital

Manchester Local Care Organisation
Leading local care, improving lives in Manchester, with you

Trafford Local Care Organisation
Leading local care, improving lives in Trafford with you

Supported by MFT Clinical and Scientific Services (CSS) providing a broad range of services to patients treated in hospital and in the community.

Chairman's Foreword

I, and the rest of the senior leadership team at MFT, wholly endorse this new Green Plan which sets out how our organisation will continue to play its part in making healthcare more sustainable and tackling climate change.

Climate change is the single biggest threat facing humanity and is already impacting health in a number of ways. As a large multi-site organisation, we have a significant environmental impact. Over the last few years, we have made good progress in reducing the negative effects of our activities, but there is much more to be done.

The clear timelines for achieving net zero carbon and this pathway for the next three years, align with national NHS strategy and that of the city-region in which our hospitals and services are located.

This strategy not only sets out how we will tackle our own environmental impacts, for example by reducing carbon emissions and waste, but also considers how we will leverage and maximise positive opportunities, such as our ability to influence the sustainable behaviours of those who supply us and work for us, as well as sharing our learning more widely across the system.

As an anchor institution, we are fully committed to working with partners to bring about environmental improvements which will benefit the health and wellbeing of our region. Through this strategy, we aim to build the capacity and understanding, required across our organisation, to meet our collective objectives and improve sustainability outcomes for the benefit of all.

As one of the first Trusts to declare a climate emergency, this strategy represents a vital next step in the way that we tackle this challenge, head on, and use our position as a system leader to inspire others.

Kathy Cowell

Kathy Cowell OBE DL

Group Chairman

Board Net Zero Lead

Message from the Mayor

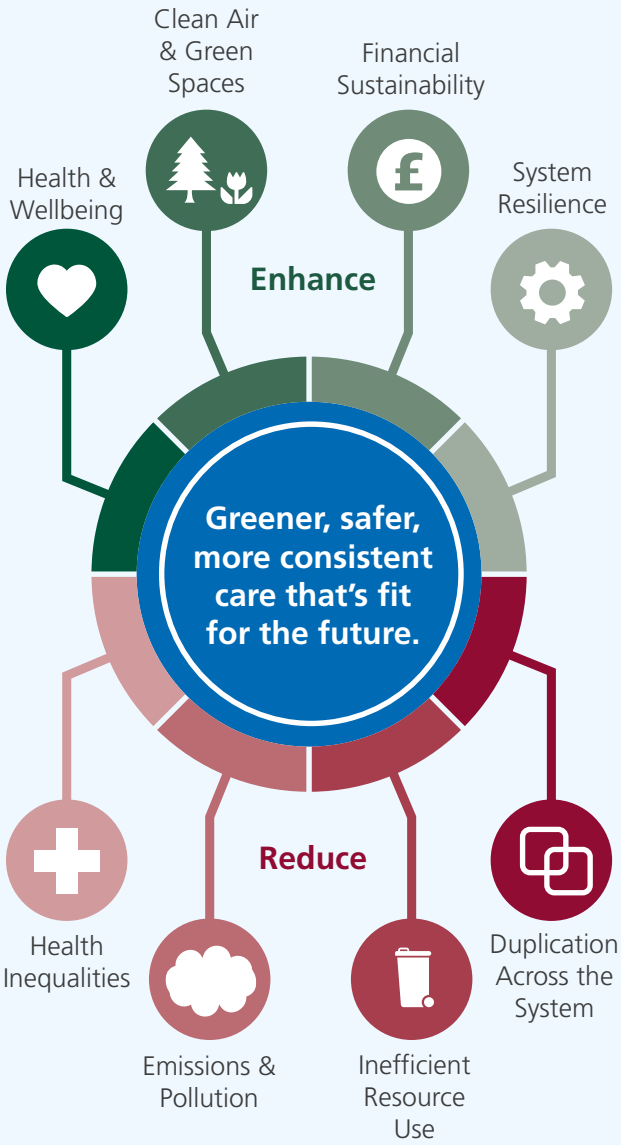
Our ambition is that Greater Manchester achieves carbon neutrality by 2038, more than a decade earlier than the national target.

The Environment Plan for Greater Manchester will only be realised if major healthcare providers work hard, individually and collectively, to limit their environmental impacts. So far, I am greatly encouraged by their progress and planning for further carbon reductions. This sector's continued commitment to our green agenda and active collaboration is delivering important health benefits for all in Greater Manchester. Thank you for this vital work.

Andy Burnham

Andy Burnham

Mayor of Greater Manchester



Introduction

This Green Plan marks the start of a new chapter for MFT. Building upon the progress made through our previous Sustainable Development Management Plan (SDMP), this strategy sets out our long-term vision for sustainable healthcare, and the progress we will need to make during the next three years.

The urgency of this strategy stems from the knowledge that the now critical levels of carbon dioxide in the atmosphere require significant, accelerated change to business as usual across all sectors, as we face a future with average global warming of up to 2.4°C.

The NHS has already acknowledged that the climate emergency is a health emergency. We must both prepare our services for increased future demand, as our communities face the impacts and inequalities of climate change and, also, limit our own carbon contributions to reduce any further damage.

The breadth of this strategy goes well beyond the traditional estates-based opportunities to reimagine how we deliver care in a net zero carbon NHS. Decision making will become more holistic, acknowledging sustainability impacts whilst continuing to protect patient safety as our priority. MFT's 'Single Hospital Service' provides a unique opportunity to address this challenge at scale, using local knowledge and working collaboratively across teams, hospitals and specialist services, to innovate and lead in the field of sustainable healthcare.

Headline objectives, set out in this strategy, prioritise activities for the greatest cumulative impact for the three-year lifespan of this strategy. These objectives will be underpinned by more detailed annual workplans and programmes developed and delivered by local teams.

Why Do We Need This Strategy?

International, national and regional policy considerations

Organisations in the Global North have a particular responsibility to plan how they will reduce carbon, and contribute to the wider social ambitions of the UN Sustainable Development Goals.

In England, the NHS has set out plans to reach net zero carbon by 2040 for the emissions it controls directly and, by 2045, for those it can influence, such as those created by the supply chain.

To reach that ambition, each NHS Trust and Integrated Care System (ICS) must have its own plan detailing its organisational approach to reaching net zero carbon in sustainable healthcare. This strategy, 'Code Green: Delivering Net Zero Carbon at MFT', is our third published sustainability strategy. It supersedes the previous Sustainable Development Management Plan (SDMP) and further refines the activities and targets needed to accelerate the widespread change required across the Trust.

This 3-year strategy represents a step change for MFT, preparing the organisation for the breadth and pace of sustainable innovations and changes needed to reach our net zero carbon targets.

It also aligns our net zero carbon target (MFT Carbon Footprint emissions) and the parameters (carbon budgets) for reaching this goal with those set out by the Greater Manchester Combined Authority (GMCA).

Addressing the health of Greater Manchester

Our strategy defines what actions we will take as an individual organisation and, in partnership with others, to not only reduce our own impacts, but significantly improve the lives of residents in Greater Manchester.

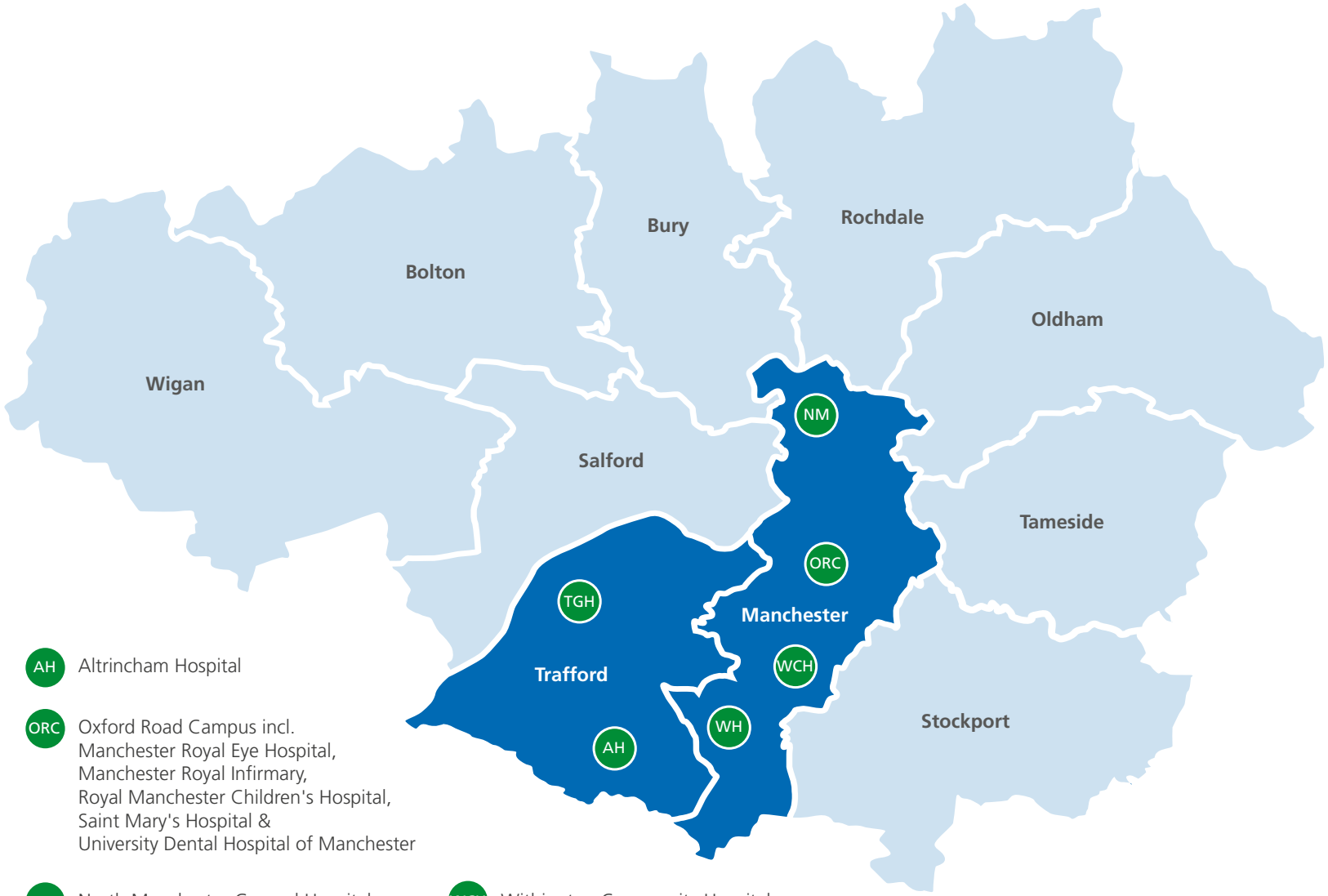
Over 1 million people in Greater Manchester are living in the most deprived areas of England. These residents can expect to die 9.8 years earlier than those living in the least deprived areas. Poor air quality contributes to 1,200 deaths every year in Greater Manchester, and the region has one of the highest rates in the country for emergency admissions in children with lower respiratory tract infections.

Our position, as the largest NHS Trust in England, means we are well placed to take action on climate change to reduce existing health and social inequalities, and to promote health equity.

Additionally, we will continue to work with our partners in the Greater Manchester ICS and nationally to tackle those environmental issues which are unique to healthcare delivery (e.g. medicines, models of care and clinical waste management) and capitalise on positive, cross-organisational opportunities (e.g. preventative care and social prescribing). This strategy focuses us on these priorities.

A fuller list of the legislative and wider policy drivers for change at a national and local level can be found in Appendix C.

MFT Hospital Sites within the Greater Manchester Health and Social Care Partnership



Our Impact

MFT undertakes a wide range of activities to deliver high quality health services to the local community. All these activities have a carbon impact.

These impacts can be split into three distinct categories which are:

- Our MFT Carbon Footprint (areas where we have the most control over carbon reductions)
- Supply chain emissions
- Community emissions

These categories when combined together make up our 'MFT Carbon Footprint Plus' (see diagram).

To reach our net zero carbon goal, significant change and innovation will be required by our staff, patients and suppliers to contribute to the required carbon reduction. Whilst the MFT Carbon Footprint represents only 20% of our total carbon footprint, this is where we have the greatest influence and ability to make change.

The carbon data shown demonstrates our impact during 2019/20 and will become our new baseline year. This represents the most complete and accurate data set, not distorted by the impact of COVID-19 and updated to encompass North Manchester General Hospital and the newest supply chain carbon factors. This approach is in line with Greener NHS guidance and mirrors the baseline year used for the GMCA's 5-year Environment Plan.

MFT Carbon Footprint Plus: 425,013 tCO_2e

MFT Carbon Footprint

Where we have the most control: Gas, Electricity, Other Energy Consumption, Medical and Anaesthetic Gases, Business Travel, Fleet Vehicles, Waste Management, Water

84,949 tCO_2e

20% of the MFT Carbon Footprint Plus

Community Emissions

We can influence: Patient & Visitor Travel, Staff Commuting

25,790 tCO_2e

6% of the MFT Carbon Footprint Plus

Supply Chain Emissions

We can work collaboratively to hold suppliers to account: Goods and services bought by MFT

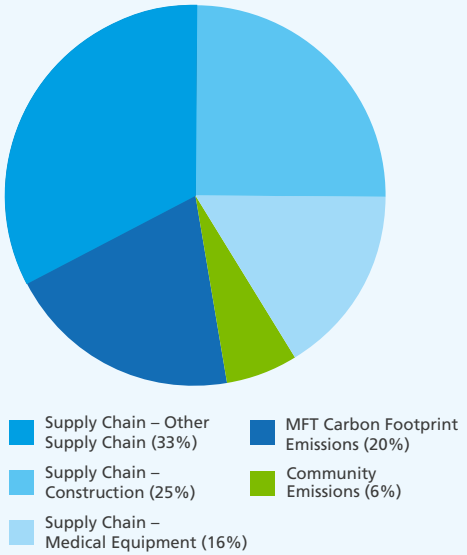
314,274 tCO_2e

74% of the MFT Carbon Footprint Plus

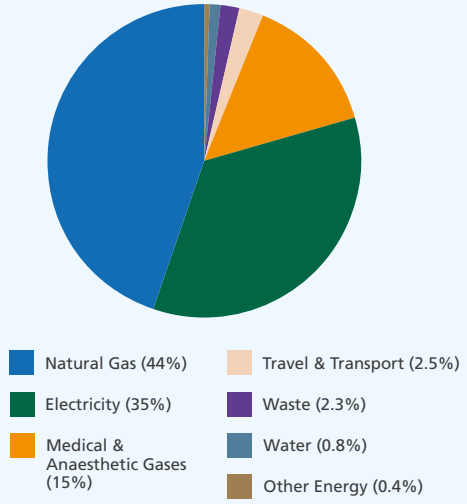
The carbon impact per inpatient, per bed day is 125kgCO_2e

The carbon impact of an outpatient hospital appointment is 76kgCO_2e

MFT Carbon Footprint Plus baseline 2019/20



A closer look at the MFT Carbon Footprint emissions



Our Impact

The breakdown of the MFT Carbon Footprint Plus largely mirrors that of the entire NHS and is typical of an acute Trust. The largest component of the Carbon Footprint Plus is the supply chain, calculated from Trust expenditure data, encompassing healthcare-related spend through to buildings and infrastructure. Within the MFT Carbon Footprint, are the emissions from energy (for heat and electricity), and these have steadily decreased since the Trust was formed in 2017/18.

To date, many carbon reduction measures have focused on estates-based opportunities and, since 2017/18, major energy efficiency and infrastructure projects have been implemented to reduce wastage and prepare for future low carbon technologies. These actions contributed to a 5% reduction in energy consumption over this period, however the equivalent carbon reductions have been significantly enhanced (22%), through greater use of renewables nationally, which has reduced the carbon intensity of electricity from the National Grid.

Whilst North Manchester General Hospital did not formally join the Trust until April 2021, the carbon impact of this site has been incorporated into our historical analysis from 2019/20 to establish an accurate pre COVID-19 baseline. When normalising this data to account for the fluctuating size of the estate, both the MFT Carbon Footprint and community emissions have shown a reduction trend. However, supply chain emissions have continued to rise, representative of increased spending on Trust activities and developments, and reflective of weaknesses in the supply chain carbon footprinting methodology.

A more detailed look at our historical carbon footprint performance can be found in Appendix B.

Our Highlights So Far

PEOPLE

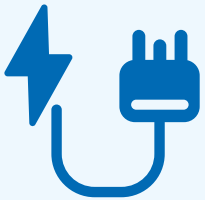
2
staff-focused sustainable healthcare E-learning modules launched

50
teams participate in MFT sustainability accreditation scheme **'Green Impact'**

120,000
staff sustainability actions recorded on **'Green Rewards'** pledge platform

PLACES

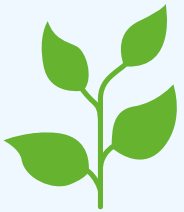
£18 million
investment secured to decarbonise our hospital buildings



48%
of MFT fleet now electric: reduces local air pollution

1,340 tonnes
of waste recycled annually

CARE



296
submissions to the innovative **Greener Operations** research project led by MFT clinicians

50
clinical services delivering virtual outpatient appointments, reducing patient travel footprint

Desflurane use reduced to just
3%
of all volatile anaesthetic gases

What We Want to Achieve

Our vision for sustainable healthcare is a future where carbon considerations are fully integrated into patient decision making and care pathways. Where all staff, contractors and suppliers are fully aligned with our net zero ambition, and we take a more holistic, collaborative and preventative approach. To achieve this vision and deliver net zero carbon, we have identified two overarching ambitions.

Our first overarching ambition is to achieve a net zero MFT Carbon Footprint by 2038.

As an anchor institution within the Greater Manchester city-region, we have committed to adopting the science-based approach of our Combined Authority, which is even more ambitious than the national NHS target.

This places importance on total carbon emitted, not just the date at which we reach net-zero carbon, to more responsibly limit our overall contribution to climate change. This approach uses an organisational carbon budget to manage this over time.

Our second overarching ambition is to achieve a net zero MFT Carbon Footprint Plus by 2045.

This is an NHS-led target based on using our influence to address the significant carbon impact of the goods and services being bought, as well as from patient, visitor and staff travel. The longer time span of this ambition represents the scale of the challenge ahead, and MFT will work collaboratively across the healthcare system to achieve this with our suppliers and other stakeholders.

What We Want to Achieve

Our carbon budget relates specifically to the emissions we directly control, the MFT Carbon Footprint, and is calculated based upon GMCA recommended carbon reductions of at least 10% per year, in order to avoid catastrophic climate change. Our carbon budget from our 2019 baseline until the end of this Green Plan is 398,040 tCO_2e.

By staying within this budget for the duration of this strategy, we will be on track to stay on our pathway to net zero carbon. If we emit more than the budget allows, subsequent strategies will be more challenging to deliver and will require a reduced carbon budget to compensate. Carbon offsetting, which involves making financial contributions to local or international carbon reduction projects, will not be utilised over the timeline of this 3-year strategy. Priority must be given to reducing our own emissions to demonstrate credible leadership on climate action. As the quality and assurance of carbon offsetting products develop, we will follow sector guidance to review the suitability for MFT as we move closer to the 2038 deadline.

Anticipated carbon savings have been calculated for existing estates, travel and medicine decarbonisation projects already in development and to be fully implemented over the duration of this Green Plan.

These measures alone will not meet our 3-year carbon budget, and further action is needed to prioritise additional carbon saving activities. It is imperative that decision making across the whole organisation is informed by this net zero priority, ensuring new or altered services are not negating carbon reductions being made elsewhere.

Progress towards our second key ambition will largely be determined by the rate of change within the supply chain across the sector. The International Leadership Group for a Net Zero NHS, which includes major global suppliers, have shown public commitment to the 2045 pledge, indicating a willingness and enthusiasm to innovate. The scale and breadth of healthcare activities we deliver within MFT means that our voice will be particularly significant in driving change regionally and nationally, and we will be vocal advocates for low carbon supplier partnerships and broader collaboration to achieve this commitment.

Whilst carbon is the focus of our overarching targets, the wider health and social impact of our sustainability activities remains a priority. Each of the ten areas of focus outlined in this strategy have been assessed against both carbon and social impact through a materiality assessment which can be found on page 33. A balanced approach will be taken to ensure we prioritise our activities to achieve the greatest positive impact.

MFT Carbon Footprint Budget 2019/20

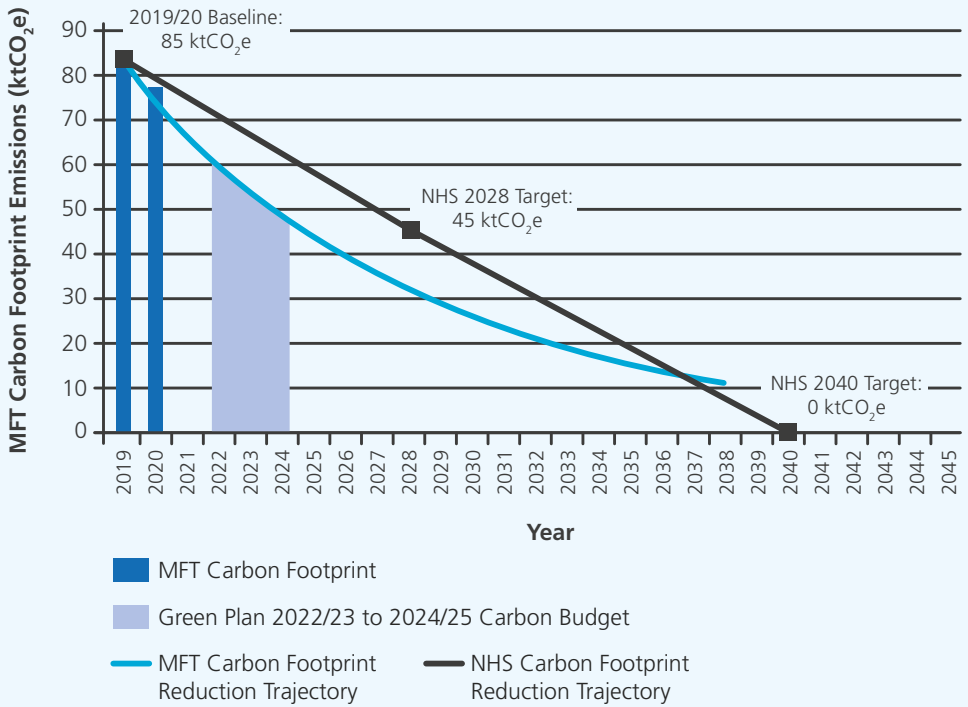
Total budget to 2038/39
746,200 tCO_2e

Interim budget to 2024/25
398,040 tCO_2e

By the end of this Green Plan we aim to use no more than 53% of our MFT Carbon Footprint budget

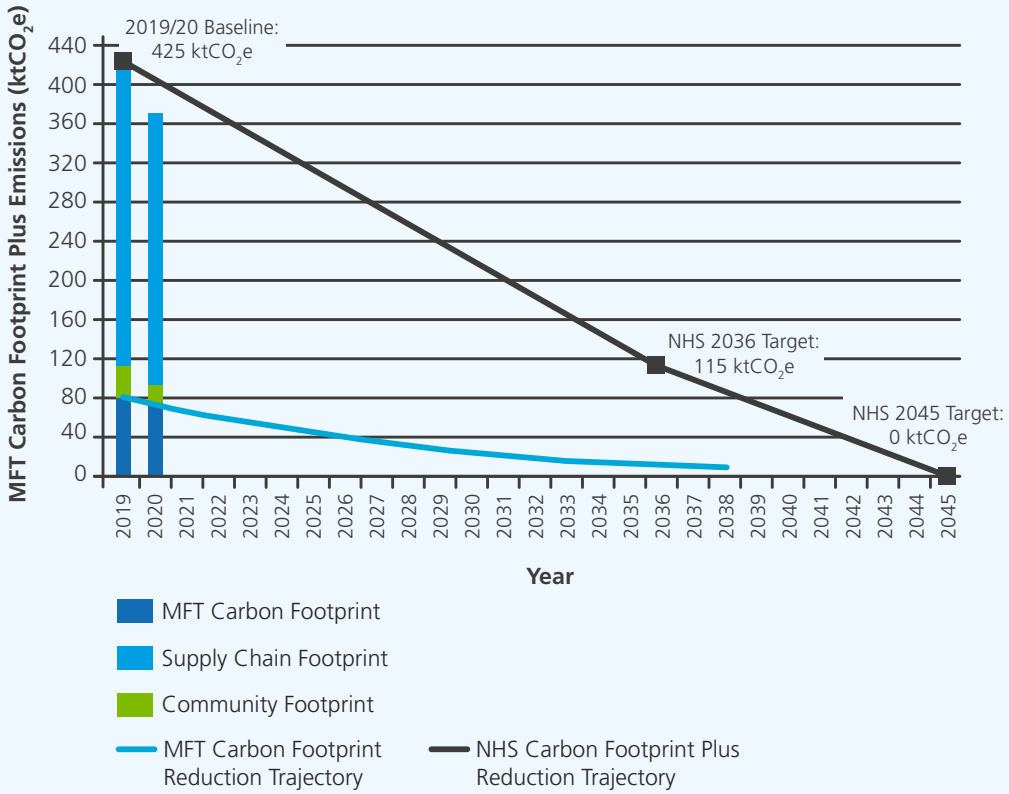
What We Want to Achieve

MFT Carbon Footprint Trajectories to Net Zero



2028 indicates the NHS interim 80% reduction target from a 1990 baseline for the MFT Carbon Footprint.

MFT Carbon Footprint Plus Trajectories to Net Zero



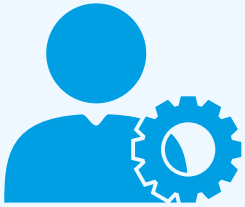
2036 indicates the NHS interim 80% reduction target from a 1990 baseline for the MFT Carbon Footprint Plus.

Our Vision

Throughout the lifetime of this Green Plan, and beyond, we will:

What You Can Do

STAFF

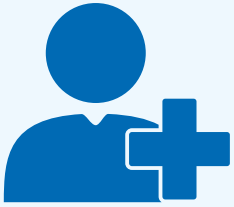


Educate
yourself to understand how your role relates to net zero carbon.

Connect
with similar departments and functions across the Trust and beyond to explore and share sustainability good practice.

Consider
what you buy. Is there a more sustainable option, can you use less or is it required at all?

PATIENTS



Talk
with your clinician. Are there more sustainable or lower carbon approaches to your care?

Fully understand
your treatment plan, to maximise the benefits, avoid wasted medicines and resources.

Preventative care
Keep active and healthy to reduce the need for more intensive healthcare.

SUPPLIERS

Measure & report
your impact to quantify where your carbon emissions are taking place.

Collaborate
with your NHS customers to identify practical opportunities to improve the sustainability of your goods and services.

Innovate
your goods and services to reduce the full life cycle impacts of your products throughout the supply chain.

Risks and Opportunities

There are both risks and opportunities associated with the delivery of this Green Plan.

Risks

1. Access to Finance

With significant investment required to deliver the commitments in this strategy, it will be key that external funding opportunities are maximised, and decarbonisation embedded into backlog maintenance and major redevelopment programmes, as well as upgrading of retained estate.

2. Staff Resources

With a growing demand for environmental professionals in the healthcare sector and beyond, we need to improve career development paths and succession planning in the sustainability team. Clinical programmed activities (PA) time must be allocated if commitments are to be effectively delivered locally.

3. Patient Demand

It will take several years for the NHS to catch up on missed elective surgery and the backlog of care generated during the COVID-19 pandemic. This will impact on resource usage and carbon footprint which may not reduce in absolute terms as fast as we need it to. As new diagnostic technology is adopted this will place pressure on energy supply. The need for remote healthcare services will become more pressing as healthcare demand grows.

4. Insufficient Electrical Capacity

To decarbonise the estate a significant increase in electrical capacity will be required. It will be key that needs are identified at an early stage, and we will need to liaise closely with the Power Network Operator, Electricity North West.

5. Reporting Requirements

Reporting requirements are becoming more frequent and demanding, and we need better data to monitor progress on a real-time basis. Investing in smarter systems for collating and reporting data will be key.

6. Reputation

With an increasing focus on net zero carbon, there is a risk of harm to our reputation if we do not deliver against our stated targets and other commitments. Environmental credentials are becoming increasingly important to the younger generation, and we risk not attracting and retaining staff if this agenda is not fully embedded.

Opportunities

1. Increased Costs of Waste and Utilities

Whilst the increasing cost of waste and utilities will place substantial pressure on organisational finances, it will make a stronger business case for investing in improvement and efficiency measures.

2. Integrated Care System and Collaboration

As the ICS (Integrated Care System) transitions to a legal entity, there will be greater opportunity to collaborate with our system partners on shared priorities, as well as embed net zero carbon more formally within the commissioning process as a requirement to deliver healthcare services.

3. Greener NHS

With an expanded national team and regional support, this programme will provide the tools and other supporting information required to deliver against this strategy.

4. Innovation

It will be essential that we stay close to national and international innovations and work with our Academic Health Science Network to identify where low carbon solutions are needed.

5. Enhanced equality

Actions for net zero carbon can address existing health inequalities. Equality Impact Assessments should be conducted for new activities which underpin this strategy.

6. Early action

The sooner we act to decarbonise the healthcare system, the lower the cost will be. It is widely recognised that the costs of inaction will far outweigh the cost of early action, and we can contribute to additional social value through the associated contracts.

7. Co-benefits

There will be significant co-benefits from decarbonising including cleaner air, which will drive economic benefits and reduce respiratory hospital admissions.

Areas of Focus

This section looks at the ten most important areas where we will direct our efforts to reduce carbon emissions and improve wider sustainability and health outcomes. Due to their interconnectivity, positive results in one area will also benefit others. The areas mirror national NHS priorities.

Sustainable Models of Care

Why it matters

We need to reimagine current care pathways to improve patient outcomes whilst making care less carbon and resource intensive and, where possible, reducing the need for care.

Examples include minor process changes, which save staff time and use less resources, or more system-wide approaches such as 'Patient Initiated Follow Ups (PIFU)', 'Same Day Emergency Care (SDEC)', 'Getting It Right First Time (GIRFT)', quality improvement projects or moving care closer to home to reduce pressure on hospitals and patient transport.

Some of these approaches will enable specific treatments to be less carbon intensive. Although carbon reductions may not be measurable by individual cases, this will support a better functioning health service with reduced waiting times, removal of unnecessary appointments/ referrals and provide better health outcomes.

To drive down the carbon footprint of care, a more holistic view of healthcare is needed together with greater collaboration between primary, secondary and community healthcare providers, enabling patients to be treated in the most appropriate way.

What we're doing

Creative and innovative transformational programmes are a long-standing feature of the Trust's work and have been accelerated during the pandemic. Several flagship projects demonstrate this:

- Redesign of care pathways to provide community-based specialist eye treatment reduce carbon from patient travel by 50% (30 tonnes CO_2e per annum)
- Virtual physiotherapy clinics, aided by kinetic sensors, allow patients to perform exercises using games, reducing the number of in-person physiotherapy appointments
- Specialist consultants provide advice and guidance via video calls to GPs on specific patient cases to avoid unnecessary hospital referrals or testing
- 'Patient Initiated Follow Ups (PIFU)' rolled out to eliminate unnecessary outpatient appointments
- 'No Delay May/Home by Noon in June' efficient patient discharge campaigns.

What we want to do

Ten hospitals and community services in the city of Manchester and Trafford are managed by our Trust as a Single Hospital Service. We will maximise this opportunity to embed the principles of sustainable innovation and quality improvement across all healthcare sites.

Major clinical transformation projects will conduct sustainability impact assessments to identify and quantify where carbon or resource savings will be made, and each clinical service unit (CSU) will have a designated sustainability lead to drive relevant innovations within their specialty.

The impacts from testing new models of care will be fully evaluated and shared within and between hospital sites and beyond. They will be encouraged to adopt proven methods of reducing the carbon intensity of care pathways.

Objectives

Headline objectives

- Pilot the redesign of at least 3 care pathways to reduce carbon
- 2% of patients discharged to a PIFU pathway

Supporting projects

- Establish at least 3 'green working groups' for clinical services with a high environmental impact
- Provide resources and training on Sustainable Quality Improvement (SusQI), to empower clinical leads to review and redesign care pathways to reduce carbon (in collaboration with system and regional partners)
- Continue to embrace the Getting It Right First Time (GIRFT) programme to avoid unnecessary procedures, admissions and bed days
- Measure and promote the specific carbon benefits of key, out-of-care hospital models such as Community Macular Treatment Centres
- Pilot innovative technologies that reduce the environmental impact of care and prevent ill-health

Digital Transformation

Why it matters

The use of digital technologies and tools to deliver and manage healthcare can help realise sustainability benefits and drive down the carbon intensity of care.

Direct carbon reduction can be delivered by reduced staff, patient and visitor travel, and reduced resource use as digital patient data systems become more integrated. Greater efficiency can be achieved as more preventative and proactive care measures are put in place.

Some digital health developments require more widespread adoption (e.g. virtual appointments and electronic patient communications), while others need further research and innovation (e.g. smartphone diagnostics) before they can be fully mainstreamed.

However, the digital approach is not always a low carbon or sustainable approach. Large data centres are a major contributor to greenhouse gas emissions, and there are significant ethical concerns over aspects of the digital supply chain, such as modern slavery and child labour, conflict minerals and rare earth elements and the environmental impact of mining. E-waste is the world's fastest growing waste stream, as technology becomes obsolete at an ever more rapid pace. Widespread uptake of digital technology can contribute to the exacerbation of health inequalities unless steps are taken to prevent digital exclusion.

What we're doing

The COVID-19 pandemic was the catalyst to accelerate many aspects of our existing digital programmes. In 2020/21 this included:

- Investment in and rollout of virtual outpatient services which facilitated 29% of all outpatient contacts in 2020/2021
- Virtual advice and guidance from MFT specialists to support GPs to avoid unnecessary tests or hospital visits. Over 4,000 GP contacts were made over the year, a significant proportion of which resulted in an avoided first appointment.

'HIVE' is an ongoing, major initiative for our Trust which involves digitising and streamlining 750 different patient records programmes into a single system. Once completed, it will enable staff to access crucial patient information quickly and efficiently and provide the foundation for future digital services at MFT.

What we want to do

Digital technologies can streamline healthcare delivery, whilst achieving tangible reductions in carbon. We will ensure our digital approach is a responsible one; ensuring we don't exclude any patient groups, improving awareness of sustainability and social impacts and working with partners to enhance understanding of our digital supply chain. We will be mindful of the carbon impact of unnecessarily storing large volumes of data.

Digital care will mean the most carbon intensive care option for patients (an on-site hospital visit) will only be used when necessary. Digital therapeutics will give clinicians more informed case information and patients greater control over their own health.

Objectives

Headline objectives

- Deliver 25% of all first outpatient appointments and 60% of all follow up appointments virtually
- Embed circular economy considerations within the procurement and disposal of IT equipment, including the development of reporting metrics

Supporting projects

- Collaborate with key partners to embrace digital innovations that have significant carbon benefits associated with them
- Work with key suppliers to embed circular economy considerations within procurement of IT and other digital infrastructure, including purchasing durable devices that can be repaired and upgraded, and embracing technology as a service rather than a product
- Identify and measure the sustainability benefits of 'HIVE' which digitalises and streamlines patient records into a single system

Supply Chain and Procurement

Why it matters

We require a huge network of suppliers to produce and deliver the goods and services needed to deliver healthcare.

The purchase of medical instruments and equipment, pharmaceuticals, IT, construction materials, business services and commissioned healthcare are, of course, essential for healthcare provision, but have associated environmental and social costs.

Greenhouse gases are emitted during the production and delivery of goods and services and these emissions account for the largest proportion of the overall NHS Carbon Footprint Plus (62%).

Whilst we don't have direct control over these emissions, we have significant influence and purchasing power. By working collaboratively with partners from across the system, we can maximise this leverage, putting more pressure on suppliers to adhere to the ambitious net zero carbon targets.

MFT's purchasing power also allows us to push for social good, especially in our local area. By making smart decisions at the point of purchasing, we can increase local employment and benefit our community.

What we're doing

MFT's supply chain is the largest contributor to our carbon footprint, responsible for 74% of all emissions in our baseline year (2019/20). Projects to address this are:

- Proactively investigating procurement data to target interventions with a focus on:
  - » Highest carbon intensity products
  - » Biggest suppliers by spend and carbon emissions
- Engaging with suppliers to build in circular economy principles
- Removing single use plastic items from on-site food outlets
- Piloting reusable PPE in the Critical Care Unit
- Increasing the proportion of recycled paper
- Reusing furniture and other equipment
- Rationalising clinical packs to remove unnecessary items.

What we want to do

All our suppliers will share our vision of a sustainable healthcare system. From 2030, we will only work with those who align with the commitment to deliver net zero carbon by 2045. In practical terms:

- Carbon emissions will be minimised, while social and environmental benefit will be maximised
- More products will be sourced locally and social value properly considered
- Continued low carbon product innovation will be championed
- Suppliers will be expected to provide take-back or repair schemes where appropriate.

Objectives

Headline objective

- Apply a social value weighting of at least 10% to all new purchasing contracts and work collaboratively with partners and suppliers to drive down our Carbon Footprint Plus

Supporting projects

- Develop a Sustainable Procurement Policy to support the transition to net zero carbon and more sustainable procurement models. This will embed circular economy principles, with suppliers expected to consider and take responsibility for all stages of the product lifecycle
- Work collaboratively across the system to develop interventions for the actionable top 10 most carbon intensive products and suppliers
- Implement a programme of carbon literacy for procurement staff, achieving at least 50% of staff trained by 2024/25
- Pilot new methods for reporting on supply chain carbon emissions to improve the accuracy of the MFT Carbon Footprint Plus
- Increase the proportion of recycled paper purchased from 64% to 95% by 2024/25

Medicines

Why it matters

A quarter of the NHS Carbon Footprint Plus is from medicines. The majority is associated with supply chain manufacturing and transportation and some medicines such as anaesthetic gases, medical gases and certain types of metered-dose inhalers release high carbon emissions at the point of use. Collectively, these medicines account for 5% of all emissions nationally and, as such, are of particular focus in this 3-year period.

Preventing patients from requiring hospital treatment, including medicines, is key to reducing the impact of this area. Interventions such as social prescribing and other community-based resources, which support patients to adopt improved healthy behaviours, will become increasingly vital in the pathway to a decarbonised NHS. Where medicines are prescribed, they must be clinically necessary, but many treatments do not address the underlying causes of ill-health.

When medicines aren't being used correctly by patients or expire without being used at all, a further burden on the carbon footprint of the NHS is generated, without any benefit to patient health. We can minimise this impact through efficient prescribing combined with patient education.

Prescribing is relevant to the whole of the healthcare system, requiring collaboration between commissioning, primary, secondary and tertiary care providers to successfully incorporate sustainability into the decision-making process.

What we're doing

Several initiatives are already underway to minimise the environmental impact of medicines. Many of these activities have been prioritised towards those medicines with direct impacts on climate change at the point of use – anaesthetic gases, medical gases and metered-dose inhalers.

They include:

- Making clinical leads accountable for the sustainable use of anaesthesia
- Implementing a campaign for anaesthetists to substitute the most potent anaesthetic gas for a less carbon intensive alternative which reduced consumption by 95%
- Piloting nitrous oxide capture technology at Wythenshawe and St Mary's hospitals and removing backup nitrous oxide cylinders from Wythenshawe
- Auditing inhaler prescriptions across the Trust
- Implementing patient engagement measures to increase successful application of medicine at the Kellgren Centre for Rheumatology.

What we want to do

Our vision is that environmental impact is considered as a priority alongside clinical efficacy in the prescribing of medicines across all MFT hospitals. Our clinicians will take an informed approach to adopting low carbon prescribing, with best practice being proactively shared between professionals within our family of hospitals and the wider system. We will engage with and educate patients to help them make more informed choices around the use and disposal of medicines.

Objectives

Headline objective

- Reduce the carbon footprint of medicines that have a high GWP at the point of use (metered dose inhalers, medical gases, and volatile anaesthesia)

Supporting projects

- Appoint sustainable anaesthesia leads for MFT hospitals with allocated PA time for this agenda and ensure a collaborative working group operates across the whole Trust
- Implement a programme to minimise wasted Nitrous Oxide and Entonox
- Develop and implement a Trust-wide hierarchy for sustainable anaesthesia, maintaining desflurane usage at less than 5% of volatile halogenated agents (only used when clinically essential)
- Baseline carbon emissions from MFT prescribed inhalers and develop a programme of interventions to reduce the impact on our carbon footprint, including improving disposal of used inhalers
- Develop a campaign to further reduce over or unnecessary prescribing and wastage of medicines
- Require all anaesthetists to undertake mandatory training and regular CPD on the environmental impacts of anaesthesia

Food and Nutrition

Why it matters

The nutritional quality of food served to patients has a direct impact on their health and recovery. A well-balanced plate is also a low carbon plate, consisting of minimally processed foods and seasonal, ideally locally sourced, fruit and vegetables. Improving the quality of the food served within hospitals has the potential to significantly benefit the patient experience and recovery rates, as well as improve staff health and wellbeing.

The efficiency of meal delivery and wastage of food is another key consideration. The UK healthcare sector creates 121,000 tonnes of food waste annually, equating to a financial loss of £230 million a year. Wastage can be found throughout the food production system from food growing, storage and meal preparation, through to unserved food and plate waste. This creates a substantial financial and environmental burden through over-ordering and waste disposal costs, and a huge opportunity in tackling this.

What we're doing

Menu designs account for our patients' demographics and reflect their religious and cultural needs, including kosher, halal, vegan and Afro-Caribbean options. These are nutritionally assessed by our dietitians and meet government guidelines on nutrition and hydration.

The MFT Food and Nutrition Strategy encompasses our commitment to sustainability, to reduce the carbon impact of our food supply chain and adhere to the government buying standard for the sustainable procurement of food.

Single use cutlery and crockery for meals is only provided when strictly necessary. A food waste initiative has been piloted to weigh and accurately quantify food waste. We already segregate food waste and send it off-site for treatment via anaerobic digestion.

What we want to do

We buy 2.2 million patient meals a year and will use our purchasing power to invest in a positive food system. This requires working closely with our supply chain to integrate as much local, seasonal, low carbon (including plant-based) and responsibly sourced food as possible into meal design. Our meals will be nourishing and culturally appropriate, appetising to patients, and minimise avoidable plate wastage.

Our food ordering processes will be efficient and convenient; using technology to make it simple and quick for staff to manage and reduce avoidable wastage. Services will be consistent across all hospitals and will be an exemplary component of the MFT patient experience.

Objectives

Headline objective

- Reduce the carbon impact of food, minimise food waste and eliminate unnecessary single use plastics from catering

Supporting projects

- Increase the number of low carbon, sustainable and healthy patient meal options on offer as part of the Better Hospital Food Programme, and require catering providers to report progress at least once annually
- Work with ICS and PFI partners to take a more collaborative and robust approach to procurement of catering services with increased weighting on healthier, lower carbon and locally sourced options
- Undertake an in-depth food waste study across at least one MFT hospital, to identify and deliver priority interventions
- Eliminate all unnecessary single use plastics from staff catering facilities and ensure this is a contractual requirement for any new or renewed outsourced provision

Estates and Facilities

Why it matters

The environmental impact of our hospital buildings, through energy consumption for power and heating, water consumption and waste treatment, accounts for 83% of our MFT Carbon Footprint and 17% of our MFT Carbon Footprint Plus. One pound in every £187 is spent on energy used in buildings across the NHS. Delivering a net zero carbon hospital estate will be challenging but is one of the key areas we can directly control.

The management of this can be considered from two perspectives:

- **Supply side:** looking at what energy sources are available (non-renewable, off-site renewable, on-site renewable) and what waste contracts are in place (low carbon intensity/circular economy)
- **Demand side:** using less energy and water and generating less waste.

In the **short to medium term,** staff engagement, innovations in care pathways and engagement with suppliers can help identify immediate efficiencies in energy, water and waste to reduce resource use, whilst supporting high quality patient care.

In the **medium to long term** innovations in the supply side, locally, regionally and nationally, will be essential to reach the net zero carbon ambition of the NHS. From the demand side, we need to embed net zero carbon into the design of new buildings and major refurbishment schemes, as well as planned backlog maintenance and plant replacement.

What we're doing

We have already reduced building emissions by 21% since MFT's inception in 2017/18.

- Projects delivered include on-site energy infrastructure upgrades, energy efficiency programmes such as building fabric improvements and LED lighting roll outs, supported by decarbonisation of the grid.
- All imported grid electricity is backed by a Renewable Energy Guarantees of Origin (REGO) certificate.
- Installation of combined heat and power plants (CHP), high efficiency boilers, upgraded building management systems and over 10,000 LED lights at two hospitals have reduced total electricity consumption by 10%, saving 1,840 tCO_2e and £1m every year.

What we want to do

Become a **zero-waste organisation by 2030**, by:

- Preventing waste generation by applying circular economy principles to services and contracts
- Reusing resources on site or locally as much as practically possible
- Recycling resources which can't be reused and sending zero avoidable waste to landfill.

Achieve **net zero carbon emissions from our estate by 2038**, by:

- Transitioning heating away from fossil fuel sources
- Operating optimised energy efficient buildings, which provide greater patient comfort
- Increasing the proportion of on-site renewables
- Utilising renewable energy tariffs and power purchase agreements
- Ensuring that major new developments and refurbishments are designed and operated to a net zero carbon standard.

Objectives

Headline objectives

- Reduce carbon emissions from the building estate by at least 30% by 2024/2025 and ensure major schemes are energy efficient and low or zero carbon
- Implement innovative treatment technologies for waste and increase the recycling and reuse rate from 17% to 25%

Supporting projects

- Develop an Estates Decarbonisation Strategy, delivering ambitious energy and water reduction and efficiency schemes, desteaming hospital sites and seeking funding opportunities
- Develop decarbonisation plans for all existing fossil-fuelled CHP schemes and not commit to any new schemes unless they have a decarbonisation plan that aligns with our carbon budget
- Ensure that major hospital redevelopments, refurbishments and life-cycled infrastructure is designed to be low and zero carbon in-use
- Increase capacity of on-site renewable energy generation and only use certified renewable tariffs. Explore opportunities to work with partners to develop PPAs for off-site renewables
- Develop a plan for innovative treatment and prevention of waste, including working with key suppliers and social enterprises to develop a circular economy approach

Travel and Transport

Why it matters

Travel is fundamental to delivering health and care. 9.5 billion miles (3.5%) of all road travel in England is associated with patients, visitors, staff, and suppliers to the NHS. This travel has an impact on our climate, air quality, local environment, and health. Just a small reduction in transport-related nitrous oxide (16%) could prevent almost 160 deaths and save more than 350 days spent in Greater Manchester's hospitals due to respiratory conditions each year.

Our Trust both contributes to, and is affected by, the environmental impacts of travel and transport. As one of the largest employers in Greater Manchester, we have over 28,000 employees travelling to work. We also treat over 2 million patients and travel over 5 million miles for business every year. Travel and transport contribute 7% of our organisation's overall carbon footprint plus (2019/20).

1. https://cleanairgm.com/air-pollution/#your-health

What we're doing

We have been working on sustainable travel improvements for several years developing cycling infrastructure and providing incentives to cycle such as bike loans, free bike maintenance, subsidised bike locks and competitions. We have upgraded 48% of our transport fleet to electric vehicles and provide some free shuttle bus services to support low carbon business travel.

These results led to recognition including:

- Platinum Travel Choice Award from Transport for Greater Manchester (2020)
- Case study featured in the launch of 'For a Greener NHS Campaign' (2019)
- Highly commended at NHS Sustainability Day (2018).

What we want to do

We want to make sustainable travel the natural choice for patients and individuals and organisations working with and for MFT. The following aims will help us transition to net zero carbon and deliver improvements in air quality:

- **Reduce journeys:** e.g. through flexible working for staff, more digital patient appointments
- **Switch the mode:** provide incentives for employees to move away from cars, especially single occupancy vehicles, to walking, cycling and public transport
- **Reduce the impact** by:
  - » Electrification of fleet and specialist support vehicles
  - » Policies supporting sustainable business travel options and disincentivising higher carbon choices
  - » Ultra-low and zero emission vehicles (ULEV and ZEV)
  - » Optimising movement of goods and services vehicles.

Objectives

Headline objectives

- Reduce the carbon emissions of travel and transport activities (business travel, fleet mileage, staff commuting and patient and visitor travel) by 25%
- Achieve a "Good" rating for the Clean Air Hospital Framework

Supporting projects

- Deliver the MFT Healthy Travel Strategy and implement campus-specific travel plans
- Reduce journeys through virtual outpatients' visits and the provision of care closer to home
- Review business travel and implement an action plan to reduce its environmental impact
- Actively seek funding to improve active travel infrastructure, whilst continuing to incentivise take-up through hire schemes and on-site cycle maintenance
- Fully electrify the in-house transport fleet, and only offer ultra-low and zero emitting vehicles through staff salary sacrifice schemes, improving charging infrastructure subject to funding and electrical capacity constraints
- Work with key suppliers and partners to consolidate orders and deliveries to sites
- Ensure that up-to-date information on active and sustainable travel is widely available to staff, patients and visitors

Climate Change Adaptation

Why it matters

More frequent extreme weather events and rising temperatures increase the risk of vector-borne diseases and pose threats to lung health, while the localised impacts of flooding, storms and heatwaves place growing pressure on staff, hospital buildings, critical infrastructure and the supply chain.

Climate change adaptation seeks to manage this risk to services, adapting or designing buildings and processes to ensure continuity of care, in a rapidly changing global climate.

An almost threefold increase in the frequency of extreme weather events (since pre 1994 levels) has been recorded in Greater Manchester. While we cannot change this, we can prepare for these occurrences. By adapting our estate and creating more resilience through the supply chain, we can minimise these potential risks.

Past occurrence of extreme weather and climate change hazard events across Greater Manchester

Event	1945-1969	1970-1993	1994-2017
Flood (all forms)	36 (44%)	24 (36%)	109 (52%)
Storm	18 (22%)	24 (36%)	44 (21%)
Cold	17 (21%)	11 (16%)	27 (13%)
Fog	8 (10%)	2 (3%)	15 (7%)
Heat	2 (2%)	4 (6%)	10 (5%)
Drought (water shortages)	1 (1%)	2 (3%)	5 (2%)
TOTAL EVENTS	**82**	**67**	**210**

(Source: Manchester Climate Change Agency: Manchester Climate Change Framework 2020-25, 2020)

What we're doing

- Our Climate Change Adaptation Plan (CCAP), which encompasses a detailed action plan to tackle this agenda, was updated in 2021. Adaptation requires a cohesive approach to future planning and is embedded within multiple Trust policies and procedures including: Emergency Preparedness, Resilience and Response Policy, including the threat to human health. Threat of severe weather is included on the Risk Register.
- Major Incident Plan and Business Continuity Plan to anticipate and coordinate the response for potential, major disruption which could be the consequence of an extreme weather event.
- Severe Weather Plan, Heatwave Plan and Fuel Shortage Plans are in place.

What we want to do

MFT will take all precautions possible to maintain a consistent high level of care, recognising the increasing frequency and likelihood of extreme weather events.

This will ensure that the health of those Manchester communities which are most vulnerable to the impacts of climate change, such as the homeless, elderly and economically deprived, are not disproportionately affected in the quality of care they receive.

Our investments in targeted interventions, such as nature-based solutions (e.g. trees, green spaces and sustainable urban drainage) to absorb flooding runoff and excessive heat, will help shield our hospitals from reaching critical operational limits. Additionally, our rigorous business continuity planning will ensure we are prepared for the consequences of more frequent, local extreme weather events.

Objectives

Headline objective

- Ensure our organisation is preparing to deal with the impacts of climate change by delivering and embedding the Climate Change Adaptation Plan (CCAP) and associated action plan

Supporting projects

- Deliver, maintain and report progress against the Climate Change Adaptation Plan (CCAP) and associated action plan
- Maintain and review climate change risks on the corporate risk register
- Work with city-wide partners to deliver shared priorities on climate change adaption and help ensure system-wide resilience
- Ensure that major new buildings and hospital campus redevelopments are planned and designed to be resilient to climate change impacts including hotter drier summers, and an increasing frequency of extreme weather events

Green Spaces and Biodiversity

Why it matters

High quality green spaces are an essential resource for human health. They function as attractive habitats which absorb and filter carbon dioxide, air pollution, rainwater and heat. Health, nature and wellbeing are inextricably linked, and hospital patients that have a view of nature from their window recover faster and need less medication.

In an urban environment, high quality external areas are an important asset to supporting physical and mental health, and help raise awareness of the benefits of the natural environment. Whilst the carbon benefit from hospital green spaces is minimal, our focus is on maximising staff wellbeing, patient recovery and supporting local biodiversity. Designed effectively, these outdoor spaces can also help to protect the Trust's infrastructure from extreme weather events. New developments are subject to the 'biodiversity net gain' principle, which leaves biodiversity in a better state than before.

What we're doing

The MFT Estate, across seven separate sites plus numerous community locations, spans both urban and suburban areas of Greater Manchester. Approximately 19% of this footprint is green spaces.

The spaces include a mixture of publicly accessible gardens, managed courtyards, balconies, grassed and planted landscaping. Rooftop beehives are situated on the roof of the Trust headquarters.

Our proactive and resourceful staff members are:

- Leading local gardening activities with patients to complement care on the ward
- More effectively using existing green spaces by developing formal gardens for staff contributing to the post pandemic workforce recovery efforts
- Undertaking micro initiatives such as planting a mini orchard and wildflower planting and showcasing departmental planters in an 'MFT in bloom' campaign.

What we want to do

By playing an active role in the development and management of on-site natural assets, staff, patients and community groups will feel better connected to the natural environment, benefitting their personal health and wellbeing.

We will adopt innovative approaches to enhance our green spaces and promote biodiversity, such as using vertical spaces, rooftops and courtyards. The site redevelopment of Wythenshawe and North Manchester General Hospitals provides a significant opportunity to integrate more innovative green infrastructure into building design.

Objectives

Headline objective

- Maximise the quality of on-site green spaces, identifying and delivering schemes that address one or more of the following priorities: improves local biodiversity, supports staff wellbeing and/or patient recovery, combats climate change or provides opportunities for social prescribing

Supporting projects

- Develop a Greenspace and Biodiversity Plan, establishing associated metrics
- Collaborate across estates, clinical teams and with local social enterprises to develop and seek funding for schemes
- Build green measures into major hospital redevelopment programmes
- Facilitate our staff beekeeping programme and assess the feasibility of expansion across other sites
- Require service providers to undertake annual tree condition surveys to establish a programme of recommended works
- Implement opportunities for wildflower planting, designated 'no-mow' zones to encourage wildlife, and expand hedgerow and tree cover

Workforce, Networks and System Leadership

Why it matters

This focus area looks at our ability to influence the thinking and behaviours of those who work with us and for us, enabling many of the other activities outlined throughout the Green Plan.

The NHS employs 1.3 million staff members. Engaging the workforce with the sustainability agenda is essential if we are to achieve net zero carbon.

As a large teaching and research hospital Trust, we have a key role to play in making healthcare more sustainable now and in the future. Currently, around 8% of our staff have engaged in the MFT sustainability programme, and further work is needed to truly embed sustainability among the workforce. By educating and mobilising staff and creating new networks for change, we are expanding our capacity for low carbon innovation, and providing leadership across Greater Manchester and the North West.

We recognise that our influence can also bring about positive change in our employees' lives and wellbeing, for example how they heat and power their homes through to their transport, dietary and other consumer choices. These changes, stemming from the workplace, can encourage staff to explore ways to save money and improve their health whilst reducing their overall carbon footprint.

Climate focused groups within local government and the healthcare community are vital to accelerate place-based coordinated action. By actively engaging in these forums we're able to use our experiences to shape conversations, as well as inspire new projects and innovations within the Trust.

What we're doing

We are educating and incentivising our staff to adopt more sustainable ways of working and living. Currently, we run two main sustainability behaviour change programmes.

- **Green Impact:** teams work together to deliver sustainable change projects in their ward, team or department. This programme is one of the most mature in the NHS with over 50 teams engaged since launch.
- **Green Rewards:** individual employees can earn points for sustainable behaviours and convert those points into rewards. To date 1,400 staff have participated recording more than 100,000 actions.

Our staff can also take a Sustainable Healthcare eLearning Module, developed by the Centre for Sustainable Healthcare.

What we want to do

Our vision is that all employees are aware of the net zero carbon ambition for the NHS and understand what that means for their work and day-to-day activities. Visible sustainability leaders and networks will make this a more prominent aspect of the MFT culture.

Beginning from their time as a trainee, clinical staff will receive core training and continuous professional development related to their specialty, meaning an environmental focus becomes embedded within our healthcare delivery.

This is supported by the extension of the 'first do no harm' principle to cover the environment, as well as human health.

Objectives

Headline objectives

- Continue to educate and engage the workforce to understand the net zero ambition of the NHS
- At least 50% of staff with major influence or responsibility for carbon intensive areas to undertake training and/or CPD

Supporting projects

- Provide role-appropriate staff and student sustainability training. Work with partners at all levels to develop a tailored programme of learning
- Include a net zero carbon clause in all job descriptions and set appraisal objectives for those in key positions of leadership and influence
- Appoint undergraduate and postgraduate sustainable education leads to embed sustainability within MFT clinical trainee development
- Run focused campaigns and behavioural change programmes to increase awareness and action on specific sustainability themes
- Develop and maintain a net zero communications plan with key deliverables
- Widely promote our work through events, social media and case studies
- Enhance the package of 'green' staff benefits

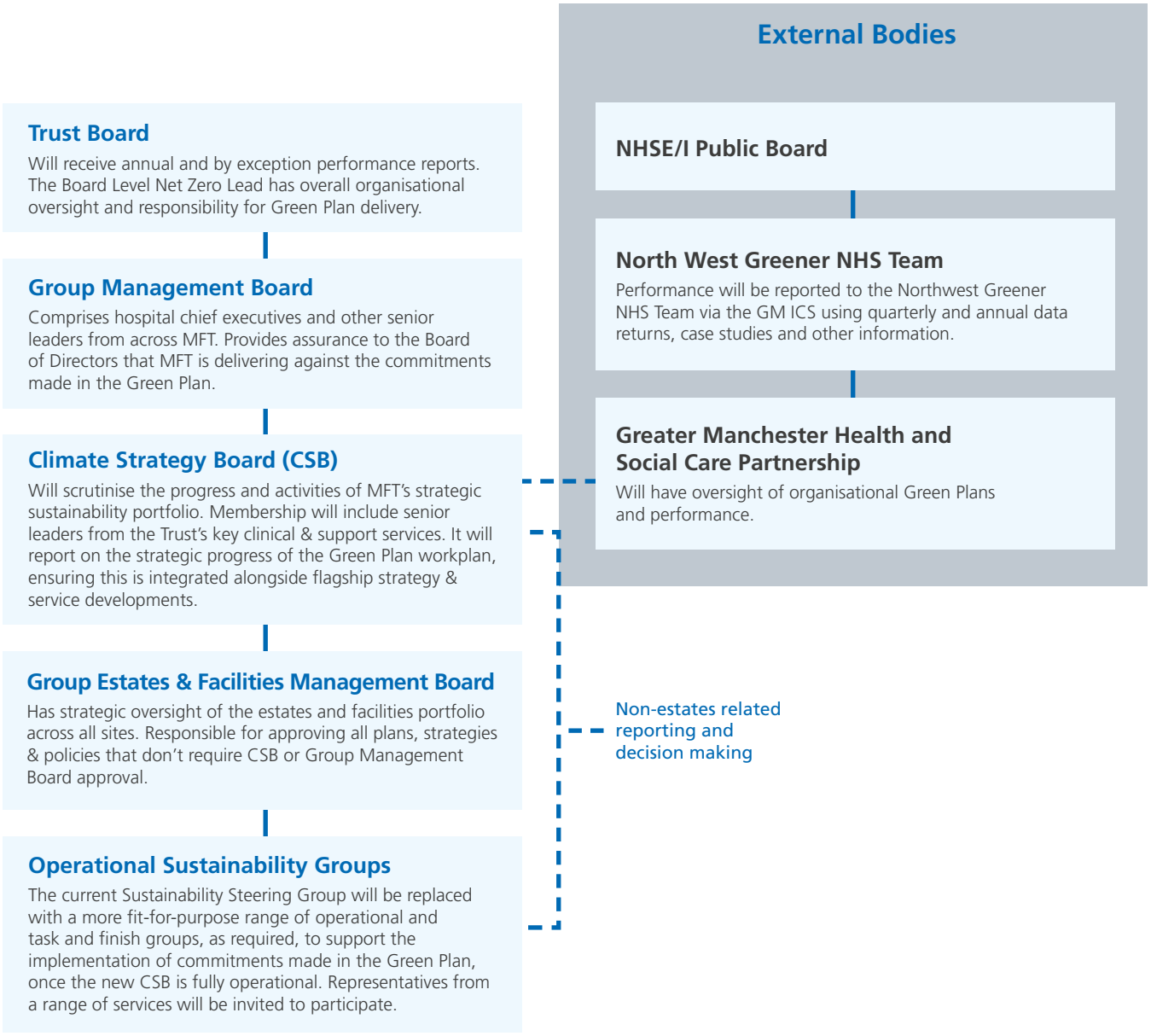
Cross-Cutting Themes

These cross-cutting themes underpin the delivery of our Green Plan commitments. With functional teams tasked with developing and implementing relevant sustainability targets, the themes explain how we maintain oversight, communicate requirements, drive and finance action, and track progress against our stated objectives.

Governance

Clear leadership and accountability are needed to ensure progress against this strategy is delivered consistently, efficiently and at pace across our large and complex Trust.

The development of a new Climate Strategy Board will provide greater opportunity to embed our targeted strategy to meet the net zero carbon agenda in all our work. Expanding this scope into more clinical and management fields, beyond estates and facilities, will enable a much greater cultural shift to meet our ambitious aims.



Tracking Progress

Data is at the heart of tracking the progress of our Green Plan objectives.

We use many data sets, both quantitative and qualitative, to assess performance across our individual hospitals as well as at Trust level. These data sets are collected and analysed with differing frequencies, depending on the availability of the data, complexity of processing and priority of issues. Reports and data submissions are made throughout the year, both internally and externally, and are summarised in a publicly accessible Annual Sustainability Report released each summer. The below outlines a list of progress tracking mechanisms. Additional requirements may be added or removed over the course of this Green Plan as required locally, regionally, or nationally.

Monthly

Internal Reporting

- Utility data normalised by patient contacts, floor area and weather
- Waste tonnages compared to historic averages
- Proportion of paper purchased which is recycled paper

External Reporting

- Recycled paper purchased as a proportion of all paper purchased, as reported to Greater Manchester procurement group

Quarterly

Internal Reporting

- Progress report on Green Plan objectives and corresponding workplans to Climate Strategy Board
- Report to Group Estates & Facilities Management Board

External Reporting

- Quarterly data collection, reported to Greener NHS including comparison with ICS and NW peers

Annually

Internal Reporting

- Carbon footprint and carbon footprint plus, including comparison against budget, in the MFT Sustainability Report
- Annual progress of Green Plan Objectives in the Annual Sustainability Report
- Annual Sustainability Report will be made publicly available via MFT's website

External Reporting

- Carbon footprint and Environmental Management Plan review, reported to Investors in the Environment
- Estates & Facilities ERIC and PAM reporting
- Carbon footprint, leadership and resilience reporting against United Nations Race to Zero campaign
- Fleet make-up and mileage reporting to Greener NHS
- Qualitative sustainability reporting using the Greener NHS Green Plan Support Tool

Communications

Engaging and accessible communications are an essential component of our approach to sustainability. The far-reaching measures required to meet our net zero carbon ambitions simply can't be done *to* our staff, they must be done *with* our staff.

To enable this, clear and concise information will continue to be shared through our monthly newsletter, social media presence (@MFTgreen) and Trust intranet pages. There will be specific campaigns and flagship projects. Content will then be disseminated through local channels via the MFT sustainability community who are proactive advocates for sustainable healthcare.

We are a large organisation with a complex structure, and whilst this poses some challenges to communication, it also generates a wealth of opportunities to share lessons between our 28,000 staff members. The experiences, stories and voices of staff members and healthcare partners will be prioritised within our internal and external communications, providing a platform for local sustainability leaders, no matter what their role or responsibility.

Collaboration with colleagues across the Trust will help us to innovate in this area. We will refine our communication methods to ensure they are accessible and tailored to key audiences, making sure no one is left behind in understanding why we need to act, and what they can do. A communications plan will be developed and maintained as a 'live' document to ensure that we maximise the opportunities created through this strategy, and align with key national messaging and campaigns.

Finances

Delivering this strategy will require both staffing and budgetary resources.

It is essential that we remain closely sighted on national, regional and system level financing and grants, as we will not be able to solely rely on leveraging funding from internal budgets.

Whilst the major campus redevelopment schemes provide a huge opportunity to deliver a net zero carbon hospital, we know that the budget will be under pressure and a compelling case will need to be presented for measures with longer term paybacks or no cashable savings.

We also need to invest in our people and ensure that they have the required expertise to understand what net zero carbon means in relation to their area of responsibility. All major business cases need to consider whether they have a positive or negative impact on carbon, and how this can be tackled to enhance the benefits or minimise the disbenefits from the outset. We know that retrofitting costs significantly more than getting measures implemented as part of life cycling and new build.

Our commitments are to:

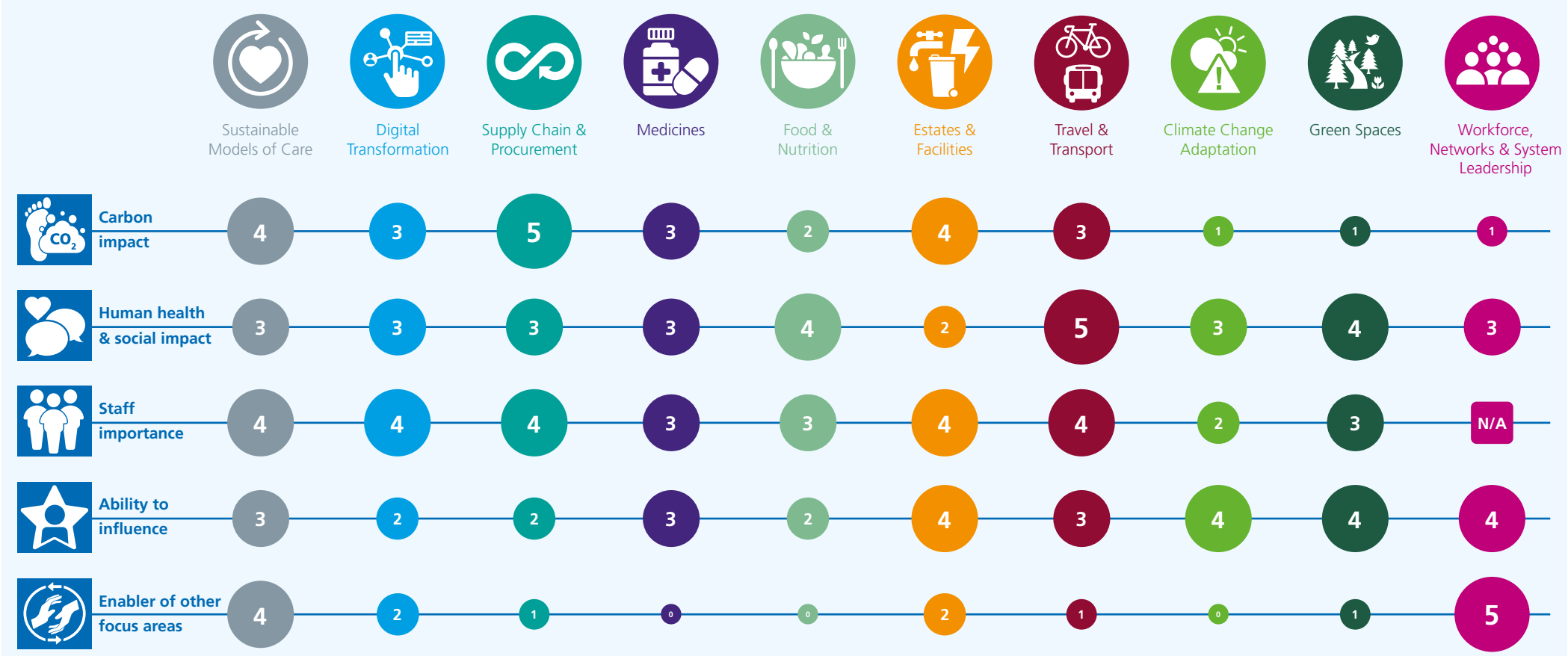
- Have a fully resourced sustainability team to coordinate the sustainability work programme and monitor and report performance, alongside dedicated time from clinicians to lead programmes of work
- Invest in training staff in key positions of leadership and influence
- Purchase utilities, services and products at a competitive rate, whilst using our position as an anchor organisation to influence suppliers, generate wider social value and apply net zero thinking to buying decisions
- Have an annual non-pay sustainability budget that reflects the requirements of delivering the Green Plan annual work programme, whilst retaining some ‘in-year’ flexibility
- Pursue national, regional and system opportunities for funding and grants
- Work closely with our PFI funders and shareholders to maximise benefits and address the challenge of decarbonising the PFI estate
- Ensure that both embodied and in-use zero carbon measures are fully considered and costed into life cycling, refurbishment and new build projects.

Further work will be undertaken on individual programmes to refine costs on a scheme-by-scheme basis.

Materiality

A materiality assessment, which allows us to prioritise the most important areas of focus, was conducted during the development of the Green Plan with the input of wider staff groups. Each area of focus has been assessed against the five criteria outlined below.

Whilst carbon reduction is the principle high level target, this assessment demonstrates how other sustainability issues are also very significant, particularly those which provide wider co-benefits to our health and society. Additionally, our 'ability to influence' identifies the importance of working collaboratively across the healthcare system. This materiality exercise helps us to concentrate our resources in the most appropriate place for each of the areas of focus.



Appendix A: Reporting Measures at a Glance

The reporting measures outlined below are indicative only and this is not intended to be an exhaustive list. Regular reporting will be undertaken using the best available data over the duration of the three-year strategy, and continuous improvement of reporting metrics will be key.

Area of Focus	Headline Objective	Reporting Measures
Sustainable Models of Care	Pilot the redesign of at least 3 care pathways to reduce carbon. 2% of patients discharged to a PIFU pathway.	• CO_2e of avoided travel • PIFU data • Number of staff undertaking training
Digital Transformation	Deliver 25% of all first outpatient appointments and 60% of all follow up appointments virtually. Embed circular economy considerations within the procurement and disposal of IT equipment, including the development of reporting metrics.	• % of virtual outpatient appointments • Tonnes of WEEE waste
Supply Chain & Procurement	Apply a social value weighting of at least 10% to all new purchasing contracts and work collaboratively with partners and suppliers to drive down our carbon footprint plus.	• CO_2e from supply chain • Number of staff undertaking training • Recycled paper purchasing data
Medicines	Reduce the carbon footprint of medicines that have a high GWP at the point of use (metered dose inhalers, medical gases, and volatile anaesthesia)	• CO_2e from medicines • Number of clinical sustainability leads • Sustainability programmed activity (PA) time
Food & Nutrition	Reduce the carbon impact of food, minimise food waste and eliminate unnecessary single use plastics from catering.	• % of plant-based meals/number of meals served • Tonnes of food waste • £ spent on plastic catering consumables/number of items
Estates & Facilities	Reduce carbon emissions from the building estate by at least 30% by 2024/2025 and ensure major schemes are energy efficient and low or zero carbon. Implement innovative treatment technologies for waste and increase the recycling and reuse rate from 17% to 25%.	• Projected CO_2e savings from designed projects • In use CO_2e from buildings • kWh on site renewables generation • Waste tonnage

Appendix A: Reporting Measures at a Glance

Area of Focus	Headline Objective	Reporting Measures
Travel & Transport	Reduce the carbon emissions of travel and transport activities (business travel, fleet mileage, staff commuting and patient and visitor travel) by 25%. Achieve a "Good" rating for the Clean Air Hospital Framework.	• CO_2e from travel • Cycle parking capacity • Staff commuting modal split
Climate Change Adaptation	Ensure our organisation is preparing to deal with the impacts of climate change by delivering and embedding the Climate Change Adaptation Plan (CCAP) and associated action plan.	• £ invested in climate change resilience infrastructure • Over-heating incidents
Green Spaces & Biodiversity	Maximise the quality of on-site green spaces, identifying and delivering schemes that address one or more of the following priorities; improves local biodiversity, supports staff wellbeing and/or patient recovery, combats climate change or provides opportunities for social prescribing.	• Number of green space and biodiversity initiatives • Biodiversity value • Number of trees
Workforce, Networks and System Leadership	Continue to educate and engage the workforce to understand the net zero ambition of the NHS. At least 50% of staff with major influence or responsibility for carbon intensive areas to undertake training and/or CPD.	• Number of staff engaged through communications/campaigns • Number of staff and trainees undertaking sustainability training

Appendix B: Historical Data

Historic Data Performance

The MFT Carbon Footprint has been measured since its inception in 2017. For this Green Plan, North Manchester General Hospital has also been included in the footprints for 2019/20 and 2020/21 for the purposes of comparison. However, this site was not officially part of MFT until April 2021.

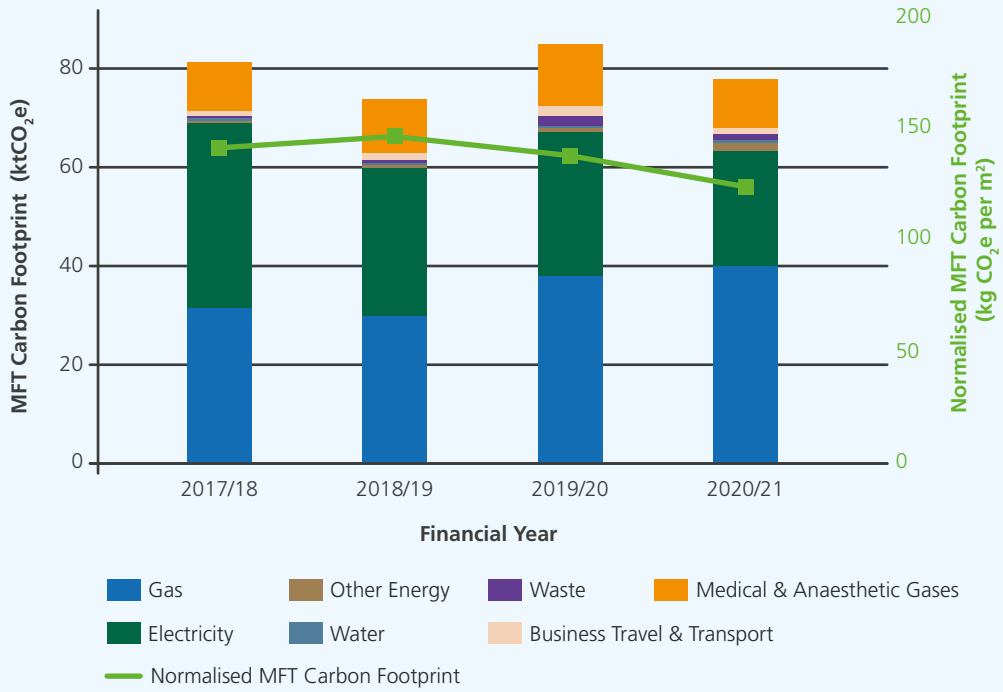
The footprints have been normalised by gross internal floor area to account for the changes in size of the trust over the time period. The normalised MFT Carbon Footprint has been decreasing since 2018/19, while the normalised MFT Carbon Footprint Plus, dominated by supply chain emissions, has increased from 2017/18 to 2019/20, before decreasing in 2020/21. During the pandemic, both footprints decreased in line with changes to normal activity. It is important now to harness positive opportunities that may have come about through pandemic responses.

Theme	KPI	Unit	2017/18	2018/19	2019/20 *	2020/21 *
Carbon	MFT Carbon Footprint	tCO_2e	81,146	73,488	84,949	77,901
	Community Carbon Footprint	tCO_2e	23,769	23,735	25,790	18,309
	Supply Chain Carbon Footprint	tCO_2e	252,495	228,594	314,274	280,231
	MFT Carbon Footprint Plus	tCO_2e	357,410	325,817	425,013	376,442
	Normalised MFT Carbon Footprint	Kg CO_2e/m^2	142	147	138	123
	Normalised MFT Carbon Footprint Plus	Kg CO_2e/m^2	630	658	689	595
Utilities	Natural Gas Consumption	kWh	147,313,215	142,232,066	180,188,024	189,847,881
	Electricity Consumption	kWh	84,092,708	85,018,408	95,032,414	83,077,135
	On-site Renewable Generation	kWh	70,905	80,477	99,799	86,559
	Water Consumption	m^3	620,335	627,097	800,124	695,866
Waste	Total Waste	Tonnes	6,839	6,953	7,932	7,531
	Healthcare Waste	Tonnes	3,019	3,052	3,613	3,539
	Healthcare Reuse & Recycling	Tonnes	57	54	57	74
	Non-Healthcare Waste	Tonnes	2,588	2,505	2,972	2,498
	Non-healthcare Reuse & Recycling	Tonnes	1,175	1,342	1,290	1,420
Travel	Total Fleet Mileage	km	153,182	243,571	697,042	567,135
	Total Business Travel Mileage	km	4,186,692	5,112,687	9,405,211	4,193,162
	Modelled Staff Commuting Mileage	km	110,862,889	118,335,755	146,295,961	139,496,383
	Modelled Patient & Visitor Travel Mileage	km	85,636,443	85,636,443	99,625,822	65,645,680

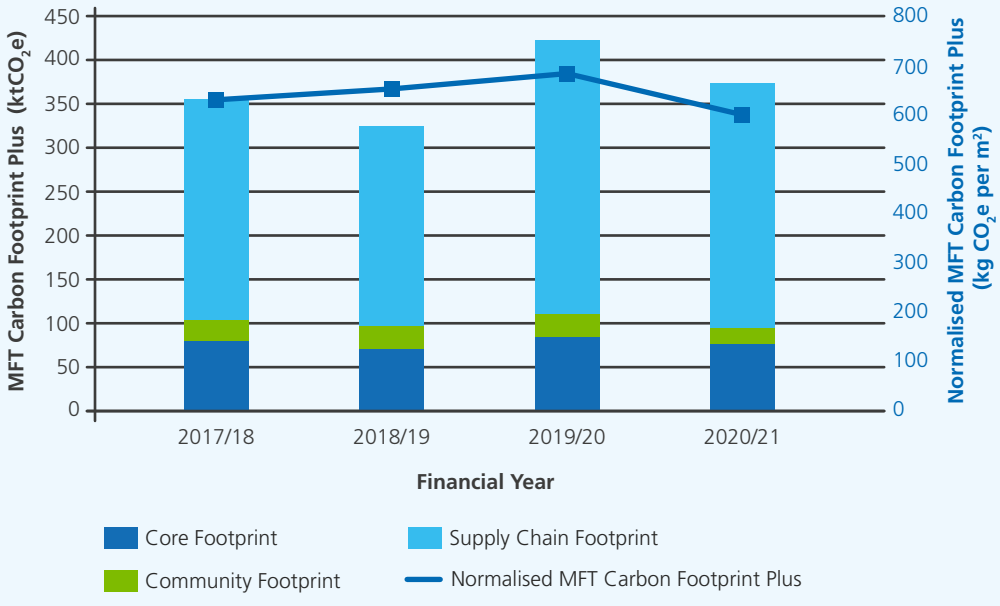
* including North Manchester General Hospital

Appendix B: Historical Data

Historic MFT Carbon Footprint



Historic MFT Carbon Footprint Plus



Appendix C: Legislative and Policy Drivers

Drivers provide the legal and policy context for improving sustainability and can be divided into five key groups, as outlined below.
This list is not intended to be exhaustive and key documents will be updated and released throughout the duration of this Green Plan.

1. Legislative

Building Regulations (2010)

Minimum standards for design, construction and alterations to buildings.

Civil Contingencies Act (2004)

Legislative framework for those responsible for preparing and responding to emergencies.

Climate Change Act (2008)

Established powers for the government to ensure that organisations in key sectors are aware of and prepared for the impact of a changing climate.

Environment Act (2021)

Includes provisions to establish a post-Brexit set of statutory environmental principles, a new environmental watchdog and provisions relating to waste, air, water and biodiversity.

Environmental Protection Act (1990)

Defines fundamental structure and authority for waste management and control of emissions into the environment.

Health and Care Bill (2021)

Puts Integrated Care Systems on a statutory legal footing. Integrated Care Boards take on NHS planning functions previously held by clinical commissioning groups (CCGs).

Public Services (Social Value) Act (2012)

Requires people who commission public services to think about how they can also secure wider social, economic and environmental benefits. Requires minimum 10% weighting for social value on contracts.

The Waste Regulations (2011)

Built on the concept of the waste hierarchy – requires anyone managing waste to prevent, reuse and recycle.

2. Healthcare specific guidance, strategies and policies

Delivering a 'Net Zero' National Health Service

Sets out how the NHS will respond to the climate and health emergency and provides a robust analytical process regarding how the health system can reach net zero carbon.

Fair Society, Healthy Lives (The Marmot Review)

Report concludes that reducing health inequalities requires action on six policy objectives including health and sustainable places and communities.

Greener NHS Programme delivery reports and regional Memorandum of Understanding (MOU)

National programme working to deliver the NHS Net Zero Plan, engage the workforce and share learning to reach net zero across the healthcare system.

Health Technical Memoranda and Health Building Notes

Health Technical Memoranda give comprehensive advice and guidance on the design, installation and operation of specialised building and engineering technology used in the delivery of healthcare. Health Building Notes give best practice guidance on the design and planning of new healthcare buildings and on the adaptation or extension of existing facilities.

NHS Constitution

The principles and values of the NHS in England. Expected to be updated in 2022 to embed climate change considerations.

NHS Long-Term Plan

A 10-year plan to ensure that the NHS is fit for the future.

NHS Operational Planning and Contracting Guidance – current version

Sets out priorities for the year including system planning, operational plan requirements, workforce transformation requirements, financial settlements and process and timescale for submission of plans.

NHS Standard Contract – Current Service Conditions for Sustainable Development

Mandated by NHS England for use by commissioners for all contracts for healthcare services other than primary care.

NHS X – What Good Looks Like

Builds on established good practice to digitise, connect and transform services safely and securely.

Appendix C: Legislative and Policy Drivers

Public Health Outcomes Framework

Sets out a vision for public health to improve and protect the nation's health and improve the health of the poorest fastest.

Report of the Independent Review of NHS Hospital Food

Highlights the main challenges for NHS catering and makes recommendations including sustainability.

Third Health and Care Adaptation Report

Summarises the current and future effects of climate change on the sector and outlines practical next steps to build resilience and adaptation.

3. International guidance and agreements

Glasgow Climate Pact

An agreement reached at COP26, the 2021 United Nations Climate Change Conference.

Intergovernmental Panel on Climate Change Global Warming of 1.5°C Report

A special report on the impacts of global warming of 1.5 degrees.

Paris Climate Change Agreement

A legally binding international treaty on climate change, adopted in 2015.

The Global Climate and Health Alliance

An alliance of health NGOs, health professional organisations, and health and environment alliances from around the world. Includes Healthcare without Harm, UK Health Alliance on Climate Change and Centre for Sustainable Healthcare.

UNFCCC Race to Zero campaign

A global campaign to rally leadership and support from businesses, cities, regions, investors for a healthy, resilient, zero carbon recovery.

United Nations Sustainable Development Goals (SDGs)

A call for action for all countries to promote prosperity while protecting the planet. Includes 17 goals to transform the world.

World Health Organisation: European Policy for Health and Wellbeing

Supports health and wellbeing of populations and ensure people-centred health systems are universal, equitable, sustainable and of high quality.

4. UK strategy and guidance

A Green Future: 25 Year Plan to Improve the Environment

Sets out government action to help the natural world regain and retain good health.

Clean Air Strategy 2019

Sets out plans for dealing with all sources of air pollution.

Greening Government: ICT and digital services strategy 2020-2025

Strategy setting out how government can provide responsible and resilient ICT and digital services to all its end users and customers.

Government Buying Standards

Sets out minimum, mandatory Government Buying Standards (GBS) for buying goods and services.

HM Treasury's Sustainability Reporting Guidance

Assists those in the public sector to report on sustainability within annual reports and accounts.

National Adaptation Programme 2018-2023

Sets out the actions that government and others will take to adapt to the challenges of climate change in England.

National Policy and Planning Framework

Sets out the government's planning policies for England.

Net Zero Strategy: Build Back Greener

Sets out policies and proposals for decarbonising all sectors of the UK economy.

Procurement Policy Notes (PPN)

Provides best practice for public sector procurement, including social value and carbon reduction plans.

Resources and Waste Strategy

Sets out how we will preserve material resources by minimising waste, promoting resource efficiency and moving towards a circular economy in England.

The Stern Review 2006: The Economics of Climate Change

Established principle that the benefits of strong and early action on climate change far outweigh the economic costs of not acting.

UK Climate Change Risk Assessment (CCRA) 2017

Sets out risks and opportunities facing the UK from climate change.

Appendix C: Legislative and Policy Drivers

5. Greater Manchester; local strategies and plans

GMCA 5-Year Environment Plan for Greater Manchester 2019-2024

Sets out the aim and priorities for Greater Manchester to be a carbon neutral city region by 2038.

Greater Manchester Local Industrial Strategy

Designed to deliver an economy fit for the future.

Greater Manchester Transport Strategy 2040

Sets out Greater Manchester's long-term ambition for transport.

Green and Blue Infrastructure Strategy for Manchester

Sets out the city's strategy for high quality green and blue infrastructure as an essential part of successful, liveable cities.

Manchester Climate Change Framework 2020-2025

Manchester's high-level strategy for tackling climate change.

Manchester Population Health Plan 2018-2027

The city's overarching plan for reducing health inequalities and improving health outcomes for residents.

Our Manchester – The MCR strategy 2016-2025

Sets out a long-term vision for Manchester's future and describes how we will achieve it.

Places for Everyone

A joint development plan for 9 of the 10 GM districts for jobs, new homes and sustainable growth. Replaced the Greater Manchester Spatial Framework.

Natural Capital Investment Plan

GM has developed a series of natural capital tools and resources and a series of programmes, projects and policies.

Trafford Council Carbon Neutral Action Plan

Sets out Trafford's priorities for carbon reduction.

Appendix D: Glossary

Climate change is a long-term shift in global temperatures and weather patterns. Human activity causes higher volumes of greenhouse gases (GHGs) to be released into the atmosphere. Different GHGs have a stronger or weaker effect on global temperature changes, so GHG emissions are measured in tonnes of carbon dioxide equivalent (tCO_2e) – the equivalent amount of carbon dioxide (CO_2) in tonnes that would have to be released to cause the same warming effect as the emitted GHGs.

To measure the impact that MFT has on climate change, we count the GHGs emitted as a result of our activity – this is called our carbon footprint.

1. Air Quality: the extent to which air is pollution-free. Poor air quality is damaging to human health, particularly children, the elderly and those with existing medical conditions. Major pollutants are emitted as a result of human activity, especially from fossil-fuelled transport and industry.
2. Anchor Institution: a large organisation with a significant stake in their local area. They have sizeable assets that can be used to support their local community's health and wellbeing and tackle health inequalities, for example, through procurement, training, employment, professional development, buildings and land use.
3. Backlog Maintenance: the process of restoring buildings and estates up to a minimum physical condition, therefore optimising safety, and efficiency.
4. Biodiversity/Biodiversity Net Gain: the variety of life found in a particular space, including plants, animals, bacteria, and fungi. Generally, a high level of biodiversity denotes a healthy ecosystem. Biodiversity net gain is an approach to development which seeks to enhance the biodiversity of an area.
5. Carbon Budget: the maximum amount of carbon dioxide (CO_2) or carbon dioxide equivalent (CO_2e) that can be emitted over a defined period of time to limit the impacts of climate change to a specific global average temperature. Carbon footprint: A measure in tonnes of carbon dioxide equivalent (tCO_2e) of the greenhouse gases (GHGs) emitted by an individual, organisation, service or product. For definitions of NHS Carbon Footprint & NHS Carbon Footprint Plus, see Delivering A Net Zero National Health Service.
6. Carbon Neutrality: the balance between emitting carbon and absorbing carbon emissions from carbon sinks.
7. Carbon Dioxide (CO_2): a gas present in the atmosphere that is produced when carbon or organic matter, such as fossil fuels, are burned. Carbon dioxide is a prominent greenhouse gas (GHG), and increased levels of carbon dioxide in the atmosphere lead to climate change.
8. Clean Air Hospital Framework: a self-assessment tool to set ambitions on tackling air pollution in seven key areas. https://www.actionforcleanair.org.uk/clean-air-hospital-framework
9. Circular Economy: a model of production and consumption which maximises the useful life of resources through reuse, repair, refurbishment, sharing, leasing, and recycling.
10. Climate Change Adaptation: action to prepare for the current or expected impacts of climate change, in the short, medium, and long term.
11. Climate Emergency: political declaration to acknowledge the severe acceleration of human caused climate change and the dangers this causes.
12. Care Pathway: a tool used by the NHS to map out a patient journey from diagnosis and through treatment. They are used to set out best practice and enable the delivery of consistently high quality care to patients. To read more visit https://digital.nhs.uk/services/nhs-pathways
13. Co-benefit: the positive effects that a policy or measure aimed at one objective might have on other objectives, e.g. Active travel reduces air pollution and benefits health and wellbeing.
14. Desflurane: volatile anaesthetic drug used for general anaesthesia, with a global warming potential over 2,500 times higher than CO_2.
15. Digital Exclusion: individuals being unable to benefit from digital services due to one or more barriers, including: access, skills, confidence, motivation, ease of use, and awareness. To read more visit Digital NHS https://digital.nhs.uk/about-nhs-digital/our-work/digital-inclusion/what-digital-inclusion-is
16. Electrical Capacity: the maximum threshold of electricity a site can use at any one time.
17. ERIC: the Estates Return Information Collection collates information on the running costs of providing, maintaining and servicing the NHS Estate https://digital.nhs.uk/data-and-information/publications/statistical/estates-returns-information-collection/england-2019-20
18. Getting it Right First Time: helps to improve the quality of care within the NHS by bringing efficiencies and improvements. https://www.gettingitrightfirsttime.co.uk

Appendix D: Glossary

19. Greenhouse Gases (GHGs): gases found in the atmosphere which trap heat. Many of these gases are emitted as a result of human activity, and when accumulated in the atmosphere, they cause global climate change. Carbon dioxide (CO_2), water vapour and methane are the most prevalent greenhouse gases. In the healthcare sector, volatile anaesthetics and medical gases are also significant.
20. Green Infrastructure: planned natural or semi-natural areas which enhance the environment by improving water quality, air quality, climate change mitigation and adaptation, biodiversity, as well as providing space for recreation/leisure.
21. Greener NHS: a campaign to tackle the climate 'health emergency' including a national team to support the programmes of work which is part of NHSE/I https://www.england.nhs.uk/greenernhs
22. Health Equity: the absence of unfair, avoidable or remediable differences among groups of people, whether those groups are defined socially, economically, demographically, or geographically or by other dimensions of inequality (e.g. sex, gender, ethnicity, disability, or sexual orientation).
23. Health Inequalities: unfair and avoidable differences in health between different groups in society, defined socially, economically, demographically, and geographically.
24. HIVE: a new 'operating system' for MFT, replacing current IT systems including a new electronic patient record (EPR) solution. https://mft.nhs.uk/hive-epr/
25. Integrated Care System: partnerships between health organisations within a geographical area to collectively plan health and care services to meet the needs of their population and tackle health inequalities.
26. Life-cycling: considering the environmental, social, and economic impacts of a product or service through the entirety of its life, from extraction to disposal. Term also used in a PFI context in relation to asset management and maintenance.
27. Natural Capital: stocks of natural assets which include geology, soil, water, air and all living things. It is from natural capital than humans derive a wider range of services, often called ecosystem services, which make life possible.
28. Net Zero Carbon: greenhouse gas (GHG) emissions produced are balanced with emissions removed from the atmosphere. Emissions produced are reduced as close to zero as possible, and anything remaining is offset.
29. Patient Initiated Follow Up (PIFU): gives patients and their carers flexibility to arrange follow-up appointments as and when they need them, avoiding unnecessary trips to hospitals and clinics. https://www.england.nhs.uk/outpatient-transformation-programme/patient-initiated-follow-up-giving-patients-greater-control-over-their-hospital-follow-up-care/
30. Power Purchase Agreement (PPA): long term contract between a power producer and a consumer of electricity.
31. Premises Assurance Model (PAM): a management tool that provides NHS organisations with a way of measuring how well they run their estates and facilities services.
32. Private Finance Initiative (PFI): a method of funding major capital investments, where private firms are contracted to complete and manage public projects.
33. Same Day Emergency Care (SDEC): sometimes called ambulatory care, emergency care is clinical care which is not provided within the traditional hospital bed base. https://www.england.nhs.uk/urgent-emergency-care/same-day-emergency-care/
34. Science Based Approach/Targets: approaches or targets which align with latest climate science, usually the Paris Agreement to limit global average temperature rise to well below 2°C.
35. Single Hospital Service: aimed outcome from the MFT merger, allowing standardised care across Manchester and Trafford, maximising the opportunity to increase research and education, reduce duplication, integrate patient record systems, and recruit and retain the best staff. More information can be found here https://mft.nhs.uk/2017/09/28/single-hospital-service/
36. Transport Mode: the type of transport used to travel, including: walking/running, cycling, bus, Metrolink, train, single occupancy car, car share etc. The most sustainable travel modes are active travel (walking/running and cycling) and the use of public transport.
37. Social Prescribing: method of local referral to holistic care focusing on a patient's health and wellbeing, usually instigated in a community setting.
38. Social Value: socio-economic and environmental benefits delivered through the procurement of goods or services.
39. Sustainable Quality Improvement: an approach to improving healthcare in a holistic way by assessing quality and value through the lens of a 'triple bottom line'. https://sustainablehealthcare.org.uk/susqi
40. Sustainability Impact Assessment: a formal evaluation of economic, social and environmental impacts of any project or proposal.
41. Trajectory: the projected path of future emissions, often designed to stay within a certain carbon budget.
42. Ultra Low Emissions Vehicles (ULEV)/Zero emissions vehicles (ZEV): motorised vehicles which emit zero or close to zero carbon dioxide (CO_2) during use.

Contact Us

If you have any questions, or would like to find out more about the work that we are doing please contact us via email: ECOteam@mft.nhs.uk or follow us on Twitter: @MFTgreen

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