

# **NHS GREATER GLASGOW & CLYDE - ANNUAL CLIMATE EMERGENCY AND SUSTAINABILITY REPORT 2021/22**

## **Introduction**

This is NHS Greater Glasgow & Clyde's first annual Climate Emergency and Sustainability Report.

The planet is facing a triple crisis of climate change, biodiversity loss and pollution as a result of human activities breaking the planet's environmental limits.

The World Health Organisation recognises that climate change is the single biggest health threat facing humanity. Health organisations have a duty to cut their greenhouse gas emissions, the cause of climate change, and influence wider society to take the action needed to both limit climate change and adapt to its impacts. More information on the profound and growing threat of climate change to health can be found here: [www.who.int/news-room/fact-sheets/detail/climate-change-and-health](https://www.who.int/news-room/fact-sheets/detail/climate-change-and-health)

NHS Greater Glasgow & Clyde provides health care to the 1.2 million people who live in Greater Glasgow area, covering six integrated joint boards (Glasgow City, East Dunbartonshire, East Renfrewshire, Inverclyde, Renfrewshire and West Dunbartonshire) employing over 38,000 people across a broad estates of:

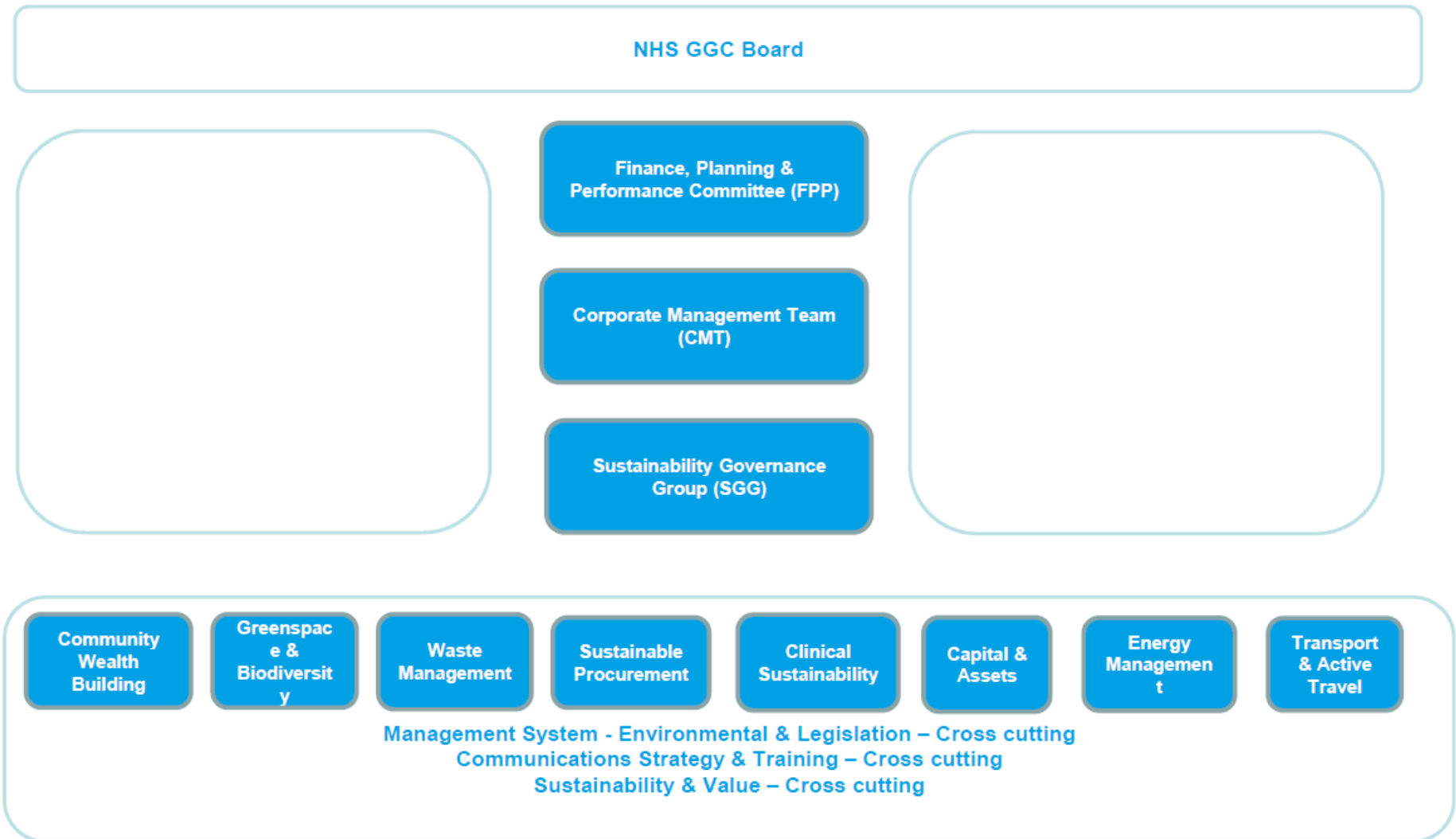
- 35 hospitals
- 240 GP practices (in total around 790 GPs)
- 300 Community Pharmacies
- 270 Dental practices
- 180 Ophthalmic practices

## **Leadership and governance**

NHS Greater Glasgow & Clyde has designated the following key leadership roles

- Michelle Wailes, Board Non-Exec Sustainability Champion & Chair of the Audit & Risk Committee
- Tom Steele, Director of Estates & Facilities and Exec Sustainability Champion
- Sustainability Governance is overseen by the Boards Sustainability Governance Group, which the exec champion chairs. The group reports into Corporate Management, Financial Planning & Performance and then onto the Board.
- To provide assurance to the Board that an appropriate governance framework is in place, which will in turn address NHS GGC policy and strategy commitments which reflective the national narrative, the following structure has been endorsed and utilises the working group charters to align to the once for Scotland approach:

# NHS GGC Sustainability Governance Framework



## Greenhouse gas emissions

NHS Greater Glasgow & Clyde aims to become a net-zero organisation by 2040 for the sources of greenhouse gas emissions set out in the table below. The table sets out the amount of greenhouse gas produced annually by NHS Greater Glasgow & Clyde.

		Amount of greenhouse gas (tonnes of CO2 equivalent)			Percentage change since 2019/20
Source	Description	2019/20	2020/21	2021/22	2021/22
<b>Building energy use</b>	Greenhouse gases produced in providing electricity and energy heat for NHS buildings	115,030.60	98,739.50	95,730.3	16.7% Decrease
<b>Non-medical F-gas use</b>	Greenhouse gases used for things like refrigeration and air conditioning	Not available	1,096.40	1,966.3	79.3% Increase
<b>Medical gases</b>	Greenhouse gases used in anaesthetics - nitrous oxide (N2O), Entonox (which contains nitrous oxide), desflurane, sevoflurane and isoflurane	Not available	Not available	5,458.7	First year reporting
<b>Metered dose inhaler propellant</b>	Greenhouse gases used as a propellant in inhalers used to treat asthma and chronic obstructive pulmonary disorder (COPD)	Not available	Not available	19,958	First year reporting
<b>NHS fleet use</b>	Greenhouse gases produced by NHS vehicles	Not available	4,628.40	1365.2	70.5% Decrease
<b>Waste</b>	The greenhouse gases produced by the disposal and treatment of waste produced by the NHS	147.7	351.20	1765.9	1095% Increase
<b>Water</b>	The greenhouse gas produced from the use of water and the treatment of waste water	1367.80	373.00	190.9	86% Decrease
<b>Business travel</b>	Greenhouse gases produced by staff travel for work purposes, not using NHS vehicles.	Not available	Not available	2873.2	First year reporting
<b>Sub-Total</b>		<b>116546.1</b>	<b>105,188.5</b>	<b>129,308.5</b>	
<b>Carbon sequestration</b>	The amount of carbon dioxide captured per by woodland, trees, grassland and shrubs growing on NHS grounds.	Not available	Not available	Not available	
<b>Greenhouse gas emissions minus carbon sequestration</b>		<b>116546.1</b>	<b>105,188.5</b>	<b>129,308.5</b>	

## National Sustainability Assessment

NHS Scotland has developed a National Sustainability Assessment Tool (NSAT) which all Health Boards use on an annual basis to measure their progress across sixteen different areas of sustainability.

In 2021/22, NHS Greater Glasgow & Clyde achieved 48% overall. Our three highest scoring areas were: Capital Projects, Ethics and Awareness. Our three areas with the most room for improvement were: Sustainable Care, Adaptation and Waste.

## Climate Change Adaptation

The climate is changing due to the greenhouse gases already emitted into the atmosphere. While efforts to reduce the rate and scale of climate change continue, we must also adapt to new conditions we are facing.

The changing climate is increasing risks for health and health services. More information on these risks in the UK can be found in the UK Climate Change Committee's Health and Social Care Briefing available here: [www.ukclimaterisk.org/independent-assessment-ccra3/briefings/](https://www.ukclimaterisk.org/independent-assessment-ccra3/briefings/)

*What have we done to better understand the impact of climate change on NHS Greater Glasgow & Clyde and the people and places we serve?*

NHS GGC has completed its Climate Change Risk Assessment Tool and is working in collaboration with GGC, NHS Assure and our Clinical Infrastructure Consultants to develop this further to fully understand and plan for the effects of climate change on our assets and services.

*What are we doing to build resilience and prepare for the increasing risks from climate change to NHS Greater Glasgow & Clyde and the people and places we serve?*

NHS GGC is now factoring climate change in the short to medium term into its business continuity plans and resilience planning. Adaptation to climate change is a key consideration on long term strategic planning.

## Building Energy

We aim to use renewable heat sources for all of the buildings owned by NHS Greater Glasgow & Clyde by 2038.

NHS Greater Glasgow & Clyde has c 127 sites such as ranging from large campuses such as the Queen Elizabeth University Hospital, large historic sites (Glasgow Royal Infirmary), multiple smaller acute sites across the regional and health centres.

In 2021/22, NHS Greater Glasgow & Clyde used 483,009.07 kWh of energy. This was a decrease 3.3% since the year before.

In 2021/22, NHS Greater Glasgow & Clyde generated 242,181 kWh of energy from renewable technologies.

In 2021/22, 95,042 tonnes of CO2 equivalent were produced by NHS Greater Glasgow & Clyde use of energy for buildings. This was a decrease of 3.2 % since the year before.

*What did we do last year to reduce emissions from building energy use?*

Various energy related spend to save projects.

*What are we doing this year to reduce emissions from building energy use?*

\*please refer to Energy Team at NHS GGC – Alan Gallacher

## Sustainable Care

The way we provide care influences our environmental impact and greenhouse gas emissions. NHS Scotland has three national priority areas for making care more sustainable – anaesthesia, surgery and respiratory medicine.

### **Anaesthesia and surgery**

Greenhouse gases are used as anaesthetics and pain killers. These gases are nitrous oxide (laughing gas), Entonox (which contains nitrous oxide) and the “volatile gases” - desflurane, sevoflurane and isoflurane.

NHS Greater Glasgow & Clyde’s emissions from these gases are set out in the table below:

<b>Anaesthetic gas use</b>			
<b><u>Source</u></b>	<b><u>2018/19 (baseline year) tCO2e</u></b>	<b><u>2021/22 - tCO2e</u></b>	<b><u>Percentage change since 2018/19</u></b>
<b><u>Volatile gases</u></b>			
Desflurane	Not available	111.6	
Isoflurane	Not available	2.8	
Sevoflurane	Not available	279.3	
<b>Volatile gas total</b>		393.7	
<b><u>Nitrous oxide and Entonox</u></b>			
Piped Nitrous oxide	Not available	5065.0	
Portable Nitrous oxide	Not available Not available	Not available	
Piped Entonox	Not available	Not available	
Portable Entonox	Not available	Not available	
<b>Nitrous oxide and Entonox total</b>			
<b><u>Anaesthetic gas total</u></b>		<b>5852.4</b>	

*What did we do last year to reduce emissions from anaesthetic gases?*

- Build Nitrous and Anaesthetic gas reduction project into Medical Gas Committee and Clinical Sustainability Group objectives.

*What are we doing this year to reduce emissions from anaesthetic gases?*

- Build on last year's work as we are still at the foothills of this change management process.

*What else did we do last year to make surgery greener?*

- Making segregation in clinical areas a top priority to reduce the clean waste entering orange waste stream and expanding trial of Neptune system to reduce vacsac waste. Focus on exploring re-usable instrumentation through managed service contracts.

*What are we doing this year to make surgery greener?*

- Developing the governance framework within the clinical directorate to ensure Clinical Sustainability/Green Theatres is a core part of clinical functionality

### ***Respiratory medicine***

Greenhouse gases are used as a propellant in metered dose inhalers used to treat asthma and COPD. Most of the emissions from inhalers are from the use of reliever inhalers – Short Acting Beta Agonists (SABAs). By helping people to manage their condition more effectively, we can improve patient care and reduce emissions. There are also more environmentally friendly inhalers such as dry powder inhalers which can be used where clinically appropriate. We estimate that emissions from inhalers in NHS Greater Glasgow & Clyde 19,958 tonnes of CO2 equivalent.

*What did we do last year to reduce emissions from inhalers?*

21.22 is the benchmark year

*What are we doing this year to improve patient care and reduce emissions from inhalers?*

Work is being driven by pharmacy and primary care to improve on this year's numbers. Still to be formally agreed as part of broader clinical sustainability.

## Travel and Transport

Domestic transport (not including international aviation and shipping) produced 24% of Scotland's greenhouse gas emissions in 2020. Car travel is the type of travel which contributes the most to those emissions.

NHS Scotland is supporting a shift to a healthier and more sustainable transport system where active travel and public transport are prioritised.

Due to the size of the geographical area covered by NHSGGC, some element of travel and transport will always be required. These are often providing a vital service, however there are a number of ways the associated emissions can be reduced.

NHSGGC are committed to adding to our electric/hydrogen fleet, adding additional electric vehicle charging points and minimising the impacts from our fleet operations.

[Glasgow's Low Emission Zone](#) will be enforced from 1 June 2023. All vehicles will need to meet emission standards when entering city center zone.

What we're doing

- Over 100 electric fleet;
- Three transport hubs established to reduce courier mileage by incorporating external deliveries into existing fleet runs;
- Over 200 drivers trained on Fuel Good Driving – maximising fuel consumption and reducing engine idling;
- 4 Star Eco Fleet rating.
- Over 200 EV charging points across the board and ongoing projects to develop and install more.

The emissions from transport and travel are significant in a large organisation such as NHSGGC, particularly due to the vastness of our operational activities and services.

NHSGGC are continuously encouraging sustainable travel by making staff and visitors aware of the various public transport links that are available to them.

There are a variety of public transport and active travel routes to our hospital sites and health centres ([Shuttle Bus for staff](#)).

The [Travel Plan Office](#) continue to promote sustainable and active travel and host events to provide information on public transport and active travel options, including [Cycle to Work](#).

What we're doing

- Managing and developing NHSGGC [Cycle to Work scheme](#).
- Reviewing, developing and implementing projects to improve cycling infrastructure e.g. [secure bike storage](#), across our estates;
- Created walking and cycling maps for our main acute sites, indicating links to National Cycle Routes and walking routes; Queen Elizabeth University Hospital and Royal Hospital for Children [Walking and Cycling Guide](#).
- Promoting annual season tickets for public transport operators to provide cost savings for staff. [Using Public Transport – NHSGGC](#)

We are working to remove all petrol and diesel fuelled cars from our fleet by 2025. The following table sets out how many renewable powered and fossil fuel vehicles were in NHS Greater Glasgow & Clyde fleet at the end of March 2022.

	Renewable powered vehicles	Fossil fuel vehicles	Total vehicles	Percentage renewable powered vehicles
Cars	31	94	1125	25%
Light Commercial Vehicles	64	313	377	17%
Heavy vehicles	5	94	99	5%

The following table sets out how many bicycles and eBikes were in NHS Greater Glasgow & Clyde's fleet at the end of March 2022. \*Please note public bikes are available, however NHS GGC do not own any.

	Number
Bicycles	0
eBikes	0

## Greenspace and Biodiversity

We are committed to enhancing biodiversity and green spaces across the NHS Greater Glasgow and Clyde estate.

Well-managed green and open spaces support and contribute to enhanced biodiversity, climate change adaptation and mitigation, active travel, and a reduction in the effects of air pollution, excessive noise, heat, and flooding. As well as the environmental benefits of greenspace, there is an increasing body of evidence linking access to high quality greenspace with enhanced physical and mental health and wellbeing. Spending time in greenspace has been shown to have both a preventative and restorative effect on health and wellbeing, and this effect is observed most strongly among those living in more deprived areas.

NHSGGC has a significant environmental footprint due to the nature and size of the organisation. As one of the largest public sector landowners in Scotland, this also presents a significant opportunity to enhance biodiversity and access to greenspace for staff, patients and members of the wider community. Additionally, much of the NHSGGC estate is located within and adjacent to some of Scotland's most deprived areas and communities. Given the 'equigenic' effect of greenspace on health and wellbeing, delivery of greenspace and biodiversity improvements across the NHSGGC estate will directly contribute towards alleviating health and wellbeing inequalities, thus helping contribute to improved quality of life for all.

### What we're doing

- Greenspace strategies have been developed for several acute sites, including QEUH, RAH and Leverndale;
- Have accessed funding from Scottish Government, [Green Exercise Partnership](#), [Sustrans](#), NHSGGC endowments and estates to deliver landscape improvement projects;
- Look to undertake GIS mapping of all of the land owned by NHSGGC, including its extent, quality, accessibility and biodiversity by 2025;
- Make significant progress towards utilising our existing outdoor estate as a method of adaptation to the effects of climate change, including retrofitting green infrastructure to



combat increased flooding, and passive cooling systems to combat increased incidences of high temperatures by 2030;

- All future estates will reflect the [NHS Sustainable Design and Construction Guide](#);
- Developing and making use of our outdoor estate as places for health and wellbeing; for patients, staff, visitors, and the local community;
- Developing sustainable management strategies for each of our acute sites to make the most of our existing assets by 2025.

## **Sustainable Procurement, Circular Economy and Waste**

Earth Overshoot Day marks the date when our demand for resources exceeds what Earth can regenerate in that year. In 2020, the Global Earth Overshoot Day was 22nd August. In 2021, it was 29th July. The current global trend shows a concerning picture of over consumption. For the UK, the picture is more worrying. In 2022, the UK's Earth Overshoot Day was 19th May. The current level of consumption of materials is not sustainable, it is the root cause of the triple planetary crises of climate change, biodiversity loss and pollution.

We aim to reduce the impact that our use of resources has on the environment through adopting circular economy principles, fostering a culture of stewardship and working with other UK health services to maximise our contribution to reducing supply chain emissions to net-zero by 2045.

NHSGCC are committed to making net zero a key consideration for all procurement activities and no longer purchase from suppliers that do not meet or exceed a commitment to be net zero. Sustainable Procurement requires NHS Scotland to work alongside suppliers to take into consideration the whole lifecycle, environmental, social and ethical impact of procured goods & services.

The NHS purchases products from suppliers all over the world and an environmentally and socially responsible approach implements an opportunity to boost health and wellbeing throughout the UK and globally. Embedding sustainability at the heart of procurement decisions can reduce negative impacts on the local community and those around us, whilst bringing the organisation closer to our net zero goals.

What we're doing

- Invested in a Carbon Footprint Tool – allows NHSGGC to identify where we are being wasteful with carbon and taking action to reduce the waste and emissions;
- Increase and improve the measuring and monitoring of associated carbon emissions from all goods and service providers;
- Increase the scope and weight given to contracts and product selection that support and directly reduce associated carbon emissions;
- To only purchase products or services from suppliers that are aligned with net zero commitments;
- Review and select only procurement frameworks that have committed to a net zero target;
- Change of pack size to National Uniforms to deliver a 50% plastic packaging reduction and cost cuts of waste disposal;
- Commit to reducing our reliance on single-use equipment, investing in take-back schemes and reuse schemes where possible.

We want to reduce the amount of waste we produce and increase how much of it is recycled. The table below provides information on the type of waste we produce.

Type	2020/21 (tonnes)	2021/22 (tonnes)	Percentage change
Waste to landfill	Not available	Not available	0
Waste to incineration	5000	5255	5.1% increase
Recycled waste	330	914	63% increase
Food waste	Not available	385	0
Clinical waste	6000	5918	1.3% decrease

*What did we do last year to reduce our waste?*

- Roll out of recycling and segregation campaigns across the Board

*What are we doing this year to reduce our waste?*

- Increase uptake through staff training, comms and public engagement.

## **Environmental stewardship**

Environmental stewardship means acting as a steward, or caretaker, of the environment and taking responsibility for the actions which affect our shared environmental quality. This includes any activities which may adversely impact on land, air and water, either through the unsustainable use of resources or the generation of waste and pollution. Having an Environmental Management System (EMS) in place provides a framework that helps to achieve our environmental goals through consistent review, evaluation, and improvement of our environmental performance.

*What did we do last year to improve our environmental performance?*

- Maintain compliance with all statutory permitting and monitor our high level environmental legal register

*What are we doing this year to improve our environmental performance?*

- Roll out Q-Pulse as the Boards business management system which will host our EMS & QMS system which will broadly adhere to ISO standards (9001 & 14001) and invest in dedicated resource to develop and maintain the system.

## **Sustainable construction**

Where there is a need for new healthcare facilities, we want both the buildings and grounds to be safe, nature-rich, sustainable, resilient and accessible NHS Greater Glasgow & Clyde is working on the following building projects:

1. North East HUB
2. Bishopton Health Centre
3. Leverndale Phase 2 Greenspace Project

The emissions associated with the construction and operation of our buildings are significant and we have a responsibility to ensure these are reduced as far as reasonably possible.

NHSGGC is one of the largest public sector landowners in Scotland. The estate varies enormously from Victorian stone buildings to mid-century concrete framed and clad hospital towers. The challenge to achieve a net zero position from this baseline should not be underestimated. However we are committed to ensuring that our property and assets are optimised to be efficient and to be a benefit to the communities and patients they serve.

The design and construction of new buildings can easily align with modern low carbon techniques and practice. A greater challenge comes from the existing buildings, which represent a high amount of spent embodied carbon, so careful consideration must be made here.

What we're doing

- Site-specific net zero masterplans to be commissioned for each acute site, incorporating plans for green infrastructure, renewable heating systems, enhanced access for public transport and walking/cycling, maximising the use of existing facilities and identifying optimal siting where new-build is required;
- Work to develop site strategies to optimise existing estate and improve functionality, accessibility and amenity;
- Explore options for new buildings and major refurbishments to be carbon neutral in construction, and reduce as far as possible the emissions associated with their operation;
- Explore the use of renewable heating systems and utilise this technology where appropriate;
- Ensure whole-life considerations, including embodied carbon and eventual demolition/disposal are taken into account when selecting materials and building elements.

## **Sustainable Communities**

The climate emergency undermines the foundations of good health and deepens inequalities for our most deprived communities. The NHS touches every community in Scotland. We have a responsibility to use our abilities as a large employer, a major buyer, and one of the most recognised brands in the world – an 'anchor' organisation – to protect and support our communities' health in every way that we can.

**HSGGC recognises its status as an anchor organisation at the heart of the Glasgow City region.**

Anchor organisations are large employers with a strong local presence in an area. They can exert sizable influence through their commissioning and purchasing of goods and services, through their workforce and employment capacity, and by creative use of their facilities and land assets. Positive use of these aspects can affect social, economic and environmental change. Community Wealth Building (CWB) is an alternative approach to traditional economic development, which seeks to develop resilient, inclusive local economies with improved local employment and a larger and more diverse local supply chain.

**What we're doing:**

As an anchor and leader in place, NHSGGC has an important role in ensuring that economic development focuses on improving population health and reducing inequalities. Going forward as part of any approach it will be important to work with other anchor organisations across the region.

**Conclusion:**

NHS GGC is at the foothills of developing appropriate governance and reporting on the agenda. This can be demonstrated by the additional information that was gathered this reporting year due to availability of additional resource and the increasing visibility of the topic across the organisation.

However, it is recognised both internally and externally that re-alignment and significant additional resource is required to develop and drive the plans to meet interim targets and reduce the financial and non-financial impacts from across the organisation.