

Manchester City Council Report for Information

Report to: Communities and Equalities Scrutiny Committee – 11 January 2022

Subject: Climate Change – Leisure Estate

Report of: Strategic Director (Neighbourhoods)

Summary

This report describes the work that has been undertaken over the last three years to retrofit and improve the sustainability of the Council's leisure estate, this contributes to the decarbonisation of Manchester City Council's operational estate and more generally to the climate change emergency. The report outlines the Carbon Reduction Programme (CRP) that is underway to deliver energy efficiency and carbon reduction measures across the estate.

Recommendations

The Committee are recommended to note the activities and progress to date on the decarbonisation of Manchester City Council's leisure estate; and to note the additional sustainable measures the leisure operators are putting in place.

Wards Affected: All

Environmental Impact Assessment - the impact of the issues addressed in this report on achieving the zero-carbon target for the city

This report sets out in detail the contribution the service is making to achieving the zero-carbon target for the city. The full impact is captured in the body of the report.
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Our Manchester Strategy outcomes	Summary of how this report aligns to the OMS
A thriving and sustainable city: supporting a diverse and distinctive economy that creates jobs and opportunities	The delivery of carbon reduction activity to the Council's estate in Manchester will support the local construction supply chain and in particular the low carbon sector.
A highly skilled city: world class and home-grown talent sustaining the city's economic success	The delivery of carbon reduction activity to the Council's estate supports the development of new skills within the Council and supply chain, specifically around heat pump technology.

A progressive and equitable city: making a positive contribution by unlocking the potential of our communities	Everyone has a role to play in tackling climate change, and learning from the Council's carbon reduction activities is shared to support and inspire leisure partners, users and local communities
A liveable and low carbon city: a destination of choice to live, visit, work	The delivery of carbon reduction activity to the Council's estate will directly contribute to reducing carbon emissions in the city.
A connected city: world class infrastructure and connectivity to drive growth	The Sport and Leisure Strategy considers the wider infrastructure and connectivity requirements when making decisions about the location of new facilities.

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Background documents (available for public inspection): None

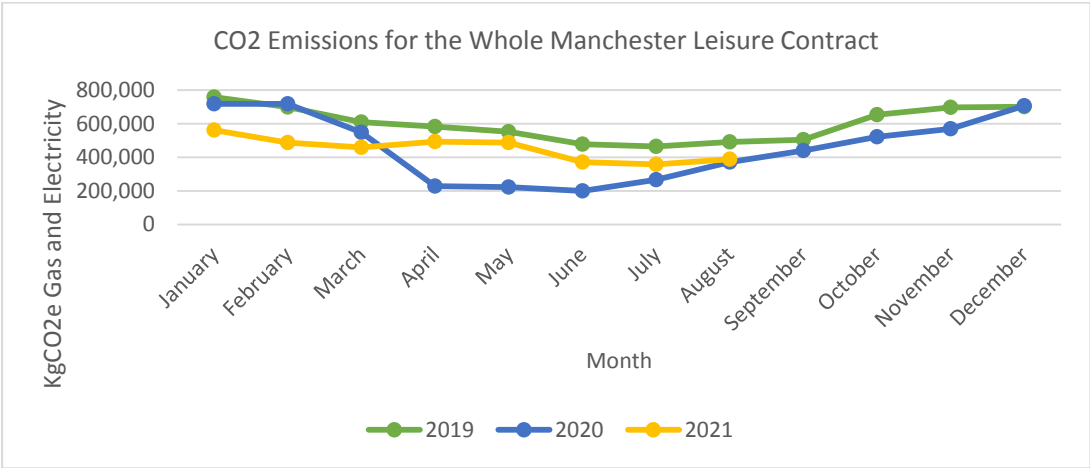
1.0 Introduction

- 1.1 Manchester City Council declared a Climate Emergency in July 2019, which recognised the need for the Council, and the city as a whole, to do more to reduce Carbon Dioxide (CO₂) emissions and mitigate the negative impacts of climate change. The Council's Climate Change Action Plan 2020-25 (CCAP 2020-25) was developed to ensure that all aspects of the Climate Emergency Declaration were converted into clear actions with tonnes of CO₂ (tCO₂) savings included where applicable.
- 1.2 The Council's leisure estate and the Sport and Physical Activity Strategy has a significant role to play in achieving the overall ambitions for the City and as such, MCRactive (who are responsible for delivering the Strategy) have developed a five year sustainability strategy, which sets out the strategic framework and key objectives aligned to the CCAP outcomes for zero carbon emissions by 2038. An overarching Leisure Facility Sustainability Action Plan has been developed with leisure operators, which details the actions and the targets – this is underpinned by individual leisure centre Environmental Action Plans. The objectives for the Action Plans are as follows:
1. Decarbonise Buildings
 2. Efficient and Effective Supply Chain
 3. Influence and Educate Partners
 4. Sustainable Waste and Recycling
 5. Sustainable Travel Plans
- 1.3 As requested by the Communities and Equalities Scrutiny Committee, this report focuses on Objective 1 which includes the actions being undertaken to retrofit and improve the sustainability of the Council's leisure estate as part of the Council's Carbon Reduction Programme (CRP). This follows a report presented to Scrutiny Committee on the 20 July 2021, which focused on Objective 4. The CRP has been established to deliver a wide range of energy efficiency and low carbon energy generation measures throughout the Council's estate. The Council's Climate Change Action Plan 2020-25 (CCAP) includes a target to reduce annual emissions from the operational estate by 4,800 tCo₂. The leisure estate's Co₂ emissions stands at approximately 30% of the overall Council's estate which equates to a reduction in annual emissions of 1,440 tCO₂ which is included in the overall target. This report sets out the progress that is being made towards this target.

2.0 Current Emissions

- 2.1 It is estimated that the leisure estate emits 8,078 tCo₂ per annum based on pre-pandemic consumptions levels. The CCAP 2020-25 requires carbon emissions from the Council's buildings to reduce by a minimum of 4,800 tCO₂ per annum by April 2025. For context, this target is approximately equivalent to the total annual emissions of the Town Hall Extension, Manchester Aquatic Centre and Manchester Art Gallery combined.

2.2 The below graph shows a three-year comparison for the whole leisure estate. The data in 2020 was significantly impacted due to the sporadic opening and closing of various facilities due to COVID-19 restrictions. Since all leisure Centres reopened fully in April 2021, there has been a drop of 1,029 tCo2 compared to 2019 data. The key reasons for this are due to more energy efficient operations and the impact of the CRP, which is set out in section 3 of the report.



3.0 Carbon Reduction Programme

3.1 A CRP has been established by the Council to oversee the delivery of a wide range of energy efficiency and low carbon energy generation measures throughout the estate. The energy conservation measures set out in this report (excluding Abraham Moss capital programme) generate an estimated reduction in Co2 emissions of 3,139 tCO2 per annum.

3.2 Phase One of the CRP focused on Leisure Centres, as they are some of the Council’s most energy intensive buildings, this is as a result of heating and lighting large open spaces and heating water for swimming pools and showering facilities. During Phase One, which was completed in November 2021, eight of the leisure facilities were upgraded with energy conservation measures, as follows: Wythenshawe Forum; East Manchester Leisure Centre; Hough End Leisure Centre; Arcadia Sports Centre; Moss Side Leisure Centre; North City Family and Fitness Centre; Belle Vue Sports Centre; and Manchester Tennis and Football Centre. The improvements covered a range of measures such as upgrading to LED lighting, improving lighting controls, upgrading Building Management Systems, and installing variable speed drives, as well as solar panel installations at seven of the sites, and an energy efficient combined heat and power plant at the Wythenshawe Forum.

3.3 The table below sets out the leisure estate programme costs for phase one and the estimated savings of 860 tCO2

Building	Total Budget	Forecasted tCO2 Savings
Phase One		
Wythenshawe Forum	£1,131,267	295
East Manchester Leisure Centre	£344,691	101
Hough End Leisure Centre	£319,076	74
Arcadia Sports Centre	£229,654	59
Manchester Tennis and Football Centre	£381,968	61
Moss Side Leisure Centre	£150,721	23
Belle Vue Sport Centre	£454,908	169
North City Family and Fitness Centre	£121,959	78
Total	£3,134,244	860

3.4 There is a further two phases of the CRP, as follows:

- Unlocking Clean Energy. The project has two key parts, first the installation of renewable generation assets partly funded by the ERDF grant, and the development new business models to promote self-consumption of energy by the Local Authorities.
- Public Sector Decarbonisation Scheme (PSDS). The PSDS provides grant funding for energy efficiency and heat decarbonisation projects in non-domestic public sector buildings, including leisure centres.

3.5 Several projects across eight Leisure Centres have been commissioned and are due to complete by spring 2023. These projects are forecasted to save 1,353 tCO2 per annum. The technologies included in this phase of work include air source or ground source heat pumps, solar panels, and battery storage systems.

Building	Completion Date	Forecasted tCO2 Savings
Arcadia Sports Centre	30 th March 2022	58
East Manchester Leisure Centre	23 rd March 2022	119
Hough End Leisure Centre	29 th March 2022	80
North City Family and Fitness Centre	18 th March 2022	182
National Cycling Centre	31 st March 2023	354
Manchester Aquatics Centre	11 th February 2022	505
Moss Side Leisure Centre	11 th March 2022	55
Total		1,353

3.6 In addition to the CRP, three large scale capital schemes are underway at Abraham Moss Leisure Centre in Crumpsall, HSBC UK National Cycling Centre in Clayton and the Manchester Aquatics Centre in Ardwick. The carbon savings achieved by these projects are not specifically included in the targets set out in the in the CCAP 2020/25, therefore, the benefits delivered by these projects will ensure the leisure targets are exceeded during this period.

- 3.7 Abraham Moss - The project to replace Abraham Moss Leisure Centre and Library commenced in early 2021 and is a full demolition and rebuild of this large mixed use leisure centre. The old leisure centre was some 50 years old and whilst it had been refurbished and improved in phases over a number of years many parts of the building fabric and services installation had come to the end of their economically viable life. The new building has been designed to meet high levels of energy efficiency and to be low carbon in use, including efficient building services, high levels of insulation and rooftop solar electrical generation. The demolition aspect of the project includes wherever possible the recycling of metal, timber and plastic elements and in the case of the concrete elements they are being crushed and recycled on site for use as aggregate below the new building and hardstanding areas minimising waste, reducing site traffic and reducing the need for new quarried materials.
- 3.8 National Cycling Centre - The refurbishment of the National Cycling Centre seeks to address the mechanical and electrical installations of the Velodrome and associated areas along with elements of the building fabric which are now at the end of life. The replacement and updating of heating, lighting and power installation along with improvements to the building fabric will significantly reduce the energy use and the forecasted carbon reduction is 357 tCO₂ per annum. The full refurbishment is being carried out in parallel with energy efficiency works carried out as part of the Public Sector Decarbonisation Scheme, and an ERDF funded project to install car ports with solar panels in the car parks. This project is estimated to save an additional 246 tCO₂ per annum.
- 3.9 Manchester Aquatics Centre - The refurbishment of the Manchester Aquatics Centre, constructed in 1999, includes not only an update of the pool operating features to keep in line with latest competition standards but also the introduction of a number of high-tech solutions aimed to reduce cost in use and the carbon footprint of the building. The refurbishment proposals project a 40% reduction in energy use and reduced carbon emissions of 569 tCO₂ per annum. Using a mixture of MCC and Central Government grant funding the boilers and heating plant and lighting installations will be replaced that not only meet modern standards but also significantly reduce energy use and carbon emissions. Alongside the updating of existing installations there will be new initiatives including electrically powered air source heat pumps to generate heat without using gas, solar photo voltaic cells to generate renewable electricity from the roof top arrays and battery storage to maximise the use of power on site whilst more actively managing the electricity usage and modulate power demand so as to reduce peak loads and thereby reduce cost of the externally purchased electricity.

4.0 Leisure Operator Measures

- 4.1 In addition to the Council's decarbonisation programme, the leisure operators have been upgrading centres not identified in the programme with energy conservation measures, the following centres have had upgrades in the last year which includes LED lighting, PIR sensors, new efficient boilers and showers.

Centre	Energy Saving Measures	Cost
Ardwick Sportshall	LED Lights, PIR sensors	£10,000
Denmark Road Sports Centre	LED Lights, PIR sensors	£5,000
Debdale Outdoor Centre	LED Lights, PR Sensors, Energy efficient showers & toilets	£10,000
Range Sports Centre	LED Lights, PR Sensors, Energy efficient boiler replacement (AMP)	£100,000

- 4.2 Over and above the capital works, the operators are working with suppliers to source local contractors to ensure minimal travel to and from Manchester. GLL have already established three major contracts for food and beverage, localised maintenance agreements and grounds maintenance to support this.
- 4.3 The operators have committed to increasing staff, partners stakeholder & customers awareness of the Environmental Action Plans and delivering engagement events on Sustainability. All GLL General Managers and senior managers completed the MCC carbon reduction training programme in quarter one and individual centre commitments were established following this, each centre now has an Environmental Champion. GLL have set up a staff working group who will be responsible to review the Plans at the end of each year and setting targets for the following year. Travels plans are also being completed for the event venues and will be shared with event partners which will promote low carbon travel options for event staff, volunteers & participants.

5.0 Impact of Carbon Reduction Measures

- 5.1 Given the impact of COVID-19 on both trading and use of leisure centre's in response to the pandemic and that the CRP measures have only recently been installed, it is too early to provide any robust evidence/ comparative data to highlight the impact from the carbon reductions measures as a result of the Council's investment. It is anticipated that comparative data will be available for analysis from the start of the 2022/23 financial year.
- 5.2 Whilst comparative data on carbon emissions will not be available until next financial year, the below table sets out the actual savings achieved through the solar panels already installed, this gives the total electricity generated from the renewable energy which saves on the energy provided direct from the grid.

Centre	Completion Date	Total Yield(kWh)
East Manchester Leisure Centre	May 2020	129,245
Wythenshawe Forum (Phase 1)	April 2021	93,399
Arcadia Leisure Centre	January 2021	94,388
Belle Vue Sports Village	March 2021	131,670
Hough End Leisure Centre	November 2020	141,298
Moss Side Leisure Centre	September 2020	91,451

6.0 Next steps

- 6.1 MCRactive will continue to work closely with the Council to deliver the next phases of the CRP, which will complete in 2023. The team are currently exploring opportunities for smaller facilities where energy conservation measures can be installed. A study is also underway exploring the feasibility of installing a roof mounted Solar PV system on the BMX section of the National Cycling Centre. If feasible, this could potentially generate a saving of circa 100 tCO₂ per annum. A programme of work is being developed to expand and improve the use of Building Management Systems across the estate. A building management system (BMS) is a computer-based control system that controls and monitors a building's mechanical and electrical equipment such as ventilation, lighting and power systems. Systems linked to a BMS typically represent 40% of a building's energy usage; if lighting is included, this number approaches to 70%. Therefore, BMS systems are a critical component of managing energy demand.
- 6.2 MCRactive will continue to monitor consumption rates across the whole leisure estate and gather data on the performance of the energy conservation measures at the above centres to ensure a 13% year on year reduction in tCO₂.
- 6.3 MCRactive will continue to work with the leisure operators such as GLL and SLM, as well as the smaller lease holders of Council owned venues to deliver the objectives set out in the Leisure Facility Sustainability Strategy.