



# Sustainability Brochure

[www.morrisoncommunitycare.com](http://www.morrisoncommunitycare.com)

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# The Team Approach

We build environmentally focused facilities and work towards carbon neutrality in all of our development projects.

Sustainable solutions that work are front of mind throughout the planning, design, and building process. Alongside building to current regulations, we look ahead to ensure our design is eco-friendly, efficient, bio-diverse, and future-proof.

We are committed to achieving sustainable construction and design through partnerships with designers and contractors. We have sustainably focused partnerships with:



# Morrison Community Care Group

The Group are working to tackle the shortage of care beds in the UK and Ireland by building purpose built homes which have a positive effect on people who need care – but in doing so we are considerate to the planet at every turn and are currently working towards carbon neutrality.

In the Groups’ drive towards Net Zero, sustainable solutions are embedded in our approach from design to build. The steps we are taking towards reducing our environmental impact include:

- > Designing warm, energy efficient care homes.
- > Utilising LZCT & renewable technologies for the generation of heating & hot water.
- > Utilising some of the most advanced off-site manufacturing techniques in the UK.

The Groups’ ethos over the last 30 years, has always been to provide quality personalised care in a home like place. The Group has continuously strived to create and maintain environments which will allow Service Users to maintain their rights and independence; as well as always striving for innovation ranging from the latest computerised technology to their complimentary therapist Dr Mitchell, whose background is in research into Dementia.

This was recognised on a national scale when Abbotsford House Care Home was crowned best care home in the UK at the UK Caring awards on 8 December 2017. The awards recognise excellence, innovation and achievement in all corners of the industry. This accolade was also recognised by parliament, ‘Motion S5M-09792: Rona Mackay, Strathkelvin and Bearsden, Scottish National Party, Date Lodged: 08/01/2018. As well as on a global scale last year, the Group won Best Community Care Provider in the World.

Paul Sokhi states: “Our 30 years’ experience in the industry has shown us that people want to have fun in their old age and we want to encourage this through design and environment. By encouraging people out of the often-lonely surroundings of their own homes into an environment where there is a vibrant community, we hope to give residents and their families an extra lease of life. We understand that people age at different rates and at different times, and as such we have a quick responsive, highly trained care and clinical team on site that allows our facilities to be a home for life in every sense of the word.”



## CCG Scotland

CCG began working with Morrison Community Care Group in 2017 with the construction of Abbotsford House Luxury Suites, a 45-bedroom luxury care home in Milngavie, East Dunbartonshire.

Following its completion in 2018, a further two facilities and 122 bed spaces were delivered on behalf of the provider prior to the launch of Morrison Community Care (CCG) Holdco, an innovative joint venture company that utilises shared knowledge and expertise to achieve a common goal of improving the standard and availability of care accommodation in central Scotland. Over 120 more bed spaces have been created to date and with more developments on-site and in the pipeline, the company is primed to address the growing needs and demands of the Scottish elderly population.

## CCG is one of Scotland's largest privately-owned construction and manufacturing companies.

Based in Glasgow, an 800-strong direct labour force is spread across a range of fully integrated divisions including main construction services, off-site manufacturing of timber systems, window and door manufacturing, planned maintenance and renewals, multi-utilities, M&E, flooring installation and new housing sales.

This multi-faceted group structure is unique to the Scottish construction sector and is designed to ensure clients such as Morrison Community Care are given an assurance of delivery whilst realising quality and value.

One such area that CCG focuses on is sustainability; the utilisation of sustainable build methods and materials to reduce waste and minimise carbon emissions.

CCG's approach is known as offsite Modern Methods of Construction whereby the design, manufacture and assembly of building components are undertaken in a controlled factory environment prior to being installed on-site.

CCG are pioneers of this method of building and have been mainstream in the manufacture of the enhanced closed panel timber system known as 'iQ' since 2010 operating from the £12m 'CCG OSM', one of the most advanced facilities of its kind in the UK. This zero-waste, semi-automated production line offers the means to create entire wall zones, as well a floor and roof cassettes, to an exacting quality standard – internal wall linings, insulation, CCG's own windows and doors, service zones and, in some cases, external lightweight render, are all assembled under conditions that are not impacted by weather, risk damage and are inherently efficient.

This inherent efficiency and design-for-manufacture approach known as Fabric First allows CCG to maximise thermal performance and comfort. Each panel is precision engineered to deliver enhanced airtightness characteristics through the minimisation of thermal bridging i.e. through the reduction of joints and junctions, there are fewer areas within the fabric of the building for heat to escape and crucially improves thermal comfort, creating a comfortable living environment no matter the area of the building.

As 'iQ' has its components pre-installed, this offers distinct environmental benefits at site-level. Fewer vehicles are needed to transport the system whilst a faster speed of build minimises the impact on the surrounding community.

Furthermore, with a more energy efficient building and the use of low carbon energy appliances, the reduction in energy use helps lower carbon emissions once the building is under occupancy. In short, the carbon footprint of any care home constructed by CCG is drastically lower throughout its lifetime all whilst providing unmatched comfort for residents and staff.

## Looking Ahead

The Scottish Government has set an ambitious target to become a net zero economy by 2045 with the phased introduction of a more environmentally focused standard of living driven by the emerging climate crisis already underway across the country.

Some Local Authorities have opted to deliver this target by 2030 whilst forthcoming changes to building regulations will prohibit the use of direct-emissions heating systems in any new build building by as early as 2024.

CCG's journey to net zero began in 2019 where a programme of advanced research and development was commenced to understand the technical requirements, the arising energy performance advantage and the cost implications associated with buildings to an operational net zero\* standard of specification.

\*Operational net zero carbon focuses on the reduction of carbon emissions associated with operational energy use - i.e. energy required for lighting, heating, cooling, and ventilating systems; and appliances - and does not cover emissions during the build process.

Our objectives in this exercise were to:

- > Establish a fabric strategy based on CCG's off-site manufacturing capabilities.
- > Focus on non-gas solutions to provide space and water heating.
- > Reduce space heating energy demand below 30kWh/m<sup>2</sup>/year for all types.
- > Minimise the risk of overheating.
- > Demonstrate a reduction in energy costs to the end user
- Achieve operational Net Zero standard.

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CCG evaluated & costed the specification requirements and operational performance of a net zero new build strategy which was to be practical and deliverable in the immediate term.

It was initially tested across a range of house & flat types that were analysed using the National Calculation Method (SAP 2012) and dynamic simulation modelling software (IES Virtual Environment), the purpose of which was to establish an optimised and practical solution that demonstrates operational net zero carbon delivered by a combination of fabric performance and renewable technologies.

This strategy was compared against different compliance levels in Section 6 (Energy) and Section 7 (Sustainability) of the Scottish Building Standards Domestic Technical Handbooks including Section 6 (Energy) Notional Dwelling (Baseline standard) Aspect Silver Level 1 only of Section 7 (Sustainability); Aspect Silver Levels 1 and 2 only of Section 7 (Sustainability) and Aspect Gold Level 1 and Aspect Silver Levels 2 to 8 of Section 7 (Sustainability).

The strategy was proven and the CCG Net Zero Home build standard was born in 2020. Its applied use is now supporting the delivery of over 650 affordable homes across the breadth of the country and is capable of being applied to the Morrison Community Care design guide for elderly care accommodation.

# Holmes Miller

Our sustainability charter is founded upon a detailed roadmap, that will guide our practice towards a zero carbon future, focusing on three key areas;

> The way we work:

Assessing the impact of our working practices, studio culture, and the daily impact on the environment through the operation of our business.

> The way we create:

Challenging our approach to the design and procurement of buildings, and collaborating with like minded clients, to achieve a built environment that delivers net zero target emissions.

> The words we speak:

Sharing knowledge, investing in research and development, and raising awareness as ambassadors in the advocacy of change.



We are addressing each of these key areas through our assessment of **Climate, Wellbeing and Resilience** to allow us to focus on the multiple challenges that are faced in creating a sustainable environment for our communities.

Each key theme is outlined within this document, with our commitment to explore, research and address each element through our annual review, to drive continual change through our industry and our business.

The evolution of our practice will be translated through our Business Management Systems, to bring assurance and consistency in delivery, positively reinforced and promoted by our architects, designers and directors.

**“A vision to craft architecture that creates only positive impact to the community and the environment.”**

## Climate

### > Whole Life Carbon

- Creation of buildings with net zero operational carbon
- Promotion of refurbishment rather than rebuilding
- Tracked + continually reduced embodied carbon through design
- All Holmes Miller studios and activities assessed as carbon neutral

### > Circularity

- Designing to create growth in the creation of sustainable materials
- Designing to reduce the demand for raw materials
- Designing to reduce waste material generation
- Designing to extract maximum value from any raw materials used

### > Travel

- Optimise accessibility through design, reducing inequalities
- Promote cleaner + greener choices through development appraisal
- Promotion of active travel + healthy choices through design
- Decarbonise all Holmes Miller studio travel

### > Environmental

- Assess all projects against the impact + protection of the natural environment
- Derive positive impact through Environmental Impact Assessments
- Enhance biodiversity through buildings and landscape
- Design to mitigate air, water and noise pollution

## Wellbeing

### > Physical Wellbeing

- Designing buildings that offer the optimum environmental conditions for users, in air quality, daylight + temperature
- Promoting design solutions that encourage movement + activity
- Recognising + designing to ensure inclusiveness throughout
- Understanding our end users + learning from our experiences
- Repurpose all carparking in Holmes Miller studios, to provide quality external space, cycle parking and EV car sharing areas

### > Social Wellbeing

- Focussing on clients that are promoting socially inclusive + community led projects
- Designing spaces that promote social interaction, connection and positive user engagement
- Investment in 'non profit' activities and projects to enhance the local community surrounding Holmes Miller studios
- Promote an active, engaging culture of support across Holmes Miller studios

### > Mental Wellbeing

- Develop specific end user KPI's and PoE assessments linked to projects, to ensure positive impact on community wellbeing
- Promote biophilic design where possible
- Promotion of enhanced landscaping across our projects
- Establish a flexible working policy for all staff
- Promote digital conferencing as the principle option for meetings + engagement



# Resillience

## > Transitional Risk

- Identifying and designing to suit the ongoing shift to a low carbon economy
- Recognising changing energy sources, and their impact on building procurement and future viability
- Designing for flexibility and occupancy adaption
- Working beyond the legislative and regulatory minimums to future proof investments

## > Physical Risk

- Designing for climate change, and working to mitigate the impact of shock / stresses around flooding, overheating, and environmental impacts

## > Economic Risk

- Active promotion of solutions that offer best long term economic and sustainable value
- Designing to protect against economic risk and safeguard investment
- Working with clients and frameworks to promote ethical and sustainable investment in the built environment





> MCC Dalgety Bay Care Home: A strong focus on external break-out spaces to capture key views and links with the landscape.



> MCC Roselea Care Home: The first facility to embrace enhanced Care Inspectorate post-Covid care home requirements.

# DesignME

## > Sustainability Services Strategy

The design parameters for the M&E services on our projects are dictated by the production of our SBEM calculation / Thermal model. These are carried out using IES software and help us demonstrate the benefits of using specific types of renewable and low carbon technologies to reduce the carbon emissions of the new building. These calculations confirm the percentage improvement in carbon emissions over the building regulation minimum for the project.

At present our proposals include the use of LZCT & renewable technologies such as Combined Heating & Power (CHP) for the generation of heating & hot water. This renewable technology can be supplemented by the use of low- carbon technologies such as LED lighting, automatic lighting controls, variable speed drives on pumps and mechanical ventilation as well as heat-recovery ventilation systems.

In a bid to reduce the carbon footprint of our care homes and drive things towards net zero, the design team have been investigating how various changes to the building fabric and building services could help reduce the buildings carbon footprint and omissions. This exercise has involved running various detailed iterations of our thermal models and comparing the results to the current designs that are being implemented at present.



We are now progressing with the next round of investigations which include the following changes and enhancement of current design:

- Increasing the PV coverage to maximise roof coverage (this will be different on each site depending on roof size and orientation).

- Introduce Power Factor Correction technology to the incoming supply.
- Introduce further lighting controls and automatic switching.
- Investigate lower Wattage LED light fittings. Vary heating flow and return temperatures. Varying more U-Values & G-Values.
- Investigating improved Air-Tightness methods.
- Introduce Heat Recovery Ventilation to areas currently provided with extract only.



## > Our Approach

At the heart of our design philosophy is an intelligent, rigorous and sustainable approach to MEP services design. All our engineers are fully trained in all aspects of building services – both mechanical and electrical engineering.

Engineering is a creative and collaborative profession and our team comes from a wide range of backgrounds so that we can bring fresh perspectives and diverse thinking to projects. We provide an open and intelligent approach to mechanical and electrical engineering by focussing on what is right for the building and the client. From going back to first principles to using cutting edge modelling software, we have the knowledge and understanding to quickly appraise options and consider risks carefully to ensure the best solutions are delivered on time and on budget.

Our analysis of the building, using computer modelling, and our initial advice on such issues as shading, daylighting and thermal performance often have the greatest effect on shaping the building and ensuring a sustainable, low- energy design can be realised.

We use a wide range of tools, including computer modelling, to inform our understanding of how the building will behave and to optimise the form and fabric of the buildings. Our software includes Revit MEP, AutoCAD, Hevacomp, Stroma, and IES Virtual Environment.

Our methods are collaborative and allow other design team members (and clients) to make informed decisions about the project by providing them with objective assessments about the effectiveness and environmental impact of development proposals. An overview of our methods is noted on the next page.

# Our Methods

## > Thermal Modelling & Heat Analysis

Overheating can be a really significant problem in buildings, especially with increases in air tightness and insulation standards driven by Building Regulations, particularly in high-rise or densely-planned residential schemes. With careful design, most buildings in our temperate climate ought to be able to be naturally ventilated, and our analysis will help you to determine the most appropriate technical solution.

CIBSE TM52 and CIBSE TM59 have been developed to set objective standards and our experts understand the technical jargon; we can help you achieve a building which is comfortable all year round.

At the early design stage, comprehensive thermal modelling is crucial to influence design decisions, we use IES VE software to build a 3D dynamic model of the building and use this to analyse different scenarios and design options, including future climate situations.

## > Building energy modelling and Energy Performance Certificates (EPCs)

An Energy Performance Certificate (EPC) is required for all new buildings and this can be produced through the thermal model and IES. We have Elmhurst accredited Low Carbon Energy Assessors as part of our team, fully qualified to produce EPCs.

For non-domestic buildings we use IES Dynamic Thermal Modelling software which allows us to model a building in 3D and run different simulations to establish predicted energy demand and use, lighting loads, CO2 emissions, daylight provision, overheating etc. Modelling can be used to demonstrate Building Regulations Section 6/ Part L compliance, BREEAM compliance or for general advice as part of our sustainability offering.

## > Daylight Calculations

Good levels of natural daylight are important in the design of new buildings. We use computer software to accurately determine the level of daylight, including the average daylight factor and minimum point daylight factor. We also undertake Climate Based Daylight Modelling (CBDM).

Our daylight analysis is undertaken either as part of the pre-planning service alongside our energy and sustainability work, as a standalone service often as part of BREEAM compliance, or most commonly as part of our M&E service where we always recommend building a computer model for daylight, energy and thermal comfort.

## > Energy Modelling & Building Physics

Often the most challenging questions we need to address during the design process are not the precise details of the building systems but the more fundamental questions about the fabric of the building and how it will behave and respond to the environment and how this affects sustainability and the building physics.

The main issues we usually need to consider include:

- Shading and solar gain
- Daylighting, glare and window design
- Thermal mass
- Summertime comfort and avoiding overheating
- Natural ventilation
- Insulation and heat loss

It is crucial that our proposals for projects are evaluated against these criteria to ensure that we will have buildings which will provide comfortable conditions at all times with a robust, efficient and easy-to-maintain engineering services installation.

We use a wide range of tools, including computer modelling, to inform our understanding of how the building will behave and to optimise the form and fabric of the buildings. Our software includes Revit MEP, AutoCAD, Hevacomp, NBS, Stroma, and IES Virtual Environment.

Our analysis of the building, using computer energy modelling, and our initial advice on such issues as shading, daylighting and thermal performance often have the greatest effect on shaping the building and ensuring a sustainable, low-energy design can be realised.



# Cowal Design

Sustainable design plays a vital role in addressing climate change, and as civil and structural engineers, we recognise our responsibility to contribute to a more sustainable future. At COP26, the focus on environmental awareness highlights the urgency to adopt environmentally friendly practices. With this in mind, we strive to advance sustainable design principles continuously.

One of the key aspects of sustainable design is the choice of materials. By prioritising recycled and renewable materials and incorporating innovative construction techniques, we aim to reduce carbon emissions and conserve resources. We utilise advanced structural modelling software that can assess the extent of embodied carbon in the solutions.

Collaboration is also essential in sustainable design. Developing SUDs solutions in conjunction with the rest of the design team, we actively engage with stakeholders, including Scottish Water, to align our designs with their sustainability objectives. Our team works closely with authorities to secure necessary technical approvals and facilitate open discussions on sustainable design solutions.

In addition to material choices and collaboration, we continuously explore new technologies and methods that enable us to create low-energy designs. We prioritise reducing energy usage and optimising building performance by integrating energy-efficient systems and employing passive design strategies. We embrace innovative solutions, such as green roofs, solar panels, and rainwater harvesting, to further enhance the sustainability of our projects.

## Our Sustainability Commitment

Our commitment to sustainable design extends beyond individual projects.

We have a strong track record of incorporating sustainable design principles in various projects, leading to notable achievements in sustainable construction.

These accomplishments validate our expertise and reinforce our dedication to creating a built environment that aligns with environmental goals.

In conclusion, as civil and structural engineers, we acknowledge the importance of sustainable design in mitigating climate change. We are committed to constantly pushing the boundaries of sustainable design, implementing environmentally friendly practices, engaging stakeholders, and leading by example to pursue a more sustainable future.

By incorporating these improvements, the statement provides a more comprehensive and compelling overview of the commitment to sustainable design practices and highlights the proactive approach to addressing environmental challenges.

# CRGP Surveyors

At CRGP Surveyors Ltd, rooted in the vibrant city of Glasgow, we're dedicated to making a positive impact on our environment. As a quantity surveying and project management business, we recognize the significance of our role in promoting sustainability within our community and industry.



## Our Pledge:

- > Reducing Carbon Footprint: We prioritize reducing our carbon emissions by promoting energy efficiency in our operations and encouraging the use of public transportation or carpooling among our team. We also have EV car charging stations at our office.
- > Waste Management: We are committed to minimizing waste generation by adopting responsible procurement practices and recycling initiatives within our office.
- > Sustainable Partnerships: We endeavor to collaborate with suppliers and partners who share our environmental values, opting for eco-friendly materials and practices in our projects.
- > Community Engagement: Engaging with the local community, we support environmental initiatives, participate in clean-up activities, and strive to raise awareness about sustainability in the construction industry.
- > Continuous Improvement: We consistently review and refine our strategies, seeking innovative ways to further reduce our ecological impact.

As proud members of the Glasgow and Scottish business community since 1964, we believe that through our collective efforts, we can make a significant difference in preserving our environment for future generations.

**MCC**

**Multi-award winning, turnkey  
care developments.**

THE  
SCOTTISH SME  
BUSINESS  
AWARDS 2018  
WINNER

 SCOTTISH  
PROPERTY  
AWARDS 2022  
Commercial and Public Property  
Health Care Development of the Year

  
CARING UK  
AWARDS 2017  
WINNER

 SCOTTISH  
PROPERTY  
AWARDS 2021  
Commercial and Public Property  
FINALIST

 GLOBALS  
OVER 500 HOURS HEALTHCARE  
2019