

CASWELL CASE STUDY

McDONALD'S MARKET DRAYTON

First restaurant built to the
UKGBC Net Zero Standard*
in the UK and Ireland

AT A GLANCE

CHALLENGES

- Net Zero Carbon goal
- Pilot 'blueprint' scheme
- Tight installation programme

KEY BENEFITS / DRIVERS

- SUSTAINABILITY
- ENVIRONMENTAL
- PRESTIGE



CLIENT

Algeco UK

END USER

McDonald's Restaurants

DESIGNER

CDM Partnership

ARCHITECT

Scurr Architects

MEP CONSULTANT

Silcock Leedham

OBJECTIVES

To be the UK's first Net Zero Carbon McDonald's restaurant, utilizing offsite construction processes and innovative environmental technologies.

To be the first restaurant built to the UK Green Buildings Council's Net Zero Standard in the UK and Ireland and provide a working testbed for future sustainable developments.

CHALLENGES

To use as many sustainable products and construction processes as possible whilst maintaining a realistic budget.

As the first of its kind - with little in the way of precedents to follow - its success was heavily dependent on the pooled knowledge and expertise of all stakeholders.

Technical installation co-ordination to ensure all the roof HVAC services could sit beneath and within the boundaries of the framework for the solar panel array.

To commission and deploy new system designs - incorporating new Kitchen Extract fan type and state-of-the-art heat recovery system - all within the original, typical programme time-frame.



"The learnings here will serve as a blueprint for our future new build restaurants and help us deliver on our goal of all our restaurants being net zero in use by 2030"

Beth Hart

Vice President Supply Chain,
McDonald's Restaurants



SOLUTIONS



Whilst the materials built and installed by Caswell remained to the same efficient specification on the HVAC systems, the additional implementation of a **Heat Recovery Unit** allowed for residual heat to be harvested through the Kitchen Extract system and fed back into the dining areas, so reducing the need for secondary heating.

We are proud to have been involved in a project where so many positive ideas were brought together to raise sustainability and environmental credentials to another level.
Here's just a few of the innovative initiatives employed at Market Drayton.

Renewable power from two wind turbines and 92 sqm of solar panels

These collectively produce 60,000 KWh of power every year, so reducing the amount of energy the restaurant draws from the grid

Walls insulated with British sheep's wool

A natural and effective solution which replaces unsustainable man-made materials

Cladding made from recycled IT equipment and household 'white goods'

Recycling scrapped consumer products - like computers and washing machines - contributed 250 sqm of recycled, repurposed construction materials

Wall signs made from McDonald's used coffee beans

A perfect example of a 'circular waste solution'

Kerb stones each made from 182 recycled plastic bottles

This alternative to traditional concrete kerbs reduces carbon emissions by 25Kg per kerb.
By using over 1,000 of these at Market Drayton, 200,000 plastic bottles were saved from landfill

A Drive-Thru lane made from recycled tyres

More permeable than a traditional, hard tarmac or concrete road surface, it allows more water to be absorbed rather than creating excessive run-off rainwater which can cause localised flooding and also contribute to overloading the drainage system with the potential consequence of sewage back-up / discharge into our waterways.

The manufacturing process also produces far less carbon-dioxide

A biodiversity garden and nature trail

The garden will collect rainwater from the car park and provide a habitat for frogs and other wildlife. It was designed with the help of schoolchildren from the local Junior School and, as such, provides an inspiring environment for the next generation of customers.

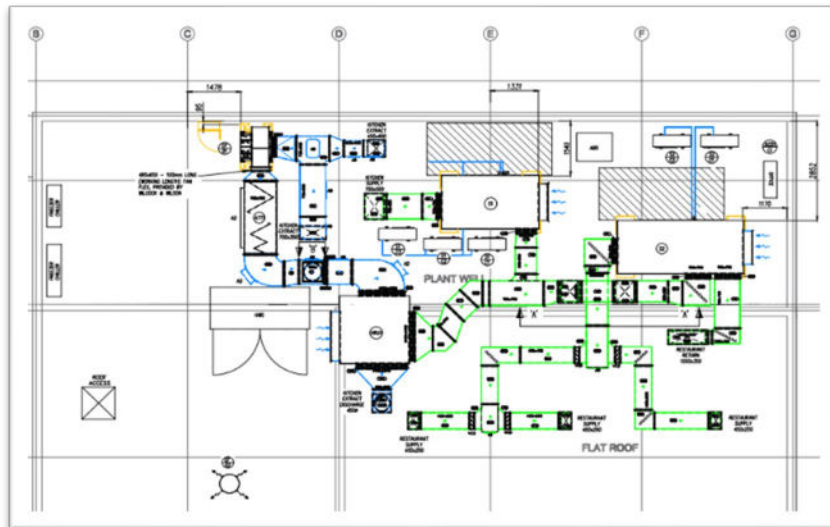


"It was with great pleasure that we delivered the UK's first net zero carbon McDonald's restaurant in Market Drayton, Shropshire. This project featured a large number of small improvements to make a huge difference in overall performance. Sustainability is firmly top of our agenda and we look forward to working with you all in the coming years to deliver more of the same."

Paul Beard - Senior Design Manager (OSS Retail) Algeco



THE CASWELL PLANT LAYOUT WAS SPECIALLY CONFIGURED TO FIT BENEATH THE BESPOKE SOLAR PANEL FRAMEWORK



KEY BENEFITS



SUSTAINABILITY

Traditional building materials and processes were examined to evaluate their sustainability credentials and - where it could be improved with feasibility and new technology allowing - this was incorporated into the build.

LOWER ENERGY COSTS

The inclusion of a heat recovery system to capture and reuse what would normally be lost heat energy dramatically reduces the traditionally high running costs of heating the dining areas for customer comfort.

PRESTIGE

The first of anything bestows a certain kudos and prestige. So it is that the combined skills, knowledge and teamwork exhibited by all stakeholders ensures that this particular restaurant holds that crown.



SCOPE OF WORKS

Design • Manufacture • Installation • Commissioning & Certification

PRODUCTS & SERVICES

Caswell co-ordinated a whole host of HVAC-related products and services to enable the objectives and stated challenges to be met.

Here's a list of the key elements with which we were involved:

DW144 / DW172 ductwork
Thermal Insulation and Cladding
Actuated Variable Volume Dampers
Kitchen Extract Fan
Kitchen Exhaust Attenuation
AHUs and Heat Recovery Unit
Air-Conditioning Equipment
Contract Crane Lift
HVAC Control Panel and BMS
Fire Dampers
Actuated Shut-Off Dampers
Roof Extract Fans
Commissioning And Servicing

** UKGBC Net Zero Carbon was created in 2018 as part of the World Green Building Council initiative*
Read more HERE (<https://ukgbc.org/our-work/topics/advancing-net-zero/>)

