Ecclesall Road

A Sustainable Learning Store
Building a better future.
Plan A has forced us to think differently about the way we do business. We've had to be more creative, find innovative solutions and challenge our previous thinking in order to move forward. And nowhere has this been more apparent than in our construction programme.

This document provides an overview of the key design and construction considerations at one of our Sustainable Learning Stores at Ecclesall Road, Sheffield which was launched in 2011.

Planned and built with sustainability in mind, the store helped to develop our knowledge of sustainable construction. Here we trialled new initiatives, and those that proved successful have been embedded into the way we do business.

By working closely with our supply chain and involving the community every step of the way, we produced a store we are incredibly proud of. Read on to find out more.
At M&S, we’re committed to having only positive effects on the environment and the communities we serve. This positivity is at the heart of everything we do.

Through our learning stores, we aim to create an education programme that will allow us to work towards our goal of creating zero carbon stores.

By trialling techniques such as using sustainable materials, considering heating solutions to reduce carbon, looking at transport solutions and considering the whole life of the store, we will use our learnings to create sustainable stores that have a lasting positive impact on the communities they serve.

The construction industry is already using sustainable features to reduce carbon, waste and water usage in retrofit and new build projects. However, at Ecclesall Road we combined these technologies with biodiversity and community involvement to create a truly unique proposition. We offered customers something innovative and new – a store like nothing they had ever seen before.
A life-long commitment to sustainability

Sustainability is a life-long commitment. It’s about more than materials, more than reducing carbon and more than meeting targets. It’s an holistic approach that should cover a store’s entire lifespan from planning to operation.

And it was with this whole life process in mind that we began to plan our Sustainable Learning Store in Ecclesall Road.
Considering sustainability from the very earliest stage of a project impacts on carbon emissions throughout a store’s lifespan and shapes how we approach the design. We aim to create stores that require limited input in terms of heating and power and the physical features of the site can shape the design to help us achieve this.

The Ecclesall Road store is in a cosmopolitan area 1.5 miles from Sheffield city centre and sits on the site of a former car showroom and garage, on a typical brownfield site.

Because we were demolishing the existing building and reusing the site, it was the perfect location for our first sustainable learning store.

The site was subject to rigorous testing by the project team, who drilled 55 bore holes across a 10-metre grid to take more than 80 soil samples for testing. The project team worked closely with specialist waste soil treatment and disposal contractors to identify re-use options for the various different types of soil. 98.2 per cent of soil from the site was recycled and the remainder was treated off site and reused.

Planning conditions required that 10 per cent of the store’s energy needs should come from renewable or low carbon energy. But we felt we could do better than that. So we set ourselves the target of reducing the development’s predicted carbon dioxide emissions by 20 per cent.
Our Ecclesall Road learning store cost six to seven per cent more than a standard Simply Food store but by applying whole life costing analysis we are confident that we can recoup the incremental build costs over the lifetime of the store.

Ecclesall Road was designed with sustainability and whole life costing always at the forefront of our minds. We used heat pump technology, reusing waste heat from our refrigeration systems to heat the building and water which significantly reduced the energy consumption of the store.

We used sustainable materials including targeting 100 per cent FSC timber, reclaimed bricks and recycled aggregate to reduce the need for additional new materials.

The store is lit by natural light and uses 100 per cent LED lighting internally and externally. We added in rainwater collection systems to flush toilets and irrigate the living wall and utilised natural refrigerants in fridges and air conditioning to reduce operating carbon.

To ensure carbon was monitored at all stages of the process, we appointed a carbon manager to assess the store’s carbon impact and produce a specially-tailored carbon reduction strategy, focusing particularly on the most energy intensive services and embodied carbon materials.

We added ecological value to the site by installing a green roof and living wall, including indigenous planting in our plans and including bird boxes and insect chambers to attract more wildlife to the site.

To encourage sustainable travel, we included sustainable cycle shelters and electric car charging points in the plans.
When construction began, we monitored energy consumption on site, with the main contractor taking responsibility for implementing the carbon reduction strategy. They also ensured that everyone on site was engaged in reducing energy consumption.

At Ecclesall Road, we received two visits from the Considerate Constructors scheme. The first visit resulted in a score of 36.5 out of 40, classed as excellent, but the second visit scored 37.5 out of 40, an industry leading score. This was due to our regular liaison with the nearby Hunter’s Bar School, whose eco club visited the site regularly to learn about sustainable construction and careers in the construction industry.

Contractors also managed to use 98.2 per cent of the aggregate from the car showroom in the foundations and as backfill in the walls, with the remaining aggregate being treated and reused elsewhere.

We sourced as many local contractors as possible, with the brick work and joinery packages sourced from Sheffield itself. By reducing commuting distances to site, we reduced our carbon footprint even further.

We also provided eco-friendly site cabins, which feature occupancy sensors for lighting, pulsed water meters and taps with sensors to reduce carbon and water wastage.

All site managers and supervisors attended Site Sustainability Simplified training, which they pass on through Toolbox Talks. We also encouraged contractors to switch off plant and equipment when not in use to reduce unnecessary energy usage, fuel consumption and noise. This also reduced our impact on the local community.
In use

At M&S, we recognise that good community engagement is as important as delivering the final proposition to customers.

Engaging colleagues in all features of the store and ensuring the benefits are monitored for future learnings is vital to this project’s success.

A well designed and constructed store can be inefficient if the handover process is not carried out correctly – that’s why we used a graduated handover to ensure store users are fully trained in the new technologies and their uses.

We encouraged colleagues to converse with customers about the store and the features which make it unique. This not only showcased the unique proposition M&S is providing to the community, but also encourages customers to think about how they could better incorporate sustainability and energy saving in their own lives.

We instilled a feeling of pride in colleagues by upskilling and motivating them and training them in the proper use of all internal systems and their benefits.

To capture all the learnings from Ecclesall Road, we continued to invest in the store once it opened by monitoring the features to help cut back on operating costs.

We installed a Building Energy Management System (BEMS) to allow us to control services more precisely while remotely tracking half hourly energy use. We also use detailed sub-metering in store so we can understand when and where we use our electricity. We remotely monitor the store’s air conditioning, refrigeration and lighting systems around the clock to manage and reduce our energy consumption.
Ecclesall Road

- Marks & Spencer

- M&S Simply Food

- Image of a green wall with the text "M&S Simply Food" in white letters on a green background.
A whole worth more than the sum of its parts

Our Sustainable Learning Store at Ecclesall Road combined a variety of sustainable initiatives under one roof and at the time of launch pushed new boundaries in terms of sustainability and innovation to create a truly unique proposition.
Ecclesall Road deconstructed

The design and construction of Ecclesall Road included a number of sustainable features which are explored in more detail here...

**Biodiversity**

Living walls and green roofs encourage native wildlife into the area. The type of green wall chosen at Ecclesall Road was a passive living wall consisting of pre-planted modular panels that are attached directly to the building and form part of the building fabric. Ecclesall Road is the first M&S store to fully embed the biodiversity best practice principles set out in the M&S Biodiversity Guide. We specified 62 types of native plants and species of wildlife value in accordance with the recommendations of the ecological survey and local biodiversity plan.

**Heat reclaim technologies**

We are using the heat from refrigeration units to heat the building and water. This innovative feature helped us to exceed planners’ desire for 10 per cent of the building’s energy to be provided by renewable or low carbon sources.
Sustainable materials

Our main contractor achieved full FSC project certification using 100 per cent FSC timber for the shell and fit out - a first for M&S and in the retail sector. We also employed new techniques, such as creating a polished concrete floor – to reduce the need for additional materials thereby reducing the embodied carbon in the store.

Managing energy and use

Staff at the Ecclesall Road store monitor and manage their energy use, undergoing regular training and reviews to ensure we are making the most of the opportunities the learning store provides. Store operation teams are provided with a Building User Guide so employees understand what actions to take to ensure an optimum internal environment throughout the year. All systems used to manage a store’s internal environment are listed in the store’s Building User Guide and refresher training and ongoing system monitoring is provided through a dedicated Store Maintenance Engineer.

100 per cent LED lighting

100 per cent of the stores powered lighting comes from LEDs – one of the first in Europe and the first in the UK. This gives a 25 per cent energy saving on conventional lighting. Sun pipes bring additional natural light to the sales floor and sensors and dimmers balance electric lighting against available natural light – another way of saving energy.

Zero waste to landfill

We’ve recycled aggregate from the site in the foundations and to backfill walls, using 98.2 per cent on site and using the rest elsewhere – driving zero construction waste to landfill. We also utilised reclaimed bricks from a local mill rather than new to reduce the embodied carbon impact of the site.

Sustainable Transport

The car park features electric car charging points and sustainable cycle shelters to encourage eco-friendly travel, and we display real time public transport information in store so customers can make the most of local buses.

Community Engagement

Throughout the construction process, we kept the local community informed through our imaginative site hoardings. We engaged Hunter’s Bar School’s eco club from the beginning of the project and will continue to involve the children going forward. We are also partnered with the University of Sheffield’s School of Architecture and Landscape Design so we can share our learnings about biodiversity with academia. We are also passed on knowledge through on-site training and apprenticeships with our construction partner Wates.

M&S opened its 100th Groundworks project a short walk from the Ecclesall Road store. The site is close to a local river which is designated under the Sheffield Development Framework as a protected wildlife corridor. Consultation with the local community association revealed the need for a safe, usable space for community activities. The project will also help locals to reconnect with the riverside environment.
Sustaining sustainability

Planning and building a store isn’t all there is to sustainability. We aim to develop our specifications and processes as a result of what happens at our learning stores, so it’s vital that we engaged store colleagues to ensure they make the most of these incredible opportunities. Because a well designed and constructed store can be inefficient if the handover isn’t carried out correctly.

We wanted colleagues to be proud of the store and be able to share why sustainability is so important with customers. We started by staging a gradual handover to store operators.

We monitored all systems at three month intervals, taking into account seasonal changes. A member of the store team will acted as a store liaison with the construction team to ensure everything runs smoothly.

The store team at Ecclesall Road was provided with a Building User Guide so employees understand what actions to take to ensure an optimum internal environment throughout the year.

All systems used to manage the store’s internal environment are listed in the guide, including images of controls and systems and a brief description of what they do.

Store management teams received training on commissioning and refresher training and ongoing system monitoring is provided through a dedicated Store Maintenance Engineer.
Ecclesall Road Project Details

**Build process:**
Commenced on site in June 2010, launched April 2011

**Footage:**
21,000 sq ft total, 12,400 sq ft sales

**Main contractor:**
Wates Retail

**Architect:**
Lewis and Hickey

**Services engineer:**
Sustainable Design Solutions

**Project management:**
Four Group

**Structural engineers:**
WSP

**Refrigeration engineers:**
Oaksmere Design

**Mech H consultant:**
RPS

**Quantity surveyor:**
Gleeds

**Address:**
250-266 Ecclesall Road, Sheffield, S11 8JD

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Above, left:
Marc Bolland formally opens the store in 2011

Left:
Pupils from Hunter’s Bar School learning during construction