HOLCIM

PROJECT 80

Eco-Housing Initiative

Case Study



PROJECT 80
STAR PERFORMER®
MULTI-PURPOSE CONCRETE BLOCK

Project 80, led by Midland Heart, is a research and development programme that will develop and monitor 80 homes that meet the Future Homes Standard.

Project Name	Sector	Location	Client	Product Used
Project 80	Residential Housing	Eco Drive, Handsworth, Birmingham	Midland Heart Housing Association	Star Performer® multi-purpose concrete block



RESULTS

85%
Reduction in CO_2 for Type 1 Houses

80%
Reduction in CO_2 for Type 2 Houses

90%
Reduction in CO_2 for Type 3 Houses using **STAR PERFORMER**

BRIEF

Project 80 is a research and development programme led by Midland Heart, a housing association in Birmingham. It began in 2021 and set out to develop and monitor 80 homes to meet the then assumed targets of the Future Homes Standard (FHS).

Eco Drive in Handsworth formed the first stage of the programme with 12 houses built. The second development at Elvetham Road in Edgbaston comprised another 12 homes.

Incorporating low and zero carbon technologies, these were the first developments in the country designed to the proposed FHS. This meant there needed to be an 80% CO_2 emission reduction in the construction of these houses compared to contemporaneous building standards. Besblock, now part of Holcim UK, was brought on board to consult on the building blocks for this ambitious development.

Data gathered from occupied homes is now being used to inform a government-led technical consultation on the FHS and shared with the wider housing sector.



SOLUTION

To meet design targets and cut emissions by 80%, Project 80 required building materials and specialist solutions to minimise thermal bridging.

Besblock consulted on the building blocks for the external walls on the project's 'Type 3' three-bed houses. It supplied Star Performer, a versatile, all-in-one cellular concrete block tailored for domestic house building and ideal for Project 80.

Owing to its cellular structure, roughly a quarter (24%) of the block is made up of voids. This helps deliver exceptional thermal and acoustic performance, while being lighter to transport and handle.



"The houses look like traditional brick construction, however, the methods of construction and the materials used have been innovatively developed and applied to improve the thermal efficiency of the properties. We're impressed with the results and are proud to deliver lower carbon homes that are more comfortable to live in."

Tony Hopkin,
Technical Lead
Midland Heart

RESULTS

The calculations, conducted collaboratively with assistance from Holcim, showed the Type 3 homes' external wall U-value was at 0.13 W/ (m^2.K): well within the FHS specification of 0.18 W/ (m^2.K) and the Passivhaus specification of 0.15 W/ (m^2.K).

The overall design performance of the Type 3 houses demonstrated an estimated reduction of 90% for CO_2 emissions, against the 2013 standard. This was the best performing house type of the three specifications that Midland Heart delivered at Eco Drive and at Elvetham Road.

The overall carbon savings estimated across each house type were:

Type 1 Houses – 85% reduction in CO_2

Type 2 Houses – 80% reduction in CO_2

Type 3 Houses – 90% reduction in CO_2



USING STAR PERFORMER



SMARTER Multi-purpose, one-block, on-site solution.

GREATER Thermal insulation to comply with Future Homes Standard.

BETTER Acoustic performance with Robust Details® compliance.

GREENER
24% less aggregate.
24% less water.
Less cement than in an equivalent solid block.
10% recycled material.

Star Performer is a multi-purpose, cellular block for the domestic housing market that provides excellent thermal and acoustic performance.

The cellular construction delivers superior thermal properties that contribute to the requirements of the FHS. It's the only cellular aggregate block with Part E Robust Details accreditation for use in party walls.

A versatile, one block solution, Star Performer can be used below damp proof course in sulphate soils classified as up to and including DS-3*.

Star Performer has lower embedded carbon compared to aerated blocks due to the manufacturing process.

*Speak to our sales team for details.

FUTURE HOMES STANDARD READY

robustdetails® COMPLIANT

LIVE ENVIRONMENTAL PRODUCT DECLARATIONS AVAILABLE

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HOL_19:1_Aug-2026