



Crofts Street

Cardiff, Wales, UK

This exciting scheme, which will be the first time we have used a highly energy-efficient modular build system, can be delivered in considerably less time than a traditional-build project

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Cabinet Member for Housing and Communities



Place
Cardiff, Wales, UK

Date
2018-21

Client
Cardiff Living

Site Area
1,390m²

Height
7m/23ft

Floors
2

Energy Performance Certificate
A111

Structural Engineer
AECOM

Services Engineer
AECOM

Environmental Consultant
AECOM

Manufacturer & Delivery
@Home

Energy & Sustainability
AECOM

Fire Engineering
AECOM

Awards

2023
RSAW Welsh Architecture Award
RSAW Welsh Architecture Sustainability Award
RSAW Welsh Architecture Client of the Year Award



Crofts Street, Cardiff, is a modular housing project comprising nine two-bedroom townhouses, designed to be carbon positive in operation and built on brownfield land for council rent. It is the city's first modular scheme and was awarded Welsh Government Innovative Housing Funding.

The INNO design, led by RSHP and AECOM and delivered by @HOME, uses a 'fabric first' approach to optimise the performance of each unit against weather conditions, fire and acoustics. This system reduces operational energy consumption, which can lead to major cost savings on utility bills for residents. The townhouses prioritise the use of sustainable materials, which means that they have less embodied energy than other buildings. With these considerations, the scheme is expected to surpass the current (Part L1A 2013) Building Regulations standards by 142% for regulated carbon emissions and 42% in fabric energy efficiency. The homes are all electric and use roof-mounted solar panels (predicted to generate 58 kwh/m²/yr), with far-infrared electric heaters and Showersave - a

wastewater heat recovery system. They also have a whole-house mechanical ventilated heat recovery, and natural ventilation. The modules have an EPC Energy Performance Certificate of A111 with in use operational energy data showing 9.22 kwhr/m²/yr, well above the RIBA 2030 Challenge domestic 2030 target of 35kwhr/m²/yr. They also have have a Life Cycle Embodied Carbon (including modules A1-A5, B1,B4, C1-C4 and carbon sequestration) = 342.24 KgCO₂e/m², equivalent to LETI A rating and well above the RIBA 2030 Challenge domestic target of 625 KgCO₂e/m².

The scheme also promotes the efficient use of land, developing it at a practicable density in line with neighbouring developments and pre-war terraces. The ground floor of the houses has a brick slip system, reflective of the brick materiality that defines adjacent homes. Above this, Oko Skin cladding is arranged in the same orientation, but has double in width. The different demises are identified by tonal differences between respective doors, windows and Juliette balconies.