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HARTDENE BARN

Hartdene Barns is a stunning, newly completed collection of nine luxury, carbon-net-zero eco homes, set within forty acres of land within an Area of Outstanding Natural Beauty (AONB) in the UK's green belt, close to the villages of Hartfield and Cowden on the border of West Kent and East Sussex. »

IMAGES: © Gareth Gardner





“ The development has adopted a high standard of environmental design, utilising special fabrics, plant enhancements and green technology to maximise energy savings.



The development was designed by architects Nissen Richards Studio for Q New Homes. The houses are clad in striking charred larch and come complete with a wide range of energy-efficient features, including air source heat pumps, solar photovoltaic panels, extensive insulation, MVHR systems and electric car charging points. The Hartdene Barns development of highly sustainable homes was also designed to meet RIBA Climate Challenge 2025 criteria.

“This has very much been a design-led development, and it’s been a huge pleasure to work on – as well as huge learning curve for everyone involved,” Jim Richards, Director of Nissen Richards Studio commented. *“Working with distinctive forms and silhouettes, meeting challenging sustainability targets, whilst providing generous and inspiring internal spaces that capture views of the surrounding landscape has been a delicate high-wire act, but the final buildings are all we hoped for. They have a sense of place and a notable link to the past, but the modern incarnations of these former agricultural buildings are also built to the highest specification to provide buyers with luxury, low-carbon homes.”*

Q New Homes

Q New Homes is an ambitious private residential property development company operating in South East London and across the home counties of Kent, Surrey and Sussex. The company is

owned and led by brothers Damien and Michael Wynne, the driving forces behind the Hartdene Barns project.

Damien Wynne, Director, Q New Homes, commented on Hartdene Barns: *“The dwellings all have their own special architectural moments that set them apart from the norm and demonstrate our attention to detail and our willingness to embrace design excellence, with support from our long-standing relationship with Nissen Richards Studio.”*

Low-carbon Construction

The development has adopted a high standard of environmental design, utilising special fabrics, plant enhancements and green technology to maximise energy savings. The buildings were constructed using structural insulated panels (SIPs) with a mixture of glulam and steel beams, together with low-carbon concrete. Former concrete slabs and pathways were removed and crushed for use as hardcore, helping ensure a build with very low embodied carbon.

Sustainability is also embedded in the fabric through the use of eco-friendly materials. The house structures are made of lightweight timber, as opposed to heavy, carbon-intensive masonry. Weight-bearing SIPs also help to save money and reduce the scheme’s carbon footprint. The floor structures feature metal web joists, which have been manufactured off-site and use less timber to achieve the joist strength and loading capability required, providing easy access for mechanical and electrical services thereby, whilst also making them more labour- and cost-effective. »

“ Large glazing is used wherever there are large views – which are incredible in many instances - with smaller windows where the view is towards common areas. ”



The structurally insulated panels by SIPs Eco consist of a foam core sandwiched between two rigid facings, which reduce embodied carbon by 40% compared to traditional masonry construction. SIPs also create an unbroken, thermally efficient envelope around each dwelling, enhancing the performance of green technologies and minimising cold bridging. Each home is also cocooned in insulation, fortified by an internal wrap vapour control layer and an air seal that ensures airtightness. The homes also feature fireplaces that burn bioethanol—a renewable energy source derived from food.

Materials Palette

A rich palette of high-quality materials has been utilised for the development, augmented with a contemporary sensibility. The buildings' exterior features black standing seam zinc roofing; dark

black spruce charred cladding; charred timber (spruce) board; black aluminium powder coated window and door frames; Michelmersh Selected Dark brickwork and clear glazing.

A variety of cladding patterns has been utilised across the site to highlight entrances and feature areas. The variations add tactility and break up the large-scale elevations of the new homes. The family of patterns also helps create a unique design for each dwelling, whilst also unifying the overall scheme. It includes ship-lapped vertical boarding with varying widths of boards and rectangular boards and alternating vertical fins with open joints. Large glazing is used wherever there are large views – which are incredible in many instances - with smaller windows where the view is towards common areas. »



“ In contrast to the dark exteriors, the property interiors are light, bright and filled with natural tones.



In contrast to the dark exteriors, the property interiors are light, bright and filled with natural tones. The neutrality of the interior design creates a luxurious backdrop for prospective owners to inhabit and personalise. The design principle inside is to express the forms through, for example, vaulted high ceilings, whilst full-height, glazed Crittall-style doors create a connection between the primary living spaces and entrance hall. Stairs, some light and some solid, reflect the various internal layouts of the properties. The staircases feature a crafted handrail with metal balusters and either slatted or solid timber balustrades. A slatted wall sits next to any ‘floating’ stairs, along with a wall-mounted timber handrail.

The palette for the kitchens utilises a combination of rich materials, such as quartz worktops, alongside timber. Feature fireplaces have been utilised across the houses to help divide and spatially organise the large open plan kitchen, living, dining spaces. They create a warm focal point within each space from which furniture can be organised and laid out.

The master bedrooms feature light and neutral colours expressed through timber bespoke joinery and natural fabrics. Beds are orientated towards large windows to maximise views out to the surrounding landscape. There’s a neutral palette to the bathrooms with contrasting dark tapware. Large format tiling and textured small tiles create feature walls and distinguish different areas within the room. The bathroom tiling ranges from white for master bedrooms to dove grey for secondary bedrooms and green for guest WCs.

RIBA Climate Challenge

Nissen Richards Studio worked to meet the project’s low operational energy targets by considering both regulated and unregulated energy consumption, regardless of the source. To do this, they adopted a hierarchy that started with a ‘fabric-first’ approach to minimise energy demand, followed by the use of efficient services and low-carbon heating, prioritising ways of maximising on-site renewable energy generation. ■

