

Arup designed HS2 Interchange Station becomes first railway station in world to achieve top sustainability certification

May 11, 2020



The new station, to be built in the West Midlands, has become the first railway station globally to achieve the BREEAM 'Outstanding' certification - a measure of sustainability for new and refurbished buildings.

The certification given by award winning BREEAM assessors GWP Project Services recognises the station's climate change resilience features, including maximising natural daylight and ventilation, and a modular station roof design which can capture and reuse rainwater. The entire building/complex is designed for deconstruction and future adaptability with features to enable net zero carbon emissions from day-to-day energy consumption.

BREEAM is the Building Research Establishment's Environmental Assessment Method. It sets the standard for best practice in sustainable design and has become the de facto measure used to describe the sustainability performance of buildings. The Interim Certificate, awarded at the design stage to Interchange Station confirms an 'Outstanding' rating, putting it in the top 1% of buildings in the UK and the first for any railway station globally.

Arup's design minimises embodied carbon through the use of life cycle assessment reporting for key building materials and waste at source through material efficiency analysis. Energy efficient technology

will be incorporated, such as air source heat pumps and LED lighting. In addition, the station and Automated People Mover maintenance facility, also designed by Arup, have over 2,000m² of solar panels generating zero carbon electricity.

Directing rainwater from the main station building via a network of underground pipes into a rainwater harvesting tank will assist in providing part of the building's water requirements, which will reduce the mains water demand for the station. The landscaping features sustainable drainage systems to reduce the burden on surface water drainage whilst naturally irrigating planted areas, and there will be new natural habitats created around the station, leaving a legacy of biodiversity and an enhancement of native species.

There will be 222 electric vehicle charging points in the car parking, and cycle storage for 176 bicycles with further room for expansion as demand dictates. In addition, dedicated pedestrian access into the station from the east of the railway and multiple dedicated cycle routes will provide passengers with a safe, direct connections to the station.

Kim Quazi, Lead Architect at Arup, said: "Creating the world's most sustainable station has always been at the heart of HS2's design vision and this certification is testament to everything we have been working towards.

"From the striking roof made from light-weight glulam timber – inspired by the form of a leaf – to the green open spaces, everything has been selected to minimise the station's carbon footprint and ensure that it reflects its surroundings and unique location.

"As sustainability and resilience become ever more crucial in transport infrastructure, this BREEAM award represents a significant milestone for station design and a step forward in our quest for greener rail."

Photo credit: HS2 Ltd