

Click here to see inside the completed Digital Life building.

# Looking to the future

The four-storey structure is located in the heart of the University's campus.

Teesside University's ambitious masterplan is continuing with the construction of the £40M steel-framed Digital Life building at its Middlesbrough campus.

Aiming to position itself at the forefront of digital teaching and learning, Teesside University is currently in the midst of a large-scale transformation, which has seen over £280M invested to date as part of its drive to enhance facilities.

The latest development is the Digital Life building, which is located in the heart of the Middlesbrough campus. This will help support the demand for flexible learning, Continuing Professional Development and apprenticeships in areas including artificial intelligence (AI), immersive technologies, and digital sustainable engineering.

Designed by Hawkins Brown, the four-storey building will house state-of-the-art AI and robotics suites, virtual reality, and cybersecurity laboratories, and animation and visual effects studios.

Digital Life will be a unique space for collaboration and study, delivering an industry-quality digital studio experience for students in the School of Computing, Engineering & Digital Technologies, alongside the University's industry partners.

The building will also contain the University's

first dedicated, large-scale and multi-functional events space (auditorium), which will accommodate student events including graduation ceremonies.

Vice-Chancellor and Chief Executive of Teesside University, Professor Paul Crony OBE, says: "We are an ambitious, global-looking University and, as an institution which attracts students from all over the world, we always strive to provide the best possible student and learning experience.

"Digital Life will provide a vital cross-university asset for digital innovation, firmly cementing Teesside's reputation as a future-facing University."

Construction of the Digital Life building began last year (2023), following the demolition of some existing structures – including a pub – which cleared the site for the new build.

The new building is a steel-framed structure, a design chosen for a number of reasons. Billinghurst George & Partners' Senior Structural Engineer Tom Brown, says: "Cost played a big part in choosing the framing solution, as did the long spans required by the building.

"The completed scheme is also aiming to achieve a BREEAM 'Outstanding' rating and structural

steelwork is helping this aspiration, as the overall tonnage contains a significant amount of recycled material."

Working on behalf of main contractor Wates, Severfield sourced the steelwork from British Steel, and then fabricated, supplied and erected the project's steel frame.

Founded on a series of piled foundations, which are up to 18m-deep, the majority of the steel frame is designed around a regular grid. The building has perimeter columns set at 5m centres, which is said to be an optimal distance to support the composite cladding panels, while internally there are spans of up to 10m.

The ground floor is a suspended slab, but above this the upper floors and roof have a composite design of steel beams supporting metal decking and a concrete topping. The composite flooring's diaphragm action provides stability to the steel frame, which works in conjunction with bracing strategically placed throughout the building.

The floor beams are all cellular members, fabricated by Severfield from 533 UB sections. As well as accommodating the building services within their depth, the beams, alongside the entire steel frame, will be exposed within the completed scheme to create the desired industrial-looking environment.

Having a regular column grid, means much of the steel frame is the same on all of the floors. The notable exception, however, is the full-height auditorium that occupies approximately one-third

## FACT FILE

### Teesside University Digital Life building, Middlesbrough

Main client: Teesside University

Architect: Hawkins Brown

Main contractor: Wates

Structural engineer: Billingham George & Partners

Steelwork contractor: Severfield

Steel tonnage: 420t

of the rectangular building's length.

With retractable seating, this column-free space will be able to accommodate up to 600 people. It will also have additional seating on first and second floor balconies.

According to Severfield Project Manager James Massheder, the largest steel elements for the project were needed to form the auditorium.

"We erected four 32.5m-long × 3m-deep roof trusses, which were brought to site in halves, assembled on the ground, and then lifted into place using a 100t-capacity mobile crane."

Adding some architectural interest, two of the auditorium's elevations meet at a splayed corner, whereby the lower parts of the elevations are inset.

This is created by four columns, slightly inset from the regular column line, raking outwards, from ground to the underside of second floor. A fabricated crank in each column, means that they straighten for the upper two floors of the building. Like all of the project's 16m-high columns, the cranked members were delivered to the site as complete sections.

The splayed corner acts as a signpost to the Digital Life building's main entrance. Positioned midway along one of the main elevations, this is another full-height area of the structure.

Positioned on one side of the entrance foyer is a feature steel staircase, which provides access to all of the upper floors. Wrapped around a lift core, it is supported by a series of cantilevering beams that create the illusion of a floating staircase.

Another interesting architectural element in the entrance foyer is provided by 4m × 4m hanging steel-framed box, which is known as the collaboration pod.

Suspended from the roof via four UC section hangers, the glazed pod is a meeting room, which can be accessed via second floor bridge.

Summing up, Wates Project Manager Dan Dodsworth, says: "This project used 100% British steel, produced less than 40 miles from the site, and a minimum of 20% of which was recycled."

"This helped support the University's commitment to embedding sustainable procurement practices across all of its masterplan projects, with all new builds targeted to a BREEM 'Outstanding' rating.

"As well as being quicker to install, the use of steel over concrete also facilitated the construction of the building's innovative design, centred around flexible learning and leading-edge technology.

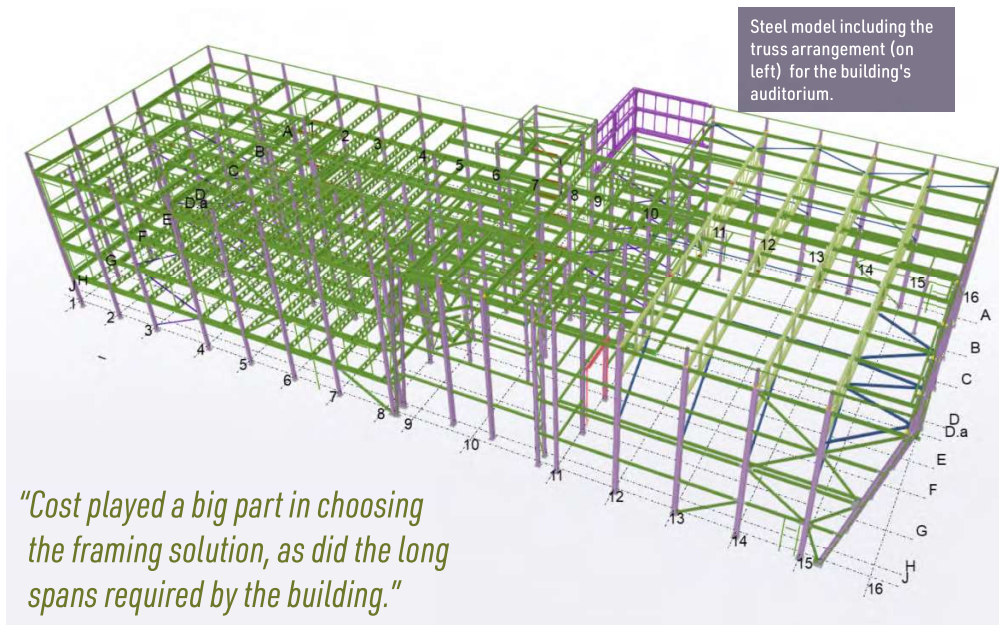
"Steel cellular beams allowed for higher ceiling heights and future flexibility for mechanical, electrical and plumbing (MEP) routes, as well as reducing the need for internal columns." ■



Cellular beams, accommodating building services, have been used throughout the project.



The building's feature splayed corner points the way to the main entrance.



"Cost played a big part in choosing the framing solution, as did the long spans required by the building."