Roofs shape leisure centre design

FACT FILE
Trowbridge Leisure Centre
Main client: **Wiltshire Council**
Architect: **Roberts Limbrick**
Main contractor: **Pellikaan Construction**
Structural engineer: **Stantec**
Steelwork contractor: **Adstone Construction**
Steel tonnage: **246t**

Cross bracing has been positioned to avoid glazed elevations.

Like the majority of leisure centres, structural steelwork is the framing solution of choice for a new stand-out facility in Wiltshire.

Transforming the local skyline with a suitable industrial aesthetic, a new leisure centre is taking shape in the centre of Wiltshire's county town of Trowbridge.

Providing the town with a transformative asset, accommodating modern, accessible facilities that promote health, wellbeing, and social interaction, the centre is a steel-framed structure topped with two pitched roofs.

The roof design is a nod to the town's once thriving woollen cloth industry, and the warehouses and mills (a few remain) that once dominated the townscape.

Along the leisure centre's western elevation, facing the County Hall, the building is topped by a 15-degree pitched roof, which forms the 22m-wide open-plan area for a six-lane, 25m swimming pool and learner pool. On the opposite side of the building, there is another, steeper 7m-wide pitched roof structure.

Visualisation of the completed Trowbridge Leisure Centre.

Separating the two feature roofs, is an area of the building (accommodating changing rooms and the main entrance) with a flat roof. Taking advantage of the level surface and supporting the council's target of being carbon neutral by 2030, solar panels, helping to power the all-electric building, will be installed on this area.

Adding to the architectural design, the pitched spans are both formed with a series of paired beams, 11m-wide and 3.3m-wide, which are joined with a central connection.

As the majority of the centre's steelwork will be exposed within the completed building, the roof beams are joined by more than just bolts. Each pair has a tension rod with a central and circular connector, which is in keeping with the historic aesthetic, while also providing a solution against splice deflection.

There are a series of six pairs of roof beams topping the western portion of the building. Each pair was assembled on the ground into a 22m-long section, complete with tension rods and a connector, before being lifted into place by a mobile crane.

Four of the pairs of beams span over the double-height main pool area, while the other two form the roof over a two-storey area accommodating a first-floor studio that sits above the learner pool.

To protect it from the corrosive environment, all of the steelwork in the aquatics area and changing rooms was galvanized and painted before being delivered to site.

To negate any deflection and vibration issues, along with the need to separate the pool environment from the studio, there is a roof truss positioned at this dividing point.

Supported by a single column, positioned at the midpoint, the truss was brought to site piece-small, assembled onsite and lifted into place as one section.

The new leisure centre is being constructed by Pellikaan Construction, which began in early 2025, following the completion of an extensive demolition programme. The main contractor remediated the majority of the site and installed piled foundations (up to a depth of 19m), preparing the ground for the steel frame erection.

Comprising more than 993 pieces of steel and weighing approximately 246 tonnes, the steel frame took Adstone Construction around 35 days to erect.

Coordination between the project's different trades was key to the successful completion of the steelwork.

As safety is always of paramount importance,

Having completed the steel frame, work continues on the facility's two pools.

groundworks were not undertaken in areas where the steel frame was being installed.

Aside from the double-height main pool area and the main entrance, the majority of the leisure centre is a two-storey steel frame, with the upper floor compositely formed with steel beams supporting metal decking and concrete topping.

The entrance is located along the southern elevation, adjacent to the steeper pitched roof zone. This part of the centre also accommodates a café and an adventure play area as well as a first-floor 120-station gym.

The leisure centre is being constructed using high-quality, robust materials, with numerous glazed facades providing an abundance of natural light to the facilities.

In order to not obstruct the glazing, the steel frame's stability-giving bracing has been strategically placed in areas where there are no windows or doors.

"The project was particularly challenging due to the tight site constraints, limited crane access, and the requirement to work over the pool areas. With many detailed members needing precise alignment, the erection team did an excellent job bringing the frame together successfully," says Adstone Construction Structural Engineer, Elliott Laidlaw.

Wiltshire Council has partnered with Alliance Leisure, the delivery partner for the UK Leisure Framework (UKLF), which is owned and managed by Denbighshire Leisure Ltd, to bring the project to fruition.

This collaboration is said to ensure an end-to-end solution, covering the design, procurement, and construction of a sustainable leisure centre for the local community.

Summing up, Julia Goddard, Regional Director at Alliance Leisure, adds: "With our extensive experience in developing over 280 leisure projects, we are committed to leading a team of top-tier experts to create an exceptional new leisure facility for Trowbridge. Our goal is to design a sustainable and inclusive leisure centre that caters to the needs of the local community, fostering long-lasting improvements in physical and mental health and wellbeing."

The Trowbridge Leisure Centre is due to be complete by the end of 2026. ■

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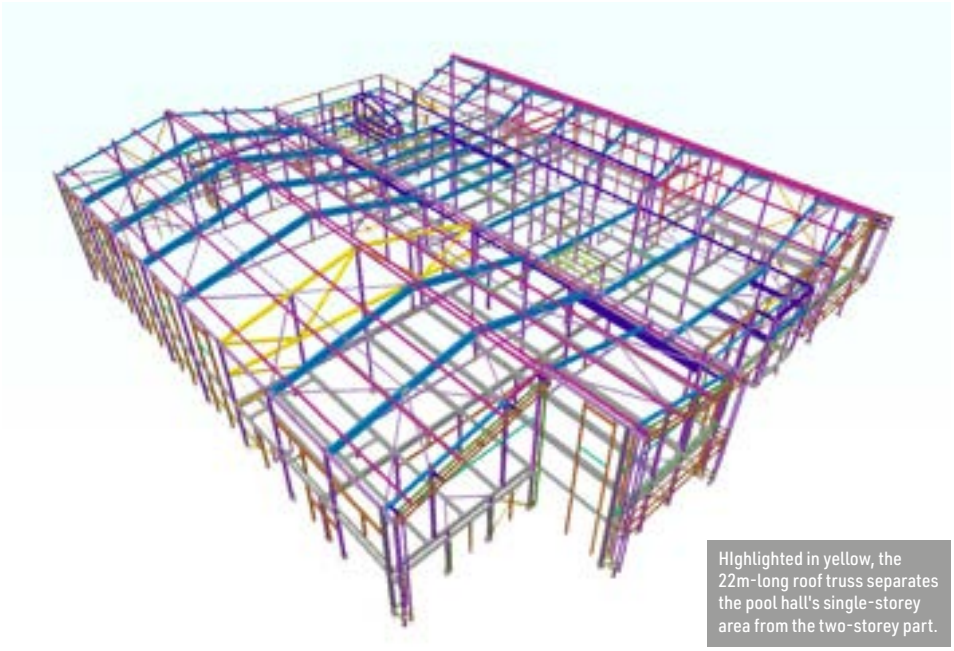

HIghlighted in yellow, the 22m-long roof truss separates the pool hall's single-storey area from the two-storey part.