

# Building the UK's largest Passivhaus leisure centre with Ravatherm XPS X 700 SL

## The challenge

There's a lot resting on the basement of the new Spelthorne Leisure Centre. The facility could be one of the most energy efficient in the world when it opens, as well as the largest one in the UK built to Passivhaus standards. Making this possible requires insulation that ticks every box: compressive strength, thermal conductivity, and thickness – with the latter proving a key consideration, given the enormity of the basement, which alone holds a filtration room, a 20m x 10m learner pool, and an eight lane 25m pool with spectator seating.

The project team initially opted for another XPS insulation product, due to their familiarity with the brand, which was being used elsewhere in the project. However, it later became clear that this product was not compatible with adhesive bonding or mechanical fixing, presenting a dilemma for installing the insulation in the basement. "It makes life so much easier to have that flexibility in application, particularly for Passivhaus, where you have to account for heat loss through even the fixings", explains Josh Wardle, senior architectural technologist at GT3 Architects.

## The solution

The team began exploring more suitable alternatives, a search which led to **Ravatherm XPS X 700 SL**. "The fact that Ravatherm could simply be glued on was a huge tick", says Wardle. "When I spoke to Natalie at Ravago, she came up with all of the answers straight off – how we lay the product, how we apply it", adds Phil Harding, senior design coordinator at Willmott Dixon. "It was easier to use than the original product and surpassed it on thermal performance too". Two layers of **700SL** (250mm) were applied to the underside of the pool slab and three layers (360mm) to vertical sides to achieve an improved U-value of 0.08W/m<sup>2</sup>K.

## Spelthorne Leisure Centre, Staines

<b>Industry</b>	Leisure
<b>Application</b>	Basement/swimming pool
<b>Products used</b>	Ravatherm XPS X 700 SL
<b>Year completed</b>	Summer 2024 - expected
<b>Client</b>	Spelthorne Borough Council
<b>Main contractor</b>	Willmott Dixon
<b>Groundworks</b>	Farncombe Construction
<b>Architect</b>	GT3 Architects
<b>Location</b>	Staines, Surrey



# Case study



## The results

Once complete, Spelthorne Leisure Centre will be the UK's largest wet and dry leisure centre to achieve the stringent and internationally recognised Passivhaus standards, with energy consumption expected to be up to 70% lower than a standard new building.

Natalie Sutton, Account Manager at Ravago Building Solutions says, "Ravatherm XPS X 700 SL's high compressive strength, thermal performance and moisture resistance has made it the product of choice for everything from car park decks to cold stores. This is the first time it's been used in a Passivhaus swimming pool, which itself is one of the first projects of its kind anywhere in the world. That's a big enough challenge for all involved, so it's fantastic to hear feedback that we were able to make everyone's lives easier at every stage, from specification to installation".

## Customer feedback

*"From the initial enquiry through to delivery on-site, it was a pleasure to have Ravago on board with Farncombe Construction to achieve the high specification insulation demanded by Passivhaus at Spelthorne Leisure Centre."*

*"Numerous questions and requests from our team regarding deliveries and installation were dealt with promptly and professionally."*

*"The regular updates given to our site management with information of delivery dates and times helped immeasurably with the specific logistics on a project surrounded by the general public."*

Tim Harrison, Construction Director, Farncombe Construction