

Guildford New Sewage Treatment Works

Product

Heidelberg Materials Waterproof Concrete, Sika® WT-200 P, Sika ViscoCrete®-1000, Sika Plastiment®-190

Main contractor

BAM Enpure JV

Client

Guildford Borough Council

Project overview

Guildford Borough Council's Weyside Urban Village project involves moving the town's sewage treatment works to unlock land for housing while protecting the surrounding green belt. Heidelberg Materials, alongside BAM Enpure JV and Sika, supported the build with watertight concrete for key structures like the primary settlement tank and activated sludge plant. Due for completion in Q4 2025, the project uses innovative concrete solutions to ensure durability and water resistance on the former landfill site.

Project description

The Weyside Urban Village project is a brownfield regeneration scheme initiated by Guildford Borough Council. To free up land for much-needed housing, Guildford sewage treatment works needed to be relocated.

By building the new sewage treatment works on a former landfill site, unsuitable for housing, the surrounding Green Belt will be preserved. When complete, Weyside Urban Village will include up to 1,550 new homes with new spaces for community and employment.

Heidelberg Materials, in collaboration with key partners, provided integral support in the development of watertight concrete for the primary settlement tank and activated sludge plant, working alongside main contractor BAM Enpure JV and our trusted supplier Sika.

Activity commenced in Q4 2023 and is scheduled for completion by Q4 2025.

Project requirements

Constrained by the presence of landfill, the project adopted an above-ground approach, where the design allowed. The need to place process tanks above ground generated considerable areas of visible, exposed tank surfaces, which emphasised the creation of watertight reinforced concrete structures that met the vigorous standards set by Thames Water and the relevant regulators. BAM Enpure JV's delivery approach of utilising offsite manufacturing technology also required in situ concrete to complement precast concrete products.



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Heidelberg Materials' solution

The primary settlement tank and activated sludge plant were the focus for the waterproofing of this project and required Heidelberg Materials waterproof concrete, used as a stitching concrete between 7-10m tall precast panels.

Heidelberg Materials waterproof concrete solution was integral to the successful completion of the Guildford New Sewage Treatment Works project. For this project, 660m³ of concrete containing Sika WT-200 P was utilised for the Primary Settlement Tanks and the Activated Sludge Plant.

Sika WT-200 P is a combined water-resisting and crystalline waterproofing admixture used to reduce the permeability of concrete, making it suitable for watertight structures. The crystalline waterproofing admixture consists of active materials that form non-soluble products throughout the pore and capillary structure of the concrete, permanently sealing it against the ingress of water and other liquids ensuring the longevity of the structure, an essential aspect for the project.

In addition to the concrete containing Sika WT-200 P, Heidelberg Materials used 10,000 litres of Sika ViscoCrete®-1000 and 6,600 litres of Sika Plastiment®-190 in the overall concreting works.

Trusted partners

Working with trusted partners BAM Enpure JV and Sika on this project has provided reassurance to Thames Water throughout the project. The longstanding relationship between the businesses allowed for the seamless integration of Heidelberg Materials waterproofing concrete as part of a watertight system in partnership with Sika, helping to meet the critical delivery goals of the Guildford STW Relocation Project.

Chris Sharrod, Area Technical Manager at Heidelberg Materials, commented: "We have a strong relationship with Sika, and their support from the beginning of the project

was invaluable. The collaboration between Heidelberg Materials, Sika, and BAM was highly effective, starting from the first site meeting and continuing with constant communication. This coordination meant that any issues were resolved quickly, ensuring smooth progress on site. The admixtures from Sika performed excellently, helping us deliver quality concrete that enabled BAM to achieve an impressive finish."

Stephen Armfield, Key Account Business Development Manager at Sika, added:

"The close working relationship between Sika and Heidelberg Materials allowed us to engage early with the design and delivery teams, providing support to overcome technical challenges. This partnership has proven essential in delivering the project to Thames Water's exacting standards."

Richard Scott, Design Lead at BAM Enpure JV, also commented:

"Heidelberg Materials and Sika's concrete technology was essential in ensuring watertightness for our largest hydraulic tank structures. The collaborative mix design development, site trials, and ongoing site verification have enhanced our technical offering to Thames Water, and we're proud to be part of this important infrastructure project."

