



Partner of Choice

PARTNERING TO DELIVER THIS COASTAL PROTECTION SCHEME

Tarmac's collaborative approach, concrete and asphalt solutions and responsive local supply chain helped Knights Brown to deliver this high-profile project on time and on budget while ensuring long term value to their client Swansea City Council.

Project Scope

This £26m coastal protection project was designed to provide protection from flooding and coastal erosion to residents and businesses in this popular part of Swansea Bay. The existing sea defences, a 0.5km-long vertical concrete sea wall and 0.7km sloping revetment were in poor condition and left the community exposed to the risk of flooding. It also aimed to enhance the promenade as a popular leisure destination with new decorative surfacing, landscaping, lighting, litter bins, seating and better links to Mumbles Road. The main areas of work included raising the promenade up to one level by around half a metre in the middle section, strengthening the main coastal defence structure, main wall and revetment and replacing railings with a low pedestrian wall. It would also involve widening the promenade to create a shared pedestrian footpath and cycleway while adding seating and hard and soft landscaping.

Key challenges

There were also a number of significant challenges when delivering this project. The new sea wall would need to resist the scouring action of the sea and



construction work would need to be timed to fit around the tides. Road access for HGV's to this area of the bay was limited, so it would also be important to carefully manage material deliveries to minimise disruption to local residents, businesses and road users. Project managers also needed to mitigate the impact of construction work on an adjacent SSSI, designated as an important habitat for local and migratory birds.

Our solutions

Tarmac was involved early in the project as a key materials supply partner firstly for the supply of aggregate and concrete to the project for the sea wall and structure and to supply a decorative asphalt for the promenade that would meet the client and designer's vision.



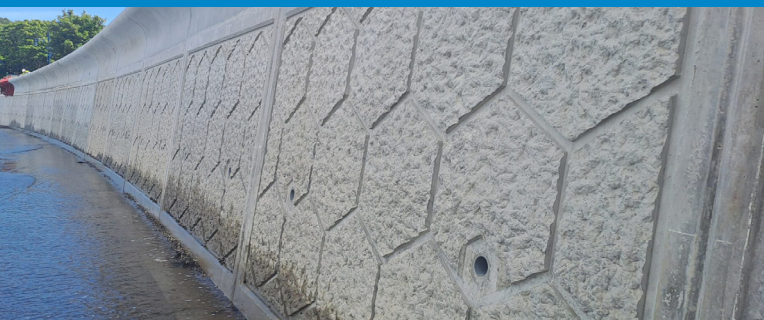
High early strength, abrasion resistant concrete

The concrete needed for the sea walls, slipways and stairs would deliver high strength, abrasion resistance and the early strength gains needed by the contractor to complete work within the available time windows. The design also required detailed patterns and textures to be cast into the surface of the sea wall and the low pedestrian wall of the promenade.

Stringent performance requirements

A C40/50 micro-silica concrete mix was supplied for the sea wall. As it would be used on a steep gradient, there was a very tight slump tolerance for the mix. If it was too dry, it couldn't be suitably placed, compacted and finished; if too wet, all of the concrete would flow to the bottom of the structure. It also had to be workable for a sufficient period to cover the typical transit time of approximately 45 minutes and allow for discharge on site, while achieving a relatively early set before being covered by the incoming tide. As the concrete was supplied over a period of two years, the mix was adjusted according to the season to achieve the performance requirements.

Tarmac can supply a wide range of specialist quality assured concrete for challenging projects. This includes fibre reinforced concretes, waterproof concretes and chemical of abrasion resistant concretes. We can also supply CEVO low carbon mixes that meet strength requirements but deliver significant savings in carbon emissions.

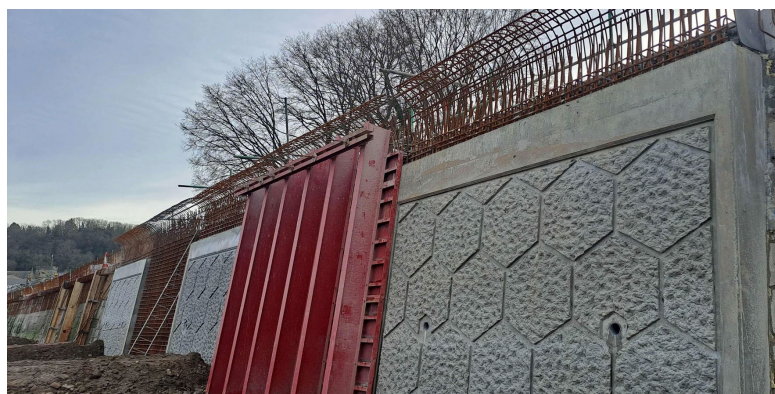


High performance coloured asphalt

After discussions with the client and main contractor and supply of product samples, **ULTICOLOUR** was chosen as the surface for the promenade in a light buff colour. **ULTICOLOUR** uses a clear polymer modified binder, pigment and colour matched aggregates. This produces brighter, deeper colours that resist surface wear and keep their appearance for longer. The client wanted a durable, maintenance free surfacing and **ULTICOLOUR** has an impressive 20 year record of performance in the UK including on a number of coastal promenades including Blackpool, Morecambe Bay in Lancashire and Whitley Bay in Tyne and Wear. It is tough enough to use on bus lanes but also complemented the colours in the coastal environment.

Results and benefits

The project was completed on time and on budget in the summer of 2025. Tarmac supplied around 16,500m³ of concrete to the project starting in July 2023 with around 10,500m³ of this volume being specialist high strength micro silica concrete. In total, 660 tonnes of **ULTICOLOUR** Light Buff asphalt was supplied to the site by Tarmac and laid by the surfacing contractor Gwendraeth Valley Tarmacadam. It was a complex decorative paving design including a number of intricate patterns, but the contractor was able to achieve an excellent finish. Throughout the project there was careful planning and coordination between Tarmac's asphalt and concrete networks and collaborative working between project partners.



Delivering long term value

The new sea defences will reduce the risk of coastal flooding to 126 properties, including homes and more than 50 businesses along this popular stretch of the Swansea Bay coastline. By improving the appearance of the promenade area it is also expected to further strengthen the tourism industry, already worth around £660m to Swansea's economy each year. After being shown evidence of the proven performance of **ULTICOLOUR** on other sites, they were also confident of the long-term durability of the new pavement. This result was only made possible by the collaborative approach of all project partners.