

## Case study

### Project Information

**Location:** Swansea  
**End client:** Dŵr Cymru Welsh Water  
**Main contractor:** Morgan Sindall  
**Start date:** July 2018  
**Scope of works:** Design, manufacture, delivery and installation of the PFET and Blending Chamber structures for Gowerton WwTW

### Background

The reasoning behind the works at Gowerton was a requirement to meet permit conditions in South Wales by 2020. It is a cost-effective approach to challenging flow management at Water Treatment works which enables DCWW to meet their spill permit regulations as laid down by the Welsh Government and Natural Resources Wales.

The client was working to an extremely tight programme to achieve consent dates, which meant that the FLI Carlow precast construction methods delivered key advantages over the traditional build process.

On completion of the design the precast panels were produced off site at the same time as the 500,000m<sup>3</sup> excavation was undertaken to receive the panels. The area was suitably prepared for the delivery of the panels which was coordinated with the site team and the client's operators to facilitate the existing treatment process.

Key drivers for the scheme included the requirement for complex M&E integration which also lends itself to the FLI Carlow design and production philosophy for off-site manufacture.

The Gowerton scheme is the first project in the UK to utilise American company WesTech's Flexfilter technology. WesTech are partnered with FLI Water to deliver systems to the UK water market.



## Solution

- Controlled production of elements to a very high standard
- Integration of complex M&E systems
- Reduced H&S risk on site
- Programme savings in the works through a shorter construction programme
- Reduced workforce on site resulting in reduced main contractor preliminaries
- Reduced construction traffic for the local area, meaning less disruption for residents
- Lower carbon footprint as a result of the FLI Carlow construction methodology, which is typically half that of traditional in-situ build
- Flexibility for programme phasing on site, if necessary
- All units manufactured off-site and called in as dictated by the programme
- FLI Carlow provide a secondary sealing system which traditional methods do not offer
- Clear works development through Building Information Modelling (BIM) and cutting-edge design capability.



## A word from our client

"The scheme involved installing various complex precast structures to house a new flexseal treatment system that will deal with foul water storm flows before discharging to the consented outfall, the first of its kind in Europe. The PFET structure alone was 27mtrs x 26mtrs x 8 mtrs deep (at the deepest part), consisting of 3 different levels and various interconnecting chambers.

Due to the high priority of the scheme and the tight deadlines to meet NRW consents, a precast option was progressed. This enabled the design of the structure to be passed to FLI Carlow which released our design team to concentrate on other areas of the scheme, showing significant programme savings on the design.

Due to the competency and efficiency of the FLI Carlow team the precast installation was completed on time with zero accidents/incidents and to the end client's satisfaction."

**Kevin James,**  
Project Manager - Wastewater Infrastructure,  
Welsh Water Capital Delivery Alliance



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