

Ynysforghan

Overview:

Site Location:	>> Ynysforghan, South Wales
Client:	>> Morgan Sindall
Contract Value:	>> £750,000
Project Duration:	>> 25 Weeks



The site is located on Clydach Road just off junction 45 of the M4 near Swansea. An existing 675mm cast iron sewer main runs along Clydach Road connecting numerous properties to the sewage system. An existing CSO on this system allows excess flows in storm conditions to spill into a nearby culvert which then enters the River Tawe some 300yds downstream. Currently this discharge is unscreened which ultimately affects the water quality within the nearby river and ultimately the bathing waters in Swansea Bay.



This project aims to address the continuing unsatisfactory intermittent discharge (UID) occurring within the existing Ynysforghan combined sewer overflow (CSO).

The proposed works involve the closure of the existing CSO and the construction of a replacement CSO approximately 45m downstream of the existing asset. It is intended that the proposed replacement CSO will bring the UID's to within acceptable levels.

This scheme consisted of approximately 135m of new 675mm and 450mm pipe work, 7 new manholes and new RC CSO chamber which will contain an automated self-cleaning screen.

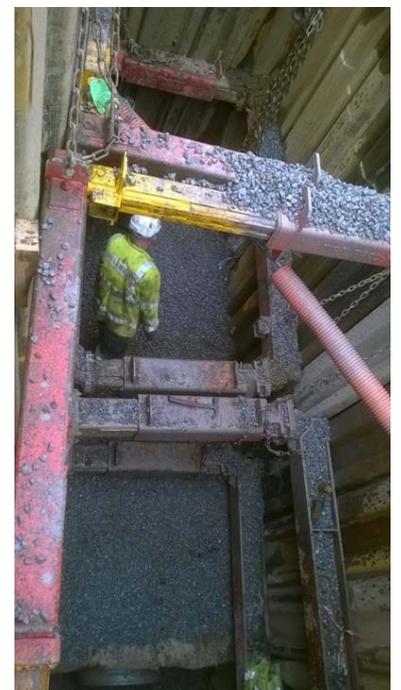
The existing 675mm Cast Iron sewer pipe lies within the highway in a very traffic sensitive location at a depth of 6m.

This section of highway used to be the main access into from Clydach into Swansea City centre before the M4 was constructed.

Due to the traffic sensitive nature of the highway work, close liaison with Swansea Highways Department was essential in developing a traffic management plan for the scheme duration to ensure the continuing flow of traffic off the M4 Junction 45 Gyratory.

Traditional open cut trenching methods were adopted for most of the pipe laying due to the presence of rock at 5m depth which would prevent a trenchless alternative being favoured.

This in itself proved a challenge whilst crossing a busy mini roundabout excavating between 5m and 6m deep laying a 675mm concrete pipe below numerous existing live critical services.



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A small section of the new pipeline crossed beneath services owned by 7 different utility companies all within the same carriageway. Due to this, a pipe jacking solution was preferred. This involved jacking a 1200mm steel sleeve across the road and into a private driveway then inserting a new 450mm pipe inside.



The new CSO which was a 6m long by 3m wide x 4.5m deep reinforced concrete structure was constructed at the side of Clydach Road. The new CSO now houses the new automated screen. The outfall pipe from the new CSO was connected to a nearby storm culvert. This connection point was 6m deep and involved core drilling through a 600mm thick concrete wall into an existing chamber.

The surrounding surface to the new CSO was constructed using Grasscrete Cells, this provides a firm surface for maintenance vehicles to operate from whilst giving the appearance of a grass surface.



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