

Municipal, Peacehaven, United Kingdom

Brighton and Hove: « green » site



**WASTEWATER
TREATMENT PROVISION
EUROPEAN STANDARDS
CLEANER SEA TO
SUSSEX**



Brighton and Hove
Peacehaven

UK

CONTRACT SCOPE

Site: Peacehaven - Brighton

Scope: Wastewater and
sludge treatment

Design, construction, commissioning
environmental mitigation works and
stakeholder engagement.

ACTIVITY SECTOR

Municipal

Wastewater facility and sewer system

EXPERTISE

- Multiflo® lamella system
- Biostyr® biological aerated flooded filter cells combine biological waste water treatment

The challenge

Much of the current sewer system in Brighton and Hove dates back to the Victorian era. As part of Southern Water's £300 million environmental improvement scheme, our multi-talented team was tasked with replacing part of the sewer system to transfer waste water to a new facility and bring cleaner seas to Sussex. Delivery, a joint venture between Veolia Water, Contain and MWH, was responsible for delivering this complex project, including design, construction, commissioning environmental mitigation works and stakeholder engagement.

The scheme is now the proud recipient of more than 20 nationally recognized awards in design, construction, safety, people development and public relations. The Peacehaven scheme involved replacing the existing sewer system with a new 11 km sewer tunnel. The aim was to link the tunnel to a new waste water treatment works (WwTW) and sludge recycling center. The facility is capable of treating 95 million liters of waste water a day, for more than 250,000 residents in the Brighton and Hove area. Three new pumping stations lift the waste water, enabling it to flow along the tunnel to the new WwTW, with 17 new shafts to enable access and connect local flows to the sewer tunnel.

Veolia's solution

Two tunnel-boring machines were required to create a 9km, 2.4m diameter transfer tunnel.

**£300 m
environmental
improvement
scheme**

**2500 m
from the shore
waste water released
in the sea**

**95 m
liters of waste
water a day**



A further 2km of pipe jack 1.8m diameter tunnel was also installed to divert existing flows and connect to the new Long Sea Outfall. Some 150 piles were required to form three connecting piled walls which enabled the very deep shaft pumping stations to be constructed at the same time as supporting the adjoining roads.

The 17.5m diameter shafts to the pumping stations were constructed by underpinning pre-cast concrete segmental linings and spraying concrete linings. This involved excavating below existing ground water levels, which required extensive grout injection, ground treatment and dewatering spanning a total of 1.6 km.

The new WwTW now uses patented technology from Veolia Water Solutions & Technologies.

The benefits for our client

In the face of considerable local opposition to the project, Veolia Water and the 4D team engaged positively with the two planning authorities, local environmental health representatives and local residents.

The plant blends into the landscape, thanks to a green roof the size of almost three football pitches, and extensive re-profiling and landscaping of the surrounding areas to screen the works from view.

Process description

Peacehaven is the first UK Multiflo® lamella system to incorporate automatic lamella plate cleaning and an automatic scum removal system. A battery of 10 Biostyr® biological aerated flooded filter cells combine biological waste water treatment and suspended matter filtration in a single, low-footprint reactor representing cutting-edge technology with fully automated operation, optimized filtration speeds, a small footprint and a rapid response to high load variations.

Sludge is also recycled at the facility and can be imported from other Southern Water sites to produce a soil conditioner. All odors are captured and treated before being released to the atmosphere. The treated waste water is released into the sea 2500 meters from the shore, helping to bring cleaner seas to Sussex.



PLANET

- Engaged with authorities, local environmental health representatives

REGIONS & CITIES

- Blends into the landscape



WOMEN & MEN

- Engaged with local residents

Commercial Use ONLY

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MUNICIPAL OFFER

