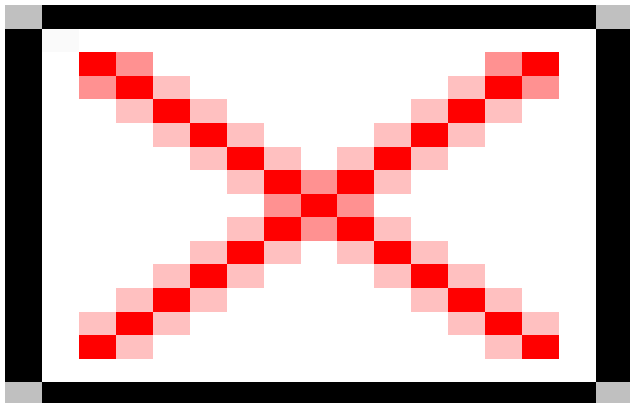


IMDC
Intakes, outfalls and land-falls
Tender documents
Location:
Accra, Ghana
Client:
Ministry of Housing & Works (Ghana)



Project Contact Information

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Korle Lagoon: design and supervision

General description of the project

The Ministry of Works & Housing of the Government of Ghana decided to bypass all the existing dry weather wastewater around the Korle Lagoon.

In order to reduce the flux of pollution arriving in the Korle Lagoon and to provide the downstream section of the future wastewater drainage system for Accra, the dry weather flows entering the lagoon are to be intercepted by a wastewater collector system that discharges to a sea outfall.

The project consists mainly of three structures:

The interceptor weir. The pump station with a preliminary treatment. The sea outfall.

The Interceptor

To intercept the dry weather wastewater flows from the Korle canal, the Kaneshie - and the Agbogbloshie drain, an interceptor weir is designed upstreams of the upper lagoon.

The interceptor is a 77,50m long weir in reinforced concrete with a total height of 4,85m from top to bottom, able to hold up the high tide sea water level.

Twenty heavy steel flap gates with a clearance of 3,00x3,50 m each are provided in the interceptor weir to allow to pass the flood flows during the rain season conditions (open flap gates) without overtopping the upstream embankments.

During the dry season the flap gates are closed and the dry weather flows are intercepted and pumped over to the sea outfall.

To remove the flap gates for important maintenance or repair works and to unload them onshore, a railway trolley is running on top of the interceptor weir.

For small maintenance each flap gate compartment can be closed by means of stop logs in order to permit

repair and maintenance works in dry conditions.

Furthermore, a garage is provided onshore to store the trolley.

Pumpstation

During the dry season a pumpstation with a max. capacity of 2m³/s will pump the dry weather wastewater to a gravity sea outfall pipe.

The pump station consists of:

- A double mechanical intake screen for preliminary wastewater treatment. This bar screen with a space of 50mm will be cleaned by hand
- A screw pump with dia. 2,95 m and a length of about 20 m will pump up the water from level 0,00m to +7,85m
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- Fine screen with screw conveyor. The stainless steel step screen is built with two groups of bars, one is fixed, the other is rotating. The bar spacing is 6mm
- Sand trap and settling tank.
- Oil skimmer to remove the grease by hand.

The pump station is provided with a complete equipped service building for the electrical equipment to provide the power to allow the full functionality of the station and the mechanical treatment works.

The service building also includes a control room and all necessary office and sanitary accommodations.

Sea outfall

The outfall pipe with a dia. of 1200 mm consists of two strings with ballast weights, nominated as the Lagoon string with a length of 880 m and the offshore string with a length of 920 m provided with diffusers.

The strings are jointed together by a coupling stress inhibitor.

The treated wastewater is flowing gravity from the outlet of the settling tank through the outfall pipe to the sea.

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