Best practice at Farringdon – Concrete Siltbuster

Overview

Due to the construction methodology for the ITH main structure there are many areas on the structure that have steel to steel connections. For durability, fire protection and aesthetical purposes these connections are required to be concrete encased. During this process water is required for mixing the concrete and then washing out the mixer. The concern of the project was how we could deal with this alkali water by-product of the cleaning process.

Innovation

A concrete wash-water treatment system has been procured that has 2 main benefits:-

1) Solids and Liquid Separation
Any solids and cement fines are removed from the washout effluent by being passed through a geotextile dewatering bag.

2) Automatic pH Adjustment
The effluent enters the main treatment chamber and undergoes automatic pH adjustment using carbon dioxide to reduce the pH.

Once treated, this water is then reused in either the concrete making process or once again used for washing out the mixer. This reduces the water demand for this process.

Benefits

- The disposal of untreated concrete waste water may breach environmental legislation and usually needs treatment prior to disposal.
- The system allows reuse of water rather than disposal.
- Discharge consents are not required which is a costly and time consuming process
- Space saving - combines solids removal and pH adjustment in a single integrated unit. Skips would otherwise need to be used.
- Decommissioning of the treatment system is simplified. In a traditional system excess acid would need to be disposed of as a hazardous waste whereas partially spent carbon dioxide cylinders can be returned to the supplier.

Targets and objectives

The use of concrete siltbuster has helped us meet our targets and objectives in the following areas:

- CEEQUAL – material use; energy; waste management; transport;
- Farringdon Sustainable Design and Construction Strategy - transport; energy and carbon; waste; sustainable material use
- Farringdon Targets and Objectives – minimise waste; restrict carbon emissions; use sustainable materials in a sustainable way.

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