Hindley Junior & Infant School

Type of System: Rainwater Harvesting System / Attenuation Tank

Date of Installation: 2004

Tank Size: 66m^3

GEOCELL

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Site Problem:

The design for the Hindley Junior & Infant School development in Wigan Council required that stormwater runoff from the Greenfield site be restricted to zero discharge.

Original Solution:

The original design was to collect the runoff from the field and roof area using traditional drains introducing flow. into a conventional concrete attenuation tank.

Engineers Requirements:

The engineering requirements for managing the stormwater were assessed as follows:

- Zero discharge from the site.
- A high tank storage requirement in a highly restricted limited space.

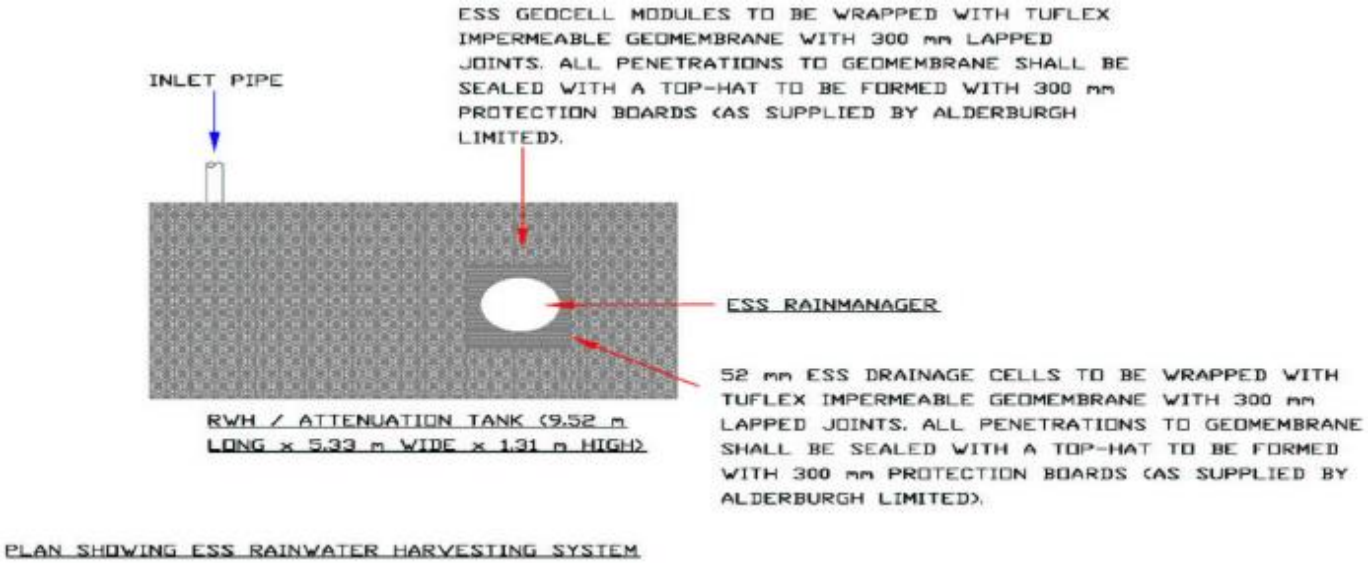
Hindley Junior & Infant School

ESS Solution:

ESS provided a solution using ESS Geocell modules, which have a void ratio of 95% and high load bearing capacity of more than 450kN/m^2, ESS 52mm drainage cells, ESS Tuflex geomembrane and ESS Rainmanager C-Class (Rainwater Harvesting System).

ESS also proposed a rainwater harvesting system using ESS stormwater attenuation / harvesting tank. Stormwater from the roof is collected in the ESS attenuation tank with ESS rainmanager. The water to be reused in the school is pumped back using the rainmanager from the attenuation tank after filtration. The school also has an ESS educational panel showing the total system for the students, enabling them to calculate the daily usage of water.

The attenuation tank is made up of ESS treble Geocell modules, wrapped with Tuflex impermeable geomembrane. The rainwater harvesting system is fixed into the attenuation tank using 52mm drainage cells. The attenuation tank has a 225mm inlet pipe connected to the attenuation tank. The RWH tank is a circular tank with an outlet pipe with a filter chamber inside and a pump for pumping the required filtered water for the school. The filtered water is basically used for flushing toilets, cleaning school areas, and irrigation of landscapes.



PLAN SHOWING ESS RAINWATER HARVESTING SYSTEM

Hindley Junior & Infant School

Summary:

- Modular configuration allowed for a flexible, ideal site solution that worked with other existing infrastructure both above and below ground level. The modular assembly further reduced installation times allowing a much more economical solution to be found.
- Load bearing capabilities and high void ratios provided the most efficient solution for a restricted site with loading issues.
- Less excavation required compared to traditional tanking systems.