CASE STUDY

SOLMAX

PARIS 2024 OLYMPIC VILLAGE, SAINT DENIS, FRANCE

Olympic Athletes' Village integrates advanced stormwater management

Industry:	Site development
Sub-industry:	Stormwater management
Location:	Saint Denis, France
Product:	OSMORIA™ Geoclean®

OSMORIA Geoclean makes it easy to provide a hydrocarbon treatment solution for diffuse and accidental pollution.

Overview

A 3-hectare bus station has been specially designed to serve the athletes' village in Saint-Denis (Parisian suburb). This project was critical in order to properly accommodate the 14,250 athletes and official attendants who will be staying there for the duration of the competition. It will also contribute to the long-term vision: After the Games, the Athletes' Village will be transformed into a sustainable urban district, featuring housing, offices, shops, public facilities, and numerous green spaces.

The bus station has a dual role: supporting the immediate needs of the Olympics - up to 140 buses per hour are expected - and contributing to the long-term development of a sustainable city district that respects the well-being of its inhabitants and the environment.

Challenge

The project involved the integrated and responsible management of runoff for a 12,000 m² roadway. Managing runoff in an environmentally responsible manner is essential to this transformation, ensuring that the new district would be resilient and deal with storm water contaminated with hydrocarbons from the roads.

Solution

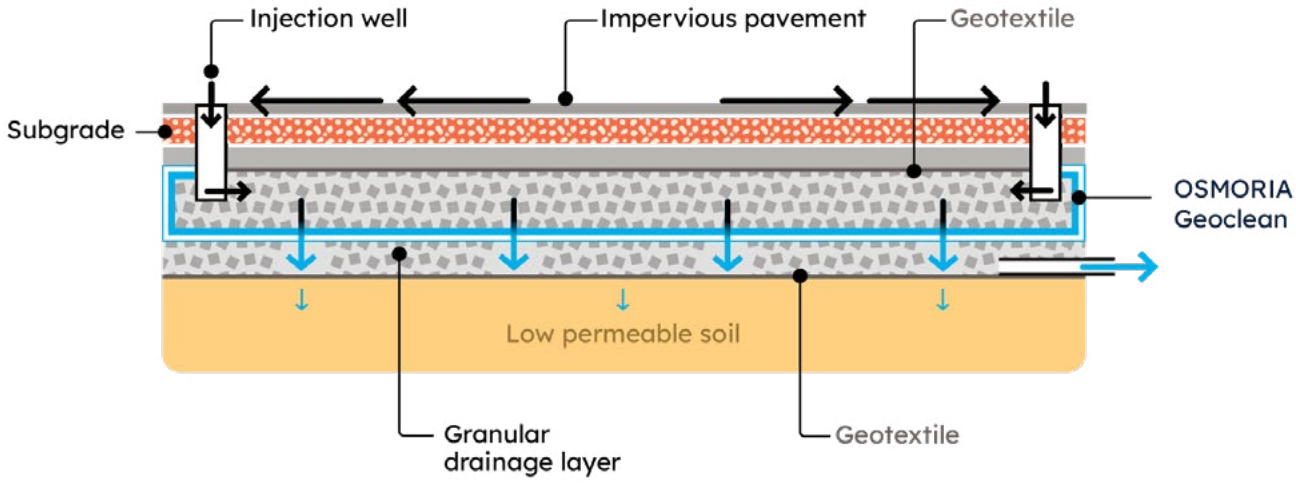
The solution for water pollution control was the OSMORIA Geoclean solution. The aquatextile fixed hydrocarbons and PAHs, then activated and amplified their natural biodegradation over the long term.

The subbase attenuation layer under the roadway is composed of aggregates from crushed recycled concrete. Runoff water, containing hydrocarbons from chronic leaks and spills on the road surface, are collected into the subbase attenuation layer through injection holes and distributed by drains. It is then temporarily stored and gradually infiltrated into the soil.

The OSMORIA Geoclean active oil-biodegrading aquatextile, placed under the subbase attenuation layer, binds hydrocarbons on its oleophilic filaments allowing cleared water to infiltrate the soil. The aquatextile filaments provided mineral nutrients, enabling endemic microorganisms in the soil and water to rapidly colonize its porous structure and degrade the hydrocarbons attached to it more systematically and swiftly. The biodegradation rate in the first month exceeded 2.2 g HC/m²/week, translating to an annual rate of 120 ml HC/m²/year.

The OSMORIA Geoclean active oil-biodegrading aquatextile, placed under the subbase attenuation layer, binds hydrocarbons on its oleophilic filaments before the cleared water infiltrated the soil.

OSMORIA Geoclean offers a cost-effective hydrocarbon treatment solution for both diffuse and accidental pollution, while protecting the environment. The aquatextile is autonomous, durable, and maintenance-free. A subbase attenuation layer equipped with OSMORIA Geoclean provided a simplified solution that blends harmoniously into the landscape.



Schematic cross-section of an impervious road with shallow subbase attenuation layer on low permeable soil