International

Hong Kong Pumping Stations

Case study

Focus products: Intercrete® 4842, Intercrete 4885

Location: Hong Kong

Client: Water Supplies Department (WSD), Hong Kong

Distributor: Euro Pacific Waterproofing Limited

Summary: Green roof waterproofing

Background

Hong Kong's Water Supplies Department (WSD) operates around 20 seafront Pumping Stations that supply water to Hong Kong residents. These include Shatin Seafront Pumping Station in Shatin New Town, one of the fastest growing urban areas in Hong Kong. WSD also operates the Tai Po Water Treatment Works (WTW) which supplies fresh water to a significant part of Kowloon, as well as the Central and Western districts on Hong Kong island.

Shatin Seafront Pumping Station and Tai Po Pumping Station, which forms part of the wider Tai Po WTW, both required remedial work to replace previously failed waterproofing systems on the rooftops of the Pumping Stations. Green roofing areas have been installed at both Pumping Stations to help achieve environmental sustainability by reducing the rate and volume of stormwater runoff and minimising cooling loads on the underlying buildings in summer and heat loss in winter. Green roofing uses vegetation, such as grass, wild flowers and herbs, for roof covering instead of traditional materials.

The solution

Intercrete 4842, a highly flexible, cementitious modified, waterborne coating, was specified to waterproof the roofs at both Shatin Seafront and Tai Po Pumping Stations. The coating maintains its elastomeric properties even when under permanent immersion and it is independently tested for root resistance, a vital consideration in green roof design. It is also CE marked in accordance with BS EN 1504 Part 2 Surface Protection Systems for Concrete.

Applied by spray and brush, Intercrete 4842 cures to protect the substrate from water penetration and carbon dioxide diffusion and also accommodates movement in cracks. Once Intercrete 4842 had cured, the coating was overlaid with a drainage layer, filter layer, soil and vegetation. At Tai Po Pumping Station, the parapet walls were also coated with Intercrete 4885, a waterborne, high build, elastomeric, cold fluid applied liquid membrane system. It is especially suited for use in hot, humid climates due to its ability to reflect sunlight and withstand extreme temperature ranges from -50°C. to +80°C. without deterioration. Intercrete 4885 maintains a wet edge even in direct sunlight.

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