



### Project Description

Mei Foo Station was constructed inside the Mei Foo Park and is part of the development of Hong Kong's West Rail Metro line. This unique design achieved a complete integration with the existing park by incorporating a landscaped station roof and innovative rooftop parkland facilities for the public in this densely populated area. KCRC won the International Project British Construction Industry Award for this project and Kier won the International Performance of the Year Quality in Construction Award for this project.

### The Challenge

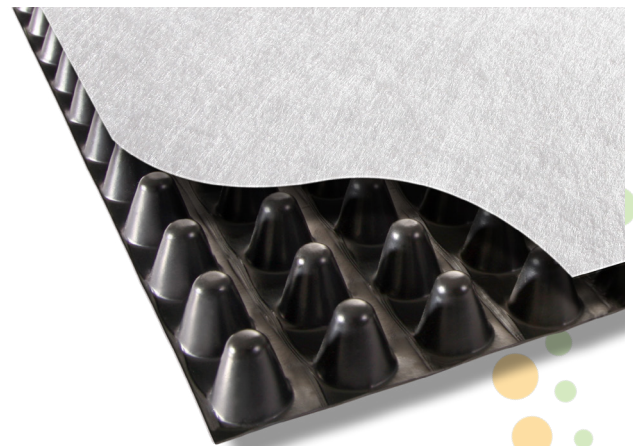
The residents demanded a podium deck finished with an intensive green roof restoring the park to its original state after construction of the new below ground station. The design required a cover soil between 1 to 3m deep to sustain tree growth. Being a monsoon area the rainfall intensity is high, reaching 380mm/hr. The large runoff area from both hard and soft landscaping required a design with a high capacity light weight drainage solution that could withstand construction loads.

### The Solution

The initial specification was a 12mm geocomposite drain which would cover the whole surface of the roof. As the site developed, final levels and drainage routes were agreed and ABG was asked to check the overall capacity of the system at monsoon level flows. ABG's design department calculated that the specified 12mm geocomposite would not offer the flow capacity required and proposed a higher capacity geocomposite drainage layer.

### Project Information

<b>Client</b>	Kowloon Canton Railway Corporation
<b>Contractor</b>	Kier Zen Pacific
<b>Products</b>	ABG Intensive Podium Deck - Deckdrain 2700S
<b>Quantity</b>	27,000m <sup>2</sup>
<b>Benefits</b>	<ul style="list-style-type: none"><li>• Easy handling, transportation and installation</li><li>• High performance drainage layer replacing drainage stone and pipe</li><li>• Enhanced noise protection</li><li>• Reduce load on podium deck</li><li>• Cost effective</li></ul>



ABG Deckdrain under all hard and soft landscaping

# Green Roof

## Intensive Podium Deck, Deckdrain, Mei Foo Rail Station, Hong Kong



ABG manufactured and tested the bespoke **Deckdrain 2700S** under simulated site conditions to prove suitability for these high loads and flows. After extensive testing showing an in-plane flow capacity of 3 l/m/s at 3% hydraulic gradient under 20kPa soft platens (for soil load intrusion), **Deckdrain 2700S** exceeded the calculated value of 2.6 l/m/s. The Deckdrain was quickly, easily and safely installed.

**Deckdrain** comprises a HDPE core with a high performance filter fabric fully bonded to it. The core forms an open void through which water can freely flow whilst the geotextile filter fabric allows water entry to the void whilst controlling the ingress of particulates. In addition, **Deckdrain** enhances the noise suppression from the underground commuter traffic.

### The ABG Service

ABG Design assisted with calculations and specific design for this site. An engineered bespoke geocomposite was manufactured for this project and delivered on time for a rapid and successful installation.



Deckdrain receiving cover layer up to 3m in depth prior to hard and soft landscaping, planting with trees and installation of play areas



Mei Foo Station beneath the sound proofed Green Roof



Mei Foo Station integrated into Lai Chi Kok park

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