

# Mirafi® HPa – Load Transfer Platform for Stormwater Management System at Taman SPPK, Segambut

## Project Data

<b>Project</b>	: Subgrade stabilization and load transfer platform for stormwater management system at Taman SPPK, Segambut, in Malaysia
<b>Year of construction</b>	: 2016
<b>Client</b>	: Fixus Construction Sdn Bhd
<b>Material</b>	: TenCate Mirafi® HP380a

## Introduction:

Climate changes and human mismanagement on water resources such as river channel and floodplain increase flooding and erosion problems. Poor urbanization restricts flood water flow and eventually leads to destructive flooding hazards. To improve this, detention and retention systems are commonly adopted in urbanization planning and development to prevent flooding.

## Project Description:

This project site is located at Taman SPPK, Segambut in Malaysia. Insufficient drainage and sewerage capacity in the residential area raised the alarm of flood risk due to occasional thunderstorms. An underground stormwater detention system (StormTrap® Double Trap) was then introduced to store water runoff in the underground chamber for some time before releasing it back to the drain. StormTrap® is one of the global pioneer providers of stormwater management system who provides cost effective solutions to engineers, owners and municipalities.

A 7.0m depth of soft soil was spotted at the project area, with ground water table nearly at the same level. The soft soil comprised of 3.0m soft clay at the top, followed by 4.0m very soft sandy silt at the bottom before firm ground. Due to the soft subgrade problems, a stable construction and load transferring platform are needed to support the underground stormwater detention system.



Installation of bakau piles over the soft subgrade.



Installation of Mirafi® HP380a over the flat thin soil layer followed by aggregate backfilling.

## Installation:

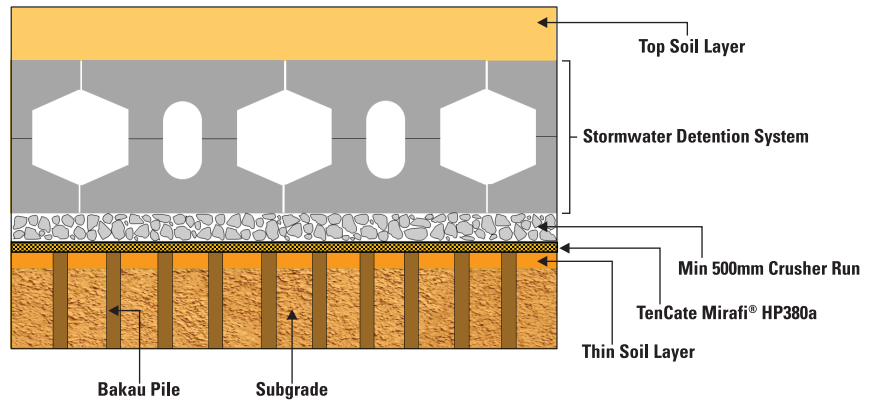
The construction began with installation of sheet piles over the entire project perimeter, followed by excavation to the designed depth for load transferring platform.

Bakau pile was installed at 500mm c/c spacing throughout the entire project area. A thin soil layer was then backfilled on top for surface preparation to lay the geotextile. Next, Mirafi® HP380a geotextile was laid and subsequently a 500mm thick aggregate fill was placed and compacted to create the stabilized load transferring platform.

Lastly, the construction was finished with the installation of StormTrap® system and backfilling of soil. The land above the underground system will be utilized for playground and car parking lots.

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**Cross-sectional view for the laying of Mirafi® HP380a**



**Conclusion:**

Geosynthetics have been proven to be useful and effective in improving the performance of roads and load support structures. The combined functions of Mirafi® HP380a geotextile comprising separation, reinforcement, lateral confinement and permeability helps to transfer loading from the stormwater detention system to the piles. We acknowledge 'Fixus Solutions Sdn Bhd' for trusting TenCate Mirafi® HPa and the commendable completion of this project.



Installation of StormTrap® system over the load transferring platform.



Completed load transferring platform on top of the geotextile.



The overview of the overall completed project.

Mirafi® is a registered trademark of TenCate.

StormTrap® is a registered trademark in United States and Malaysia.

Further details of this application and products can be obtained by contacting your nearest TenCate Technical Support Office.

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