Bentofix®

Base Lining System in Pond

- **Project Name**
  Artificial Pond at Xiamen University, Sepang, Malaysia
- **Year constructed**
  February, 2015
- **Developer**
  Sunsuria Development Sdn. Bhd. – Selangor, Malaysia
- **Consultant**
  G & P Professionals Sdn. Bhd. – Selangor, Malaysia
- **Installer**
  Huls Engineering Sdn. Bhd. – Selangor, Malaysia
- **Products**
  Bentofix® NSP 4000

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Xiamen University, founded in 1921, is regarded as one of the top academic institutions in Southern China. Since its establishment, the university has developed a global presence, especially in Southeast Asia. In the early 2010s, the Malaysian government, through the Ministry of Higher Education, invited Xiamen University to set up a campus in Malaysia. The invitation was accepted; thus, a Chinese university's first overseas branch was established.

Challenge

To recreate a similar environment to the main Siming campus, an 8-acre lake will be constructed at the new campus in Sepang, Malaysia. The new campus site is located in Sepang, a district in the Southern part of Selangor and around 10km from the Kuala Lumpur International Airport. Although the geological formation in Sepang mainly consists of clay and peat soil, the groundwater level in the proposed site is quite low. Furthermore, the groundwater aquifer feeds into Langat River, which is around 3km away from the proposed lake location. Combined with the climate situation in Malaysia, it will be challenging to have an artificial lake with a permanent waterhead throughout the year. A solution for a pond lining system is required to contain the water inside the artificial lake and prevent water infiltration into the subsoil.

Solution

Naue worked with the consultant to propose a geosynthetic clay liner (GCL) Bentofix® as a sealing element at the base of the pond. Manufactured with powdered sodium bentonite, Naue Bentofix® GCL provides a low permeability barrier against liquid, limiting water infiltration into the subsoil. An additional bentonite layer is impregnated at the longitudinal edges of the roll, sealing up the overlap section in the longitudinal section and making installation significantly easier and safer compared to such GCL where the overlap area has to be sealed manually.

The pond lining was constructed in February 2015 and completed in less than a month due to the Bentofix® advanced overlapping technique. Since then, the artificial pond has been in service, providing beautiful green scenery to the Xiamen campus environment. The cover picture, taken recently in 2023, shows that the pond is currently still preserving water after 8 years from construction.

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