

Heavy detailing no match for PREPRUFE® basement waterproofing



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| Project | A New Copenhagen Neighbourhood |
| Consultant | COWI |
| General Contractor | Kemitura Bro og Tunnel, Per Aarsleff A/S |
| GCP Solutions | PREPRUFE®, PREPRUFE® Plus, INTEGRITANK®, BITUTHENE® LM |

Project

The City Center of Copenhagen is developing a whole new neighbourhood, sparking an increase in city life, tourism and business activity. This exciting new project ties the city and waterfront together through bike and walking paths and open space, as well as creating a rail connection to the Kalvebod Brygge. Expected to attract more than 20,000 visitors a day, the center features a mix of commercial, residential and hotel space that is focused on energy efficiency and walkability.

Located close to the harbour, the new development referred to as Postgrunden, the area of the Post Office, encompasses of 128,000 m² of floor space, including 75,000 m² of below-ground space. The buildings will house technical facilities, as well as car park space.

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Per Aarsleff A/S Project Manager Jakob Grønlund.

The construction team for two adjacent commercial buildings in Postgrunden was seeking a high-performance waterproofing to withstand the seven meters of water pressure in the area. In addition, they needed a below-ground waterproofing system that could not only be applied swiftly but that could accommodate considerable detailing throughout the building foundations.

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Kemitura Bro og Tunnel Project Manager Andreas Hensen

"The structure is supported by 2,500 concrete piles, and that presents a challenge when you need to apply the waterproofing," said Per Aarsleff A/S Project Manager Jakob Gronlund. "Our design engineer recommended the PREPRUFE® waterproofing system, and it fit really well with what we were about to build."

The international consulting firm COWI selected a suite of waterproofing systems, including PREPRUFE®Plus, INTEGRITANK® and BITUTHENE®LM waterproofing from GCP Applied Technologies, due to GCP's long track record of waterproofing complex structures and its technical service team's decades of waterproofing expertise. GCP's Blue360® design team provided end-to-end design and field support to the construction team, helping the architect with project-specific detail drawings, training applicators both onsite and offsite and fielding technical site questions.

"GCP produced detail drawings specifically for this project, and that has given us, our employer and his designers confidence that the PREPRUFE® design we're using is the right one," Gronlund said. "The support process with GCP has been very smooth."

In addition, the products offered the capabilities to meet the project's unique constraints. Independent testing has shown that PREPRUFE®Plus membrane can resist lateral water migration at high pressures, making it ideal for this environment. And the system was able to provide a seal around the concrete piles to ensure continuous waterproofing. The system's ZIPLAP™ dual adhesive seam allowed applicators to bond each composite sheet of waterproofing together with less time and labour. "The project had super tight deadlines," said Kemitura Bro og Tunnel Project Manager Andreas Hensen. "With the PREPRUFE® system it's easy for us to meet deadlines and even speed things up."



"The application is sped up using the ZIPLAP™ system," said Gronlund. "Even more important, the membrane holds up well as additional work is done [by other trades] and that's a great advantage."

The liquid-applied BITUTHENE®LM waterproofing system enabled certified applicator Kemitura Bro and Tunnel to quickly waterproof the foundation. The INTEGRITANK®liquid waterproofing system was then used to interface between the vertical and horizontal surfaces.

The waterproofing system's moisture resistance also helped keep the schedule on track. "We applied the basement waterproofing in the summer amid rainstorms," Hensen. "The surface of PREPRUFE®was not activated by water, and that's important. If it was, we would have had to do it all over."

The project is proceeding smoothly, and is scheduled for completion in late 2019. "We have huge confidence in the ability of the PREPRUFE®system to provide water resistance," Gronlund said. "There's no water coming through, and that's a huge accomplishment."

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North America customer service: 1-877-4AD-MIX (1-877-423-6491)

GCP Applied Technologies Inc., 2325 Lakeview Parkway, Alpharetta, GA 30009, USA

P. O. Box 5006, Office 2104, 21 Floor, The Exchange Tower, Opp. JW Marriott Marquis Hotel, Business Bay, Dubai – United Arab Emirates

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