

## WESTBURY CN RAILWAY EMBANKMENT MONTREAL, QUEBEC, CANADA

### Reinforced Soil Walls and Slope Reinforcement

#### Problem

Devmont acquired land near a Canadian National (CN) railroad to erect a multi-unit building. The plans submitted for the permit proposed that this structure runs alongside the railway. To secure the structure, the city of Montreal and CN jointly proposed building a protective berm. It had to be securely erected to prevent any direct impact on the building in the event of a train derailment.

The broad conditions of the analysis had to account for factors such as the velocity of the train, its mass, as well as the (more or less defined) potential external forces. At the design stage, we had to consider in our assessment that freight and passenger trains will use this stretch of rail.

#### Solution

The principle adopted was to design a soil reinforced berm as well as to make the analysis and calculations necessary to guarantee the security of the multi-unit building. The solution proposed by Maccaferri Canada was to build a Double sided Terramesh system berm filled with compacted granular material.

Maccaferri Terramesh unit has a specific height of 800 mm and was manufactured in one continuous double twist wire mesh to ensure the homogeneity of the system and the adequate distribution of the charges in the event of impact. In this typical case, the height of the Terramesh was extremely important to ensure good internal distribution of the potential impact. The double twist wire mesh had no break between the face and the backing in addition to making the circumference of each of the cubes that made up the double-sided Terramesh.

So, the contractor only had to make sure the correct format (width of the double-sided Terramesh) was placed at the right elevation during installation. At the same time, the contractor and the owner obtained support from CN, which placed a few cars along the job site to protect workers.

**Client:** Devmont

**Designer / Consultant:** Maccaferri Canada / JPC Civil

**Contractor:** Construction BCM

**Products used (Qty.)**

- Terramesh 284m

**Date of construction:** 07/2019 - 09/2019



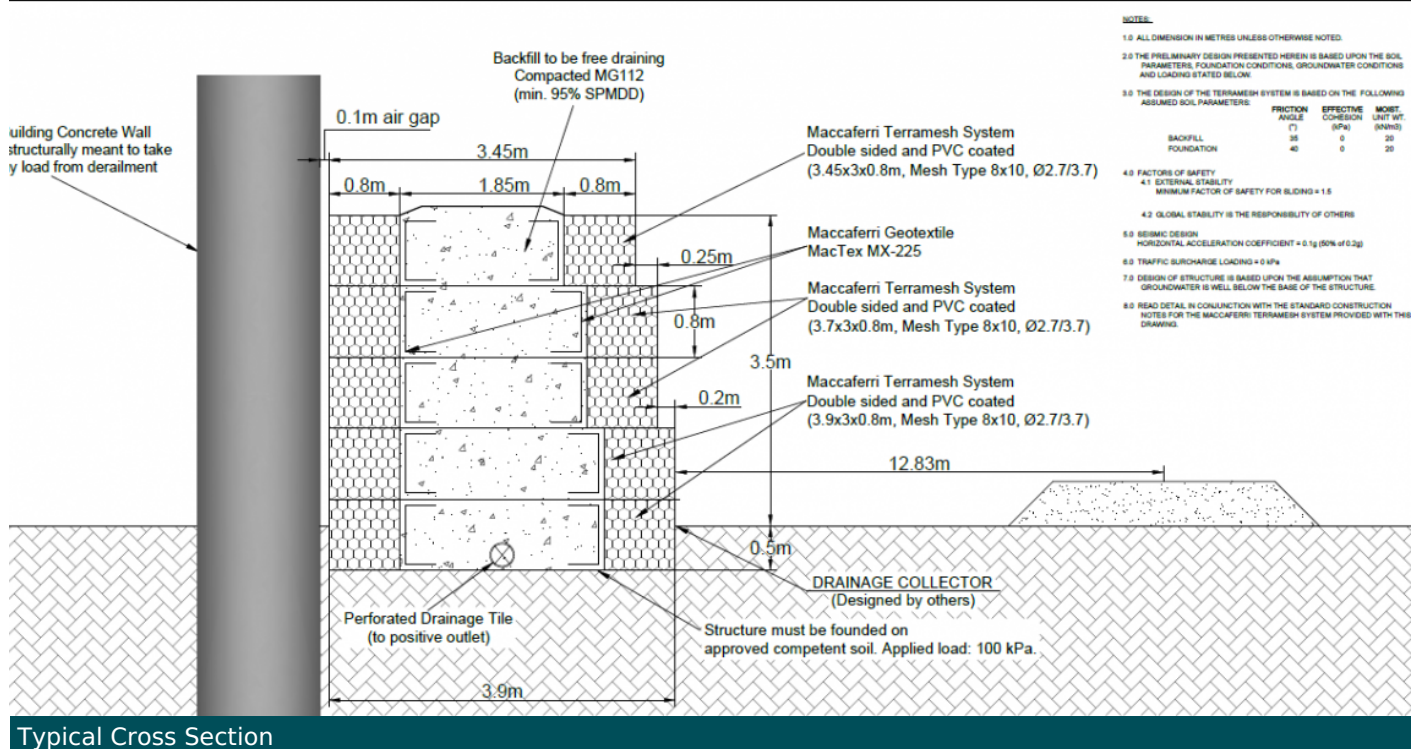
Space between the wall and the building



East End



End of wall



Typical Cross Section