



# CASE STUDY

## Historic Site MSE Wall System: Titan Earth Wall™ – Stoney

**LOCATION:** Toronto, Ontario (Casa Loma)

**PROJECT TYPE:** Design Assistance and Product Supply

**PRODUCT USED:** Titan Earth Wall™ – Stoney



### PROJECT:

Casa Loma, a historic Gothic Revival castle in Toronto, is one of the city's most treasured landmarks. Lateral earth pressures were causing foundation wall cracking and Titan was entrusted with a crucial project that involved designing a mechanically stabilized earth (MSE) wall to preserve this historic structure.

The project presented a few unique challenges that needed to be overcome:

- Preservation of historical integrity
- Existing site constraints
- Tight working space



Casa Loma - Historic Gothic Revival Castle



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### CHALLENGES:

**Preservation of Historical Integrity:** Preserving the integrity of this historic site and its surrounding landscape was a high priority. This required a solution that reinforced the structure and respected its historical significance. It was important to balance modern engineering needs while preserving the castle's aesthetic and architectural heritage.

**Existing Site Constraints:** Existing pipes and other obstructions encountered during excavation required modifications in the design to work around this, while preserving the site's historical features and maintaining structural stability.

**Tight Working Space:** Due to the historical nature of the site, the construction area was limited. Although Titan did not handle the installation; it was a challenge related to project execution.



Site Excavation



## ▼ TITAN SOLUTION:

The Titan Earth Wall™ – Stoney system was chosen for this project. By providing MSE design assistance and supplying the necessary materials, Titan ensured that the solution met the project's unique needs.

Galvanized wire forms were used to create the face of the MSE structure. Additionally, Titan TE-6, a 6oz non-woven geotextile, was installed within the front face of the galvanized baskets to prevent the reinforced fill from escaping, which ensured the stability and durability of the MSE system. Behind the wall, the Titan Pyramid Grid™ – UX geogrid provided crucial reinforcement to the soil structure.

## ▼ ACHIEVEMENT:

The Titan Earth Wall™ – Stoney system successfully reduced the lateral pressures on Casa Loma's historic structure. Using geogrid reinforcement significantly lowered lateral pressures, creating a more stable environment. This innovative system provides enduring protection and requires minimal maintenance, making it a smart, hassle-free choice for long-term security.

Titan carefully planned and coordinated the design and construction process to protect the structural integrity of Casa Loma and preserve its historical significance.



Pyramid Grid™ – UX Geogrid



Galvanized Wire Forms





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### PROJECT SPECIFICATION SUMMARY

- Titan Earth Wall™ – Stoney
- Galvanized Wire Forms
- Titan Pyramid Grid™ – UX Geogrid
- Titan TE-6 – 6oz Non-Woven Geotextile



Front face of the wall



Watch Project Video



Casa Loma - Historic Gothic Revival Castle