

**User name:** Monir Precision Monitoring

**Project name:** 31 Parliament Street Urban Infrastructure and Excavation Shoring Monitoring

**Location:** Toronto, Ontario, Canada

**Background:**

- A new, luxury condominium was being built alongside the Union Station Rail Corridor (USRC), which moves 300,000 people daily to and from Toronto.
- Monir Precision Monitoring monitored the railway, as well as the shoring of the excavation site while the condo was being raised
- USCR includes over 6.4 kilometers of track and 14 rails, with associated switches and platforms.

**Challenges:**

- Needed to follow strict guidelines for work in and around the corridor, including monitoring requirements, and overcome challenges around tricky sight lines due to slopes from the track.
- Had to follow multilevel approval processes and protect existing rail infrastructure.
- Previous monitoring software could not meet these needs.

**Solution:**

- iTwin IoT was used to test incorporating a digital twin within Monir's existing IoT monitoring processes.
- Technology provided new methods to visualize and assess the site throughout the construction process.
- The digital twin allowed them to remotely monitor changes over time without having to be on site.

**Outcomes:**

- The open digital twin helped the team collaborate and bring together data in a geospatial context and at scale, improving infrastructure delivery and performance.
- Increased operational efficiencies by 40%, saved approximately 3,000 hours in on-site assessments and reduced the project timeline by six months.

**Quote:** "The Bentley software and services deployed on this project gave us peace of mind in the results, speed of delivery, and reliability of critical monitoring information for early detection of any issues that may arise. This allowed the project team to proactively assess our next steps and ensure the safe passage of trains throughout the corridor, keeping a vital commuter artery open for business." – *Samantha Ford, General Manager, Monir Precision Monitoring.*

**Image caption/courtesy 1:** Monir selected iTwin IoT to test incorporating a digital twin within their existing IoT monitoring processes. *Image courtesy of Monir Precision Monitoring.*

**Image caption/courtesy 2:** Using Bentley digital twin applications for management and visualization of the instrumentation data increased operational efficiencies by 40%. *Image courtesy of Monir Precision Monitoring.*

**Image caption/courtesy 3:** The digital twin solution provided a more holistic visual monitoring context relative to the entire project. *Image courtesy of Monir Precision Monitoring.*

For more information, please contact Bentley PR at [PR@news.bentley.com](mailto:PR@news.bentley.com).