

User name: Arcadis

Project name: Advanced analysis and design of flood protection structures through automation

Location: New York City, Indianapolis, and Dallas; New York, Indiana, and Texas; United States

Background:

- To improve efficiencies in flood management and mitigation projects, Arcadis' engineering team initiated a program to fast-track analytical modeling of flood protection structures.
- These types of projects have increasingly become important after climate change and superstorms.

Challenges:

- Working on three large projects requiring 1,000 hours to conventionally model more than 20 flood gates, 25 flood walls, and various monoliths.
- Needed a more efficient and automated solution that delivered fast and accurate results.

Solution:

- Leveraging STAAD, the team automated and standardized design of critical flood management structures.
- The Bentley-based solution enabled the creation of analytical models at the click of a button, compared to 16 to 32 hours using traditional methods.
- The successful implementation of advanced structural analysis and automation workflows has led to evaluating and adapting these processes for future initiatives.

Outcomes:

- Bentley technology helped the team collaborate and improve infrastructure delivery and performance.
- Reduced modeling time by 95% and saved an additional one to two hours in time on quality assurance and quality control.

Quote: "With innovative use of Bentley STAAD and its OpenSTAAD documentation, the team was successful in fast-tracking project design, maintaining consistency and assuring quality. We are eagerly looking forward to new developments and updates from Bentley to further scale these tools."
– *Musthafa Shaju, Principal Engineer, Arcadis*

Image caption/courtesy 1: Arcadis' engineering team initiated a program to fast-track analytical modeling of flood protection structures. *Image courtesy of Arcadis.*

Image caption/courtesy 2: Leveraging STAAD, the team automated and standardized design of critical flood management structures. *Image courtesy of Arcadis.*

Image caption/courtesy 3: The Bentley-based solution enabled the creation of analytical models at the click of a button, reducing modeling time by 95%. *Image courtesy of Arcadis.*

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