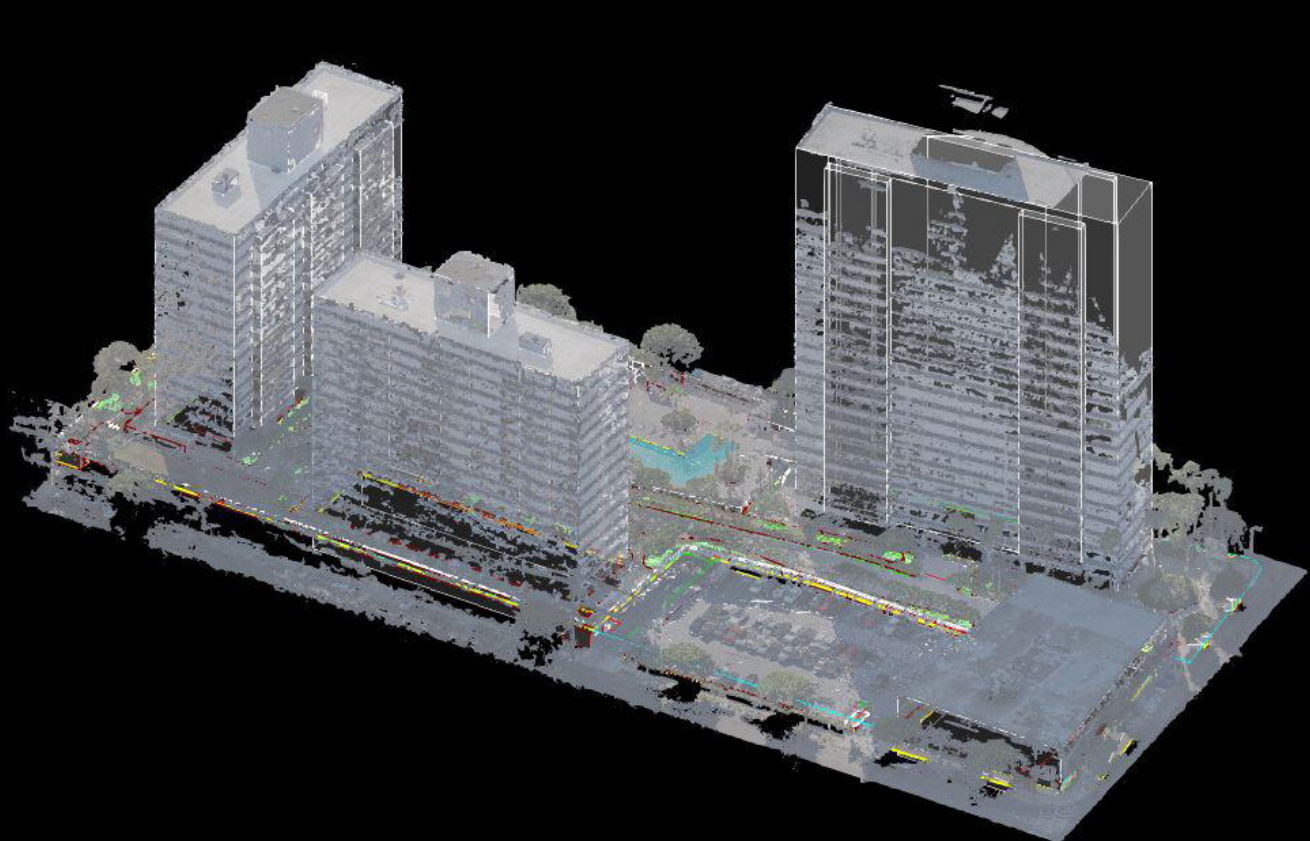


# Structural and MEP BIM Scan to BIM project of a plaza building in USA

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**CASE STUDY**

## Abstract

SBL accomplished a noteworthy feat by developing an all-encompassing Building Information Modeling (BIM) representation for a distinguished plaza structure in the USA. This endeavor was geared toward crafting an intricate 3D portrayal, encompassing all structural, architectural, facade, and MEP (Mechanical, Electrical, and Plumbing) facets to aid an extensive renovation.

## Challenges

The initiative encountered multiple challenges:

- Fusing varied components like structural elements, architectural nuances, facades, and complex MEP systems into a unified BIM model at Level of Detail (LoD) 300.
- Ensuring the model's precision and accuracy from the compiled scan data to effectively mirror the plaza's existing condition for proficient renovation planning.
- Handling the extensive dataset from point cloud sources and imagery to formulate a coherent and dependable model.

## Approach

SBL adopted a structured and detailed-oriented strategy:

- Engaged Autodesk Revit, a premier BIM application, to manage the intricate assembly and integration of diverse components into the 3D model.
- Rigorously examined point cloud data, employing a registered scan to 3D modeling technique to accurately represent every facet of the plaza edifice.
- A consortium of specialists in structural, architectural, and MEP fields collaborated to ensure the model fulfilled all prerequisites and supported the impending renovation.



## Benefits

The project yielded significant advantages:

- Delivered an elaborate, multi-dimensional depiction of the plaza structure, facilitating a more knowledgeable and streamlined renovation approach.
- Improved comprehension of the building's present status, inclusive of structural, architectural, and MEP details, leading to enhanced decision-making and strategic planning.
- The comprehensive model acts as a crucial asset for future upkeep, alterations, and potential enlargements.

## Customer

The plaza building's management commissioned the project, seeking a substantial renovation to rejuvenate the facility and augment its functionality and aesthetic appeal.

## Geography

This project focused on a renowned plaza structure situated in the USA, celebrated for its architectural prominence and contribution to the urban environment

## Industry

The project served the construction and renovation sector, emphasizing the amalgamation of structural engineering, architectural design, and MEP systems via sophisticated BIM technology.





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