

BACKGROUND

An industrial facility had installed new manufacturing equipment which extended past the original footprint of the building. The client had intended to shelter the additional square-footage of the facility using a pre-fabricated steel structure attached to the foundation which had been built for the new equipment.

INITIAL CONDITION

The pre-fabricated structure that was procured by the client appeared not to be adequately sized for the existing concrete foundation on which it was intended to be installed. Upon further investigation by Induspec, it was observed that the column base layout could not be used safely without intermediate structural accommodation between the steel structure and the concrete foundation. Also, the installation details provided by the steel structure fabricator did not include provisions for the safe and adequate anchoring of the steel structure to a foundation.

ANALYSIS

The relevant dimensions of the pre-fabricated steel structure were obtained from the fabricator's technical drawings, as well as from on-site measurements. The adjacent installations inside and outside the facility were also observed to identify potential interference with planned retrofit components. Finally, the structural drawings for the foundation were also reviewed to design adequate anchoring elements and their layout.

OUTCOME

Based on a thorough analysis of the relevant features of the steel structure and the foundation, it was determined that the most cost-effective solution would be to design steel brackets to be installed between the column base-plates and the concrete foundation.

RECOMMENDATIONS

Induspec collaborated with the client, as well as the fabricator/installer, to determine the best solution to address the issues observed. The solution involved the addition of specially designed steel brackets to provide a safe and reliable means by which the steel structure could be anchored. The use of this strategy averted the necessity of expensive and time-consuming modifications to either the steel structure, the concrete foundation, or registered pressure piping which created interference.

IMPLEMENTATION

Sealed fabrication and installation drawings, were provided to the client within two weeks of the initiation of the project. Induspec worked with the building designers to ensure they approved the use of the brackets for their building and Induspec worked with the building installer to ensure that the installation procedures for the foundation brackets was clearly understood. The Induspec solution was innovative, simple, cost effective and safe.

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