

An architectural rendering of a modern, multi-story building with a courtyard. The building features a mix of brick and glass facades, with a prominent skybridge connecting two wings. The scene is set during the day with a clear sky and some palm trees visible in the background. The overall aesthetic is clean and professional.

PROBLEM STATEMENT

The floor system used in the Wilkins building may or may not be the most efficient and cost effective system. A different system will be investigated for its incorporation into the Wilkins building. Both the integration into the floor framing and the effects the systems have on the lateral system will be looked at.

The current lateral system used in the Wilkins building consists of concentric braced frames. As noted in the Existing Structural Systems section, this system includes braced frames located in two exterior bays. These frames reduce the exterior wall space available for windows. This decrease in windows lessens the amount of natural lighting available, which may adversely affect worker productivity. Furthermore, changing the structural system will alter the weight of the structure, which in turn changes the seismic forces. For these reasons, a new lateral system will be investigated.

Changing the floor and lateral systems will alter the weight of the structure. All concrete floor systems investigated in Technical Assignment #2 induced a greater weight than the existing composite structure. As a result, the foundation will potentially need to be redesigned as well.