

Proposal



Problem Statement

Due to the needs of the client, the companies involved and their drive to provide quality products, the design of this building is the most efficient steel system for the requirements of this project. This was found to be true when investigating the lateral system against the wind and seismic loads prescribed in ASCE7-02 for Technical Report 3. However when investigating alternate floor systems it was found that even though the open-web steel joist floor system is extremely light and inexpensive there may be problems with walking induced vibrations. For these reasons I intend to propose a material alteration of the structural system of both the gravity and the lateral systems from a steel system to a concrete system. In lieu of this alteration I will redesign the floor and lateral systems using concrete instead of steel in a way that will reduce floor vibration, provide space for MEP components, and will not disrupt the architecture or the current floor plans. I will determine whether the new systems are more efficient based on the criteria of overall cost, construction time, ease of construction, susceptibility to vibration, overall building weight, and coordination with the other trades.