

Building Statistics – Part 2

Construction

The proposed hospital is positioned among other buildings such as an office building, a restaurant, and a newly built parking garage, as seen on the existing site plan. It is also important to notice how closely positioned to Main Street and the pedestrian sidewalk the construction is. The sidewalk immediately in front of the project has been closed to provide more room for construction, and another segment has been given overhead protection from potential falling objects. A significant scheduling matter involves the completion of floors 4-6 before floors 1-3, in order to improve site logistics.

Structural System

The Hospital is built predominantly of a cast in place concrete structure, which includes concrete beams, columns, slabs, and shear walls. Each floor's slab is 5" thick and the foundation incorporates grade beams and 88 total caissons. Two W40x277 Steel beams support the Northwest cantilevering corner of the building on floors two-six. They are also aided by seven W14x30 steel beams.

Mechanical System

Three air handling units located on the roof make up the entire building's air to air system. AHU one serves all operating rooms and distributes 30,000 CFM of supply air. AHU two supplies 73,000 CFM, and AHU three supplies 96,000 CFM. A variable air volume system is also prevalent in the building, which acts as the building's water to air system.

Electrical System

The electrical system consists of a three phase 480Y/277V main switch board. It is comprised of 4 wires plus one ground wire, and has a max load of 4000 amps. Also, 480Y/277V is the main utility transformer which has a max load of 2500KVA. All hospitals are at great risk of losing power, since many hospital machines and care devices run off of electricity. For added insurance, a diesel powered emergency generator is provided, with output capacities of 1500KW/1875KVA.

Fire Protection

A dry-pipe sprinkler system is implemented for fire suppression. This method involves sprinkler heads with concealed mercury that expands when heated. When it is heated to a dangerous temperature, its glass container breaks and air pressure rapidly releases water out of the heads to extinguish fire.

Interior Feature walls

Interior architectural features included in the hospital are an illuminated partition system and play spaces located at the North West corner of each floor. These spaces are visible from the Main Street and are a colorful attraction for both building occupants and spectators. A feature wall made of similar panels was designed for the main entrance of the first floor.