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Structural Option
Metropolis at Dadeland
Adviser: Schneider
Proposal – Executive Summary
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Thesis Proposal – Breadth Topics

Breadth Topic 1

Lighting / Electrical

Currently the ceilings within the living units are just a finish on the bottom of the slab above. Since this will no longer be practical with a steel framework I plan on introducing suspended ceilings into the space. This will enable lights to be placed in the ceiling throughout the space instead of primarily on the walls as many of the installed lights currently are located. By including the new loads on the electrical system, wiring and circuitry within each unit will need to be redesigned. I will include in my analysis wiring and switching that will be needed to operate the new lights, circuit layout in the breaker panels in an individual living space, and check to see if this has an increased overall load on the entire buildings system.

Breadth Topic 2

Construction Management

There are two things that I am looking at in my main proposal that have a direct impact on the constructability of the building. First the beam spacing will be reviewed to see what impact it may have on the required depth of the form-deck and overall depth of the structure. This becomes a CM issue when it comes to added labor for more structural members versus having to maneuver lighter members.

Secondly, there is the challenge of installing shear studs to enable the composite design of the floors. The standard rule-of-thumb presented to us by Dr. Geschwindner in AE 403 is that each stud is the equivalent of an extra 7 pounds of steel in the beams. I would like to look at how accurate this estimate is and from this analysis be able to determine if the composite system is a good decision. Even if shear studs become for expensive or labor intensive than a conventional steel system, there is still trade off between cost and ability to limit the height of the building.