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Structural Option
Metropolis at Dadeland
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Proposal – Executive Summary
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Thesis Proposal – Executive Summary

Depth and Breadth Analysis

The Metropolis at Dadeland is a 28 story, 313 foot tall primarily residential structure in suburban Miami-Dade County, Florida. It encompasses over 477,000 sq-ft. The tower was designed as the center of a “new downtown” away from downtown Miami.

The proposed thesis will be an investigation of replacing and existing cast-in-place concrete and post-tensioned slab structure with a steel frame. A comparison of replacement structures will be made between a conventional steel frame and composite floor system. The steel system will may cause a difficulty with height limitations, but the use of a composite floor and limiting ceiling heights should be able to mitigate this issue.

In addition to the redesign of the gravity system will be a redesign of the lateral resisting system. Not only was it not completely adequate according to the findings of technical report 3, but braced or moment frames should be more compatible with the steel framework than the existing shear walls.

As breadth analysis relating to the structural redesign construction issues and electrical layouts will be addressed. Changing the structural system of the building has very obvious effects of schedule and cost of a project. Any manipulation of system or method in the construction of this building could have a substantial impact on the management of this project.

The need for a lighting redesign in the residential spaces is simple. With the post-tensioned slabs the ceilings of the lower units were just a plastered finish on the floor above. No lights were installed in the ceilings of the individual living units due to this system. Since when using a steel structure a dropped ceiling is preferable to hide the less finished structural system there is now space in the ceiling plenum to install lights. The investigation of this lighting will focus more on the actual electrical wiring of the spaces than on the aesthetics of the moods set by increased lighting flexibility.