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STRUCTURAL OPTION
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UNIVERSITY OF CENTRAL FLORIDA'S ACADEMIC VILLAGES
ORLANDO, FL



Executive Summary
Structural Technical Report 3
Lateral System Analysis and Confirmation Design
November 21, 2005

This technical assignment includes an in depth analysis of the University of Central Florida's Academic Villages lateral system. The Academic Villages located in Orlando, Florida. It is a complex of ten separate dormitories built to accommodate 500 new freshman students. The buildings are various sizes ranging from 14,000 square feet to 22,000 square feet. Each building is 4 stories tall and 44'-8" above the ground. Each floor has between eleven and fifteen 24 ft x 28 ft apartment units. The existing lateral system in the Academic Villages is composed entirely of interior and exterior masonry shear walls in both N-S and E-W directions at each level.

Located in Florida, wind was the critical case for this structure. The building deflection was calculated based on the overall stiffness of the shear walls at every level and was found to be well under then allowable limit of $H/400$. The results from STAAD.pro 2002 did not confirm this, however, I believe this could be a result of my technical difficulties with the software. The overturning moment due to wind was well under the resisting moment due to the dead load. It was not expected to be a factor since the building is only 4 stories tall.