

# EXECUTIVE SUMMARY





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THE COLLEGE OF BUSINESS ADMINISTRATION IS LOCATED ON THE NORTHERN ARIZONA UNIVERSITY CAMPUS IN FLAGSTAFF, ARIZONA. THE CBA WAS DESIGNED AND JUST FINISHED CONSTRUCTION IN JANUARY OF 2006. THE BUILDING IS THE NEW HOME FOR THE CBA AND INCLUDES CLASSROOM SPACE, FACULTY OFFICES, AND SOME COMPUTER LABS. THE EXISTING STRUCTURAL SYSTEM OF THE CBA IS COMPOSED OF PRECAST HOLLOW CORE PLANKS SPANNING BETWEEN PRECAST BEAMS WHICH FRAME INTO PRECAST COLUMNS.

THIS REPORT IS AN IN DEPTH STUDY AND REDESIGN OF THE STRUCTURAL SYSTEM OF THE COLLEGE OF BUSINESS ADMINISTRATION. THE GOAL OF THIS THESIS IS TO DESIGN A STRUCTURAL SYSTEM THAT FITS INTO THE EXISTING LAYOUT OF THE BUILDING, HAS A LOWER OVERALL COST, AND HAS A SHORTER CONSTRUCTION TIME. THE DESIGN AND ANALYSIS WERE COMPLETED WITH THE USE OF RAM STRUCTURAL SYSTEM AND STAADPRO, COMPUTER ANALYSIS PROGRAMS.

THE PROPOSED STRUCTURAL SYSTEM IS A COMPOSITE STEEL SYSTEM. THE FLOOR FRAMING, COLUMN, AND LATERAL SYSTEM WERE DESIGNED AND MEET THE CRITERIA OF THE 2003 EDITION OF THE INTERNATIONAL BUILDING CODE. AN ACOUSTICAL STUDY SHOWS THE PROPOSED FLOOR SYSTEM MEETS THE RECOMMENDED LEVELS FOR FLOORS. A COST ANALYSIS DEMONSTRATES THAT THE PROPOSED SYSTEM HAS AN OVERALL COST LESS THAN THAT OF THE EXISTING SYSTEM, WHEREAS A SCHEDULE COMPARISON SHOWS THE PROPOSED SYSTEM HAS A LONGER CONSTRUCTION TIME. THIS REPORT SHOWS THAT THE PROPOSED SYSTEM IS A FEASIBLE OPTION FOR THE COLLEGE OF BUSINESS ADMINISTRATION.