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PROFESSIONALS

UB ALUMNI ARENA | Amherst, NY

Structural Modifications

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Client:
State University of New York at Buffalo

Client Contact:
Jennifer Kuhn
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Completion Date:
2011

Construction Cost:
$1,000,000

Key Personnel:
Gregory Hewitt, PE
James Frick, PE
Julie Crane, EIT, LEED AP

Team:
DiDonato Associates-Project Management, Structural Design,

DiDonato Associates was selected to verify existing condition report, design, prepare construction documents, and provide services during construction for structural modification to the Alumni Arena at the University of Buffalo North Campus. A study previously done identified various structural issues needing to be addressed and also the need for an increase in structural capacity to accommodate the Athletic Department's plan for a new scoreboard, sound systems, hanging ropes, banners and other improvements.

DiDonato obtained copies of the structural drawings for both phases of Alumni Arena construction as well as architectural plans and wall sections. Drawings were reviewed to determine existing construction and conditions and compared with previous structural evaluation.

A 3-D structural model of the Main Gym space frame and the overstressed transfer truss over the pool was generated utilizing the structural analysis and design program STAAD-PRO. We also performed analyses of the roof joists spanning the Triple Gym and the CMU cavity walls to determine the extent of necessary repairs.

The Main Gym roof space frame was analyzed for existing conditions and for the proposed loading of a new sound system and scoreboard weighing approximately 30,000 lbs. Additional sensitivity analysis was performed to determine if additional weight could be added to the roof structure without significantly adding to the extent of structural modifications necessary to the space frame.

These analyses were then used to determine extent of repairs and structural modifications to bring the building into compliance with current building codes and provide required capacity for proposed improvements.