# Engineering and Applied Sciences Building

## Miami University
## Oxford, Ohio

## General Statistics

Size: 82,661 square feet
Above grade: (3) floors of classrooms, offices, and labs, plus (1) mechanical floor
Below grade: (3) levels of underground parking
Cost: $23,651,159
Delivery Method: Design-Bid-Build
Construction Date: October 2004—June 2006

## Architecture

The style of the building was largely based upon the style of existing Benton Hall, a brick built in 1969, to which the new School of Engineering and Applied Science building is attached by a skywalk at the second and third level. The School of Engineering and Applied Sciences is generally a long, narrow building broken into two main areas connected by a skywalk in its center similar to the one that connects it to Benton Hall. In the back of the building, a new engineering quad is being renovated where the campus ice rink was previously located.

## Project Team

Owner: Miami University
General Contractor: Monarch Construction
Electrical Contractor: Lake Erie Electric
HVAC Contractor: Triton Services, Inc.
Fire Protection Contractor: Dalmatian Fire, Inc.
Plumbing Contractor: The Nelson Stark Company
Project Manager: Miami University Planning and Construction Division
Architect: Burt Hill Kosar Rittleman Associates
Associate Architect: SFA
Site/Civil Engineer: Burt Hill Kosar Rittleman Associates
Structural Engineer: THP Limited
MEP Engineer: Burt Hill Kosar Rittleman Associates

## Electrical & Lighting

480/277V, 3 Phase, 4 Wire service
Individual 480 to 208/120V step-down transformers in every electrical room
Natural gas powered emergency generator on site
Various lighting fixtures including recessed fluorescent troffers, hanging fluorescent pendants, , recessed

## Structural

Composite floor system with 6½" concrete slab on metal deck supported by steel beams ranging from W14 to W27
W12 steel columns provide gravity load resistance above grade
Below grade garage is C.I.P. mild reinforced concrete with 12" thick slabs on columns ranging from 24"x24" to 24"x48"
Braced frame in North-South (short) direction with HSS steel
Moment frame in East-West (long) direction with partially restrained moment connections
Spread footing foundation under main building with drilled piers under exterior entrance plaza

## Mechanical

Fourth floor mechanical penthouse
Two custom variable volume AHUs rated at 41,000 CFM and 46,000 CFM supply central steam and chilled water heating and cooling to all classrooms and offices most of the year
Secondary chilled water unit for use by data control centers in the winter
Ductless individual VAV boxes distribute air to grouped zones of classrooms and offices
Domestic hot water supplied by a steamed hot water converter

Jonathan Kirk

Structural Option

http://www.engr.psu.edu/ae/thesis/portfolios/2008/jek283/