

THE FREDERICK COLLEGE OF CARDIOLOGY

Arlington Heights, IL

Rob Currie

L/E option

Design and Functional Components:

The Frederick College of Cardiology houses offices, labs, operation rooms, and an auditorium. It is a multipurpose facility built for the effective instruction of surgeons. The building rises two floors above grade - keeping a low profile along its exterior. The floorplan spreads out in an L shape spreading from a main hub where the main entrance and auditorium are located. Classrooms, labs, and operation rooms are kept on the eastern leg of the "L" while the southern "office" wing contains the offices and dining areas. Wood and stone natural accents characterize the interior. The proposed design allows for integration of these many instructional spaces into one streamlined facility.

Lighting and Electrical Systems:

Lighting design and equipment selection for this facility create visual continuity and promote energy efficiency. Many linear and compact fluorescent lamps are used as well as several LED and Metal Halide sources. Lutron control systems regulate lighting usage and shading operations.

Electricity enters the building from an exterior utility transformer converting 12kv to 480Y/270. The main switchgear is rated at 1600 amps and feeds the building's two wings.

Structural:

The main structural system consists of steel framing with concrete decking. The typical concrete floor slab is made of 4" thick poured concrete on 3" metal decking. A 4' thick poured-concrete floor slab supports the building.

Mechanical:

Cooling in the building is provided by two 100 ton cooling towers located on the roof. Heating is provided by two natural gas boilers located in the basement. Supplemental heating is provided by six hot-water cabinet unit heaters and six hot-water unit heaters, located throughout the building. Additional air delivery control is provided by both fan powered boxes (FPB) with hot-water reheat and variable air volume (VAV) units with hot-water reheat.



Exterior View (Facing NE)



Lobby with Wood and Stone Accents (View Facing SE)



Auditorium Demonstration Space



Low Profile Façade (View Facing NW)

Building Name: *The Frederick College of Cardiology*

Location: *Arlington Heights, IL*

Owner: *The Frederick College of Cardiology*

Architect: *Perkins and Will*

General Contractor: *Pepper Construction Company*

MEP Design: *WMA Consulting*

Construction Start: *January 2013*

Size: *48,000 GSF*

Total Levels: *2 above grade*

Building Height : *34*

Construction Type: *2B*

Occupant Load: *655*

Project Delivery Method: *Design-Bid-Build*

CPEP Web Address: <http://www.engr.psu.edu/ae/thesis/portfolios/2014/rbc5047/index.html>