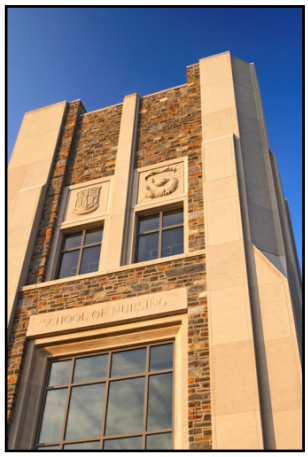
Introduction | Background



The Duke School of Nursing building offers a new three-story state of the art facility that has helped strengthen the quality and integrity of the School of Nursing at Duke. The building was built on the Duke University Medical Center campus in the Gothic architectural style of Duke. The intent of the building was to unite classroom and laboratory in a standalone facility. Besides offering a wonderful learning environment, the building provides students and faculty with comfortable and interactive common spaces.

Building Overview

General Building Data

Building Name: Duke University Medical School- School of Nursing

Location: Durham, NC

Building Occupant Name: Duke University School of Nursing

Occupancy: Assembly (A-3) and Business
-Includes offices, seminar rooms, classrooms, and café facility

Size: 59,610 Square Feet

Number of Stories: 3 levels above grade and 1 level below grade

Primary Project Team:

***Owner*:**

Duke University Medical School

***Architecture*:**

Ayer/Saint/Gross Architects

Website: http://www.asg-architects.com

Civil and Structural Engineering:

Stewart Engineering

Website: http://stewart-eng.com

MEP and Fire Protection Engineering:

Mueller Associates Inc.

Website: http://www.muellerassoc.com

Landscape Architecture:

Michael Vergason Landscape Architects

Website: http://www.vergason.net

Acoustical Consultant:

Shen Milsom & Wilke, Inc.

Website: http://www.smwinc.com

General Contractor:

Bovis Lend Lease

Website: http://www.bovislendlease.com

Construction Manager:

Bovis Lend Lease

Website: http://www.bovislendlease.com

Dates of Construction: ***Start:***

March of 2005

Completed:

August of 2006

Actual Cost Information: Total Building Cost is $14.7M

Project Delivery Method: Design-Build

Architecture:

The Gothic style "Duke" tower and Duke limestone was incorporated into the design in order to fit into the traditional Duke building style.

Major National Model Codes:

2002 North Carolina State Building Code NCBC with local amendments to the International Code Council, IBC 2000 edition.

Zoning:

The Duke University School of Nursing was built on Duke Property and therefore there were no zoning requirements on this university owned land.

Historical requirements of building or zoning:

There were no historical requirements for this building. However, Duke University has its own building Architectural Style that requires all university buildings to retain the Gothic Duke style.

Building envelope:

The building has two major roof structures. The first is a low slope roof. This roof structure is composed of single ply roof, concrete encased insulation, metal decking, and GWB or Acoustic Ceiling Paneling ceiling. The second roof structure

is over the Café. This roof structure is composed of standing seam metal roof, polyiso insulation, plywood, and 5-in exposed wood. The main exterior wall system is made up of precast or limestone panels, 8-in CMU, faced batting insulation, and GWB.

Construction:

Bovis Lend Lease was both the General Contractor and the Construction Manager for the Duke Medical School- Duke University School of Nursing project. The project was delivered by a design-build method for a total building cost of $14.7M. Construction began March 2005 and was completed August 2006. As part of the construction contracts, the building had to be operational for the first day of classes on September 4th, 2006.

Structural:

The Duke University School of Nursing building shell is made up of 8" and 12" CMU walls that are covered by precast limestone panels and in some places Duke stonework. The main structural system is comprised of a structural steel framing that typically create approximate 20'x20' bay sizes. The basement floor is a 6" slab on grade with #3 rebar, spaced 12" OC. Spread. The typical first floor is a 4" slab on grade with 6x6-W2.1xW2.1 reinforcing. The entire second and third floor and the flooring above the basement on the first floor are a 5¼" concrete slab and decking system. Isolated spread footings ranging from 12" to 30" in thickness and 5' to 10' square in plan view in order to support the steel columns throughout the building. Continuous strip footings 12" to 18" thick by 2' wide make up the wall foundations around the building.

Mechanical:

A 235 ton air-cooled chiller located on the roof of the building creates chilled water. This chilled water is pumped throughout the building to VAV air handling boxes. Also, the system was designed to be able to handle phase 2 of this project which is not yet built. This phase 2 was designed with the current building and will be built at a later date when Duke feels the need to expand its Duke University School of Nursing facility.

Electrical:

A 12.47 kV campus fed service line enters a 1000 kVA pad mounted exterior transformer, which then enters the building via an underground duct bank. At this point the service enters a single 2000A switchboard. This switchboard services all the panelboards and motors throughout the building. The main

voltage for the entire building is 480Y/277V, except for receptacle loads which are run at 208Y/120V. A 60 kW natural gas generator located in the basement, provides emergency electrical backup for the building.

Lighting:

The lighting compliments the Duke Gothic Architectural Style in the main public areas of the first floor. The fixtures have an elegant Gothic sense while also possessing a modernistic feel. The classrooms and offices for the most part do not reflect an elegant lighting design but rather a functional efficient lighting design. Compact and linear fluorescents, running at 277V, are used throughout the building for reduced energy consumption. Daylight integration and controls are utilized throughout the building when applicable, to also reduce energy consumption via lighting.

Transportation:

There are two passenger elevators for occupants of the building. The elevators go from the central core of first floor to the central core of the third floor. The elevators are both 27 KVA and protected by two 150A shunt-trip circuit breakers.

Telephone/Data:

The telephone and data system is comes form the outside into the first floor Telecommunication Room, RM 1016TC. This telephone and data is then run throughout the first floor and into the other telecommunication rooms on the other floors. Almost every classroom, office, and group gathering areas receive telephone, data, and cable television.

Audio Visual:

The audio visual equipment is run from audio visual closets in the large classrooms/auditorium, the Dean's office, and the conference rooms. This system includes projectors, automatic projector screens, speakers, and microphones.

Fire Alarm:

The main Fire Alarm Annunciator Panel is located in the main entrance lobby of the tower. The system is composed of room/duct smoke detectors, manual pull stations, strobe lights, heat detectors and door holders. These devices are found throughout the building on all floors.