

University of North Carolina

Imaging Research Building

125 Mason Farm Road, Chapel Hill, NC

Building Statistics

Size: 325,000 SF

Cost: \$280 Million

Building Height: 8 above grade + 2 subgrade = 10

Architect: Perkins + Will

Structural/Civil: Mulkey Engineers & Consultants

MEP: Newcomb and Boyd

CM: Choate Construction

Architecture

The UNC Imaging Research Building will be a state of the art imaging and cancer research facility located at UNC Chapel Hill. It will have an L-shaped floor plan that will include facilities for a 7 Tesla Magnet, a 1.5Ghz NMR, a Cyclotron, MRI machines, PET/CT Scanners and other imaging equipment on its two sub-grade levels. It will also include university offices and a number of other different functioning research labs. The façade will be a mixture of glazed aluminum curtain wall and precast panels.



Structure

The UNC Imaging Research Building will have a concrete superstructure consisting of T-beams, columns, and girders. The perimeter of the building will be spandrel beams and columns with cantilever retaining walls and basement walls below grade. The foundation will consist of a combination of spread and mat footings to support columns, walls, shear walls, and imaging research equipment.

Mechanical

The cooling system will consist of custom air handling units and precision room air conditioning units utilizing campus chilled water. Campus chilled water is used in plate and frame heat exchangers to provide chilled water to cooling coils in AHU's and chilled water to precision room air conditioning units. The heating system will use district heating water to provide hot water to heating coils in air handling units and heating water to terminal unit heating coils. The equipment used will be three heating water pumps with high efficiency motors.

Lighting/Electrical

The power system for the building consists of emergency and normal power using a 480Y/277V system. The lighting consists of mostly 277/120 volt fixtures using mostly linear fluorescent lamps and some compact fluorescent down lights. The basement of the building also houses switchgear supplied 1000KVa transformer, and a 2000a busduct runs up through the building.

Daniel R. Hesington, LEED AP | Structural Option

<http://www.engr.psu.edu/ae/thesis/portfolios/2010/drh5015/index.html>