PROJECT DESCRIPTION:

The project includes the demolition of the existing McIver Building and the construction of an approximately 180,000 GSF new building consisting of laboratory and support space, academic teaching facilities, and offices. The building will be designed for maximum flexibility for rapidly changing academic programs. The project also includes a stand-alone chiller plant with an initial build out of 2,000 tons with future expansion capabilities to an ultimate capacity of 7,500 tons.

The primary occupants of the building consist of the following:

- **School of Nursing**
  - Active Learning Spaces: Clinical Labs and various Simulation Spaces for Maternity, Home Health/Rehab., Pediatrics, Infectious Disease, Ortho., and adjacent Debriefing Rooms
  - General Instructional Spaces for Online Learning and Community Engagement Clinics
  - Offices for Faculty and Staff

- **College of Arts and Sciences**
  - Teaching Labs for Anatomy and Physiology, General Biology and Faculty Research.
  - Instructional Lab Suites for Chemistry

- **School of Health and Human Sciences**
  - Clinical and Simulation Labs for Health and Wellness
  - Labs for Human and Animal Anatomy, Physiology, Kinesiology and Public Health Education

- **General University Use**
  - Classrooms and Computer Labs

LOCATION & CAMPUS CONTEXT:

The Nursing and Instructional Building will be constructed on the site of the existing McIver Building. The site is north of Spring Garden Street/Administration Drive and south of Walker Avenue, at the end of the McIver Street pedestrian mall (Refer to Campus Master Plan Pages 16 & 17). It is envisioned that the building will be 3-4 stories in height. The site topography falls from south to north, with the current building having a lower level daylighting on the north side.
The Camp

The Campus Master Plan (Page 54) discusses some of the important contextual issues of the building location. The Master Plan references a phased approach to construction, however the current funding will allow for the completion of the building in a single phase.

The new South Chiller Plant is proposed for the corner of Forest Street and Oakland Avenue to meet the current and future needs of the campus. Refer to Campus Master Plan Pages 56-57 and 82-83 for additional information.

SCOPE OF SERVICES

The selected firm will provide Architectural, Engineering and other consulting services as required to provide Programming, Advance Planning and comprehensive Design and Construction Administration Services for the project.

PROJECT SCHEDULE:

The preliminary schedule developed by the university indicates the completion of all programming and design phases, with SCO approval in April 2018, followed by the Bid and Award of the project. Construction will commence with demolition of the existing McIver Building in June 2018, with completion of the project by June 2020. Consideration will be given to completing the South Chiller Plant for the 2019 cooling season. The university intends to complete the project utilizing the services of a Construction Manager at Risk (CMAR).

BUDGET:

The total budget for this project is $105,000,000 which includes all design phase services, fees, demolition of the existing McIver Building, construction, contingency, materials testing, and owner’s reserves.

It is not the intent for this project to plan or renovate any existing spaces for current occupants of the McIver Building.

Letters of Interest due by 5:00 p.m. on April 8, 2016

Submit Letters of Interest to:
Scott Noble, RA
UNCG Facilities Design & Construction
Gray Home Management House
105 Gray Drive
Greensboro, NC 27412

RESOURCES:

Campus Master Plan - http://facdc.uncg.edu/campus-master-plan/
Design and Construction Guidelines - http://facdc.uncg.edu/resources
EXISTING CONDITIONS
PROPOSED MASTER PLAN

EXISTING BUILDINGS

PROPOSED BUILDINGS

Nursing and Instructional Building
McIver Building Replacement

The top priority in UNCG’s capital priorities plan is the replacement of the McIver Building. The McIver Building is currently in a state of disrepair. While it is preferred that the replacement be at least equal in size to the existing building, current economic realities suggest that a phased construction plan will be necessary.

The proposed footprint is sited to respect the iconic Foust Building by incorporating a buffer between Foust and the McIver replacement. The proposal for McIver also acknowledges the current role of the building as the southern terminus of the McIver Street pedestrian mall.

At the same time, the southern wing of the building serves as the eastern terminus of the east–west axis linking the Kaplan Commons through the EUC to the College Avenue and McIver pedestrian malls.

The shape and orientation of the proposed building could accommodate a multi-phase construction process with the southern and eastern wings completed in the first phase in order to anchor the north–south and east–west pedestrian connections proposed in the plan. The northern wing, which would provide a more formal entrance to the McIver pedestrian mall, could be completed as part of a second phase of construction.
UNCG has identified the need to add chiller capacity to the existing campus. A new Chiller Plant is proposed for the corner of Forest Street and Oakland Avenue to meet the current and future needs of the campus. Currently, there is a single central chilled water plant located in the McIver Parking Deck. The plant is 6,000 tons consisting of four chillers. The plant was originally constructed in 1997 and expanded in 1999 and 2002 to reach its current capacity. The plant serves approximately 40 buildings with a total area of just over 2,665,000 GSF. The plant is running at or near capacity and there is no room to expand the capacity within the existing footprint.

A second chilled water plant adjacent to the boiler plant on Forest Street is planned as the next major development in centralized chilled water. Based on the future needs and expansion of the campus chilled water system detailed in the Frameworks section of this report, the new plant should meet the following specifications. The plant shell would be constructed in its entirety with equipment added in response to load increases. At 7,500 tons, the plant footprint would be approximately 13,000 SF, excluding the exterior electrical service yard and cooling towers, which would require an additional 2,000 SF and 6,000 SF respectively. The towers could be located on the roof to reduce
the overall footprint. If the towers are located on the roof, the overall height would be 70 to 80 feet and would likely require architectural screening. If the towers are at grade, the plant height would be 35 to 40 feet. A detailed analysis would determine the appropriate plant capacity, optimum siting strategy and optimum land use strategy.

Important design feature for the new chilled water plant at Forest Street include:

- variable speed chillers
- variable primary chilled water pumping
- double ended switchgear with an A and B service for redundancy
- N+1 redundancy in all primary equipment

Finally, UNCG had previously considered a steam turbine chiller or even a steam turbine for power generation within the Forest Street chiller plant. The footprint described above does not include space for this equipment. A detailed analysis would determine the viability of steam driven or cogeneration equipment.
Chilled Water
The current campus building inventory results in approximately 4,850,000 GSF, excluding leased buildings, buildings located beyond the core campus, as well as remote and/or small athletic facilities, and parking decks. Allowing for another 400,000 SF of unanticipated growth or building replacement, the likely long term inventory of buildings on a central chilled water system is 5,250,000 GSF. As shown on the Chilled Water System diagram opposite, much of the future connections will occur on the south or west side of campus.

This gross building area is approximately twice the building inventory served by the McIver Chiller Plant. The resulting future peak chilled water demand for the existing campus north of Oakland Avenue is likely to double from 6,000 tons to 12,000 tons. This is consistent with an average peak demand of 350 SF/ton with an eighty percent diversity factor. The 350 SF/ton average is a combination of research spaces, general academic buildings, libraries, residential communities and other miscellaneous building types on campus. A detailed analysis is required to develop an accurate load profile as well as the timing of the loads.

With a future campus demand of 12,000 tons, the minimum plant capacity for the new chilled water plant on Forest Street is 6,000 tons. To accommodate redundancy, a plant capacity of 7,500 tons, divided among five chillers, should be considered. The McIver and Forest Street plants would interconnect and share redundancy. The resulting installed and firm capacity for the campus chilled water system would be 13,500 tons and 11,625 tons respectively. A firm capacity of 11,625 tons provides for:

- N+1 redundancy for all identified development
- N+1 redundancy for an additional 400,000 SF except on the most demanding days

The second major requirement for a campus chilled water system is the distribution piping. As shown on the Chilled Water System diagram, much of the chilled water piping is already installed and being used. Completing or reinforcing the chilled water distribution piping requires:

- piping from the Forest Street plant to the existing 24" mains in the parking lot south of McNutt
- new 12" mains to support the new development on the southwest portion of campus
- new 12" mains to HPP and the SRF on the west side of campus
- completing the 24" north / south mains on Stirling Street to close the loop
- completing the east / west main that bisects the campus to reinforce the distribution grid

While much of the distribution piping would occur when the plant is built, some of the piping may be installed with individual building projects. Although the individual building projects may have to install more capacity than is necessary for a specific building project in this scenario, the approach will ensure that the distribution mains are sized for the overall performance of the campus chilled water system.
Chilled Water System

Existing Chiller Plant

Nursing and Instructional Building

South Chiller Plant