Virginia Theological Seminary
Central Plant and Site Hydronic Piping
Alexandria, Virginia

APM

CLIENT
Virginia Theological Seminary
Mr. David Mutscheller, Plant Director
Phone: 703.461.1769

ARCHITECT
Walton Madden Cooper & Robinson Poness, Inc.
Mr. Art Robinson, Principal of Operations
Phone: 301.459.9500

GENERAL CONTRACTOR
Forrester Construction Company
Mr. Rick Forrester, Vice President
Phone: 301.255.0350

$9.27 MILLION
MASTER BUDGET COST

13 MONTHS OF CONSTRUCTION

NEW CONSTRUCTION, GREEN ROOFS, AND GREEN SCREENS

"Virginia Theological Seminary is the largest of the 11 accredited seminaries of the Episcopal Church and was founded in 1823."

■ **DESCRIPTION:** The Central Plant and Site Hydronic Piping project can be defined by three main parts: Central Plant, Site Hydronic Piping, and Building Tie-Ins. The Central Plant portion of the project consists of a 4,034 SF addition to the existing Maintenance Shop and includes the installation of four (4) boilers, two (2) chillers, three (3) cooling towers, and associated pumps and piping. It also includes office space, file room, and conference room.

The Site Hydronic Piping portion of the project is a four pipe system consisting of ~10,000 LF of hot and chilled water piping ranging from 1½" to 10" in size, in ~2,100 LF of trench connecting the new Central Plant to ten (10) campus buildings.

The Building Tie-in portion of the project consists of stubbing the four pipe system into ten (10) campus buildings. The scope of the work inside each building ranges from just stubbing the four pipes inside the basement wall for future connection to demolishing the existing steam to hot water converters, boilers, chillers, cooling towers, pumps, and piping in order to connect the new four pipes to the building distribution pipes.

■ **SUSTAINABILITY:** While this project is not a USGBC LEED project, sustainable design practices were employed and include a green roof and green screen around the cooling towers.

■ **CHALLENGES:** There are two main challenges for this project. The first is the new site hydronic piping parallels and zigzags across the main campus drive, which runs through the heart of the campus. This will severely affect the Seminary's operations from a pedestrian and vehicular standpoint since the Seminary operates seven days a week. The second main challenge is performing the tie-in work in the existing buildings. Several of the existing buildings date back to the mid-late 1800's, so their basements and/or crawl spaces are extremely small and already tightly constrained by existing infrastructure. Many of the foundation walls (exterior and interior) are constructed of four masonry wythes further restricting available space and necessitating a very high degree of as-building and construction coordination in order to install the new four hydronic pipes.