

**UNIVERSITY OF VIRGINIA
BOARD OF VISITORS**

**Meeting of the
Buildings and Grounds
Committee**

December 6, 2018

BUILDINGS AND GROUNDS COMMITTEE

Thursday, December 6, 2018

2:45 - 3:45 p.m.

Board Room, The Rotunda

Committee Members:

Whittington W. Clement, Chair	James B. Murray Jr.
Robert D. Hardie, Vice Chair	C. Evans Poston Jr.
Robert M. Blue	James V. Reyes
Mark T. Bowles	Frank M. Conner III, Ex-officio
Maurice A. Jones	

AGENDA

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**UNIVERSITY OF VIRGINIA
BOARD OF VISITORS AGENDA ITEM SUMMARY**

BOARD MEETING: December 6, 2018

COMMITTEE: Buildings and Grounds

AGENDA ITEM: I. Remarks by the Chair

ACTION REQUIRED: None

BACKGROUND: The Committee Chair will provide introductory remarks.

**UNIVERSITY OF VIRGINIA
BOARD OF VISITORS CONSENT AGENDA**

II.1. ARCHITECT/ENGINEER SELECTION: BRANDON AVENUE UPPER-CLASS RESIDENCE HALL PHASE II

The second Brandon Avenue Upper-Class Residence Hall will provide between 300 and 400 additional beds and approximately 100 parking spaces in an apartment-style facility with single rooms and amenities comparable to off-Grounds housing options. Consistent with the Brandon Avenue Strategic Master Plan, approved by the Board of Visitors in September 2016, the Brandon district will support the development of upper-class housing in an ideal location on Central Grounds, strengthening the University's distinctive residential culture. A joint selection committee from the Office of the Architect for the University, Facilities Management, and Housing and Residence Life interviewed four firms that submitted letters of interest, all with the required experience working on similar projects, to provide architectural services for this project. Based on the proposals submitted by the firms and the interviews, the University recommends the selection of Elkus Manfredi Architects of Boston, MA for this contract. Elkus Manfredi Architects was chosen based on its qualifications, extensive experience, and understanding of the challenges of this project.

ACTION REQUIRED: Approval by the Buildings and Grounds Committee

<p><u>ARCHITECT/ENGINEER SELECTION FOR THE BRANDON AVENUE UPPER-CLASS RESIDENCE HALL PHASE II</u></p>
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<p>RESOLVED, Elkus Manfredi Architects of Boston, MA is approved for the performance of architectural services for the Brandon Avenue Upper-Class Residence Hall Phase II.</p>
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II.2. ARCHITECT/ENGINEER SELECTION: NORTH GROUNDS MECHANICAL PLANT AND INFRASTRUCTURE

Building out the North Grounds Plant will replace the Darden School's aging and inefficient utilities with innovative and highly-efficient central plant equipment and distribution system; will provide capacity for planned growth and future retirement of building-level utilities in the North Grounds; and allow valuable building space at the Darden School to be repurposed to support its mission. A joint selection committee from the Office of the Architect for the University and Facilities Management interviewed four firms that submitted letters of interest, all with the required experience working on similar projects, to provide engineering services for this project. Based on the proposals submitted by the firms and the interviews, the University recommends the selection of Hammel, Green and Abrahamson (HGA) of Minneapolis, MN for this contract. HGA was chosen based on its qualifications, extensive experience with the University's existing systems, and understanding of the challenges and complexities of this project.

ACTION REQUIRED: Approval by the Buildings and Grounds Committee

ARCHITECT/ENGINEER SELECTION FOR THE NORTH GROUNDS MECHANICAL PLANT AND INFRASTRUCTURE

RESOLVED, Hammel, Green and Abrahamson (HGA) of Minneapolis, MN is approved for the performance of engineering services for the North Grounds Mechanical Plant and Infrastructure project.

II.3. ARCHITECT/ENGINEER SELECTION: WEST GROUNDS CHILLED WATER CAPACITY

The West Grounds Chilled Water Facility serves the Newcomb Plant and McCormick Road loops. To meet the increased cooling demand of University buildings and fully leverage the capacity of the five existing chiller plants connected to these loops, this project will install one 1,200 ton chiller in an available bay at the Newcomb Chiller Plant and connect the McCormick and Central Grounds chilled water loops. A selection committee from Facilities Management interviewed three firms that submitted letters of interest, all with the required experience working on similar projects, to provide engineering services for this project. Based on the proposals submitted by the firms and the interviews, the University recommends the selection of Affiliated Engineers of Chapel Hill, NC for this contract. Affiliated Engineers was chosen based on its qualifications, extensive experience in chiller plant design, and understanding of the complexities of this project.

ACTION REQUIRED: Approval by the Buildings and Grounds Committee

ARCHITECT/ENGINEER SELECTION FOR THE WEST GROUNDS CHILLED WATER CAPACITY

RESOLVED, Affiliated Engineers of Chapel Hill, NC is approved for the performance of engineering services for the West Grounds Chilled Water Capacity project.

**UNIVERSITY OF VIRGINIA
BOARD OF VISITORS AGENDA ITEM SUMMARY**

BOARD MEETING: December 6, 2018

COMMITTEE: Buildings and Grounds

AGENDA ITEM: III.1. Schematic Design Approval: Ivy Mountain Central Utility Plant

PROJECT BUDGET: \$20.0 million

BACKGROUND: The planned Ivy Mountain Central Utility Plant includes the construction of an approximately 7,500 square foot central heating/cooling building, associated service yard, and utility distribution systems to support the full development of the Ivy Mountain site, initially including the Ivy Mountain Musculoskeletal Center. The Ivy Mountain planned development creates an opportunity to implement highly-efficient and innovative district energy generation and distribution systems. The project includes boilers, chillers, and distribution systems needed to support the initial construction, as well as expansion capabilities for the future phased development of the site.

By integrating heat recovery chillers with condensing boilers and traditional electric chillers, heat that is typically rejected to cooling towers is recovered and reused for building heat. Additionally, significant water savings are achieved by avoiding the potable water consumed during the evaporative cooling process. UVA has recently demonstrated this concept with the renewal of the North Grounds Mechanical Plant, realizing nearly 50% reduction in energy required to heat/cool the same connected load.

DISCUSSION: The Board reviewed the design for the Ivy Mountain Central Utility Plant at the September 2018 meeting. The design team, led by Zimmer, Gunsul, Frasca Architects in collaboration with the Architect for the University and representatives from Facilities Management, has developed a schematic design that Ms. Raucher will review with the Committee.

ACTION REQUIRED: Approval by the Buildings and Grounds Committee

SCHEMATIC DESIGN FOR THE IVY MOUNTAIN CENTRAL UTILITY PLANT

RESOLVED, the schematic design for the Ivy Mountain Central Utility Plant, prepared by Zimmer, Gunsul, Frasca Architects, in collaboration with the Architect for the University and representatives from Facilities Management, is approved for further development and construction.



Central Utility Plant Existing Site Plan



Central Utility Plant Illustrative Site Plan



Central Utility Plant East Perspective (Existing)



Central Utility Plant East Perspective (Proposed)

**UNIVERSITY OF VIRGINIA
BOARD OF VISITORS AGENDA ITEM SUMMARY**

BOARD MEETING: December 6, 2018

COMMITTEE: Buildings and Grounds

AGENDA ITEM: III.2. Schematic Design Approval: Ivy Mountain Pump Station

PROJECT BUDGET: \$4.6 million

BACKGROUND: At the request of UVA, the University of Virginia Foundation (UVAF) plans to construct a gravity sewer, pump station, and force main to the Rivanna Water and Sewer Authority interceptor line on the Birdwood Golf Course. The Ivy Mountain Sewer expansion will provide sewer capacity for current and future developments on the Ivy Mountain site and Old Ivy Road. The project will consist of approximately 1,200 linear foot of gravity sewer, approximately 2,750 linear foot of force main, and a pump station. No private easements are required since the project is limited to existing University and Virginia Department of Transportation (VDOT) property.

The action requested by the Buildings and Grounds Committee is for the location and design of the 400 square foot pump station. The proposed design is consistent with the utilitarian nature of its function and with the Ivy Mountain Central Utility Plant.

DISCUSSION: The design team, led by Dewberry Engineering in collaboration with the Architect for the University and representatives from Facilities Management and UVAF, has developed a schematic design that Ms. Raucher will review with the Committee.

ACTION REQUIRED: Approval by the Buildings and Grounds Committee

SCHEMATIC DESIGN FOR THE IVY MOUNTAIN PUMP STATION

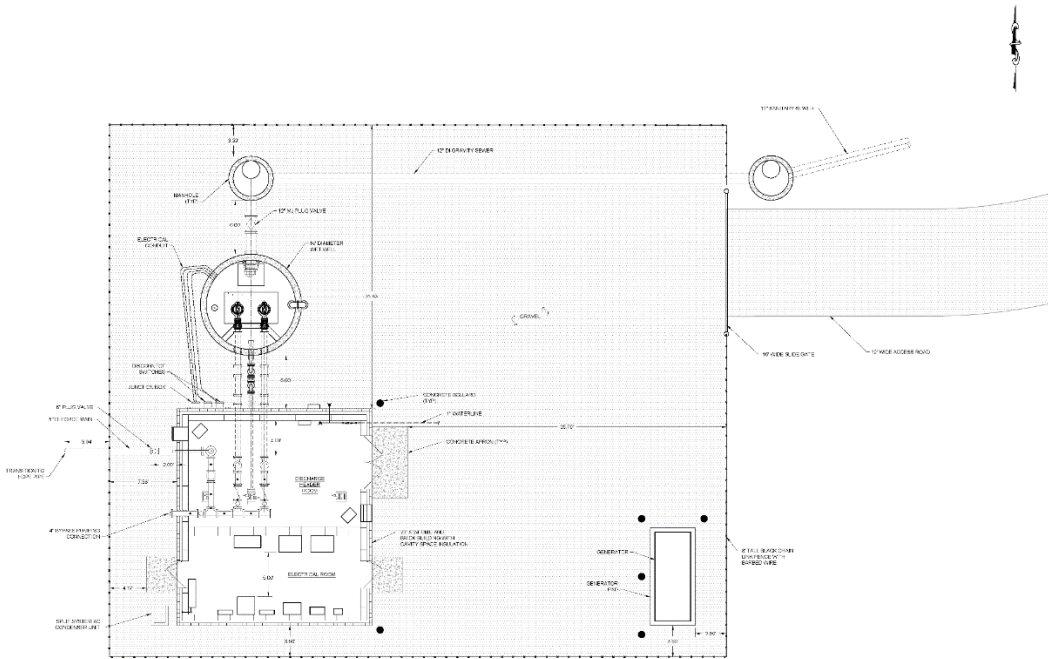
RESOLVED, the schematic design for the Ivy Mountain Pump Station, prepared by Dewberry Engineering, in collaboration with the Architect for the University and representatives from Facilities Management and the University of Virginia Foundation, is approved for further development and construction.



Existing Site and Context



Pump Station Location



Pump Station and Service Yard Plan



Pump Station – Northwest Perspective (Proposed)



STANDING SEAM METAL
WALL & ROOF PANEL



GROUND FACE CONCRETE BLOCK

Pump Station – Perspective View and Material Palette (Proposed)

**UNIVERSITY OF VIRGINIA
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BOARD MEETING: December 6, 2018

COMMITTEE: Buildings and Grounds

AGENDA ITEM: IV. Committee Discussion: University of Virginia Foundation

Mr. Tim Rose, Chief Executive Officer of the University of Virginia Foundation (UVAF), will provide a general overview of the history, mission, and structure of the UVAF, and discuss the Foundation's real-estate portfolio including current landholdings, the UVA Research Parks, recent acquisitions, and projects at the Boar's Head and Birdwood properties.

WRITTEN REPORT

**Buildings and Grounds Committee
University of Virginia**

December 6, 2018

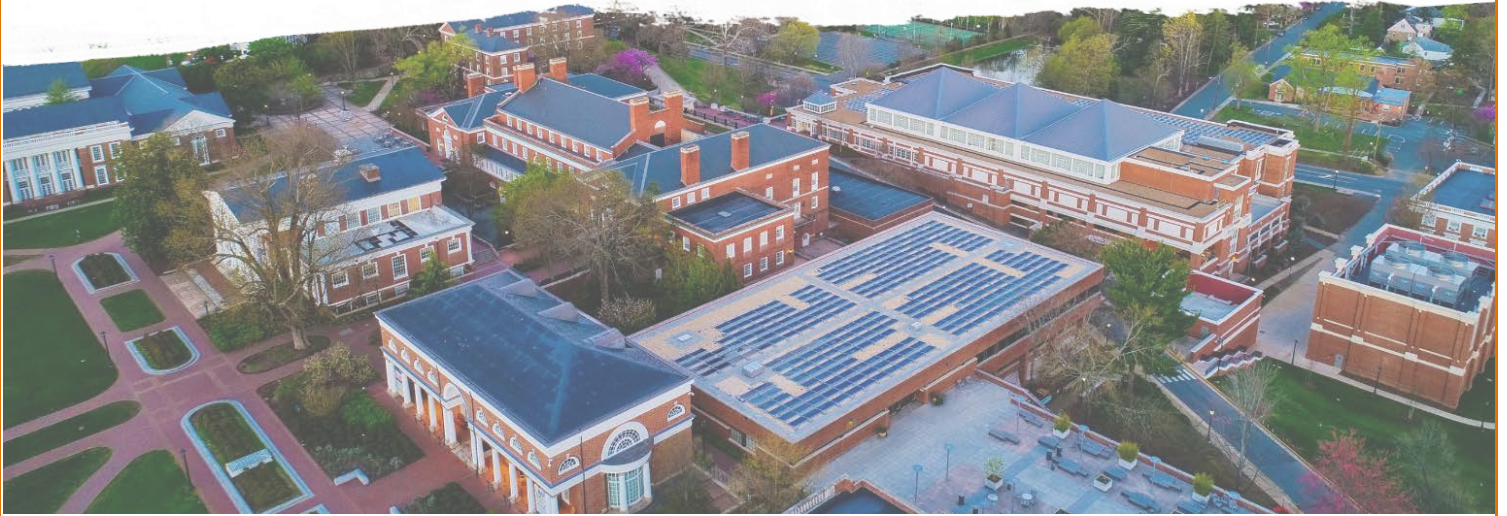


Photo credit: Sun Tribe Solar

UVA SUSTAINABILITY: DECEMBER 2018

In 2016, the University of Virginia, the first in the country to set nitrogen reduction goals, laid out its environmental principles in a landmark sustainability plan. Those and other efforts have helped UVA establish itself as a leader in sustainability, and the work continues – including through the recent Bicentennial Sustainability Leadership Summit. Here are 10 ways UVA is leading in higher education sustainability.

1. UVA Sustainability Plan

In 2016, UVA launched its first comprehensive [Sustainability Plan](#), developed by the Committee on Sustainability and facilitated by the Office for Sustainability, with input from more than 100 stakeholders. The plan built upon existing stewardship goals; added objectives regarding waste, procurement, food and water; and committed to integrated plans focused on community engagement, curriculum and research. The plan outlines 23 goals and 101 objectives, including the development of detailed action plans for how the University will meet its environmental stewardship goals.

UVA's strategic sustainability framework seeks pan-University and interdisciplinary connections at all levels of the University to involve the community and raise awareness, steward resources on Grounds and beyond, and discover solutions to global challenges through research, curriculum and using the Grounds as a learning tool.

This report was adapted from the October 23, 2018 UVA Today article, "[10 Ways UVA Plays a Leading Role in Higher Ed Sustainability](#)," written by UVA Communications and the UVA Office for Sustainability. For more information, see the UVA Sustainability website and the [2017-2018 Sustainability Annual Report](#) (www.sustainability.virginia.edu).



2. Bicentennial Sustainability Leadership Summit

As UVA approaches the 2020 landmark of many of its Sustainability Plan initiatives and moves into its third century, it has an opportunity to engage the community in developing a shared, holistic, longer-term vision for sustainability.

As a first step, from October 28 to 30, UVA hosted the [Bicentennial Sustainability Leadership Summit](#). With over 500 student, staff, faculty, alumni and community attendees, more than 50 confirmed speakers, breakout discussions, tours and networking events, the Summit explored UVA's achievements to date and began to chart a course for advancing UVA's leadership role in addressing the most pressing global challenges.

3. Collaboration from the Grounds Up

There are sustainability-related learning and leadership opportunities in nearly every area of the University, with more than 130 sustainability-related courses, more than 300 faculty members involved in sustainability-related research, and more than 30 sustainability-focused student groups.

UVA is preparing current and future sustainability leaders for work in the sciences, social sciences, engineering, design, the humanities and more. Pan-University collaborative teaching, research and applied practice continues to grow, with extensive collaboration among the University Committee on Sustainability, UVA's Office for Sustainability, the Environmental Resilience Institute, the Global Sustainability Initiative and other entities.

4. Climate Action - Greenhouse Gas Reduction

In 2011, the Board of Visitors set a goal to reduce greenhouse gas emissions 25 percent by 2025, including both UVA's academic Grounds and the UVA Health System. Despite significant building expansion and growth, UVA has already reduced emissions by 19 percent and has released a Greenhouse Gas Action Plan that outlines future efforts.



Photo credit: Dominion Energy

5. Renewable Energy

The use of renewable energy is a key strategy in UVA's Greenhouse Gas Action Plan, and the University's use of renewables is growing on and off Grounds.

As of October 2018, 21 percent of UVA electricity (32 MW) is being powered by two new off-Grounds solar facilities in King William County (Hollyfield solar facility) and Middlesex County (Puller solar facility), representing 123,800 solar panels. Additionally, UVA has installed 726 kW of solar-generated electricity on Grounds – enough to power roughly 100 American homes for a year – with solar arrays atop Ruffner Hall, the UVA Bookstore, Clemons Library, Skipwith Hall and the Alderman Substation.

6. Nitrogen Research and Goal

As the first institution of higher education in the world to set a nitrogen reduction goal, UVA leads both in researching nitrogen footprints as well as in developing goals and strategies to reduce reactive nitrogen at an institutional scale.

Home of the Nitrogen Footprint Network, environmental sciences professor James Galloway's lab has helped more than 18 institutions worldwide track their nitrogen footprints. Recently, UVA and the University of New Hampshire collaborated to develop the first integrated carbon and nitrogen footprint tool, the Sustainability Indicator Management and Analysis Platform, or SIMAP.

7. Resilience Research

The Environmental Resilience Institute is the hub of environmental resilience and sustainability research at the University. Launched in 2017, the institute includes guidance from a steering committee of eight faculty members from five schools, and participation from more than 150 members spanning 10 schools. The mission of ERI is to accelerate the rate of discovery, train the next generation of leaders in integrative research, and link science with policy on regional to global scales.



8. Sustainable Building

For existing buildings, the Office for Sustainability's Delta Force program, a building retro-commissioning team, drives down energy and water use through building management and systems upgrades. Because of Delta Force, Clark Hall recently achieved a 67 percent reduction in energy costs, reducing the annual energy expense from around \$1.2 million to approximately \$450,000.

For new construction and major renovations, UVA requires that all buildings meet a minimum of Silver-level certification through the Leadership in Energy and Environmental Design. Currently, 52 buildings across Grounds and at the College of Wise hold LEED certification at various levels. UVA's new Green Building Standards go above and beyond LEED to ensure all new construction aligns with sustainability goals.

9. Global Sustainability Degree Programs

The Global Sustainability Initiative encompasses several transdisciplinary degree programs with UVA faculty. The Global Sustainability minor was created in 2011 with just three students and has seen 269 graduates to date. Eighty-four students have graduated with the Global Studies major in environments plus sustainability, with another 59 expected over the next two years.

This year, the team is expanding the capacity of these programs and strengthening ties across disciplines by adding the leadership of three new UVA Sustainability Faculty Fellows. These fellows will help develop the community of scholars across UVA's schools who can deliver a collaborative teaching experience to students interested in global sustainability.

10. Alumni Engagement

UVA's new Sustainability Alumni Network was created to bring together alumni working in the multi-faceted realm of sustainability, students interested in related careers, and sustainability leaders on Grounds. Involved alumni will collaborate in shaping a vision for sustainability at UVA, serve as mentors for students and connect with each other to build a global community of Wahoos in service of a more sustainable world.