New Research Laboratory & Given Building Renovations
for
The Larner College of Medicine
and the Department of Psychology

RFP Site Visit and Informational Meeting
November 15, 2017
New Research Laboratory & Given Building Renovations

AGENDA

- Introductions
- Facilities Design & Construction Website
- Defining the Project, Background and Goals
- Existing Utility Infrastructure
- Campus Master Plan Guidelines
- Regulatory Land Use Process
- Contract
- Fee Proposal Matrix
- Architect-Engineer Checklist of Services
- RFP Highlights
- Questions
- Tour of Facilities
Research: Larner College of Medicine and Psychology Department

1. The Importance of Research

2. The Problem

3. The Solution
The Importance of Research

1. Research is a **core mission** of the University of Vermont.
2. It improves the health and healthcare of **citizens of VT and the World**.
3. Return on investment to VT: **$74 - 94 million** annual research funding.
   a) Over **7 to 9 times** the **ROI** of the other public Medical Colleges;
   b) **Top 10** state in **NIH funding** per capita;
   c) The **majority** of UVM **start-ups** are associated with Larner College.
4. Psychology **most research productive** of CAS; $1.6 million annual grants.

5. World-class research attracts students.
   
a) Larner and Psychology provide **student research experiences** for M.D., Ph.D., undergraduate and honors college.

b) Undergraduate teaching:
   
   --Psychology is the largest major at UVM. Its faculty teach nearly **12,000** credit hours per year.

   --Larner faculty teaching **over 14,000** credit hours in AY 2018.

6. Research success disproportionally affects the **rankings** of Universities.
Project Goals

- Provide modern facilities to support the research and education missions
- Provide the same amount of space currently available for the College of Medicine and the Psychology Department
- Minimally disrupt ongoing activities during the project
- Provide the highest quality project at the lowest cost
- Deliver the project on-time and on-budget
Psychology Program

• Dewey Hall is 46,000 GSF and will not be part of the project
• Approximately 30,000 NASF of program
  o Approximately 6,000 NASF of wet laboratory space including several small animal holding rooms
  o Approximately 24,000 NASF of office, teaching laboratory, dry laboratory space and clinical space
Proposed Site Plan
Given Building Background

- Given Building is approximately 246,000 GSF
- Current uses include laboratories, a vivarium, offices, anatomy laboratory, cafeteria and a large auditorium
- Project will include:
  - A reskinning of the entire exterior
  - Modernization of HVAC and electrical systems of the entire building
  - Architectural renovations of selected areas of the building to meet the program
Given Building Final Occupancy

- Accommodate all College of Medicine programs currently in Given Building that are not moved to new research building, in addition to 5,000 NASF of office space from the Hill’s Building
  - Includes approximately 28,000 NASF of wet laboratory space
- Accommodate the Psychology Department program of approximately 30,000 NASF
Critical Project Experience

- Design of new state-of-the-art Research Buildings
- Design of a rejuvenation of an aged research building to meet modern standards, while occupied
Overview of Utilities Infrastructure and Existing Conditions

November 15, 2017

By
Salvatore Chiarelli, Director
Physical Plant Department
Existing Central Heating and Cooling Plant

- Four (4) 40,000 pound per hour steam boilers
- One (1) 64,000 pound per hour steam boiler
  - Steam feeds about 90% of campus square footage
- Three (3) Chillers in Central Plant
  - Two 1350-ton steam turbines and One 1500-ton electric
  - Chilled water feeds only 30% of campus
- Annual plant shut down occurs after graduation (May)
- Interruptible natural gas service, Vermont Gas System
  - #2 as back up fuel, 150k gallons stored underground on site
- Very efficient system, 90% condensate return
Existing Utilities
Existing College of Medicine (COM) Plant and Utilities

- (2) 20,000 pound per hour steam boilers at Given
  - Can only run 1 absorption machine because of pipe size limitation
  - Given steam boilers supply in island mode if needed
- (2) 1000 ton absorption chillers in HSRF (1999)
  - Serve Given, Rowell and HSRF when needed
  - One small electric chiller serves Animal Quarters only
- Need additional chilled water supply to meet growing needs
- Given electric load about 1MW
- Electric: Burlington Electric
- Water/sewer: Burlington Public Works
Opportunities

- Desirable to run a larger pipe to run both absorption machines from Given to HSRF
- Heating and Cooling recovery
- Will need additional chilled water supply to meet growing needs
- Central plant was designed with space for another chiller
- Potential to send chilled water out to campus from HSRF
- Potential to run a chilled water line to west side HSRF from Central Plant
Given Building Existing Conditions & Challenges
Building Envelope

• Pre-Cast Siding
  • Clips are failing, rusting
  • Siding not insulated

• Windows
  • Single-pane, not energy efficient
  • Evidence of leaks
  • Asbestos caulking
• Roofing
  • Roof membrane replaced in 2000
  • Hundreds of penetrations and anchors in existing roof
  • Seals failing and leaks result

• Courtyard Glass Roof
  • Panels are cracking
  • Safety risks of performing work
Mechanical

• HVAC
  • A 2-pipe system is used for heating (hot water) and cooling (chilled water)
  • Severe aging and deterioration of original steel piping throughout system
  • Pipe locations are difficult to access behind cinderblock, sheetrock, above ceiling ductwork and electrical conduit.

• Valves
  • Hundreds of original valves throughout system for heating, cooling, potable water, steam, RO water, vacuum and compressed air.
  • Many valves not fully operational.
• Air Handling Units
  • All are original equipment showing severe aging
  • 100% outside air
  • Excessive wear of components causes vibrations throughout facility. To compensate, systems are run at slower, less optimum speeds.
  • Condensate pans deteriorating
• Vacuum System
  • One central vacuum system only serves parts of the building.
  • Water-cooled unit, not energy efficient.
  • When the central vacuum system fails, PPD has no plans to replace it.
  • New laboratories are required to install individual vacuum pump systems.
Electrical

• Major switchgear upgrade completed in 2010.
• Building distribution is aged.
• Old wiring throughout building

Building Automation Controls

• Building is served by both Honeywell and Johnson Controls systems which report to central command system.
• Actuators and valves are operated by both modern DDC electronics and some obsolete air lines.
• Elevators
  • Some upgrades, but all are original
  • 3 elevators serve Given

• Cold Rooms
  • All original equipment
  • Asbestos containing materials used during construction
  • Some compressor units have been replaced with newer type of Freon
• Strobe Fans
  • Two major fans serve all the laboratory fume hoods.
  • Fans are not interconnected; neither one has capacity to service entire facility
  • No redundancy or backup fan is in place, other than a spare motor stored in penthouse.
New Research Laboratory & Given Building Renovation

Campus Master Plan Guidelines & Regulatory Land Use Process

Linda Seavey
Director
Campus Planning Services

Campus Master Plan:
www.uvm.edu/~plan

Site Planning & Design Review Process:
www.uvm.edu/~plan/cmpc_design_review_process.pdf
2006 Campus Master Plan

• **Board of Trustees** Approved

• Divides campus into **9 Architectural Districts** (project is in Gateway District)

• **Land Banks** provide approved development sites, with priority for already developed areas (parking lots)

• **Guiding Principles**
  • Sense of Place
  • Inclusive & Accessible
  • Environmental Sustainability
  • Circulation
  • Compatibility
  • Flexibility

• **Campus Master Plan Committee** internal review process
Gateway District

- Modern expression of the campus
- First part of campus that most visitors will encounter
- International Style buildings
- Site is on land bank within Gateway District
- Infill development strengthens the campus image and fabric of the district
Gateway District
Foreground Buildings

- New Research Laboratory will be seen as a foreground building
- New building massing should physically relate to both old and new structures
- The Campus Master Plan goal for the Gateway District:
  - Express the importance of scientific research to the University, with an emphasis on high-tech building design
  - Include large areas of glass for public spaces
  - Appropriate building materials: stone, metal, wood, and pre-cast, in addition to red brick
- Recognize University ethic of sustainability
Gateway District
Landscape Guidelines

- Landscape improvements in the northern end of the District are conceived as being urban in character.
- Proposed quadrangles in the vicinity of the Given Building are more structured and geometric than on much of the rest of the campus.
Campus & Community Context

New Research Lab Site

UVM Medical Center

East Avenue

Given

HSRF

Stafford

Jeffords

Main Street
City of Burlington Zoning
Central Campus
Institutional Core Campus Overlay

- Zoning District: Institutional (I) & Institutional Core Campus Overlay (ICC):
  - **Lot Coverage:** Allows up to 70% lot coverage
  - **Height:** Allows up to 10 stories/140 feet in height overlay
- Capacity (stormwater, transportation, & utilities)
- Circulation
- Traffic Analysis
- Parking requirements – met by UVM
- Institutional Adjacencies & Compatibility
- Compliance with UVM Campus Master Plan, local municipal & regional plans
  - 1st option for siting a project is on *pre-developed land* such as parking lots, or existing building footprints
Stormwater Planning
Given Building

Historic Preservation

- Opened in 1963
- Largest deferred maintenance cost at UVM and is the least energy efficient building on campus
- Single biggest rehab project at UVM
- Exterior changes require VT Division for Historic Preservation review
- 2011 UVM negotiated changes to one façade, with efforts to be made to preserve other three façades to the extent possible
- Conformance with this agreement will expedite permit process
### Regulatory Process/Timeline

#### New Research Laboratory Building

<table>
<thead>
<tr>
<th>Regulatory Process</th>
<th>Estimated # Meetings</th>
<th># Hours/Time of Day</th>
<th>Estimated Cumulative Hours</th>
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<tbody>
<tr>
<td>UVM Permit Strategy Meetings</td>
<td>5 - 7</td>
<td>Day</td>
<td>10 - 14</td>
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<tr>
<td>Campus Master Plan Review</td>
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<td>*Burlington Technical Review</td>
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<tr>
<td>*Burlington Design Advisory Board</td>
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<td>Afternoon</td>
<td>2</td>
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<tr>
<td>*Burlington Conservation Board</td>
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<td>Afternoon</td>
<td>2</td>
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<tr>
<td>Burlington Development Review Board</td>
<td>1 - 2</td>
<td>Evening</td>
<td>3 - 6</td>
</tr>
<tr>
<td>Act 250 Pre-Hearing or Site Visit</td>
<td>2</td>
<td>2 - 3 Day</td>
<td>4 - 6</td>
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<tr>
<td>Act 250 Hearing</td>
<td>1</td>
<td>2 - 3 Evening</td>
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<td><strong>Estimated Total</strong></td>
<td><strong>17 - 21</strong></td>
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<td><strong>36 - 47</strong></td>
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#### Given Building Renovation

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<td>Campus Master Plan Review</td>
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<td>Day</td>
<td>2</td>
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<td>Vermont Division for Historic Preservation Review</td>
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<td>Burlington Development Review Board</td>
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<td>2 - 3 evening</td>
<td>3 - 6</td>
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<td>Act 250 Hearing</td>
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<td><strong>Estimated Total</strong></td>
<td><strong>11 - 16</strong></td>
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<td><strong>25 - 36</strong></td>
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* NOTE: According to 24 V.S.A. § 4413, the City of Burlington may only regulate with respect to location, size, height, building bulk, yards, courts, setbacks, density of buildings, off-street parking, loading facilities, traffic, noise, lighting, landscaping, and screening requirements.

* These meetings are more likely to happen if the project is deemed by the Burlington Planning and Zoning Department as “Major Impact”. While this project meets the size criteria for Major Impact, there is an exemption for projects that have “no change of use or increased parking demand”. City staff will make that determination.
Campus Master Plan:
www.uvm.edu/~plan
### Fee Proposal Matrix

**New Research Laboratory & Given Building Renovation for The Larner College of Medicine and The Department of Psychology**

<table>
<thead>
<tr>
<th>Project Phase</th>
<th>New Research Facility</th>
<th>Given Renovation</th>
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<tbody>
<tr>
<td></td>
<td>Fee</td>
<td>Reimbursable Expenses</td>
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<td>Schematic Design:</td>
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<td>A/E Checklist of Services</td>
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| Schematic Design Total | $0.00 | $0.00 | $0.00 | $0.00 |
RFP Highlights

• Full design team requirement, with Vermont partnership of 20% effort minimum

• Full design and construction schedule

• RFP schedule

• Method of Construction, Pre-construction services, Estimates

• Proposal Requirements, Selection Criteria, Proposal Terms, and Deadlines
New Research Laboratory and Given Building Renovation Design & Construction Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
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<tbody>
<tr>
<td>January 15, 2018</td>
<td>Begin Schematic Design Phase</td>
</tr>
<tr>
<td>May 1, 2018</td>
<td>Complete Schematic Design and estimate reconciliation</td>
</tr>
<tr>
<td>May 18, 2018</td>
<td>Present Schematic Design to Board of Trustees</td>
</tr>
<tr>
<td>February 1, 2019</td>
<td>Complete Design Development, Construction Drawings and estimate reconciliations</td>
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<tr>
<td>February 1, 2019</td>
<td>Present Construction Drawings to Board of Trustees</td>
</tr>
<tr>
<td>April 1, 2019</td>
<td>Completion of Bid Phase</td>
</tr>
<tr>
<td>June 1, 2019</td>
<td>Begin Construction on New Research Laboratory</td>
</tr>
<tr>
<td>December 1, 2020</td>
<td>Complete Construction on New Research Laboratory</td>
</tr>
<tr>
<td>January 1, 2021</td>
<td>Begin Renovation of Given Building</td>
</tr>
<tr>
<td>December 1, 2023</td>
<td>Complete Renovation of Given Building</td>
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</tbody>
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RFP Schedule

• Tuesday, October 31, 2017 Request For Proposal Available
• Wednesday, November 15, 2017 (1:30 PM) Mandatory Campus Site Visit
• Tuesday, November 28, 2017 (2:00 PM) Deadline For Questions
• Tuesday, December 5, 2017 Addendum to be Issued
• Thursday, December 14, 2017 (2:00 PM) Request for Proposals Due
• Week of January 2 - 4, 2018 On-Campus Interviews with Short Listed Firms
• Monday, January 15, 2018 Schematic Design Start Date