

## Capital Budget Request

Overview	
Biennium	2012-2014
Budget Round	Introduced Bill
Request Origin	New Project
Agency	208: Virginia Polytechnic Institute and State University
Project Title	Renovate / Renew Academic Buildings
Project Type	Improvements-Other
Facility/Campus	Blacksburg Main Campus
Project Location	Roanoke Area
Building Name	Sandy Hall, Davidson Hall, and Liberal Arts Building
Building Name	
Building Function	Higher Education - Instruction (100% E&G)
Contains significant energy costs?	No
Contains significant technology costs?	No
Infrastructure Element	Classroom / Laboratory

Supporting Documents				
File Name	File Size (Kb)	Uploaded By	Uploaded Date	Comment

Narrative	
<p><b>Description</b></p>	<p><b>Project Description:</b>            This project will renovate three existing academic buildings located in the core of main campus along a central area known as the drill field. These three buildings were constructed between 1899 and 1928, have had no major renovations or improvements since coming into service, and no longer house permanent occupants because of their deteriorated conditions. Individually, these renovations are small projects and may be combined to a single package to achieve efficiencies in pricing through an attractive sized package, reduced general conditions fees, and compressing escalation with concurrent schedules. This renovation package provides a unique opportunity to bring three underutilized assets to high productivity, substantially reduce campus deferred maintenance, and solve several critical space needs without building additional campus space. The three buildings in this package request are described below.</p> <p>(1) The renovation of Davidson Hall-Front Section (building number 156) has been on the university's plan since 1993 and will complete renovations started in the Davidson Hall Improvements-Phase I capital project (no. 17662). This phase of the project will renovate and rehabilitate the historic front section of the building. The 18,670 gross square foot front section of Davidson Hall was constructed in 1928 with an addition/top floor constructed in 1933. This renovation project will fully renovate the building's exterior and interior which has extensive egress and ADA deficiencies and deteriorated building systems. The building has received no major renovations, upgrades or improvement projects since originally constructed. The renovation and improvements will include replacement of heating and ventilation, electrical, plumbing and telecommunications systems, installation of central air conditioning, and extensive upgrades and system improvements to and classrooms and instructional laboratories. Sprinkler and addressable fire alarm life safety systems will be incorporated throughout. Restrooms will be replaced with accessible facilities. Exterior improvements will include tuck pointing the stonework and replacing any damaged masonry elements. Windows and exterior doors will be replaced to realize increased energy savings.</p> <p>(2) The renovation of Sandy Hall (building no. 101) has been on the university's plan since 2001. Sandy Hall was</p>

## Capital Budget Request

constructed in 1924; there have been no major improvements or renovations since it came into service. The building includes about 10,960 gross square feet and the building's support systems and infrastructure are out-dated and inefficient. Further, the building is not air-conditioned and does not have mechanical ventilation systems. Sandy Hall currently serves as temporary swing space for academic programs in transition. As these programs move to new or newly renovated facilities on campus in the next year Sandy Hall will be available for interior and exterior renovation activities. The improvements will include exterior envelope repairs, hazardous material abatement, minor structural improvements and upgrades to HVAC, electrical and plumbing systems. Improvements to accessibility, fire protection and egress will include the incorporation of sprinkler and addressable fire alarm systems, and an approximately 4,800 gross square foot three story addition added to the building's west side housing an egress stair, elevator, accessible restrooms and academic support space. Restrooms will be replaced with accessible facilities. Upon completion the expanded building size will total approximately 15,762 gross square feet.

(3) The renovation of the Liberal Arts Building (building no. 175) has been on the university's plan since 1993, formerly titled Renovation of Performing Arts Building. The building was constructed in 1899 as a YMCA building and currently houses instructional programs of the School of Performing Arts and Cinema. This renovation project will fully renovate the exterior and interior of the 15,900 gross square foot building. The Liberal Arts Building it is one of the most outdated buildings on campus with extensive egress and ADA deficiencies and deteriorated building systems. The improvements will include exterior envelope repairs, hazardous material abatement, replacement of HVAC, electrical and plumbing systems, and gutting of interior partitions to reconfigure interior rooms and spaces. Sprinkler and addressable fire alarm systems will be incorporated, and approximately 2,000 gross square foot four story addition (vertical circulation tower) will be added to the northwest side housing an egress stair, elevator and uni-sex toilets. Restrooms will be replaced with accessible facilities. Upon completion the expanded building size will total 17,900 gross square feet.

The renovations will renew the facilities and clear deferred maintenance effectively resetting the life expectancy to 50 years with adequate maintenance.

### Justification

#### Program Description:

Combined these projects will provide efficiently designed space for two college level activities and a major department on campus. These renovations will substantially reduce maintenance backlogs, result in more efficient building layouts in high value campus real estate, return existing square footage to its long-term highest and best use, and provide important cost efficiencies up front and over the long term compared to new construction.

(1) A renovated Davidson Hall-Front Section will provide modern, accessible and technologically capable space for faculty, staff and graduate students of the Department of Chemistry. The department of Chemistry is home to 356 undergraduate and 184 graduate students and generates more than \$8M annually in externally funded research. The renovation of this space will complete the update of this building's laboratories, classrooms, offices and other learning spaces.

(2) A renovated Sandy Hall will serve as the academic home for the College of Science which is currently located in temporary, prefabricated modular buildings located in the upper quad of the campus. This college is home to 4,061 undergraduate and 634 graduate students and generates more than \$22 million annually in externally funded research. It is the largest college in terms of instructional output generating nearly 240,000 student credit hours each academic year. The renovated Sandy Hall will provide critical student and faculty support for advising and other student support functions including a distance learning classroom facility.

(3) A renovated Liberal Arts Building will serve as the academic home for the College of Liberal Arts and Human Sciences which is currently located in inadequate space in Wallace Hall. The majority of these colleges programs are housed in close proximity to the Liberal Arts Building and relocation to this area will promote efficiencies and interdepartmental communication within the college. The College of Liberal Arts and Human Sciences is home to 4,510 undergraduate and 1,526 graduate majors. It is the second largest college in terms of instructional delivery providing more than 223,685 total credit hours each academic year. The renovated Performing Arts Building will provide seminar space and offices for student advising and other student support functions.

The University's strategic plan includes three scholarship domains: Learning, Discovery, and Engagement; and three

## Capital Budget Request

Foundational Strategies: Development of the Organization, Investment in the Campus Infrastructure, and Effective Resource Development, Allocation, and Management. This project supports several key domains and strategies of the strategic plan, and the specific goals of each area addressed by this project are listed below.

Learning: (1) Strengthen and integrate all aspects of the undergraduate academic experience, including the academic experience for transfer students, (2) Invest in departmental and university-level support for undergraduate education, (3) Enhance quality graduate and professional education, (4) Establish a graduate education portfolio reflective of a 21st century university, (5) Develop and integrate advanced technology and information systems applications that assist collaboration, reflection, assessment, and sharing among faculty members, students, and staff members, (6) Contribute to the holistic and transformative educational experiences of Virginia Tech undergraduate and graduate students, and (7) Improve the capital assets that underpin student learning and support programs.

Engagement: (1) Engage students, at the undergraduate and graduate levels, in opportunities for service learning and experiential education that prepare them to serve a diverse and complex marketplace and society while building the capacity of communities.

Foundational Strategies: (1) Effectively manage the University's space and land resources for learning, living, and work, and (2) Enhance health, safety, and security operations to support the University's discovery, learning, and engagement endeavors.

### Existing facilities:

(1) Davidson Hall was constructed in 1928 and has not had any major renovations or improvements since it went into service. The facility condition index in FICAS is 72 percent. Maintenance reserve projects and other maintenance work are no longer sufficient to keep the building serviceable; a full building renewal is required to restore the building to service. Due to lack of air-conditioning and sufficient electrical and telecommunication resources, the building is no longer able to provide a satisfactory environment for the sensitive equipment used in modern instruction, or provide suitable space for collaboration between student and faculty. Improvements to the building's systems and exterior are required to restore useful life to the facility.

(2) Sandy Hall was constructed in 1924; there have been no major improvements or renovations since it came into service. The facility condition index in FICAS is 56 percent. Maintenance reserve projects and other maintenance work are no longer sufficient to keep the building serviceable; a full building renewal is required to restore the building to service. The building includes about 10,960 gross square feet and the building's support systems and infrastructure are out-dated and inefficient. Further, the building is not air-conditioned and does not have mechanical ventilation systems.

(3) The Liberal Arts building is located in a key position on the academic core of campus. The location is a critical serving point to support the instruction of students. The facility condition index in FICAS is 78 percent. Maintenance reserve projects and other maintenance work are no longer sufficient to keep the building serviceable; a full building renewal is required to restore the building to service. Rehabilitating this outdated structure to meet the requirements of modern instruction practices will address student needs and expectations.

### Funding Plan:

The proposed program is 100 percent Educational and General instruction: thus, the funding plan calls for 100 percent General Fund support.

### Alternatives considered

### Options Considered:

The options considered include building new facilities, razing and replacing these facilities, and deferring improvements to a future biennium. Building new facilities is considered more expensive than renewal, will add unnecessary space, and will increase maintenance and utility costs compared to renewal. Razing and replacement is considered unnecessary because the building envelopes and support structures are sound and the sites are constrained which prohibits a larger footprint or taller building. Solving the space needs of these programs is a top priority of the university and these

## Capital Budget Request

buildings are no longer serviceable; thus, deferring the project may result in expensive leases to house the programs and advanced deterioration that prohibits refurbishment.

### Funding Request

Phase	Year	Subobject	Fund	Amount
Pre-Planning	FY 2013	2322 - Construction, Buildings	0100 - GENERAL FUND	\$337,000
Detail Planning	FY 2013	2322 - Construction, Buildings	0100 - GENERAL FUND	\$2,022,000
Construction	FY 2014	2322 - Construction, Buildings	0100 - GENERAL FUND	\$28,373,000
Equipment Purchase	FY 2015	2295 - Undistributed Equipment	0100 - GENERAL FUND	\$2,968,000
				<b>\$33,700,000</b>

### Methodology

**Methodology**      The construction costs are based on the efforts of an external cost consultant, which analyzed the program requirements and compared to current market building comparables within university settings. Soft cost estimates developed by University staff based on historical data costing analysis and trends over the past eight years. The project is anticipated to have moderate site conditions and will use an appropriate construction delivery method for the size and complexity of the project. Project costs are estimated to the mid-point of construction using three percent escalation in accordance with the instructions for developing the Six-Year Capital Outlay Plan.

### Project Costs

Cost Type	Total Project Costs	Requested Funding
Acquisition Cost	\$0	\$0
Building & Built-in Equipment	\$21,813,000	\$21,813,000
Sitework & Utility Construction	\$1,409,000	\$1,409,000
Construction Cost	\$23,222,000	\$23,222,000
Design & related Services	\$3,523,000	\$3,523,000
Inspection & Testing Services	\$650,000	\$650,000
Project Management & Other Costs	\$2,409,000	\$2,409,000
Furnishings & Movable Equipment	\$2,968,000	\$2,968,000
Construction Contingency	\$928,000	\$928,000
<b>Total Project Cost</b>	<b>\$33,700,000</b>	<b>\$33,700,000</b>

### Capacity

Cost Type	Unit of Measure	Units	Cost Per Unit
Acquisition Cost			
Construction Cost	square feet	58,202	
<b>Total Project Cost</b>	square feet	<b>58,202</b>	

Capital Budget Request

Other Costs		
Cost Type	Total Project Costs	Requested Funding
Design & Related Service Items		
A/E Basic Services	\$3,042,000	\$3,042,000
A/E Reimbursables	\$26,000	\$26,000
Specialty Consultants (Food Service, Acoustics, etc.)	\$0	\$0
CM Design Phase Services	\$217,000	\$217,000
Subsurface Investigations (Geotech, Soil Borings)	\$8,000	\$8,000
Land Survey	\$0	\$0
Archeological Survey	\$0	\$0
Hazmat Survey & Design	\$0	\$0
Value Engineering Services	\$53,000	\$53,000
Cost Estimating Services	\$27,000	\$27,000
Other Design & Related Services	\$150,000	\$150,000
Design & Related Services	\$3,523,000	\$3,523,000
Inspection & Testing Service Items		
Project Inspection Services (inhouse or consultant)	\$568,000	\$568,000
Project Testing Services (conc., steel, roofing, etc.)	\$82,000	\$82,000
Inspection & Testing Services	\$650,000	\$650,000
Project Management & Other Cost Items		
Project Management (inhouse or consultant)	\$443,000	\$443,000
Work By Owner	\$35,000	\$35,000
BCOM Services	\$36,000	\$36,000
Advertisements	\$9,000	\$9,000
Printing & Reproduction	\$10,000	\$10,000
Moving & Relocation Expenses	\$48,000	\$48,000
Data & Voice Communications	\$430,000	\$430,000
Signage	\$19,000	\$19,000
Demolition	\$0	\$0
Hazardous Material Abatement	\$96,000	\$96,000
Utility Connection Fees	\$0	\$0
Utility Relocations	\$0	\$0
Commissioning	\$272,000	\$272,000
Miscellaneous Other Costs	\$1,011,000	\$1,011,000
Project Management & Other Costs	\$2,409,000	\$2,409,000

O & M Costs						
Cost Type	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018

Capital Budget Request

GF Dollars	\$182,000	\$182,000	\$187,000	\$192,000	\$197,000	\$202,000
NGF Dollars	\$0	\$0	\$0	\$0	\$0	\$0
GF Positions	1.00	1.00	1.00	1.00	1.00	1.00
NGF Positions	0.00	0.00	0.00	0.00	0.00	0.00
GF Transfer	\$0	\$0	\$0	\$0	\$0	\$0
GF Revenue	\$0	\$0	\$0	\$0	\$0	\$0
Layoffs	0	0	0	0	0	0

O & M Costs

Planned start date of new O&M costs (if different than the beginning of the fiscal year)

05/18/2011 10:09:55