

# Capital Budget Request

## Construct Business Learning Community

### Overview

Agency	Virginia Polytechnic Institute and State University (208)
Project Code	none
Project Type	New Construction
Biennium	2016-2018
Budget Round	Initial Bill
Request Origin	New Project
Project Location	Roanoke Area
Facility/Campus	Blacksburg Main Campus
Source of Request	Agency Request
Infrastructure Element	Office / Classroom

Contains significant technology costs? No

Contains significant energy costs? No

### Agency Narrative

#### Agency Description

The Pamplin College of Business is a highly regarded business school with demand beyond service capacity for its six degree programs. At present, the college serves 3,800 undergraduates and 500 graduate students. While demand for a Virginia Tech business degree exceeds these service levels, the college must turn away qualified students who desire a Virginia Tech business degree because its existing facility (originally built in 1957 with an addition in 1987) cannot support growth because of size limit and outdated infrastructure.

The college, working within its own expertise and nationally recognized consultants, has determined the college has demand by highly qualified students for its programs to justify growing undergraduate enrollments by 20 percent to 4,500 and graduate enrollments by 50 percent to 750. With this information, the college has developed a plan to meet demand for a Virginia Tech business degree. The plan is to construct a new home for the college and its six degree programs.

This proposed new construction project, called the Business Learning Community (BLC), will provide the Pamplin College of Business expanded, modern educational space sufficient to meet demand for its programs. The envisioned BLC includes approximately 205,000 gross square feet of academic space for structured, interactive learning including a variety of general purpose classrooms; specialized classrooms/learning laboratories; and seminar rooms. The proposed overall size and internal spaces will provide appropriate facilities to sustain the existing enrollments and to support the existing planned growth to meet demand.

As part of the plan for the new Business School facilities, Virginia Tech plans to establish a novel "living-learning community" that will include space for a residential college which will align physically and with the academic foci of the college to support enrollment growth. The university has developed nongeneral fund financial plans in its residential system to support the auxiliary enterprise facility component of this vision. Thus, the university will finance construction of the residential component and is asking the state to partner on a portion of the costs for the academic component.

The overall funding plan for the entire community calls for \$40 million of general fund support for the academic facility, \$80 million of private gifts for the academic facility, and \$200 million of nongeneral fund resources for the residential component. This capital project is for the new academic building and includes a request for a \$40 million general fund appropriation and an \$80 million nongeneral fund authorization for a total project budget of \$120 million. The plan for the residential component will be handled under the university's restructuring authority and may precede the academic building to address increasing demand for on-campus housing that is a result of current enrollment growth trends.

#### Justification

##### Program Description:

This new 205,000 gross square foot facility will provide new facilities to house the entire College program within it including the Department of Marketing, Department of Management, Department of Hospitality and Tourism Management, Department of Finance, Department of Business Information Technology and Department of Accounting and Information Systems.

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sustain the existing enrollments and to support the existing planned growth to meet demand.

The plan for the Business Learning Community calls for a location in the North Campus Precinct. It is envisioned to be a three to four story facility, clad in a combination of Hokie stone, precast concrete panels and trim, and a combination of curtain wall glazing and punched opening windows.

The BLC provides space for faculty and graduate student offices and for advisors and other support staff. The BLC also provides spaces for study and informal experiential learning which can include students and mentors.

The university's strategic plan includes the following principle strategies that this important project will help to achieve:

- Increasing the number of our programs recognized as among the best internationally
- Ensuring competency in data analysis and computational methods as a component of general education for all students
- Developing an appropriate infrastructure for e-learning
- Developing an appropriate infrastructure for high performance computing
- Emphasizing translational research and scholarship
- Maintaining growth in research expenditures toward a target of \$680 million by 2018.
- Increasing graduate enrollment toward a target of an additional 1,000 students
- Creating meaningful partnerships with businesses and government entities to address complex problems by co-locating researchers and practitioners in "living labs"
- Increasing undergraduate involvement in meaningful research experiences and experiential learning (hands on minds on)
- Developing ways to integrate computational science/informatics and digital fluency for managing and analyzing complex data sets across a wide range of disciplines.
- Developing and implementing alternate pathways for the general education of all students.
- Continuing to investigate, develop, and utilize current and emerging technologies to enhance traditional classrooms, provide mobile access, and expand high-quality distance -learning opportunities.
- Identifying opportunities during construction and renovation to create flexible classroom spaces that fully support e-learning components.
- Pursuing quality-of-life initiatives in support of the university as a vibrant, dynamic, and sustainable workplace

#### Existing Facilities:

The College of Business occupies the 104,940 gross square foot Pamplin Hall and additional space in Wallace Hall plus rents space in the North End Center. This consolidation will bring Hospitality and Tourism Management and off-campus office space into this facility, and will replace the program's substandard dedicated commercial kitchen lab space currently located in Wallace Hall. Pamplin Hall was originally constructed in 1957 with an addition in 1987 and no major renovations since 1987. The facility condition index of the Pamplin Hall is 26 percent.

#### Funding Plan:

This capital project is for the new academic building and includes a request for a \$40 million general fund appropriation and an \$80 million nongeneral fund authorization for a total project budget of \$120 million.

The overall funding plan for the entire community calls for \$40 million of general fund support for the academic facility, \$80 million of private gifts for the academic facility, and \$200 million of nongeneral fund resources for the residential component.

The plan for the residential component will be handled under the university's restructuring authority and may precede the academic building to address increasing demand for on-campus housing that is a result of current enrollment growth trends.

#### Options Considered:

Options considered but rejected include leasing additional off-campus space which is costly and reduces program cohesiveness by distributing students, faculty and staff across several buildings and adjacent areas to campus.

#### Alternatives Considered

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#### Costing Methodology

The method for estimating costs includes: 1) using unit costs in the Bureau of Capital Outlay Management's Construction Costs Database updated April 2015 with a regional market multiplier and a multiplier for softs costs; and 2) comparables as shown in the CR-3. Both methods are escalated to a construction midpoint of 2019 at three percent.

On a total project cost basis, inclusive of design, construction, and equipment, the unit costs are \$585 per gross square foot. The unit construction costs of the project are \$435 per gross square foot, including self-performed construction work. The building types in this request are classroom and office in the Bureau of Capital Outlay Management's Construction Costs Database.

The University's project cost estimates are derived from a database of on-campus construction costs of comparable project types. Virginia Tech building construction reflects the high level of quality, durability and tradition that makes Virginia Tech a distinctive and memorable place for students. Our estimates also include the cost of technology, specialized instruction, and energy efficiency goals of the institution.

The building envelope will be comprised primarily of 'Hokie Stone' with precast concrete accents consistent with university standards as affirmed

by the Board of Visitors. The Virginia Tech Board of Visitors has directed that all new building projects and expansion projects built on the Blacksburg central campus must use Hokie stone as the predominate building material on all building facades. Brick, metal panels, and siding materials are not permitted as substitutions for Hokie stone. In maintaining the random ashlar stone pattern of our collegiate Gothic buildings, the university has explored a wide range of contemporary stone erection means, methods and systems. The most efficient system tested that meets erection, insulation and moisture protection requirements utilizes a four-inch thick nominal stone thickness with a two-inch nominal air barrier over moisture resistant sheathing. Stainless steel anchoring straps and load bearing shelf angles and stainless steel flashings comprise the structural support and flashings system, meeting our requirement for a 50-100 year enclosure life expectancy. Because the university owns the stone quarry, the quarrying and stocking of all the cut stone is carried as a project (soft) cost, and the construction budget carries all erection, final stone dressing, installation and intensive quality assurance inspection costs.

Mechanical equipment and building automation systems will be designed to maximize energy efficiency and minimize operations and maintenance costs. Mechanical equipment will be located inside and screened from view to maximize student use of the campus landscape. Electrical systems will support current academic technologies and increased student use of individual technology equipment. Effective use of exterior and interior glazing is necessary for energy efficiency lighting for academic work. Ceiling heights must be a minimum of 16 feet for sound attenuation in large lecture and assembly environments as required for effective pedagogy. Design priorities will include flexibility in classrooms and interior spaces to maximize the long-term programmatic functionality of the building. Building location and site design will focus on maintaining and creating that sense of place that is unique to Virginia Tech.

The University's role as the leading producer of technology intensive degrees relies upon a system of classrooms and instructional laboratories that support technology driven work in contemporary society. All buildings must have high-capacity wireless networks to support multiple devices (laptop computer, tablet computer, smartphone) used simultaneously by students and faculty to retrieve information and to communicate and to connect digitally with sites around campus and around the world. The use of electronic equipment by students and faculty requires dedicated power outlets corresponding to the seat/station count and power outlets in common areas. This requires automated audiovisual and classroom lighting controls, which also rely on wireless networks. The university operates its own communications network using primarily internet connectivity which requires accessible, climate controlled server rooms in lieu of the traditional phone closet. Because the communications infrastructure is installed by our own university operated auxiliary it is carried as a project (soft) cost outside of the normal construction budget.

Site development costs in this region are historically in the medium to high range and require deep foundations. This project will be one of the first to be located in the North Campus Precinct where site utilities do not currently exist. Providing power, steam, chilled water, gas, sanitary sewer, and storm water infrastructure will be costly and that cost is anticipated to drive up project cost. 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.

Summary of Business Learning Community Other Costs:

1. Hokie stone used as primary exterior building envelope material.
2. Building foundation deep caissons or piers to remediate unsound subsurface foundation conditions
3. Extensive subsurface rock excavation and removal.
4. Raised flooring systems throughout laboratories and support spaces for flexible use of electronic equipment
5. Specialized building slabs designed to eliminate ground vibration interfering with sensitive scientific equipment

**Agency Funding Request**

Phase	Year	Fund	Subobject	Requested Amount
Full Funding	2019	0100 - General Fund	2322 - Construction, Buildings	\$40,000,000
Full Funding	2019	0815 - 9(D) Debt Service - Construction Costs	2322 - Construction, Buildings	\$80,000,000
Total				\$120,000,000

**Project Costs**

Cost Type	Total Project Costs	Requested Funding	DGS Rec
Acquisition Cost	\$0	\$0	
Building & Built-in Equipment	\$81,000,000	\$81,000,000	
Sitework & Utility Construction	\$8,000,000	\$8,000,000	
<b>Construction Cost Total</b>	<b>\$89,000,000</b>	<b>\$89,000,000</b>	
<b>DESIGN &amp; RELATED SERVICE ITEMS</b>			
A/E Basic Services	\$8,960,000	\$8,960,000	
A/E Reimbursables	\$0	\$0	
Specialty Consultants (Food Service, Acoustics, etc.)	\$230,000	\$230,000	
CM Design Phase Services	\$1,330,000	\$1,330,000	
Subsurface Investigations (Geotech, Soil Borings)	\$189,000	\$189,000	
Land Survey	\$25,000	\$25,000	
Archeological Survey	\$0	\$0	

Hazmat Survey & Design	\$0	\$0
Value Engineering Services	\$0	\$0
Cost Estimating Services	\$50,000	\$50,000
Other Design & Related Services	\$460,000	\$460,000
<b>Design &amp; Related Services Total</b>	<b>\$11,244,000</b>	<b>\$11,244,000</b>
<b>INSPECTION &amp; TESTING SERVICE ITEMS</b>		
Project Inspection Services (inhouse or consultant)	\$1,550,000	\$1,550,000
Project Testing Services (conc., steel, roofing, etc.)	\$750,000	\$750,000
<b>Inspection &amp; Testing Services Total</b>	<b>\$2,300,000</b>	<b>\$2,300,000</b>
<b>PROJECT MANAGEMENT &amp; OTHER COST ITEMS</b>		
Project Management (inhouse or consultant)	\$990,000	\$990,000
Work By Owner	\$100,000	\$100,000
BCOM Services	\$10,000	\$10,000
Advertisements	\$0	\$0
Printing & Reproduction	\$0	\$0
Moving & Relocation Expenses	\$100,000	\$100,000
Non Built-In Data and Voice Communications	\$1,900,000	\$1,900,000
Signage	\$75,000	\$75,000
Demolition	\$0	\$0
Hazardous Material Abatement	\$0	\$0
Utility Connection Fees	\$0	\$0
Utility Relocations	\$850,000	\$850,000
Commissioning	\$1,200,000	\$1,200,000
Miscellaneous Other Costs	\$2,951,000	\$2,951,000
<b>Project Management &amp; Other Costs Total</b>	<b>\$8,176,000</b>	<b>\$8,176,000</b>
Furnishings & Movable Equipment	\$7,500,000	\$7,500,000
Construction Contingency	\$1,780,000	\$1,780,000
<b>TOTAL PROJECT COST</b>	<b>\$120,000,000</b>	<b>\$120,000,000</b>

**Capacity**

Cost Type	Unit of Measure	Units	Cost Per Unit
Acquisition Cost		0	\$0
Construction Cost	GSF	205,000	\$434
Total Project Cost	GSF	205,000	\$585

**Operating and Maintenance Costs (Agency)**

Cost Type	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
GF Dollars	\$0	\$0	\$2,441,576	\$2,514,823	\$2,590,268	\$2,667,976
NGF Dollars	\$0	\$0	\$0	\$0	\$0	\$0
GF Positions	0.00	0.00	16.17	16.17	16.17	16.17
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

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

**Supporting Documents**

File Name	File Size	Uploaded By	Upload Date	Comment
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<a href="#">09-CR-3 BLC.xls</a>	625,664	Rob Mann	6/13/2015	CR-3_Business Learning Community
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**Workflow History**

User Name	Claimed	Submitted	Step Name
Rob Mann	05/18/2015 11:06 PM	05/18/2015 11:06 PM	Enter Capital Budget Request
Rob Mann	05/18/2015 11:06 PM	05/18/2015 11:07 PM	Continue Drafting
Jennifer Hundley	06/12/2015 05:13 PM	06/12/2015 05:42 PM	Continue Drafting
Rob Mann	06/13/2015 09:54 AM	06/13/2015 10:03 AM	Continue Drafting
Rob Mann	06/13/2015 10:15 AM	06/13/2015 10:16 AM	Agency Review Step 1
Rob Mann	06/13/2015 01:04 PM	06/13/2015 01:06 PM	Agency Review Step 1
Rob Mann	06/13/2015 07:31 PM	06/13/2015 07:35 PM	Agency Review Step 1
Bob Broyden	06/14/2015 02:18 PM	06/14/2015 02:18 PM	Ready for DPB Submission
Ruth Anderson	06/15/2015 03:48 PM	06/15/2015 03:49 PM	DPB Review
Ruth Anderson	06/18/2015 10:59 AM	06/18/2015 10:59 AM	DPB Review
Anne Smith	06/19/2015 03:35 PM	06/19/2015 03:35 PM	DPB Review
Rob Mann	06/19/2015 03:41 PM	06/19/2015 03:41 PM	Agency Review Step 1
Bob Broyden	06/19/2015 03:51 PM	06/19/2015 03:51 PM	Ready for DPB Submission
			DPB Review