



DEPARTMENT OF
GENERAL SERVICES

BUREAU OF CAPITAL OUTLAY MANAGEMENT

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BCOM Newsletter

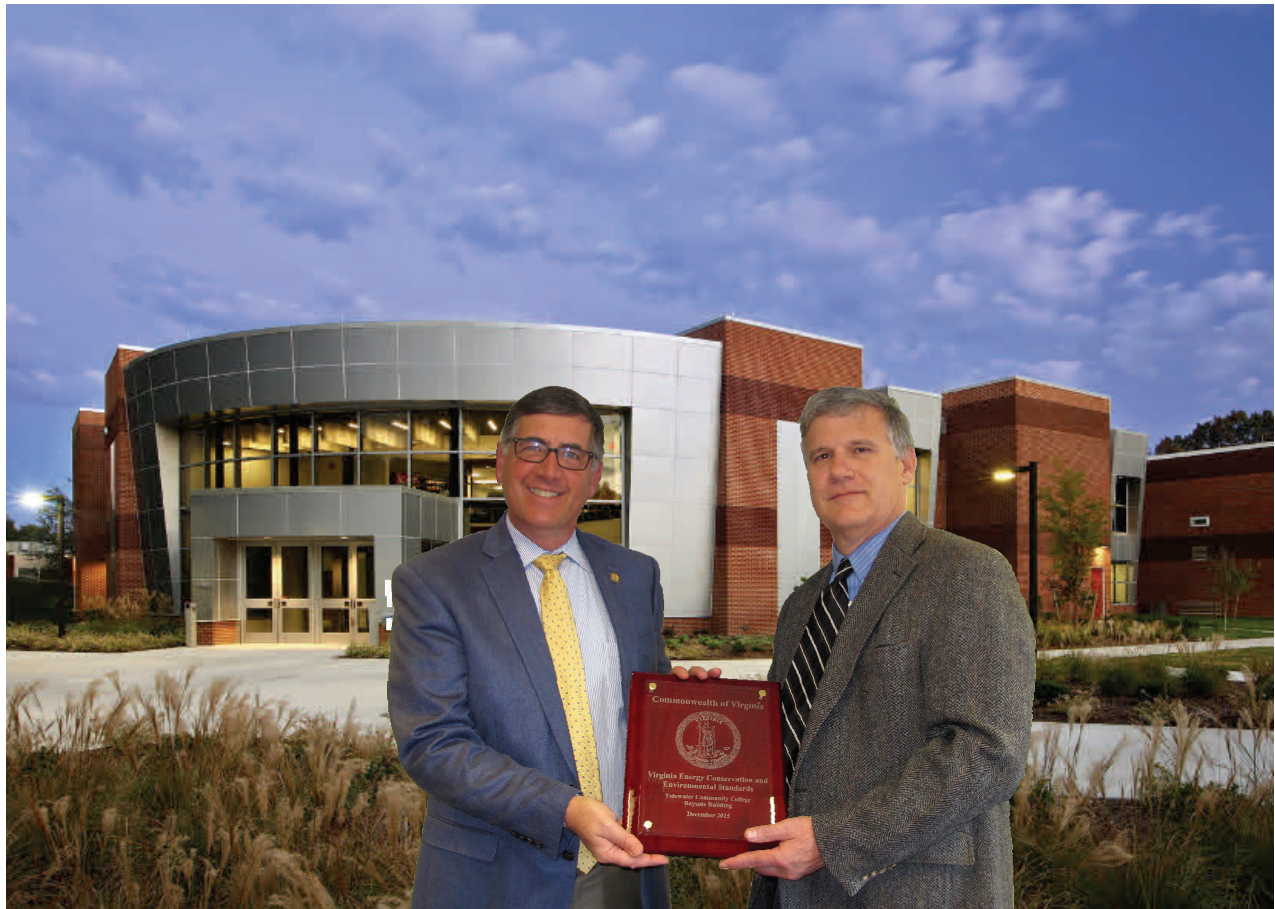
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Tidewater Community College's Bayside Building First Public-Use Building Completed Using Virginia Energy Conservation and Environmental Standards



VCCS Associate Vice Chancellor for Facilities Management Services, Bert Jones, accepting VEES plaque from Bureau of Capital Outlay Management Director, Mike Coppa.

(Background photograph courtesy of Hourigan Inc., October 2015.)

Tidewater Community College's Bayside Building Achieves VEES Certification

The newly renovated student services center at Tidewater Community College is the first public-use building in the Commonwealth completed using standards developed in Virginia to promote energy efficiency and conservation in government facilities.

DEB and BCOM developed the Virginia Energy Conservation and Environmental Standards (VEES) as an alternative to other international green building certification programs such as Leadership in Energy and Environmental Design (LEED) and Green Globes. VEES assures energy conservation and environmental performance standards including the site development, land use, indoor environmental quality, water conservation, and efficiency of energy and resources principles are applied in a consistent and cost-effective manner. Rather than a point system, VEES establishes minimum standards for each of the principles that must be met.

"VEES is an alternative approach to green building principles that allows us to raise the bar on energy efficiency and conservation while keeping in mind that no two projects are exactly alike," Department of General Services Director Christopher Beschler said. "This built-in flexibility allows us to construct and renovate state buildings in a manner that is environmentally friendly, energy efficient and cost effective."

The VEES method references the International Green Construction Code but takes into consideration the unique and regional aspects for green building design in Virginia. DGS evaluates each project with the agency or institution and closely matches the VEES requirements with the building's intended use.

The High Performance Buildings Act, which became Virginia law in 2012, requires executive branch agencies to meet VEES, LEED or Green Globes standards in all new public buildings where construction is greater than 5,000 square feet or in renovations when the cost to renovate exceeds 50 percent of the building's value.

Renovations to the Bayside Building on TCC's Virginia Beach Campus involved converting the former campus library, constructed in the 1970s, into a 43,000-square-foot building housing student services, computer and math labs, and more. The project included both interior and major exterior renovations. Existing structure, walls and metal roof were used where possible to reduce the need for new materials, and local and recycled materials were used where required. Incorporation of natural light and LED light fixtures were among green practices employed. The project received its certification for meeting the VEES requirements in December. RRMM Architects of Chesapeake designed and implemented the renovation.

"VEES is an effective method that allowed us to achieve our energy efficiency goals while avoiding some of the administrative costs associated with other green building programs," said Bert Jones, Associate Vice Chancellor for Facilities Management Services for the Virginia Community College System.

The renovation is in keeping with TCC's goal of promoting student engagement and success by providing a true college experience, said Matthew Baumgarten, Chief Operating Officer for Facilities at TCC. "The new Bayside Building represents a smart use of materials and energy," he said. "And it's a beautiful building that is welcoming to students and guides them to the resources they need." □

Stair Pressurization System Acceptance

The 2012 VUSBC (VCC Section 403.5.4) requires a smoke proof enclosure in every required exit stairway serving floors greater than 75 feet above fire department vehicle access to comply with VCC 909.20 and VCC 1022.10. VCC Section 909.19 requires the system be inspected and tested prior to issuance of a certificate of occupancy. The typical compliance path for VCC 909.20 is in the selection of VCC 909.20.5 Stair pressurization alternative. When applying the stair pressurization section of the building code, the A/E shall consider the design, construction, and system acceptance testing as a complete package for the State Building Official (SBO) review and approval.

Part 1 – Design: The design of the stair pressurization system begins with the requirements to maintain a positive pressure inside the stair between 0.10 inches and 0.35 inches of water column. This pressure differential is measured with all doors closed and latched. The stair pressurization system shall be an independent system, and operate under normal and stand by electrical power. The stair pressurization system is activated by smoke detectors installed at each floor level at the entrance to the stair. The stair pressurization system is also to be activated during a loss of normal power; an approved stand by power system is to be provided. Application of NFPA 70, The National Electrical Code Article 701.12 & VCC 909.20.6; the system is to operate at required performance levels within 60 seconds of power disruption. All power wiring, control wiring, and equipment shall be protected within an enclosure with the same fire resistance rating as the stairway enclosure.

Other factors to be taken into consideration when establishing the stair pressure set point is the operation of the fire doors entering the stair. VCC 1008.1.3 requires the door latch to release when subjected to a maximum 15 pound force, the door set into motion when subjected to a maximum 30 pound force and the door the swing to full open position when subjected to a maximum 15 pound force. 2010 ADA-ASAD 404.2.8 requires the door to close from a full open position to a position of 12 degrees from the latch in a minimum of 5 seconds. Too high a stair pressure set point negates the ability for the doors to perform in a compliant manner. Where exit stair doors discharge into a lobby or exit passageway; a door operator is typically required to achieve compliance with VCC 716.5.9 door closing and latching.

Part 2 – Construction: A stair pressurization system requires the stairway to be complete and free of all construction materials. All doors shall operate, latch and open when the pressurization fans are running with the forces prescribed in the code. Smoke detectors required for the activation of the system shall be located outside each door to the stairway. The construction of the duct system shall not include fire dampers or smoke dampers. Backdraft dampers are permitted, but shall operate within the sequence of operation. All controls shall be connected to the emergency power system. A separate control panel with a comprehensively labeled faceplate shall be located in the fire command center. The pressurization fans shall be tested, balanced, and controlled as specified by the Contract Documents. Changing or revising the sequence of operation during the construction phase requires submission, review and approval by the SBO.

Part 3 – Acceptance Testing: A separate SBO inspection specifically for the stair pressurization system shall be scheduled after the Commissioning Agent (Cx) and the engineer of record (A/E) have reviewed and approved the system. The SBO substantial completion inspection of the stair pressurization system includes an inspection of the fire-rated enclosure, doors, door hardware, door latching and smoke detector locations. In addition, a timed sequence of the fan operation under normal and emergency power is observed by the SBO inspection team.

Stair Pressurization System Acceptance (cont.)

The SBO will observe the following tests to confirm the stair pressurization system is operating in compliance with VCC 909.20:

- Observation of door operation with stair pressurization system off
- Observation of stair pressurization system operation as initiated by smoke detector and immediate loss of normal power (standby power)
- Observation of stair pressurization system operation as initiated by smoke detector and while under normal power
- Observation of stair pressurization system as initiated at the fire fighter's stair pressurization control panel
- Observation of door operation with stair pressurization system on

The Contractor should schedule the SBO inspections to include the regional state fire marshal representative, A/E representative, fire alarm contractor, electrical contractor, the mechanical contractor. A certified air balancer with pressure differential meter and pound-force gauge for the door forces, and sufficient staff to prevent stairwell from being used during the test shall be present. Meters and gauges must have been calibrated within the past year.

In conclusion, a complete stair pressurization system begins at the design and selection of the system type, followed by the quality of the construction, and the final testing and acceptance of the system by the SBO. □

VCCO Certifications

Congratulations to the following individuals who successfully passed the VCCO Certification Exam in February:

- **Brandon Brown with the Virginia Military Institute**
- **Rob Johnston with the University of Mary Washington**
- **Caprice White with the City of Portsmouth**



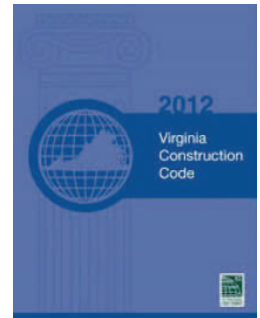
Virginia Construction Contracting Officers are state and local government employees who have completed the necessary training and successfully passed a multi-part examination focused on state procurement law, policy and procedures. VCCOs perform several key functions in delivering projects including the procurement of professional services; the receipt, opening and review of bids; and in some cases the approval of CO-8 forms for recommending the award of construction contracts.

For more information on CPSM and VCCO seminars, visit the [Seminars](#) page on the Bureau of Capital Outlay Management's website. □

Emergency and Stand-by Power Systems Requirements **(VCC Section 2702)**

2012 VCC Section 2702.1 requires emergency and stand-by power systems to be installed in accordance with NFPA 110 (Emergency and Standby Power Systems) and NFPA 111 (Stored Electrical Energy Emergency and Standby Power Systems).

VCC Section 2702.1.1 requires stationary emergency and stand-by stationary generators to be listed in accordance with UL 2200, the UL Standard for Safety titled Stationary Engine Generator Assemblies.



In addition, VMC Section 915 requires stationary generators to be installed in accordance with NFPA 37.

Based on the above, project specifications for emergency and stand-by stationary generator assemblies shall (1) require the generator assemblies to comply with and be installed in accordance with NFPA 37 and NFPA 110 and (2) require emergency and stand-by stationary generator assemblies to be listed in accordance with UL 2200. Note that a statement in the specifications such as “comply with UL 2200” is not consistent with the VCC requirement and may be misinterpreted by the Contractor and result in a non-code compliant installation.

The listing of the generator assembly shall be by a nationally recognized testing agency such as UL, Intertek, ETL, etc. This is one instance where the listing standard is developed by UL and where the listing can be provided by other testing agencies.

For exterior locations, NFPA 110 and UL 2200 include requirements for the weatherproof enclosure, which means that the weatherproof enclosure is part of the UL 2200 testing and listing. Requirements for liquid and gaseous fuel supplies are also included in NFPA 37, NFPA 110, and UL 2200, which means that the fuel supply is also part of the UL 2200 testing and listing.

Using UL listings as examples of listings, all stationary generators are listed under UL Guide FTSR. Under this guide, the combination of a certified engine generator enclosure (for outside generator locations) and an engine generator are complete overall product assemblies that have been investigated by UL and identified by the FTSR “Certification Mark for Engine Generators” on the outside of the engine generator enclosure or weather housing.

In addition, there is also a separate UL listing for the generator enclosures (also known as weather housings), which is UL Guide FTTP (Engine Generator Enclosures - Construction Only). These enclosures are listed for use with specific generators. If an enclosure has not been identified for use with specific generators as part of the certification, then the effect of the enclosure on the generator operation has not been investigated by UL. These effects include resistance to the elements and effects of the enclosure on the operating temperature of the generator.

Consult the nationally recognized testing agencies for their specific listing requirements. □

Transmittal Forms

Standard Transmittal Form

Agencies and their design consultants are encouraged to use the standard transmittal form for project review submissions. This form, [DGS-30-380](#), is available from the [DGS Forms Center](#). This form serves as a checklist of key submittal requirements and also helps to assure documents are properly identified. Improperly labelled submittals may be incorrectly logged into the Bureau's tracking system and/or misclassified in the Bureau's document management system, which may cause a delay in initiating a review. Please refer to the Submittal Guidance article in the [May 2015 Newsletter](#) for additional information.

Change Order Transmittal Forms

A new, specialized transmittal form has been developed for agency and consultant use when submitting Change Orders to BCOM which require approval by the Director of the Department of General Services, serving as the Governor's Designee. The new transmittal form has been included as a new tab within the latest versions of the A/E Change Order and Construction Change Order forms. (See CPSM Forms Update below.) The Change Order transmittal form identifies additional documentation required when these Change Orders exceed certain thresholds. □

CPSM Forms Update

The following CPSM forms were recently revised and are available for download:

- [DGS-30-092](#) (CO-11) **Construction Change Order** (includes the CO-11a) (Revised 02-16)
- [DGS-30-096](#) (CO-11a) **Constr. Change Order Justification** (incl'd w/above) (Revised 02-16)
- [DGS-30-100](#) (CO-11ae) **Architect/Engineer Contract Change Order** (Revised 02-16)
- [DGS-30-104](#) (CO-12) **Schedule of Values and Certificate for Payment** (Revised 01-16)
- [DGS-30-152](#) **Checklist for Beneficial Occupancy** (Revised 02-16)
- [DGS-30-232](#) **Building Systems & Equipment Checklist** (Revised 02-16)

Form Number	Form Title	Rev	Effective Date
DGS-30-000	Capital Outlay Management Forms Master List	02/16	02-16
DGS-30-092	Construction Change Order	02/16	02-16
DGS-30-096	Constr. Change Order Justification	02/16	02-16
DGS-30-100	Architect/Engineer Contract Change Order	02/16	02-16
DGS-30-104	Schedule of Values and Certificate for Payment	01/16	01-16
DGS-30-152	Checklist for Beneficial Occupancy	02/16	02-16
DGS-30-232	Building Systems & Equipment Checklist	02/16	02-16

- Please download Form **DGS-30-000**, [Capital Outlay Forms Master List](#) for a complete listing of the latest version of each CPSM form.
- All current forms may be downloaded from the [DGS Forms Center](#).
- If a prior version of a form is required, please contact capout@dgs.virginia.gov. □