

Office of the University Building Official

July 2017 – June 2018

Annual Report



**University Building Official
Benjamin Hays, PE, LEED AP, CBO**

Overview

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Mission

The Office of the University Building Official promotes a high quality, healthy, safe, and accessible built environment for the University community by way of our technical expertise and our professional, courteous, and timely service.

Vision

We strive to be a valued and creative partner in the ongoing physical development of the University.

Highlights

The Office of the University Building Official has worked energetically on behalf of the University this past year. The number and complexity of construction projects that shape our work has continued to grow along with the Board's capital plan. Throughout the year our team:

- Provided extensive assistance to several unique University-wide events such as the *Concert for Charlottesville* and *University Bicentennial*.
- Performed record numbers of technical reviews, inspections, and permits to facilitate construction project schedules.
- Reorganized and added staff to implement new software in the coming fiscal year. Both changes were executed to better serve our customers and resulted in a net reduction in our unit's operating budget.
- Published the 2018 Facility Design Guidelines which included more than 100 proposed suggestions from the Provost's Office, Emergency Preparedness, the Architect's Office, Facilities Management, and the Health System.
- Collaborated with the Building Officials from other "Level 3" institutions within the Commonwealth at Virginia Tech and William and Mary as well as with the State Fire Marshall's Office.

Introduction

Duties

The Office of the University Building Official is responsible for ensuring building code compliance at the University. To accomplish this, we have a team of experienced architects, engineers, inspectors, and technicians. In addition to this function, our team serves as a technical asset to the University, regularly collaborating with individuals, departments, and outside organizations.

The Virginia Statewide Uniform Building Code outlines specific core duties of our office including:

- Reviewing drawings for conformance with federal, state, and University codes and standards.
- Participating in the University's Value Management process for certain capital construction projects.
- Issuing building permits for new construction, renovations, demolition, and temporary structures such as stages, membrane structures, and portable buildings.
- Inspecting construction projects for compliance with fire safety requirements, accessibility guidelines, and structural, mechanical, electrical, and plumbing codes.
- Issuing certificates of occupancy for new buildings and approvals for re-occupancy following renovations.

The University's Cornerstone Plan outlined collaboration as an institutional hallmark. We view our work – including the core duties outlined above – in a highly collaborative manner. To accomplish this, we work together with a diverse group of project managers, design architects and engineers, and faculty and staff from across Grounds to ensure a safe and exceptional built environment.

Background

To help ensure the health, safety, and welfare of the University residents, the Office of the University Building Official (OUBO) was created as part of the 2006 [Higher Education Restructuring Act](#). As an office, OUBO is charged with administering the Virginia Statewide Uniform Building Code at UVA. Our purview includes all construction activities on the University's Central Grounds, the Health System, the College at Wise, and other UVA-owned properties around the state. Prior to 2006, building code compliance at UVA was handled by the [Board of Capital Outlay Management](#) in Richmond.

Effective August 25, 2017, then-President Teresa Sullivan designated Benjamin Hays as the University Building Official. The Restructuring Act and Management Agreement between the University and the State of Virginia stipulates that the building official reports directly and exclusively to the University's Board of Visitors. For day-to-day operations, the building official additionally reports to the Senior Vice President for Operations.

2017-2018 by the Numbers

During FY'18, OUBO:

Reviewed

1156 design documents

Processed

318 building permits

Performed more than

1225 construction inspections

and Evaluated

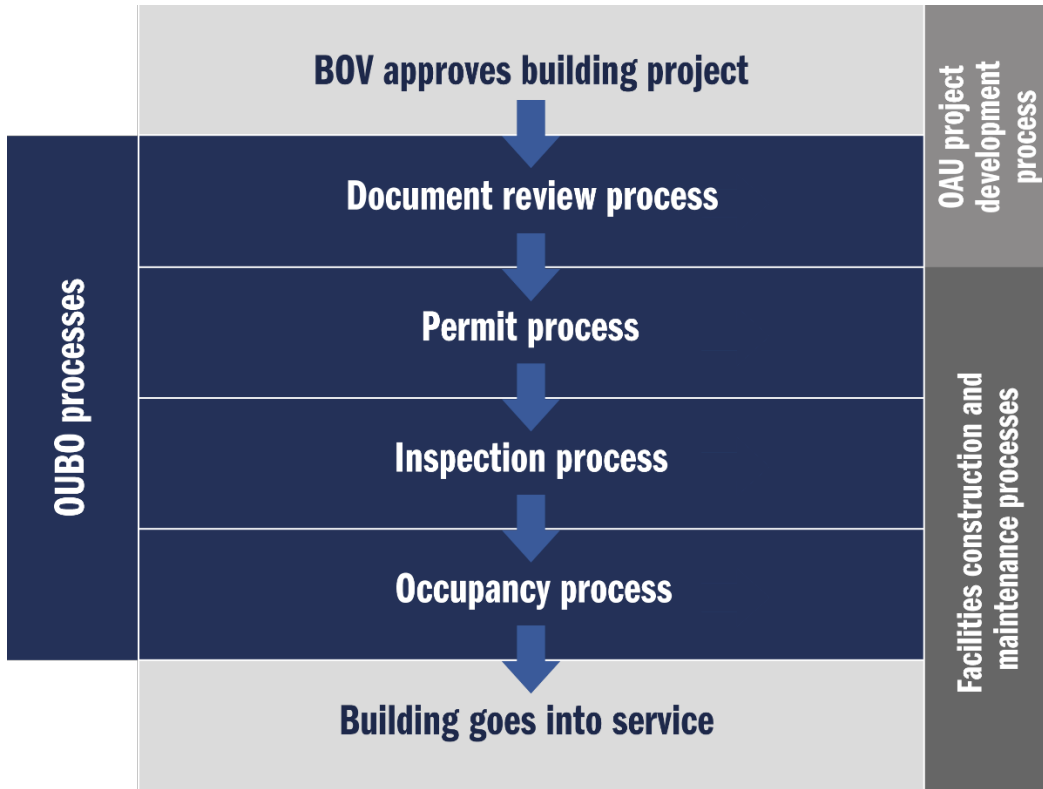
290 requests for occupancy

for ongoing design and construction totaling

\$986,079,200¹

¹ Ongoing design and construction total from the Facilities Management 2016-17 annual report

Our Work: Overview



Our work begins soon after the Board of Visitors approves a new building project. As soon as the design team is selected, we begin discussing technical questions and reviewing design documents for compliance with federal, state, and University codes and regulations. We work closely with the Office of the Architect and Facilities Management throughout the design and permitting processes to ensure that building projects are ready for construction.

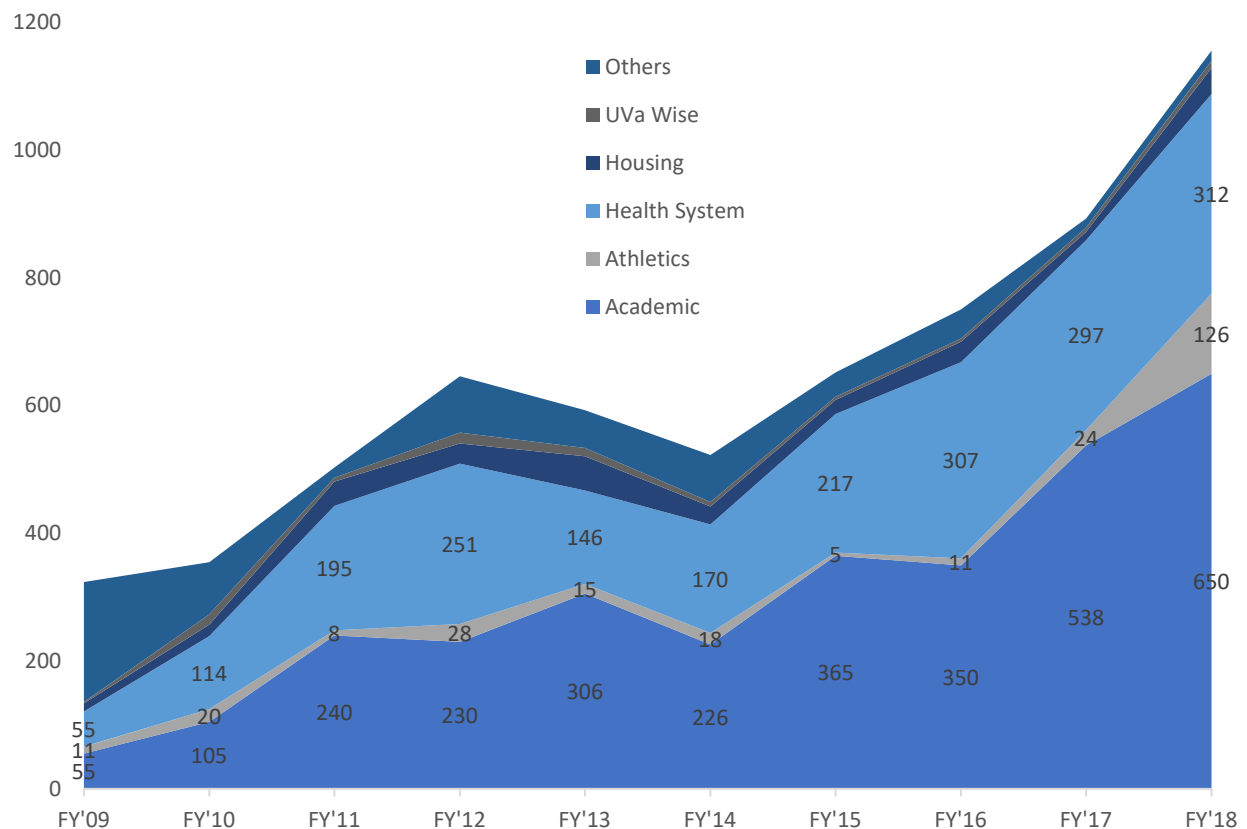
Once construction begins, our architects, engineers, and inspectors regularly visit construction sites around Grounds to ensure the built work matches the plans and specifications. We continue to collaborate with Facilities Management to resolve issues that arise in the field and we evaluate occupancy to ensure a smooth transition and turnover to the end users.

Our Work: Reviewing Design

1156 design documents

This year our team reviewed a tremendous number of design drawings and submittals, up nearly 30 percent over the previous year and 50 percent over two years. These numbers correspond broadly to recent increases in the capital and non-capital program at UVA, where “in-place” capital construction has increased more than 50 percent over two years.²

More broadly, the number of submittals our team reviews when compared to a decade ago - seen in the chart below - owes to a changing relationship with project teams. Historically code officials have followed a regulatory model. Our team subscribes to a collaborative model of achieving code compliance. This benefits the University in obvious ways and is reflective of the current design-build and construction-management centered models of project delivery.³



² "In place" capital construction totals can be found In Facilities Planning and Construction's 2016-17 annual report (with 2017-18 numbers from this year's draft report).

³ For more on this philosophical shift, see White Paper titled Realizing High-Performance Buildings by Engaging Code Officials Early in the Process, published by the National Council on Building Codes and Standards. 2018.

Our Work: Processing Permits

318 building permits

Once design for a project is complete, permits can be issued, and construction can begin. This year our team processed a record number of permits. We work with design teams and project managers to offer partial or early site permits, particularly on fast track projects that benefit from phased construction.

Approximately 10 percent of the permits we process are for “temporary” installations – stages, inflatables, and miscellaneous structures – most of which are not tied to recoverable work orders. This year we permitted two of the largest “temporary” installations in recent history: the stage of the *Concert for Charlottesville* and all the various structures, including the three-story video truss, for the *University Bicentennial* celebration. These projects were exhilarating to work on given their respective schedules and technical complexities.



Figure 1: Temporary structures being erected for the University Bicentennial celebration

Our Work: Inspecting

1225 construction inspections

Construction is where design dreams start to become reality. Our team inspects most every stage of construction from foundations and framing, through the installation of mechanical, electrical, and fire-safety systems, and all the way to final grading and finishes for accessibility. As projects take shape, modifications and refinements are frequently proposed. When this happens, we work with both the design and construction teams to ensure any updates meet building codes and do so in a way that does not impact the overall project schedule.



Figure 2: McCormick Road Residence Halls (here, Bonnycastle) under construction

Our Work: Evaluating Occupancy

290 requests for occupancy

As construction wraps up, building occupants are eager to move into and use their new space. At that stage, we review final inspections, third party certifications, and a wide variety of reports to recommend partial, temporary, and permanent occupancy. As with our reviews and permits, occupancy approvals often are partial, reflective of changes in the construction industry. We strive to collaborate with the construction and ownership teams at this stage to ensure that building use is both timely and safe.



Figure 3: Davenport Stadium was one of many projects receiving occupancy this fiscal year

Our Work: Current & Future

\$986,079,200+ in design & construction

Looking to the future, we anticipate plenty of exciting work. The Board approved capital plan continues to grow at a steady pace with major new re-development underway along Brandon Avenue, the Emmet-Ivy intersection and Ivy Mountain. Master planning is in the works for the Athletics Precinct and Fontaine Research Park. And this is on top of the roughly one billion dollars of ongoing design and construction work that we continue to review, permit, inspect and evaluate for occupancy.



Figure 4: Rendering of the Ivy Mountain Musculoskeletal Center, one of many new buildings proposed at Ivy Mountain

Our Goals: Collaboration

Publishing the FDG

Each year we set two or three high-level goals as a unit. This year one of our major goals was the publication of the 2018 Facility Design Guidelines. In addition to national and state codes and standards, all buildings at the University are designed to comply with the University's own Facility Design Guidelines (FDG). The document represents a collection of standards that has been developed over decades by dozens of stakeholders from around the University.

This year, our team considered more than 100 proposed changes from the Provost's Office, Emergency Preparedness, the Architect's Office, Facilities Management, and the Health System. In addition to continuing to streamline the document, the 2018 FDG includes the newly developed Green Building Standards which grew out of the Board's commitment to sustainability.



Figure 5: Solar panels at the Bookstore are indicative of UVA's commitment to sustainability, represented in the 2018 FDG

Our Goals: Customer Focus

Facilitating Project Schedules

Our office publishes timelines by which we review documents during phased design. Depending on the phase, our reviews are completed within five, ten, or fifteen days. At any one time, we have between 30 and 50 sets of documents in our review queue. Notwithstanding the large increase in the number of reviews, we met our published review targets 99 percent of the time during FY'18. This exceptional rate of achievement allows project managers and customers a high degree of certainty when scheduling work with our office.

This year we also aimed to facilitate project schedules through by increasing cross training and testing new inspection methods. Several of our engineers and architects attended technical and life-safety training in areas outside of their primary discipline. This allows our team to be more nimble in both the review and inspection processes. We also began using new construction management software BIM 360 at the University Hospital Expansion (UHE) project. After some initial testing, we have fully adopted BIM 360 as our inspection tracking method at the UHE project, which will allow for expedited occupancy and turnover of the plinth and tower in 2019 and 2020.



Figure 6: The University Hospital Expansion project, where our office is using innovative inspection methods

Architects, Engineers, Inspectors, & Technicians

Our office is made up of licensed professional architects and engineers as well as certified inspectors and document technicians. While the core makeup of our team was prescribed by the restructuring act of 2006, we have continued to evolve in response to customer and program needs. If you were to stop by our office, you would find:

Benjamin Hays, PE, SE, LEED AP, CBO – Building Official

Benjamin Hays is the University Building Official and Senior Civil & Structural Engineer for the Office of the University Building Official (OUBO). As Building Official, he directs the team of architects and engineers who are responsible for administering code compliance and providing technical review for all new construction and renovation work at UVA's Central Grounds, the Hospital, College at Wise, and Blandy Experimental Farm. He additionally provides review oversight for all civil and structural engineering works at UVA. Ben is a regular lecturer in the School of Architecture with expertise in structures and the history of building technology.



Ben began his professional career as a design engineer in Los Angeles. His work there included historically-sensitive seismic upgrades to existing buildings, evaluations of film studios and technical campuses, and the design of high-end contemporary structures. He moved to Virginia in 2009 and expanded his design portfolio to include bridges, waterfront structures, and municipal buildings. Ben joined OUBO as the Senior Civil & Structural Engineer in 2011 and began teaching in the School of Architecture in 2014. His engineering work and historical-technical writing have won awards from professional societies and in research competitions.

Ben holds civil and structural engineering licenses in both Virginia and California, is a nationally ICC Certified Building Official, and is a LEED Associated Professional. He is a member of numerous professional organizations including the American Society of Civil Engineers, the Southeast Chapter of the Society of Architectural Historians, and the Construction History Society of America, where he serves on the Management Committee.

Ben and his wife Emili have designed and restored several houses on both coasts and are actively engaged in the interests of their three children. Most weekends you will find Ben in his woodland garden, running on local trails, or hiking in the mountains with his family.

Scott Clough, PE, LEED AP, CBO – Electrical Engineer

Scott joined OUBO as Senior Electrical Engineer in January 2014. Prior to joining UVA, he worked as a Senior Project Manager in Ohio. He has 19 years of engineering experience including consulting, peer review, standards, and electrical design for education, healthcare, hospitality, and utility projects. At OUBO, he reviews plans and specifications and performs inspections for electrical and fire alarm systems. He also serves as in-house consultant for electrical systems, lighting, fire alarm, and value management studies.



Scott is a registered Professional Engineer in Virginia and five other states. He is licensed by Virginia DHCD and ICC as a certified building official, electrical plans examiner, and commercial electrical inspector. He is also NICET Level 1 certified for fire alarm systems.

Scott is a member of Facilities Management Fire & Life Safety Committee, the FP&C Safety Committee, and the Light Pollution Task Force. He is a LEED Accredited Professional and a member of the Institute of Electrical and Electronics Engineers (IEEE).

David Cooper, CBO – Fire Protection Engineer

David joined OUBO as a fire protection engineer in June 2014. Prior to joining UVA, he spent 10 years as the building official for Fauquier County. He has 30 years of experience in the construction field as a field inspector, plan reviewer and general code compliance reviewer. His experience includes field inspections for all building trades, plan review and oversight of all processes of a county building department. Additionally, he has spent several years with Virginia's Fire Marshal's office where he performed construction and general fire safety inspections for existing and new construction of state owned universities and hospitals. At OUBO, his primary responsibility is plan review and consultation related to fire safety provisions including fire suppression, egress and fire resistance rated construction.



David holds the following certifications from Virginia Department of Housing and Community Development: certified building official, fire protection plans examiner, commercial plans examiner, commercial electrical plans examiner, combination commercial inspector; which includes commercial building, electrical, plumbing, and mechanical inspector certifications; combination residential inspector; which includes residential building, electrical, plumbing and mechanical inspector certifications, fire protection inspector, elevator inspector, and amusement device inspector. David is also a member of the Virginia Building Code Official Association and National Fire Protection Association.

Kathy Grove, AIA, LEED AP, CBO – Architect

Kathy joined OUBO as senior review architect in April 2012. She provides review, in-house consultation, inspections, and value-management input for architectural projects with regard to code and ADA compliance, constructability, and compliance with UVA's facilities design guidelines. In 2018, Kathy expanded her role to include work as sustainable design coordinator facilitating implementation of UVA's new Green Building Standards. She is a member of UVA's Environmental Stewardship Subcommittee and co-chairs that committee's Clean Water Working Group.



In 2018, Kathy completed bi-annual Virginia DHCD and ICC certification as a certified building official, licensed commercial building inspector, and licensed commercial building plans examiner. In 2017, she earned a certificate in NFPA 101 Life Safety for Health Care Occupancies. This summer she has mentored OUBO's summer intern focusing on accessibility issues with design and construction of University projects.

Kathy has over 25 years of professional experience in architectural design including 20 years as a director/project manager specializing in sustainable design, consulting and construction of institutional, mixed-use and residential projects. She has been project manager of multiple LEED Platinum and Gold certified projects and has presented at the national AIA and Greenbuild conventions. Kathy is a registered professional architect in Virginia, a member of the American Institute of Architects (AIA), and a Leadership in Energy and Environmental Design (LEED) Accredited Professional.

Ron Herfurth, PE, CBO – Mechanical Engineer

Ron joined OUBO as senior mechanical engineer in 1991. He joined the University of Virginia in 1988. At OUBO, he reviews mechanical and plumbing plans, specifications and participates in inspections of mechanical and plumbing systems. He also serves as in-house consultation for mechanical systems and value management studies. He is a standing member and chairman of an interdepartmental Facilities Management HVAC Committee.



Ron is a registered professional engineer in Virginia and holds DHCD certification as a building official, mechanical plans examiner, plumbing plans examiner, commercial energy plans examiner, commercial mechanical inspector, commercial plumbing inspector, and commercial energy inspector.

Ron is a member of American Society of Heating Refrigeration and Air-Conditioning Engineers and Virginia Plumbing and Mechanical Inspectors Association.

Nathan Lawson, EIT – Civil & Structural Engineer

Nathan joined OUBO as the associate civil engineer in September 2016. Prior to joining the University, Nathan worked in Northern Virginia as a consultant performing reserve studies, facility condition assessments, and construction administration. In 2017, Nathan accepted the opportunity to broaden his position as the associate civil/structural engineer. At OUBO, he reviews plans and specifications and conducts inspections related to civil and structural engineering. He provides in-house consultation for small structural engineering related projects. Additionally, he conducts inspections pertaining to fire safety.

Nathan is certified through ICC as a commercial building inspector, building plans examiner, and fire inspector I. He continues to fulfill the time requirement towards earning a Virginia professional engineering license.



Richard McDaniel, CBO – Fire & Life Safety Inspector

Richard has served OUBO as a contract fire and life safety inspector since 2008. In that capacity he inspects new building projects in both the academic and medical divisions to ensure compliance with fire safety requirements of approved construction documents.

Prior to UVA, Richard worked for the State Fire Marshall's Office where he performed various fire safety duties which included inspections for both state and non-state-owned colleges and universities, hospitals, and other public buildings.



Cory Paradis – Summer Intern, Accessibility

Cory Paradis joined OUBO in June 2018 as a summer intern. Cory brings a unique perspective, and a lifetime of first-hand ADA experience to OUBO. He works closely with Kathy Grove to help ensure ADA code compliance while also providing valuable insights into how the ADA regulations impact those who rely on them to navigate daily life. His duties include reviewing site plans and architectural plans, assisting during site inspections, and consulting with project managers and CAMs on various projects. Cory's other responsibilities include working with UVA Facilities Management Project Services on a Grounds Improvement Fund proposal to replace brick walkways near the Rotunda, working with GES to update their accessibility map, and serving on the Barrier-Free Access Committee (BFAC).

Prior to joining OUBO, Cory excelled in his time as a student at the University. He transferred from community college directly into the Architecture School's Urban Planning program. Outside of required coursework, he was also a student and teacher's assistant in an Inclusive Design architecture studio, where he provided feedback on students' designs and challenged them to think critically about designing for those with disabilities. Cory also appeared recently in the Chronicle of Higher Education, where he discussed the accessibility challenges faced in his time as a student and the ongoing efforts being made to improve access and was also profiled in an article by UVA



Today. In May 2018, Cory graduated with honors from the Urban Planning program and received the Z Society's Edgar F. Shannon Award for the Architecture School, an award given to the best student in each school, chosen by peers, faculty, and staff. Cory is dedicated, passionate, and excited to join the ongoing efforts to improve accessibility across Grounds. He also plans to return for graduate school in the next few years.

Ruta Vasiukevicius – Document & Workflow Manager

Ruta joined the OUBO staff in the role of document & compliance analyst in 2018. She had worked in the construction document archives, now part of Geospatial Engineering Services, with Garth Anderson since 2001.

In the early 1980s, Ruta studied and worked in Interior Design and Museum Exhibit Design in Boulder and Denver, Colorado. In 1986, she and her husband, a radio astronomer, moved to central New Mexico to be near the Very Large Array Radio Telescope, where they lived for a dozen years and raised a family. Design work was scarce in their small New Mexico town, so she switched gears and taught ceramics at the local community college, supplied a local gallery with her work, and worked part-time at the public library. The family enjoyed extended sabbaticals in the mountains of Japan and the outskirts of Paris. In late 2000, they re-settled in Charlottesville.

When at home, she enjoys gardening, cycling, and exploring the natural world. Recently, she and her husband joined a small group of outdoor enthusiasts and naturalists to hike the Grand Canyon from the north to the south rim over five days in May 2017.



Robert Waite, AIA, CBO – Architect

Bob joined OUBO as Senior Review Architect in December 2008. He has over 25 years of professional experience in architectural design, project management and code compliance inspections. He has experience in all types of building uses including health care facilities, residential and dining facilities, athletic facilities and classroom and laboratory facilities.

At OUBO, Bob manages and distributes the reviews for all projects that the office reviews. He coordinates with project managers and helps them schedule the reviews for their projects. He assigns the processing of all building permits. He provides ADA compliance inspections and expertise when needed and assists in reviews for all disciplines code compliance, constructability, ADA compliance, and compliance with UVA's facilities design guidelines. He also assists the University Building Official on an as-needed basis. Bob is a registered professional architect in Virginia and holds certification with the Virginia Department of Housing and Community Development as a residential building inspector, combination building plans examiner, and certified building official.

Bob is a member of the American Institute of Architects (AIA). He is also a member of the Virginia Building and Code Officials Association and attends the Region IV JMBCOA monthly meetings. He also serves on the Barrier Free Access Committee for the University. Bob served with the US Army as a first lieutenant with the 101st Airborne Division in the Republic of Vietnam.

