


Event:  
Date:  
Place:

**ENERGY in BUILDINGS 2024**  
November 22-23, 2024  
Athens, Hellas



<b>#</b>	<b>Filza H. Walters</b> MBA, FESD,	
Title:	Professor of Practice at Texas A&M University, College Station, Texas, USA	
email:	fhwalters@tamu.edu	•
Presentation title:	<b>Developing Smart Building Technology Modules to Enhance Workforce Preparedness: A Case for AI-Driven Academic and Professional Education</b>	
<p>Smart building technologies are resources that improve building energy efficiency and resilience, reduce carbon emissions, and provide load flexibility to the grid. However, in both academic curricula and building professionals' continuing education, there is a lack of systematic instruction on methods to integrate multiple energy systems including distributed energy resources (DER), smart building technologies, AI (Artificial Intelligence) tools and key concepts, components, and controls, including "Internet of Things" (IoT) devices. In today's dynamic workforce, this major gap in smart building technology education prevents stakeholders from being able to attract talent with an understanding and preparation to adopt smart building technologies in building design and operations.</p> <p>A federally funded project included a partnership between Slipstream and Texas A&amp;M University (TAMU) to develop a semester-long smart building curriculum for engineering college students with the ability to adapt the contents for workforce development of professionals in building services. The final product consists of 16 training videos adapted for building professionals and the public. The educational content and training materials cover the benefits of building energy systems, the latest sensor technologies and IoT devices, all with a focus on smart building technologies. The key drivers are on topics related to smart building controls (i.e., energy management information systems), smart building control platforms, cybersecurity, grid-interactive-efficient buildings (GEBs), smart building control methods, and occupant-centric control. Although not explicitly included the technologies nod to the need for AI driven technologies to prepare engineers and industry professionals to be future-ready.</p> <p>This paper describes the project approach, provides outlines of the training materials, and identifies lessons learned in creating the content for this course. The authors suggest ways to scale the instruction of smart building concepts to empower the workforce to accelerate the adoption of smart building technologies and AI-based teaching and learning in higher education and building sector.</p>		
Short CV:		
<p>Filza H. Walters, FESD, FASHRAE, Professor of Practice in Architectural Engineering at Texas A&amp;M University, a distinguished academic and industry professional, contributed to growth and initial ABET accreditation of two U.S. engineering programs. Her extensive volunteer efforts, recognition, and scholarly collaborations include the E.K. Campbell Award, studies, grants, course development, student competitions, and industry-sponsored projects with ASHRAE, ASEE, and AEI.</p>		

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CV:

Filza H. Walters, FESD, FASHRAE, is a Professor of Practice in the Architectural Engineering (AREN) program with a distinguished background in academia and industry. At Texas A&M University's (TAMU) Department of Multidisciplinary Engineering (MTDE), Professor Walters has been instrumental in the rise in student enrollment, with TAMU's program positioned to be the largest AE program in the US. During her tenure at A&M, she secured the DOE's Zero Energy Design Designation (ZEDD) for her emphasis on energy, environment, and decarbonization, and contributed to the program's initial ABET accreditation.

Before joining TAMU, Walters led the establishment of Michigan's first ABET-accredited baccalaureate-master's architectural engineering degree program. At TAMU, Walters is AEI's faculty advisor and ASHRAE's co-branch advisor. She is an elected member of the inaugural MTDE Promotion and Tenure, Scholarship, and Strategic Planning Committees. Professor Walters has also served on multiple Faculty Search committees.

With over eighteen years of architecture, engineering, and construction industry experience in commercial, cultural, educational, healthcare, industrial, and mission-critical facilities, Walters infuses theory and practice in her teaching through project-based, active, and experiential learning. She collaborates on studies, grants, course development, student design competitions, and industry-sponsored projects with the US DOE, EPA, Ford Motor Company, and Slipstream. Her research in engineering education and smart building technologies has been disseminated through conference papers, proceedings, and invited talks. Professor Walters has co-authored a book chapter on governance in higher education and is a frequent speaker, mentor, and judge for K-12 STEM talks, E-Week's Future City Competition, and has participated in three Department of Energy's (DOE's) Solar Decathlon teams.

After earning a 5-year Bachelor of Science in architectural engineering and an MBA, Professor Walters remains dedicated to the profession and professional organizations. She was the first female president of the Detroit Chapter and currently serves as the executive officer for ASHRAE's College of Fellows, an officer in ASEE's Architectural Engineering Division, and a sustaining member of the ASCE/AEI Academic Council.

Walters is a consummate volunteer and has received many accolades for her committee work in ASHRAE's Training and Education, Building Energy Quotient, and Technical Committees 1.07, 7.02, and 9.07. She is a recipient of ASHRAE's Chapter and Regional Distinguished Service Award, Government Activities Award, and the E.K. Campbell Award, which recognizes one member per year for outstanding service and achievement in teaching. A trained ABET Program Evaluator, Walters was elevated to Fellow for ASHRAE and ESD (the Engineering Society of Detroit).