



HIGH PERFORMANCE BUILDING CONFERENCE

JUNE 8TH, 2016

UCF PEGASUS BALLROOM, STUDENT UNION

Registration and Trade Show opens: 7am

Programs: 8am – 4pm

Trade Show and Cocktails: 4-5pm

The High Performance Building Conference is a series of programs on the state of the art of building design and construction, brought to you by the ASHRAE Central Florida Chapter.

The purpose of this conference is to allow the local HVAC&R industry to present on current and future trends in high performance building design, operations, and construction.

We are co-hosting this conference with UCF to further enhance our connections between students, alumni, faculty, University leadership and the local HVAC&R industry's needs: from workforce development, curriculum, internships and putting into practice what we preach by serving humanity and promoting a sustainable world.

Please RSVP by June 3rd at noon at ASHRAE-CFL.org

Cost:

Free for ASHRAE student members

Non-ASHRAE students, \$20: gets you ASHRAE student branch membership & conference entry

ASHRAE Members: \$50, Walk-ups day of, \$75

Non-ASHRAE Members: \$75, Walk-ups day of, \$100

Registration is limited to the first 300 RSVPs

Registration includes a morning coffee bar, lunch, and (2) tickets for afternoon cocktails during the trade show

*Vegetarian options available upon request

Parking for this conference will be in Garage D. A parking pass and map to the garage will be provided with registration.



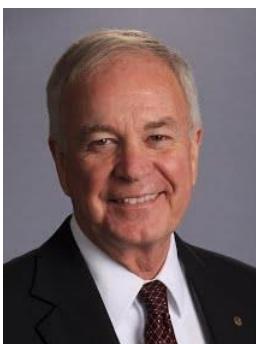
CONFERENCE ITINERARY

7 – 8a **Registration and trade show floor opens**
Pegasus Prefunction

8 – 9a **Welcome Message**
William F. Merck II, UCF Chief Financial Officer
Mark Steiner, Professor and Director of Engineering Design
Burns Bradford, ASHRAE Central Florida Chapter President
Pegasus Ballroom

	Design Track	Operations Track	Construction Track
915 – 1015p	Kristy Walson & Burns Bradford, TLC Water Efficiency – Don't Drain Our Resources	David Dunn, City of Orlando WET Gold	Robert High, HJ High So How Do You Build a High Performance Building?
1030 – 1130p	Bob Knoedler, Hanson Commissioning's Contribution to High Performance Buildings - Design Phase Lessons Learned	Chris Castro & Ian LaHiff, City of Orlando Transforming the Energy Landscape in Orlando	Wade Conlan, exp Cx – New, Retro, and Re-Commissioning Lessons Learned
1145a – 1p	Lunch Keynote Address - Pegasus Ballroom David Novell, UCF Assistant Vice President of Sustainability		
	Design Track	Operations Track	Construction Track
115 – 215p	Bill Martin, UCF Cathy Roche, ShenkelShultz Matt Wiechart, TLC Bill Zecher, Clancy & Theys Owner Project Requirements: Planning, Design, Sustainability Case Study – Global UCF	Duane Siemen, UCF Jason Wyckoff, UCF Advancement of Reliability Centered Maintenance in the Workforce	Bob Hyttel, Trane High Performance Buildings and Systems... Technologies to Make Your Building Perform!
230 – 330p	Panel Discussion Pegasus Ballroom Moderator – Nate Boyd, Hanson Owner's Representative - Curt Wade, UCF Engineering – Brad Perrott, Hanson Commissioning – Wade Conlan, exp Contractor – Glenn Mullins, CPPI		
330-5p	Trade show and cocktail hour Pegasus Ballroom & Prefunction		

Opening Plenary



William F. Merck II is the Vice President for Administration and Finance (1996-present) and Chief Financial Officer (2007-present) for the University of Central Florida. He serves as the university's chief business officer and has overall management responsibility for the following administrative units: Business Services, Debt Management, Emergency Management, Environmental Health and Safety, Facilities Operations, Facilities Planning and Construction, Finance and Accounting, Human Resources, Landscape and Natural Resources, Parking and Transportation Services, Purchasing, Resource Management, Sustainability Initiatives, Utilities and Energy Services, and University Police.

Before coming to UCF, Mr. Merck was Vice President for Administration and Finance for the College of William and Mary from 1986 to 1996 and he also served as Vice President for Business Affairs at James Madison University from 1981 to 1986. Mr. Merck acquired his Associate in Arts from South Georgia. He also graduated from Georgia State University (formerly Georgia State College) with a BBA in Management and a MBA in Finance.



Mark W. Steiner, Ph.D. is Professor and Director of Engineering Design in the department of Mechanical and Aerospace Engineering in the College of Engineering and Computer Science at the University of Central Florida. Previous to his recent move to Florida, Mark served as Director of the O.T. Swanson Multidisciplinary Design Laboratory in the School of Engineering at Rensselaer Polytechnic Institute (RPI), which he established from start-up and grew into an internationally recognized design program. He is an expert in advanced design methodology. At RPI he also served as Professor of Practice in the Department of Mechanical, Aerospace and Nuclear Engineering and wrote the Partners for Advancement of Collaborative Engineering (PACE) proposal for the largest ever in-kind grant of \$514M to RPI. Mark has twelve years of practical industrial experience introducing world-class productivity best practices into business operations at GE Corporate and bringing products to market at GE Appliances. He is the author of numerous papers, an inventor with five patents and an invited speaker at various national and international academic and industrial workshops, meetings, and conferences.



William (Burns) Bradford, EI, LEED AP BD+C is an engineer at TLC Engineering for Architecture. His focus is the design and analysis of sustainable healthcare facilities. He is the 'go-to' source for sustainability information in TLC's Healthcare Operating Unit as the business unit's champion for sophisticated building simulation software that ultimately allows the design team to drive down the facility energy budget from the outset of schematic design. Burns has worked on some of the most innovative hospitals in Florida and throughout the Southeast, actively contributing to some of the first LEED for Healthcare Certified facilities in the state of Florida. He is also the Chapter President for the Central Florida Chapter of ASHRAE—the youngest in the history of the Chapter. He is a proud graduate of the University of Central Florida, receiving both a BS in Mechanical Engineering and an MS in Mechanical Engineering.

Lunch Keynote – Sustainability at UCF



David Norvell, PE, LEED AP, C.E.M., is the Assistant VP for Sustainability at the University of Central Florida. His energy services team includes professionals in engineering, project management, building commissioning, marketing, building automation and utility production. The team manages more than 10 million square feet of building space at the second-largest university in the nation. Under Norvell's leadership, UCF has seen substantial gains in energy efficiency and reductions in costs across campus, making the university one of the green leaders in Florida.

The luncheon presentation will provide a history and also framework for the direction of sustainability at UCF. With many pressing issues both locally and worldwide, it is prudent to involve a interdisciplinary approach to problem solving. The university is a great platform in which to facilitate this type of problem solving as well as related research and academic environment.

High Performance Design Track

915 to 1015am: Water Efficiency – Don't Drain Our Resources

Kristy M. Walson, PE, LEED AP & William (Burns) Bradford, LEED AP BD+C



Kristy M. Walson, PE, LEED AP is a mechanical engineer by trade who focuses on sustainable design as a Sustainability Consultant at TLC Engineering for Architecture. Kristy provides green building consulting, LEED Administration, and energy modeling on numerous projects. In addition to her project duties at TLC, she has served as the Director of Education for the Central Florida Chapter of the USGBC, as well as Chapter Secretary. Kristy currently serves on the Green Works Advisory Panel for the City of Orlando and A graduate of Virginia Tech and the University of Michigan, Kristy has extensive experience in Visual DOE, Equest, and IES VE-Pro energy modeling software and uses these tools to accurately model the life cycle costs of building systems and energy use.

Abstract:

It is no secret the facilities design and maintenance sector believes "blue is the new green." The next phase of building performance and efficiency improvements have an increased focus on water. Water conservation is part of most major green rating systems, but it is imperative that water conservation become the new normal during health care design. There are different conservation methods that can be used by designers and facility managers to show water efficiency improvements. These can lead to reductions in hot water usage, cooling tower makeup water usage, medical process equipment water usage, sanitary demand, and others that are not mentioned in this presentation. This presentation will demonstrate successful water use reduction practices through case-studies on existing projects designed by TLC Engineering for Architecture, illustrate water use reduction as it relates to the LEED for Healthcare rating system and provide lessons learned when implementing these procedures, show the difference between strategies that payback versus "doing the right thing" for sustainable design, and discuss how reduced flow fixtures and equipment can affect the energy usage of the entire facility.



1030 to 1130am: Cx Contributions to High Performance Buildings - Design Phase Lessons Learned



Robert J. Knoedler, P.E., EMP, CxA, a Vice President with Hanson Professional Services, a national Engineering and Allied Services firm, and serves as Principal-in-Charge for Building Commissioning and Energy-related Services. With degrees in both electrical engineering (BSEE – Univ. of Illinois) and mechanical engineering (MSME – Thermal Systems – Univ. of Illinois), he is a licensed professional engineer in a dozen states and has worked in the private consulting arena for over 35 years. Bob has served as project manager, lead designer, and commissioning authority in the design, study, optimization and forensic investigation of building and process systems for a variety of facilities. A member and officer of the Board of Directors for the Southeast Region of the Building Commissioning Association, Bob is also a member of ASHRAE, the AABC Commissioning Group (ACG) and the Energy Management Association (EMA).

Commissioning has become an important component in the building process, recognized by Owners and industry peers as a quality assurance / risk management strategy contributing to project success. Code authorities have integrated commissioning requirements into building and energy codes and ordinances, at both state and local levels. Many proponents of commissioning focus on its value during the construction and acceptance phases; observing system construction and installation, followed by functional performance testing. However, many of commissioning's benefits are realized during the pre-design and design phases of the project. Documenting comprehensive Owner's Project Requirements, developing a detailed Cx Plan and Cx specifications, verifying the A/E's Basis of Design, and providing experienced design reviews are instrumental in ensuring building systems' performance meets designers' intent and Users' needs. This presentation will discuss 'lessons learned' from Commissioning Authorities' participation in pre-design and design phase services; and how these contribute to the development of high performance buildings.

High Performance Design Track

115 to 215pm: Owner Project Requirements: Planning, Design, Sustainability

Case Study – Global UCF



Bill Martin, AIA, Director of Facilities Planning and Construction

As the Director of Facilities Planning and Construction at the University of Central Florida, Bill is responsible for the coordination and oversight of the design and construction of Major and Minor Projects at the University of Central Florida. Bill serves as the staff Architect and liaison between University divisions, schools, etc. He develops and assures adherence to architectural aesthetic controls for all University facilities, and coordinates University standards with executive management personnel. Bill is responsible for the update the campus masterplan, space planning, and all associated reporting requirements. Bill serves as the senior project official on major capital construction programs, and directs the solicitation and selection of Architect, Engineering and Construction service providers to facilitate and accomplish University needs and initiatives. UCF currently has 17 Major Projects and 350 Minor Projects in planning, design, or construction.



William (Bill) Zecher has served the Clancy family for the last 19 years handling educational, municipal and commercial clients. He has invaluable experience leading Clancy & Theys' preconstruction efforts in estimating, value engineering, options analysis, subcontractor prequalification, bid packaging, scope review and contracting. Bill is involved in each project from day one of the project through construction. His knowledge of the vital components in a higher education facility and his lasting relationships with the subcontractor community allows him to provide amazingly accurate estimates, value-producing savings options, and very carefully selected teams of subcontractors who share our firm's culture of providing for a quality project that will exceed expectations.



Cathy Roche, AIA, NCARB, LEED AP, an Associate Principal with SchenkelShultz, has 26 years of experience in designing a variety of education and aviation projects. She has the unique ability to integrate high design elements and technical components seamlessly into the project. Cathy works closely with the engineering professionals during the design process to ensure that the goals of sustainability are integrated into the design. Since joining SchenkelShultz in 2005, Cathy has completed more than 9 million SF of projects, including work with the University of Central Florida, Florida Atlantic University, University of Florida and Valencia College. She is a Registered Architect in the state of Florida, as well as a LEED Accredited Professional from the United States Green Building Council. Cathy has led two projects receiving Green Globe certification and has served as the LEED AP for 6 recent higher education projects that have met or exceeded the sustainable goals set forth by the client.



Matthew (Matt) Wiechart, PE CxA, LEED AP, HPBD, CPMP, Principal / Senior Mechanical Engineer
TLC Engineering for Architecture, Inc.

Matt is committed to the design of sophisticated mechanical and energy management systems. With over 18 years of experience, Matt has applied creativity to design energy-efficient and cutting-edge mechanical systems such as geothermal utilizing the Floridian aquifer, chilled beam cooling systems and large custom air handling units at multiple college campuses. As both a LEED AP and commissioning agent, he focuses on a customized sustainable design approach and its significant impact on energy reduction. Matt is an accomplished public speaker who regularly presents technical information at industry events and for partner firms. He has received three ASHRAE Technology awards for engineering outstanding project designs and recognition from Carrier United Technologies for valuable input and participation at their national sales and service meetings.



**Central Florida
Chapter**



High Performance Operations Track

915 to 1015am: WET Gold



David Dunn, CFM, is a US Navy Veteran with an Associate of Science degree in Business Administration, a Bachelor of Divinity degree in Ministry, an International Facility Management Association Certified Facility Manager, an Adjunct Professor at Valencia College, an Adjunct Chaplain for the State of Florida, and a Pastor & Advocate for people diagnosed with mental illness. In 2006 David left the Space Shuttle Program after twenty-three years to join the City of Orlando Facilities Management Division. The City of Orlando combined the Fleet & Facilities Management Divisions in 2011 and promoted David to manage the newly combined Fleet & Facilities Management Division.

In 2010 I reported that water is fast becoming the new Gold and through the course of that presentation I gave real applied knowledge and examples of how our peers throughout the country are dealing with this crisis labeled "Wet Gold". In 2014 as I continued to track the Legislation and actual impact to design standards associated with Water. Many of the predictions of 2010 have been realized and more challenges are on the very near horizon.

1030 to 1130am: Transforming the Energy Landscape in Orlando



Chris Castro is a social entrepreneur, community organizer and sustainability professional with a passion for accelerating the transition to a clean energy economy. Over the last 10 years, Chris has worked with governments, academia, chambers, companies, nonprofits and communities to implement sustainability projects that include a variety of topics, specifically smart cities, solar energy development, energy efficiency, electric vehicles, local food systems, water quality, ecological restorations, urban forestry and more. He's currently the senior energy adviser to Mayor Buddy Dyer and sustainability program manager for the City of Orlando. In his role at the City, Chris works to develop cross-sector policies and programs that support the sustainability, energy and climate-related goals of the Green Works Orlando municipal and community action plans. Chris is also the co-founder of several nonprofits and companies, including IDEAS For Us, Fleet Farming, Citizen Energy, and the Florida Green Chamber of Commerce. He is also on the Board of Directors for the newly founded USGBC-Florida chapter, the Florida Renewable Energy Association, and FL SUN solar cooperative.



Ian L. LaHiff, P.E. LEED-AP is the Energy Project Manager at the City of Orlando, working with a team of construction managers and controls specialists, he identifies and implements energy-efficiency upgrades throughout the city's wide portfolio of buildings. He holds a Bachelor of Science in Mechanical Engineering from the University of Central Florida and is a licensed Professional Engineer. Ian has more than eight years of design and construction experience with a focus on sustainability and most recently held a fellowship working at the U.S. Department of Energy before joining the Orlando Green Works team in 2013. Ian is an active member of the local ASHRAE chapter and has been a board member of the Central Florida Region of the U.S. Green Building Council since 2014.

115 to 215pm: Advancement of Reliability Centered Maintenance in the Workforce



Duane Siemen, P.E., CMRP, has been the Facilities Operations Director at UCF since 2014. Before this Duane worked in all three major theme parks and in manufacturing. As part of his current role, Duane is in charge of making sure all divisions within Facilities Operations work together efficiently by communicating a strategy that supports the growth of each division through his delineated Reliability Centered Maintenance process. His department also manages university buildings housekeeping, recycling, maintenance and housing activities. Duane controls a budget in excess of \$20M and also provides direction and procedures to, and implements the CMMS system to all university assets and users. Duane holds an electrical engineering degree from UCF and is a licensed Professional Engineer. He also holds both an Electrical Contractors License and a General Contractors license with the state and is a member of the Florida Association of Electrical Contractors.



Jason Wyckoff, Reliability Engineer Manager

Jason Wyckoff has been serving alongside the Facilities Operations team at UCF for the past year. Originally from Titusville, FL, Jason graduated from UCF while majoring in Engineering and Business Management.

As part of his current role, Jason is in charge of implementing reliability based maintenance strategy for the FO department while also overseeing the CMMS system (AiM). Before working at Facilities Operations at UCF, Jason helped maintain launch facilities and processing spacecraft at the Cape Canaveral Air Force Station. While there, he assisted in the development of the reliability program for NASA which certified the evolved expendable launch vehicles (EELV) in time for the launch of the Pluto "New Horizons" mission. Some of his career highlights include implementing standardized maintenance, a Reliability Centered Maintenance (RCM) Program, and a Predictive Maintenance Program with an ROI of \$5.25:1. When he's not at work, Jason is a family man. He enjoys spending time with his family, playing games, and working out together.



**Central Florida
Chapter**



High Performance Construction Track

915 to 1015am: So How Do You Build a High Performance Building?



Robert High, is the third generation president of H. J. High Construction. H. J. High is one of the oldest general contractors in Florida and is celebrating their 80th year anniversary in 2016. Robert is a LEED AP, DBIA Designated Design Build Professional, and is licensed in FL, GA, and SC. He graduated from Furman University and received his MBA from the Crummer School of Business at Rollins College.

Abstract: Robert will be presenting on the current state of market conditions and the challenges faced by contractors in building high performance buildings. Project schedules are becoming increasingly impacted by the increase in RFI's resulting from design and planning efforts associated with high performance designs, and there are challenges associated with effectively conveying the designers' intent in the construction documents when new concepts are called for. How can the design process adapt to help the construction process?

1030 to 1130am: Cx – New, Retro, and Re-Commissioning Lessons Learned



Wade H. Conlan, PE, CxA, CPMP, LEED AP BD+C

With a diverse engineering and project management background, Wade is an expert in the design, troubleshooting, and optimization of HVAC systems. He has commissioned over 50 million square feet of facilities with over 50,000 tons of cooling capacity in multiple countries around the world. He is responsible for design review, submittal review, developing commissioning plans, functional tests, and performance tests for project commissioning. For over 10 years of his career, he has provided energy audits, retro-commissioning, and re-commissioning services for existing buildings, including energy modeling, life cycle costs analysis, and economic analysis. Wade is active in ASHRAE at the Chapter, Region, and Society. He is the Past Chair for Conferences & Exposition Committee, TC-9.10 Laboratories, SSPC 110 MOT for Fume Hood Performance, and was the General Chair for the Host Committee for the 2016 Winter Conference held in Orlando. He will be receiving the Distinguished Service Award at the Annual Conference in St Louis and was a 2011 40 under 40 recipient. In addition, he is the current Vice-Chair of the Industrial Advisory Board for UCF's MAE Department.

Abstract: The Commissioning Process is unique for each type of commissioning and the facility being commissioned. The size of the facility and the systems utilized helps is not the only things that make each job unique – the schedule, construction team, and Owner's involvement are always different. As buildings strive to be more sustainable, it is imperative that commissioning occurs to help achieve the proper operation of those systems to capture the intended energy consumption and indoor environmental quality. For New Cx we will focus on the lessons learned in the Construction and Acceptance Phase with some real life examples. For Re-Cx and Retro-Cx we will focus on their general processes and share some unexpected findings on facilities around the world.

115 to 215pm: High Performance Buildings and Systems- Technologies to Make Your Building Perform!



Bob Hyttel has 15+ years' experience with Trane Commercial Systems. He initially spent time with Trane in marketing and new product development for Trane's screw and scroll chiller business unit. His focus was on chilled water system design and future designs of Trane chillers. Bob spent significant time travelling around the US giving presentations on chillers and chilled water systems. Bob is currently a Trane Systems Account Manager. He works with Trane's comprehensive product portfolio encompassing small split systems up to 4,000 ton centrifugal chillers as well as numerous airside, terminal and building automation system products and services. He also has extensive knowledge with high performance products/systems including thermal storage systems, absorption chillers, dedicated outside air equipment, air cleaning products, energy recovery units and cooling towers. Bob has achieved Trane's Top Ten Sales award for the past 6 consecutive years. Bob has a Bachelor of Science degree in Mechanical Engineering from the University of Minnesota. He is also active member in ASHRAE.

Abstract: Technology is advancing at an exponential rate throughout the globe. These advances allow for continual development of new and innovative products and services available to building owners and consulting engineers for adoption into current day design. Advances in designs, products, systems and services will allow buildings to become more intelligent, efficient and sustainable. Technologies to be discussed will touch on high performance chiller plants, airside technological advances/options, Energy Efficiency / Demand Shift products and systems, wireless technology advances and Intelligent Buildings.



**Central Florida
Chapter**



High Performance Buildings Panel Discussion

230 to 330pm



Nate Boyd, PE, CPMP, LEED AP, is a mechanical engineer and energy specialist at Hanson Professional Services. He helps clients develop energy roadmaps that encompass energy audits, retro-commissioning, and M&V programs for campus and portfolio-wide energy conservation master plans. Nate is active within ASHRAE, currently serving as the Vice Chair of the Multidisciplinary Task Group – Impact of ASHRAE's Standards and Technology (MTG.IAST) committee, Region XII Vice Chair of Grassroots Government Advocacy, voting member of the Building Energy Quotient (bEQ) committee, chair of the Handbook and Commercial Building Energy Audits committees for T.C. 7.6 – Building Energy Performance, and is a Governor of the ASHRAE CFL Chapter as well as the Sustainability chair and chair of the UCF Initiative, where he serves on the Industrial Advisory Committee for undergraduate curriculum at UCF's Mechanical and Aerospace Engineering Department. Nate formerly served as the Energy Manager at the City of Orlando, and was recently awarded the Young Engineer in ASHRAE (YEA) Award of Individual Excellence as well Consulting-Specifying Engineer magazine's 2016 40 Under 40.



Curt Wade C.E.M., B.E.P., LEED AP BD&C, LEED AP O&M is the director of UCF's Utilities and Energy Services division. Curt joined UCF in May of 2011 to support the construction and commissioning efforts of UCF's 5.5 megawatt CHP plant; and had previously worked as a demand side management energy advisor with the electrical utility provider serving UCF from 2009-2011. Beginning in 2014, Curt was promoted to Director of Sustainability and Energy Management where he created the department of Utilities and Energy Services. This division was streamlined in 2015 to aggressively reduce energy use and cost with; procurement, operations, new construction, and existing buildings. His staff, comprised of professional engineers, technical experts, and skilled specialists; are tasked with advancing the University's strategic goal of carbon neutrality. His department develops and implements policies, plans, and programs, and oversees operations practices, to reduce energy consumption. As a result, his division has saved the university \$3.57M in energy cost with implementing capital ECM projects, and has avoided an additional \$3.91M with the CHP plant since 2014. He is also an active member to UCF's Sustainability Advisory Committee, and serves as the energy chair. Curt is also a member of the Association of Energy Engineers, USGBC and ASHRAE.



Bradley Perrott, P.E., EMP, LEED AP, GGP joined Hanson in 2016 and serves as a mechanical engineer and commissioning specialist. Prior to joining Hanson, Mr. Perrott was the commercial department head and senior project manager where he was the mechanical engineer of record for all projects within the commercial department. He also oversaw the computer-based energy modeling as required for utility company feasibility studies and for projects undergoing LEED certification. Mr. Perrott has over 13 years mechanical HVAC design experience, including central energy plants and thermal storage, and has designed projects for K-12, higher education, hospitality, correctional, public safety, and governmental facilities in the State of Florida and the Southeast US. In 2013, he was named one of Consulting-Specifying Engineer magazine's 40 Under 40.



Glenn Mullins, CMAA, LEED AP BD+C has 36 years of experience working within the construction industry. He has worked for Charles Perry Partners, Inc. (CPPI) for 18 years, where he currently serves as the Director of Preconstruction. Glenn has been a LEED Accredited Professional for eight years and was also the first Green Globes Professional in Central Florida. He has been an integral part of the success of CPPI's sustainable building program. Through Glenn's efforts, CPPI has built 50 certified sustainable buildings. Glenn's construction project experience includes a wide variety of facilities. He has been involved with major construction projects for clients that include higher education, K-12 education, local government, state government, corrections, parking, housing, healthcare and commercial facilities. Glenn has also been involved with numerous mentoring and volunteer programs. These have included Boy Scouts of America, construction apprenticeship programs, and Teacher for a Day programs in K-12 facilities. He previously served on the Boards for Valencia Construction Program Advisors, Seminole State College Construction Program Advisors, and the Central Florida Council for Boy Scouts of America.



Wade H. Conlan, PE, CxA, CPMP, LEED AP BD+C

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