

Susan Howard, CISSP  
Senior Cybersecurity Consultant  
Jacobs



**Cybersecurity Challenges and Solutions in DoD Architecture, Engineering, and Construction:**

*This presentation investigates some of the ways Smart buildings and IoT technologies are vulnerable to cybersecurity attacks and how proper architecture and design can help mitigate risks. It will include project cases where cybersecurity has been successfully incorporated in building design, and provide useful and actionable cybersecurity information to help identify and resolve cybersecurity design challenges.*

Susan Howard is an Industrial Control Systems Senior Cybersecurity Consultant for Jacobs with a Certified Information Systems Security Professional (CISSP) certification and an M.S. in telecommunications engineering from UC Boulder. Ms. Howard's current work includes governance, risk, and compliance for control systems cybersecurity, vulnerability assessments, and cybersecurity and telecommunications design consulting. Her work supports multiple sectors including water, wastewater, transportation, electric utilities, building automation, data center automation, and others. Industries she supports include private sector clients such as Intel and Microsoft, municipal and state water and transportation agencies, and Department of Defense clients including the United States Army Corps of Engineers and the Naval Facilities Engineering Command. Recent and ongoing projects for the DoD include incorporating the Unified Facilities Criteria 4-010-6, Cybersecurity of Facility Related Control Systems, into design specifications for control systems at Camp LeJeune, Corpus Christi Naval Air Station and the Ft. Gordon Cybersecurity Center of Excellence (CCOE). Prior to Jacobs, Ms. Howard worked as cybersecurity technology manager for Intel Corporation, Portland General Electric, LTK Engineering, and proudly served her country in the United States Air Force. She has presented cybersecurity topics regularly for Board meetings, International conferences, and Intel events across Asia and Europe.

Bradley Minor, PE, MLSE  
Director of Structural Design  
CEMS Engineering|Architecture



**Anti-Terrorism and Force Protection Understanding, Applicability and Implementation:** *This presentation addresses Anti-Terrorism/Force Protection (AT/FP) standards specified by the Protective Design Center and implemented via Unified Facilities Criteria (UFC). These DoD planning and design requirements aim to mitigate the impact and damage caused by aggressor attacks. Attendees will gain a better understanding and learn how to execute the design standards.*

Guided by the *UFC 4-010-01, DoD Minimum Anti-Terrorism Standards for Buildings*, and numerous other design documents, Bradley Minor, PE, MLSE, has provided anti-terrorism consulting services for facilities throughout the country since 2008. Through his experience, historical knowledge and technical background, he has been able to proactively support design teams and installation representatives in adapting AT/FP requirements into project specific criteria and design solutions. Mr. Minor's extensive experience in structural design services not only includes AT/FP, but Access Control Points (and similarly ECFs), progressive collapse, seismic evaluation and retrofit of existing structures, and high wind and high seismic design utilizing conventional construction methods and materials, as well as specialized systems (i.e. FRP-Fiber Reinforced Polymer).

Dustin Mortensen, PE  
Water Resources  
Freese and Nichols, Inc.



**Economic Analysis of Dam Ownership at Fort Hood:** *Of the 49 dams located at Fort Hood, Texas, seven are classified as high hazard dams. This presentation provides an overview of the Fort Hood Dam Safety Program; summarizes the methodologies used in the economic analysis to quantify economic costs and benefits; and discusses basic risk management strategies in dam ownership. It is geared towards military installations with dams and it will address unique challenges.*

Dustin Mortensen, PE, is a Project Manager in Freese and Nichols' Water Resources Design Group and is a firm associate. Mr. Mortensen's 14-year background includes master planning and design for water resources infrastructure. His technical experience includes dam safety inspections, feasibility studies, field investigations, design of new dams and rehabilitation of existing dams, and construction management. He is a registered professional engineer, and earned a Master of Science degree in civil engineering from Utah State University.

Frank Reid, US Air Force (Retired)  
Senior Cybersecurity Consultant  
AECOM



**Risk Management Framework for Cyber Security in DoD:** *One of the newest risk management frameworks (RMF) is cybersecurity of industrial control systems. Now is the time to apply a whole set of controls, at differing levels of the operational technology architecture, and weigh the associated risks to that architecture. This presentation goes beyond the controls, and discusses the steps involved in applying a full RMF in the cybersecurity of new and extant ICS networks and architectures, within and around your facilities.*

Frank Reid is a Senior Cybersecurity Consultant with AECOM. He is a retired US Air Force cryptologic linguist and intelligence analyst with more than 30 years of experience in defensive and offensive cybersecurity operations. Mr. Reid's accomplishments include serving as Cybersecurity Subject Matter Expert for a Department of Homeland Security (DHS) publication, The Quick Guide on Cybersecurity for Infrastructure Development; developing the Over the Network Keying cryptologic protocol for the National Security Agency; acting as the chief IT architect designing and building USSTRATCOM's war gaming center; Chief Information Security Officer for the Omaha, Nebraska power company; serving as Head of IT and chief engineer for USSTRATCOM's Global Innovation and Strategy Center; and, most recently, working as a Senior Vulnerability Manager in charge of securing threats against systems for 92,000 people worldwide at AECOM. As a graduate of DHS's Industrial Control Systems Cybersecurity course, Mr. Reid applies that expertise to secure industrial control systems for clients ranging from local water and power authorities to construction teams at major Department of Defense facility upgrades and new facilities.

Bill Meinert, PE, MBA  
Wastewater Practice Leader  
OBG



**Net Zero State-of-the-Art Water Resources Recovery Facility:** *In recent years, Wastewater Treatment has been re-branded to Water Resources Recovery Facility due to the focus on energy recovery, recognition of sustainability goals, and economic justification (net present value) for capital improvement projects. This presentation examines the Military Academy at West Point, a designated pilot installation for the U.S. Army's Net Zero sustainability initiative/energy recovery and generation. It focuses on program goals, the decision-making process, and final design elements that made the cut.*

Bill Meinert has 28 years of engineering consulting experience including project manager for the USMA West Point's Target Hill Wastewater Treatment Plant and MCAS Cherry Point's WWTP Upgrade projects. A majority of WWTP projects in the past five years have included a focus on energy and sustainability issues as part of scoping and implementing—including the new West Point WWTP project (design complete, entering construction phase), which includes several major design elements key to meeting the Net-Zero Energy Goals of the USMA. Mr. Meinert is a Professional Engineer, with a BSCE from University of Notre Dame, and MSCE and MBA from University of Pittsburgh. He serves as Wastewater Practice Leader in the public sector for OBG, leading projects in more than a dozen states over his career; and he has managed more than 30 major wastewater treatment plant projects from concept through startup.

Ray Ramos, PE, RRC  
President  
Raymond Engineering



**Anatomy of a Building Envelope Failure:** *This presentation underscores the importance of preventing water infiltration into buildings (weather-proofing) to ensure facilities remain safe and structurally sound, while promoting health and safety for occupants and facility users. It explores the location of defects, AMA and ASTM standards for detection of interior environmental failure, corrective measures, and a case study review. This is an AIA-approved presentation.*

Mr. Raymond Ramos, PE, RRC, is the president of Raymond Engineering, a roofing/waterproofing consulting firm he founded in 1992. With offices located in Georgia, South Carolina, North Carolina and Florida, his firm provides a wide variety of A/E services to public and private sector clients throughout the United States. Mr. Ramos has worked as a roofing engineer since 1984 and has extensive experience in virtually every roofing/waterproofing system on the market. He is a registered engineer in the states of Georgia, Florida, South Carolina and North Carolina and carries the designation of Registered Roof Consultant through the Roof Consultants Institute (RCI, Inc.). Mr. Ramos is an active member in a number of organizations to include the Society of American Military Engineers, American Society of Civil Engineers, Council of Educational Facilities Planners, American Society of Testing and Materials, International Building Code Council, and Atlanta Area Boy Scout Council. He is a 1976 graduate of The Virginia Military Institute holding a degree in civil engineering. Lastly, he served as an officer in the U.S. Army Corps of Engineers for 8 years, with tours of duty in the Republic of Korea and Ft. Bragg, North Carolina.

Keith Kowadlo, PE, US Army (Retired)  
Federal Account Manager  
Tremco Sealants & Waterproofing



**Making the Right Connections – Understanding Air and Vapor Barrier Systems:** *This presentation looks at industry trends and “state-of-the-art” designs; reviews the common materials used for air barrier assemblies; and examines the continuity issues of the building enclosure commonly found at the transitions, terminations, and penetrations. Lessons learned in design, installation, and quality control of air barriers are discussed; as well as federal mandates for energy efficiency. This is an AIA-approved presentation.*

Keith Kowadlo is the Federal Account Manager for Tremco Commercial Sealants & Waterproofing. He is a retired Army Engineer Officer who served as a Quality Assurance Representative on numerous construction projects for the US Army Corps of Engineers. Following retirement, he worked as federal business development manager for several Architectural-Engineering design firms pursuing Design/Build construction work. Mr. Kowadlo is a registered Professional Engineer in North Carolina with a Master’s degree in Construction Management from Penn State. He has been a member of SAME since his 1977 graduation from the Virginia Military Institute.

Ryan Joyce, MBA  
Senior Management Consultant  
Arcadis U.S., Inc.



**Improving Enterprise Resiliency through Microgrids:** *Through advancements in energy producing resources and electrical transmission software, microgrids no longer remain an asset solely reserved for mission critical equipment. Well-designed microgrids offer communities, such as military installations, the ability to fully operate independently from outside resources and allow for sustainability and reliability. Learn about the benefits of microgrids—and the long-term energy cost savings through renewable and sustainable energy resources.*

Ryan Joyce is a Senior Management Consultant in the Atlanta, GA office specializing in security and resiliency planning, data analytics, financial analysis and client partnerships. He is a member of the national Risk and Resiliency Team and works directly with clients to determine their security needs and deliver comprehensive solutions. He is responsible for developing and implementing security assessment of sites, risk mitigation planning, security design and support for overall resilience planning. Mr. Joyce has 11 years of experience in project management and security operations; his experience includes three years as a senior manager with a nation-wide security firm, and eight years as an Infantry Officer with the US Army. His military service includes deployments to Iraq and Afghanistan as a security and intelligence adviser. Mr. Joyce is a graduate from the United States Military Academy at West Point and holds a Master's in Business Administration from Syracuse University.