Air Force Civil Engineer Center

SME Directory 2017

Subject Matter Experts

The responsibilities of today's Air Force civil engineers span nearly every discipline of engineering and beyond. Our engineers frequently are called upon to provide a wide range of expertise to support commanders at the installation, combatant and major command levels. Because every civil engineer cannot be the authority in every area of engineering, the Air Force Civil Engineer Center (AFCEC) ensures subject matter experts (SMEs) are available to them.

Each of our civilian SMEs offers the unique blend of experience, education and training to be the Air Force's authority in an area of expertise. SMEs provide continuity as well as assurance that our civil engineering "know-how" keeps pace with lessons learned, changing technology, federal guidance and industry standards. The standards and criteria they publish help Air Force civil engineers work more skillfully and efficiently.

Although they might have gone by another name, subject matter experts have served within civil engineering for more than 40 years. Most SMEs have a master's degree or higher in their functional area, are registered professionals (or the equivalent) and are recognized as an expert by their peers and industry. Many within the Department of Defense and outside the Air Force benefit from civil engineering's subject matter expertise. They include joint working groups, industry partners and vendors, professional organizations and research programs.

On any given day, AFCEC SMEs can be found resolving issues impacting their area of expertise, developing technical guidance, giving advice to major command or installation engineers, working with national laboratories to advance the art of engineering, developing and advocating for required technical courses or mentoring technical personnel across the Air Force. Collectively, our SMEs represent a vast wealth of engineering knowledge and technical expertise. We hope you use the following pages to learn about the areas of expertise and take every advantage of this valuable resource.

Contact any SME at **NIPR**: afcec.rbc@us.af.mil **SIPR**: usaf.tyndall.afcec.mbx.afcec@mail.smil.mil

850-283-6995 DSN 312-523-6995 888-232-3721 Fax 850-283-6193

SME Directory as of January 2018

Air Base Recovery and Acquisition

Alessandra Bianchini, Ph.D., PE, AFCEC/CX

Vision

Ensure short- and long-term air base operational capability through program development and research strategies in support of air base protection, resiliency and recovery technologies.

Scope

The SME is the Air Force's authority in air base recovery technology and acquisition strategic planning for all actions (e.g., peacetime, pre-attack actions, trans-attack and post-attack). The SME leads investigations of operational deficiencies and provides guidance to support research and development strategies for air base recovery of infrastructure worldwide to improve overall base resiliency. Furthermore, the SME is the primary interface with the research development test and evaluation community to assure research investments and development in support of civil engineering agile combat support capabilities. The SME also prepares technical articles, engineering technical letters, guidance, training and other official publications and represents the Air Force on committees and technical working groups while staying current on policy and technical developments.

Initiatives and developments

The recent rebalancing to the Pacific theater is focusing special attention on the few bases directly located in the area and those that have a fundamental strategic role within the newly addressed scenario. Initiatives include:

- Leading working groups in the pavements area to highlight needs and future development for long-term solutions aimed at strengthening infrastructure reliability with respect to operational mission needs.
- Formalizing, within an evolutionary process, current airfield damage repair initiatives dealing with forecasted threat scenarios toward the definition of a program consistently maintaining capabilities and mission.
- Outreach to academia for development efforts supporting civil engineer needs and the small business community for developmental efforts that yield substantive and innovative products for Air Force civil engineers.

Air Base Requirements

Robert "Ken" Crowe, AFCEC/CX

Vision

Ensuring future civil engineer air base capabilities are identified and validated for establishment, protection, sustainment and transition of expeditionary, in-garrison and contingency installations and bases. Deliver accurate capabilities baseline to identify future civil engineer capability gaps leading to solutions and assured air dominance.

Scope

The SME is responsible for providing expert advice to the Air Force civil engineer, Air Staff, major commands, Air Force Installation and Mission Support Center, AFCEC and base commanders for airbase systems, equipment, technology and data. The SME leads civil engineer air base capability requirements development through the functional requirements process, or Joint Capabilities Integration and Development System (JCIDS), and directs capability requirements document development.

The SME provides technical information, programming and budgeting estimates, and high-level capability performance objectives to support civil engineer air base requirements and acquisition process.

The SME has authority and responsibility for air base policy and requirements processes relative to worldwide civil engineer mission capabilities and air base mission capability objectives identified in defense planning guidance and national military strategy and flow-down strategic guidance. The SME is Requirements Management Certified at B+.

Initiatives and developments

- Industry trends: developing accurate accounting of internal processes (capabilities) and linking to desired outcomes (needs) to optimize and initiate processes for better results.
- Program challenges: institutionalizing the Air Force's policy change for civil engineering (CE) requirements and acquisition from risk avoidance to a risk management organization supporting JCIDS, the defense acquisition system, the CE strategic plan and defense planning guidance.
- Critical initiatives/developments: developing and producing a capabilities-based assessment founded on current baseline and capability gaps; documenting the CE basing resilience baseline with appropriate capability-based assessments to allow CE integration within the JCIDS systems; and creating computer-based tools (the acquisition decision support system) for the development and documentation of the capabilities-based assessment, providing linkage to defining references and documenting the analysis of capabilities.

Airfield Criteria, Markings, Aircraft Arresting Systems

Barry Mines, Ph.D., PE, AFCEC/CO

Vision

Facilitate safe airfield operations through proper siting criteria for facilities in and around operational airfield surfaces.

Scope

The Airfield Criteria, Airfield Markings and Aircraft Arresting Systems (AAS), SME provides technical assistance to Air Force engineers and community planners to facilitate safe operations at Air Force operating locations worldwide. The SME works closely with the Air Force Life Cycle Cost Management Center, which procures AAS, and the Air Force Installation and Mission Support Center, which provides program management.
The SME represents the Air Force on the Tri-Service Aviation Discipline Working Group to develop consolidated DoD engineering standards and criteria for airfield facilities. This program is wide ranging, covering criteria for airfield layout, design, imaginary surfaces and proper siting clearances. The SME interfaces with the Air Force Flight Standards Agency, the other services, the Federal Aviation Administration and NATO to develop common standards.

Initiatives and developments

- Working with the Federal Aviation Administration to update Advisory Circular 150-5220-9 Aircraft Arresting Systems on Civil Airports. This document needs to include newer systems in order for those systems to be allowed to be used by Air National Guard units operating at civilian airports.
- Continued interfacing with the Joint Strike Fighter office on additional aircraft arresting system testing compatibility needed for the F-35 to include spacing of the pendant support discs or retractable support blocks in the BAK-14M system.
- Continuing to seek funding for development of a technique to install a mobile runway edge sheave on asphalt pavement that overlays a gravel base course.
- Developing a protocol to allow replacement of all anchor bolts of an aircraft arresting system fairlead beam as the technical order does not currently have a technique that allows replacement of all anchors if they have corroded or have failed a nondestructive test.
- Content development for CE DASH, an online reference tool providing references, workspaces and reachback capability for the CE enterprise.

Air Resource Management

Francisco Castaneda III, PE, AFCEC/CZ

Vision

The SME, through the Air Resource Management program, protects and supports the Air Force mission and the natural environment by effectively managing, sustaining and continually enhancing air quality natural infrastructure resources through regulatory compliance, regulatory risk minimization, professional competency, value engineering, sustainable practices and pursuing emission reduction.

Scope

The program is executed on a cyclic plan-do-check-act approach to effectively yield long- and short-term improvements in regulatory risk reduction, personnel proficiency and contingency planning. This approach, overseen by the SME, strategically executes guidance and policy interventions to ensure environmental stewardship while focusing on warfighter operational requirements. Specific support provided by the SME includes: air quality excellence advocacy, execution guidance, technical consultation, value engineering corrective actions, impact analysis and general conformity assistance, processes tracking, and training development. The SME provides the expertise, technical support, compliance tools, permitting support, value engineering corrective action resources, specialized guidance, process flow charts, playbooks and training resources to achieve and sustain regulatory compliance with the Clean Air Act (CAA). Additionally, the SME evaluates the effectiveness of the program through compliance tracking and metrics.

Initiatives and developments

- Value engineering is a proactive effort that is a cross between quality assurance and corrective re-engineering, is pre-emptive in nature, correcting identified noncompliance and re-engineering base-level programs for long-term compliance sustainability. Recent regulatory trends show a significant increase in CAA regulations and related enforcement actions (EAs). The value engineering initiative reduces regulatory risk by identifying and correcting noncompliance issues before they become official EAs. On 14 bases to date, 403 corrective actions and program improvements reduced regulatory recordkeeping and reporting, and removed two unwarranted Title V permits.
- Boiler compliance is a two-phased initiative to update boiler recordkeeping and provide base-specific compliance plans. Recent significant changes to boiler regulations increased regulatory recordkeeping/reporting requirements. Data validation completed on seven installations in fiscal year 2017 identified and corrected old boiler data. Starting in fiscal year 2018, create up-to-date, base-specific and shop-specific boiler compliance plans to provide simplified and succinct compliance procedure at the shop level.

Antiterrorism, Security and Small Arms Range

Jeff Nielsen, PE, AFCEC/CO

Vision

Improve protection for DoD personnel and assets against terrorism and illicit activity using enhanced planning and design standards incorporated into new and existing facilities.

Scope

The antiterrorism program provides guidance and criteria to mitigate the risk from terrorist attacks and protect Air Force assets on garrison and expeditionary installations. The SME manages the program, promotes site planning, design and construction compliance; develops design criteria; offers technical consultation; and represents the Air Force on developing DoD engineering standards and criteria for facility mitigation. Security engineering covers a wide range of threats, including explosive devices, direct and indirect fire weapons, airborne hazards, forced entry and surveillance. The SME also manages the Air Force small arms range design criteria and standard facility prototype drawings. The SME works in collaboration with the Air Force Security Forces Center (AFSFC) and the Air Force Medical Support Agency (AFMSA) to review the design of all new and rehabilitated ranges required to maintain safe operations.

Initiatives and developments

- Working with industry and academia to develop Certified Blast Protection Professional certification guidelines.
- Working with AFSFC and AFMSA to ensure a safe range training environment for student and instructors.
- Replacement of ETL 11-18 with a tri-service Unified Facilities Criteria (UFC) 4-179-02, Small Arms Range Design.
- Major updates and revisions to Antiterrorism UFCs 4-010-01 and 4-020-01.
- Treat vehicle speed control within the installation entry control site.
- Electric vehicle-stopping devices to augment final denial barriers.
- New UFC for forced entry criteria to replace 1993 MIL-HDBK-1013/1A.
- Developing new criteria for steel stud construction details to allow standoff reduction.
- Content development for CE DASH, an online reference tool providing references, workspaces and reachback capability for the CE enterprise.

Architecture

Randall L. Lierly, RA, AFCEC/CF

Vision

To facilitate and advance the confluence of architects', interior designers' and landscape architects' skills, knowledge, creativity, commitment, vision and resources to promote and sustain design excellence of Air Force facilities.

Scope

The program provides guidance on facility architecture, interior design and landscape architecture, as well as tools, resources, expertise, processes, technical information and techniques to achieve design excellence. The SME is responsible for program guidance, policies, promotion and implementation. The SME develops design criteria for Air Force facilities and represents the Air Force on DoD and technical panels, such as the Tri-service Architecture Discipline Working Group under the Unified Facility Criteria program. The SME works with the career field manager on mentoring, training, education, recruitment, retention and professional registration opportunities. The SME also manages design standards, accessibility and design technologies issues.

Initiatives and developments

- Publication of updated Air Force Corporate Facilities Standards.
- Continued implementation of Installation Facilities Standards Tool across the Air Force.
- Providing reachback for accessibility, design technology issues and criteria interpretation.
- Coordinating and collaborating with design professionals in other federal agencies.
- Advancing the use of building information modeling (BIM) in the Air Force by adopting the Architecture-Engineering-Construction (AEC) industry practices of BIM for facility design, building and facility management.
- Adoption of design practices that incorporate the principles of economic, social and ecological sustainability into the built environment.
- Defining Air Force expectations and standards that deliver consistent, cost-optimized, quality facility designs to continue facility design excellence.
- Enhancing retention and career progression by providing Air Force architects with incentives to engage in civil engineer career field advancement programs and opportunities.
- Assuring the Air Force is evolving with the AEC industry by analyzing new design and construction methods and technologies.

Chemistry

G. Cornell Long, AFCEC/CZ

Vision

Promote good chemistry practices and systematic project planning in the acquisition of quality environmental data to support defensible decision-making.

Scope

The program promotes the acquisition of defensible environmental data by providing guidance on chemistry practices and quality systems, and supplementing with training, consultative expertise and other specialized technical information to support environmental restoration goals and objectives. The SME is responsible for the advocacy and implementation of environmental data acquisition policies and oversight of environmental quality systems, including project planning, data collection and review, and technical consultation. The SME represents the Air Force on tri-service and interagency workgroups — including the Department of Defense (DoD) Environmental Data Quality Workgroup and the Intergovernmental Data Quality Task Force — developing standards for the Air Force and DoD. The SME provides Air Force oversight for the DoD Environmental Laboratory Accreditation Program to ensure analytical testing consistency and compliance with the DoD Quality Systems Manual.

Initiatives and developments

- Development of minimum quality-control criteria for the detection of emerging contaminants, such as 1,4-dioxane and perfluorooctanesulfonic acid/perfluorooctanoic acid.
- The use of environmental forensic chemistry techniques, such as isotope analysis, to determine sources of environmental contaminants as well as monitor the performance of our remediation systems.
- Broad application of a performance evaluation sampling program as an additional quality check of laboratory performance in Air Force performance-based remediation contracts and emerging contaminant sampling efforts.
- Intergovernmental implementation of the optimized Uniform Federal Policy for Quality Assurance Project Plans as a means to document project-specific decision logic, problem definition, data requirements and exit strategies.
- New sampling and analysis techniques such as passive samplers, incremental sampling methodologies and the use of mobile instrumentation for the characterization of hazardous waste sites.

Corrosion Control

Robert J. "Bob" Evans Jr., PE, AFCEC/CO

Vision

Develop and implement plans, processes and procedures to improve the Air Force's ability to identify, control and mitigate corrosion in facilities, infrastructure and associated systems. Familiarize Air Force civil engineer personnel with corrosion control concepts to significantly reduce the impact of corrosion on facilities, infrastructure and associated systems while increasing mission readiness, improving sustainability and safety, and saving energy.

Scope

The SME focuses on preventing and mitigating material deterioration of facilities and infrastructure (F&I) by addressing the four areas of corrosion control: cathodic protection, protective coatings, industrial water treatment and design/material selection. The SME represents the Air Force on DoD Corrosion Prevention and Control Working Integrated Product teams to develop criteria, tools and training to prevent and mitigate corrosion degradation of F&I. The SME also is the Air Force F&I representative on the Air Force Corrosion Prevention and Control Working Group, which researches, predicts and prevents corrosion while managing corrosion-related strategies for acquisition, construction and maintenance of equipment, weapons, facilities and infrastructure. The working group identifies pervasive corrosion issues, provides advocacy within member organizations and monitors corrosion activities related to enhancing systems safety, system availability and lower operating costs.

Initiatives and developments

- Developing a Corrosion Prevention and Control (CPC) source page in the Whole Building Design Guide with quick access to training, criteria and related corrosion resources.
- Developing an Environmental Severity Classification tool to assist engineers in planning, design, construction and operations and maintenance of F&I within the respective environment.
- Identified key corrosion cost drivers through studies and surveys to help prioritize distribution of limited resources.
- Integrating CPC principles, criteria and requirements from Tropical Engineering United Facility Criteria (UFC) into varying engineering disciplines' UFCs and Unified Facility Guide Specifications.
- Initiating corrosion training requirements based upon position and knowledge proficiency in a Facilities Training Summary table.
- Integrating new technology projects into corrosion processes, procedures and/or criteria.
- Updating Facilities Corrosion Training Summary table and incorporating corrosion training into other functional areas.

Cultural Resources Management

James D. Wilde, Ph.D., Registered Professional Archaeologist, Deputy Federal Preservation Officer, AFCEC/CZ

Vision

Increase mission capacity on bases and ranges by creative compliance, accurate inventories, expert planning and engagement with stakeholders and commanders.

Scope

Cultural Resources Management (CRM) comprises three broad categories: archaeology, historic facilities and Native American issues. The SME is responsible for program guidance, policies, promotion, assistance and implementation of, and adherence to, the National Historic Preservation Act (NHPA), the Archaeological Resources Protection Act, the Native American Graves Protection and Repatriation Act, among others. The SME oversees and directs the Air Force CRM Program, chairs the Cultural Resources Panel, updates Air Force instructions (e.g., 90-2002, "Air Force Interactions With Federally Recognized Tribes" and AFI 32-7065, "Cultural Resources Management"), manages the CRM eDASH page and playbook, and compiles, validates and reports CRM and Native American data required by Secretary of the Air Force and Headquarters Air Force, the Department of Defense, the Department of Interior and Congress. The SME represents the Air Force on a variety of DoD and federal agency working groups, committees and teams.

Initiatives and developments

- Industrywide developments that improve Air Force CRM include the growing use of small drone aircraft with multi-spectral cameras for analyzing landscapes, 3-D laser scanning of historic buildings as mitigation for proposed changes or demolitions, continual improvements in visualizing software, ever-improving digital cameras and data collection methods, and better use of the geospatial information system.
- Began initiative to digitize, curate and store archaeological and some building data in partnership with Arizona State University's the Digital Archaeological Record. Air Force CRM has budgeted for annual increases in paper, film and outdated digital data from Air Force installations to be updated and curated in the digital archive.
- Plans, programs, budgets and executes archaeological surveys on ranges to reach the NHPA requirement of 100 percent agency lands inventoried for significant properties.
- Oversees data collection and analyses to find, interpret and communicate information to warfighters about significant cultural, archaeological, historical and heritage data to ensure U.S. forces minimize impacts to these important resources.

Electrical: Airfield Lighting/Lightning/Grounding Systems

Joanie Campbell, PE, AFCEC/CO

Vision

Familiarize Air Force personnel with concepts of equivalency and intent, and remove focus from checklists that create unnecessary expense and work.

Scope

The SME ensures technical references comply with current National Fire Protection Act (NFPA), National Electric Code, DoD, Air Force and other guidance, and provides technical information to installations and commands to assist with system design. The SME reviews designs within the electronic controls realm and provides comments. The SME remains current on new technology and decides when this technology is reliable enough and maintainable enough for Air Force use. The SME provides interpretation of all Air Force Instructions and Unified Facilities Criteria within control topics and directs the focus of the bases to intent rather than meeting a checklist. The SME is a member of the NFPA 780 Lightning Protection Committee and represents the Air Force during the three-year process of developing updates. The SME also represents the U.S. on several NATO panels and working groups such as the Air and Space Interoperability Council (ASIC) and Agile Combat Support Working Group, ensuring that NATO and ASIC bases meet, as closely as possible, the standards of the Air Force.

Initiatives and developments

- Working with Mississippi State University to evaluate DoD criteria and NFPA 780 Annex E resistance computation affected by the resistance of power-system grounding electrodes or a similar ground medium that is not isolated from the structure being protected. This effort will analyze the grounding interaction of multiple grounding systems and effects on facilities grounding systems.
- Content development for CE DASH, an online reference tool providing references, workspaces and reachback capability for the CE enterprise.

Electrical Power and Lighting

Rexford Belleville, PE, AFCEC/CO

Vision

Create, promote and facilitate the technological state of the art that will advance electrical engineering skill, knowledge, creativity and commitment for the development of efficient, effective and resilient construction.

Scope

The SME addresses all issues pertaining to electrical power and lighting installations as well as electrical safety concerns. The SME is the current chairman of the DoD Electrical Discipline Working Group to create Unified Facility Criteria and guide specifications that govern construction, operation and maintenance of electrical infrastructure. The SME develops contracts for the evaluation of power distribution systems that include arc flash analysis, short circuit, load flow, harmonic, protective device coordination and system condition and status. The SME works with functional managers to identify training and support for shop personnel, and interfaces with industry experts to evaluate new technologies that produce standards necessary to employ and advance the state of the art in government facilities.

Initiatives and developments

- Began incorporating the full control capabilities of solid-state lighting, which uses light-emitting diodes, for indoor and outdoor large high-bay, high-mast area applications to improve light quality, reduce light pollution, minimize energy use, reduce glare and eliminate interference to adjacent mission technologies.
- In the process of improving accountability for backup power requirements to ensure mission capability through standardized documentation, tracking, testing, reporting and replacement using unified information platforms.
- Began verifying and increasing the hardening of supporting infrastructure in order to sustain and maximize mission endurance.
- Started to identify and employ methods and tools for evaluating and determining the reliability of electrical infrastructure on different levels from the facility, lateral and feeder to the main substation and utility supply.
- Began evaluating new technologies for prolonging the design life of electrical distribution such as cable rejuvenation and increasing system safety using special fire-rated oil in oil-filled transformers for interior applications.
- Content development for CE DASH, an online reference tool providing references, workspaces and reachback capability for the CE enterprise.

Emergency Management

Mike Connors, PMP, AFCEM, AFCEC/CX

Vision

Ensures the Air Force has a single, integrated all-hazards program to effectively and efficiently protect the Air Force community and mission capability; leverages joint, interagency and civilian capacity as necessary while ensuring continued operational capability.

Scope

The SME provides chemical, biological, radiological and nuclear (CBRN) defense and emergency management (EM) program guidance, resource budgeting, education and training products, data collection analysis and logistical support to Air Force installations worldwide. The SME assists EM personnel in sustaining their mission and combat support operational capability in an all-hazards environment while minimizing the loss or degradation of resources and equipment. The SME oversees the development and output of EM and CBRN tactics, techniques and procedures (TTPs), and education and training products to provide installations with continuously updated mission preparation, response, mitigation and recovery support documentation. Additionally, the SME maintains a reachback capability for EM personnel to directly engage with the Air Force Civil Engineer Center.

Initiatives and developments

- Developed four Air Force Specialty Code 3E9X1-specific CBRN response operations Air Force TTPs affecting 1,800+ total force emergency managers.
- Maintained currency of 12 multiservice CBRN response operations TTPs for all emergency managers and Air Force members.
- Coordinating fielding and distribution requirements of dismounted reconnaissance sets, kits and outfits system to ensure smooth transition of components into existing unit type codes (UTCs) and EM training.
- Facilitated the Joint Expeditionary Collective Protection (JECP) Concept of Employment Working Group to establish Air Force guidance on successfully executing JECP in a wartime environment.
- Developed an Air Force enterprise process to inspect, sanitize, test, repair and return to service 200,000 M50 protective masks annually.
- AFCEC used excess equipment from UTC centralization to fill $1.7 million in validated shortages for readiness and EM flights worldwide.
- Developing state-of-the-art immersive virtual training products; reducing the time to learn and improving retention of materials.
- Enhancing the Installation Emergency Management Plan 10-2 Planning Tool based on feedback and lessons learned.

Energy Conservation

Dan Gerdes, AFCEC/CN

Vision

Provide better tools and methods to more easily identify and capture utility conservation (power, gas, water, steam, etc.) concepts. Champion conservation efforts that have greater direct and indirect mission benefit than just meeting mandates or goals. Ensure all efforts consider both near-term targets and long-term sustainability resourcing needs.

Scope

Conservation of facility energy in a resource-constrained world is a basic requirement to ensure we can meet our ever-changing mission demands. Capturing our best opportunities through holistic solutions in our facilities and infrastructure is the best foundation of any energy strategy. Every gallon of water, British thermal unit of natural gas or kilowatt-hour of power conserved is one less we need to secure for our energy assurance. Finding cost-effective solutions with quantifiable savings is the basic approach. We must also look at long-term sustainability of our new construction, repairs or even day-to-day maintenance to ensure we're also looking at the full scope benefits to determine where to invest our next dollar of resources.

Initiatives and developments

- Installing advanced meter infrastructure at all covered buildings and mission-critical facilities to better manage energy usage and ensure we provide the mission owner the health status of his energy-use portfolio.
- Oversee the resource efficiency manager effort and target turning concepts into executable projects that directly save the Air Force funding and optimize energy demand to increase the overall resilience of our installations.
- Develop an installation energy health system through an energy and mission assurance cell. The cell will collect and analyze advanced meter data and other industrial control system data streams to provide the installations over-the-shoulder assistance in predictive maintenance, sustainment management system data population and asset management plan condition validation; and support mission commanders with missions matrixed across multiple bases and provide them with an integrated snapshot of the health of critical infrastructure systems.

Energy Savings Performance Contracts/Utility Energy Service Contracts

Michael Giniger, PE, CEM, AFCEC/CN

Vision

Leverage third-party financing as a budget-neutral funding stream through Energy Savings Performance Contracts (ESPC) and Utility Energy Service Contracts (UESC) focused on Air Force and national energy security. The SME ensures ESPC/UESCs emphasize mission resilience through energy assurance using energy conservation measures, renewable energy, power generation and deployment of emerging energy technologies.

Scope

The Air Force is the DoD's largest energy consumer and has an obligation to reduce facility energy and water use. ESPC/UESCs are a partnership between the Air Force and an energy service company (ESCO) or utility provider. The SME guides installations through complex third-party financed energy savings contracts. These projects require energy conservation measures to generate sufficient cost savings to pay for the project and financing over the term of the contract. The SME provides unbiased advice to the acquisition team. The SME provides expertise on policy implementation, assistance to ensure savings measurement and verification, participation on interagency working groups, technical support with energy- and water-efficient products and new technologies. In summary, the SME assists Air Force bases in meeting mission energy assurance goals and provides energy leadership.

Initiatives and developments

- Improve and update ESPC and UESC playbooks located on the CE portal that have superseded engineering technical letters.
- Maintain contact with installations to provide guidance and explain the use of ESPC/UESC contracts; make recommendations at critical contract points for go/no-go direction; determine whether energy resilience levels are adequate to commit the Air Force to long-term financial commitments.
- Stay abreast of cybersecurity issues and technical positions that impact energy conservation measures within ESPC/UESC contracts.
- Improve synergy among AFCEC Energy Directorate's development division, Office of Energy Assurance and functional experts; minimizing overlap.
- Coordinate with Air Force research and development groups to place the latest technology developments into ESPC/UESC contracts.
- Continue to cooperate with Federal Energy Management Program and energy service contractors to refine ESPC/UESC templates and standards.

Energy Surety, Security and Resiliency

Tarone Watley, PE, MBA, Security +, AFCEC/CO

Vision

Advocate for and establish enterprisewide resiliency criteria and performance standards that assure Air Force missions through viable, reliable and affordable energy systems and technologies. These systems and technologies increase resiliency on Air Force installations independent of local, regional or national resources.

Scope

The SME concentrates on effectively planning, standardizing, adopting and sustaining next-generation 21st century energy resources that are affordable and reliable, and maximize the use of clean technologies. The Energy Surety SME is a member of the DoD Renewable Energy Generation Discipline Working Group, which hosts several Unified Facilities Criteria on utility and facility-scale renewable energy generation system and energy resiliency planning. The SME develops resiliency criteria and performance requirements for existing or new and Air Force-owned or privatized energy systems and infrastructure, including but not limited to on-base electrical distribution systems, microgrids and distributed energy resources. The SME interfaces with industry leaders to evaluate technologies that produce and advance state-of-the-art government facilities and infrastructure.

Initiatives and developments

- Develop utility system resiliency and performance metrics that can empirically demonstrate improvements in the system's availability, reliability, sustainability and total cost of ownership.
- Develop and codify practical planning activities, including use of various technical tools, such as the Massachusetts Institute of Technology Lincoln Lab Resiliency Tool, and financial tools, including the Environmental Security Technology Certification Program, Energy Resiliency and Conservation Investment Program and Energy Savings Performance Contracts, for executing resiliency projects on Air Force installations.
- Establish a Utility System Outage Report Tracker tool that standardizes and trends outage data across the enterprise for operationally monitoring and evaluating the health and longevity of Air Force utility systems; serve as key data input for the DoD Annual Energy Management and Resiliency Report and, as needed, supplement Operational Reporting-3 reporting for commander-critical information reports.
- Evaluate new technologies and approaches such as adoption of smart microgrids, energy storage system applications and clean or renewable energy resources for improving resiliency on Air Force installations.

Environmental Impact Analysis

Michael Ackerman, AFCEC/CZ

Vision

Ensure timely support of Air Force mission requirements and better, more informed, decision-making through focused and disciplined execution of the environmental impact analysis process (EIAP).

Scope

The SME, through the environmental impact assessment (EIA) program, provides enterprisewide guidance, tools and execution support to ensure adequate consideration of environmental impacts during the federal decision-making process. The SME is the Air Force's authority on EIA for Air Force actions in the U.S. and abroad. The SME serves as the senior consultant on issues related to the execution of EIAP. The SME conducts policy reviews, prepares technical articles and presentations, develops training and provides guidance to Air Force personnel and organizations for critical projects.

Initiatives and developments

Working in a number of areas to improve the execution of environmental planning across the Air Force. Initiatives include:

- The Air Force EIAP manual to ensure consistent execution guidance for EIAP across the Air Force.
- Templated product lines for effective National Environmental Policy Act (NEPA) execution.
- Development of programmatic approaches for efficient and cost-effective planning.
- Early stakeholder engagement approaches to identify key issues early in the planning process.
- Development of Air Force NEPA training and staff development tools.
- Leading integration with basing, airspace, facilities and mission planners to ensure NEPA compliance and better decision-making.

Expeditionary Engineering

Gregory A. Cummings, AFCEC/CX

Vision

Directly supports the civil engineer enterprise vision of "agile, innovative Airmen engineers enhancing air, space and cyberspace operations across the globe" by providing the best tools and practices to organize, train and equip innovative Airmen engineers, allowing them to accomplish missions in support of our warfighters.

Scope

Executes and implements established policy on the use and management of assigned civil engineer forces supporting the total force posture (Air National Guard, Air Force Reserve and active duty). Participates in broad and extensive studies in the management, administration and technical and professional direction of all functions, which includes worldwide readiness training; readiness program policy implementation and guidance; military mobile force structure, contingency and wartime operations planning; civil engineer wartime equipage; civilian wartime force posture; and exercise, contingency deployment support and readiness-related asset management principles. Applies Air Force and joint military combat support experience to plan, organize and determine the necessary policies, regulations, directives, programs, doctrines and procedures for the establishment and maintenance of assigned major Air Force programs, e.g. Prime Base Engineer Emergency Force (BEEF) and Rapid Engineer Deployable Heavy Operational Repair Squadron Engineer (RED HORSE).

Initiatives and developments

- Rapid Airfield Damage Recovery: fielding and training of rapid damage repair capability, development of rapid damage assessment near-term solution and assisting with development of rapid explosive hazard mitigation.
- Analyzing the restructuring of civil engineer unit type code for deployable teams and equipment in support of emerging force presentation constructs supporting dynamic basing in nonpermissive environments.
- Modernization of expeditionary equipment and facilities: RED HORSE vehicle standardization, Basic Airfield Expeditionary Resources modernization for energy-efficient shelters, next-generation emergency airfield lighting system and Prime BEEF unit type code equipment management.

Explosive Ordnance Disposal

John Olive, Ph.D., AFCEC/CX

Vision

Enable global combat support and explosive ordnance disposal (EOD) response across the full spectrum of military operations to neutralize and dispose of all explosive hazards, leveraging innovative technology and employing highly trained warriors supporting combatant commanders in the projection of global air, space and cyber power. Promote and advocate for future organizational, training, equipment and modernization initiatives for the EOD program.

Scope

The SME advises senior leaders on the development, sustainment and strategic direction of the EOD program, while providing mentorship to Airmen across the enterprise. Provides executive management, planning, programming and technical expertise in all areas of EOD readiness, support to civil authorities, homeland defense and combat operations, force protection, range activities, and research, development, test and evaluation efforts. The SME is responsible for oversight and development of EOD tactics, techniques and procedures, and is the final authority for technical issue resolution. The SME represents the Air Force as an adviser to the U.S. Homemade Explosive Working Group, DoD Operational Environmental Executive Steering Committee on Munitions, DoD Explosive Safety Board and other joint and national level committees developing DoD and industry EOD and unexploded explosive ordnance (UXO) standards.

Initiatives and developments

- Core member of Agile Combat Support Base Resiliency Collaboration Team, nearing production of a $45 million UXO defeat laser acquisition program and guiding development of a remote mass mechanical clearance capability to rapidly remove UXO from airfield operating surfaces.
- As adviser to DoD Explosive Safety Board, assisted in the revision of DoD Manual 6055.09, DoD Ammunition and Explosives Safety Standards. As a member of DoD Intentional Detonation Working Group, the SME's actions led to release of the new Air Force Manual 91-201, Air Force Explosives Safety Standards.
- Championed Eastern National Robot Rodeo and Capabilities Exercise, partnering with the Combatting Terrorism Technology Office and the United Kingdom's Defence Science and Technology Laboratory. Military EOD teams and civilian bomb squads used emerging robot systems provided by industry.
- Directed operational tests of a new remote weapons system to engage high-risk munitions on Air Force test ranges.

Facility Cybersecurity

Timothy Nauman, PE, AFCEC/CO

Vision

Develop the culture needed for Air Force civil engineers to deliver cybersecure control systems for secure infrastructure that supports the Air Force mission. Changing our culture to achieve this vision is possible with guidance, technical support and advocacy for resources in support of adopting cybersecurity in the Air Force civil engineer community.

Scope

The SME provides technical support to the civil engineer facilities community for securing control systems that automate facilities infrastructure. The SME provides guidance to Air Force leadership to implement cybersecurity for facility-related control systems; supports the DoD Unified Facility Criteria (UFC) Discipline Working Group that governs construction, operation and maintenance of secure control systems; provides technical support to incorporate facility related cybersecurity requirements into the products of AFCEC directorates; and informs AFCEC and Air Force civil engineer squadrons of industry best practices and the state of current industry efforts to secure control systems. The SME also supports initiatives and efforts to secure funding and policy guidance for an enterprise strategy that brings cybersecurity and its culture into the Air Force civil engineer control system community of interest.

Initiatives and developments

- Implementing secure design concepts in the design reviews of facility control systems delivered to the Air Force. These systems are part of real property acquisition projects that include miltary construction, Energy Savings Performance Contracts and technology demonstrations.
- Improving the language of contract specifications to deliver documentation needed for civil engineer squadrons to document the cybersecurity features of control systems in support of the Air Force Risk Management Program. This documentation includes architecture diagrams, hardware and software lists, data flow diagrams and system security and recovery plans.
- Support the efforts of Air Force leadership to resource the efforts to identify, prioritize and secure civil engineering control systems located at Air Force installations worldwide that support critical mission infrastructure.

Facility Design and Construction Standards

David M. Duncan, RA, LEED AP, AFCEC/CF

Vision

To facilitate and advance the Air Force standard design program, increase design and construction criteria knowledge, establish better means of identifying, accessing and evaluating criteria, and properly apply criteria to Air Force design and construction.

Scope

The program encompasses technical criteria development, implementation and problem resolution for programming, design and construction of Air Force facilities. The SME serves as the Air Force's final technical authority for matters relating to construction criteria. These criteria include government and agency policies, laws and regulations; Unified Facility Criteria (UFC) and international codes. The SME represents the Air Force on numerous committees and working groups, including various tri-service UFC Discipline Working Groups. The SME is responsible for technical matters concerning overall building construction, and works in close coordination with other Air Force SMEs. The standard design program consists of providing optimized, consistent and functional facility requirements. Standard designs increase planning and programming accuracy, manage customer expectations and reduce customer changes during construction.

Initiatives and developments

- Currently maintaining a library of Air Force standard designs as part of the Whole Building Design Guide. Transitioning the Standard Design Library from the Whole Building Design Guide to CE DASH.
- Working to reformat and update existing standard designs into a common, straightforward format.
- Categorizing standard designs into three types: static, modular and harvested.
- Using the Future Years Defense Program, determining candidate facilities for standardization.
- Harvesting standard designs from recently completed Air Force construction projects as needed for replication at other installations.
- Establishing a post-construction feedback system to determine effectiveness of standard designs.
- Serves as Air Force member of Aviation and Unified Facilities Guide Specifications Discipline Working Groups.

Fire Emergency Services

Chief Master Sgt. Scott C. Knupp, AFCEC/CX

Vision

Build America's premier fire and emergency services capability to save lives, save property and protect the environment.

Scope

The SME develops training products and provides logistical support with the primary mission of saving lives, property and the environment from the effects of fires, hazardous materials, weapons of mass destruction and natural or man-made disasters. In addition, firefighters stabilize and mitigate an event to sustain and restore combat support operational capability at installations worldwide. The SME serves as the chairman of the North Atlantic Treaty Organization Crash Firefighting Rescue Panel and as a principal member of the national consensus code- and standard-writing committees that develop National Fire Protection Association standards. The SME directs the DoD fire and training certification program and the Air Force fire vehicle modernization program, and coordinates with the career field manager on recruiting, training, educating and retaining personnel.

Initiatives and developments

- The Air Force fire emergency services career field leads the industry in promoting and implementing a healthy and safe work environment. FES replaced 400,000 gallons of aqueous film-forming foam (AFFF) firefighting agent with the most environmentally preferred agent available and retrofitted 806 trucks with Eco-Logic kits, enabling testing of fire apparatus without discharging AFFF.
- Established a strategic sourcing contract for firefighter personal protective equipment (PPE) that far exceeds National Fire Protection Association minimum standards. Standardized gear ensures a compatible level of protection for a highly mobile, expeditionary workforce.
- Developed three training courses focused on firefighter safety and readiness: the 10-hour Rapid Intervention Crew Training course focused on rescuing fellow firefighters; the five-hour PPE Care and Maintenance course focused on inspection and testing of firefighting gear; and the three-hour Tactics Techniques and Procedures course on proper application of extinguishing agents.

Fire Protection Engineering

Vacant

Vision

Air Force will lead the nation in criteria for fire alarm systems, hangar fire suppression systems and firefighter training facilities.

Scope

The SME recommends policy, provides guidance and coordinates the exchange of information on all matters related to fire protection engineering management across the Air Force. The SME ensures effective programs to support mission continuity and provides operational and maintenance guidance. The SME represents the Air Force on the Department of Defense Fire Protection Engineering Working Group to develop consolidated technical criteria and on the Technical Support Working Group subgroup for fire protection features. The SME works closely with contract support activities to ensure that contract templates adequately address installation needs and with career field managers to support expeditionary and force protection initiatives. The SME is a principal member of the national consensus code- and standard-writing committees that prepare standards for airport facilities, gaseous fire extinguishing systems and foam-water fire extinguishing systems.

Initiatives and developments

- Working with Navy Research Labs to test infrared detectors for compatibility with hangar fire protection systems in order to reduce false activations: Detectors must be able to detect a flame; detectors must not send signals to activate when exposed to the typical radar frequencies associated with the full range of radar used by Air Force; when testing is complete, the detectors passing the test criteria will be listed as an approved source of supply on the qualified products list (QPL); we anticipate testing to be complete and QPL posted by March 2018.
- Working with U.S. Army Corps of Engineers to replace all eight carbon chain (C-8) fire suppression concentrate with six carbon chain (C-6) concentrate. The $40 million+ enterprisewide project to replace the C-8 concentrate is expected to be completed by September 2019.
- Content development for CE DASH, an online reference tool providing references, workspaces and reachback capability for the CE enterprise.

Fuels Infrastructure, Vertical Transportation Equipment, Natural Gas, Plumbing

Stephen M. Day, PE, AFCEC/CO

Vision

Support the construction, repair and maintenance of fuel, vertical transportation equipment, natural gas and plumbing infrastructure by providing clear U.S. and NATO criteria, standard designs, Air Force instructions and technical support.

Scope

The SME delivers guidance and technical support on the construction, repair and maintenance of Air Force fuel, vertical transportation equipment, natural gas and plumbing infrastructure. The SME coordinates with other divisions within AFCEC, the Air Force Petroleum Office and Defense Logistics Agency in support of the Air Force fuels maintenance community. Specifically, the SME supports the force development manager on personnel training, development concerns that range from formal training to how to improve on-the-job training for Airmen in the career field. The SME is involved with the development of new technology supporting the water and fuels systems maintenance shop, including a new Water and Fuels Expedient Repair System (WaFERS) to replace rapid utility repair kits and the development of a new facility assessment tool for planning studies and internal assessments.

Initiatives and developments

- The Fuels Facility Engineering Panel (FFEP) approved the use of FlexSteel in Department of Defense fuel systems. The guidance is being updated and should be completed by summer 2018.
- WaFERS was tested and commissioned in summer 2017. It passed the tests and will be a very useful capability if needed.
- The update to Unified Facilities Criteria 3-460-03 Petroleum Fuel Systems Maintenance, in development by the FFEP for five years, has been published.
- Content development for CE DASH, an online reference tool providing references, workspaces and reachback capability for the CE enterprise.

Geotechnical and Structural Engineering

Robert Dinan, PhD, PE, AFCEC/CO

Vision

Represent the Air Force in all aspects of structural and geotechnical engineering to promote and sustain design excellence of all facilities.

Scope

The SME provides guidance throughout the Air Force on facility geotechnical and structural design. The SME interprets and contributes to the development of design criteria for Air Force facilities, offers geotechnical and structural engineering technical consultation, provides structural engineering experience and represents the Air Force on tri-service Geotechnical and Structural Discipline Working Groups to develop consolidated Department of Defense engineering standards and criteria. The geotechnical and structural engineering programs are wide-ranging, covering conventional facility design, seismic engineering and structural hardening. The SME serves as the Air Force seismic safety coordinator and assists with bridge and dam inspection programs. The SME is a member of the American Concrete Institute and the Interagency Committee on Seismic Safety in Construction.

Initiatives and developments

- Combined United Facilities Criteria (UFC) 3-301-01, Structural Engineering, and UFC 3-310-04, Seismic Design for Buildings, into a single UFC, with Risk Category V facilities covered in a separate UFC document.
- Updated wind design speeds and tsunami inundation mapping for overseas installations consistent with design methodology in ASCE 7-16.
- Revised UFC 4-023-03, Design of Buildings to Resist Progressive Collapse, to coordinate with the release of ASCE Standard and Guide for Disproportionate Collapse.
- Content development for CE DASH, an online reference tool providing references, workspaces and reachback capability for the CE enterprise.

Hazardous Materials, Hazardous Waste and Pollution Prevention

Kevin G. Gabos, CIH, AFCEC/CZ

Vision

Air Force Hazardous Material Management, Hazardous Waste and Pollution Prevention programs mitigate warfighter environmental and health risks through the identification, authorization, tracking, minimization and final disposition related to the use of chemical substances supporting Air Force mission activities.

Scope

The Hazardous Material (HM), Hazardous Waste and Pollution Prevention programs provide the capability to identify, authorize and track the life cycle of hazardous chemicals to meet regulatory reporting and environmental risk reduction. The HM program identifies, authorizes and tracks hazardous chemicals to meet Clean Air Act, Resource Conservation and Recovery Act (RCRA) and executive order requirements for the Emergency Planning and Community Right-to-Know Act and pollution prevention. The SME guides the HM program, promotes RCRA compliance excellence, develops implementing criteria and guidance, offers technical consultation, and tracks compliance and trends necessary to increase efficiencies and enhance mission capability. The SME represents the Air Force on industry, DoD and other federal panels, chairs the Air Force Hazardous Material and Hazardous Waste Panel and advocates for research and development projects and regulatory and industry partnerships.

Initiatives and developments

- Provide field-level support optimizing installation programs to ensure data quality for reporting purposes.
- Sustain data quality objectives for Enterprise Environmental Safety and Occupational Health (EESOH) Management Information System (MIS) Hazardous Materials and Waste modules to meet regulatory compliance and manage environmental aspects and impacts.
- Develop technical, legal and policy analyses of RCRA compliance requirements while sustaining the Air Force mission.
- Promote cost-effective compliance to legislative and rule-making actions through the DoD RCRA Services Steering Committee.
- Develop a hazardous materials management strategy to support compliance on newly promulgated rules, working in collaboration with DoD staff and contractors.
- Improve identification and assessment of the most significant chemical substance impacts through trend analyses and tie-in to Environmental Management Systems across the Air Force.
- Leverage EESOH-MIS data to assess mission impact of new regulations under the Toxic Substance Control Act.

Hydrogeology

John L. Gillespie, AFCEC/CZ

Vision

Ensure installations have an effective, efficient and reliable resource to provide critical geological and hydrological consultation for an installation's natural infrastructure and provide products to solve current and emerging challenges to support defensible decision-making.

Scope

The program integrates installations' geological and hydrological natural resources for sustainable mission support. The SME serves as technical authority for investigation, which includes providing expertise, processes, technical information and techniques to assist the remedial project manager with making informed decisions to achieve remediation goals. The SME is responsible for overall program guidance, policies, promotion and implementation, and supports Air Force and DoD leaders on geology and hydrology matters. The SME also manages the conceptual site model (CSM) program and provides leadership for site characterization and development of the initial exit strategy. The SME provides guidance on field activities for traditional and emerging contaminants, provides services for fate and transport, and sustainable water supply. The SME mentors, trains and guides Air Force project managers and operational environmental professionals.

Initiatives and developments

- The CSM program is developing natural infrastructure blueprints for Air Force installations and joint bases. This program has about one-third of installations covered and completes four additional per year. CSM blueprints have proved invaluable in addressing emerging contaminants in groundwater, such as 1,4-dioxane and perfluorooctanesulfonic acid/perfluorooctanoic acid, and in litigation.
- Use environmental and geo statistics and quantum geospatial information systems to reduce costs in long-term monitoring programs and accelerate cost savings and program goals.
- Use the Complex Site Optimization Initiative to address sites that have a high cost-to-complete level or an over-30-year-to-cleanup timeframe to achieve response complete. Many of these sites would qualify for a technical impracticability waiver with proper foundational work. The goal of this initiative is to establish high resolution techniques to increase certainty for a waiver.
- Sustainable water supplies for installations to include quality and quantity of water, and supporting water rights litigation throughout the Air Force portfolio.

Installation Planning

Amy Vandeveer, AICP, AFCEC/CP

Vision

To provide an agile and adaptable framework for Air Force installation planning by adopting contemporary planning principles in sustainable development, form-based planning and resource conservation to achieve the Air Force's vision for sustainable, right-sized installations. To leverage the planning process as a decision support tool to ensure mission sustainment today and in the future.

Scope

The Installation Planning program comprises Air Force policy, guidance and technical assistance for installation development. The program provides tools, expertise, technical information, techniques and procedures to achieve sustainable installations to perform assigned missions with the right balance of new development, essential services, environmental protection and innovative change. The planning SME provides technical services to DoD, Air Staff, major command and installation-level planners to ensure success of the installation development program. The SME represents the Air Force before DoD services, public agencies, industry and installation planning stakeholders. The SME coordinates with the career field manager for mentoring, training, education, recruitment, retention and professional certification opportunities for Air Force community planners. The SME supports Air Force civil engineer transformation initiatives for comprehensive planning, activity management and the integration of strategic and installation comprehensive planning.

Initiatives and developments

- Implementation of enterprise planning and the translation of Air Force strategic guidance into actionable direction at the operational installation level.
- Digitize and synchronize installation-level planning products into a web-based planning tool to utilize data for real-time decision-making.
- Utilize the principles of form-based code to develop an agile and responsive planning framework to ensure sustainable planning principles are incorporated into known and future planning actions.
- Integrate activity management into the process of identifying requirements and honing investment strategies for future installation development. Identify requirements early in the process to ensure a proper timeframe for planning.
- Leverage the data and information inherent in the installation planning process to support planning across installations in processes such as strategic basing and new weapon system beddown.
- Increase opportunities for professional development and American Institute of Community Planner certification for installation planners.

Life-Cycle Cost Engineering

Scott Ward, PE, CCE, AFCEC/CO

Vision

Facilitate cost-engineering skill, knowledge, creativity and commitment to promote and leverage current technologies for facility design and sustainment excellence.

Scope

The SME delivers guidance on detailed cost estimating, economic analysis, life-cycle costing, plant replacement value, area cost factors, requirement and management plans, and cost modeling. The program is wide-ranging, covering aspects from military construction project programming and design and construction cost estimating to facility sustainment, restoration and modernization forecasting. The SME researches requirements and develops tools for infrastructure and facility systems; participates in development of non-Air Force (e.g., DoD, commercial) criteria with potential impacts to cost-engineering programs; and reviews existing programs for adequate Air Force direction. Additional responsibilities include mission support and reviews of new regulatory requirements as well as the latest technological developments. The SME represents the Air Force on and is the chairman of the Tri-Service Automated Cost-Engineering System (TRACES), developing area cost factors and unit cost guidance.

Initiatives and developments

- The SME is launching the recently Civil Engineer Board-approved Cost Estimating Improvement Program, (CEIP), which has new requirements for training and certification in the use of cost estimating tools.
- Development of the TRACES Portal and new cost engineering tools such as "TRACES Parametric."
- Writing a new CEIP Air Force Manual.
- Major updates and revisions to Unified Facilities Criteria: 3-701-01 and 3-710-01.
- Content development for CE DASH, an online reference tool providing references, workspaces and reachback capability for the CE enterprise.
- Developing refresher cost-estimating classes in conjunction with the Air Force Institute of Technology

Life Health Safety Engineering

Raymond N. Hansen, PE, AFCEC/CO

Vision

The Air Force will lead the nation in criteria in life, health and safety for facilities and personnel.

Scope

The SME serves as the lead consultant for engineering issues and recommends policy, provides guidance and coordinates the exchange of information on all matters related to life, health and safety engineering management throughout the Air Force. The SME ensures effective programs to support mission continuity and provides operational and maintenance guidance in the areas of fire protection and facilities, implementation of public laws, child and youth facilities certification and accreditation, and specialized protection and facility systems, including nuclear weapons storage areas, water mist fire suppression systems, electronics facility protection, simulators and training systems, fire protection for special electrical systems and storage batteries, personnel housing, construction safety, fall protection interfaces, carbon monoxide systems and mass notification systems. The SME is a principal member of several national consensus code and standard committees.

Initiatives and developments

- Major updates and revisions to Unified Facilities Criteria 3-600-01, 3-601-02, 4-021-01 and 4-740-14.
- Replacement of engineer technical letter (ETL) for electronics fire protection with new Air Force manual (AFMAN).
- Replacement of ETL for halon fire suppression systems with new Air Force pamphlet.
- Development of new AFMAN for facilities controlling remotely piloted aircraft.
- Replacement for ETL for nuclear weapons-capable maintenance and storage facilities with new FC 4-420-07F.
- Development of low-cost modification to convert hangar high-expansion foam systems that will prevent cockpit damage in case of inadvertent activation.
- Content development for CE DASH, an online reference tool providing references, workspaces and reachback capability for the CE enterprise.

Mechanical Engineering/HVAC

Thomas A. Adams, PE, CCE, AFCEC/CO

Vision

Provide design guidance and standardize Air Force mechanical/HVAC systems. Provide tools and expertise to the field; ensure life-cycle, cost-effective facility mechanical systems are installed in all new facilities and during major renovations.

Scope

The SME is the Air Force point of contact for all technical issues related to facility mechanical systems including air conditioning, heating, pumping, compressed air, and ventilation systems and equipment. The SME crafts and interprets primary design guidance documents such as the Unified Facilities Criteria and provides draft language for Air Force instructions and other service publications. The SME also performs engineering analyses of system performance and uses results to adopt applicable design provisions from industry guidance documents such as those published by the American Society of Heating, Refrigeration and Air Conditioning Engineers and the American National Standards Institute. In addition, the SME builds software analysis tools to assist mechanical engineers in the field and notifies higher headquarters of potential mission impacts due to new or revised regulatory burdens and finds alternatives to mitigate negative effects. Furthermore, the SME provides technical guidance to the field via AFCEC's Reachback Center, or through articles in AFCEC publications and performs life-cycle cost analyses on new system configurations and products. Finally, the SME responds to audits of Air Force mechanical systems and recommends modifications to applicable guidance documents.

Initiatives and developments

- Conducted ASHRAE 90.1 life cycle cost effectiveness study.
- Published an optimum insulation tool for facility envelope design based on the ASHRAE 90.1 life-cycle cost-effectiveness study.
- Funded a variable refrigerant flow cost study to examine capital and maintenance costs of existing DoD systems and produce a peer-reviewed article.
- Published combustion efficiency calculator to assist boiler tuning.
- Established baseline energy consumption at 76 Air Force installations to validate HVAC temperature set-point and set-back scheduling savings.
- Content development for CE DASH, an online reference tool providing references, workspaces and reachback capability for the CE enterprise.

Natural Resources Management

Kevin Porteck, Natural Resources Specialist, AFCEC/CZ

Vision

Air Force installation lands support a resilient natural infrastructure that sustains operational capability with no net loss in the capacity of Air Force installations to support the military mission now and in the future.

Scope

The natural resources program develops installation Integrated Natural Resources Management Plans (INRMP) in consultation with other federal and state regulatory agencies. Plan implementation focuses on sustaining an installation landscape well suited for military testing and training activities while ensuring compliance with all environmental protection laws. The SME supports planning, programming, budgeting and execution of natural resources requirements, to include wildlife management, forestry, wetland conservation, agricultural leasing, wildland fire management and projects to resolve issues related to threatened and endangered species conservation and the protection of other sensitive natural resources. The SME represents the Air Force on a variety of DoD and federal agency working groups and chairs the Air Force Natural Resources Panel.

Initiatives and developments

- AFCEC oversees revenue-generating conservation programs, which include agriculture leases, timber sales and permits for hunting and fishing. Proceeds are distributed back to installations to support implementation of INRMP.
- AFCEC collaborated with Florida agencies to develop a strategic plan for the conservation of species protected by the Endangered Species Act (ESA). This joint effort focuses attention on species conservation outside installation boundaries so that installations do not carry the majority of the conservation responsibility. The plan identifies where public and private resources can be targeted toward species protection on nonmilitary lands.
- Several bat species are protected by the ESA, and federal agencies must confirm that protected bats are not affected by construction and demolition activities. To address this requirement, acoustic bat monitors were placed at several installations. Since each bat species emits sounds at unique frequencies, the monitoring devices are able to detect when protected bat species are present.

Operations Maintenance

Bryan Muller, AFCEC/CO

Vision

Enable operations flight maintenance management effectiveness through standardized work requests, work execution, materiel support and contract service delivery throughout the enterprise. Develop standard process management metrics leading to an enterprise operations management dashboard. Improve in-house operations work scheduling to effectively aid decision-making with respect to work acceptance and estimated start dates based on overall capacity to perform work.

Scope

The operations maintenance program provides guidance, through standard business processes, governing the full life cycle of effective infrastructure and facility maintenance management from work request receipt, prioritization, shop scheduling and labor reporting, materiel procurement, contracted service delivery and work closeout. The SME interfaces with real property and cost accounting program managers, ensuring work task cost accumulation, capitalization and reimbursable customer cost accounting complies with the chief financial officer, financial improvement and audit readiness, and general accounting practices. The SME provides guidance to the preventive maintenance program and development of Air Force-unique procedures. The SME is the operations functional lead to the Functional Management Office for NexGen-related information technology programs.

Initiatives and developments

- Continued improvements were made to operations work management standard operating procedures, guidance and training. Air Force Instruction 32-1001, Operations Management, was extensively updated to include asset management foundations, improved facility manager program guidance, temperature set-points and AMP/Sub-AMP guidance. Release expected early 2018.
- Playbooks for Work Management and Preventive Maintenance (PM) were extensively updated by the Air Force Civil Engineer Center Operations Directorate team for release in fiscal year 2018. A new PM task list (PMTL) home was created on CE DASH for all Air Force unique PMTLs.
- Hosted three business process workshops to engage with TRIRIGA-deployed bases to share lessons learned, review business process fundamentals and capture field-validated concerns with the system.
- Continued to populate a SharePoint site to provide extensive TRIRIGA support information and active discussion forums.
- Workshops and development of a mobile education and training capability are planned to assist bases with fundamentals of work management, materiel control and preventive maintenance processes, review of current guidance and training on supporting process management tools.

Overseas Environmental

Steffanie Metzger, PE, AFCEC/CZ

Vision

The Air Force Overseas Environmental Program sustains and promotes sound environmental performance in Air Force operations to meet our overseas missions.

Scope

The SME provides guidance and direction for sustaining and promoting sound environmental performance in Air Force operations to meet overseas missions in air, space and cyberspace. The SME provides critical input in the development of DoD and Air Force overseas environmental policy and guides the overseas environmental community to ensure sustained compliance with applicable regulations. With the proponent and overseas points of contact, the SME informs officials of pertinent environmental considerations when authorizing or approving certain major DoD actions that do significant harm to the environment of the global commons, the environment of a foreign nation or a protected global resource. Additionally, the SME, under the overseas environmental program, seeks to manage non-enduring locations in a manner that sustains DoD national defense missions and minimizes environmental risks.

Initiatives and developments

- Updated Overseas Standard Titles for planning, programing, budget and execution for better consistency and transparency; published the Overseas Environmental Baseline Guidance Document through participation in Office of the Secretary of Defense Working Group.
- Maintained awareness of the host nation regulatory climate.
- Improved coordination and communication with Headquarters Air Force.
- Participated in program management reviews and combatant command conferences as necessary.
- Conducted an in-depth review of the U.S. Air Force Europe Remediation Program, which included understanding the program and compliance both historically and current, with potential strategic plan of centralization of the overseas remediation program at AFCEC.

Pavements

Craig Rutland, Ph.D., PE, AFCEC/CO

Vision

Facilitate and advance pavement siting, design, construction, evaluation, maintenance, repair and management knowledge, tools and capability to cost-effectively sustain Air Force mission requirements.

Scope

Delivers guidance on design, construction, evaluation, operation, maintenance, repair and management of pavements. Provides design and management aids; consultation on and research of pavement performance issues; training on airfield pavement design; and project quality control and assurance. Orchestrates research among numerous labs to develop materials, equipment and methods. Guides the research, development, testing and evaluation of airfield damage repair solutions; promotes training opportunities; and develops standards, criteria and specifications. Works closely with the other services, Federal Aviation Administration, Federal Highway Administration (FHWA), industry representatives and NATO to develop common standards. Chairs the Tri-Service Pavements Design Working Group and NATO Airfield Pavement Team and is a member of the Transportation Research Board. Assists the Transportation Network Activity Management Plan and sub–AMP champions with integrated priority list requirements.

Initiatives and developments

- FHWA Manual of Uniform Traffic Control Devices requires implementation assessment, and management systems ensure vehicle traffic signs comply with, and are maintained at, new retro-reflectivity standards.
- State departments of transportation are using more warm-mix asphalt in construction and more recycled materials in pavements.
- Some European countries are designing pavement subbase and base courses for 75-year lifespans with surfaces designed for 50-year lifespans. Asphalt surfaces are milled and overlaid every 15 to 20 years.
- States and municipalities are increasing the use of asset/activity management techniques to manage the transportation network, mandated by Moving Ahead for Progress in the 21st Century legislation.
- Pavement preservation techniques and practices are becoming prevalent.
- Surface treatments under MV-22 Osprey nacelles are required to mitigate damage from heat and petroleum, oil and lubricants.
- Content development for CE DASH, an online reference tool providing references, workspaces and reachback capability for the CE enterprise.

Pest Management

Donald A. Tieg, AFCEC/CO

Vision

Provides superior pest and disease vector management for the Air Force to meet global mission requirements. Ensures forward deployed pest management personnel are trained and equipped to manage insects, weeds and wildlife that pose a safety or disease/nonbattle injury risk to Airmen.

Scope

The SME recommends policy, provides guidance and coordinates the exchange of information on all matters related to pest and grounds management throughout the Air Force. The SME ensures environmentally sound and effective programs are present to prevent pests and disease vectors from adversely affecting operations and that grounds maintenance contract templates and pest management operations meet Air Force standards. The SME also interacts with the bird/wildlife aircraft strike hazard office on questions related to vegetation, insect and vertebrate pest management on airfields. The SME represents the Air Force on the Armed Forces Pest Management Board.

Initiatives and developments

- Developed long-range aircraft disinsection policies and training for the DoD Foreign Clearance Guide to prevent introduction of disease vectors and invasive species.
- Revised Air Force policies and procedures to identify and manage emerging disease threats such as Zika virus.
- Created Armed Forces Pest Management Board Technical Guide No. 3, Feral Animal Risk Mitigation in operational areas.
- Establishing a new integrated Pest Management Dashboard on CE DASH to track pesticide certification and installation pest management plans as well as providing a central platform for policy guidance.
- Obtained National Stock Numbers for new pest management utility vehicles and spray equipment for installation and contingency pest management operations.
- Partnered with U.S. Department of Agriculture and university experts to develop chemicals, pheromones and biological control methods to manage invasive species such Brazilian pepper trees and paper wasps.
- Updated pest management career field training and certification to address sound integrated pest management practices for bedbugs and other common installation pests.

Project Management

Carlton H. Hendrix, PE, PMP, AFCEC/CF

Vision

Optimize project management through continuous evaluation and improvement of practices and adequate training of Air Force project managers.

Scope

The SME advances Air Force project management through development of improved policies and procedures to optimize and standardize project management practices across the enterprise. The SME works to continually improve Air Force project management by incorporating emerging and industry-standard practices. The SME is responsible for standardizing work practices; establishing performance metrics; evaluating and implementing, as appropriate, DoD and industry best practices; developing and executing a project management training program; and maintaining the AFCEC Project Management Guide for Infrastructure and Facilities. The SME develops, maintains and serves as manager of an Air Force project management certification program and partners with the Air Force civil engineer career program to provide advice on the recruitment and development of project managers.

Initiatives and developments

- Capturing and organizing an Air Force project management corporate knowledge base and making it accessible through CE DASH.
- Providing objective and standardized tools to improve performance across all phases of the project management life cycle.
- Developing a robust Air Force project management training program.
- Partnering with the Air Force Institute of Technology and other research entities to advance the practice of project management across the enterprise.

Ranges

Jon Haliscak, AFCEC/CZ

Vision

Facilitate and advance sustainability of all Air Force ranges, supporting warfighter testing and training requirements through supporting land withdrawal renewals for ranges and making former ranges safe for future use.

Scope

The program has two main focus areas: Operational range sustainment and the Military Munitions Response program. Both of these areas are multifaceted. Responsibilities include providing tools, resources, expertise, processes, technical information and techniques to achieve the diverse goals of both programs. The SME is responsible for reviewing and commenting on policies and guidance from offices of the secretary of defense (OSD) and secretary of the Air Force, and for providing technical support to air staff, major commands and installations as required. The SME represents the Air Force on OSD working groups. The SME oversees much of the operational range sustainment initiative, including the annual data call from OSD and Operational Range Assessment program and provides input to the Air Force Restoration Program Management Office concerning the munitions response program.

Initiatives and developments

- Supports land withdrawal renewals for Nevada Test and Training Range, expiring in 2021, and the Barry M. Goldwater Range expiring in 2024.

Real Property and Asset Management

H. LaKenya Sartin, AFCEC/CI

Vision

Maintain real property mission support to acquire, maintain and dispose of Air Force real property and interest while enhancing real property guidance, training and policies to improve the accountability and sustainment of real property assets across the enterprise. The Air Force Civil Engineer Center's Installations Directorate provides front-door access for all real property-related matters by providing direct installation support for both real property transactions and accountability.

Scope

The Real Property Transactions program provides a strategically structured approach to acquire, manage and dispose of Air Force real property including land, facilities and real estate instruments. The SME is the real property focal point, responsible for accountability and sustainment development, real estate instruction, policy development, governance oversight, training and overall management of the program to meet Air Force and DoD goals and directives. The SME provides expert consultation and guidance on real property accountability methods and procedures; coordinates policy and procedures with the Air Force auditor general, DoD inspector general, Air Force general counsel, General Accounting Office and other entities; prepares congressional testimony for senior Air Force officials related to real property matters; and represents and leads numerous integrated planning teams, interservice and interdepartmental committees, task forces and working groups related to real property management, accountability and utilization.

Initiatives and developments

- Freeze Air Force footprint: Minimize acquiring General Services Administration leases; dispose of Air Force real property and real property interests that are no longer required to support current or projected missions.
- DoD financial audit: providing analysis, recommendations and information concerning Air Force real property audit activities; provides audit assertion liaison touchpoints; ensures installations continue monthly corrective action plans to meet audit compliance; and reports and provides audit assertion guidance and training.
- Creating an enterprisewide training program to minimize data loss during NexGen IT rollout.
- Continual review of standardized Air Force real estate templates (RET), delegations of authority and RET Playbook.
- Increasing real estate training opportunities by creating Air Force Institute of Technology-based basic real property training; updating and improving AFIT 424 Real Property Management and Advanced Realty courses; and providing virtual Real Property training sessions.

Remedial Systems

Kent C. Glover, Ph.D., AFCEC/CZ

Vision

Minimize the financial liabilities and environmental footprint of the Air Force environmental restoration program through competent technical leadership and guidance.

Scope

The SME serves as the Air Force lead technical authority on remedial systems issues. The SME's expertise, knowledge and technical advice are focused on remedy selection, implementation, performance evaluation and optimization within the environmental restoration program (ERP). In addition to providing consultant and technology-transfer services to the ERP, the SME develops or recommends criteria, standards and directives to Air Staff, major commands, installations and contractors. The SME also identifies the technology demonstration, validation and development needs of the Air Force civil engineering community as they relate to environmental remedial systems. The SME represents the Air Force with regard to remedial systems issues on committees and technical forums with all DoD services, other federal and state agencies, and industry.

Initiatives and developments

- Critical Process Analysis (CPA) provides detailed analysis of remedy performance at sites with high costs, risks and complexity. Triggers management action before problems are critical. Evaluates remedy effectiveness for 12-16 sites per year.
- Complex Sites Initiative (CSI) updates remedial strategies, reduces uncertainty and costs with state-of-the-art technology and alternate remedies, and clarifies contract requirements for sites with high costs, risks and complexity.
- Technology transfer emphasizes lessons learned from CPAs and CSIs, field-scale demonstration and validation of remediation technologies for emerging contaminants, and application of innovative tools and methods for high-resolution site characterization and source-zone remediation.
- Services on the Federal Remediation Technology Roundtable as a steering committee member and 2017-2018 chairman to enhance visibility of ERP successes and provide valuable interagency collaboration on remediation technology challenges.
- Interagency Technical Working Groups (TWGs) provide forums for regulatory collaboration at complex sites where remedial progress has stalled. Recent TWGs at Edwards AFB, California; Ellsworth AFB, South Dakota; Kirtland AFB, New Mexico; and Altus and Tinker AFBs, Oklahoma; and Air Force Plant 4 near Fort Worth, Texas, are providing substantial benefits to remediation progress.

Renewable Energy and Energy Resilience

Mike Rits, PE, CEM, AFCEC/CN

Vision

Enable the Air Force to meet its critical mission requirements with cost-effective and resilient energy systems.

Scope

As the Air Force moves to strengthen its facility energy assurance posture, renewable energy investment opportunities can be a force multiplier in structuring the means to provide additional resilience to the critical mission utility infrastructure. Installation energy master plans should identify single-point vulnerabilities as well as opportunities to enhance energy resilience in support of the mission. Microgrids, alternative redundant energy production and storage often can be enhanced with renewables, especially ones that reliably produce power when needed. In coordination with the Office of Energy Assurance, the Energy Surety and Electrical SMEs, the Air Force is developing a comprehensive approach to bolstering energy assurance to meet mission needs across the enterprise.

Initiatives and developments

- Encouraging bases to conduct emergency management utility outage exercises to test systems and processes that support the mission and develop lessons learned.
- Developing a template for community partnerships that enhances base and community resilience to a long-term electric grid outage.
- Assisting bases to assess energy resilience requirements or gaps to support critical missions.
- Supporting initiatives of the Office of Energy Assurance.

Roofing and Asbestos Abatement

Clayton Deel, PE, AFCEC/CO

Vision

Optimize Air Force roof life-cycle costs to effectively protect assets and minimize risks to mission. Promote a proactive maintenance culture to maximize the service life of roofs beyond what traditionally has been expected. Evaluate new technologies for timely corrective actions, enhance performance and provide for cost savings through extended service or energy savings.

Scope

The SME delivers guidance on facility roofing systems: facilitating, optimizing and standardizing design, maintenance and inspection practices throughout the Air Force. The SME develops performance criteria for Air Force facility roofs, offers technical consultation and represents the Air Force on tri-service discipline working groups. The SME is charged with maintaining technical requirements for roofing systems. Included roof types are built-up roofing, modified bitumen, thermoelastic and thermoplastic single-ply, liquid applied, metal, shingle and tile roofing systems. Additionally, the SME advises when the roof is used as a platform to install photovoltaic panels, to install vegetative green roofs and other initiatives that might deflect focus from the primary purpose of the roof to protect the facility and its contents. The SME develops and maintains information and guidance on roofing systems selection, energy conservation, preferred construction criteria, contracting, inspection and installation roofing maintenance programs. For asbestos abatement, the SME delivers guidance on installation management of asbestos-containing materials, including compliance with policy. The SME also consults with other Air Force disciplines that may be impacted by historical presence of asbestos-containing materials in older facilities to minimize risk of exposure and liability as such facilities reach the end of their service life.

Initiatives and developments

- Roof Condition Assessments: pursuing contracts to conduct thermographic imagery of an entire installation's low-sloped roofs to validate condition inspections and enable accurate scoping of necessary repairs.
- Investigating the use of thermochromic heat-sensitive pigment for roof application to take advantage of black membrane during cool temperatures and white during hot.
- Content development for CE DASH, an online reference tool providing references, workspaces and reachback capability for the CE enterprise.

Sustainable Design and Development

Paula S. Shaw, PE, LEED AP, AFCEC/CF

Vision

Lower the total ownership cost of Air Force facilities by designing and constructing buildings to reduce the resources they consume, reduce the waste they generate and maximize the benefits they provide in support of the mission.

Scope

The SME is the Air Force lead in defining programs and projects to advance state-of-the-art sustainable technologies and methodologies. The SME provides professional consulting services on siting, designing, constructing, maintaining, operating, reusing and demolishing facilities in a sustainable manner. These services include coordination with engineers and architects during all phases of the project delivery process to ensure compliance with federal, DoD, and Air Force sustainability mandates, policies and goals. Reviewing and commenting on new regulatory requirements allows the SME to have an active role in refreshing, shaping and implementing policy, initiatives and guidance. Additionally, the SME provides gap analyses to guide investment and participation in demonstration, validation and technology transfer of emerging sustainability solutions to ensure current and future mission needs are met.

Initiatives and developments

- Completed the update to Unified Facilities Criteria (UFC) 1-200-02, High Performance and Sustainable Building Requirements, Oct. 1, 2017.
- Development of DoD versions of U.S. Green Building Council (USGBC) and Green Building Initiative (GBI), UFC-based third-party guiding principles (GP) certification systems for new buildings and renovations of existing buildings.
- Discontinued use of Leadership in Energy and Environmental Design as the third-party certification system for Air Force new buildings and renovations of existing buildings; Air Force projects will now use the DoD version of either the USGBC GP Assessment or the GBI GP Compliance system.
- Revamping of the Air Force Institute of Technology sustainability course to align with UFC 1-200-02 and the new Air Force third-party certification requirements.
- Exploring the potential to establish UFC 1-200-02 equivalencies with local construction standards and codes for locations in Germany and the United Kingdom.
- Supporting the DoD-funded Environmental Security Technology Certification Program's demonstration and validation of energy and water technologies on DoD installations.

Toxicology and Risk Management

Samuel L. Brock, DVM, MPH, AFCEC/CZ

Vision

Implement defensible exposure assessments and toxicity values supporting restoration management and optimize environmental remediation risk at 800 technically complex sites.

Scope

The Toxicology and Risk Management program provides guidance, consultation and technical contract oversight support to achieve excellence in environmental risk assessment. The SME focuses on providing tools, processes, techniques, technical information resources and training. The SME is responsible for program guidance, outreach and enactment, and supports planning, implementation and policy development. The SME serves as AFCEC's technical authority for toxicology and risk assessment practitioners; supports the environmental restoration program review of risk assessments and emerging contaminants; supports Air Force and DoD leaders on toxicology and risk assessment matters; coordinates with the career field managers on recruiting, mentoring, training and retaining staff; provides professional registration opportunities; and represents the Air Force on tri-service and interagency workgroups.

Initiatives and developments

- Developed thermal treatment process to remove pesticides from soil, saving project waste-management costs and standardized methodology for application across the Air Force.
- Collaborated with U.S. Geological Survey Biological Group and U.S. Fish and Wildlife Service to create studies determining lead exposure to wildlife on small arms ranges.
- Developed site remediation evaluation tools to assess remediation progress and determine next-phase contract requirements for 200 of the most difficult Air Force remedial sites.
- Led development of the Long Term Management of Complex Sites chapter in the Interstate Technology and Regulatory Council (ITRC) Remediation Management of Complex Sites Guidance, which was released Nov. 1, 2017.
- Developed national web-based training by ITRC on Remediation Management of Complex Sites.
- Standardized and implemented guidance for toxicology group performance metrics and individual professional development.

Utility Rate Management

Nancy M. Coleal, PE, AFCEC/CN

Vision

Identify and optimize more beneficial solutions to provide utilities to U.S. Air Force installations. Provide solutions to economic, engineering and planning problems that affect the acquisition and management of utility services in order to obtain quality, reliable utility service with fair, reasonable and nondiscriminatory rates consistent with mission requirements, resulting in the lowest total cost to the Air Force.

Scope

The SME is an electrical engineering professional providing expert guidance to installations worldwide on utility rate issues and specialized contract acquisition for electric, natural gas, water and wastewater utilities. The utility rate management team provides technical support and negotiates on behalf of Air Force contracting officer and base civil engineer customers to assist installations in procuring utility service at a fair price with reasonable terms and conditions. The SME is the principal Air Force liaison to federal power authorities (Western Area, Southwestern and Bonneville power administrations). The partnership has demonstrated savings over $25 million a year by jointly managing and optimizing federal preference hydropower allocations. The team confirms utility contracts are in place, assists with new utility connection service contracts, analyzes utility invoices to validate appropriate rates according to contract terms and represents installations during discussions and negotiations with utility companies and state regulatory bodies to identify savings opportunities.

Initiatives and developments

- Proactively conducting utility acquisition assessments at all continental U.S. bases since 2007.
- Optimizing Western Area Power Administration (WAPA) federal preference hydropower benefits at 18 bases. Negotiating new contracts with WAPA to buy additional power at those bases, saving resources.
- Publishing a quarterly rate monitoring and on-the-job-training newsletter, summarizing regulatory issues impacting the Air Force; national and regional policies; and market trends and indicators.
- Assisting bases with new and renewing utility contracts and reviewing rate increases (contract modifications).
- Developing a template for utility company partnerships that enhance base and community resilience to a long-term electric grid outage.
- Assisting bases to assess their energy resilience requirements or gaps to support their critical missions.
- Optimizing the technical aspects of utility contracts, providing inputs and recommendations to installation decision-makers.
- Troubleshooting regulatory hurdles.

Water Quality

Kevin Leachman, PE, AFCEC/CZ

Vision

The Water Quality Program supports Air Force engineers and environmental professionals to accomplish Air Force missions and fully comply with all Clean Water Act (CWA) and the Safe Drinking Water Act (SDWA) requirements.

Scope

The program provides capabilities to reduce environmental risk for drinking-water and wastewater programs across the Air Force. The SME guides compliance with the CWA including stormwater, wastewater and pretreatment permitting issues, as well as fuel tank compliance. For SDWA compliance, the SME tracks and provides guidance for compliance of Air Force drinking water systems. The Water Quality SME participates in DoD panels including the CWA Services Steering Committee and the SDWA Services Steering Committee. The SME co-chairs the Air Force Water Program Panel to lead integrated solutions and strategic planning for Air Force water programs in conjunction with cross-functional stakeholders from Air Force civil engineering, operations and programming, as well as Air Force medical and legal communities.

Initiatives and developments

- Collaborates with the cross-functional Air Force Water Program Panel to develop the Air Force strategic plan for water systems with respect to engineering/operations, drinking water health and environmental risk.
- Sustains Air Force data quality for management of fuel tank and water systems.
- Promotes increased awareness and capabilities through Air Force Institute of Technology courses, webinars and consultations.
- Advocates for effective programs and feedback for rulemaking actions through the CWA and SDWA Services Steering committees.
- Updates language and guidance for DoD metrics with the CWA and SDWA Services Steering committees.
- Develops long-term strategic solutions to mitigate risk for single-wall underground storage tanks with civil engineer operations and programming stakeholders.
- Collaborates with other Air Force panels and stakeholders regarding emerging contaminants in drinking water and wastewater, and impacts on future compliance and Air Force policy.
- Provides technical analysis of legal and policy developments for CWA, SDWA and Resource Conservation and Recovery Act subtitle I (underground storage tanks).

Water/Wastewater

John D. Bishop, PE, AFCEC/CO

Vision

Ensures water and wastewater systems are maintained across the Air Force enterprise. Provides expertise to meet industry standards to support mission requirements. Evaluates new technologies that would enhance Air Force capabilities while maintaining mission integrity. Supports the Air Force enterprise through collaboration with other DoD proponents to standardize means and methods to reduce redundancy and increase efficiency.

Scope

The SME provides oversight, consultation and guidance on the water and wastewater system's life cycle to manage and operate these systems efficiently and effectively. The SME develops design criteria; oversees the application of DoD, Air Force and industry standards and criteria; provides engineering technical consultation; and represents the Air Force on water and wastewater issues. The SME coordinates with the career field manager on mentoring, training and education of Air Force water and wastewater engineers, and water and plumbing shop personnel. The SME is a member of the Water Environment Federation and American Water Works Association.

Initiatives and developments

- Utilities infrastructure: Assist in targeting the funding needs for base water-related utility replacement and repair projects with established Air Force policies.
- Bases' manpower and maintenance priorities: Assists in identifying base manpower requirements to ensure sufficient resources are being applied to required maintenance practices.
- New technology applications, linear segmentation and sustainment management systems: Supports the development and implementation of new technological applications to improve the Air Force's capabilities to maintain our bases' infrastructure.
- Promotes training and expertise development in the water and wastewater subject area at base level to increase the knowledge center to improve operations and maintenance capacity.
- Content development for CE DASH, an online reference tool providing references, workspaces and reachback capability for the CE enterprise.

SME Directory Web Links

Whole Building Design Guide:
http://www.wbdg.org

Unified Facilities Criteria:
http://www.wbdg.org/ffd/dod

Facility Design:
http://www.wbdg.org/design/design-recommendations

Air Force Corporate Facilities Standards:
http://www.wbdg.org/ffc/af-afcec/corporate-facilities-standards/afcfs

Prototypes and Standard Designs located at WBDG:
http://www.wbdg.org/ffc/af-afcec/bim

Design resources related to historic buildings:
http://www.wbdg.org/resources/historic-preservation-additional-resources

Acquisition

Defense Acquisition System:
https://dap.dau.mil/aphome/das/Pages/Default.aspx

Defense Federal Acquisition Regulation Supplement and Procedures, Guidance and Information:
http://www.acq.osd.mil/dpap/dars/dfarspgi/current/index.html

Defense Acquisition Guide Book:
https://dag.dau.mil/Pages/Default.aspx

CE DASH

https://cs2.eis.af.mil/sites/10159/

eDASH areas

Air Quality Resources:
https://cs1.eis.af.mil/sites/edash/Web%20Part%20Pages%20%20Program%20Pages/Environmental/Air%20Quality.aspx

Cultural Program:
https://cs1.eis.af.mil/sites/edash/Web%20Part%20Pages%20%20Program%20Pages/Environmental/Cultural%20Resources.aspx

Air Force Hazardous Material:
https://cs1.eis.af.mil/sites/edash/Web%20Part%20Pages%20%20Program%20Pages/Environmental/Hazardous%20Materials.aspx

Air Force Hazardous Waste: https://cs1.eis.af.mil/sites/edash/Web%20Part%20Pages%20%20Program%20Pages/Environmental/Hazardous%20Waste.aspx

Air Force Pollution Prevention:
https://cs1.eis.af.mil/sites/edash/Web%20Part%20Pages%20%20Program%20Pages/Environmental/Pollution%20Prevention.aspx

Air Force natural resources policy:
http://static.e-publishing.af.mil/production/1/af_a4/publication/afi32-7064/afi32-7064.pdf

Natural Resources Program management support and other guidance:
https://cs1.eis.af.mil/sites/edash/Web%20Part%20Pages%20%20Program%20Pages/Environmental/Natural%20Resources.aspx

Air Force Overseas Environmental:
https://cs1.eis.af.mil/sites/edash/Web%20Part%20Pages%20%20Program%20Pages/Environmental/Overseas%20Program.aspx

Water Quality Programs:
https://cs1.eis.af.mil/sites/edash/Web%20Part%20Pages%20%20Program%20Pages/Environmental/Water%20Quality.aspx