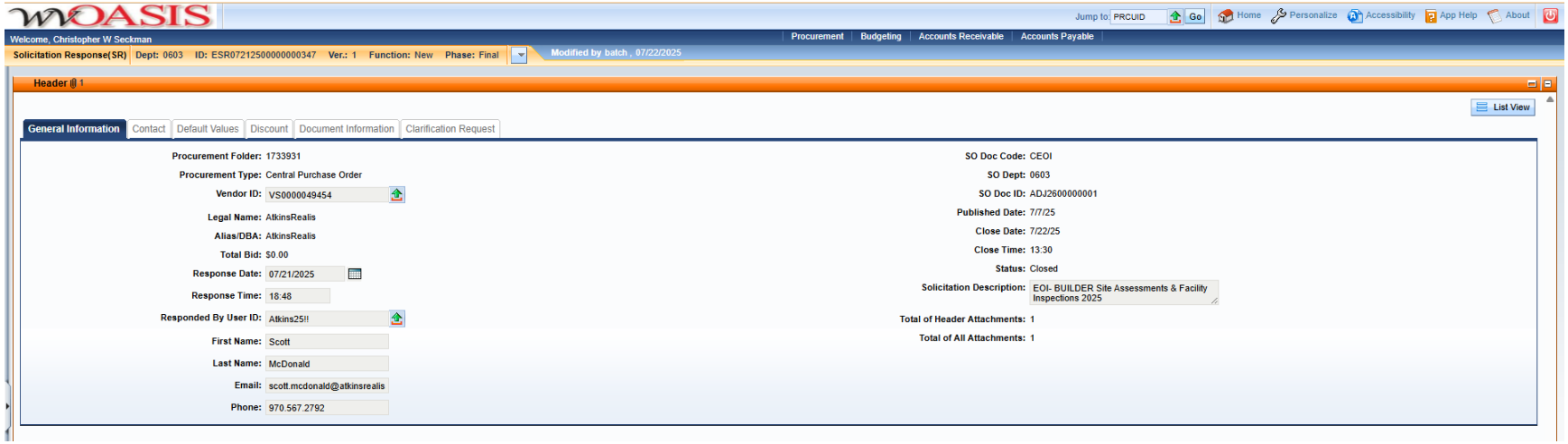
The following documentation is an electronically-submitted vendor response to an advertised solicitation from the *West Virginia Purchasing Bulletin* within the Vendor Self-Service portal at ***wvOASIS.gov***. As part of the State of West Virginia's procurement process, and to maintain the transparency of the bid-opening process, this documentation submitted online is publicly posted by the West Virginia Purchasing Division at ***WVPurchasing.gov*** with any other vendor responses to this solicitation submitted to the Purchasing Division in hard copy format.


WVOASIS
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About
Welcome, Christopher W Seckman
Procurement | Budgeting | Accounts Receivable | Accounts Payable
Solicitation Response(SR) Dept: 0603 ID: ESR07212500000000347 Ver.: 1 Function: New Phase: Final
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Clarification Request
Procurement Folder: 1733931
Procurement Type: Central Purchase Order
Vendor ID: VS0000049454
Legal Name: AtkinsRealis
Alias/DBA: AtkinsRealis
Total Bid: $0.00
Response Date: 07/21/2025
Response Time: 18:48
Responded By User ID: Atkins25!!
First Name: Scott
Last Name: McDonald
Email: scott.mcdonald@atkinsrealis
Phone: 970.567.2792
SO Doc Code: CEOI
SO Dept: 0603
SO Doc ID: ADJ2600000001
Published Date: 7/7/25
Close Date: 7/22/25
Close Time: 13:30
Status: Closed
Solicitation Description: EOI- BUILDER Site Assessments & Facility Inspections 2025
Total of Header Attachments: 1
Total of All Attachments: 1

Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

State of West Virginia
Solicitation Response

Proc Folder:	1733931
Solicitation Description:	EOI- BUILDER Site Assessments & Facility Inspections 2025
Proc Type:	Central Purchase Order

Solicitation Closes	Solicitation Response	Version
2025-07-22 13:30	SR 0603 ESR07212500000000347	1

VENDOR

VS0000049454
AtkinsRealis

Solicitation Number: CEOI 0603 ADJ2600000001

Total Bid: 0 **Response Date:** 2025-07-21 **Response Time:** 18:48:54

Comments: N/A

FOR INFORMATION CONTACT THE BUYER
David H Pauline
304-558-0067
david.h.pauline@wv.gov

Vendor
Signature X **FEIN#** **DATE**

All offers subject to all terms and conditions contained in this solicitation

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	EOI- BUILDER Site Assessments & Facility Inspections 2025				0.00

Comm Code	Manufacturer	Specification	Model #
81101508			

Commodity Line Comments: No fee required for this solicitation. Fee negotiation is post award.

Extended Description:

Provide professional engineering services for the BUILDER Sustainment Management System Implementation, including Site Assessments & Facility Inspections, for facilities throughout WV, per the attached documentation.

AtkinsRéalis

Solicitation # CEIO 0603 ADJ2600000001
July 22, 2025
The State of West Virginia, Department of Administration.
Purchasing Division
West Virginia Army National Guard – Construction and Facilities Management Office

EOI - BUILDER SITE ASSESSMENTS & FACILITY INSPECTIONS - 2025

AtkinsRéalis

July 22, 2025

AtkinsRéalis USA, Inc.
4600 S. Ulster St.,
Suite 1100
Denver, CO 80237
☎ (303) 214-0843
AtkinsRealis.com

Mr. David H. Pauline
State of West Virginia, Dept. of Administration, Purchasing Division
2019 Washington Street East
Charleston, WV 25305

RE: BUILDER SITE ASSESSMENTS: SOLICITATION #CEOI 0603 ADJ2600000001

Dear Mr. Pauline,

AtkinsRéalis USA, Inc. (AtkinsRéalis) is pleased to submit this proposal to the State of West Virginia Army National Guard (WVARNG CFMO) to perform BUILDER Sustainment Management System (SMS) Support for WVARNG CFMO Construction and Facilities Management Office (CFMO). Based on the needs you have outlined; we can confirm that AtkinsRéalis is fully capable of performing the required work and would appreciate the opportunity to do so. Further, if AtkinsRéalis is the successful proposer of this solicitation, it is our intention to negotiate and enter into a contract, considering we are currently in good standing with the State of West Virginia. **AtkinsRéalis has successfully executed both state and national-level contracts for the National Guard (Air and Army) across the country – including the State of West Virginia.**

We offer WVARNG CFMO a team of exceptional, nationally experienced, subject matter experts who can provide high-volume professional BUILDER SMS support in three unique ways. First, our Project Manager (PM), Scott McDonald, PhD, PMP, APM, has been involved with BUILDER prior to its public release in 2001 and is managing key BUILDER staff on this team. Second, our proposed team has reviewed your BUILDER data, making us familiar with the **33 sites and 222 facilities** (as of July 2025) in the WVARNG portfolio. Third, in addition to BUILDER-based Facility Condition Assessments (FCAs), we continue to perform master planning activities, utility mapping and assessment work, energy/water audits, space utilization studies, and microgrid studies for National Guard sites around the country and globally for the Department of Defense (DoD). These qualifications position AtkinsRéalis to be a **highly experienced and regionally available resource** to execute this project.

To address the requirements of this project, AtkinsRéalis offers two elements that are paramount to success: the appropriate project team and relevant project experience. All members of our proposed team are not only highly qualified in their respective areas of expertise but have a combined **120+ years of relevant experience** working on BUILDER SMS-related projects for the National Guard and DoD worldwide.

There is no learning curve for our team; AtkinsRéalis is **ready to get started on day one.** We will provide WVARNG CFMO the **best team to perform the BUILDER-based FCAs** and provide support for the program management, data collection, and work planning activities you look to accomplish. Our team is looking forward to this opportunity and we welcome you to contact us should any questions arise.

Regards,

Scott McDonald, PhD, PMP, APM
Project Manager, Principal Point-of-Contact
scott.mcdonald@AtkinsRealis.com | (970) 567-2792

Contents

Why AtkinsRéalis?

Local: AtkinsRéalis is positioned to be responsive and effective in serving the needs of WVARNG CFMO. Our capacity allows us to pull from specialized experts locally, regionally, and nationally. Our team includes personnel in offices regional to West Virginia including Ohio, Pennsylvania, Virginia, and North Carolina.

Additionally, AtkinsRéalis brings local and national expertise in BUILDER SMS to support your program. We have performed BUILDER assessments throughout the continental U.S. as well as worldwide for the DoD - and for the National Guard (headquarters and state-level) in multiple U.S. states and territories over the last 15 years – **including BUILDER SMS work for WV Air National Guard**. Included in our local presence is non-BUILDER project experience with West Virginia state organizations such as Air National Guard and Division of Tourism and Parks.

Finally, from a regional perspective, AtkinsRéalis has been serving the Armory Commission of Alabama's (ALARNG) BUILDER facility management needs since BUILDER was initially implemented in 2015 with an active and on-going project as well as multiple site micro grid studies.

Proven: AtkinsRéalis is currently assessing and has successfully completed BUILDER assessments for more than 100M Square-Feet (SF) of DOD/NGB facilities, including Space Utilization Surveys (SUS), American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) L2 energy audits, DoD Installation Energy and Water Plans (IEWP) format energy/water audits, and Real Property Inventory validation at thousands of DoD facilities, producing updated CADD floor plans and geospatial datasets using the Spatial Data Standards for Facilities, Infrastructure, and Environment (SDSFIE)-compliant geodatabases and practices.

Our team has a strong relationship with the U.S. Army Corps of Engineers - Research and Development Center - Construction Engineering Research Laboratory (USACE-ERDC-CERL) BUILDER development team dating back 15 years as **one of the first BUILDER CRADA (Cooperative Research and Development Agreement) partnerships**, indicative of our long and successful presence in the BUILDER arena. Additionally, our proposed PM, Mr. McDonald, was a member of the BUILDER development team at CERL prior to its release and remains actively engaged with CERL, as BUILDER's successor - ESMS (Enterprise Sustainment Management System) is rolling out. Our CPARs ratings (33 "Exceptional" and 13 "Very Good" in our recent BUILDER projects alone) and testimonials of our clients, validate the trust we have garnered through our responsiveness, technical proficiency, and resourcefulness. Over the past five years, AtkinsRéalis has completed multiple projects supporting the National Guard and related Construction and Facilities Management Office – Planning and Programming Branches (CFMO-P&P) by successfully delivering BUILDER SMS assessments for programs resembling the current WVARNG CFMO solicitation.

Experts: AtkinsRéalis has been committed to all aspects of BUILDER excellence for 15 years and counting, with primary emphasis on providing accurate and meaningful inventory data collection and BUILDER/BRED leveraged condition assessments for our clients. We understand BUILDER's importance to the Army National Guard (ARNG) and know that its value is realized when asset owners have confidence in the quality of their BUILDER-based facility data to make crucial programmatic investment decisions. AtkinsRéalis is currently engaged with National Guard Bureau (NGB) clients to assist them in not only ensuring that their BUILDER data is accurate and reliable, but that they are able to **achieve maximum benefit of the data during their annual planning/programming activities.** Our NGB BUILDER projects typically include BUILDER training and planning engagement with CFMO staff to maximize project benefit.

Our large geographical footprint allows us to provide registered architects, engineers, surveyors, Geographic Information System/Computer-Aided Design and Drafting (GIS/CADD) specialists to support our field team providing assessments when required, **which offer efficiencies of time and cost** - and ensures that ARNG/ANG requirements and **quality expectations are exceeded**.

I. Executive Summary

Document Content Organization: The focus of this document is to address the points you outline in your Evaluation Criteria and Scoring Guide as clearly and concisely as possible, with the assumption that you quickly find the information you need.

AtkinsRéalis USA, Inc. (AtkinsRéalis) was established in the U.S. in 1960 (65 years in business) as a corporation headquartered in Tampa, and has grown to 4,500+ employees nationally, 12,800 in North America, and over 38,000 world-wide. Our team has a strong regional presence of more than 720 employees physically located in four offices within driving distance of West Virginia. AtkinsRéalis is a worldwide BUILDER SMS expert with over 25 years of experience in planning and executing state-wide FCAs with 15 of those years specifically having a BUILDER focus. **AtkinsRéalis was among the first BUILDER SMS CRADA partners with USACE-ERDC-CERL promoting the importance of leveraging BUILDER to collect and manage installation facility data.** We have completed BUILDER assessments for the WV Air National Guard portfolio previously and are pleased to submit our proposal for the WVARNG CFMO BUILDER Assessments **SOLICITATION #CEOI 0603 ADJ2600000001.**

AtkinsRéalis employs a proactive risk management approach **to ensure FCAs are completed on schedule, within budget,** and we follow a rigorous **Quality Assurance (QA)** and **control framework to be sure all results are submitted at the highest standards of quality.** One way we **maintain high levels of quality is by identifying and mitigating potential risks.** Some risks identified for this project include our recognition of the environment of West Virginia, the ever-present risk of schedule or scope slippage, as well as our recognition of the potential budget concerns **WVARNG CFMO must consider. We address these risks, along with others, and their mitigation strategies thoroughly in our project approach.**

AtkinsRéalis approaches the method of the physical inspection of the assets through five steps in the inspection process (in order): Data Call / Site visit Preparation, Inventory Validation, Inspection Data Collection (on-site), Post Site Visit Data Production and QC, and Scenario Planning and Final Reporting. All five steps are carried out in close collaboration with the client; they will be tracked and we will communicate where we are in the process at any given time. Open communication at all times is highly prioritized by AtkinsRéalis, and if awarded this project, we intend to establish a regular, mutually agreed upon, communication cadence with the WVARNG CFMO project management team.

Part of any successful project is having a solid, but flexible, project management plan in place. **Critical components of our project management plan include project management, data management, inspection data collection, and planning/forecasting activities related to BUILDER deployment at WVARNG CFMO.** This plan, outlined in greater detail in the proposal, is designed to have a solid foundation while remaining flexible to accommodate any changes determined to be necessary by WVARNG CFMO and is a framework for collaboration between WVARNG CFMO and AtkinsRéalis to occur.

Our team's extensive experience provides us with firsthand insights into the challenges of a large-scale program. Lessons learned from previous projects have informed us of our staffing and scheduling approach, ensuring efficiency without compromising quality. For the WVARNG CFMO, we will develop a detailed project schedule encompassing all phases, incorporating key tasks, milestones, and an essential planning phase to engage stakeholders. This schedule will include initial and interim meetings with WVARNG CFMO to secure their buy-in and involvement as well as fostering collaboration throughout the process.

Based on years of experience with BUILDER-based condition assessments and related data management, AtkinsRéalis has developed a set of tools and related processes that have allowed us to streamline our work management and data collection approach. As a complement to BRED – if needed, **an AtkinsRéalis developed workbook** allows for quicker collection of data by providing inspectors with a filterable complete catalogue of the ASTM UNIFORMAT II systems for inventory that can be easily transferred into BUILDER.

Assessment teams will typically consist of two to three assessors, split by interior architecture, exterior architecture, and Mechanical/Electrical/Plumbing (MEP). If multi-disciplinary inspectors are used to cover more than one system type, the are properly trained and experienced in all disciplines they collect. All assessments begin with team calibration and assessment review, even for seasoned assessment veterans. Wherever deemed appropriate, multiple sites may be grouped into a single trip to reduce travel costs and improve assessment efficiency.

As a standard practice, multiple photos of each space assessed (360° and 2D) are taken by the team during the initial assessment. To facilitate efficient management and referencing the volume of photos collected during a typical BUILDER focused inspection, **AtkinsRéalis employs a web-based image management system** that provides access to all images by multiple users, mapped organization of images by specific site / facility / room or exterior location, and more. This method allows after visit review of what was seen onsite during the QC or report development phases. AtkinsRealis will make this image archive available to WVARNG to enhance the use of the BUILDER database.

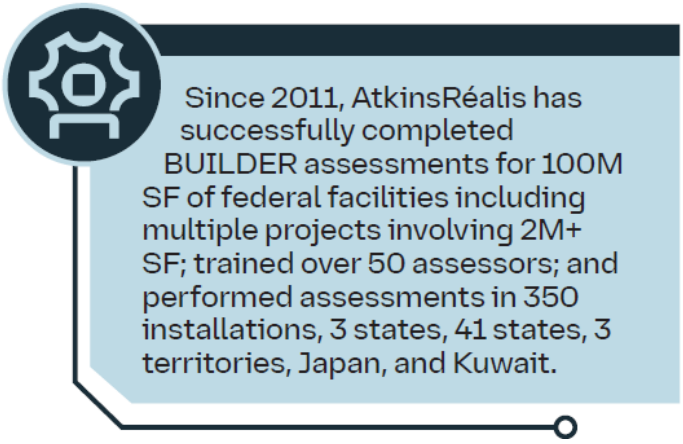
AtkinsRéalis has developed a series of QC tools that help field inspectors and data management personnel increase quality and efficiency. Our QC process happens in three phases: 1) our inspectors run a QC report on their data to check for input errors and omissions, 2) our QC team (independent review) uses our proprietary tools to identify data compliance issues and performs necessary corrections, and 3) our project management team works with WVARNG CFMO staff to ensure that data are as expected and that WVARNG has a clear understanding of how to maximize data usage.

In addition to the FCAs required for this project, AtkinsRéalis offers WVARNG CFMO **additional value-add options** to combine with our detailed FCA process and deliverables. Such options include (but are not limited to):

- **Sustainable Decarbonomics™ assessment -** a model which offers a strategic roadmap towards achieving Net Zero, energy efficiency and thermal performance, energy reduction, and renewable energy generation measures.
- **Energy Audits -** AtkinsRéalis performs engineering focused facilities assessments using ASHRAE procedures for Building Energy Audits.
- **Space Studies -** Our team's interior designers specialize in space studies, utilization planning and needs analysis, and interior design finishes, landscaping, and furnishings. Our designers are familiar with the requirements of DoD Space Requirements Form DD1450 and have extensive experience in space utilization and facility planning for DoD organizations.

Finally, in all things on-site and in-office, AtkinsRéalis employs a robust safety program and Task Hazard Analysis (THAs), step back cards, hydration reports, and use of PPE and AtkinsRéalis branded Safety Uniforms are part of our company culture. Three simple words accentuate **our internal safety philosophy: Stop, Think, and Act.** We recognize project success requires effective leadership in the areas of health and safety; at the end of the day, our goal is simple: provide the highest quality performance and deliverables possible while keeping safety at the forefront of all activities.

1. Qualifications / Experience / Past Performance



AtkinsRéalis has performed BUILDER-based facility condition assessment and data analysis work for a variety of clients globally. With over 150 sites visited, clients including multiple ARNG organizations, U.S. Air Force (USAF), The United States Navy (USN), USACE, multiple airport authorities, multiple municipalities, multiple state Department of Transportation sites, and the U.S. National Park Service. **Table 1** below shows a briefing of total square footage, and the number of buildings assessed across various clientele.

Table 1: BUILDER assessment totals to date

Client	No. of Buildings Assessed	Total SF
U.S. Department of Defense	+8000	+100,000,000 SF
U.S. Department of Energy	981	8,600,000 SF
Architect of the U.S. Capitol	57	17,400,000 SF
Federal Bureau of Investigation	122	5,020,200 SF
U.S. Municipal	32	3,440,000 SF
U.S. Private Industry	43	9,330,000 SF

Qualifications

Subject Matter Experts (SME): Our team consists of SMEs in BUILDER SMS, along with experts in key areas aligning with WVARNG CFMO needs (e.g., GIS, Value (Cost) Engineering, Master Planning, Surveying, Scenario Modeling, Software Development). Our team will furnish program management (on-going system rollout and maintenance, operations coordination, data updates and validation, planning, forecasting, budgeting guidance, CFMO staff collaboration coordination), BUILDER training utilizing AtkinsRéalis' complete set of **in-house-developed BUILDER courseware**, instruction, and technical support to respective system users in the WVARNG CFMO. AtkinsRéalis will combine experience working with other organizations with West Virginia-specific needs and staff direction to lead facility management and BUILDER program efforts in a manner most beneficial to WVARNG CFMO.

Technical Competence: With over 15 years of BUILDER implementation experience and **our BUILDER CRADA relationship with USACE-ERDC-CERL**, AtkinsRéalis has a keen understanding of - and on-going engagement with - DoD directives related to BUILDER. Including the Army BUILDER SMS Manual, the BUILDER Field Assessment Manual, BUILDER performance improvements based on version updates, and process changes dictated by OSD and DoD services, AtkinsRéalis incorporates all these BUILDER program inputs into our overall project quality approach.

Targeted outcomes include 1) accurate and complete data; 2) cost-efficient implementation and

management process; and 3) resources that can effectively direct organizational budgeting and management efforts.

Technical Field Inspections and System Maintenance: With over 100M SF of BUILDER-focused data collection experience including thousands of hours of related collaboration with NGB and DoD facilities leadership, AtkinsRéalis is familiar with dynamics, needs, and processes connected to the responsibility of managing National Guard facilities. Our project focus is to become a responsible, cooperative, and productive partner with WVARNG CFMO to see that your facility assets that serve your mission are managed at the highest levels.

Among other active projects in our portfolio, AtkinsRéalis is responsible for managing BUILDER for the FBI nationwide. This includes a BUILDER database containing millions of SF of secure facilities totaling over $2B in replacement value – demonstrating AtkinsRéalis' ability to earn the trust of organizations like the FBI to be responsible for the data and tools that serve mission-critical facility management interests. Successful execution of this relationship requires that AtkinsRéalis work closely with the CERL BUILDER development team, FBI FMO staff and leadership, and internal AtkinsRéalis resources, to proactively manage people, technologies, and organizational needs and constraints.

In addition to our experience and expertise with BUILDER, we have extensive experience with integrating data systems and leveraging supporting software systems such as VUEWorks, Oracle, IBM Maximo/Tririga, iPlan™, Archibus, iEMS (Air National Guard), and AssetWorks AIM System to name a few. We understand the fundamentals and importance of good equipment inventory data to effectively manage on-going corrective and preventative maintenance programs. We also know the importance of assessing and recording accurate granular component-level site condition and lifecycle data that will drive capital and maintenance plans and essential data points that need to be mapped and uploaded into assessment and capital planning software and CMMS (Work Order Management) systems. AtkinsRéalis has the staff and technical expertise to connect systems like BUILDER to other systems that can ultimately enhance the facility management process.

Custom Data Visualization Utilizing Power BI: AtkinsRéalis has completed several projects where clients required customized data visualization capabilities. Working with the client to develop meaningful Key Performance Indicators (KPIs) and leveraging our experience with the functionality of Power BI, dashboards were developed that gathered information from multiple databases. The dashboards provided efficient access to data used for planning and programming activities. A recent project example includes work (2024 – project value = $6.9M) for the Texas Department of Transportation (TXDOT) statewide. In this case, data about bridges (structure, location, condition, construction, etc.) were gathered and sorted across multiple criteria to produce a sufficiency rating as well as presenting related supporting data. **Figures 1 and 2** show dashboards that yield decision support data showing both inputs and outputs to the work planning process.

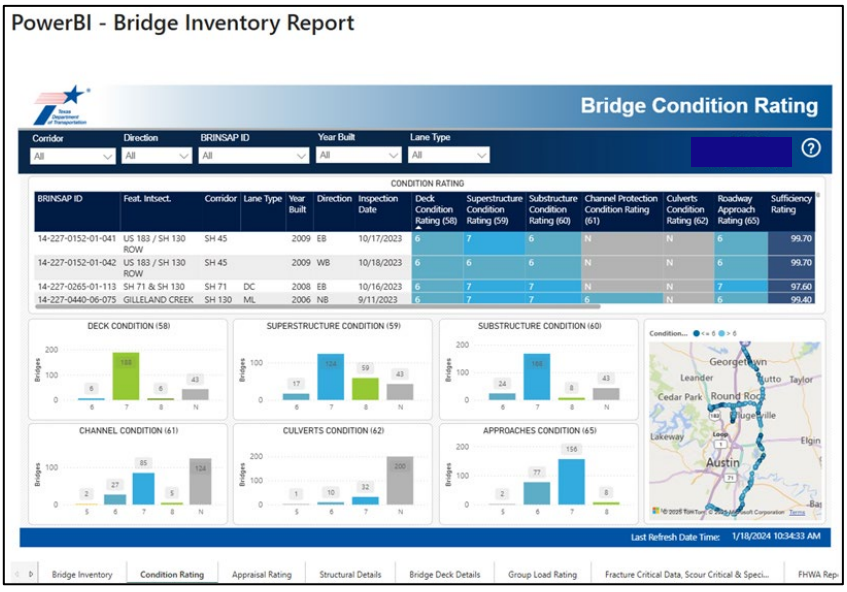


Figure 1: TXDOT Bridge Metrics

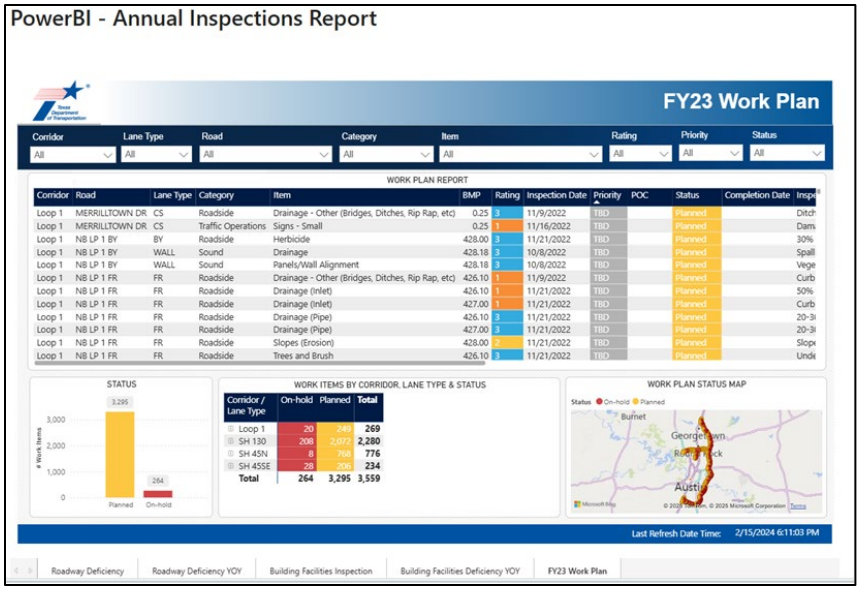


Figure 2: TXDOT Work Plan Outputs

Personnel Resumes

Our team includes highly qualified professionals whose resumes demonstrate extensive experience and expertise in various aspects of facility management and BUILDER SMS. Below are the resumes of four of our key project members, showcasing the credentials and project experience that will greatly benefit the WVARNG CFMO.

Matthew Anderson, PE, PMP, C.E.M.

Senior Project Director

Matt Anderson is a retired Air Force Civil Engineer Officer and a Professional Engineer (PE) with more than 23 years of experience applying project and program planning and programming, execution, operations management, and expeditionary facility bed down at military installations worldwide. His experience working with DoD clients at military installations worldwide, along with experience executing DoD design and construction projects applying UFC and other DoD guidance ensures his ability to meet customer requirements while also achieving operational goals. He is also a key member of the Society of American Military Engineers Facility Asset Management Community of Interest investigating additional uses of BUILDER SMS for facility management issues facing the federal government and industry.

Relevant Project Experience:

BUILDER SMS Support, Planning and Programming with SUS, WYMD, WY. Program Manager providing oversight of site visit scheduling and data QA. The scope included BUILDER inventory validation and inspection updates, and statewide BUILDER program management support. **Size:** 225K SF. **Cost:** $448K. **Duration:** 9/2017 – Present.

BUILDER SMS, State-Wide FCA's, Utility Mapping and ASHRAE Energy Audits, SCARNG, SC. Project Execution Designer during QA for both process and data. This encompassed providing SCARNG with technical assistance in three areas including physically completing inventory and condition assessments of Real Property buildings utilizing the BUILDER SMS application, mapping utilities in GIS, and completing ASHRAE Level 2 energy audits. The data collected was utilized in identifying, planning, and prioritizing potential work requirements and developing work plans. **Size:** FCA BUILDER: 919,805 SF (152 buildings/34 sites); Utilities Mapping: 152 buildings/34 sites; ASHRAE Level 2 Energy Audits: 195,754 SF (11 buildings). **Cost:** FCA BUILDER: $405K; Utilities Mapping: $411K; ASHRAE Level 2 Energy Audits: 132K. **Duration:** 10/2022-02/2024.

BUILDER SMS Implementation, USACE TAM, Camp Arifjan, Kuwait. On-site PM for BUILDER assessments overseeing building information system technical data through physical inspection and observation.

Total Years of Experience

23

Years with the firm

3

Education

M.B.A., Business Administration and Management, Webster University

B.S., Mechanical Engineering, Valparaiso University

Registrations

PE: CO #0058419
IL #062059075
VA #0402064503

Certifications

Project Management Professional (PMP) # 3308721

Certified Energy Manager (CEM) #173788

Awards

AtkinsRéalis Outstanding PM Award (Federal BU), 2022

These duties were followed by a reconciliation of the data to load in the enterprise system of record (BUILDER). **Size:** 301 facilities; 3.8M SF. **Cost:** $2M. **Duration:** 01/2022 – 8/2022.

Readiness Center, Microgrid PPDC, ALARNG, Citronelle, AL. Deputy PM during the oversight of the Project Planning Document Charrette (PPDC) for a microgrid demonstration project at the ALARNG Citronelle Readiness Center. This project integrates four types of Distributed Energy Resource (DER) elements: PV generation, electrical energy storage, redundant fueled emergency generation, and load reduction devices and load control systems, all managed by a single microgrid controller in order to optimize power generation and load flexibility, enhancing power quality of the surrounding grid using renewable resources, creating disaster-tolerant power resources for the ALARNG site. **Size:** 10.6 Acre site; 37K SF. **Cost:** $400K. **Duration:** 9/2022- 9/2023.

FY21 IDPs/IEPs/District Plan, ANG, Multiple ANG Installations. Task Manager for Installation Energy Plans responsible for performing investigative, analytical, and planning services to provide resilient and sustainable planning guidance as well as strategies for project execution of energy and water resilient projects to achieve the Air Force Energy Flight Plan Goals. The teams use of the Air Force Resilience Framework Model tool and long-range strategies for energy resilience ensured available, reliable, and quality power and water for each of the installation's critical missions. **Size:** 10 Installations. **Cost:** $673K (IEP Tasks). **Duration:** 8/2022- 11/2024.

MH-139 Helicopter Beddown Planning Charrette, Andrews AFB, Joint Base Andrews, MD. PM for the planning charrette to support the Beddown of MH-139 helicopters to replace the UH-1N helicopters at Joint Base Andrews which included the development of the planning charrette report, DD 1391, and updated plant replacement value for each hangar. Also identified scope-impacting criteria for the Facility Sustainment, Restoration, and Modernization (FSRM) necessary to accommodate the new mission within Hangars 1 and 2 and confirmed UFC. **Size:** 175K SF. **Cost:** $45M. **Duration:** 05/2022 – 08/2022.

A-E Services for Royal Saudi Air Defense Forces THAAD Design #1 A-E Design Reviews, USACE TAM Eastern Region & King Khalid Military City, Kingdom of Saudi Arabia. Design Manager responsible for closeout duties consisting of advising and assisting the Middle East District (TAM) of the USACE reviewing site and facility designs provided by the Designer of Record (DOR) supporting a foreign military sales case. The review focused on ensuring designs were UFC and Saudi Building Code compliant. **Size:** 37 Facility Design Packages (3.4K drawings) and Specifications/Design Analysis (28K pages). **Cost:** $180M. **Duration:** 01/2022 – 03/2022.

GIS Linear Segmentation, ANG, 10 States. Utility Condition Rating SME responsible for QA for both process and data. Under this contract, AtkinsRéalis is currently performing GIS analysis and field technical assistance for the ANG to meet OSD mandates on LS of infrastructure and utilities. This work includes a review of Air Force bases GIS data to Spatial Data Standards for Facilities, Infrastructure, and Environment (SDSFIE) 4.0, perform data gaps analysis, and input missing GIS data from SDSFIE 4.0 based on the results from the gaps analysis and update maps. **Size:** 4.9M LF; 6.7M SY. **Cost:** $2.6M. **Duration:** 10/2021 – Current.

125 FW Advanced Planning Charrettes for Weapons Load Training and Weapons and Release Systems Hangars, USACE Jacksonville, Jacksonville, FL. PM responsible for charrettes to develop the requirements and cost to construct a Weapons Load Training (WLT) Hangar and a Weapons and Release Systems Hangar to support the Beddown of fifth-generation fighter aircraft, including Joint Strike Fighter F-35A. aircraft. Project included the development of the planning charrette report and DD 1391 for both hangars to define the MILCON funding necessary to accommodate the new mission along with ensuring the facilities meet the current UFC and the airframe facility requirement document. **Size:** 23K SF. **Cost:** $18M (est. construction). **Duration:** 8/2022 - 12/2022,

Scott J. McDonald, PhD, PMP, APM

Project Manager

Scott McDonald has 26 years of experience in the planning and management of technology-based asset management solutions, development and execution of technical training programs, project budget development and financial management, staff leadership, and client support within a public, higher education institution. He continues to work with BUILDER SMS products, which are developed by USACE, to produce efficient and streamlined management practices designed to increase effectiveness and cost savings within organizations. Using his computer science background, Mr. McDonald supports and troubleshoots the SMS software products. He is skilled in identifying market opportunities and developing new product offerings in multiple environments and possesses extensive experience working within a variety of organizational environments including federal, state, and local governments; higher education; the DoD; and private industry. He formerly served as director of the USACE CERL/University of Illinois Technical Assistance Center during the testing, development, and initial testing of the BUILDER SMS. Mr. McDonald has developed courseware and personally trained hundreds of people in the effective use of BUILDER. His knowledge and capabilities ensure we will have qualified inspectors available even during periods of significant surge.

Relevant Project Experience:

BUILDER SMS Support, Planning and Programming with SUS, WYMD, WY. PD during the oversight of site visit scheduling and data QA. The scope included BUILDER inventory validation and inspection updates, BUILDER program management, and SUS. **Size:** 225K SF. **Cost:** $448K. **Duration:** 9/2017 – Present.

South Carolina BUILDER SMS, State-Wide FCAs, Utility Mapping and ASHRAE Energy Audits, SCARNG, SC. PD during the oversight of project execution, quality management, and client interface. Working with the PM, sub-contractor, and technical personnel to ensure execution of all tasks. Providing BUILDER training and technical expertise to clients and staff. Assisting PM with detail and schedule management for tasks one, two, and three. Review of final report documents and presentation of out brief for each task. This contract encompassed providing the South Carolina Army National Guard (SCARNG) with technical assistance in three areas including physically completing inventory and condition assessments of Real Property buildings utilizing the BUILDER SMS application, mapping utilities in GIS, and completing ASHRAE Level 2 energy audits. The data collected will be utilized in identifying, planning, and prioritizing potential work requirements.

Total Years of Experience

26

Years with the firm

10

Education

Ph.D., Engineering & Technology Management, National University

M.B.A., Albany State University

B.S., Computer Science, Albany State University

Certifications

Project Management Professional (PMP), Project Management Institute (PMI) #2695816

Accredited Pavement Manager (APM), The International Pavement Management Association #B-00000005

The data collected was utilized in identifying, planning, and prioritizing potential work requirements and work plans, identifying, planning, and prioritizing potential work requirements and developing short- and long-term work plans. and work plans, identifying, planning, and prioritizing potential work requirements and developing short- and long-term work plans. The scope includes FCAs, GIS utility mapping, and ASHRAE energy audits, including BUILDER database updates with validation of existing data. **Size:** 152 Buildings; 920K SF. **Cost:** $948,784. **Duration:** 10/2022-02/2024.

BUILDER SMS Implementation, USARNG, ARNG/USACE Mobile, FL & Camp Blanding, IL, SC, and WY. BUILDER Technical Lead and support to the project team and technical oversight to all aspects of the project. The scope included BUILDER FCAs, BUILDER data validation and input, database management, and work plan recommendations. **Size:** 2.3M SF; 59 installations; 4 states. **Cost:** $1.2M. **Duration**: 9/2020 – 11/2021.

BUILDER SMS Implementation Services, ALARNG, Montgomery, AL. Real Property Data Analyst responsible for training both client staff and field teams on the BUILDER system. Responsible for implementing BUILDER and performing related inventory and condition assessments for 2.4M SF of facilities across the State of Alabama. Also served as PM for training both client staff and field teams on the BUILDER system. Oversaw implementation of BUILDER and related inventory and condition assessments for facilities across the State of Alabama. Established FCA site visit schedule to minimize operational disruption to units in the facilities. Scope: Infrastructure assessments, FCAs, and Real Property inventories with BUILDER SMS. **Size** 4.2M SF. **Cost** $3M. **Duration:** 9/2017 – On-going.

Region 3 Sustainable Infrastructure Assessments, AFCEC, USACE Fort Worth District, Various Sites, CONUS. Quality Manager who oversaw quality for BUILDER assessments for more than 26.6M SF at more than 2,000 facilities across 10 USAF installations in the Southeast U.S., and conducted space utilization studies at 135 facilities, producing updated S-File databases and CADD documents using SDSFIE-compliant data structures. The project also included energy audits and sustainable building surveys, Real Property inventory, and RPIE inventory/barcoding. AtkinsRéalis was one of the first companies to implement BUILDER for the DoD. **Size:** 26.6M SF; 2,000+ facilities. **Cost:** $13.8M. **Duration:** 9/2012 – 5/2016.

FCAs and BUILDER Data Integration, 23 States, Eastern Region, ANG, Locations, Eastern U.S. Technical lead/Real Property Data Analyst during the oversight of the data integration between BUILDER and ANG CMMS and Integrated Engineering Management System (iEMS). Developed and managing execution of the quality action plan (QAP) guiding quality oversight in the projects. Reviewing data and monitoring field team processes which included initial staff training and calibration prior to site visits and site visit sampling to ensure consistency and quality levels are maintained. Developed the Quality Action Plan, monitored field team processes, completed QA and training. Scope: SIAs, BUILDER FCAs and SUSs at multiple installations. Oversaw data integration between BUILDER, ANG CMMS and iEMS. **Size:** 13M SF; 23-state region. **Cost** $3.3M. **Duration:** 9/2018 – 06/2020.

BUILDER FCAs, FBI, Quantico, VA. PM responsible for managing the secure site hosting of BUILDER for the FBI globally and providing training and support to the client sites. AtkinsRéalis also provided support and training for the implementation and use of the BUILDER and PAVER software systems at the FBI campus in Quantico, VA. **Size:** 2.8M SF; 4.25M SF. **Cost:** $800K. **Duration:** 9/2014 – 9/2020 & 9/2020 – 9/2022.

FCAs and UCA's, Marine Corps Air Station, USACE Huntsville Center, Iwakuni, Japan. BUILDER Technical Lead responsible for the technical oversight and utility condition assessment portion of the project. The UCA included a subsurface utility engineering, field surveying, leak detection services, existing and future utility demands, and utility modelling to ensure compliance with the base IEP and develop an implementation strategy and execution plan for achieving water sustainability. The scope also included BUILDER assessments. **Size:** 5M SF; 866 Facilities. **Cost:** $3.6M. **Duration**: 10/2017-02/2020.

Amy Breed, PhD, PMP, GISP, IAM

BUILDER Quality Manager

Amy Breed is a Senior Asset Management Consultant with a Ph.D. focused on Geology. She is skilled in GIS, consulting, Design Project Management, Microsoft Excel and Access, Data Analysis, Hydrology, and Water Treatment. Dr. Breed also co-developed a BUILDER data QC tool promoting high-quality data submissions and project efficiency. During previous employment, she was the PM for four years on large, federal consulting and design opportunities. Prior, Dr. Breed served as assistant PM, which contributed to the receival of PMP. She is tenured in advising clients, writing/re-writing technical orders, and overall, assisting stakeholders during decision making. Dr. Breed has exposure to numerous CONUS and OCONUS military bases during her project oversight and consulting efforts.

Relevant Project Experience:

BUILDER SMS Support, Planning and Programming with SUS, WYMD, WY. QA/QC advisor responsible for assisting with data QA/QC and updating the data QC Tool as appropriate. AtkinsRéalis has been involved with the WYARNG since the initial implementation of BUILDER in 2017. Since that time, the team has finalized implementation and is in the process of reassessing the 1.74M SF of facility space in the portfolio. Included in the project scope, AtkinsRéalis provides program management assistance to WYARNG as it relates to their facility management needs. **Size:** 225K SF. **Cost:** $448K. **Duration:** 9/2017 – Present.

BUILDER SMS Implementation Services, ALARNG, Montgomery, AL. QC during BUILDER SMS Implementation and updates (on-going compliance) statewide during data QA/QC and provided updates to the data QC Tool as appropriate. The scope includes Infrastructure assessments, FCAs, and Real Property inventories with BUILDER SMS. **Size** 4.2M SF. **Cost** $3M. **Duration:** 9/2017 – On-going.

CTRMA, LA 18 – FY 25 Operational Support Services, Austin, TX. Senior Asset Management Consultant responsible for assisting with Transportation Asset Management Plan development for the Central Texas Regional Mobility Authority (CTRMA). AtkinsRéalis prepared and implemented AM and maintenance programs in accordance with approved operating guidelines and budget. The team supported the agency with meeting trust indenture requirements including conducting annual inspections and reports to bondholders and developing annual budgets.

Total Years of Experience

12.5

Years with the firm

<1

Education

Ph.D., Geology, Texas A&M University

M.S., Environmental Science, Baylor University

B.S., Environmental Science, Baylor University

Registrations

Geographic Information Systems Professional (GISP) #160696

Certifications

Institute of Asset Management (IAM), Certified 2022

Project Management Professional (PMP) #3393626

CTRMA facilities were funded with toll-backed revenue and are subject to annual General Engineering Consultant inspection, review, and reporting to bondholders. AtkinsRéalis reviewed and analyzed O&M inspection reports to evaluate the condition of the assets, development routine and life cycle estimates for preservation of assets, and financial reporting included in the Annual Condition Report to bond holders. The team also provided O&M modeling supporting bond financing and TIFIA loans. **Size:** 309 CLM *(continuously changing).* **Cost:** Loans; 183S ($743M), 290E Ph III ($127M), 183A Ph III ($277M), and 183N ($612M). **Duration:** January 2010-On-going.

Experience from Previous Employment with Jacobs.

BUILDER Assessments, ARNG, Various Sites, CONUS. QA/QC during the development and update of an automated data QC tool in Microsoft Access which exports reports detailing assessment data errors/inconsistencies. The scope included conducting baseline BUILDER assessments. In coordination with ARNG headquarters, BUILDER data, photos, and various reports were furnished to support the ARNG's larger facility management program.

Tactical MDI Survey, USAF, Various Sites, CONUS. GIS Analyst and Surveyor during the development of the tools and methodologies in MDI Improvement Planning Phase I. During phase II (Phase III is in progress), Jacobs conducted MDI surveys at 76 bases and nine MAJCOMS, by interviewing the senior leadership at each base. GIS analyses include matching Real Property data to GIS layers for each base for use during the surveys to identify where the base assets are located. Surveys are conducted on-site at the Air Force Bases where the Mission Dependency Index scores are assigned by the commanders at each location.

Data Analysis, U.S. Coast Guard, Various Sites, CONUS. Data Analyst for the development of an access database driven reporting system for capturing and reporting a comprehensive view of assets, project history, and key personnel for each Deployable Specialized Forces group. Developed an access database metrics calculation model for calculating funding and shortfall metrics and modified American Society of Civil Engineers' style Letter Grades. This allows for consistency and repeatability of calculations year after year. Also assisted with the population and formatting of updated Portal (USCG intranet) webpages and libraries. Task Lead for development of an additional Portal webpage and for coordinating the development of graphics for a USCG authored internal publication. The scope consisted of developing and implementing a comprehensive mission support business model (MSBM) to manage the Coast Guard's shore infrastructure portfolio, which includes over 30M SF of building space, more than 40,000 other structures and aids to navigation, valued in excess of $18B.

Dave Savage, HCI-C

Lead Inspector

Dave Savage is an Asset Management Consultant with 20 years of experience in geo-spatial analysis, CAD drafting, DoD facility condition assessments, energy audits, planning charettes, asset management and QAQC data analysis experience. He is a technical leader and is familiar with Army, Navy and Air Force standard Real Property and planning database systems. Mr. Savage's project-specific skills include the use of AutoCAD, Bentley MicroStation, ESRI ArcMap, Bluebeam, VueWorks, Microsoft Access and Excel, BUILDER, PAVER and SiteMaster Building Pro. He has been a team lead responsible for data collection of millions of square feet of DoD properties worldwide, managing and processing of facility usage surveys, building inspections in support of the USACE BUILDER program for numerous government entities.

Relevant Project Experience:

BUILDER SMS Support, Planning and Programming, SUS, WYMD, WY. Inspection Team Lead/QAQC Analyst during the oversight and management of day-to-day operations for the BUILDER SMS implementation at the ARNG sites throughout the state of WY. The scope included BUILDER inventory validation and inspection updates, BUILDER program management and SUS. **Size:** 1.8M SF. **Duration:** 9/2017 – On-going.

BUILDER SMS Implementation Services, ALARNG, Montgomery, AL. Field Team Lead/ QAQC Analyst for the BUILDER SMS implementation at 57 Alabama Army National Guard sites, totaling nearly 4.2M SF. Conducted FCAs at armories, warehouses, headquarters, readiness centers, administration offices, and other various mission support facilities and training new architectural assessors in the field. The scope included Infrastructure assessments, FCAs, and Real Property inventories utilizing BUILDER SMS. Tasks include conducting FCAs at armories, warehouses, headquarters, readiness centers, administration offices, and other various mission support facilities and training new architectural assessors in the field. **Size** 4.2M SF. **Cost** $3M. **Duration:** 9/2017 – On-going.

BUILDER SMS Implementation, USARNG, FL, GU, IL, SC, USVI and WY. Inspection Team Lead during the oversight and management of day-to-day operations for the BUILDER SMS implementation at the ARNG sites across four states and one territory including FCAs at various mission support facilities.

Total Years of Experience

20

Years with the firm

17

Education

A.A., Computer Aided Drafting and Design, Pittsburgh Technical College

Certifications

Haag Certified Inspector-Commercial (HCI-C)

The scope included BUILDER FCAs, BUILDER data validation and input, database management, and work plan recommendations. **Size:** 225K SF. **Cost:** $448K. **Duration:** 8/2019 – 10/2020.

BUILDER Building Condition Inspection Services, Los Alamos National Laboratory, NM. Architectural Inspector for BUILDER assessments of 13 building systems involving a total of 859 buildings; 8M SF. Performed engineering services and facility assessments throughout the laboratory. Evaluated the condition of architectural components and entered the ratings into BRED. Supported the coordination of data gathering from all team members, including architectural, mechanical, electrical, and plumbing. **Size:** 859 buildings; 8M SF. **Cost:** $2M. **Duration:** 4/2016 – 9/2017.

SIA/BUILDER FCAs, AFCEC, USACE Fort Worth District, Various Locations, CONUS. Geo-spatial Technical Lead overseeing Facility Utilization Studies at 9 military installations throughout the eastern United States. Additionally, Served as Architectural inspector for SIAs and led technicians performing Real Property inventories and SUSs to facilitate future capital investments, AFCEC conducted numerous SIAs at 68 bases worldwide. Under the direction of USACE Fort Worth District, Atkins supported these efforts by performing SIAs at ten installations across the Southeast and in the Midwest. **Size:** 13M SF; 23-state installations. Size: 26.6M SF **Cost:** 13.3M. **Duration:** 10/2012 – 12/2014.

BUILDER SMS Implementation, USACE TAM, Camp Arifjan, Kuwait. Assistant Data Quality Manager for the oversight of training the field team, conducted data review of facility drawings and floorplans, and performed QC reviews of all data before uploading into BUILDER. The scope included BUILDER assessments to collect the building information system technical data through physical inspection and observation followed by a reconciliation of the data to load in the enterprise system of record (BUILDER). **Size:** 301 facilities; 3.8M SF were assessed. **Cost:** $2M. **Duration:** 01/2022 – 8/2022.

BUILDER Building Condition Inspection Services and Barracks Renovation implementation, U.S. Military Academy, West Point, NY. MEP inspector/MEP QC Analyst for BUILDER assessments. Additionally, David was responsible for geo-spatial data management, GIS/CAD conversions and floor plan development, civil engineering services and facility assessments throughout the campus in support of the 2-year barracks renovation process. David provided MEP inspector training and evaluated the condition of MEP components **Size:** 143K (Inspection Component). **Cost:** $3.5M (Total Project Fee) **Duration:** 10/2013 - 09/2015.

FCAs and Utility Capacity Analysis, Marine Corps Air Station, USACE Huntsville Center, Iwakuni, Japan. Lead Architectural inspector responsible for oversite and QA/QC of all architectural components of the BUILDER FCAs conducted over 8M SF. Tasks also include utility condition of sanitary sewer, storm water, and domestic water distribution systems. Assessment data was used to create or update ADPs, SCPs, and ADEP's. The project included FCAs, UCA, ADP, ADEP, SCPs and BUILDER assessments. **Size:** 5M SF; 866 Facilities. **Cost:** $3.6M. **Duration**: 10/2017-02/2020.

FCA and BUILDER Data Integration, ANG, 23 States, Eastern CONUS. Geo-Spatial Technical Lead overseeing Facility Utilization Studies at 32 military installations throughout the eastern United States. David was responsible for managing SDSFIE compliant datasets, creating architectural floor plans and acted as Lead Facility Inspector for over 100 buildings spread across 19 states. Additionally, acted as Lead Architectural Inspector and Trainer responsible for reviewing data and monitoring field team processes which included initial staff training and calibration prior to site visits and site visit sampling to ensure consistency and quality levels are maintained. **Size:** 13.2M SF; **Cost:** $3.3M. **Duration:** 10/2018 – 10/2020.

BUILDER Implementation, ARNG, SC, WY, IL, and USVI. Lead Architectural Inspector responsible for oversite and day-today operations for the BUILDER SMS implementation at the ARNG sites across three states and one territory, totaling nearly 2M SF. Tasks included conducting FCAs at armories, USPFO warehouses, headquarters and administration offices, and other various mission support facilities across several ARNG sites. **Size:** 2M SF. **Cost:** $456K. **Duration:** 10/2017 – 11/2018.

Experience

BUILDER FY24 and Program Management, WYARNG, Wyoming

Team: Scott McDonald, Matthew Anderson, Amy Breed, Kathy Anamisis, David Savage, Curtis Anderson
Size: 251 buildings, 22 sites, and 1.74 MSF statewide
Duration of Performance: On-going, since 2017

AtkinsRéalis has been involved with the Wyoming Army National Guard (WYARNG) since we provided the initial implementation of BUILDER back in 2017. Since that time, we have finalized implementation and are in the process of reassessing the 1.74M SF of facility space in their portfolio and program management.

BUILDER has provided WYARNG with the data necessary to **1)** know the details (Uniformat Level 4) of their inventory, **2)** have a repeatable mechanism by which they can know the condition of facilities, systems, and specific components and, **3)** develop actionable work items and projects that are a product of an objective, lifecycle-based approach. AtkinsRéalis is currently working with WYARNG to integrate these work item recommendations with their work order management system to increase visibility of their work order management system from initializing to archiving.

Additionally, AtkinsRéalis is pilot testing the use of BUILDER data with our proprietary Decarbonomics tool using WYARNG BUILDER data. This tool will leverage the information already in the BUILDER database – connected to available water and energy consumption data, to offer a more holistic view of their existing portfolio. The output from this effort will offer WYARNG an integrated facility view from which informed management decisions can be made.

The systems evaluated for the scope of services follow USARNG protocols and includes foundations and structural, exterior envelope (with roofing), interior composition, MEP systems, fire / life safety systems, finishes, conveyance, and includes program management assistance which integrates work planning and related GIS and utility support.

FCAS, UCA, ADP, ADEP and SCPs at MCASI, USACE Huntsville, Iwakuni, Japan

Team: Scott McDonald, Kathy Anamisis, David Savage, Curtis Anderson
Size: 4.8M SF
Duration of Performance: 28 Months

Under this contract with USACE Huntsville, AtkinsRéalis also provided BUILDER assessments of mission support facilities and family housing space at Marine Corps Air Station Iwakuni (MCASI). Other services included support for MCASI's installation panning standards through the development of an Area Development Plan (ADP), Area Development Environmental Plan (ADEP), Execution Plan and a review and implementation of the planning standards, in addition to the facility and infrastructure assessments.

AtkinsRéalis also contributed a Utility Condition Assessment (UCA) and Real Property Management Plan (RPMP) update including an ADP and Sustainability Component Plan (SCP) for seven districts at MCASI.

The UCA work involved: **1)** Geodatabase of the water system; **2)** WaterCAD model of the water system; **3)** Report summarizing the results of the UCA.

AtkinsRéalis instructed all field personnel to conduct subsurface utility engineering (SUE), field surveys, leak detection, water demand assessments, and as-built drawings of the water system. The SUE was performed with ground-penetrating radar and utility locating instruments.

BUILDER SMS Implementation, USACE TAM, Camp Arifjan, Kuwait

Team: Scott McDonald, Matthew Anderson, Kathy Anamisis, David Savage, Curtis Anderson
Size: 3.8M SF; 301 Facilities
Duration of Performance: 22 Months

Camp Arifjan, Kuwait with USACE Transatlantic Middle East District (TAM), is a U.S. Army forward logistics base – Aviation Classification and Repair Activity Depot (Task Force AVCRAD) for the entire Southwest Asian Theater (through Patton Army Airfield), helicopter ground support base, and as a motor pool for armored and unarmored vehicles – in Kuwait which accommodates elements of the USAF, Navy, Marine Corps and Coast Guard. Military personnel from the United Kingdom, Australia, Canada, Romania and Poland are also forward deployed at Camp Arifjan.

AtkinsRéalis conducted BUILDER assessments on 301 facilities to collect the building information system technical data through physical inspection and observation followed by a reconciliation of the data to load in the enterprise system of record. AtkinsRéalis inspectors traveled to Kuwait to perform onsite FCAs that included collecting inventory, data, and related imagery as directed by USACE management team and BUILDER SMS manual guidance. This project involved validating existing inventory by collecting and reviewing facility drawings prior to the site visit and collaborating available data with observed information. Included in the 3.8M SF of facilities on this list were over 670KSF of military housing facilities. Where possible, AtkinsRéalis inspected 100% of each of the over 120 housing facilities. When occupancy created access issues, AtkinsRéalis worked with based facility managers to collect data from representative sample areas of the facility and cross reference that information with drawings and facility manager input.

AtkinsRéalis acted decisively to field a team of experienced inspectors to collect data with minimal intrusion to Camp operations and process the data with appropriate levels of QC oversight.

BUILDER SMS Implementation Services, ALARNG, Montgomery, Alabama

Team: Scott McDonald, Matthew Anderson, Kathy Anamisis, David Savage, Curtis Anderson
Size: 1.75M SF
Duration of Performance: 12 Months: Current contract (On-going - 10 years in total to date)

AtkinsRéalis provided infrastructure assessments, FCAs, and Real Property inventories utilizing the BUILDER SMS for 1.75M SF of facilities. The team was responsible for the first BUILDER SMS implementation for ALARNG across various state-wide sites. Tasks included conducting FCA's across inventory and inspection armories, United States Property and Fiscal Officer (USPFO) warehouses, headquarters and administration offices, and other various mission support facilities at Ft. McClellan / Pelham Range in Anniston and 11 other sites throughout Alabama. Additional services included BUILDER SMS training for ALARNG CFMO staff for the full implementation and sustainment of the BUILDER SMS by FY21. The team completed over 1,700 man-hours of field assessments, collecting component condition data for 13 building systems following the ASTM UNIFORMAT II structure of building systems, in accordance with the BUILDER SMS 9-point direct rating method. The assessments included components of foundations, basement construction, superstructure, exterior enclosure, roofing, interior construction, stairs, interior finishes, conveying, plumbing, heating, ventilation and air conditioning (HVAC), fire protection, and electrical systems. Prior to beginning the on-site work, the assessment teams reviewed data including existing facility drawings, building specific hazards and safety protocols.

AtkinsRéalis also worked effectively with the ALARNG CFMO staff to coordinate escorts for access to each site, interviewed Armory managers, maintenance personnel and building occupants to gain insight into the historical wellness of a facility. The teams investigated the reliability of the building systems, recent repairs,

planned repair or replacement projects, specific equipment location, and the impact of preventative maintenance for each system.

AtkinsRéalis used the BUILDER Remote Entry Database (BRED) software to collect the facility condition data, then uploaded that information to BUILDER SMS. However, before the data was uploaded, AtkinsRéalis conducted a thorough QC review of the information. The QC team used a proprietary tool that highlights any anomalies in the data so the inspectors could make the necessary corrections while they were still in the field. This proactive approach minimizes rework, and the need to revisiting a site long after the data collection effort is complete.

A critical element of the project was to provide hands-on classroom training to the CFMO staff to educate them on not only how to interpret the data, but also how to effectively use it for capital improvement planning well into the future.

BUILDER Sustainment Management System Implementation for USARNG, Florida and Guam - FY20

Team: Scott McDonald, Matthew Anderson, Kathy Anamisis, David Savage, Curtis Anderson
Size: 920K SF
Duration of Performance: 12 Months

Under a USACE Mobile District contract, AtkinsRéalis was a key member of the project team that implemented BUILDER SMS at sites managed by the Florida and Guam ARNG. These condition assessments followed the ASTM UNIFORMAT II structure of building systems in accordance with the BUILDER SMS 9-point direct rating method. The assessments included inventory and inspection of 14 building systems including foundations, basements, superstructure, exterior enclosures, stairs, interior construction and finishes, conveyance, HVAC, fire protection, plumbing, electrical, roofing, and equipment. Prior to beginning the on-site work, the assessment teams reviewed data including existing facility drawings, building-specific hazards and safety protocols, and other relevant background information. The team also interviewed maintenance personnel and appropriate building occupants to gain insight into the historical wellness of a facility, reliability of its systems, recent repairs, planned repairs or replacement projects, equipment location, and the impact of preventative maintenance.

BUILDER SMS, State-Wide FCA's, Utility Mapping and ASHRAE Energy Audits, SCARNG, South Carolina – FY23-24

Team: Scott McDonald, Matthew Anderson, Kathy Anamisis, David Savage, Curtis Anderson
Size: FCA BUILDER: 919,805SF (152 buildings / 34 sites); Utilities Mapping: 152 buildings / 34 sites; ASHRAE Level 2 Energy Audits: 195,754 SF (11 buildings)
Duration of Performance: 16 Months

This contract encompassed providing SCARNG with engineering support in three areas including physically completing inventory and condition assessments of Real Property buildings utilizing the BUILDER SMS application, mapping utilities in GIS, and completing ASHRAE Level 2 energy audits. The data collected will be utilized in identifying, planning, and prioritizing potential work requirements and developing short- and long-term work plans. The three tasks completed by AtkinsRéalis included:
Task 1: Visual inspections of building components inventoried using BUILDER methodology. Coordination with facility site managers and the Government project management team occurred to ensure access to all required facilities. Field data was accurately and consistently collected based on facility and BUILDER requirements. Assessment ratings were based upon the observable and documentable condition of the component.

Inspectors utilized the Direct Rating Assessment method supplemented with specific distresses observed when the component-section was given any rating lower than green minus (G-). Data was uploaded into BRED and used to develop work plans.

Task 2: Quality Level B subsurface utility surveys. Multiple utilities were located and attributes were collected for communications, electrical, natural gas, wastewater, stormwater, and potable water systems. Available maps, records, CAD and GIS data identifying utilities that may exist were reviewed during the initial records search. Site personnel and utility owners were interviewed. Non-invasive geophysical technologies were employed to designate the existence of horizontal positions of known and unknown utilities. A combination of ground penetrating radar (GPR) configured with 250-Mhz antennas and radio-frequency electromagnetic (EM) units/ sondes with varying frequency options were used across each site. Utility vaults and mechanical rooms were also accessed. Real-time kinematic (RTK) GPS was deployed in areas suitable to collect survey-grade GPS data as well as robotic total stations in areas which are not suitable for GPS. Handheld survey data collectors were loaded with an electronic map and hard copies of the base map were provided to personnel for QC. Additionally, all accessible appurtenances were identified and marked in the field. Inaccessible appurtenances were researched and attempts were made to locate the features. Utility attributes were provided to SCARNG in a geodatabase for each site.

Task 3: ASHRAE Level 2 Energy Audits were conducted to provide SCARNG with a list of potential capital-intensive improvements and information to act upon recommendations. A Preliminary Energy Analysis (PEA) was conducted prior to the audits. The PEA analyzed the historic utility use, peak demand, and cost and developed the Energy Cost Index (ECI) and Energy Utilization Index (EUI) of each building. The Level 2 energy analysis identified and provided the savings and cost analyses of all practical energy efficiency measures (EEMs) that meet the owner's/ operator's constraints and economic criteria, along with proposed changes to Operation & Maintenance (O&M) procedures. The FCAs, UM, and energy audits were simultaneously conducted throughout South Carolina. AtkinsRéalis worked with the SCARNG facility site managers and Government project management team to coordinate fieldwork logistics for all three tasks. AtkinsRéalis provided the SCARNG with the data and analyses from fieldwork that is needed to identify and prioritize short- and long-term work plans.

BUILDER SMS Implementation, IEWP, U. S. ARNG, Florida, Guam, Illinois, South Carolina, and Wyoming – FY21-22

Team: Scott McDonald, David Savage, Kathy Anamisis, Matthew Anderson, Curtis Anderson
Size: 1.8M SF
Duration of Performance: 24 Months

The Marstel-Day/AtkinsRéalis team provided support for an IEWP at GUARNG cataloguing long-term initiatives for water and energy resilience that will enable future mission-essential requirements. This IEWP assessed existing data sources and performed an integrated on-site assessment of energy audits and water surveys to characterize baseline conditions. Our team analyzed those conditions, determined vulnerabilities, and quantified installation risks where energy and water security improvements can overcome challenges that could impact the mission, provide significant management and cost efficiencies, and improve installation sustainability. This effort assessed risks and opportunities to support an implementation plan with project recommendations and solutions, as well as programmatic funding requirements needed, to improve energy and water resilience. This IEWP will be used in coordination with the master plan as a roadmap for GUARNG to prioritize capital investment decisions, including critical infrastructure improvements, to provide the energy and water security requirements to support the installation's mission. To support this effort, the team utilized the BUILDER data collected from prior FCAs to consider the operations and maintenance (O&M) and sustainment, restoration, and modernization requirements of recommended solutions. The IEWP serves as a

useful, “living” planning tool for GUARNG to minimize on-going management planning requirements and to support installation resilience.

Our team completed FCAs utilizing the most current version of the BUILDER SMS application developed by the USACE-ERDC-CERL. All performance standards and QC measures for this project work were strictly adhered by following the most current version of the U.S. Army BUILDER Inventory and Assessment Guide. Prior to conducting the on-site FCAs, the team delivered technical and project summary presentations to ARNG facility managers and maintenance staff, as well as an out brief to senior leaders that highlighted recommended next steps to be included in their master planning efforts, which focused on conducting further BUILDER data analysis to develop prioritized project work plans and budgets.

The Marstel-Day/ AtkinsRéalis team facilitated a week of on-site data review and work planning charrettes, with individual breakout sessions with Regional Facility Managers, CFMO, Real Property, and other staff members. The team reviewed and provided a detailed demonstration of BUILDER report availability, generation, and utilization. We reviewed the U.S. Army Installation Management Command (IMCOM) BUILDER Business Rules and provided participants with hands-on instruction regarding the methods and tools used for work forecasting, work planning, and data sustainment. As part of the data review, the Marstel-Day/ AtkinsRéalis team demonstrated how FCA data is sectioned, collected, and compiled for entry into BRED. The timing of completing the GUARNG FCAs, while initiating efforts to complete an IEWP at GUARNG, allowed our project team to provide the client with the necessary data on facility conditions to better inform assessments of energy and water infrastructure. We worked closely with the National Guard Bureau (NGB) G-9 office to enable GUANRG as the first ARNG location to incorporate the Installation Status Report-Mission Capacity (ISR-MC) results through a simulation process so that critical facility mission evaluations could inform the IEWP.

Also unique within this TO, our team conducted a BUILDER data review and work planning charrette at FLARNG. We invited NGB G-9 to participate to demonstrate how ARNG states and territories can leverage BUILDER data and reports in other planning processes, including master planning. Our team successfully demonstrated how utilization information can inform project prioritization to minimize costs and improve return on their investments. NGB considered this innovative project as a pilot study and is encouraging similar efforts to best define the sustainment phase of their BUILDER SMS Program.

The data and FCA ratings collected by the team will be utilized to identify, plan, and prioritize sustainment, remodeling, and maintenance (SRM) project work plan requirements and long-term capital asset management strategies, in accordance with planning publications and directives to include Army Regulation (AR) 420-1 Army Facilities and Unified Facilities Criteria (UFC) 2-100-01, Installation Master Planning.

SIA/BUILDER FCAs, AFCEC, USACE Fort Worth District, Various Locations, CONUS – FY14-15

Team: Scott McDonald, Dave Savage, Kathy Anamisis, Matthew Anderson, Curtis Anderson
Size: 26.6M SF
Period of Performance: 26 months

Under a USACE Fort Worth District TO, AtkinsRéalis completed Sustainable Infrastructure Assessments (SIAs) involving BUILDER FCAs at 10 major AFBs across the contiguous United States (CONUS). This effort included evaluating the condition of architectural, roofing, MEP system components, rating each component on a 9-point scale, entering descriptive condition comments into the BRED, placing and recording bar codes and inventory data on MEP components Real Property Installed Equipment, and taking photographs of components found deficient to help the USAF make better decisions in managing its massive real estate portfolio.

BUILDER Implementation, FBI, Quantico, Virginia – FY21-22

Team: Scott McDonald, Kathy Anamisis, Dave Savage
Size: 2.8M SF, 4.25M SF (Current)
Period of Performance: 12 months

AtkinsRéalis assessed 184 facilities using BUILDER for the FBI. Despite the challenges of working in controlled facilities and with sensitive data, AtkinsRéalis successfully completed the implementation within budget and time parameters. Currently, AtkinsRéalis is updating legacy data and implementing BUILDER at new FBI facilities across three U.S. locations, at 4.25M SF. In addition to inventory validation, inspection updates, and new implementations, AtkinsRéalis is hosting the FBI's BUILDER database, working with FBI facilities staff to establish meaningful work planning standards and policies parameters, and providing training and support to the FBI facilities team.

BUILDER Hosting Services, FBI, Washington D.C. FY21-25

Team: Scott McDonald, Kathy Anamisis, Dave Savage, Curtis Anderson
Size: 8 sites; 331 owned facilities over 5.6M SF total
Period of Performance: 11 Months

AtkinsRéalis has supported the FBI on BUILDER and PAVER since 2013. Initially, this project involved working with the FBI Asset Management team to review maps and as built documentation, interview maintenance staff, and create an inventory of their facilities and pavement networks nationwide. From there, a systematic approach was employed to inspect all inventoried assets, quality check the data and update the BUILDER and PAVER databases with the inspection records.

Next, the team participated with FBI staff to leverage the asset data and management systems to create informed budget forecasts and long work plan courses of action.

AtkinsRéalis provided hosting services to the FBI's BUILDER instance and database. This request came about due to familiarity with the FBI's data – and their need for a secure, off-site hosting solution that includes help desk support, staff training, and fiscal year budgeting and work planning engagement.

FCA and BUILDER Data Integration, ANG, 23 States, Eastern CONUS – FY19-20

Team: Scott McDonald, Kathy Anamisis, Dave Savage, Curtis Anderson
Size: $13M; 80 sites
Period of Performance: 21 Months

Under this ANG contract, multiple teams of 53 engineers, GIS/CADD technicians and software developers conducted BUILDER FCAs and SUSs. AtkinsRéalis managed and executed this multi-faceted project for the ANG's Eastern Region (**23 states – including West Virginia**), including four distinct tasks for this project:

Task 1: FCA Data Sustainment: AtkinsRéalis validated existing inventory and updated the related inspection record. Working with installation leadership and facility managers, Atkins' project managers and field personnel ensured continuity and quality of existing facility data for use in future planning. Meetings included understanding the needs of the ANG at individual installations and assisting in maximizing the use of BUILDER and related facility data.

Task 2: Space Utilization Surveys: Another AtkinsRéalis team visited facilities targeted for space utilization study, interviewed occupants and installation leadership, collected related space optimization data, and updated GIS files for use in the ANG's space management SDSFIE-compliant geobase.

Task 3: FCA Data Collection: AtkinsRéalis collected new inventory information, performed a related condition assessment, and added the new information into the ANG's BUILDER database. This task comprised approximately 50% of the overall FCA effort for the project.

Task 4: Portfolio Management - iEMS/BUILDER Interface: AtkinsRéalis worked with the ANG's iEMS management group to oversee the development of an application program interface (middleware), providing data migration tools to upload directly into BUILDER from their iEMS system. AtkinsRéalis' QAP guided all aspects of the project. We employed QA measures like inspector calibration and regular client communication, and QC measures like real-time, in-the-field data quality checks as well as postprocessing data reviews. These measures ensured ANG data was dependable without incurring unnecessary costs.

Past Performance

Past Performance and Client Satisfaction: AtkinsRéalis has a proven track record of delivering high-quality BUILDER FCAs for public sector clients, with extensive experience that directly aligns with the scope and complexity of the State of West Virginia's project.

Over the past five years, we have successfully completed dozens of BUILDER FCA projects for cities, counties, states, and government agencies, demonstrating our ability to manage large-scale assessments, collaborating with diverse stakeholders, and delivering actionable outcomes, as proven in **Table 2.**

Our experience ensures that we can address the unique challenges of West Virginia's BUILDER portfolio—such as its geographic size, rural facilities, and seasonal weather constraints—while meeting CFMO expectations for quality and timeliness. Our work spans a diverse range of clients, including local and federal agencies.

This breadth of experience, detailed in the table below, underscores our capability to deliver comprehensive BUILDER FCAs across varied portfolios.

Table 2: BUILDER FCA CPAR Ratings

BUILDER FCA Project	Contract Number	Rating			
Client Feedback Form					
SCARNG FCAs (BUILDER SMS)	E24_N300-CB	EX	EX	EX	EX
CPARS		**Quality**	**Schedule**	**Cost**	**Management**
Nevada ANG BUILDER FCA	W9133L16D0008	EX	VG	VG	EX
ANG, Eastern Region	W91233L16D0008	EX	EX	N/A	EX
Yuma (AZ) Proving Ground BUILDER FCA	W912DY12D004	EX	EX	N/A	EX
MCAS, Iwakuni, Japan	W912DY12D0045	VG	VG	N/A	EX
Alabama ANG	AC-17-C-0032-S	EX	EX	EX	EX
FL ARNG, Camp Blanding	W9133L16D0008	VG	VG	VG	EX

BUILDER FCA Project	Contract Number	Rating			
MD ANG	W9127819F0573	EX	EX	N/A	EX
BUILDER SMS for U.S. Army National Guard in FL, IL, SC, and WY	W9127820F0491	EX	EX	N/A	EX
BUILDER SMS for U.S. Army National Guard in IL, SC, and WY	W9127819F0557	EX	VG	N/A	EX
Army National Guard BUILDER SMS Implementation	W9127817F0467	VG	EX	N/A	EX
BUILDER SMS for U.S. Army National Guard in IL, and WY	W9127818F0768	VG	VG	N/A	EX
BUILDER SMS for U.S. Army National Guard FL	W9127818F0326	VG	EX	N/A	EX
BUILDER SMS for U.S. Army National Guard FL and Guam	W9127819F0309	EX	VG	N/A	EX
Key: EX: Exceptional; VG: Very Good; N/A: Not Applicable					

2. Goals / Objectives: Method of Approach

Project Focus

BUILDER is a facility assessment and investment forecasting tool that uses a guided inspection process to generate a component condition index. It then uses this index to develop component-specific performance models, and leverages an enterprise-specified, rules-based approach to determine work requirements.

The approach used by BUILDER is radically different from traditional expert-based assessment tools and provides a greater level of objectivity at a fraction of the cost, all while providing a predictive investment model that informs stakeholders using leading performance indicators rather than trailing metrics. BUILDER, working in conjunction with a Computerized Maintenance Management System (CMMS), can provide an organization with a complete set of tools to effectively manage preventative maintenance requirements, identify corrective repair and replacement work items, and execute capital improvement planning. Understanding this, implementation and use of BUILDER requires a thorough understanding of its capabilities and requirements to properly manage the system.

Inventory/Inspection Assessment Discussion: Every successful BUILDER implementation that AtkinsRéalis has undertaken begins with open communication with the client and collection and review of related facility documents. ARNG FCAs involve examination of 14 ASTM UNIFORMAT II building systems, are in accordance with direct survey protocols, and utilize the BUILDER 9-point scale (e.g., green, amber, and red) to identify component conditions. Additionally, all AtkinsRealis inspectors are familiar with the Army BUILDER SMS Manual and follow its guidance when validating/updating legacy data and adding new inventory into BUILDER.

AtkinsRéalis is acknowledged for our on-going FCA support and training of clients. Our team has successfully completed BUILDER assessments for 100M+ SF of federal facilities; trained 49 assessors; and performed assessments in 224 installations, 32 states, 2 territories, Japan and Kuwait; these numbers include 62 installations and multiple facilities for MT DMA. This includes the “first of its kind” assessments for the USAF, Army, and DoE. AtkinsRéalis offers a comprehensive, disciplined approach to project management that has been honed over the past **15 years with over 150,000 man-hours of successfully executing BUILDER assessments**.

Data Collection Methods and Tools: With 100M+ SF of BUILDER FCA experience (including over 10M SF for the Eastern Region ANG project that included WVANG facilities), AtkinsRéalis is very familiar with BUILDER, BRED, and the USA BUILDER SMS Catalog guidance for ARNG BUILDER implementation. The FCA process consists of (typically) the following steps:

- Scope/facility list validation, including collection and review of available facility documentation.
- Planning and execution of site visits.
- Collecting inventory for 14 Uniformat designated facility systems following the USA BUILDER SMS Catalog.
- Performing condition assessments on all established inventory following BUILDER inspection manual and Army BUILDER SMS manual guidance.
- Gathering of all required photos for facilities and related sections.
- Documenting and communicating all life, health, and safety issues that are observed during site visits.
- Communicating with CFMO staff prior to, during, and after each site visit to ensure minimal interruption to site operations.
- Multi-level QC of data including Inspector managed while onsite, Internal QC team review, and final QC review with CFMO prior to acceptance.
- BUILDER training, data visualization, and planning support as needed.

Prior to beginning the on-site inventory and inspection efforts, the assessment team will review data including existing maintenance records, recurring work program, known maintenance issues and other relevant background information including legacy data. Once on-site, our teams interview maintenance and operation shop technicians, facility managers, and appropriate contractor personnel.

These interviews provide essential insight into the historical wellness of each facility, reliability of the systems, recent repairs, planned repairs or replacements, equipment location, and the impact of the preventative maintenance program for each system, adding important detail to the data collection process.

BUILDER Methodology

Presented here is our five-step approach (**Figure 3**) to condition assessments using BUILDER SMS. Additional to the facility condition assessment and BUILDER database update process – we present typical scenario planning and data reporting processes when we are engaged. **Table 2** outlines the approach in more detail.

Figure 3: AtkinsRéalis' Five-Step Assessment Process

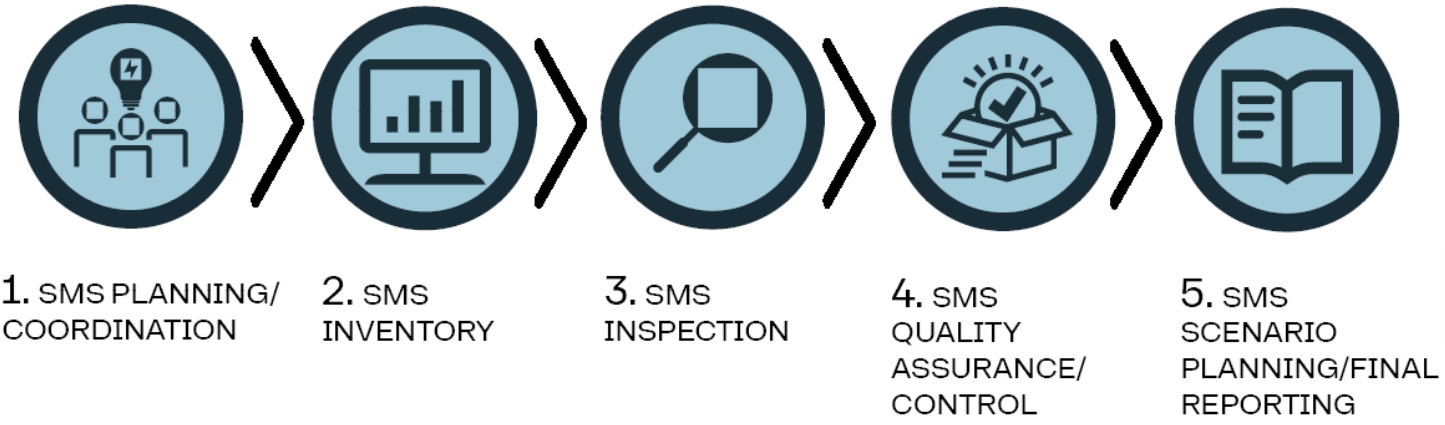


Table 3: BUILDER SMS Five-step Assessment Process

1. SMS PLANNING/COORDINATION

KEY COMPONENTS:

- Establish lines of communication between AtkinsRéalis and WVARNG CFMO.
- Submit a formal request for any documentation related to the scope facilities (e.g. as built drawings, floor plans, site maps, current open work order tickets) that is available and can be released.
- Data for all buildings included in a site visit are downloaded from BUILDER in the form of BRED (BUILDER Remote Entry Database) files.
    - This data may or may not contain legacy data and in either case, the BRED files combined with all client-provided documents provide every inspector with the data needed to effectively prepare for the site visit.
- Identify performance indicators to monitor quality, cost, and schedule.
- Develop the PMP.
- Identify disciplines and team members to execute the project.
- Identify (at minimum), 2 assessors per team: architecture and MEP.
- Architecture will sometimes be split between interior and exterior, likewise, MEP may at times be split as needed.
- The team will be sized appropriately to handle the size and complexity of the buildings at the site to maintain a conservative minimum pace of 65,000 SF/Day.
- Floor plans are uploaded to web-based image management system and become maps (once validated in the field) that inspection images are specifically pinned to
- Final site visit prep includes coordination with the POC for each sites on the trip list and final safety and data quality training for the inspection team.
- **Effective management of personnel begins in this planning stage – roles are assigned and internal leadership structure is communicated.**
- Establish the budget and schedule.

Data Collection and Mapping: 360 Image (Partial View) with Map Location Inserted

Table 3 Cont.: BUILDER SMS Five-step Assessment Process

2. SMS INVENTORY

KEY COMPONENTS:

- **Data Collection:** To develop efficiency in the data gathering process, our field teams use tablet-computing technology to input inventory and other key data in BRED. **While onsite every inspection team has a team lead who is responsible for managing the schedule, communicating with project leadership and onsite client POCs, and managing data collection quality. End of trip reporting is a collaboration between field team members and the project manager to keep WVARNG CFMO staff up to date on progress and any concerns that need to be passed along.**
    - For secure areas, we have used a variety of techniques so as not to compromise security and data quality. Depending on mission requirements and cybersecurity measures in place, some areas allowed our team to continue to use the tablets with certain features disabled (such as Bluetooth, Wi-Fi and cameras). In other more secure areas (i.e., SCIFs), tablet computers / cameras are not allowed, and we use “pencil and paper” to gather the necessary data to populate BRED outside of the secure area.
- **Discrepancy Reporting:** In the event that the field team finds discrepancies in the provided facility list – that information will be communicated to MT staff. Facilities found that are not part of the State’s Pride Database are brought to the attention of the CFMO staff realizing that when these facilities are added to BUILDER, funding advocacy increases.
- **Workbook/EquipMapper:** As a complement to BRED when needed, an AtkinsRéalis-developed workbook allows for quicker collection of data by providing inspectors with a filterable complete catalogue of the ASTM UNIFORMAT II systems for inventory that can be easily transferred into BUILDER using the EquipMapper tool developed by CERL.

3. SMS INSPECTION

KEY COMPONENTS:

- **Direct Rating Protocols:** The BUILDER 9-point rating scale (e.g., green, amber, and red) is used to identify component condition. Prior to beginning assessments, the team will walk the first facility together and agree on conditions to be considered green, amber, or red. This calibration aids consistency in the data collection by the team(s) onsite and between disciplines.
    - AtkinsRéalis facility condition assessments follow the guidance from the Army BUILDER SMS Inventory and Assessment Guide - include foundations, basement construction, superstructure, exterior enclosure, roofing, interior construction, stairs, interior finishes, conveying, plumbing, HVAC, fire protection, and electrical systems.
    - Each component of these systems is scored using BUILDER’s 9-point direct rating methodology, considering both serviceability and reliability of the component based on visible degradation and BUILDER’s recommended design service life.
    - **Table 3** is a copy of the actual rating guidance table provided by the Army BUILDER manual referenced by all inspectors during site visits and quality reviews.
- **Inspection Comments/Photos:** Comment deficiencies are linked to the appropriate component/section to document the component condition. These comments and photos are taken while onsite looking at the item being assessed.

Table 4: Condition Assessment Direct Rating Chart (Source: BUILDER SMS)

Rating	SRM Need	Rating Definition
Green (+)	Sustainment consisting of possible preventive maintenance (where applicable)	Entire component-section or component-section sample free of observable or known distress
Green	Sustainment consisting of possible preventive maintenance (where applicable) and minor repairs (corrective maintenance) to possibly few or some subcomponents.	No component-section or sample serviceability or reliability reduction. Some, but not all, minor (non-critical) subcomponents may suffer from slight degradation or few major (critical) subcomponents may suffer from slight degradation.
Green (-)		Slight or no serviceability or reliability reduction overall to the component-section or sample. Some, but not all, minor (non-critical) subcomponents may suffer from minor degradation or more than one major (critical) subcomponent may suffer from slight degradation.
Amber (+)	Sustainment or restoration to any of the following: Minor repairs to several subcomponents; or Significant repair, rehabilitation, or replacement of one or more subcomponents, but not enough to encompass the component-section as a whole; or Combinations thereof	Component-section or sample serviceability or reliability is degraded, but adequate. A very few, major (critical) subcomponents may suffer from moderate deterioration with perhaps a few minor (non-critical) subcomponents suffering from severe deterioration.
Amber		Component-section or sample serviceability or reliability is definitely impaired. Some, but not a majority, major (critical) subcomponents may suffer from moderate deterioration with perhaps many minor (non-critical) subcomponents suffering from severe deterioration.
Amber (-)		Component-section or sample has significant serviceability or reliability loss. Most subcomponents may suffer from moderate degradation or a few major (critical) subcomponents may suffer from severe degradation.
Red (+)	Sustainment or restoration required consisting of major repair, rehabilitation, or replacement to the componentsection as a whole.	Significant serviceability or reliability reduction in component–section or sample.A majority of subcomponents are severely degraded and others may have varying degrees of degradation.
Red		Severe serviceability or reliability reduction to the component-section or sample such that it is barely able to perform. Most subcomponents are severely degraded.
Red (-)		Overall component-section degradation is total. Few, if any, subcomponents salvageable. Complete loss of component-section or sample serviceability.

Table 3 Cont.: BUILDER SMS Five-step Assessment Process

4. SMS QUALITY ASSURANCE/QUALITY CONTROL

KEY COMPONENTS:

- **QC Team Review:** After each building assessment is complete, assessor and inspection team lead check data for completeness using custom BRED QC software developed by AtkinsRéalis. After initial field team data input and review, BRED files are submitted to the Quality Assurance/Quality Control (QA/QC) team for additional review and to track status of BRED files.
  - QC team logs issue a receipt of every BRED file in installation “Tracker” log, which is also used to track status of BRED files.
- **Proprietary QC Tool:** Run to combine all inventory and assessment data into a single QC report that automatically flags inventory and inspection data that may require further review.
- Using the generated QC report, the QC team checks every component-section and section detail record for completeness, accuracy, consistency, etc. Checked items include:
  - Overall checks for spelling, grammar, and punctuation.
  - Proper sectioning, unit of measure, and quantity (number of section detail entries matching overall component-section quantity).
  - Inclusion of location information, serial number, etc., in section details.
  - Ensuring each component-section has a condition rating.
  - Ensuring every component-section within an established rating range (i.e., anything rated in the Amber or Red ranges) includes concise descriptive deficiency narrative in inspection comments.
  - Delta between the age-based Condition Index (CI) value and the inspection-based CI value and whether or not the estimated year installed box is checked in every component-section record. We understand how a significant CI delta affects adjustments in component expected service life.

  - **Systemic Checks:** Additional “eyes-on” checks are performed to ensure consistency in all data across all inspectors’ BRED files. A senior reviewer looks at all data for any items difficult for an automated QC program to detect (e.g., misspellings, comment logic, etc.
  - Ultimately, all checks verify full compliance with the Army BUILDER SMS Inventory and Assessment Manual.
- The assessment teams make any necessary corrections to BRED files and re-submit to the QC team.

5. SMS SCENARIO PLANNING/FINAL REPORTING

KEY COMPONENTS:

- **Decision Support Tools:** Allow an agency to model capital improvement plans and work plans based on available budgets, potential activities, and current conditions of a structure. Users can target budget and asset condition levels as part of their model analysis.
- **Performance-Based Risk Asset Management:** Present information that will assist with deciding where repair, replacement, repurposing, and removal will best support the mission. As needed, AtkinsRéalis can assist with the development of software linkages between relevant systems to support optimized decision-making by maximizing information flow between and beyond all available decision support systems.
- **Final Data Production and Uploading:** Once the data has been entered by inspectors and twice quality checked (1 – inspector, 2 – QC team) – it is uploaded to BUILDER for client review. **This process marks the completion of packaging and delivering the updated data set per facility to the client’s BUILDER database.** All the processes outlined in this work plan flow culminate in the delivery of clean, updated facility data that allows WVARNG CFMO to **1)** be in compliance with DoD/NGB requirements and **2)** have actionable data from which informed planning and programming activities can occur.
- **Final Report:** Provides an outline of project execution approach, including data collection methods employed, Condition Index and Work Plan recommendation summaries, any safety concerns reported during the inspection process, and observations and overall recommendations.

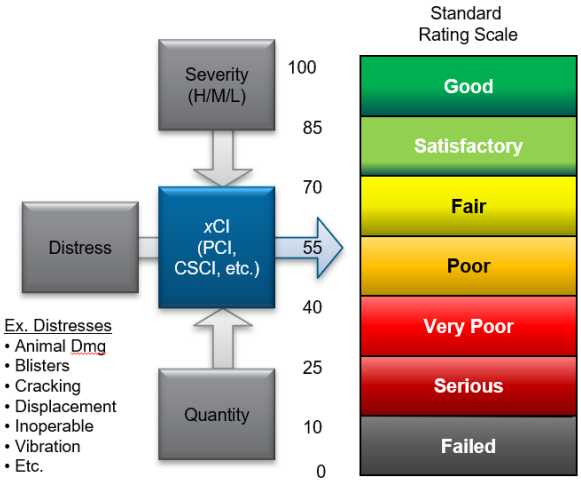
AtkinsRéalis, BUILDER SMS, and Continuous Improvement

AtkinsRéalis has been working with BRED and BUILDER since it was released prior to the DoD mandate. With over 100M SF of data collected - we have been able to refine the process by which data can efficiently be collected and managed. Over the years of BUILDER's implementation and on-going development, AtkinsRéalis has accomplished the following:

Figure 4: Inspector utilizing BRED

- Continue in a formal partnership (BUILDER CRADA) with CERL concerning on-going development of BUILDER and BRED
- Developed report merging tools – before current BUILDER QC reports were created – that facilitated data production and quality review processes
- Created and tested alternative software options for populating BRED files (**Figure 4**) – that we found ultimately to be less productive for our teams than working directly with BRED
- Established an inhouse hosting platform for BUILDER (for use by non-DoD organizations) which cleanly interfaces with the existing BRED program
- Directed the development of middleware that linked BUILDER to the ARNG's iEMS work order management and tracking system
- Developed software – currently in use – that automates several QC checks that are conducted on the BRED (MS Access Database) files which increases efficiency and quality while lowering the cost of operation
- Integrating a web-based image management system which expands visibility of field images across the entire project team and makes building by building image review available on the client side

Figure 5: Impact of Accurate BRED Data entry on Condition Rating



We have found – through years of experience – that these solutions offer our BUILDER FCA projects the best combination of quality, efficiency, and cost containment. We continue to engage with USACE CERL to prepare for the upcoming release of ESMS and will continue to innovate tools and processes that can most efficiently serve the changing needs of the DoD and NGB moving forward. Our experience also drives the care taken to accurately capture the inputs (distress, severity, and quantity) required to accurately inform the rating calculated by BUILDER (**Figure 5**).

3. Project Management / Quality and Cost Control

Project Management Plan

AtkinsRéalis is familiar with making and following a PMP. **For this project, our proposed PM, Mr. McDonald; PD, Mr. Anderson; and Quality Manager, Ms. Amy Breed, PhD, PMP, GISP, IAM, are all Project Management Professional certified**. We are very familiar with both the industry-standard practices concerning project management and the practical application of how those practices connect to BUILDER projects for the National Guard.

Using the outline below as a starting point, we will tailor the PMP to meet WVARNG project-specific needs and welcome input from the client on the nuances of the plan to be executed. **The PMP for this project becomes final when WVARNG CFMO agrees to its contents.** The key components included in this plan will include but not be limited to the following eight listings in **Figure 6.** The PMP will identify the scope, schedule, team, critical assumptions and constraints, and risk analysis, as well as the list of deliverables to be submitted, including all meetings to be hosted and/or which minutes will be provided. The PMP will be consistent with implementation guidance specified in the DOD BUILDER mandate (Under Secretary of Defense - Acquisition, Technology and Logistics) memo of September 10, 2013, the latest version of the Army BUILDER SMS User Manual, and the project SOW. The PMP document is considered a living/working document and will be used as a summary and guide for the BUILDERTM SMS Implementation, as stated in the SOW.

Figure 6: Project Management Plan

Quality Control

AtkinsRéalis will perform BUILDER SMS data QA/QC processes on a consistent basis and commit to establishing and implementing a quality program and resulting data for this project. Quality for AtkinsRéalis, with respect to a BUILDER project, begins at the project kick-off meeting and ends when all deliverables are finalized and accepted. Specifically, in response to the request in the EOI, AtkinsRéalis will 1) develop a BUILDER program management approach that establishes Quality Assurance as integral to the approach and 2) validate legacy data and perform Quality Control of BUILDER data from the point of collection in the field through the final acceptance from the client. This means we will populate/update the WVARNG BUILDER database with complete, current, and accurate asset data needed to generate actionable planning information for the organization.

Delivering Quality Management

As with previous BUILDER projects managed by WVARNG, we intend to employ a rigorous QC process to achieve data completeness, accuracy, and consistency. To meet the quality commitment stated above, we will have dedicated and experienced personnel **(Amy Breed will be our proposed QC Manager for this project)** leading the QC process. We reinforce the idea that quality is the responsibility of all team members associated with FCAs. While onsite, we will adhere to the following BUILDER specific process (modifiable to comply with WVARNG processes as needed):

Pre-assessment

Our first step in ensuring quality across our assessment teams, is to provide intensive BUILDER SMS refresher training to all field team personnel. This training includes quality expectations and in-depth coverage of our quality control processes and procedures and is intended to be an Army BUILDER SMS Manual based calibration. Next, we ensure that all personnel associated with FCAs are aware of the project scope, schedule, and specific client data collection requirements (i.e., components to omit, sectioning guidance, or unit of measure usage).

Quality consistency through situational change

Through our experience and lessons learned, we understand that as we progress through a multi-site project, efficiencies are gained, technique is refined, facility types and component configurations vary, and client guidance, geared toward improvement, can change. To ensure quality remains consistent, our team members regularly conduct all-hands meetings, including all field team personnel, to disseminate client information, crossflow of ideas and lessons learned, and to reiterate and enforce established data collection requirements. In addition, our QC team maintains regular contact with the project manager and field teams to ensure that even slight data collection/production issues are corrected before they become systemic.

Inventory and condition assessment quality control process

While onsite, we will adhere to the following process (modified as necessary to comply with client guidance and requirements):

- QC team will extract clean, discipline-specific BRED files from the BUILDER database for each building. BRED file names will contain building number, discipline (i.e., ARCH for architecture, MECH for mechanical, etc.), and an indicator of status (i.e., new/clean, completed)
- QC team or PM will issue BRED files to inspection team leads
- After each building assessment is complete, assessor and inspection team lead check data for completeness using a custom BRED QC tool developed solely for AtkinsRéalis. After initial field team review and data cleanup, inspection team lead submits data populated BRED files to QC team. Initial turn-in is typically expected the day following assessment completion
- QC team logs issue and receipt of every BRED file in installation “Tracker” log, which is also used to track status of BRED files
- QC team loads initial turn-in BRED files into BUILDER database and runs a proprietary AtkinsRéalis compiler that combines all inventory and assessment data into a single QC report. This compiler automatically flags inventory and inspection data that requires further review by QC and PM team members to aid the QC process
- Using the QC report, the QC team checks every component-section and section detail for completeness, accuracy, consistency, etc. Checked items include:

  - Overall checks for spelling, grammar, and punctuation
  - Proper sectioning, unit of measure, and quantity (number of section detail entries matching overall component-section quantity)
  - Inclusion of location information, serial number, etc., in section details
  - Ensuring each component-section has a condition rating
  - Ensuring every component-section within an established rating range (i.e., anything rated in the Amber or Red ranges) includes concise descriptive deficiency narrative in inspection comments
  - Delta between the age-based Condition Index (CI) value and the inspection-based CI value and whether or not the estimated year installed box is checked in every component-section record. We understand how a significant CI delta affects adjustments in component expected service life
- Assessment teams make corrections to BRED files and resubmit to the QC team
- Revised BRED files are reloaded into the BUILDER SMS database by the QC team and data is reviewed again after compilation to ensure all required corrections have been made

Client Data Acceptance

Once the internal AtkinsRéalis data review is complete, the data is submitted to the client for review. Once the client has had time to review the data, a meeting is set up to answer any questions and address any issues the client might have. At the point the client is happy with the data, it is finalized in BUILDER and planning activities that include the newly added data can commence.

Cost Containment

A significant indicator of future performance is our excellent record of managing project costs throughout the life of the project on previous contracts. Our record is consistent across a wide span of federal and USACE-specific programs and contracts. Our success in project cost control is based on experienced PMs who have a thorough understanding of the client's needs and are supported by an effective project management process. For example, AtkinsRéalis has completed all TOs under our USACE HNC Planning and Programming contract (19 TOs), USACE Ft. Worth A-E Services Contract (14 TOs), and USACE Savannah A-E Planning contract (25 TOs) in accordance with negotiated fees. In an environment where organizations are needing to do more with less – the fact that AtkinsRéalis is winning and effectively executing BUILDER related projects is a testament to our cost-effective approach to pricing and managing projects.

There are several factors that affect the ability to contain cost in a project:

- Efficient project planning / organization / management
- Proper utilization of experienced personnel
- Application of current technologies
- Identification and management of risk
- Leveraging of past experience
- Knowledge of the organizational environment
- Effective quality control processes and tools that facilitate doing the right work the first time

One example of the application of current technology is our use of our web-based image mapping and archiving system. As a standard practice, multiple photos of each space assessed (360° and 2D) are taken by the team during the initial assessment so if any questions come up during the QC or report review regarding the status of an assessed structure or piece of equipment, we have the necessary,

high definition imagery showing the asset in-situ which will facilitate resolution of any questions or concerns. Not all photos taken will be uploaded to BUILDER (e.g., photos of assets within a larger space), however, all photos are the property of WVARNG CFMO and will be submitted along with the reports as part of the final submission either via digital transfer or on a physical data transfer as required by WVARNG CFMO.

To facilitate efficient management and referencing the volume of photos collected during a typical BUILDER focused inspection, **AtkinsRéalis employs a web-based image management system** that provides the following functionality:

- Web based access to all images by multiple users – increasing project execution efficiency
- Mapped organization of images by specific site / facility / room or exterior location with the ability to pull measurements from the images
- Capability to handle both 2D and 360° imagery
- Advanced reporting capabilities that allow inclusion of images beyond the image limitations imposed by BUILDER
- Historical archiving for visual tracking of deterioration due to normal use or environmental impact
- Ability to efficiently correlate imagery with trend and work plan data to enhance planning/programming activities

Proficiency in generating accurate and comprehensive reports, including photographic documentation (output) and map locatable image collection and management (input) represent two critical parts of the AtkinsRéalis approach. Since BUILDER received its Office of the Secretary of Defense (OSD) mandate in 2013, challenges have increased, and needs have changed. For those reasons, AtkinsRéalis continues to adapt by modifying the composition of BUILDER-related reports to reflect changes and address needs. These modifications are the product of interaction between BUILDER updates, current DoD directives, WVARNG CFMO needs, and experiences and recommendations offered by AtkinsRéalis from years of experience, resulting in relevant and informative data-driven communications. In addition to the image requirements imposed by the NGB and BUILDER, AtkinsRéalis makes it a practice to catalog every site visit with a host of images that provide a reference point once the site visit is complete. This imagery augments the inspectors' site visit observations and notes and provides - as needed - an efficient asset review option. **AtkinsRéalis can create an account for WVARNG CFMO to access the web-based image system during project execution and can make the images available post project as requested.** This imagery bank is much more robust than the limited image viewer in BUILDER and allows a much more thorough investigation of facilities and assets by CFMO staff as needed. Additionally, last year AtkinsRéalis employed the use of 360° cameras (**Figures 7 & 8**) and related web-based image management software to enhance the impact of site visits and create a full and image-driven facility walkthrough experience – an integral part of our FCA process.

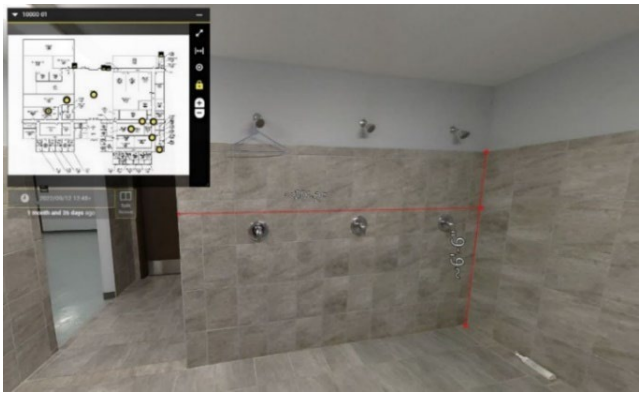


Figure 7: Scalable Image with Location Map Inset

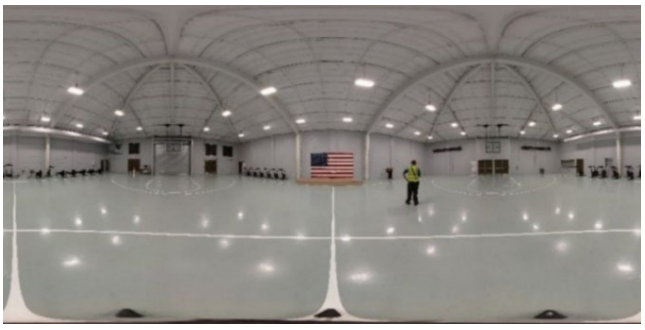


Figure 8: 360° Camera Image