



Asset Management With Data Analytics

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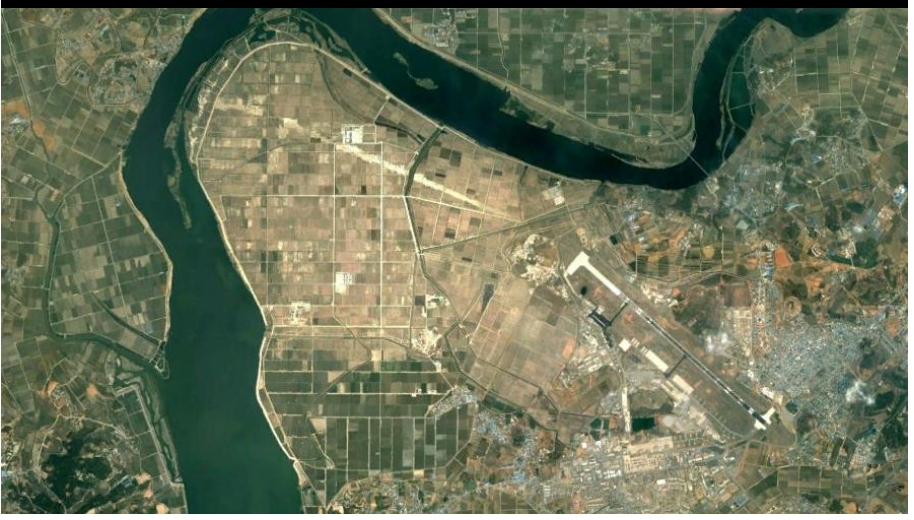


INSTALLATION  **INNOVATION** 2024
OCTOBER 28-30 SAN ANTONIO, TX

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Controlled by: AMIM-G3
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U.S. ARMY USAG Humphreys' Rapid Growth

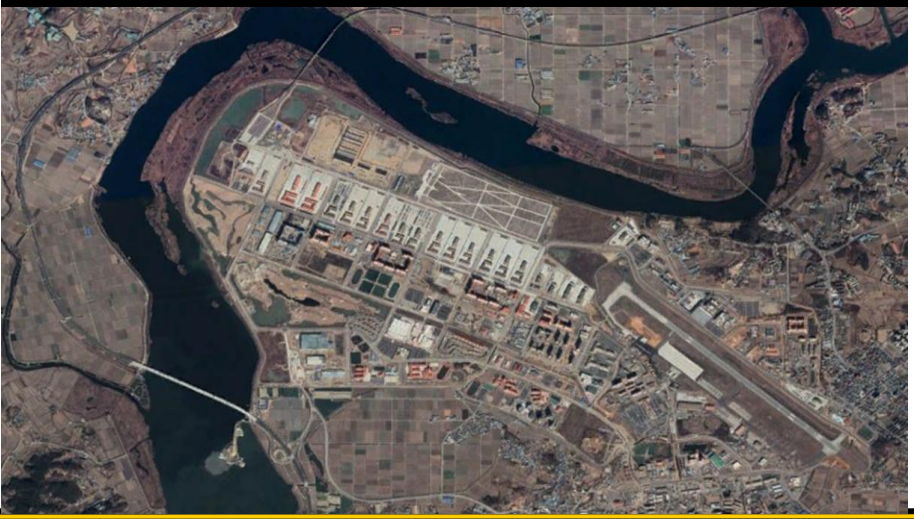
USAG Humphreys 2009



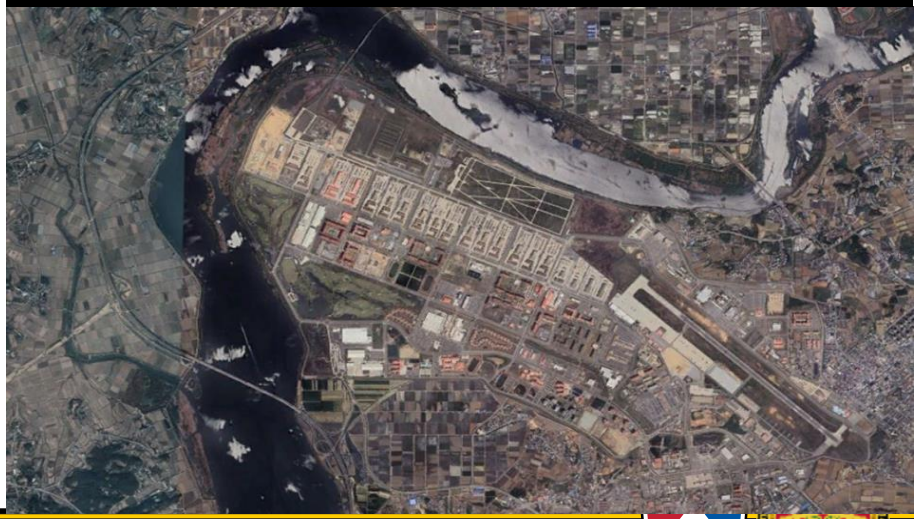
USAG Humphreys 2014



USAG Humphreys 2020



USAG Humphreys 2024



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 **U.S. ARMY U.S. ARMY GARRISON HUMPHREYS**



LOE 1

Soldier & Family Service

Support readiness and QOL for Soldiers, Families, and Retirees

LOE 2

Manage the Regular Army's Infrastructure

Ensure quality facilities, housing, and barracks

LOE 3

Support Warfighter Readiness and Deployability

Provide and maintain key infrastructure & support force protection



U.S. ARMY 10 Year Unconstrained Sustainment Requirement



IMCOM Korea BUILDER Program

Workplanning Data Analysis



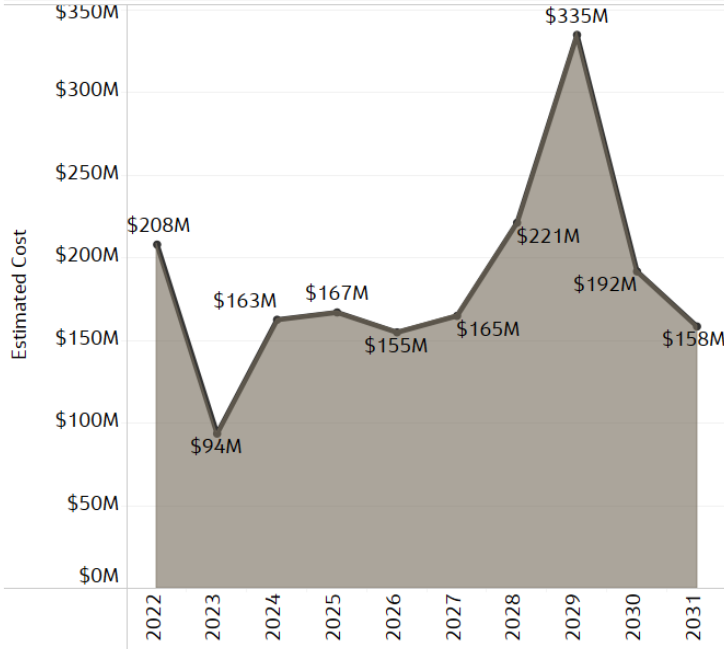
Garrison Property

Number of Buildings	550	
Building Area (SF)	16,891,797	
Complex Name	Number of Buildings	Building Area (SF)
KS792 Camp Humphreys	539	16,830,039
KS104 Camp Ames	7	19,500
KS622 ICHEON - SOCKOR	2	13,985
zz-NonV NonVertical	1	26,481
KS691 Pyongtaek Cpx Area	1	1,792

10-Yr Total Work Cost

\$3.2B

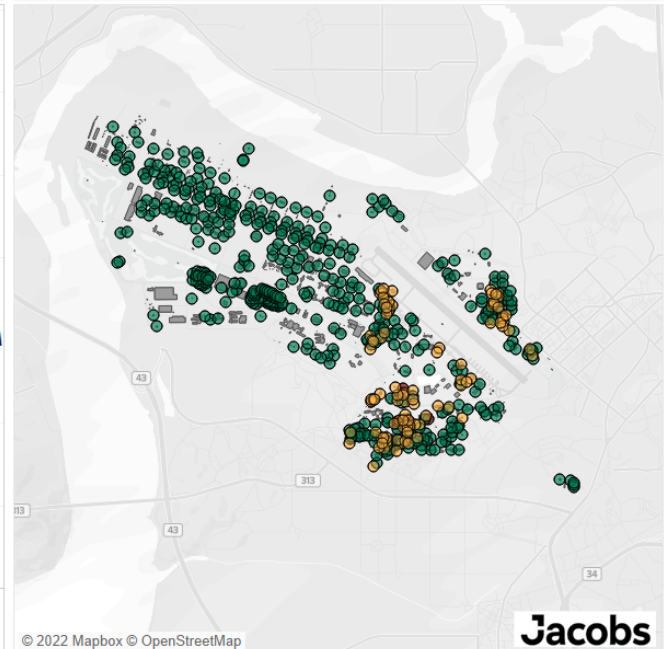
Unconstrained 10-Year Workplan



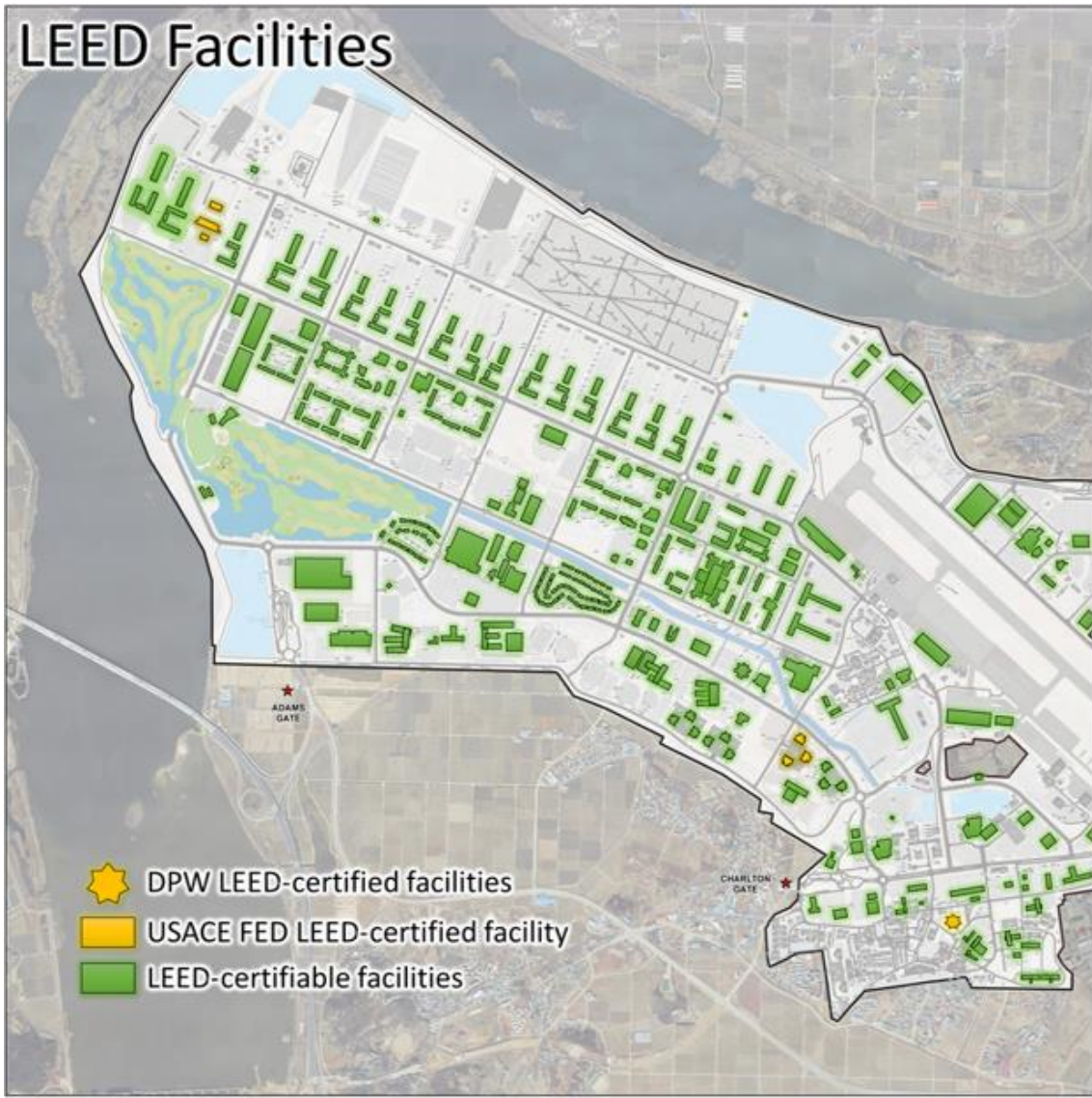
Executive Summary

- Site Name
- Camp Casey
- USAG Camp Humphreys
- USAG Daegu (Camp Henry)
- USAG Yongsan

INSTALLATION BCI RESULTS



LEED Facilities



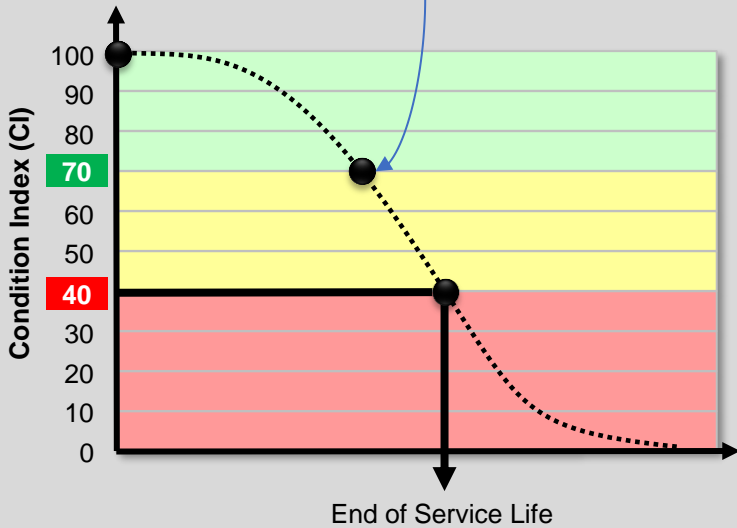
Priority	Category	DESCRIPTION
31	Barrack	REPAIR BARRACKS, S-1292
32	ELEVATOR	REPLACE ELEVATORS, P-6001
33	ELEVATOR	REPLACE ELEVATORS, P-6002
34	ELEVATOR	REPLACE ELEVATORS, P-6004
35	ELEVATOR	REPLACE ELEVATORS, S-1284 (AIRFIELD CONTROL TOWER)
36	ELECTRICAL	REPLACE ALL LIGHT FIXTURES W/LED LIGHT FIXTURES AT B 2097
37	ELECTRICAL	REPLACE ALL LIGHT FIXTURES W/LED LIGHT FIXTURES AT B 1130
38	HVAC	REPLACE EXISTING OIL FIRED HEATING SYSTEM WITH NATURAL GAS HEATING SYSTEM HANGAR
39	Barrack	REPAIR BARRACKS S-4, CAMP YONGIN
40	Barrack	REPLACE VAV DIFFUSER FOR BARRACK, P-6001
41	Barrack	REPLACE VAV DIFFUSER FOR BARRACK, P-6002
42	Barrack	REPLACE VAV DIFFUSER FOR BARRACK, P-6003
43	Barrack	REPLACE VAV DIFFUSER FOR BARRACK, P-6004
44	BG	REALIGN VICTORY ROAD
Estimated Funding Outline for FY24		
45	Barrack	REPLACE VAV DIFFUSER FOR BARRACK, P-6005
46	LHS	REPAIR MOV ACTUATOR, WATER PLANT BUILDING, S-12301
47	Barrack	REPLACE EXISTING OIL FIRED HEATING SYSTEM WITH NATURAL GAS HEATING SYSTEM BARRACKS, P-2015, 2017, 2061, 2065
48	ELECTRICAL	INSTALL NEW CHEMICAL FEEDING CONTROL PANEL AND CONNECTION A MAIN CONTROL SYSTEM
49	ELECTRICAL	REPLACE ALL LIGHT FIXTURES W/LED LIGHT FIXTURES AT B 6110
50	Barrack	REPLACE VAV DIFFUSER FOR BARRACK, P-6006
51	HVAC	REPAIR HVAC SYSTEM, B-851, 1284 AND 1860
52	HVAC	REPLACE EXISTING OIL FIRED HEATING SYSTEM WITH NATURAL GAS HEATING SYSTEM FOR ADMIN BLDGS, P-836, 882, 1052
53	LHS	REPAINT WATER STORAGE TANKS AT BLDG, P-12301
54	LHS	REPAIR SANITARY SEWER SYSTEM, HANGAR P-801 & S-857
55	HVAC	REPLACE HVAC SYSTEM WITH VRF UNIT, S-424, P-1078, S-2072

= Deferred from FY23

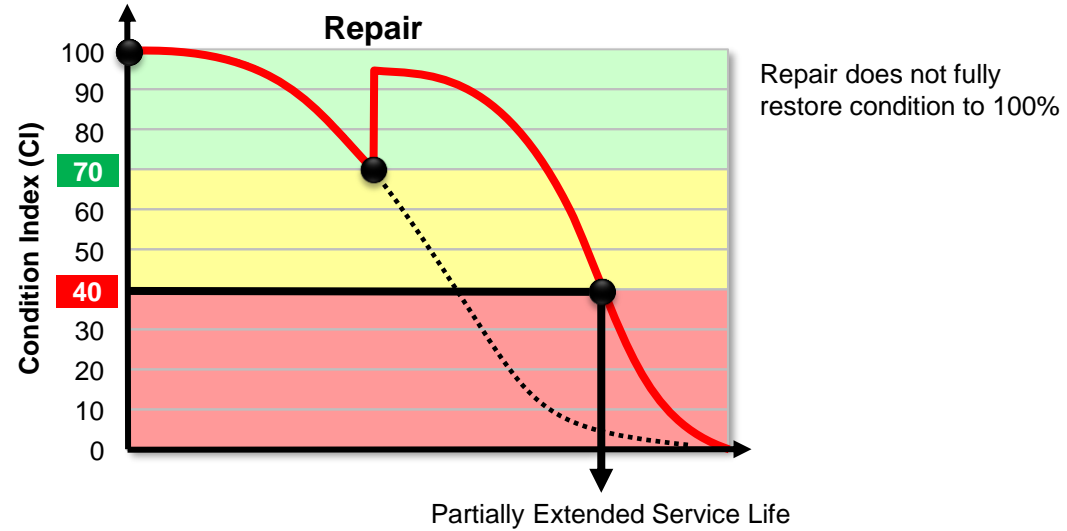


70-80% CI = "Sweet Spot" for Repair

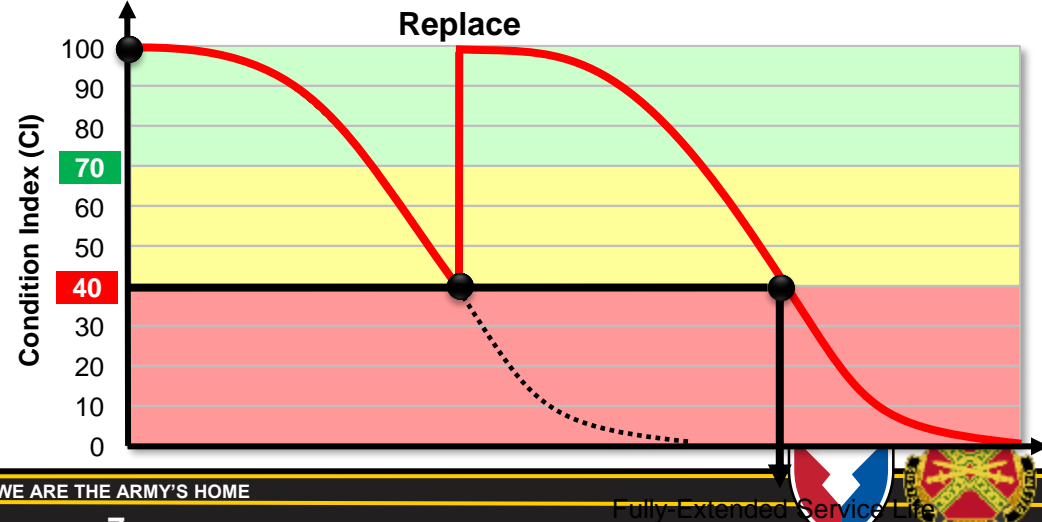
- Rate of degradation increases after this point
- Cost for repair increases after this point
- Early repair avoids unnecessary replacement



Sustainment \$



Restoration & Modernization \$\$\$






Demonstration of Base Operation Center(BOC)



Monitor



Building Level

- UMCS
- Smart Meter

Outside Utilities

- SCADA
- MicroGrid

Respond




Assess Problem

- Equipment Manuals
- "As Built" Drawings
- Supply Stockages
- Existing Service Orders

Coordinate Response

- Building Manager
- O&M Work Force
- Work Reception
- Garrison Services

Forecast



Evaluate Facilities

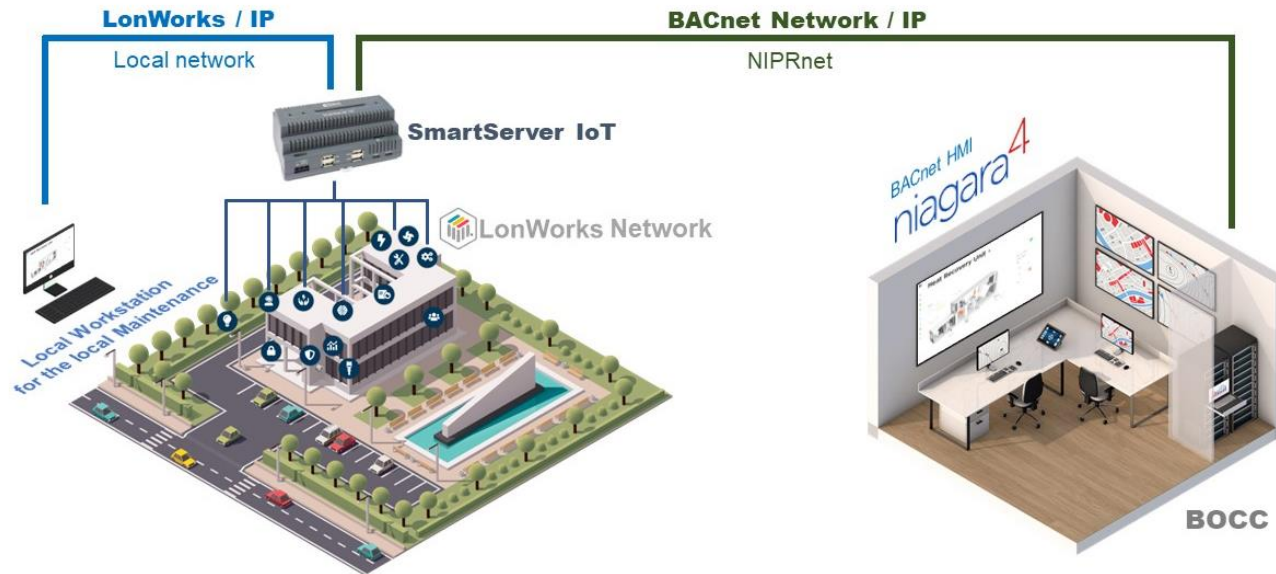
- Army Systems
- Trend Analysis
- Local Metrics

Inform Plans

- Annual Work Plan
- Swing Space Plan
- Master Plan

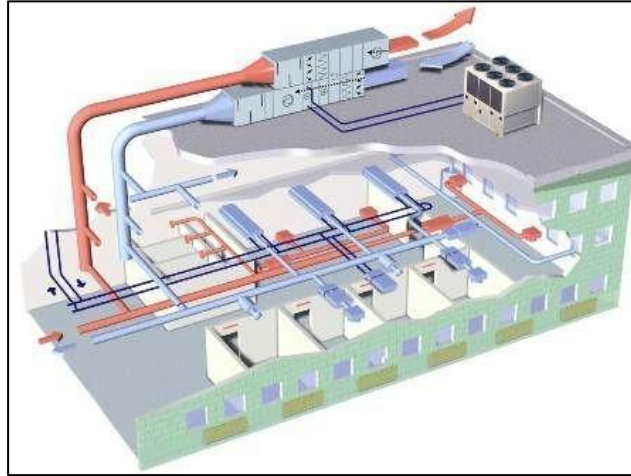


System Integration Architecture



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Systems

- Foundations
- Superstructures
- Roofing
- HVAC
- Interior Construction
- Conveying
- Plumbing
- Electrical
- Stairs
- Fire Protection
- Equipment

Sub-Systems

Heat Generating Systems

- Energy Supply
- Cooling Generating systems
- Distribution Systems
- Terminal & Package Units
- Controls & Instrumentation
- HVAC Valves

Components

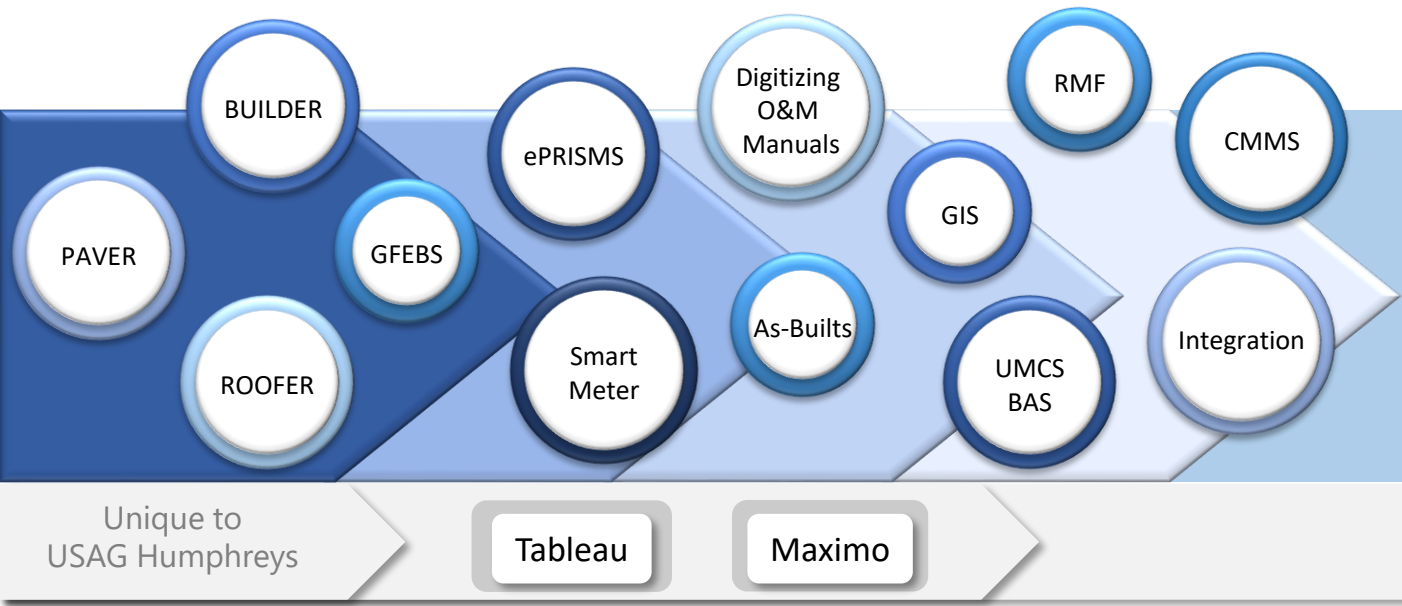
Boilers

- Furnaces
- Auxiliary Equipment
- Thermal Insulation
- Fuel-Fired Heaters



Looking Forward

Enterprise Systems and Programs



The Future of Facilities Maintenance

- Predictive Maintenance
- Cost Analysis
- 1-N List
- Preventive Maintenance
- Lifecycle Replacement

Building a foundation for the future of Installation Sustainment



Installation Data

Asset/Inventory

- ISR
- RPLANS
- HQIIS
- IGI&S Systems

Resources

- GFEBs

Utilities

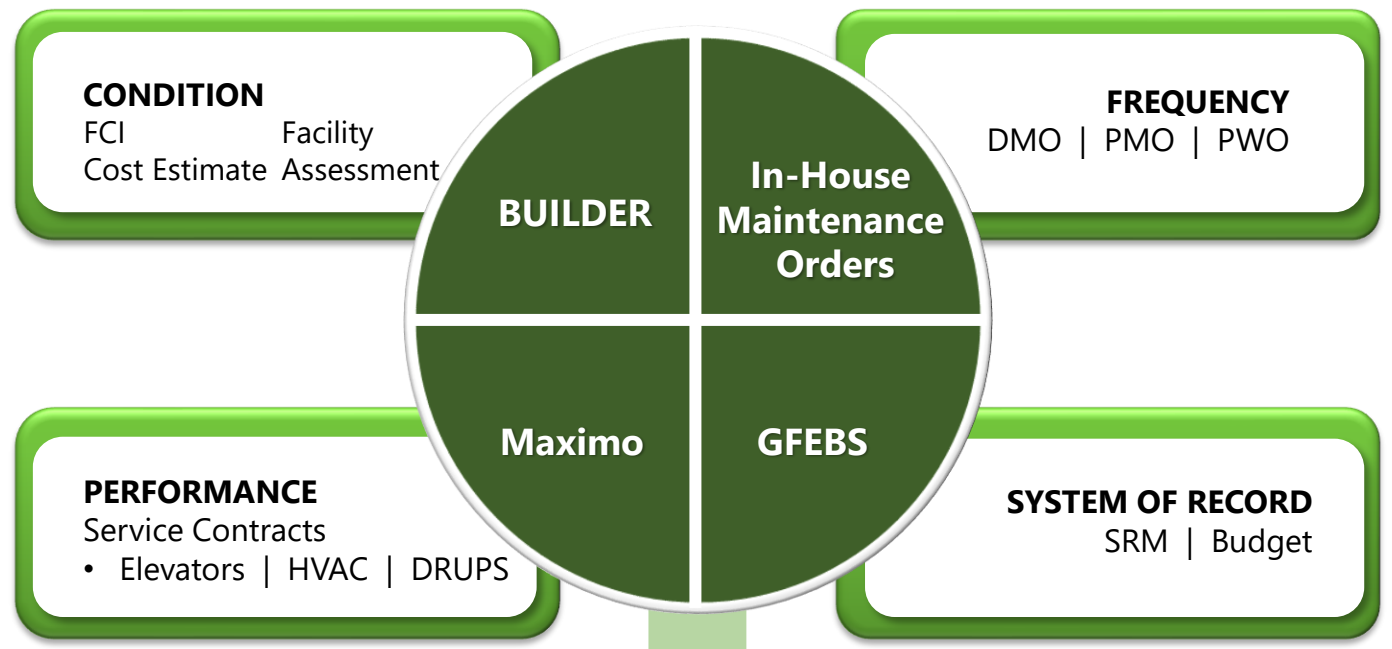
- AEWRS
- Energy & Water Planning

Operational

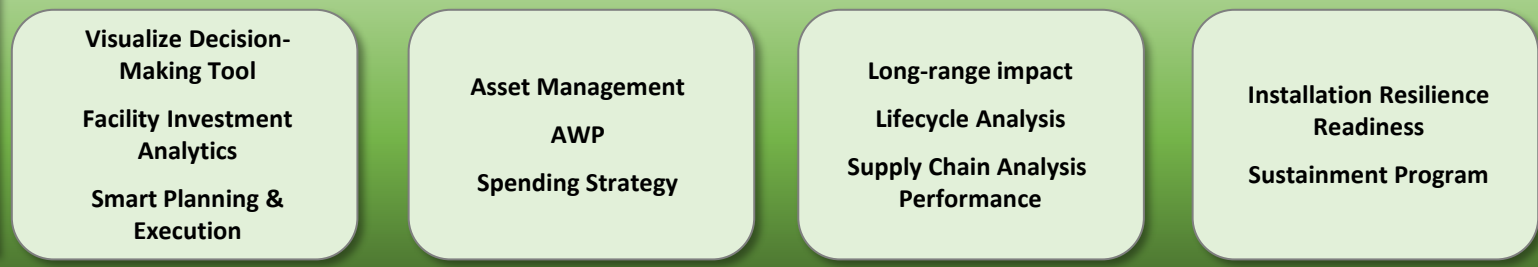
- Control Systems
- O&M Records
- Space Utilization

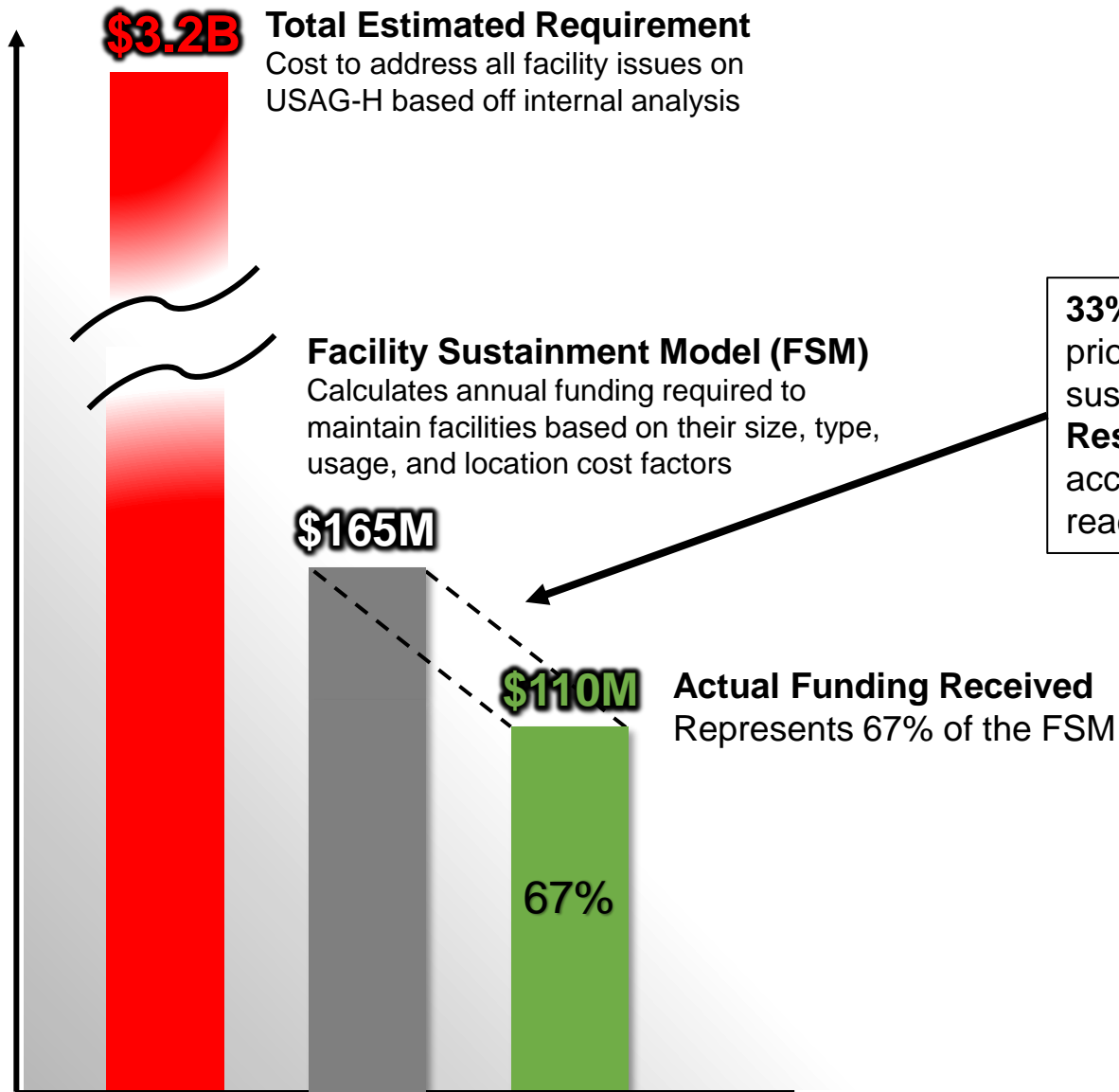
Future

- IOT Devices
- Cybersecurity Assessments



DATA-DRIVEN DECISION-MAKING





\$3.2B Total Estimated Requirement
Cost to address all facility issues on USAG-H based off internal analysis

Facility Sustainment Model (FSM)
Calculates annual funding required to maintain facilities based on their size, type, usage, and location cost factors

\$165M

\$110M Actual Funding Received
Represents 67% of the FSM

33% funding gap forces strategic prioritization of critical facility sustainment.
Result: Facility degradation accelerates, impacting mission readiness.





Step 1. Data Collection

Gather data from customers, *BUILDER*, work orders, and repair records.



Step 2. Master Planning and Engineering

Consult master plans and engineering division to ensure projects are execution-ready.



Step 3. Board Meetings and Decision-Making

Hold multiple board meetings to align sustainment with mission objectives



Step 4. Resource Allocation

Prioritizing limited resources based on strategy and funding gap.



Our current annual work plan process requires extensive coordination across teams to align sustainment efforts with mission requirements.

The complexity of data gathering and decision-making demands more effective solutions.

Key Challenge: Manual processes slow decision-making and hinder our ability to react to changing priorities quickly

The complexity of data gathering and decision-making demands more effective solutions.

Opportunity: A more automated solution could streamline this process, allowing us to consolidate data, forecast needs, and provide scenario-based insights to prioritize project more effectively.





Decision Support System
Demonstration by JACOBS

 **Platform**

- Integrated into Army system of records

 **Status Tracking**


- Swing space trigger indicators*

 **Communication/Reporting**

- Auto report generation showing data and statuses for cyclical stakeholder meetings*
- Export button to view tabular data in excel/PDF format

 **SRM Forecasting**

- View SRM requirements (5 yr., 10 yr., etc.)
- Budget, replacement schedule
- Impact of budget on facility condition*

 **Asset, System, & Facility Lifecycle Analytics**

- Identify asset lifecycle status
- Create scenarios/courses of action to calibrate programming schedule and outputs

 **General Analytics & Data Visualization**

- Prioritized AWP project lists
- View distribution of projects (by source, stakeholder, and category)
- Data and impact analysis on projects pushed to future date
- Data on building systems and assets (past PM service dates and future PM schedules)*
- View Real Property data and/or Sustainment Management System (SMS) data e.g. BUILDER
- Searching function to find data on projects, work orders, buildings, assets, etc.*
- Automated quality control of source data*



Garrison Commander

- High level garrison-wide metrics
 - Installation Readiness
 - Condition of Facilities
 - Data Driven Risk Management



DPW Leadership

- Live Dashboard Insights
- Defensible Investment Strategy
- Financial Disbursements
- Individual Site Overview



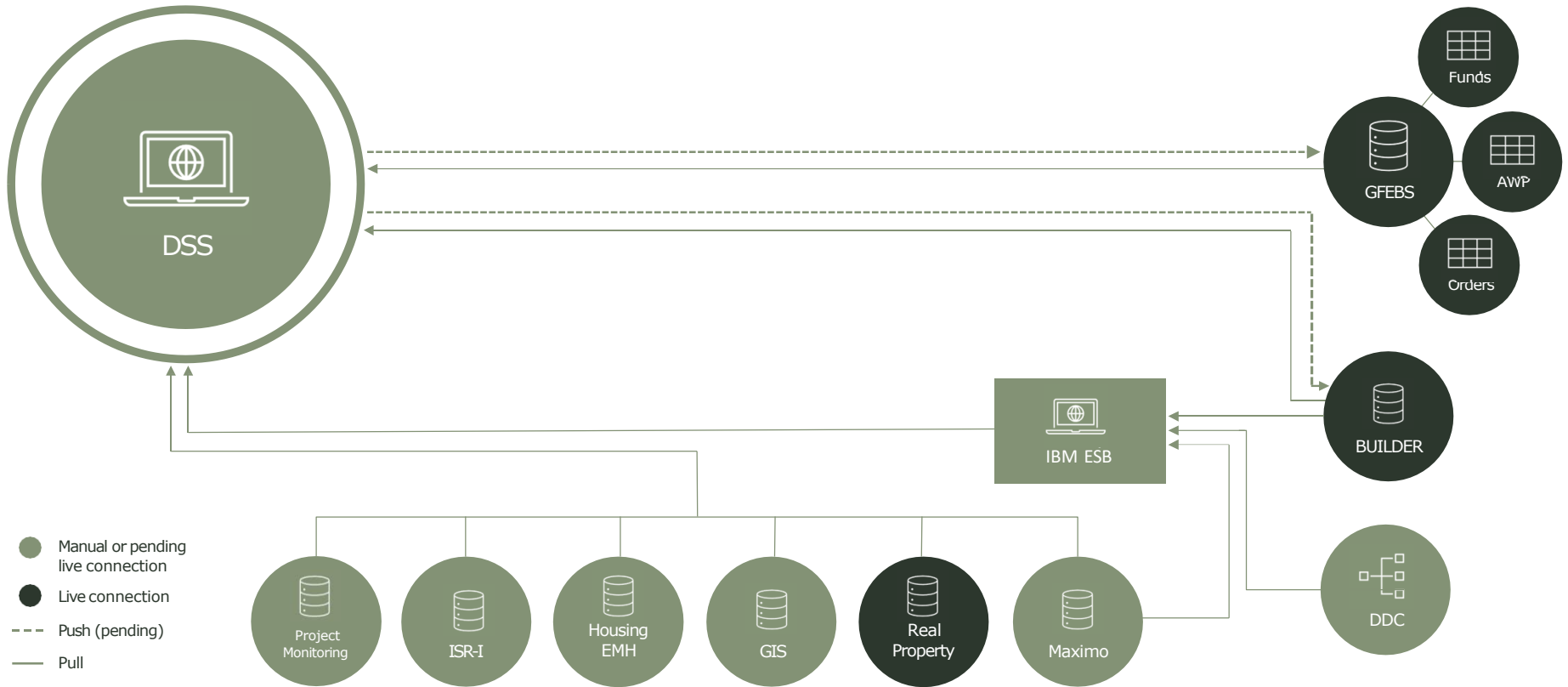
DPW Division Leadership

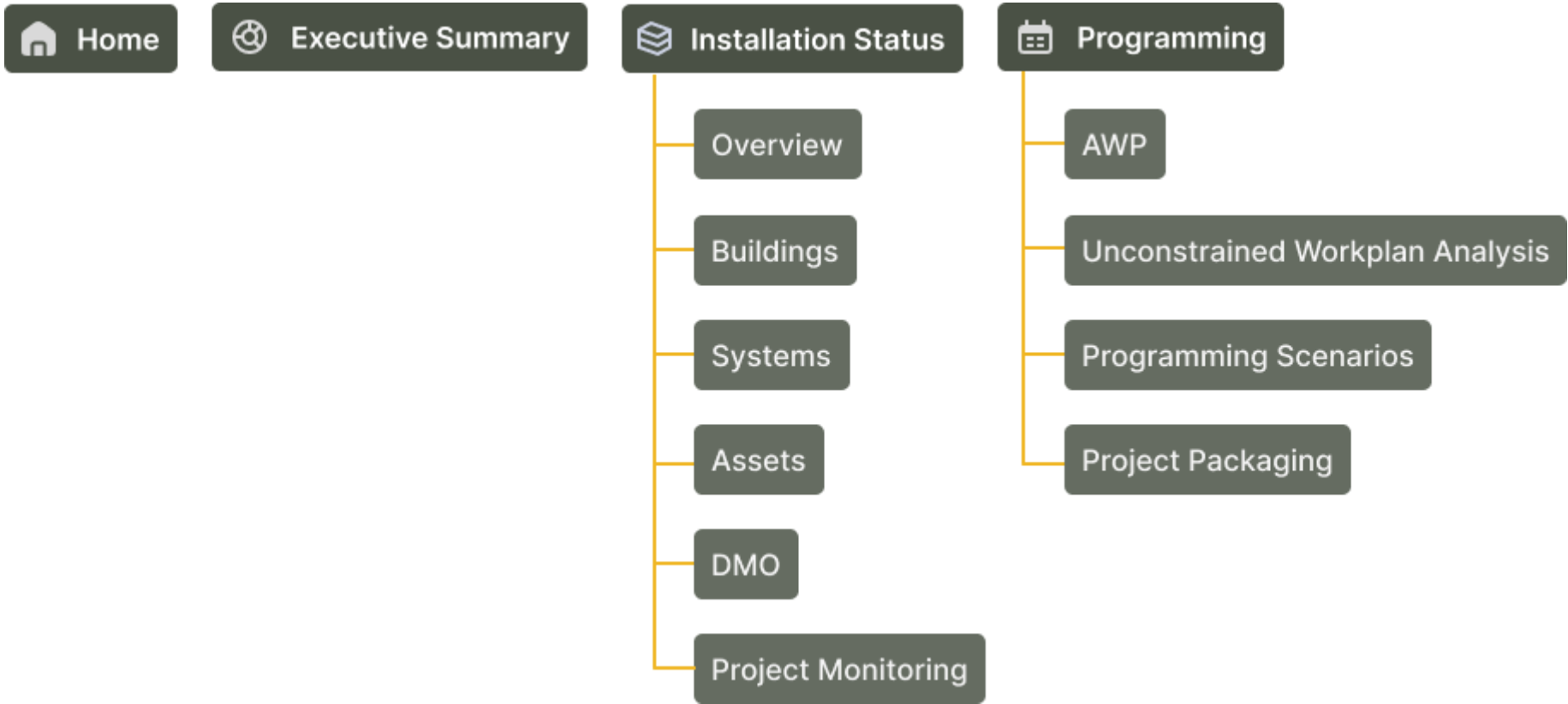
- Individual Facility, System, Asset status
- Project and Sustainment Planning
- Lifecycle Monitoring



DPW Branch Leadership

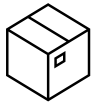
- Project Development
- KPI Management







1. Identify buildings/systems/assets with high potential risk of failure



2. Package BUILDER Work Items and/or DMOs into prioritized projects to address fair or poor performing systems



3. AWP creation with local garrison applied logic scoring.



Decision Support System



Secure

Modular Operations Platform on Army's network



Replicable

Scalable to other garrisons and customizable to their unique needs



Accessible

Pipeline databases from Army-owned programs

“The army will continue to modernize and strengthen its industrial base.”

- General George – Army Chief of Staff



Questions?



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