

Federal GIS Conference

February 9–10, 2015 | Washington, DC



Facilities are Mission Critical: GIS is Central to Supporting Federal Real Property Management

Michael Grove, USAF (GeoBase)

Lee Robertson, Smithsonian (Space & Assets)

Sandrine Schultz, US Navy (Energy Programs)

Michael Hardy, PenBay Solutions

Ben Yetman, PenBay Solutions

John Young, Esri

Federal GIS Conference

February 9–10, 2015 | Washington, DC



**Please complete
a session evaluation form**

Federal GIS Conference

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Print your customized Certificate of Attendance!

Printing stations located on L St. Bridge, next to registration

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Networking Reception:

National Museum of American History

Tuesday, 6:30 PM–9:30 PM
Bus Pickup located on L Street

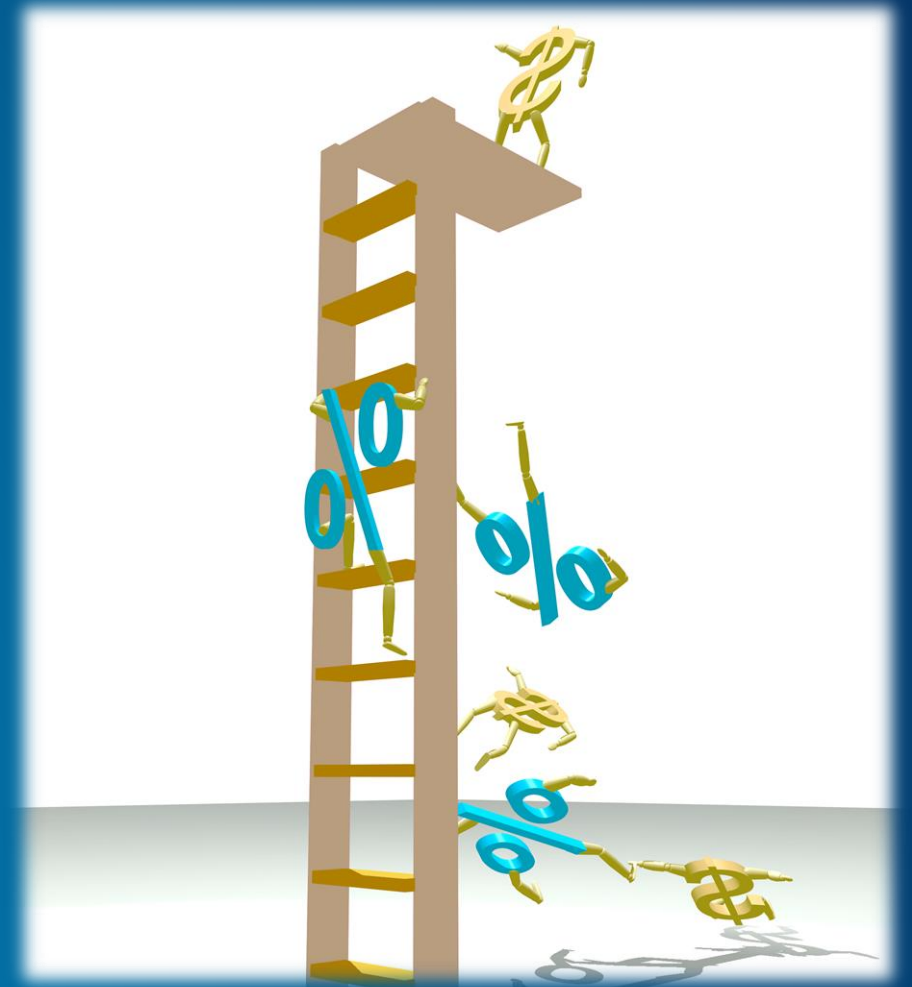
Facilities Are Mission Critical - Agenda

- Introduction – Facilities Are Mission Critical
- Government Examples
- Live Demonstrations
- QnA with Panel and Attendees
- More Information



Challenges Faced by Federal Real Property Managers

- Underutilized properties cost billions annually
- Executive orders, GAO, etc., demand new efficiencies
- Increasing vulnerability of federal real property
- Information silos and other obstacles to efficient management & protection of FRP



Facilities Are Mission Critical – GIS is a Force Multiplier



Government Examples

Michael Grove, USAF



U.S. AIR FORCE

GIS and Air Force Facilities/Space Management Examples



**Michael Grove
BAH**

February 10, 2015

Integrity - Service - Excellence

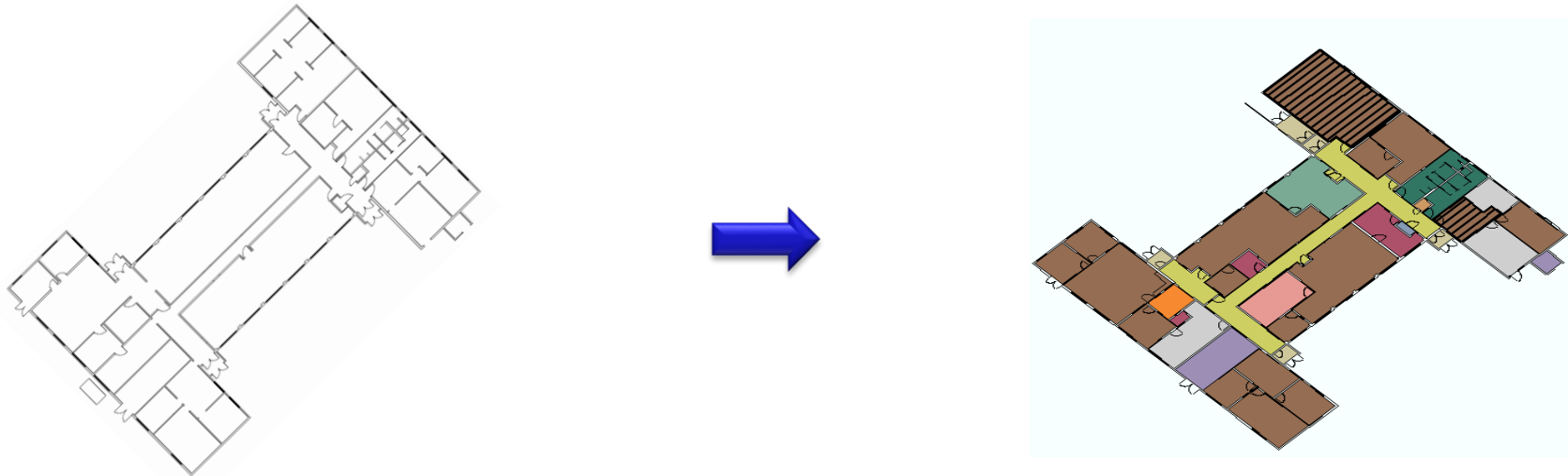


U.S. AIR FORCE

Why Space Utilization?

“Our goal is to reduce the portion of the Air Force budget used for installation support by 20% and reduce the size of the Air Force physical plant by 20%, by the year 2020. Collectively, our transformation efforts will enhance support for the warfighter, reduce the cost of installation engineering activities, and free resources for the recapitalization of Air Force weapons systems.”

*Major General Del Eulberg, The Air Force Civil Engineer
CE Transformation Vision 20/20 by 2020*

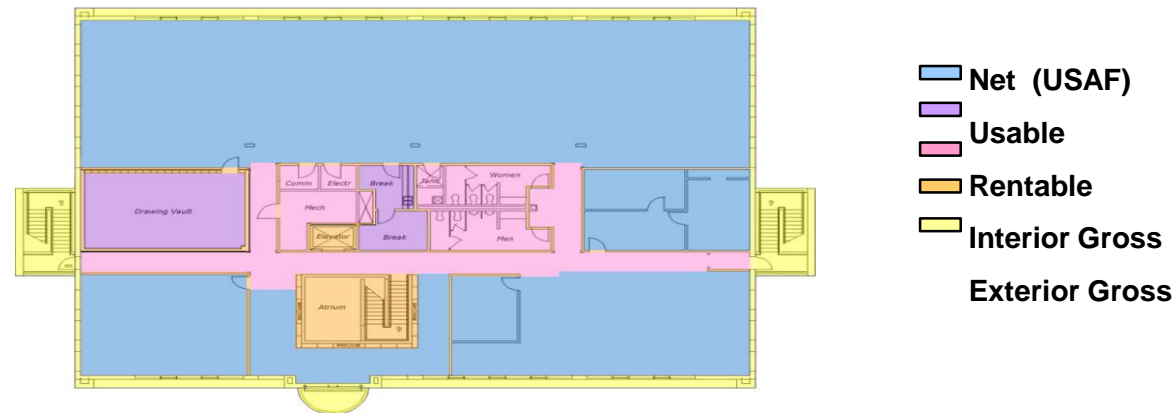




What is Space Utilization?

U.S. AIR FORCE

- M-5 Develop Demolition Policy
 - Identify surplus of inefficient facilities while diverting infrastructure funding to higher priority facilities
- M-6 Optimizing Space Utilization
 - Identify excess and underutilized building space to efficiently manage space



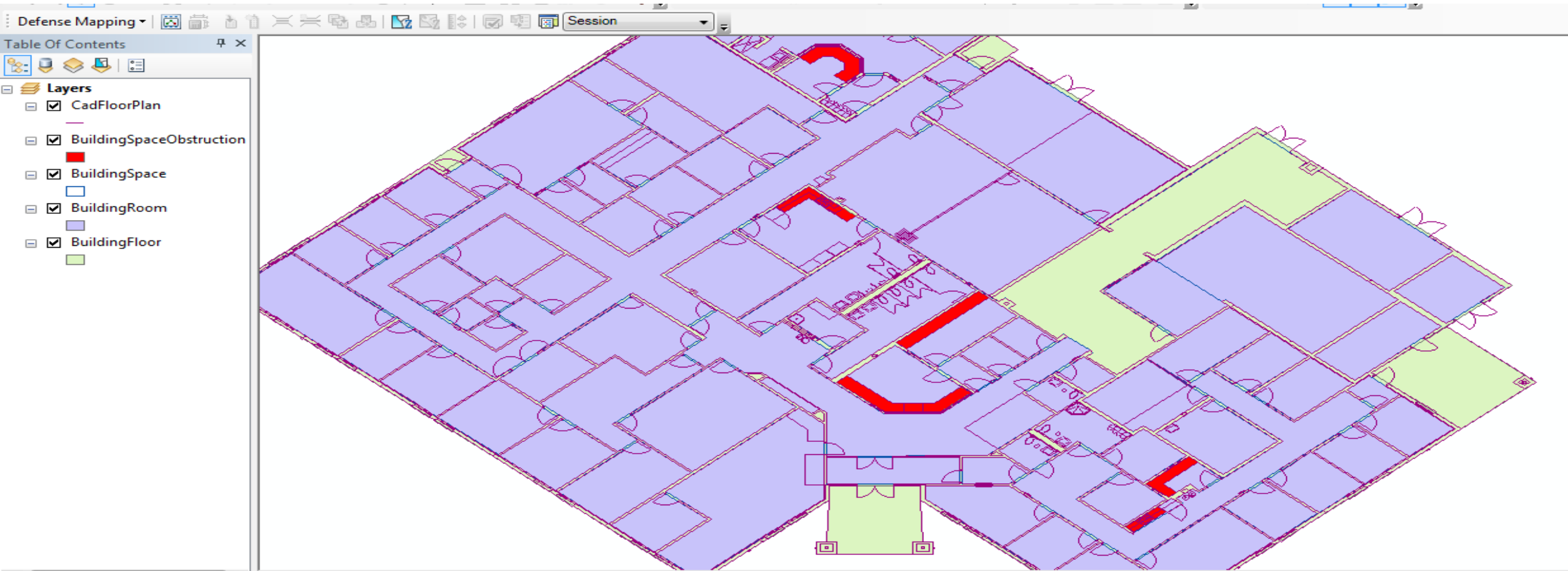
- For more information on Space Utilization, please visit the Asset Management CoP on Air Force Knowledge Now



U.S. AIR FORCE

Space Utilization

■ Combination of CAD and GIS technologies





U.S. AIR FORCE

Building 171 Example

- **Air Force Civil Engineering Center (AFCEC) main building at Port of San Antonio**
- **Leaseback of Kelly AFB from City of San Antonio**
- **Old train depot approximately ¼ mile long**
- **Friday after Thanksgiving, 2015 water main under building breaks**
- **25% of staff required to relocate across facilities on and off campus**



U.S. AIR FORCE

Building 171 Example





U.S. AIR FORCE

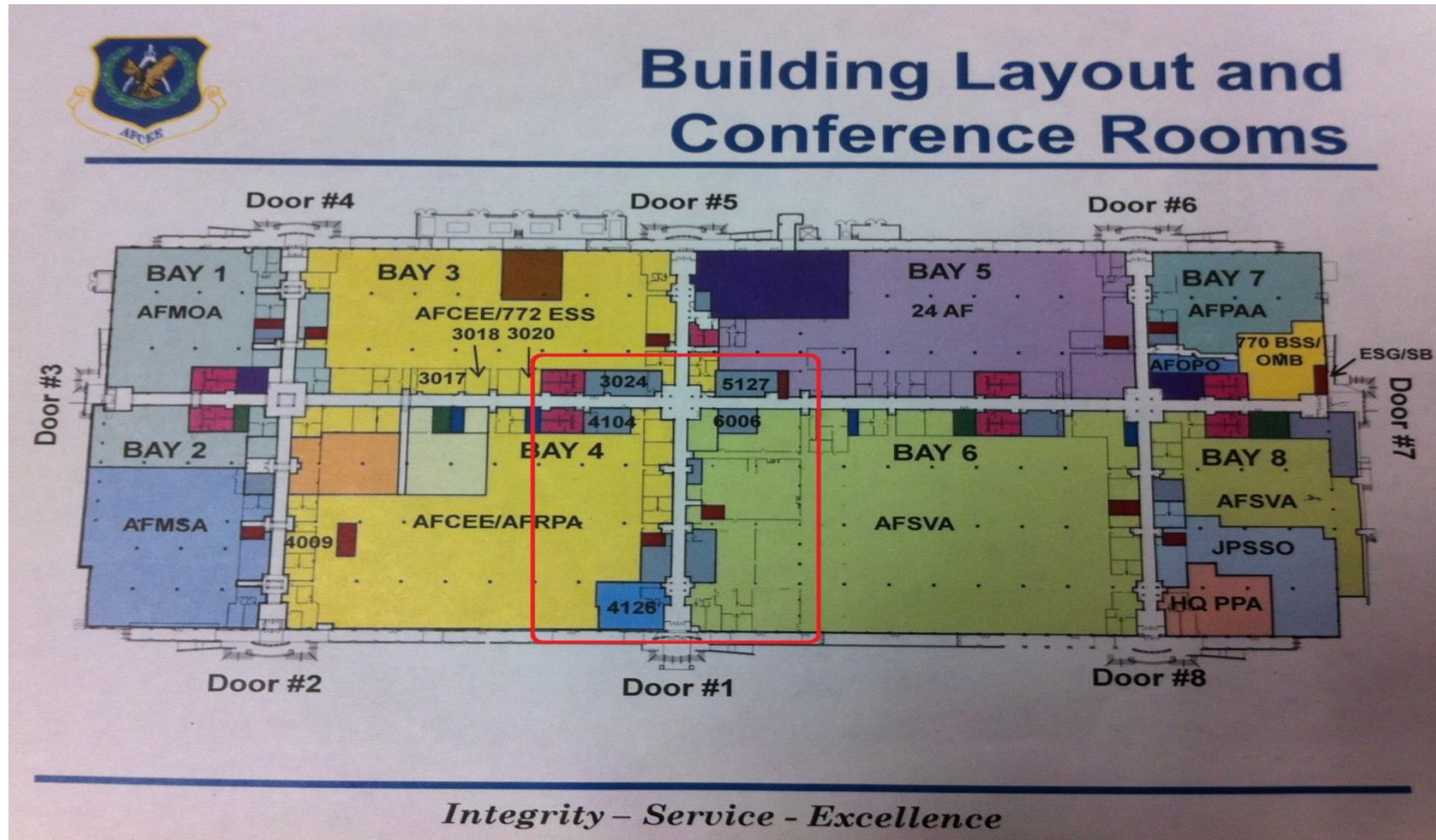
Building 171 Example





U.S. AIR FORCE

Building 171 Example





U.S. AIR FORCE

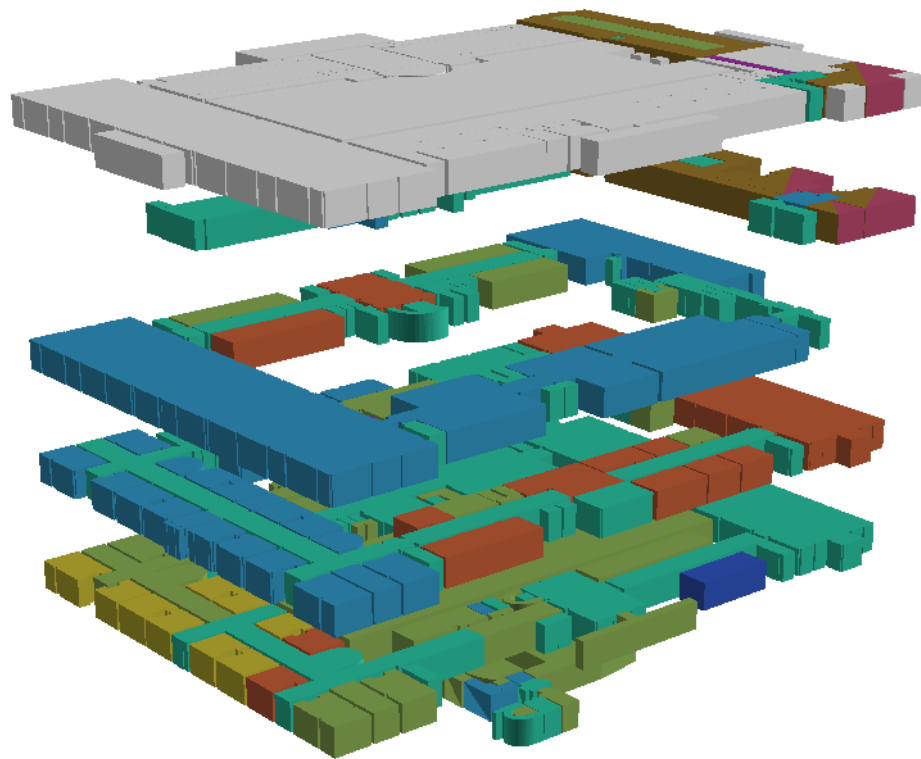
Building 171 Example

- **Relocation will last for 5+ months at least**
- **Majority of staff relocated to areas with no minimal to no comm or phone support**
- **Some relocations to the “Inn” causing disruption to available meeting space for that facility**

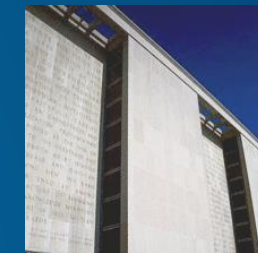
Lee Robertson, Smithsonian



Smithsonian Institution

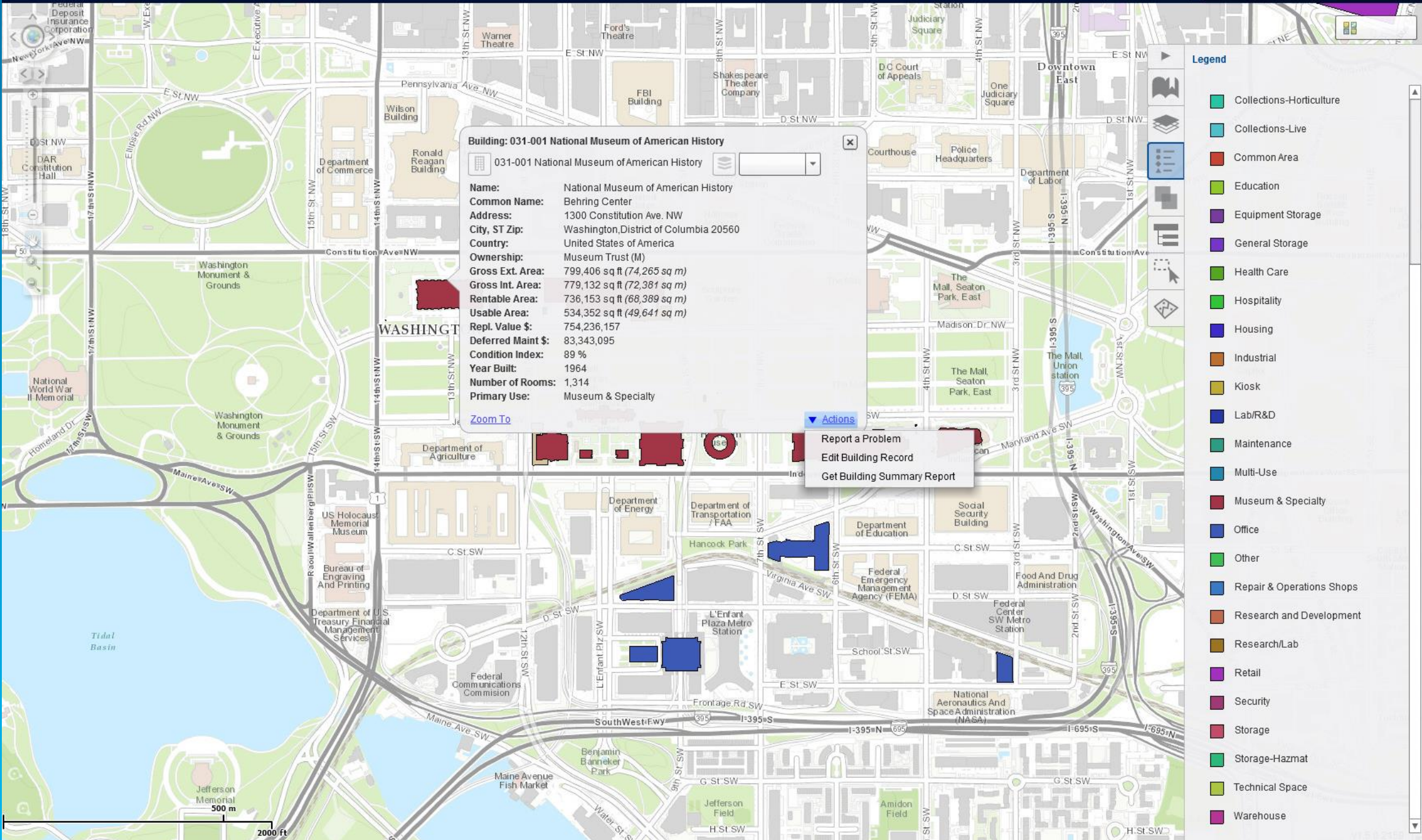


Reynolds
Center



Facilities GIS February 10, 2015

12,552,949 Gross Square Feet in GIS
580 Buildings in GIS
23,746 Spaces in GIS



Building: 031-001 National Museum of American History

031-001 National Museum of American History

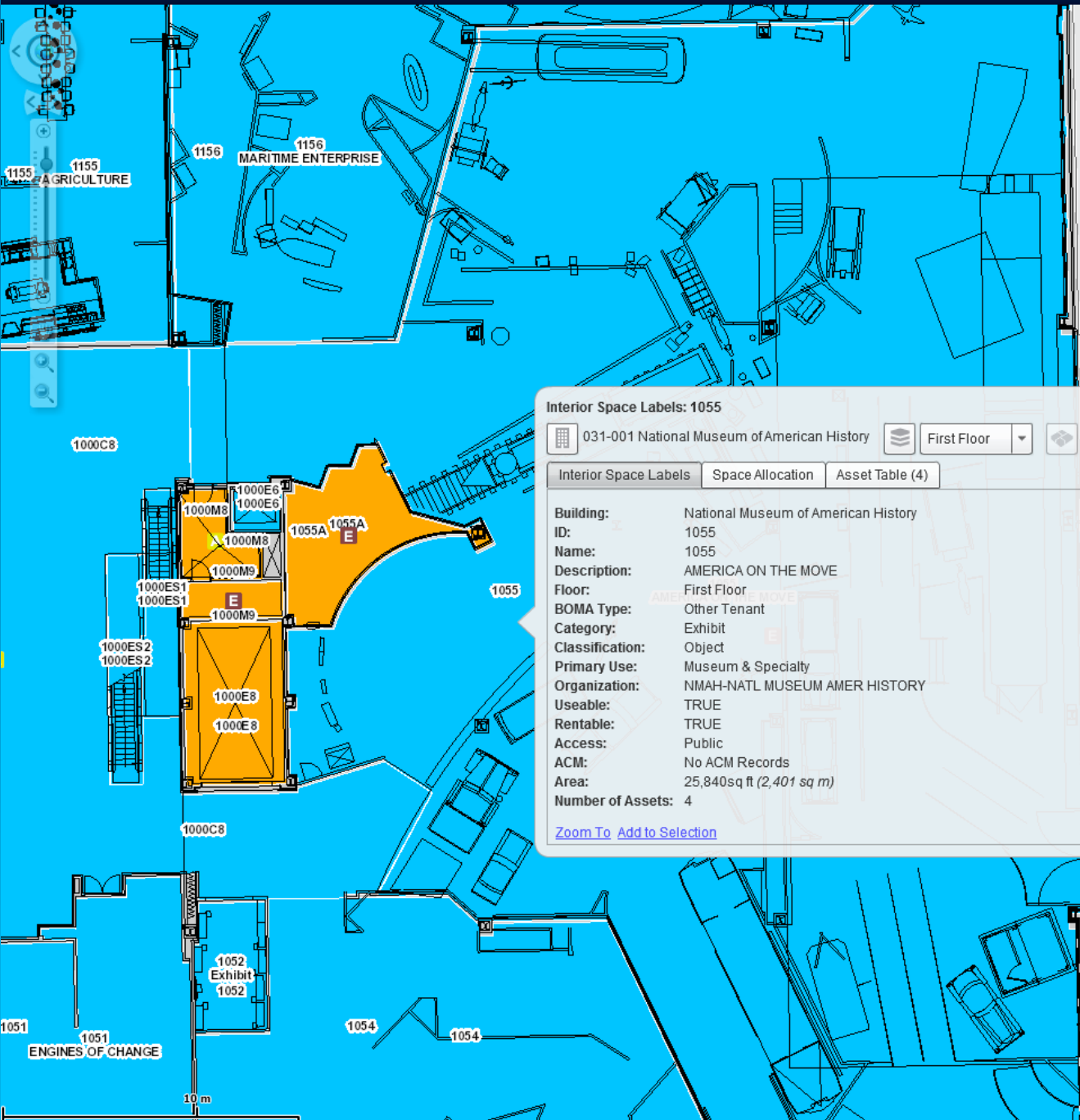
Name: National Museum of American History
Common Name: Behring Center
Address: 1300 Constitution Ave. NW
City, ST Zip: Washington, District of Columbia 20560
Country: United States of America
Ownership: Museum Trust (M)
Gross Ext. Area: 799,406 sq ft (74,265 sq m)
Gross Int. Area: 779,132 sq ft (72,381 sq m)
Rentable Area: 736,153 sq ft (68,389 sq m)
Usable Area: 534,352 sq ft (49,641 sq m)
Repl. Value \$: 754,236,157
Deferred Maint \$: 83,343,095
Condition Index: 89 %
Year Built: 1964
Number of Rooms: 1,314
Primary Use: Museum & Specialty

[Zoom To](#)

Actions

- Report a Problem
- Edit Building Record
- Get Building Summary Report

- Legend**
- Collections-Horticulture
 - Collections-Live
 - Common Area
 - Education
 - Equipment Storage
 - General Storage
 - Health Care
 - Hospitality
 - Housing
 - Industrial
 - Kiosk
 - Lab/R&D
 - Maintenance
 - Multi-Use
 - Museum & Specialty
 - Office
 - Other
 - Repair & Operations Shops
 - Research and Development
 - Research/Lab
 - Retail
 - Security
 - Storage
 - Storage-Hazmat
 - Technical Space
 - Warehouse



Interior Space Labels: 1055

031-001 National Museum of American History | First Floor | 1055

Interior Space Labels | Space Allocation | Asset Table (4)

Building: National Museum of American History
ID: 1055
Name: 1055
Description: AMERICA ON THE MOVE
Floor: First Floor
BOMA Type: Other Tenant
Category: Exhibit
Classification: Object
Primary Use: Museum & Specialty
Organization: NMAH-NATL MUSEUM AMER HISTORY
Useable: TRUE
Rentable: TRUE
Access: Public
ACM: No ACM Records
Area: 25,840sq ft (2,401 sq m)
Number of Assets: 4

[Zoom To](#) [Add to Selection](#)

- ▼ Actions
- Edit Space Record
 - Report a Problem

Legend

- Interior Asset Points Architectural
 - A Architectural
- Interior Asset Points FireSafety
 - F Fire Safety Assets
- Interior Asset Points IT
 - I IT Assets
- Interior Asset Points Plumbing
 - P Drinking Fountain

Name

Spaces by Access

- <all other values>
- Non-Public
- Public
- Public View

Exterior Spaces

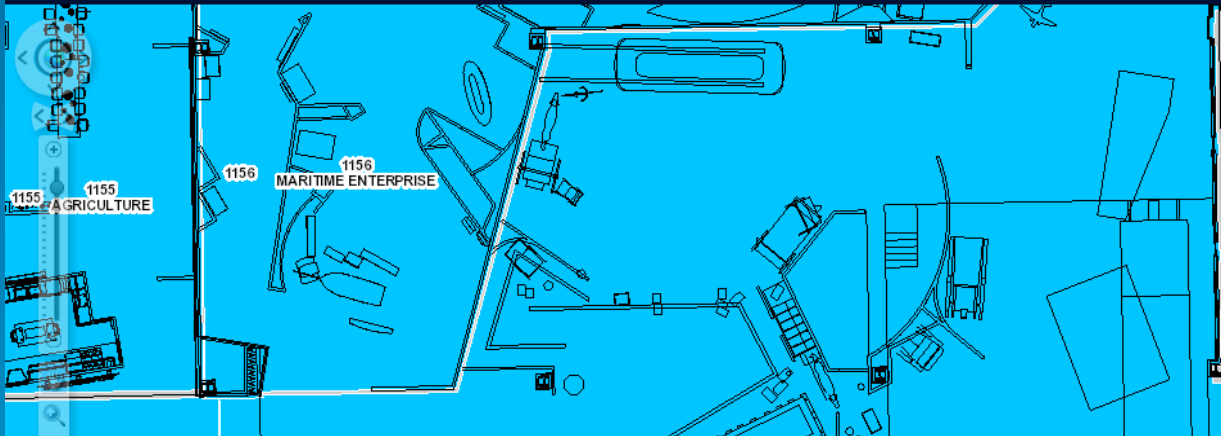
-

Floor

-

Buildings by Primary Use

- <all other values>
- <Null>
- Administration
- Broadcasting
- Collection Storage
- Collections-Horticulture
- Collections-Live
- Common Area



Interior Space Labels: 1055

031-001 National Museum of American History | First Floor | 1055

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Legend

- Interior Asset Points Architectural
 - A Architectural
- Interior Asset Points Fire Safety
 - F Fire Safety Assets
- Interior Asset Points IT
 - I IT Assets
- Interior Asset Points Plumbing
 - P Drinking Fountain

Name

Spaces by Access

- <all other values>
- Non-Public
- Public
- Public View

Exterior Spaces

-

Floor

-

Buildings by Primary Use

- <all other values>
- <Null>
- Administration
- Broadcasting
- Collection Storage
- Collections-Horticulture
- Collections-Live
- Common Area

Space: 1055

General | Contact Details | Graphic | Details | Allocation | Finishes | Regulatory | Hazardous Materials | Maintenance | History | Notifications | Notes & Documents

[Required] General information for this Space.

General

ID 1055 Status Active Image

Name 1055

Description AMERICA ON THE MOVE

Hierarchy Path \Locations\NMAH\National Museum of American History\First Floor\1055

Details

Bar Code Entry 1055 Control Number 1001204

Primary Phone Primary Fax

Primary Mail Stop

Hazardous Materials Emergency Exit Route

Reservable

Public Public

Units

Currency US Dollars Area Units square-feet Length Units feet

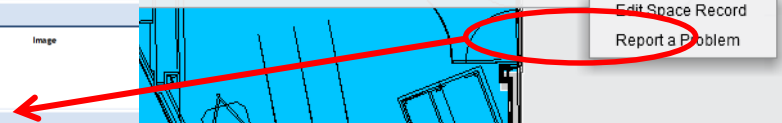
Space Measurements

Area	25840.31 square-feet	Prorated Area	25840.31 square-feet	Gross Area	
Area (Metric)	2400.5651 square-meters	Prorated Area (Metric)	2400.57 square-meters	Gross Area (Metric)	
Area (Imperial)	25840.3137 square-feet	Prorated Area (Imperial)	25840.31 square-feet	Gross Area (Imperial)	

Current Use Space Classification

Actions

- Edit Space Record
- Report a Problem





Legend

InVisionFM View

Floorplan Lines

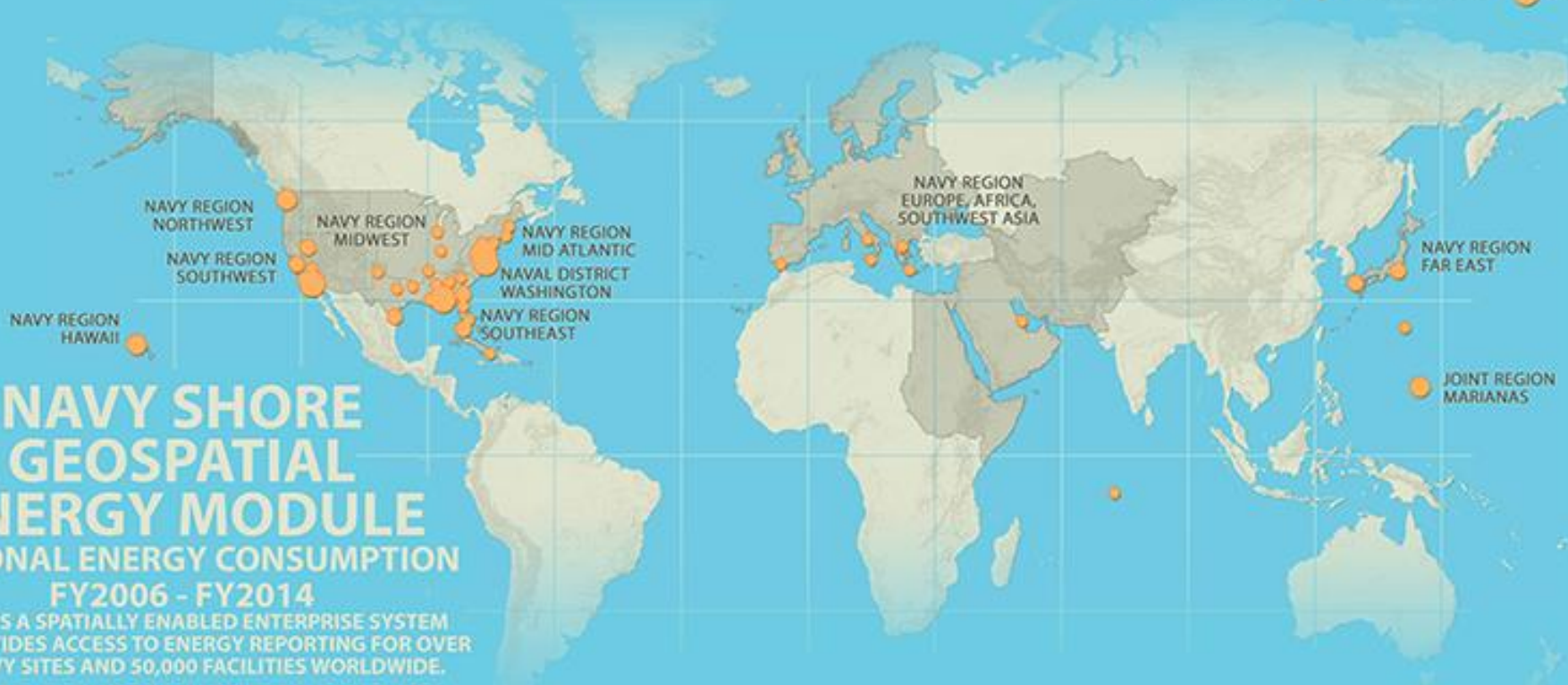
Spaces by Org

- <all other values>
- AAA-ARCHIVES JOURNAL
- AAA-ARCHIVES OF AMERICAN ART
- ACM-ANACOSTIA COMMUNITY MUSEUM
- APAC-ASIAN PACIFIC AMER CENTER
- ASEA-ASST SEC FOR EDU & ACCESS
- CEA-COMM & EXTERNAL AFFAIRS
- CFCH-CTR FOLKLIFE & CLTR HERTG
- CHM-COOPER HEWITT SI DSGN MUS
- CHM-CROSS-PLATFORM PUBLISHING
- CHM-CURATORIAL
- CHM-DEVELOPMENT AND MEMBERSH
- CHM-DIRECTOR
- CHM-DIRECTORS OFFICE
- CHM-EDUCATION
- CHM-FACILITIES
- CHM-FINANCE & OPERATIONS
- CHM-INFORMATION TECHNOLOGY
- DUSCIS-DEP USEC COLL&INTRD SP
- FSG - ASSOC DIR STRATEGIC PLNG
- FSG - COLLECTIONS MANAGEMENT
- FSG - CONSERVATION & SCIENTIFI

Sandrine Shultz, US Navy

NAVY SITES KEY
SITES AGGREGATED AT 30 MILE RADII

- LESS THAN 3 SITES
- BETWEEN 3 AND 10 SITES
- BETWEEN 10 AND 15 SITES
- BETWEEN 15 AND 25 SITES



NAVY SHORE GEOSPATIAL ENERGY MODULE

REGIONAL ENERGY CONSUMPTION FY2006 - FY2014

NSGEM IS A SPATIALLY ENABLED ENTERPRISE SYSTEM THAT PROVIDES ACCESS TO ENERGY REPORTING FOR OVER 200 NAVY SITES AND 50,000 FACILITIES WORLDWIDE.

HOW TO READ THE ENERGY INTENSITY STREAMGRAPH
THE AREA & COLOR OF EACH SHAPE CORRESPONDS TO THE REGION'S TOTAL CONSUMPTION PER 1000 SQUARE FEET. FISCAL YEAR RUNS OCT - SEPT.

ENERGY REPORTING SYSTEMS CAME ONLINE FOR 30 REGIONS BY NOVEMBER 2007

INCREASE REFLECTS RISE IN OVERALL COUNT OF TOTAL FACILITIES REPORTING

CONSUMPTION PEAKS CORRESPOND WITH CLIMATE & SEASONALITY

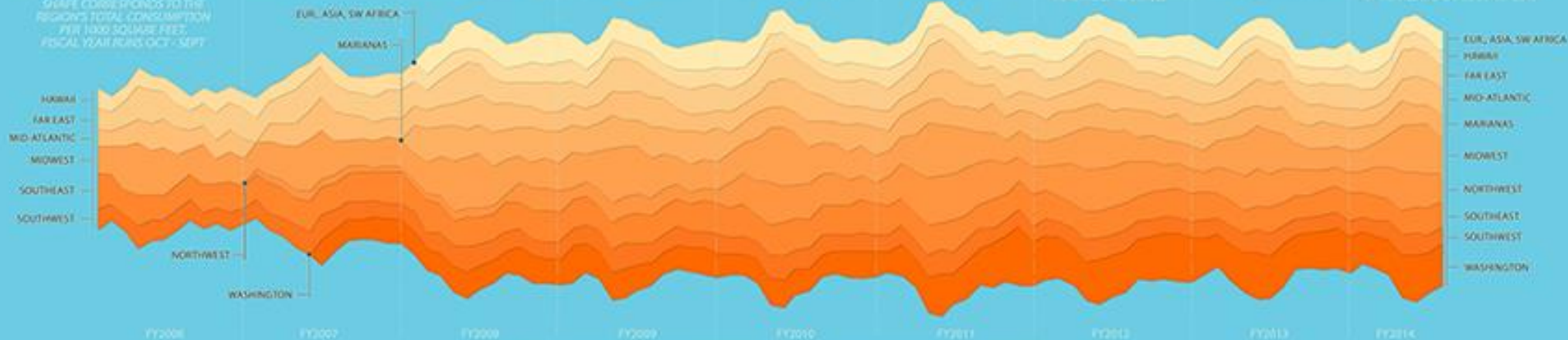
SEC. OF NAVY ANNOUNCES CONSUMPTION REDUCTION GOALS, OCTOBER 2009

PEAK CONSUMPTION OCCURS IN FEBRUARY 2010

BY Q2 OF FY2012, 10% OF SHORE ENERGY IS PRODUCED FROM RENEWABLE RESOURCES

DOWNWARD TREND OF CONSUMPTION CONTINUES WITH SEASONAL PEAKS

BY 2020, 50% OF SHORE BASED ENERGY WILL BE PRODUCED BY ALTERNATIVE SOURCES AND 50% OF INSTALLATIONS WILL BE NET-ZERO



TOC

Layers Legend

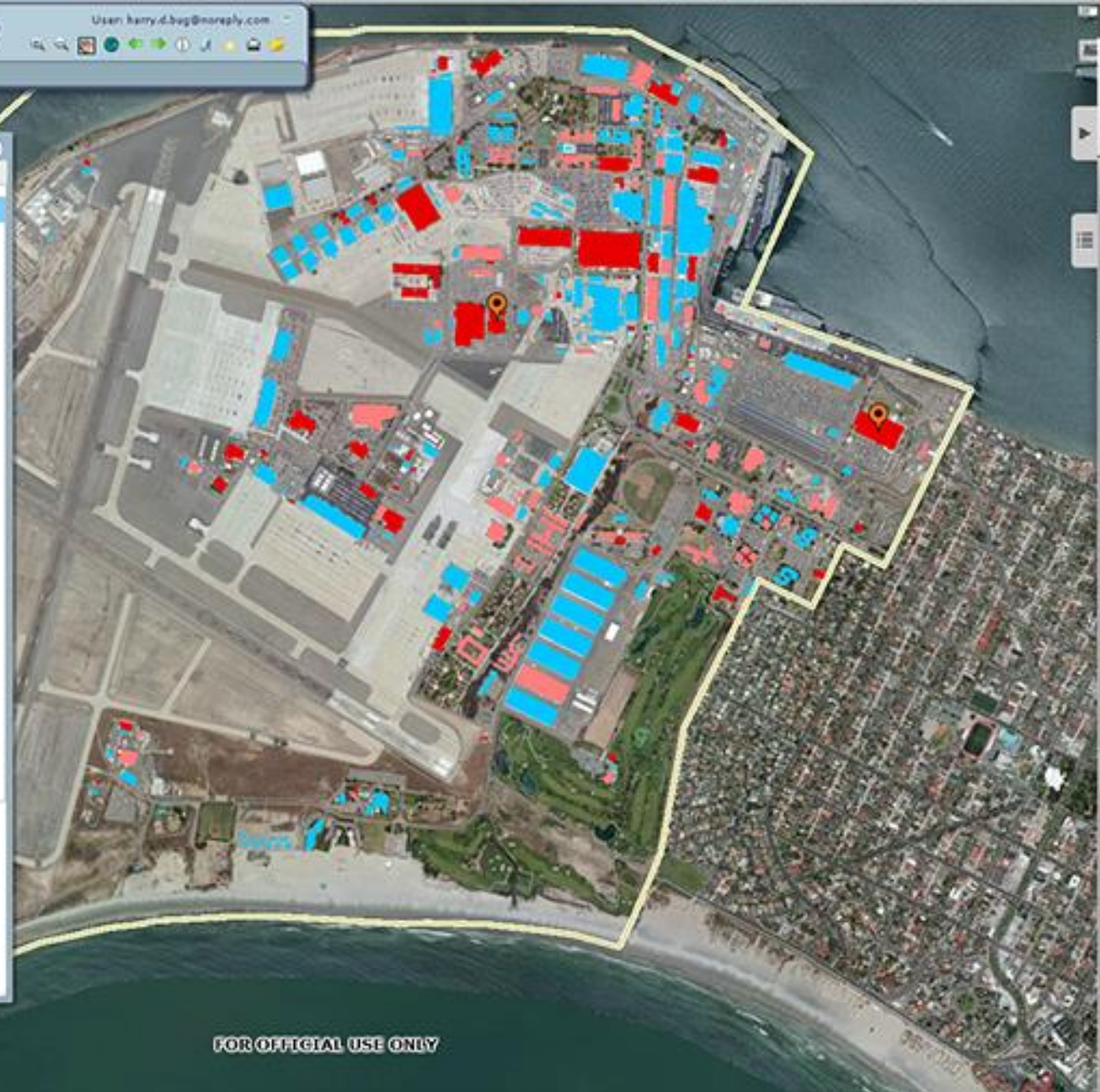
- NSGEM
- NSGEM_DAS
- WW
 - Geodetic
 - Facilities
 - Improvement General
 - Transportation Water
 - Transportation Land
 - Transportation Air
 - Military Operations
 - Outdoor Recreation
 - Cadastre
 - Hydrography
 - Background Features

Active Layer: Structure Existing Area

CNIC Cached Imagery On Off

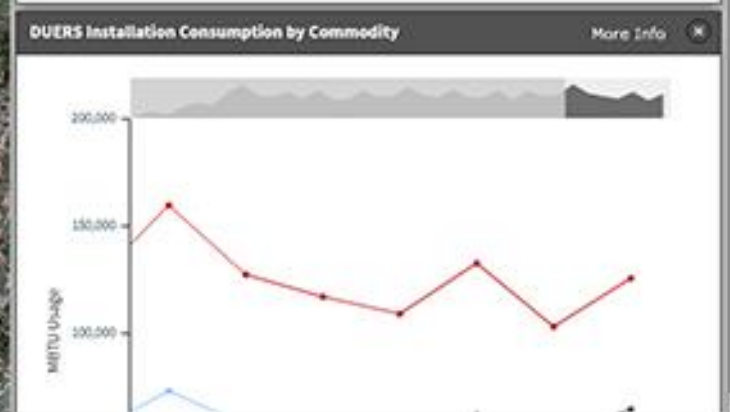
Background Map Satellite Topo
 Streets None

External Service



Installation/Site Key Facts

Site Code Site Name	N00246 NAVBASE CORONADO
Activity UIC Activity Name	N00246 NAVBASE CORONADO
Total KSF of Tracked Facilities	8,655.70 KSF
Total MBTU of Tracked Facilities	48,430.45 MBTU
Total Rolling Year MBTU of Tracked Facilities	530,702.88 MBTU



FOR OFFICIAL USE ONLY

N68469 NAVAL SUPPORT ACTIVITY WASH

Installation Key Facts

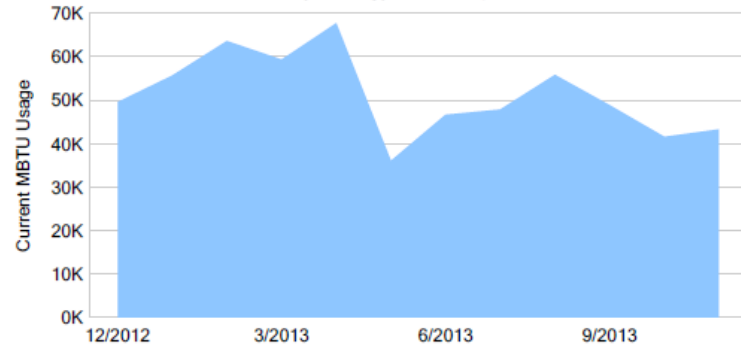
Climate Zone	4A - Mixed - Humid	Total MBTU Usage	43,311
Number of Sites	14	Total KSF Area	6,938
Number of Facilities	417	Energy Intensity (MBTU/KSF)	6.24

Data Assessment Score

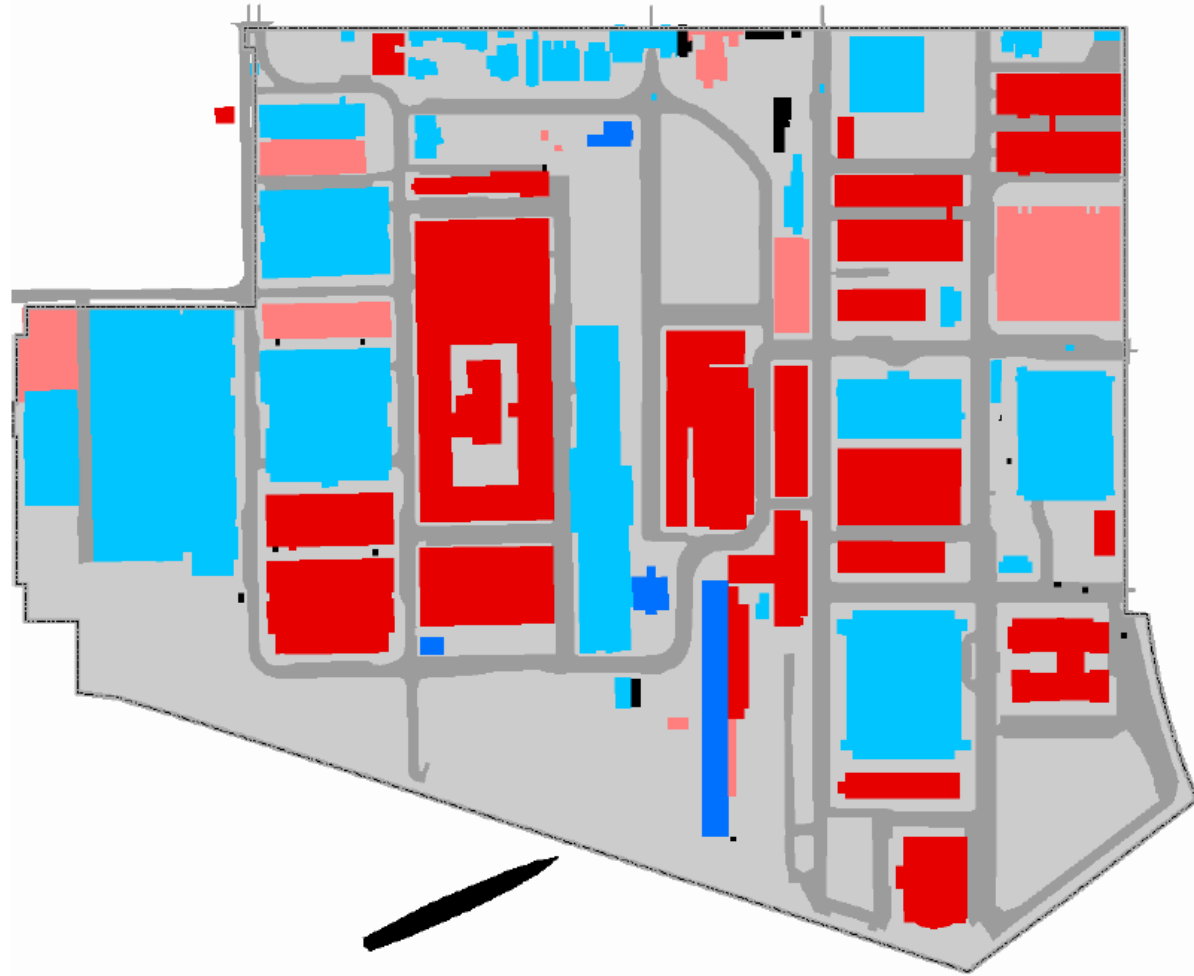
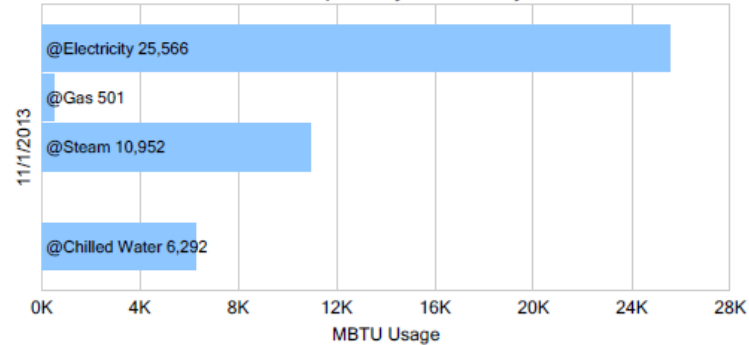
75%
Total NSGEM Score

iNFADS (Real Property)	100%
NFA ID Available	417 / 417
Primary Use Category Code is Not Blank	417 / 417
KSF Area is Not (Null, Blank, Zero)	417 / 417
Circuits (Energy Consumption)	44%
NFA ID Available	184 / 417
CIP (GIS Installation Data)	83%
NFA ID Available	349 / 417

Monthly Energy Consumption



Consumption By Commodity





NAVY REGION SOUTHEAST ENERGY PROGRAM

COMMANDER, NAVY INSTALLATION COMMAND (CNIC) INSTATED THE CNIC ENERGY PROGRAM IN ORDER TO PROVIDE GUIDANCE, POLICY, AND TOOLS FOR IMPLEMENTING MANDATED ENERGY REDUCTION AND SUSTAINABILITY PRACTICES.

THE MAIN GOALS OF THE PROGRAM (AS OUTLINED IN OPNAV POLICY OPNAVINST 4100.5E) ARE:

- 50% REDUCTION IN ENERGY CONSUMPTION BY 2020.
- 50% RENEWABLE ENERGY SOURCE CONSUMPTION BY 2020.
- 50% NET-ZERO PARTICIPATION BY 2020.

IN ORDER TO MEET THESE GOALS, CNIC ADOPTED A FACILITY ENERGY STRATEGY THAT INCLUDES:

- REDUCING ENERGY DEMANDS
 - FACILITIES AND BUILDING PRACTICES USING LESS ENERGY CONSUMPTION
- EXPANDING ENERGY SUPPLIES
 - ADOPTING ALTERNATIVE/RENEWABLE SOURCES
- ENHANCING ENERGY SECURITY
 - SUSTAINABLE ENERGY USAGE
- ADVANCING NEW TECHNOLOGIES
 - INSTALLING SMART METERS ON EACH BUILDING, USING GIS TO LEVERAGE AND PROVIDE METRICS FROM AVAILABLE CONSUMPTION INFORMATION, ETC.

FOR MORE INFORMATION ABOUT NSEEP CONTACT THE HQ NAVY ENERGY PROGRAM MANAGER: SANDRINE SCHULTZ, CEM (202)-433-6293



CNIC
NAVY ENERGY PROGRAM



CAPT. MARK McLAUGHLIN, COMMANDING OFFICER OF NAVAL AIR STATION KINGSVILLE, LEFT, LISTENS AS PUBLIC WORKS OFFICER CMDR. TROY HAMILTON EXPLAINS HOW THE ADVANCED METERING INFRASTRUCTURE PROGRAM SMART METERS OPERATE. THE METERS WILL HELP THE COMMAND TRACK ELECTRICAL USE AND MANAGE ENERGY CONSUMPTION. KINGSVILLE BECAME THE FIRST NAVY REGION SOUTHEAST COMMAND TO INSTALL THE SMART METERS WHEN THE FIRST METER WAS INSTALLED AT THE AIR STATION'S RV PARK. THE COMMAND PLANS TO INSTALL 158 SMART METERS THROUGHOUT THE BASE.



CAPT. CHRISTOPHER KINUS, NAVAL FACILITIES ENGINEERING COMMAND (NAVFAC) SOUTHEAST COMMANDING OFFICER AND REGIONAL ENGINEER, SHOWS ACTING ASSISTANT SECRETARY OF THE NAVY FOR ENERGY, INSTALLATIONS AND ENVIRONMENT ROGER NATSUHARA SOME OF THE LEED ATTRIBUTES IN THE NAVFAC SOUTHEAST HEADQUARTERS FACILITY DURING HIS VISIT TO NAVAL AIR STATION JACKSONVILLE. THE BUILDING'S THIRD FLOOR IS AN OPEN LOFT, WHICH ALLOWS ADDITIONAL NATURAL LIGHT TO THE SECOND FLOOR.



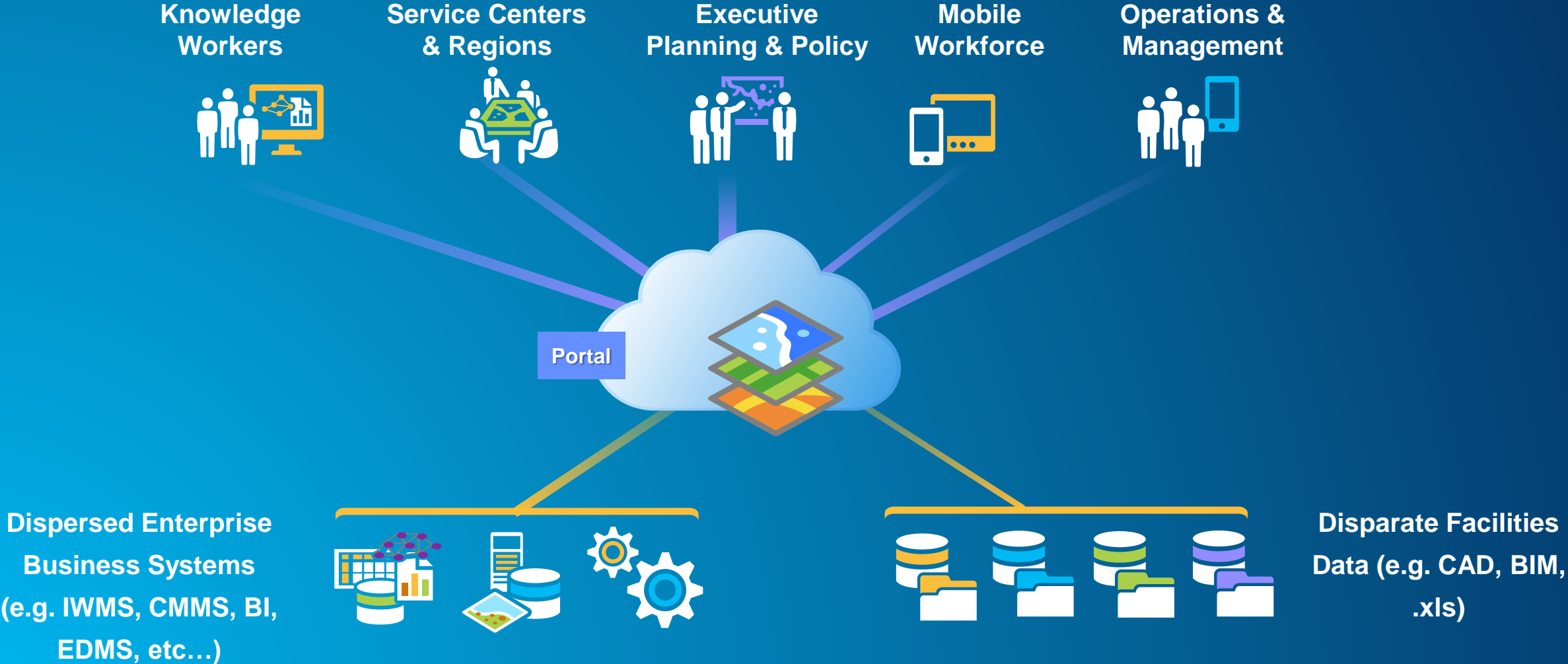
THE WIND TURBINES ON TOP OF JOHN PAUL JONES HILL HAVE BEEN FULLY OPERATIONAL SINCE JULY 2005 AND WILL SAVE NAVAL STATION GUANTANAMO BAY MORE THAN \$1 MILLION BY DECREASING FUEL USAGE BY 250,000 GALLONS THIS YEAR. THEY CAN GENERATE UP TO 13 PERCENT OF THE OVERALL BASE POWER, SUPPLYING SOME OF THAT POWER TO JOINT TASK FORCE GUANTANAMO.



A VIEW OF SOLAR PANELS BEING INSTALLED AT NAVAL STATION GUANTANAMO BAY, CUBA. THE SOLAR FARM IS BEING INSTALLED TO PROVIDE ELECTRICITY FOR THE ONGOING EXPANSION OF DENICH GYM AT THE NAVAL STATION'S COOPER FIELD SPORTS COMPLEX.

ArcGIS Platform Solutions for Facilities

A Mapping & Location Analytics Platform for Real Property & Facility Management



... helps you, your staff & contractors discover, make, use & share facility maps from any device, anywhere, anytime

Demonstration

QnA with Our Panel & Attendees

Facilities Are Mission Critical – More Information

penbaysolutions.com/govloop-mission-critical/



penbaysolutions
gis for facility management

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Events

Esri Federal GIS Conference

Main Agenda Exhibits Registration Get Involved About

Building a Resilient Nation

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February 9–10, 2015
Walter E. Washington Convention Center
Washington, DC

Please Come See PenBay Solutions at the Esri Federal GIS Conference in DC February 9th & 10th!

Washington, DC: Feb 9-10, Walter E. Washington Convention Center: **it's FREE* for Federal Government Employees to attend** (click here to



Download Federal Real Property White Paper

 **Facilities are Mission Critical**

How Enterprise Geographic Information Systems are Solving the Complex Challenges of Managing



Download Data White Paper

 **GIS & the Facility Manager: the Data Value Proposition**

Geographic information systems (GIS) as a unifying technology platform for facility management.

Facilities Are Mission Critical – More Information

facilities.maps.arcgis.com & esri.com/fm

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ArcGIS for Facilities

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Campus Place Finder

ZERO Market: Site Selection & Market Analysis

Leasing Space Based on Location

Fifty Largest Malls

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Understanding our world.