Introduction to Multi-Disciplinary Tracks

Hosted by

Gregory W. Hughes

Multi-Disciplinary Concurrent Sessions

- 15 Separate Tracks
- 15 Separate Rooms
- Each Track Presented 3 Times
- 1st Showing 1400-1450 Hours
- 2nd Showing 1530-1620 Hours
- 3rd Showing 1630-1720 Hours

- Ice Breaker 1730-1900 Hours

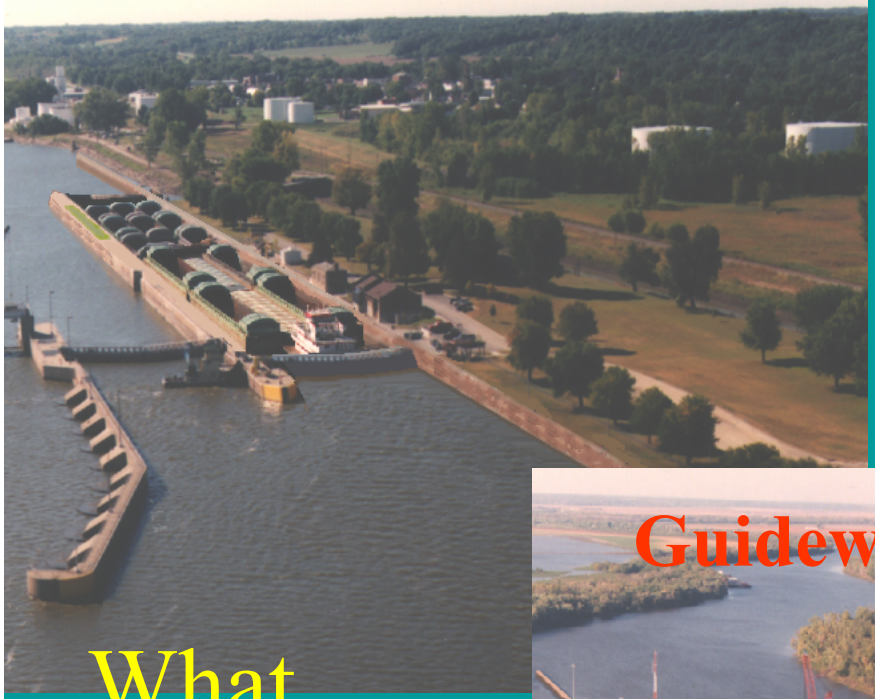
Track 1
ACQUISITION STRATEGIES FOR CIVIL WORKS
Room 230

Walt Norko & Bill Augustine

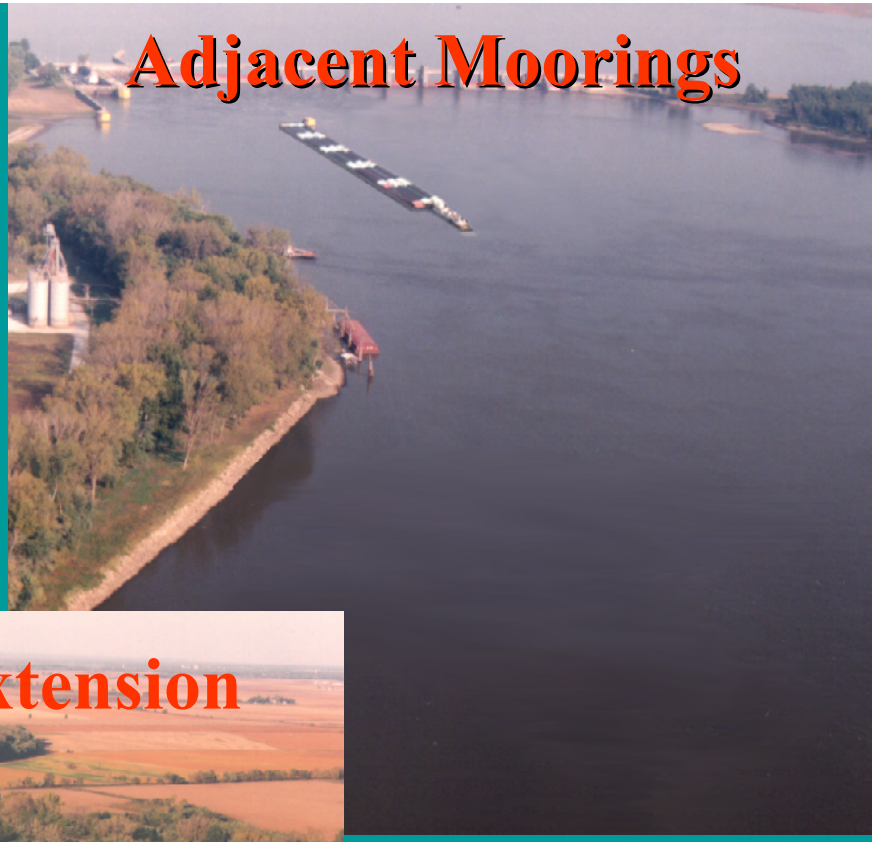
CECW-CE / CECW-B

HQ USACE

1200-Foot Lock



Adjacent Moorings



Guidewall Extension

What acquisition strategy should you use ?

MAJOR ISSUES IN CIVIL WORKS PROJECTS

- Continuing Contracts
  - Change in current USACE policy
- Reprogramming Commitments
  - Trail of past under funded projects
- More funding needed
  - Current requirements exceed available funds


INFORMATION
PLANNING
ACQUISITION STRATEGY
RISK ASSESSMENT
IMPLEMENTATION

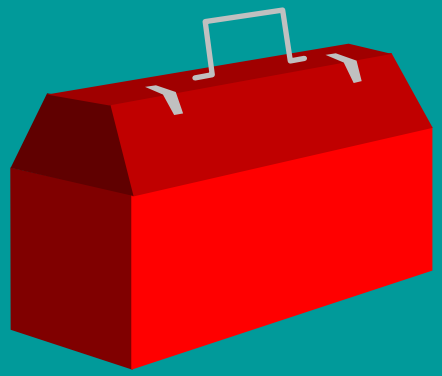
ACQUISITION STRATEGIES TOOLBOX

IDIQ SINGLE CONTRACTS

BPA

IDIQ MULTIPLE AWARD CONTRACTS

COST REIMBURSEMENT CONTRACTS



PURCHASE ORDER <$100K

OTHER IDT CONTRACTS

SOLE SOURCE 8(a) (RFP)

INVITATION FOR BID/REQUEST FOR PROPOSAL

DESIGN/BUILD

FIXED PRICE CONTRACT

CW Acquisition Strategies

- For presentation, discussion and questions ?
- Visit us in Room 220
- 3 sessions
  - 2:00 to 2:50 PM
  - 3:30 to 4:20 PM
  - 4:30 to 5:20 PM

Track 2

“Risk and Reliability Engineering”

Room 231

Anjana K. Chudgar/CECW-CE
David M. Schaaf/CELRL-ED-DS

Risk and Reliability Engineering

Risk

Potential for loss or harm to systems due to likelihood of an unwanted event and its adverse consequences. Risk is combination of the probability and consequences of an adverse event.

Risk and Reliability Engineering

Reliability

The probability that a systems will perform its intended function for a specific period of time under a given set of conditions.

Reliability is the probability that unsatisfactory performance or failure will not occur

Risk and Reliability Engineering

Outline of Presentation: Track 2 - Room 231

- Why Risk and Reliability Engineering: Chudgar
- Overview of HQ's Supported Activities: Chudgar
  - Major Rehabilitation
  - Dam Safety – PRA
  - Homeland Security
  - Major Maintenance
- Guidance-Risk and Reliability Engineering: Schaaf
- Navigation Risk and Recovery Study-CELRD: Schaaf
- R&D: Chudgar
- Related Presentations: Chudgar
- Questions and Discussion: All

Track 3
Integrating Risk & Reliability Into USACE Infrastructure Management
Room 232

Presentation for the
Multi-Disciplinary Concurrent Session
Tri-Service Infrastructure Conference
August 2005

Risk & Reliability

- What's wrong?
- How likely is it to occur?
- What are the consequences?

Discussion Topics

- Why Risk & Reliability?
- How is USACE Integrating Risk & Reliability into Infrastructure Management?
- Influence on Engineering & Construction Communities of Practice
- The Way Ahead
- Question and Answer Session

Track 4

- Hydrology, Hydraulics & Coastal Engineering
- Jerry Webb & Darryl Davis
- Room 240

Hydrology, Hydraulics, and Coastal Engineering Support for USACE

- Multi-disciplinary Session, by HH&C CoP lead: Jerry Webb, Principal Hydrologic and Hydraulic Engineer, HQUSACE
- For: Tri-services Infrastructure Conference, St. Louis, MO August 2, 2005

Session Summary

- Conference Agenda/Opportunities
- HH&C CoP Membership.
- CoP Charter and Governance.
  - Executive Advisory Group.
  - MSC, Lab, & Support POCs.
- Standing Technical Committees.
- Technical Excellence Network.
- HH&C Support to USACE, other DoD, Federal, and non-Federal partners.

USACE HH&C CoP Membership

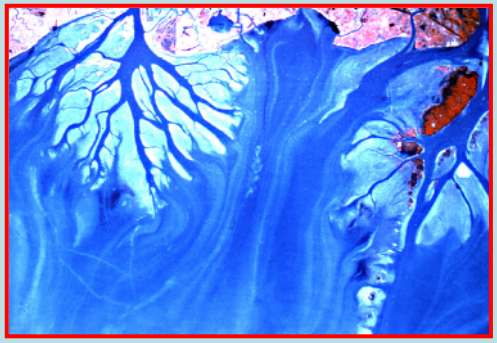
- Who?: USACE Engineers and Scientists.
  - Surface and groundwater hydrology, river hydraulics and sediment transport, hydrologic statistics and risk, cold regions hydrology and hydraulics, reservoir systems analysis, hydraulic design, hydroelectric power water supply navigation ,dam safety water control management, water quality environmental restoration, and estuary coastal, and ocean engineering and processes.
- Where from?:
  - HQUSACE, MSCs, districts, R&D laboratories, support offices, and others.

Track 5

- Civil Works R&D Forum
- Joan Pope
- Room 241

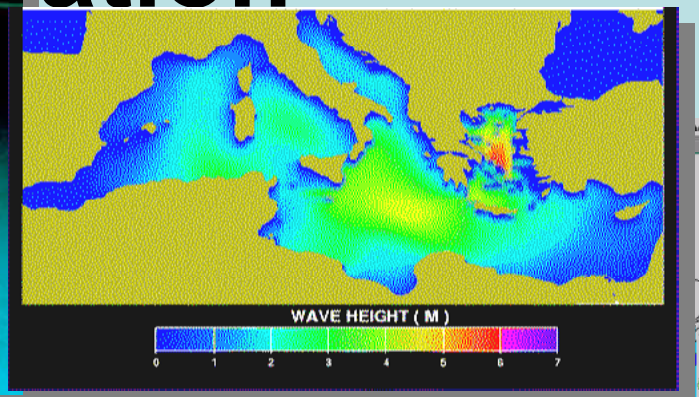
Track 5 Civil Works R&D

- **Vision – technology leader for water resources management**
- **Capabilities/Products address needs of Corps' Civil Works program, with primary emphasis on:**
  - **Navigation**
  - **Flood & Storm Damage Reduction**
  - **Environmental**
  - **Watershed Assessment & Management**
- **Customers – Corps Districts**



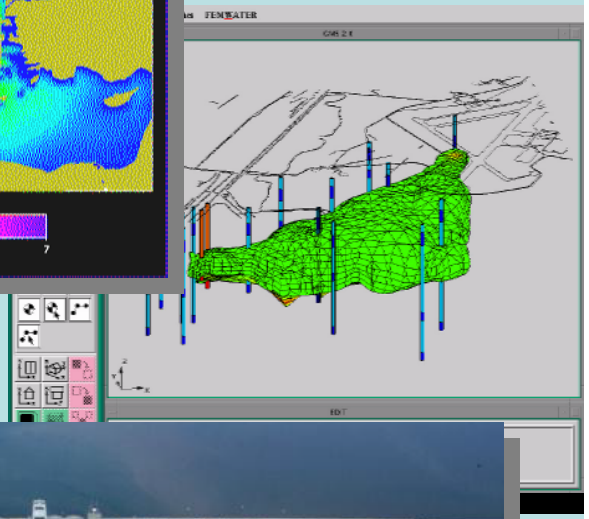
Water Resources Support to the Nation

Physical Models

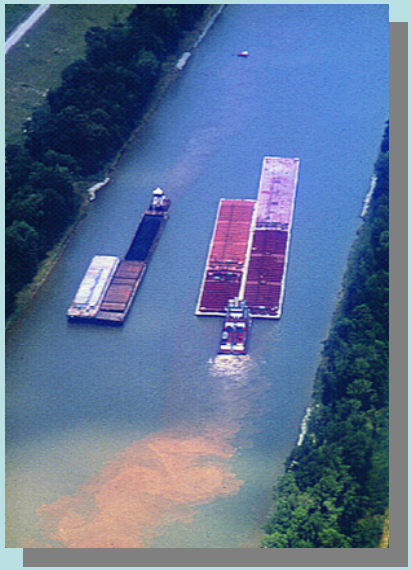


Navigation

Numerical Models



Coastal Engineering

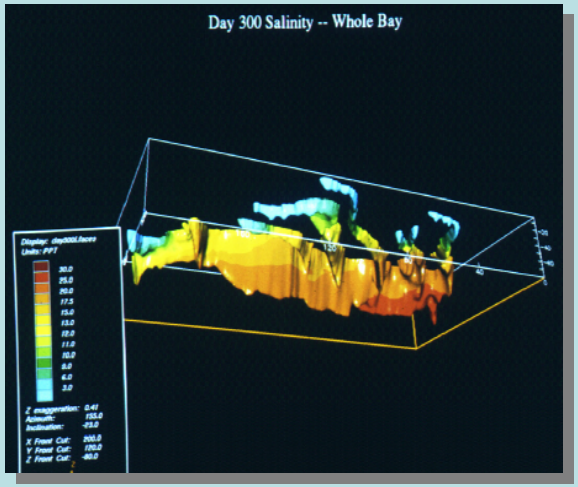


Flood Control

Water and the Ecosystem

Dredging and Disposal

Water Quality



Wetlands

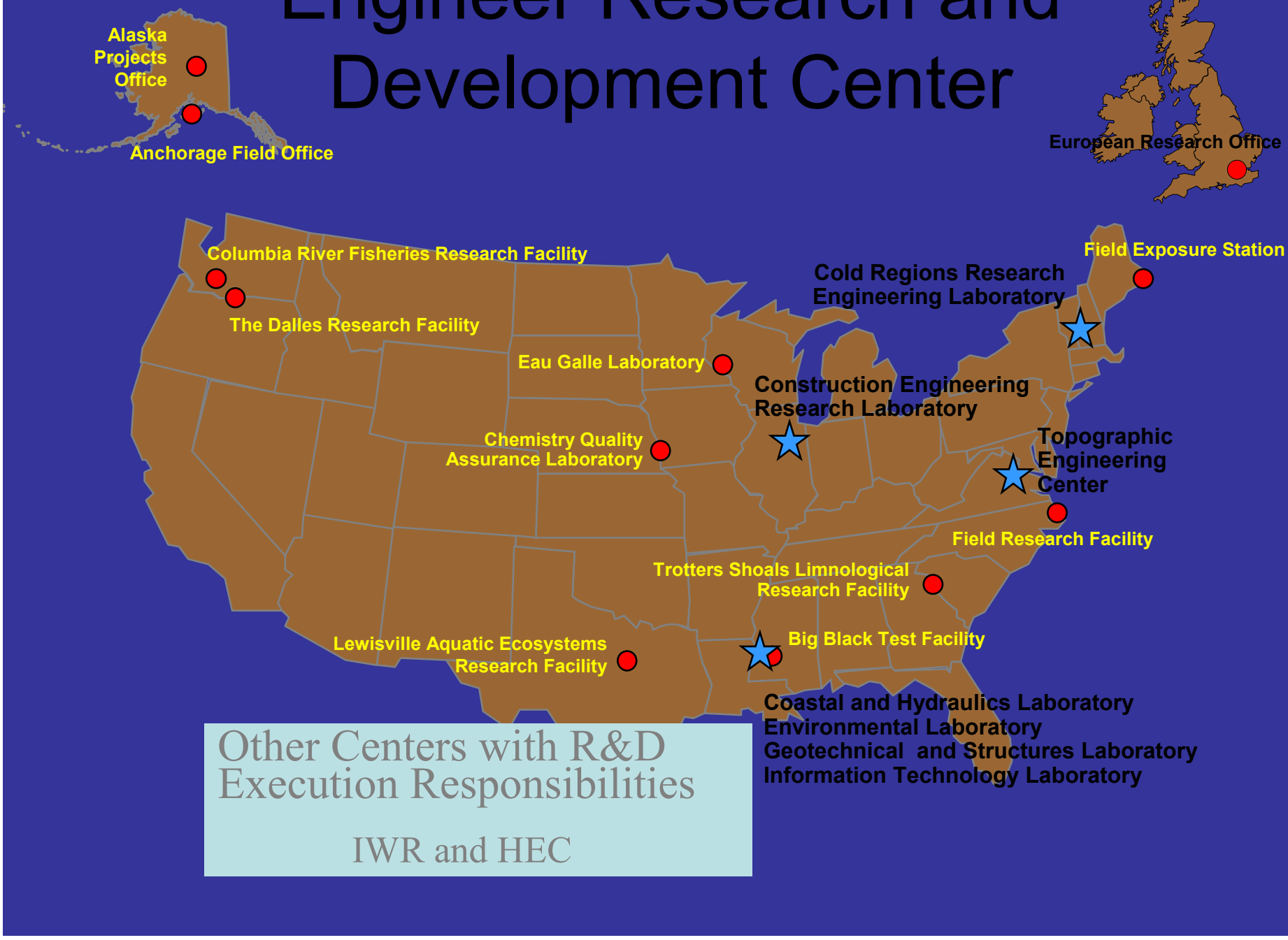
Invasive Species

Fisheries Mitigation

ERDC's Role
USACE's R&D Major Subordinate Command
DoD & Army Lead Engineering R & D Center

- Problem solvers
- Technology advisors
- Technology developers
- Business development partners
- USACE's National Science & Technology resource

Engineer Research and Development Center



Other Centers with R&D Execution Responsibilities

IWR and HEC

Civil Works R&D Changes and Drivers

- Changes 2003 - 2005
  - 4 thrust areas now vs. 6
  - 12 ERDC work packages now vs. 15
  - $29 M now vs. $27 M
  - HEC added to Senior Management Team
  - More reliance on MSC's/CoP Structure for R&D needs
- Drivers
  - USACE 2012
  - Civil Works Strategic Plan
  - Business Line budgeting
  - Congressional adds
  - Integration of ERDC/IWR collaboration

ERDC Civil Works R&D

Thrust Area	Work Packages	FY 05	FY 06	FY 07
		$M w/estimated S&S removed		
Navigation				
	Navigation Systems	3.0	3.7	4.0
	Coastal Inlets Research Program (CIRP)	2.5	2.5	2.5
	Dredging Operations and Environmental Research (DOER)	5.8	5.8	5.8
Thrust Area Subtotal		11.3	12.0	12.3
Flood and Coastal				
	Flood and Coastal Storm Damage Reduction	2.8	2.7	2.8
	Risk Analysis for Dam Safety	0.6	0.6	0.6
Thrust Area Subtotal		3.4	3.3	3.4
Environmental				
	Environmental Technologies	1.3	1.4	1.4
	Aquatic Plant Control	3.2	3.0	3.0
	Aquatic Nuisance Species	3.2	0.7	0.7
Thrust Area Subtotal		7.7	5.1	5.1
System-Wide				
	Regional Water Management	1.5	1.7	1.7
	Regional Sediment Management	1.8	2.0	2.0
	Ecosystems Assessment & Management	1.6	1.7	1.7
	Unifying Technologies	2.0	2.2	2.3
Thrust Area Subtotal		6.9	7.6	7.7
TOTAL BY FISCAL YEAR		29.3	28.0	28.5

Track 6

- Civil Works Security Engineering
- Joe Hartman & Bryan Huston
- Room 242

U.S. Army Corps of Engineers

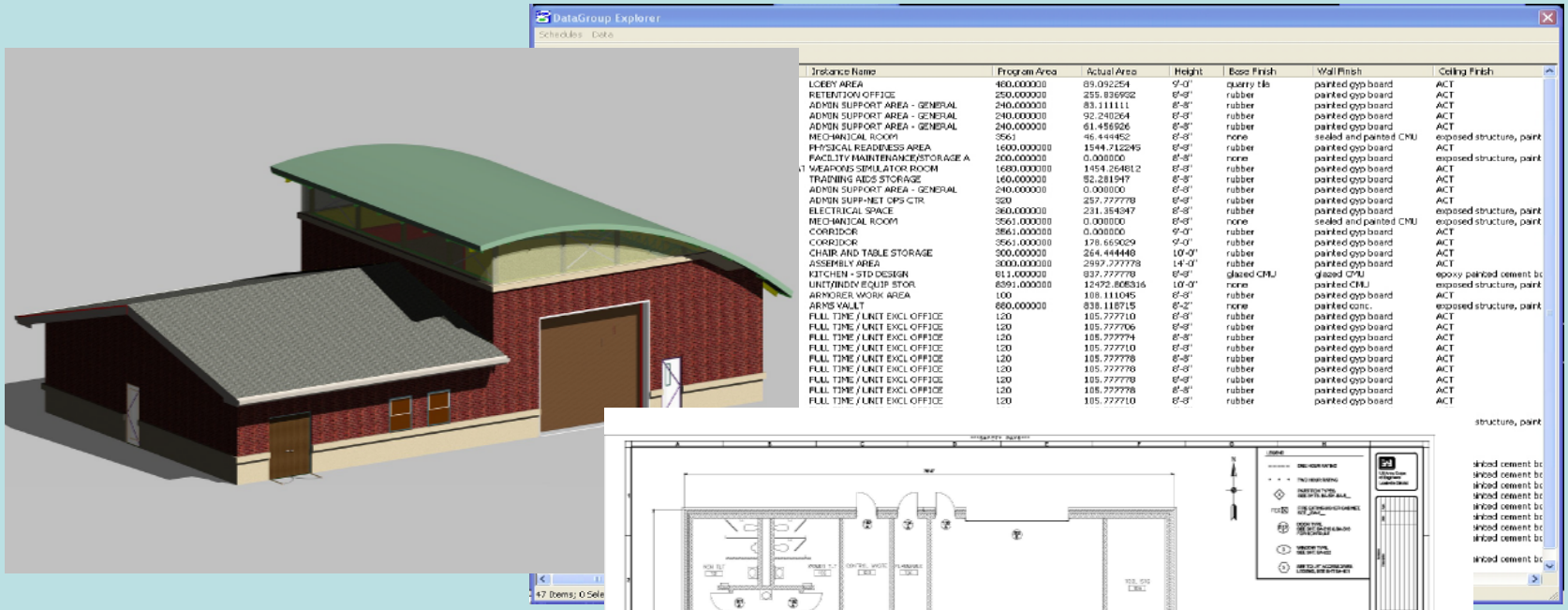
CIVIL WORKS SECURITY ENGINEERING

TRACK 6 - ROOM 242

- USACE Civil Works Infrastructure
- USACE response after 9/11
- Risk
  - Threats
  - Vulnerabilities
  - Consequences
- Bases of Design for Protective Measures

Track 7

- Building Information Model Applications
- Brian Huston & Daniel Hawk
- Room 226



Brian Huston

BIM Manager, Louisville District

Brian.K.Huston@lrl02.usace.army.mil

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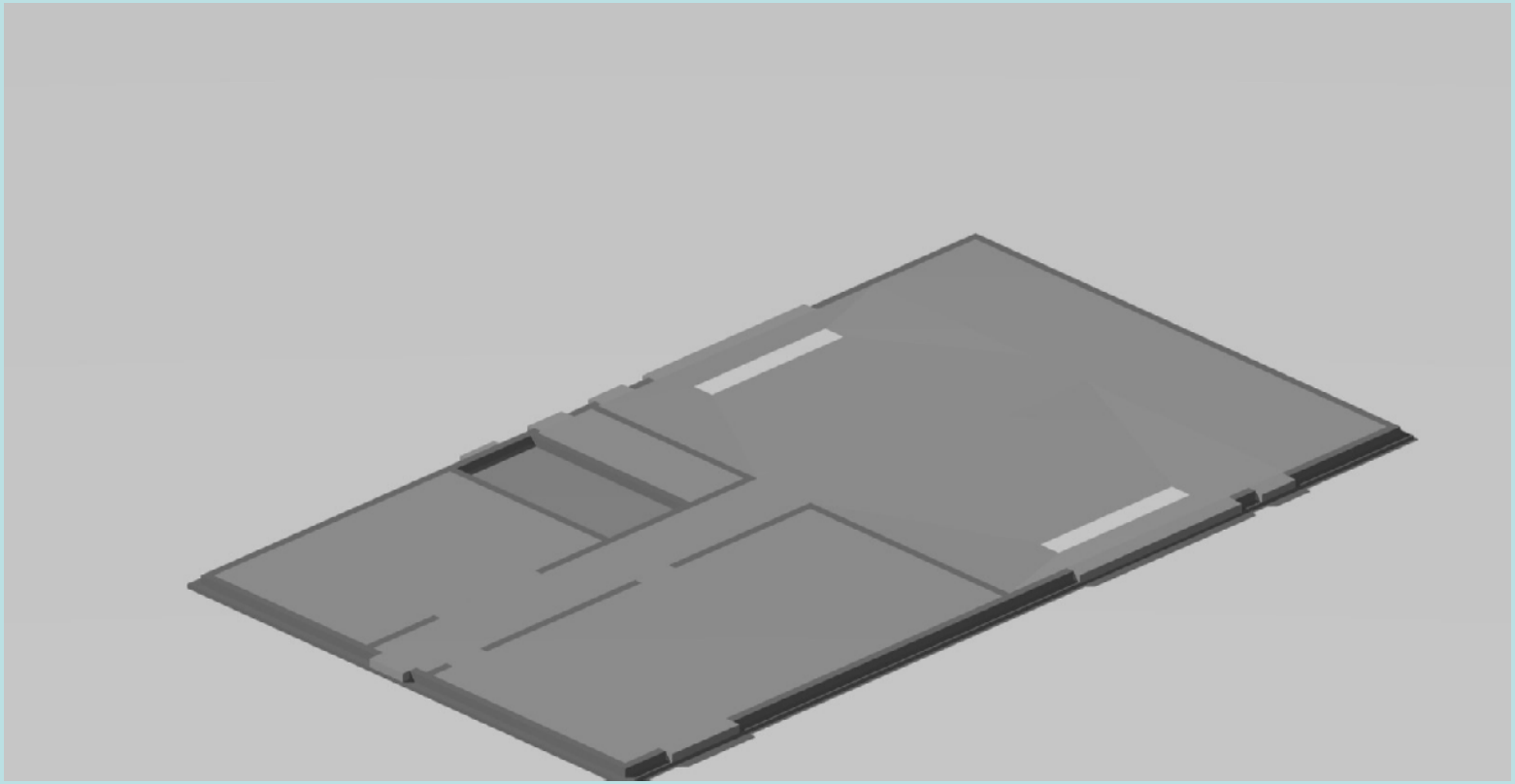
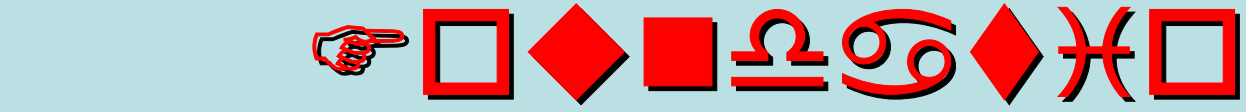
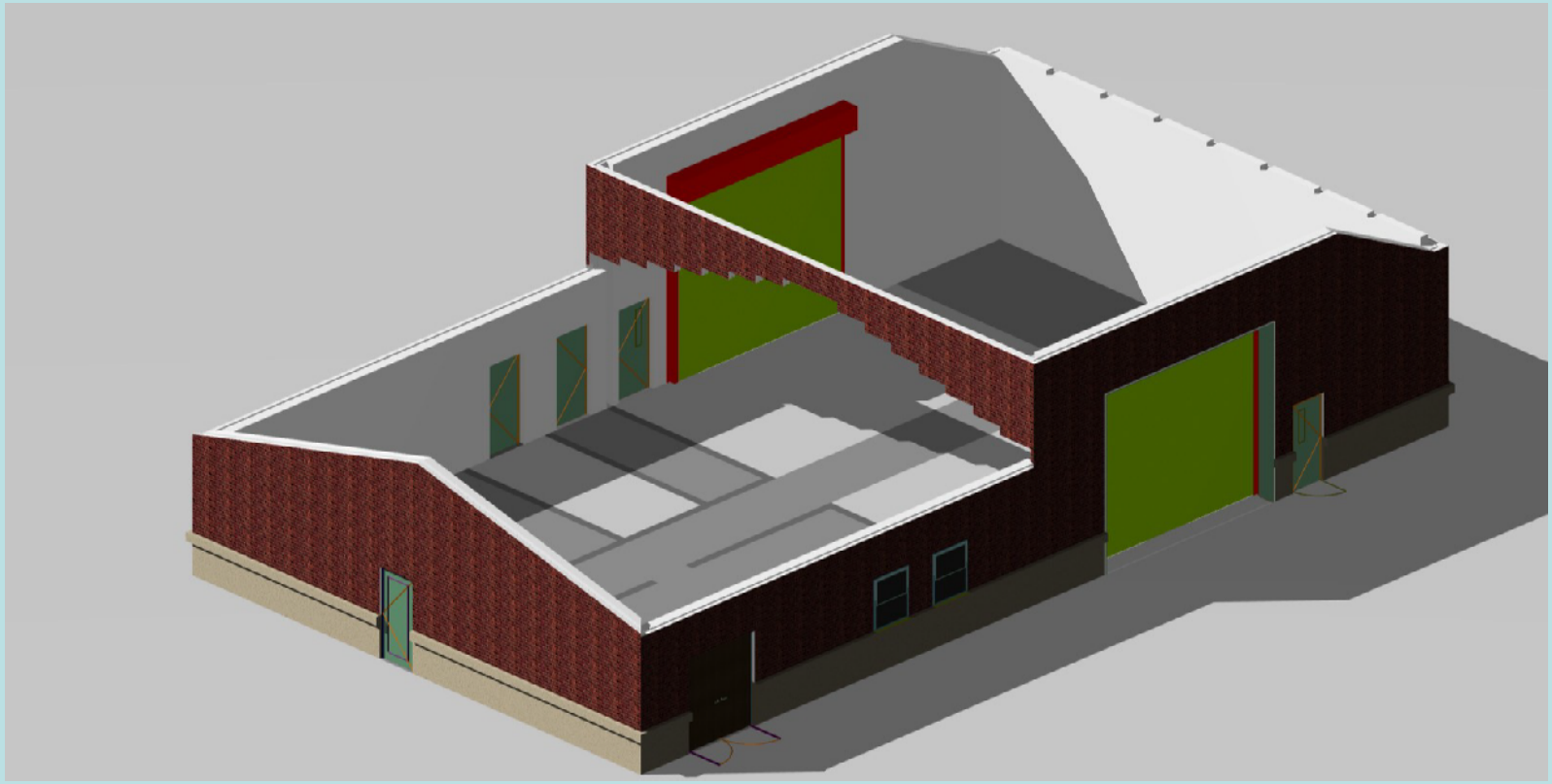
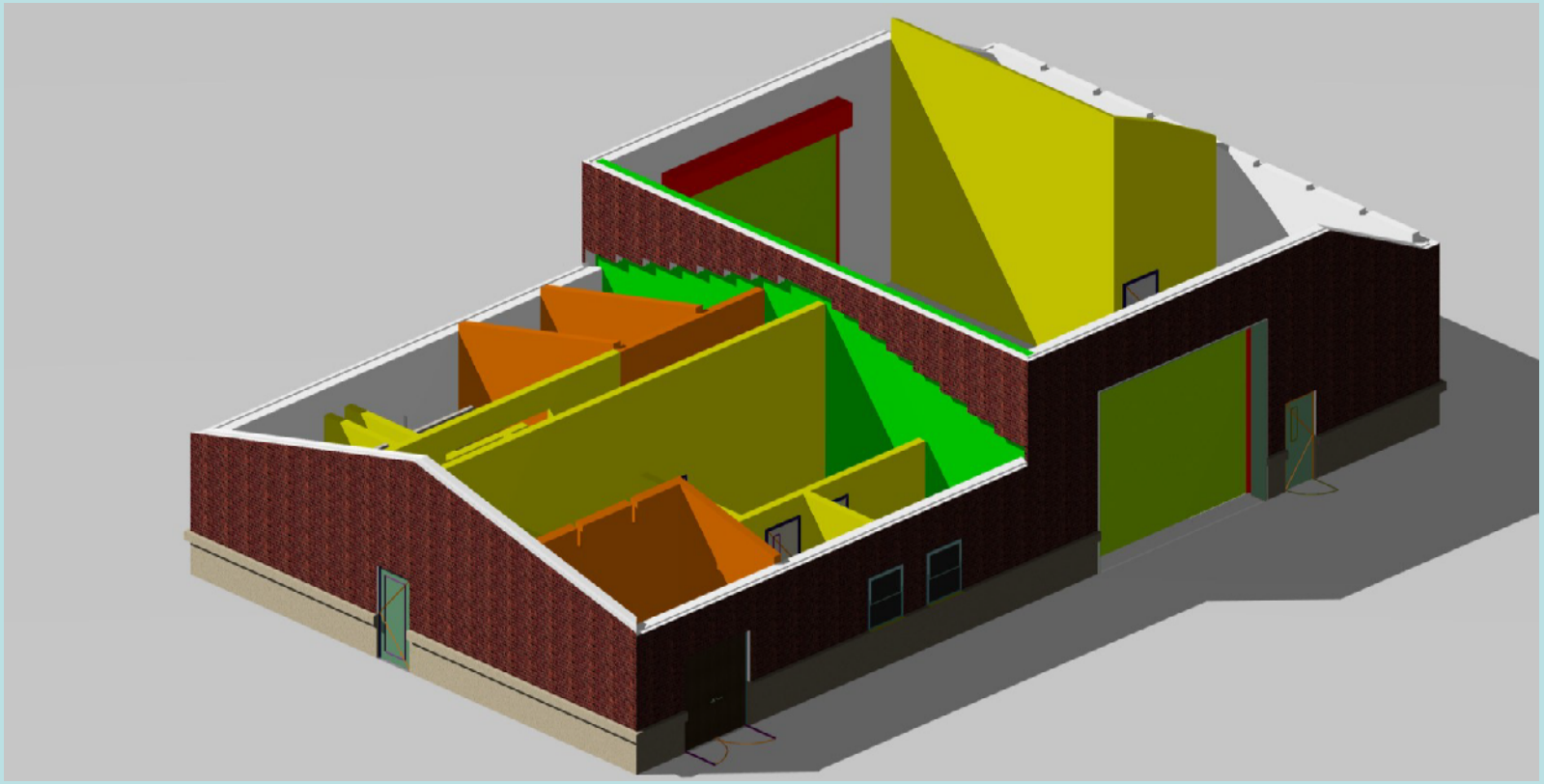
- BIM is finally the way that we can see real benefits of modeling both graphical and non-graphical data of structures simultaneously.

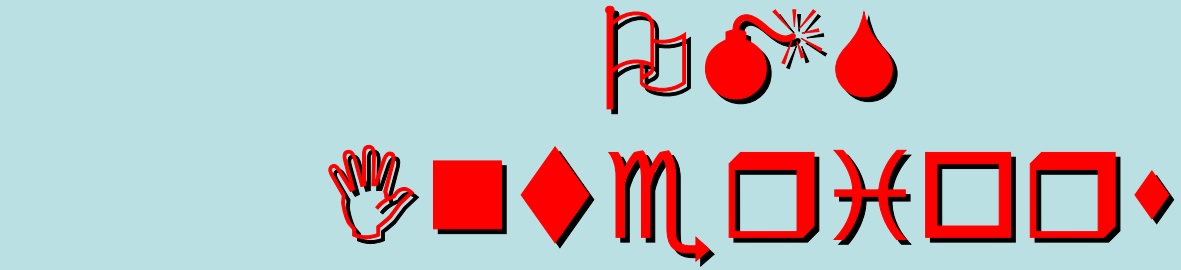
- Realizing those benefits is within our grasp. We need only to be open minded and resourceful to be successful.

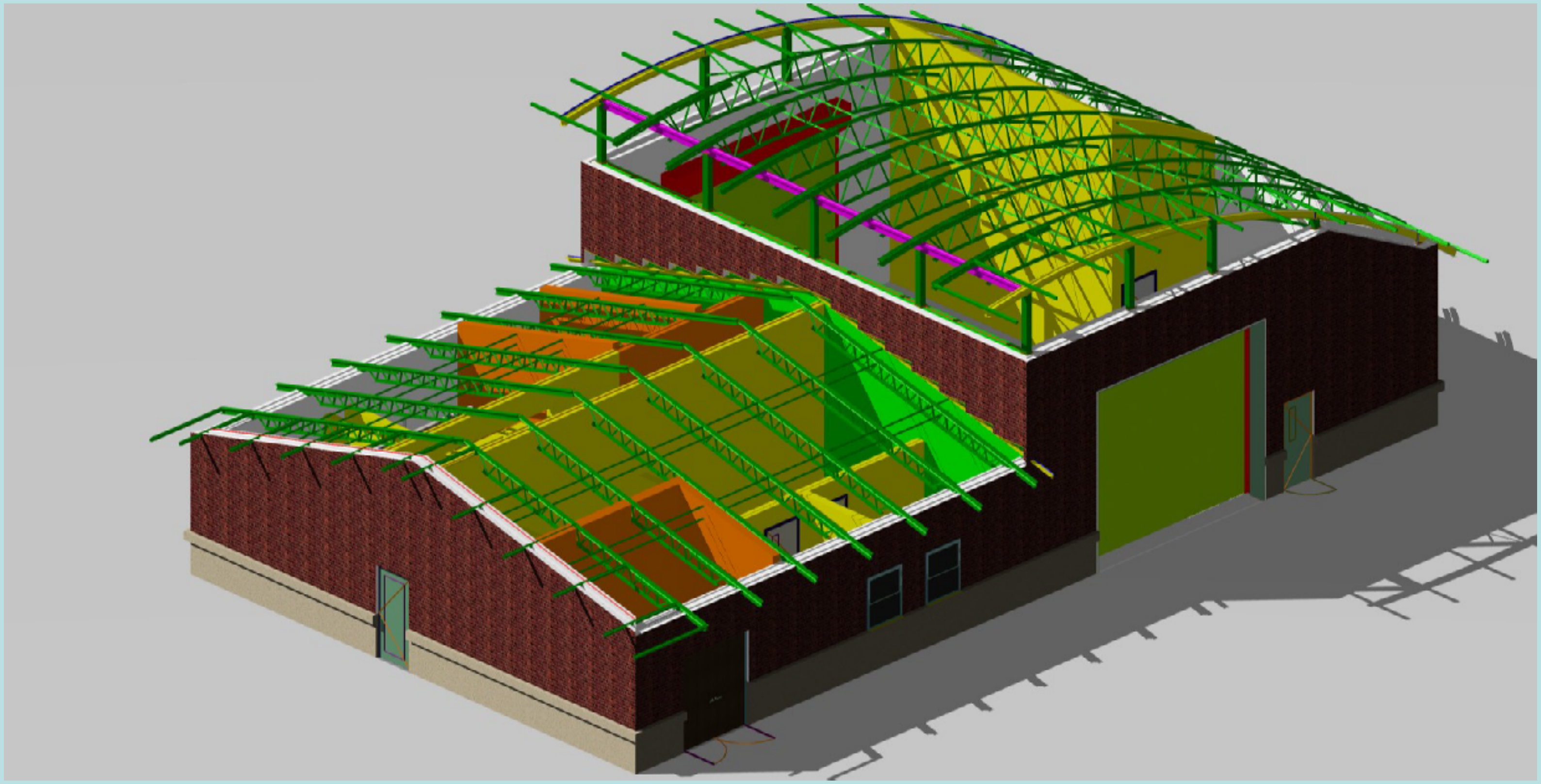












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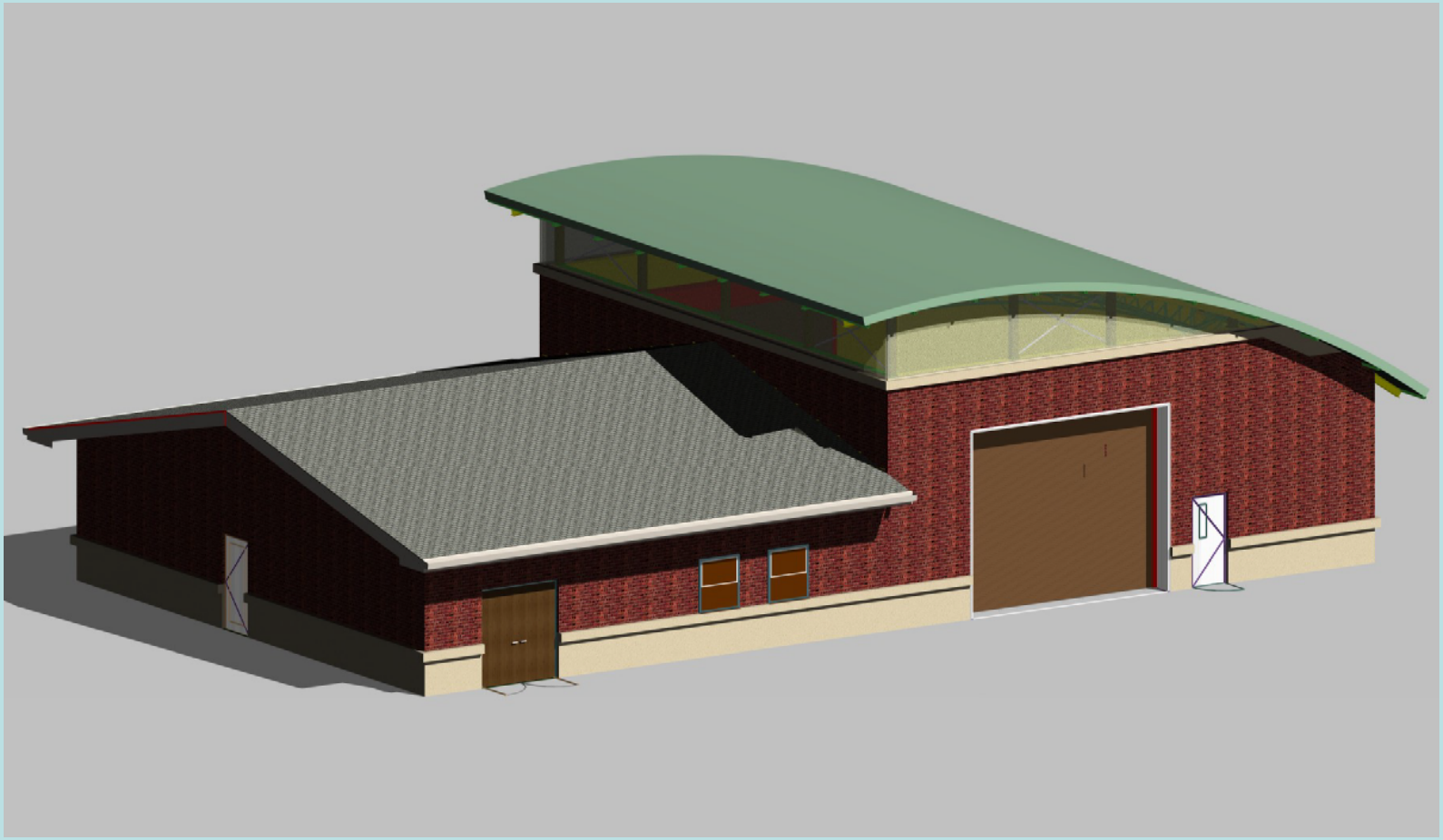
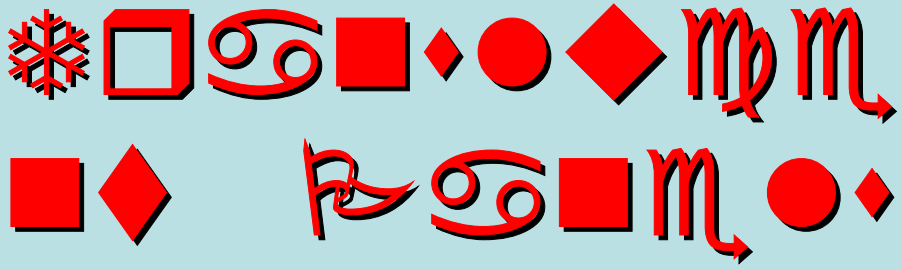
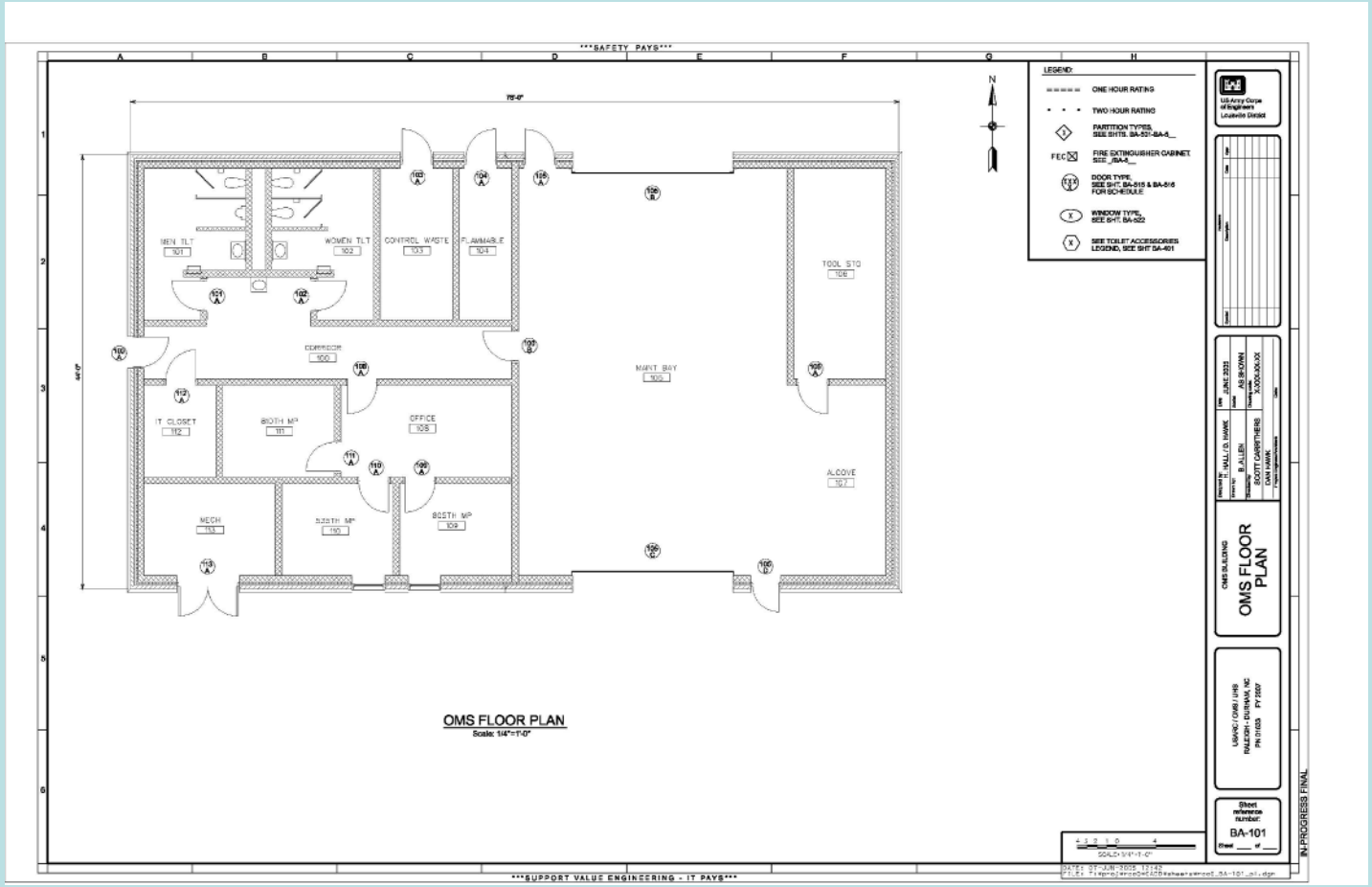
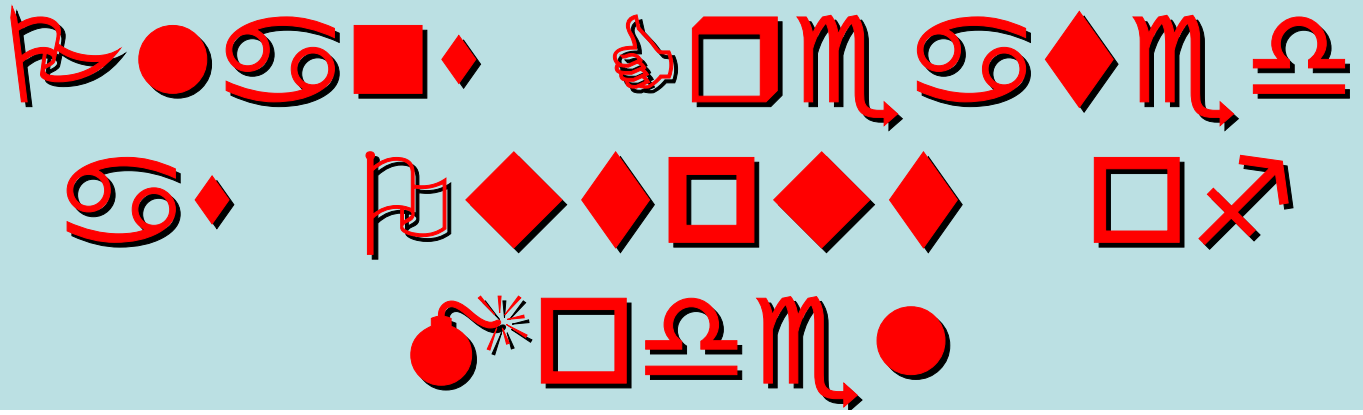





SAFETY PAYS
MEN TLT 101
WOMEN TLT 102
CONTROL WASTE 103
FLAMMABLE 104
TOOL STG 106
CORRIDOR 100
MAINT BAY 105
IT CLOSET 112
BOTH MP 111
OFFICE 108
ALCOVE 107
MECH 113
BOTH MP 110
BOTH MP 109
LEGEND:
ONE HOUR RATING
TWO HOUR RATING
OMS FLOOR PLAN
Scale: 1/4"=1'-0"
OMS FLOOR PLAN
BA-101
IN PROGRESS FINAL
SUPPORT VALUE ENGINEERING - IT PAYS



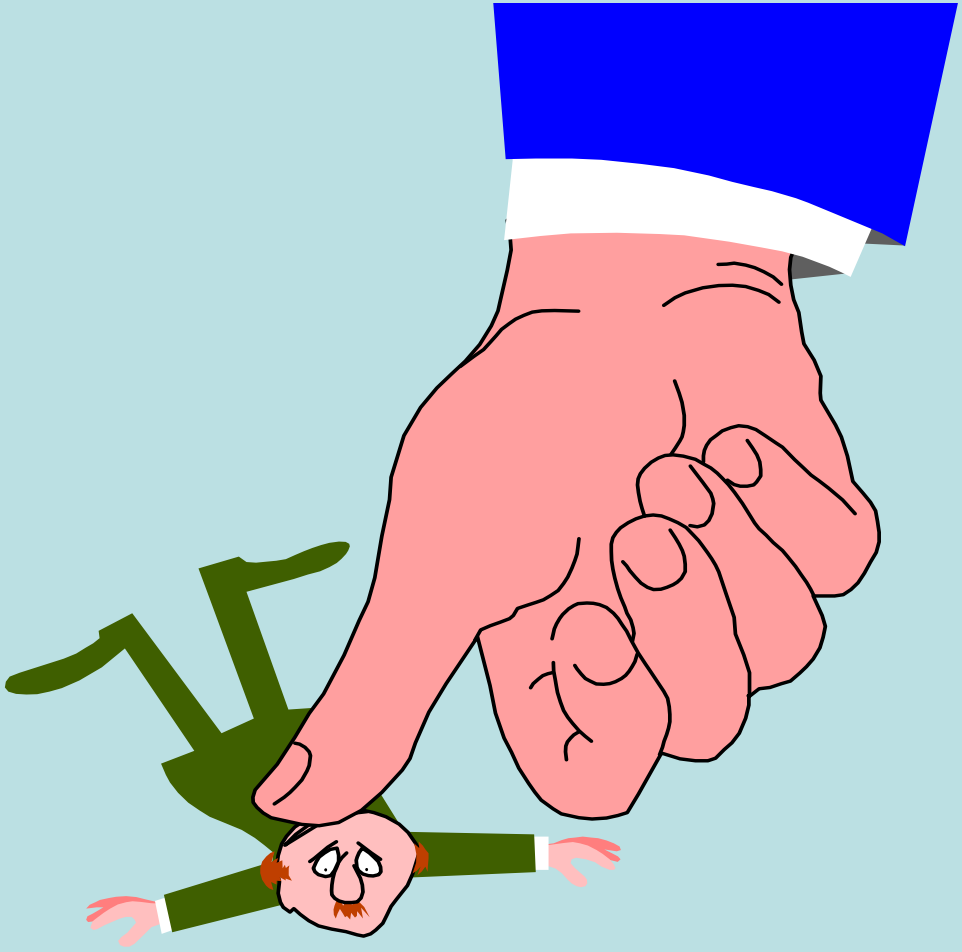
Track 8

- Design Build for Military Projects
- Mark Grammer
- Room 220

Design-Build and Army Military Construction Preview

Mark Grammer, P.E.

Design-Build Requires Letting Go of Some Things We've Always Held



Presentation Outline

- Overview of Design-Build
- Design-Build Pitfalls
- Key Items for Design Review
- Procurement Strategy
- Contract Management Strategy
- RFP Content and Format
- Managing for Success

Mark Grammer, CECW-SAD
Room 220

mark.grammer@usace.army.mil

202-761-4108

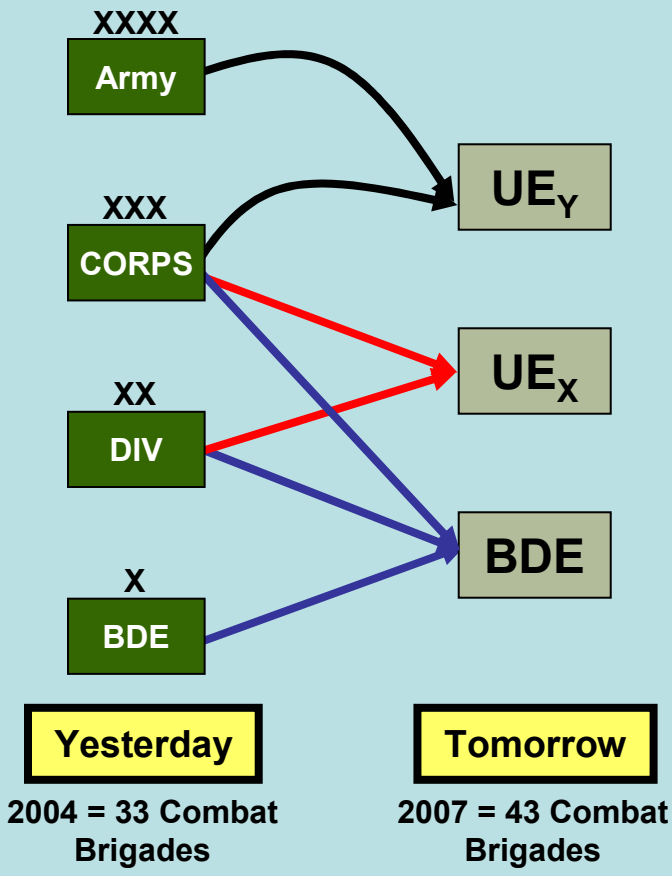
Track 9

- Army Transformation/Global Posture Initiative/Force Modernization
- Al Young & Claude Matsui
- Room 221

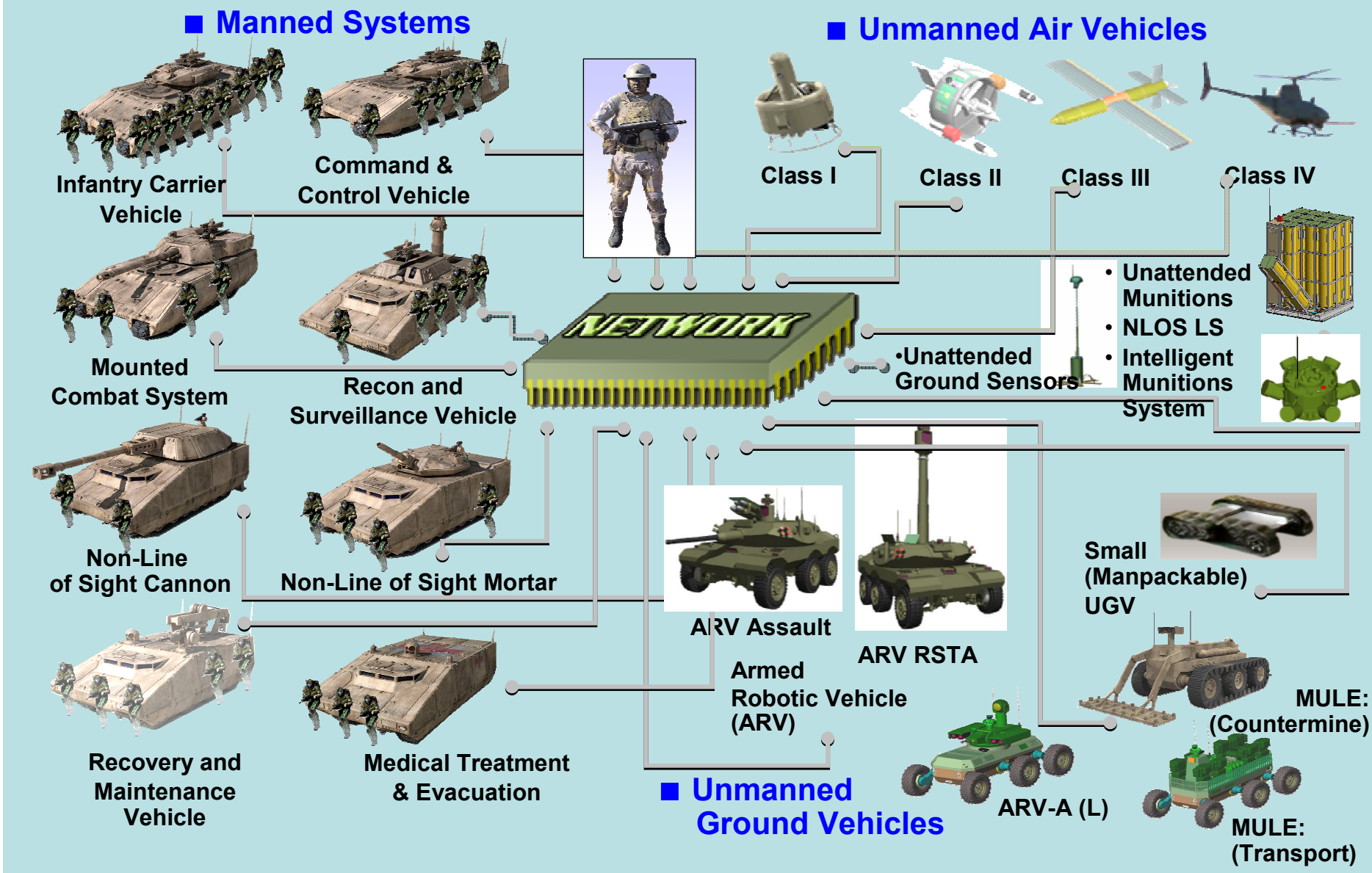
Engineering and Construction for Army Transformation

- **What is Army Transformation and how is it affecting traditional engineering and construction practices for the Army?**
- ***What's MILCON Transformation and how will it meet the accelerated pace of Transformation?***
- ***How can industry innovation and "best commercial practices" help the Army overcome the affects of a "Perfect Storm"?***

The largest stationing action in Army history … Army Modular Force, BRAC, and Global Posturing Initiative?



Future Technology Demands



Challenges to be Met

- **Programmed technology insertions will drive space allowances and necessitates adaptive/multipurpose facility designs**
- **Unprecedented connectivity required in facilities not previously considered**
- **Accelerated pace of change requires a faster construction execution window**
- **Fiscal reality causing need to reduce repetitive modification as Transformation occurs**
- **Current acquisition and contracting practices unable to meet pace and demand**
- **Change in facility duty cycle renders habitually used materials and methods less economical**

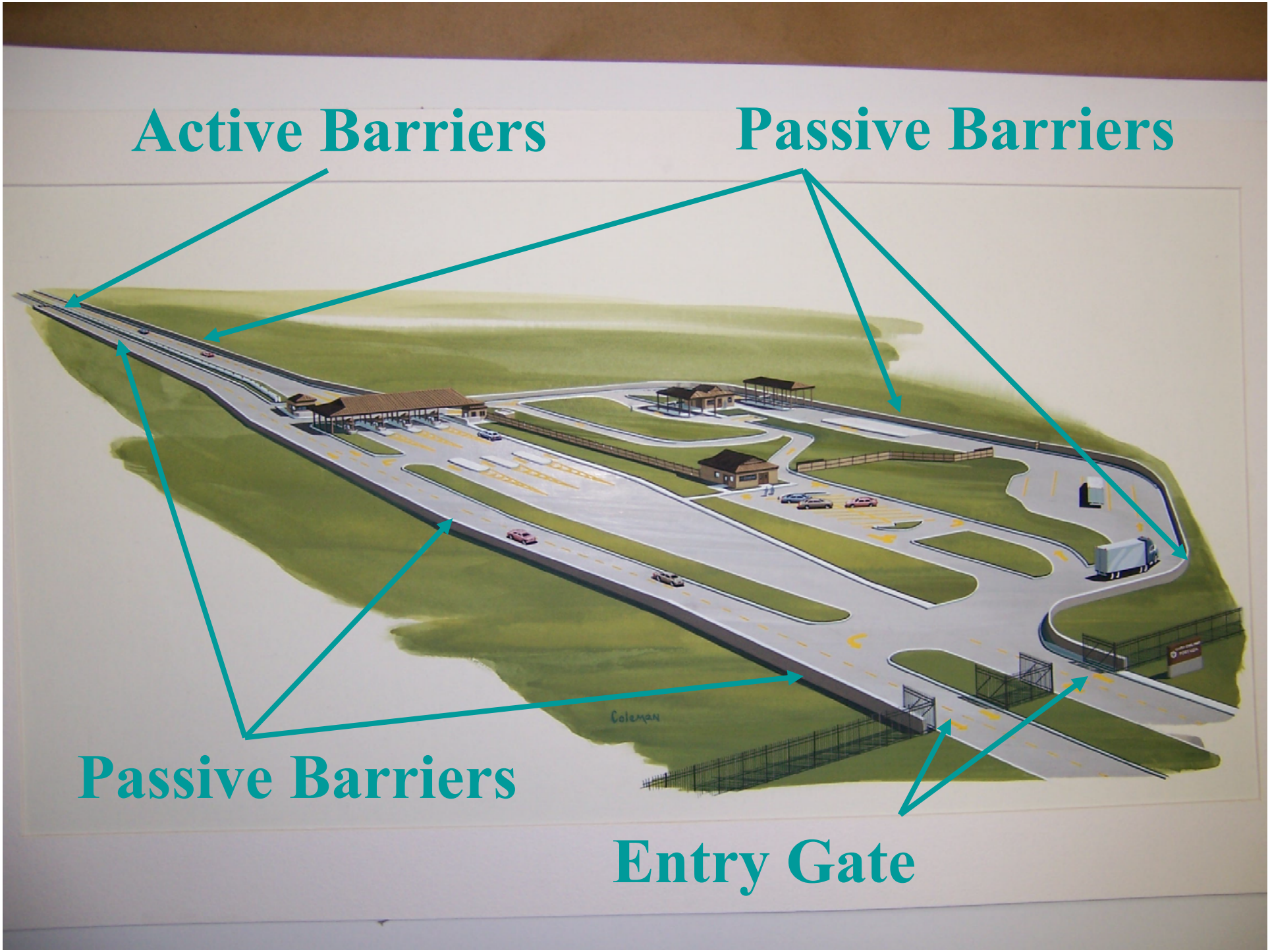
Track 10

- Force Protection – Army Access Control Points
- John Trout
- Room 222

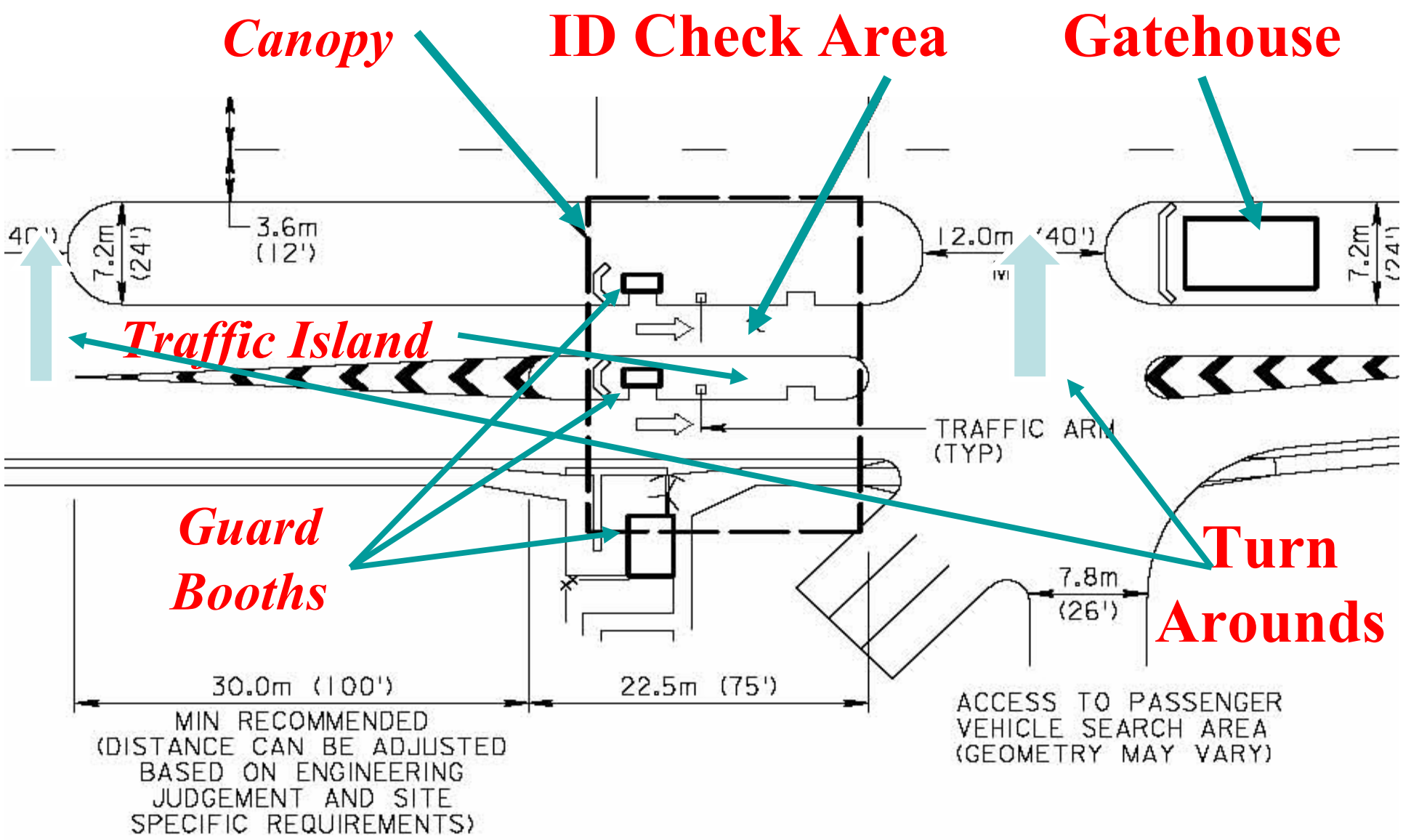
Track 10 Army Access Control Points

Criteria Sources

- Unified Facilities Criteria for ECFs/ACPs
- Army Standard Design for ACPs


Active Barriers
Passive Barriers
Passive Barriers
Entry Gate

Access Control Zone



Performance Standard

- Defeat the prescribed vehicle and pedestrian threats
- Ensure the safety of innocent motorists, pedestrians, and guards

General Design Strategy

- Detect Threat Vehicle
- Deploy Final Barriers
- Delay Threat Vehicle
- Defeat Threat at the Final Barriers

Defeated Bad Guy

Track 11

- Cost Engineering Forum on Government Estimates
- Ray Lynn, Jack Shelton, Joe Bonaparte, Kim Callan, Miguel Jumilla & Ami Ghosh
- Room 227

Track 11
Cost Engineering Forum on Government Estimates vs. Actual Cost

The purpose of a properly developed Programming Estimate is to reflect what the construction “should cost”; a Bid reflects what the construction “will cost.”

Track 11
Room 240

Track 12
E&C Technology Integration

M. K. Miles, PE, PLS
Chief, Construction and Technology Integration
Engineering and Construction
HQUSACE

Status Update: August 2005
Room 228

Integrating People, Processes and Technology through eGIS, SET and TEN

Enterprise GIS

CorpsMap
CADD/GIS Standards
Data Reference Model
Geospatial One Stop

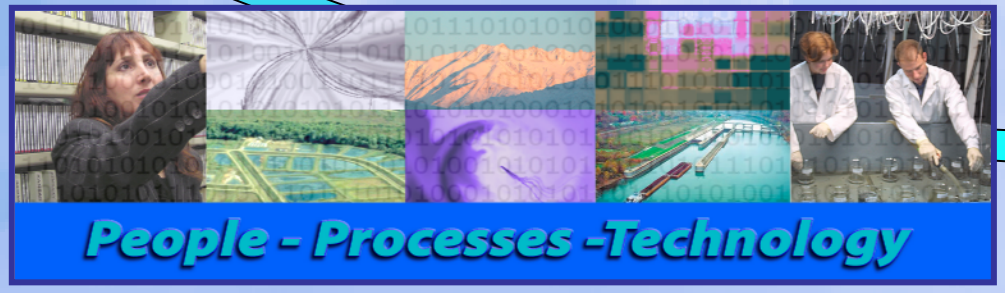
Science and Engineering Technology

Corps Enterprise Architecture
Common Delivery Framework
SET Software Inventory
Technology Transfer

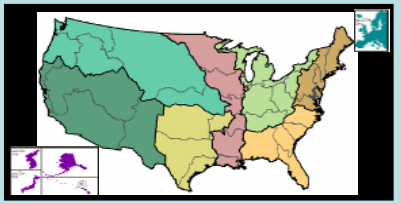
Technical Excellence Network

Communities of Practice

Body of Knowledge
Subject Matter Experts
Career Development



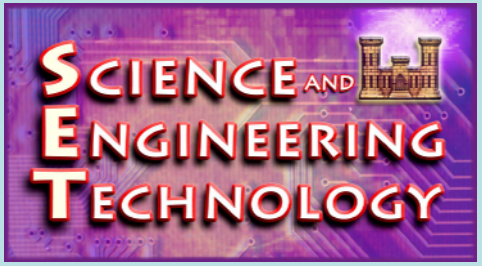
eGIS



At the Breakout Session you will find out:

- What are ***Enterprise Geographic Information Systems***
- Why we need eGIS
- How we plan to get there
- Update on the Deputy Chief's memo on eGIS & CAD/GIS data standardization & the field's responses
- Action items from the Director of Civil Works' VTC for the MSC Commanders
- Schedule for upcoming free training for CAD & GIS Data Standards

SET



At the Breakout Session you will find out:

- What is the ***Science and Engineering Technology (SET) Initiative***
- Results of the latest software usage survey
- Latest Information on Enterprise Licenses for CAD & GIS Software
- National Management Board (NMB) decision on Virtual Design Software
- Use of Building Information Models (BIM) in the Corps of Engineers

TEN

At the Breakout Session you will find out:

- What is the ***Technical Excellence Network (TEN)***
- Status of TEN today
- Some capabilities of TEN to locate information about E&C CoPs
- Next steps for TEN development
- Progress of some of the E&C CoPs

http://ten.usace.army.mil

Integrating People, Processes and Technology through eGIS, SET and TEN

Enterprise GIS

CorpsMap
CADD/GIS Standards
Data Reference Model
Geospatial One Stop

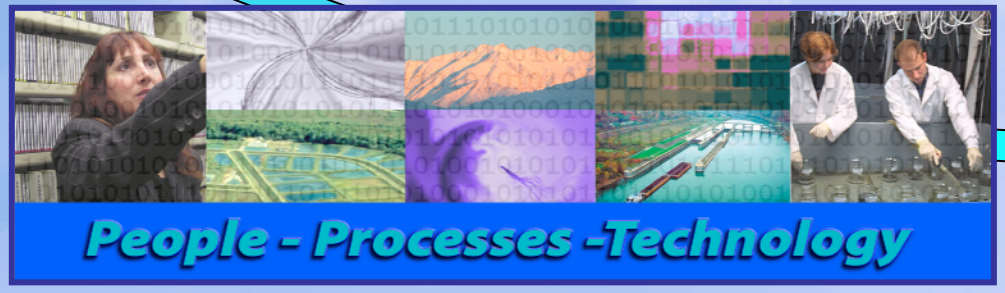
Science and Engineering Technology

Corps Enterprise Architecture
Common Delivery Framework
SET Software Inventory
Technology Transfer

Technical Excellence Network

Communities of Practice

Body of Knowledge
Subject Matter Experts
Career Development



Track 13 Sustainable Design

Tri-Service Infrastructure Systems Conference & Exhibition

Harry Goradia

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Harry.goradia@usace.army.mil

Annette Stumpf

U.S. Army Corps of Engineers,

Engineer Research & Development Center

Construction Engineering Research Laboratory

Phone: 217-373-4492

Email: annette.l.stumpf@erdc.usace.army.mil

Overview

- **May 2001, started rating all MCA projects with SPiRiT (Sustainable Project Rating Tool).**
- **SPiRiT is based U.S. Green Building Council's (USGBC) LEED (Leadership in Energy and Environmental Design) 2.0**
- **SPiRiT Gold is target for all MCA and AFH projects FY06 and beyond.**
- **Soon we will be transitioning from SPiRiT to LEED to rate our facilities.**
- **The Army/USACE is a member of USGBC.**

Policy

Foundation

- **EO 13123**, Greening The Government Through Efficient Energy Management, June, 1999.
- **EO 13101**, Greening The Government Through Waste Prevention, Recycling, And Federal Acquisition, September, 1998.
- **EO 12873**, Federal Acquisition, Recycling, And Waste Prevention, October, 1993.

Current

- **ETL 1110-3-491**, Engineering and Design, Sustainable Design for Military Facilities, 1 May 2001.
- **DASA (I&E) Memo**, Sustainable Design and Redevelopment Requirements, 18 March 2003.
- **ECB 2003-20**, Engineering and Design, Sustainable Project Rating Tool (SPiRiT), 24 November 2003.

SPiRiT Rating

- Points: 100 Possible.
- Score at least the following number to obtain the indicated rating:
  - 75-100: Platinum
  - 50-74: Gold
  - 35-49: Silver
  - 25-34: Bronze
- Beginning in FY06 Gold is minimum expected score.

SPiRiT/LEED Goal Setting and Self Rating

- Project teams self rate projects using SPiRiT/LEED at 4 stages:
  - Planning Charrette* (identify SPiRiT/LEED goals/$$)
  - Parametric Design*
  - End of Design*
  - End of Construction*

- All stakeholders should concur on the ratings
- PDTs should submit score sheets to HQ w/ planning & design charrette results
- Cost template helpful for justifying project funding
- Keep copy of rating /design analysis in project file
- CG has asked to include SDD rating in Command Mgmt Review (CMR)
- Consolidated Command Guidance (CCG) is being updated, Districts will be required to report SPiRiT/LEED levels for each project
- Put SPiRiT/LEED Level and comments in P2.

*need member with SDD experience!

Track 14

- ACASS/CCASS/CPARS
- Ed Marceau & Marilyn Nedell
- Room 224

Architect-Engineer Contract Administration Support System (ACASS)

Modernization Coming October 1!

Construction Contractor Appraisal Support System (CCASS)

Ed Marceau
Modernization Project Manager
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Overview

- Evaluation of Architect-Engineer and Construction Contractors
  - Why it's important
- A new, automated process of completing the evaluation forms
  - Discussion of process workflow and system features

Overview (cont.)

- Suggestions for making the process work
- What's changing
  - Manual vs. automated
- Training opportunities and available help
- Status of project

Track 15

- Whole Building Design Guide
- Earle kennett
- Room 229

WBDG

Whole Building Design Guide

Federal Bldg. Oakland, CA

U.S. Courthouse Las Vegas, NV

Bldg. 33 Washington Navy Yard

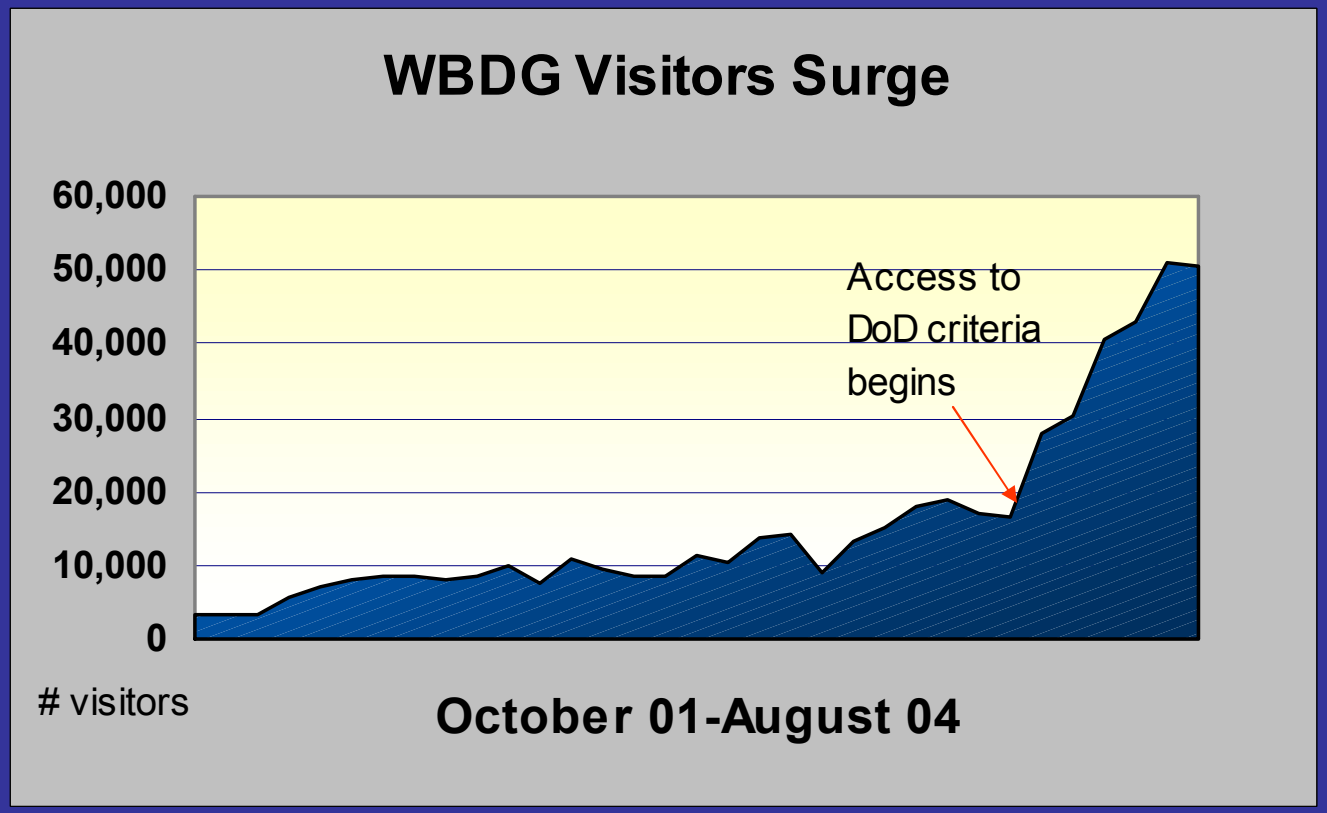
Track 15
Room 229
Earle Kennett

WBDG Objectives

- ***Effective implementation of unified facilities criteria*** allowing for the sharing and consolidation of criteria, procedures and dissemination

- ***Partnering and integration*** of public and private sector efforts through the appropriate integration of the best federal/private sector criteria

- ***Centralized Knowledge Portal*** providing single point access to criteria



Since DoD designated WBDG as the sole portal for its design & construction criteria, visitors have increased over 200% in just six months!

WBDG provides a viable platform for ***Product Guide***

WBDG/CCB Federal Agency Participation

- Department of Defense
- Naval Facilities Engineering Command
- Army Corps of Engineers
- U.S. Air Force, AFCESA
- General Services Administration
- Department of Veterans Affairs
- National Aeronautics and Space Administration
- Federal Emergency Management Agency
- National Institute of Standards and Technology
- Department of Energy
- Department of State
- National Institutes of Health
- U.S. Access Board
- Department of Interior
- Environmental Protection Agency

WBDG
Whole Building Design Guide

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The Gateway to Up-To-Date Information on Integrated 'Whole Building' Design Techniques and Technologies

WBDG Focus On

WBDG has four case studies of projects that demonstrate the Whole Building Design process. Check out our new case study on the Center for Neighborhood Technology, an organization committed to inventing and implementing new tools and methods that create livable urban communities for everyone.

New and Updated WBDG Pages

- Passive Solar Heating

GSA LEED® Cost Study & Applications Guide

The *LEED Cost Study* for the U.S. General Services Administration defines costs associated with the US Green Building Council's *Leadership in Energy and Environmental Design* (LEED) ratings. Two building types (new construction courthouses and Federal Building modernization) are modelled against two scenarios for each LEED rating (Certification, Silver, Gold), identifying differential costs of construction, design, and documentation/submission requirements. Read more

The newly issued *GSA LEED Applications Guide*, which is a companion document to the *GSA LEED Cost Study*, outlines an

Participating Agencies:

GSA

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Internet

2005 Tri-Service Infrastructure Systems Conference & Exhibition Re-Energizing Engineering Excellence

Wednesday & Thursday

Concurrent Sessions

Sessions Start at 0800

Tri-Service Infrastructure Systems Ice Breaker

- 1730-1900 Hours
- Located in Exhibit Hall
- Free Finger Food
- Free Soft Drinks
- Tickets for Alcoholic Beverages

Multi-Disciplinary Concurrent Sessions

- 1. Acquisition Strategies for Civil Works – Room 230
- 2. Risk & Reliability Engineering – Room 231
- 3. Portfolio Risk Assessment – Room 232
- 4. Hydrology, Hydraulics & Coastal Engineering – Room 240
- 5. Civil Works R&D Forum – Room 241
- 6. Civil Works Security Engineering – Room 242
- 7. Building Information Model Applications – Room 226
- 8. Design Build for Military Projects – Room 220
- 9. Army Transformation/Global Posture Initiative/Force Modernization – Room 221
- 10. Force Protection – Army Access Control Points – Room 222
- 11. Cost Engineering Forum on Government Estimates – Room 227
- 12. Engineering & Construction Information Technology – Room 228
- 13. Sustainable Design – Room 223
- 14. ACASS/CCASS/CPARS – Room 224
- 15. Whole Building Design Guide – Room 229