The Infrastructure Conference 2005

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Pentagon Renovation Liaison
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The Building:

- Conceived mid July 1941
- Provide office space for War Department
- World events pointing towards U.S. military involvement
- Construction funded for 83 million dollars
- Groundbreaking Ceremony September 11, 1941
PENTAGON

A Building, Institution, and Symbol

The Building:

- Site located in Arlington Virginia
  - Previous structures included an old airport, brick factory, pickle factory, race track, and low income housing project known as Hell’s Bottom.

Architectural Style

- Stripped Neo-Classical

Final Design:

- Open air court surrounded by 5 concentric pentagonal rings traversed by 10 spoke-like corridors.
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The Building:
- Construction: 16 Months
- Reinforced Concrete made from 380,000 tons of sand dredged from the Potomac River.
- Supported by 41,492 concrete piles.

Workers:
- Over 1,000 Architects
- 14,000 constructions workers & tradesmen
- Three shifts- 24 hours per day, 7 days per week
The Building:

- 6.8 Million Square Feet (632,000 square meters) of Interior Building
- 23,000 workers
- 17.5 Miles (28.2 Kilometers) of Hallways
- 34 acres (137,000 square meters) of grounds and parking lots.
- 283 Bathrooms
- 232,000 florescent lamps
- +1500 air handlers
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- **The Building:**
  - Stairways 131
  - Escalators 19
  - Elevators 13
  - Fire hose cabinets 672
  - Fixtures 4,900
  - Drinking fountains 691
  - Electric clock outlets 7,000
  - Clocks installed 4,200
  - Windows 7,754
  - Glass area (equals 7.1 acres)(23,746 square meters)
PENTAGON

A Building, Institution, and Symbol

- A Symbol
  - One of the top three recognized buildings in the world.
  - Stands for freedom, defense, and might
  - Stands for our unity with other countries for a common goal of free societies.
PENTAGON

What fuels the Pentagon?

- In One Year, the people at the Pentagon consume over:
  - Over 112,000 pounds of McDonald’s French Fries.
  - Over 424,000 McDonald’s Hamburgers.
  - 120,000 scoops of Baskin Robbins Ice Cream.
  - 130,000 Dunkin Donuts bagels, and 730,000 donuts.
  - 26,000 gallons of soup.
PENTAGON

What fuels the Pentagon?

- In One Year, the people at the Pentagon consume over:
  - 52,000 gallons of Starbucks coffee.
  - 110,000 gallons of fountain beverage.
  - 78,000 pounds of collard greens
  - 23,400 pounds of turkey

- McDonald’s serves an average of 550 customers per hour during Lunch.
...and then our life and mission changed.....
New Day....New Way

• Teardown and Rebuild Damaged Areas within one year.

• Continue Renovation Program at expedited pace.

• Incorporate Lessons learned.

• Review and adjust requirements.
New Key Phrases

- Terrorist Attacks
- Survivability
- CBRN
- Collective Protection
- Safe Harbor
- Continuity of Operations
- Single Points of Vulnerability
- Multiple Use Systems.
Same Structure….New Vision

- Horizontal Egress
- Collective Protection Systems
- Plan your strategies.
- Practice your plans.
- Codes
- Consistency in design and construction.
- Leverage new technology.
You are NOT alone…..

- Create Partnerships.
  - First Responders.
  - Critical Mission Support
  - Designers
  - Constructors
  - Construction Management Teams
  - Centers of Expertise
- Train with your partners.
- Communicate, communicate, communicate…
The Pentagon Renovation

- The Corps involvement in the Pentagon Renovation.
- What exactly is happening in the Renovation?
- How can it benefit you?
The Corps of Engineers, Huntsville Alabama- Wedge 1 Award in 1998.

Competed IDIQ contract for Pentagon in 1998

Awarded contract for Wedge 1 to Johnson Controls, Inc. in 1998

Pentagon Renovation Requirements

- HVAC (Mechanical and Electrical)
- Computer Room Supplemental Cooling
- Lighting
- Energy Management & Control Systems
- Fire Alarm Systems
- Access Control
- Utility Metering and Verification
- Gas Detection Systems
- Chemical Biological Radiological Nuclear Response (CBRN)
Pentagon Items of Interest

- Building Operations and Command Center
- National Military Command Center
  - Positive Pressure Scheme
  - Air Wash Entrances
- Energy Monitoring and Command System
- Chemical Biological Radiological Nuclear Response (CBRN)
  - Area Purging Schemes
  - Gatekeeper Door Latches
  - CBRN Sensing and Mitigation Strategies
Upcoming Items of Interest

- Smart Lighting
- Wedge 3-5
- Pentagon Shield Test 2
- Pentagon Athletic Complex
- Pentagon Library and Conference Center (PLC2)
How does this benefit you?

- The Huntsville Corps can provide a one stop shop for all building automation and security needs.
- The Huntsville Corps works with the local Corps Districts for Quality Assurance and Quality Control.
- The Huntsville Corps strives for customer satisfaction at a reasonable fee.