19th Annual Meeting of the Society for the Preservation of Natural History Collections
Museum SOS: Strategies for Emergency Response and Salvage

May 14, 2004

Recovery & Renovation of the Pentagon following 9/11:
The Phoenix Project

Brett D. Eaton
Information & Communications Officer
Washington Headquarters Services
ORIGINAL CONSTRUCTION

September 11, 1941 to January 15, 1943

Completed in 16 months by working three 5,000-man shifts around the clock.
THE EARLY YEARS

Minimal electrical, communications and HVAC requirements/capacity; Open-bay office environment; Flooding conditions.
A SMALL CITY

The Pentagon has never undergone a major renovation.

- 34 acres
- 6.5 million sq. ft.
- 3 Empire State Bldgs.
- 7,748 windows
- 17.5 miles of corridors
- 25,000 personnel
- 1,000,000 calls per day
- Police force
- Metro station
- Fire Station
- Health Facilities
- Post Office
- Mini-mall
- Heliport
WORKING CONDITIONS
Inefficient office space, unreliable utilities, non-code compliant...
HAZARDOUS WORKING CONDITIONS

PCBs, Asbestos, Mercury, Lead...

"The Pentagon is a classic example of "disinvestment" in federal buildings. For at least 10 years, needed major repairs and alterations to the Pentagon have been deferred. DoD officials, beginning in 1985, sought operational control of the building."

GAO Report to the Chairman, Subcommittee on Public Buildings and Grounds, Committee on Public Works and Transportation, House of Representatives

May 1991

GAO/GGD-91-57
PENTAGON RENOVATION

- Relocate 5,000 people
- Demo, Abate & Reconstruct 1 million sq. feet
- Improve safety, reliability, efficiency

Wedge 1

- Replacement of Exterior High Pressure Water Lines
- Fire Sprinklers
- Building Code Compliance
- Blast Resistant Windows
- Structural Steel Tubes
- Geotechnical Mesh
- Monitoring & Control Systems
- Building Operations Command Center
- Automated Smoke Doors
SECURITY INITIATIVES

Pentagon Remote Delivery Facility

Pentagon Metro Entrance Facility
PENTAGON ATTACKED

September 11, 2001  9:37 a.m.

- 184 lives lost
- 110 people severely injured
- 2 million square feet of space damaged
PENREN CHALLENGED

September 14, 2001

WEDGE 2

WEDGE 1

- Recover, Stabilize, Analyze, Demolish, Rebuild, Renovate
- Awarded $1.5 billion worth of contracts by 9/15/2001
- A promise made
ANALYSIS

- 1.6 million sq. ft. of fire, water, smoke, mold damage
- 400,000 sq. ft of severe structural damage
UNITED IN MEMORY

October 11, 2001
DEMO COMPLETE, REBUILDING STARTED

November 19, 2001
STRUCTURAL REBUILDING COMPLETE

April 5, 2002
TOPPING OUT CEREMONY
April 5, 2002
LIMESTONE FAÇADE COMPLETE

June 11, 2002

• 4,000 slabs of limestone replaced
BEFORE & AFTER

September 11, 2001

September 11, 2002

[Images of before and after renovation of an office space]
BEFORE & AFTER

September 11, 2001

September 11, 2002
PENREN CONTINUES

- Wedges 2-5 schedule advanced by four years – completion mandated in 2010
- New Projects Added

- Pentagon Athletic Center
- Road, Grounds & Security
- Command Communications Survivability Program
- Continuity of Operations
- Pentagon Conference and Logistics Center
- Alternate Command & Control Sites
- Pentagon Memorial
PENTAGON MEMORIAL

- Design selected from more than 1,100 entries
- 184 Memorial Units (benches and pools of lighted water)
- Funded entirely from private contributions
PENTAGON RENOVATION PROGRAM
On Cost, On Schedule, Built for the Next 50 Years!

http://renovation.pentagon.mil