A Status Report to Congress on

The Renovation of the Pentagon

Prepared by
The Office of the Secretary of Defense

March 1, 2002

Annual Status Report to Congress 12th Edition
March 1, 2002

This report is provided to the Congress in compliance with Title 10 United States Code, Section 2674. This requires the Secretary of Defense to submit an annual report on the status of the renovation of the Pentagon Reservation, and a plan for the renovation work to be conducted in the fiscal year beginning in the year in which the report is transmitted.

This is the twelfth annual report submitted in compliance with 10 USC 2674. The report covers accomplishments to date and actions proposed for FY 2002. In addition, information is included on several related projects which support the overall objectives of operations and maintenance of the Pentagon Reservation.

MESSAGE FROM THE PROGRAM MANAGER

To talk about the past year simply in terms of construction, acquisition, and project timelines is impossible. In much the same manner that 9/11 unified the entire nation, the Pentagon Renovation Program has turned its greatest challenge into an amazing story of determination, teamwork and dedication.

Wedge 1 was five days from completion and in the midst of tenant re-occupancy on the day Flight 77 crashed into the Pentagon. The blast-resistant windows, steel reinforcment and Kevlar-like material used between window frames reduced the amount of debris and reduced lives lost from the resulting explosion. The reinforced steel window frames allowed the area of impact to stand for approximately 35 minutes before collapse. Following the disaster, we quickly moved to lend our expertise and knowledge of the Pentagon to the investigation and recovery activities.

On the day of the attack and in the days that followed, the Pentagon Renovation Program played a major role in rescue and recovery efforts. Workers and staff were on hand to assist in the investigation by providing whatever architectural and engineering support expertise, equipment and construction materials the FBI, fire and police departments and other authorities requested. The FBI originally estimated that the crime scene investigation would take eight to twelve weeks. The assistance provided by the Renovation Program helped expedite this process and the FBI turned the site over to the Department of Defense in just over two weeks. On October 18, 2001 the Renovation Program began demolition of structurally damaged areas of the Pentagon. By working in shifts, 24 hours a day, workers finished what would normally be a six-month demolition project in one month and one day, on November 19. Reconstruction began the same day. From the ashes of a tremendous tragedy, the Phoenix Project was born.

The Pentagon Renovation Program is making extraordinary progress on the Phoenix Project. Just over two months after beginning reconstruction, crews had already poured concrete for the second floor slab and started erecting columns to support the third floor. The very aggressive goal of the Pentagon Renovation Program is to move Pentagon personnel back into their E-ring offices at the point of impact by September 11, 2002. Reconstruction of the entire area affected by the attack will be complete by Spring 2003.

We have not allowed the tragedy experienced last September to adversely affect the progress made on the Program's other work. In fact, since September 11 we have celebrated the achievement of several major milestones. In December, we opened the new Pentagon Transit Center, the result of a security initiative to move large vehicles farther away from the face of the Pentagon. The 34,000 passengers who use this facility daily enjoy a modern designed facility with improved accessibility. The second phase of the Metro Entrance Facility project includes building an addition to the face of the Pentagon which, when complete in November 2002, will provide a secure screening facility for Pentagon visitors and improved access for Pentagon employees.

Wedge 1 and Wedge 2 renovation/recovery efforts are advancing as scheduled. Wedge 1 is being rapidly reoccupied. When fully reoccupied, it will provide office space for 4,500 Pentagon tenants. In order to get Pentagon personnel operational as quickly as possible, we modified our plans for the renovation of Wedge 2. Approximately half of the one million square feet of space was recovered and turned over to our Pentagon customers for immediate short-term reoccupancy. We are currently completing the demolition and abatement of hazardous materials in the remaining Wedge 2 space.

In addition, we have continued to address final punch list items on the Remote Delivery Facility, awarded the design-build contract of the Pentagon Physical Fitness and

Message from the Program Manager

Readiness Facility (PPFRF), issued a solicitation for security enhancements to roads and grounds surrounding the Pentagon Reservation and accomplished in-depth analysis of force protection issues and security and safety recommendations. We are moving forward rapidly with plans to incorporate these force protection lessons learned into the design and construction of the unrenovated Pentagon.

We are grateful to Congress for their show of support and acknowledgement of our hard work and the success of our Program. By providing additional funding, Congress has allowed us to implement several Pentagon security enhancements and take steps to accelerate completion of the Pentagon Renovation Program. These changes are currently being factored into our operations and planning. We can now expect to complete renovation of the entire Pentagon by the end of 2010. I am confident that the Pentagon Renovation Program is more than up to the task of meeting this new goal.

Since September 11, our program has significantly increased in magnitude and complexity. Thanks to the tremendous efforts of the Pentagon Renovation Program team, we have been able to maintain focus and stay ahead of schedule on several projects. It has been a pleasure to witness the way Program staff have grown professionally and personally to maintain the level of performance that is the standard for our program while also maintaining the pace at which we operate. Seeing how the Pentagon Renovation Program has performed in the face of adversity makes me extremely optimistic about our ability to accomplish the goals we have set for ourselves over the next year.

Sincerely,

Walker Lee Evey

Program Manager, Lee Evey at the Phoenix Project site on November 19, the day crews began reconstruction.

EXECUTIVE SUMMARY

As required by Section 2674 of Title 10, United States Code, the attached status report to Congress on the renovation of the Pentagon is presented annually. This is the twelfth report. This report is a synopsis of the Pentagon Renovation Program, the work completed during the past fiscal year and the work anticipated for the next twelve months. In addition, this report reviews the design and construction costs-to-date within the framework of the overall certified summary. The following four sections are covered in detail.

I. PROGRAM OVERVIEW

Since 1943, the Pentagon has never undergone a major renovation and, as a result, it is unable to meet the daily demands placed on it by current tenants. All of the Pentagon's major utility systems need to be replaced, a process which is complicated by the presence of asbestos and other hazardous materials, and the need to work around fully occupied space; 20,000 people who cannot afford interruption in their daily operations.

In addition to renovation activities, an impetus has been placed on the need for security improvements as a direct result of the ever-growing threat of terrorism and the attack on September 11, 2001. To meet this potential threat, the Renovation Program has been tasked with projects outside of its original scope of work, such as the Remote Delivery Facility and the Metro Entrance Facility. Other security-related enhancements are incorporated within renovation work activities.

In addition to repealing the previous spending cap of $1.22 billion, Congress appropriated $300,000,000 to the Pentagon Reservation Maintenance Revolving Fund (H.R. 3338-71, Sec. 305) to finance accelerated Pentagon renovation completion by up to four years and to make command centers more secure. As a result, the renovation of the Pentagon is expected to be complete in 2010, accelerated from the previous schedule of 2014.

All of the projects undertaken by the Renovation Program follow a similar renovation sequence; tenant move-out; the installation of temporary mechanical, electrical, plumbing, and communications; demolition and abatement of hazardous materials; core and shell construction; tenant fit-out construction; information management and telecommunications; furniture installation; security verification; commissioning; and tenant move-in.

Beginning in FY 2000, commissioning and acquisition and installation of post renovation furniture was programmed and budgeted as a non-renovation expense, within the Facilities Operations Program as reflected in the Congressional Budget Justification package.

II. WORK IN PROGRESS

All of the work accomplished in 2001 and planned for 2002 is described in detail in the Work In Progress section. The Phoenix Project, encompassing 400,000 square feet of space, is the reconstruction of the areas in Wedge 1 and Wedge 2 that suffered structural damage as a result of the September 11 terrorist attack. Wedge 1 was five days away from completion, when the attack damaged nearly the entire million square feet, and is in recovery. The contract was awarded for the renovation of Wedges 2 through 5 on September 14, 2001. A significant portion of Wedge 2 suffered severe damage due to the attack as well. The scope of Wedge 2 has been phased to respond to the immediate need for office space to continue the planning and execution of the war effort. The other half is currently being demolished and abated of all hazardous materials as planned under renovation sequencing. The need for swing space will be a continuous challenge, especially with the advanced renovation schedule. Demolition and abatement work is being completed in Segments 2 and 3 of the basement and mezzanine. Construction is currently underway in some basement areas while planning continues to

determine the best use of the remaining space. The first phase of the Metro Entrance Facility Project was completed on December 16, 2001 with the opening of the Pentagon Transit Center. The new entrance facility will be complete in November 2002. Construction of the Remote Delivery Facility is complete and it was used extensively during the weeks following 9/11 for various purposes. Other ancillary projects to the Renovation Program include limestone cleaning and repointing, the relocation of the NIMA office, and the design and construction of the Physical Fitness and Readiness Facility. Replacement of the Chilled Water Line Feeders and the Condenser Intake and Outfall Lines are ancillary to the Renovation Program but tie into the operation of the Heating and Refrigeration Plant.

III. PROCESS IMPROVEMENTS

The Renovation Program is constantly evolving and developing better ways of doing business. This section highlights the Program's efforts in the areas of force protection, acquisition, commissioning, the tenant move process and program management. Force protection improvements include the integration of lessons learned from the terrorist attack and the implementation of improvements to fire and life safety systems. The Renovation Program's acquisition process continues to be at the forefront of acquisition reform and continues to change the way the federal government and industry does construction business. This is complemented by commissioning practices that ensure tenant satisfaction and maximize systems efficiency. Interaction with Pentagon tenants and the integrated approach to program management stretch across all aspects of the Renovation Program.

IV. APPENDICES

The appendices include a glossary of terms used throughout this report for easy reference. A timeline of projects completed prior to the scope of this report is also included. As required by the Fiscal Year 2000 Authorization Bill, Section 2881, a description of the use of the Navy Annex property is included.

The Renovation Program has been recognized during the past year for the importance of its work and innovative practices. The appendices include a sample of the media recognition and political interest the Program has received. Finally, important contact information is provided for those interested in learning more about the Pentagon Renovation Program.

The September 11 attack placed a new emphasis on the need for security. Work on the Metro Entrance Facility Project, a security-driven initiative, was already well underway. The Pentagon Transit Center opened for business on December 16, 2001.

PENTAGON
RENOVATION
PROGRAM

ON COST, ON SCHEDULE, BUILT FOR THE NEXT 50 YEARS

TABLE OF CONTENTS

I.	**PROGRAM OVERVIEW**	**01**
	Program Background	02
	Program Schedule	06
	Program Budget	08
	Renovation Sequence	10
II.	**WORK IN PROGRESS**	**15**
	PHOENIX PROJECT	17
	WEDGE 1	
	Floors 1-5	25
	SOUTH TERRACE PEDESTRIAN BRIDGES	28
	WEDGES 2-5	31
	SWING SPACE	34
	BASEMENT/MEZZANINE	
	Segments 2 and 3	36
	METRO ENTRANCE FACILITY	39
	ANCILLARY PROJECTS	45
	Remote Delivery Facility	45
	Chilled Water Line Feeders	48
	Limestone Cleaning and Repointing	49
	Relocation of the NIMA Office	49
	Condenser Intake Outfall Line	50
	Roads, Grounds & Security	51
	Physical Fitness and Readiness Facility	52
III.	**PROCESS IMPROVEMENTS**	**55**
	Force Protection	56
	Acquisition	60
	Information Management and Telecommunications	62
	Commissioning	66
	Tenant Moves	70
	Sustainable and Constructability Design	73
	Program Management	75
IV.	**APPENDICES**	**77**
	Glossary of Terms	78
	Work Completed Timeline	80
	Media and Political Interest	82
	FY 2000 - National Defense Authorization Act (Federal Building 2)	84
	FY 1991 - Legislative Authorization	86
	FY 2000/01 - Department of Defense Appropriations Act	88
	FY 2002 - Department of Defense Appropriations Act	89
	Contact Information	92

I. Program Overview

An aerial view of the Pentagon, November 20, 2001, one day after demolition was completed on the Phoenix Project.

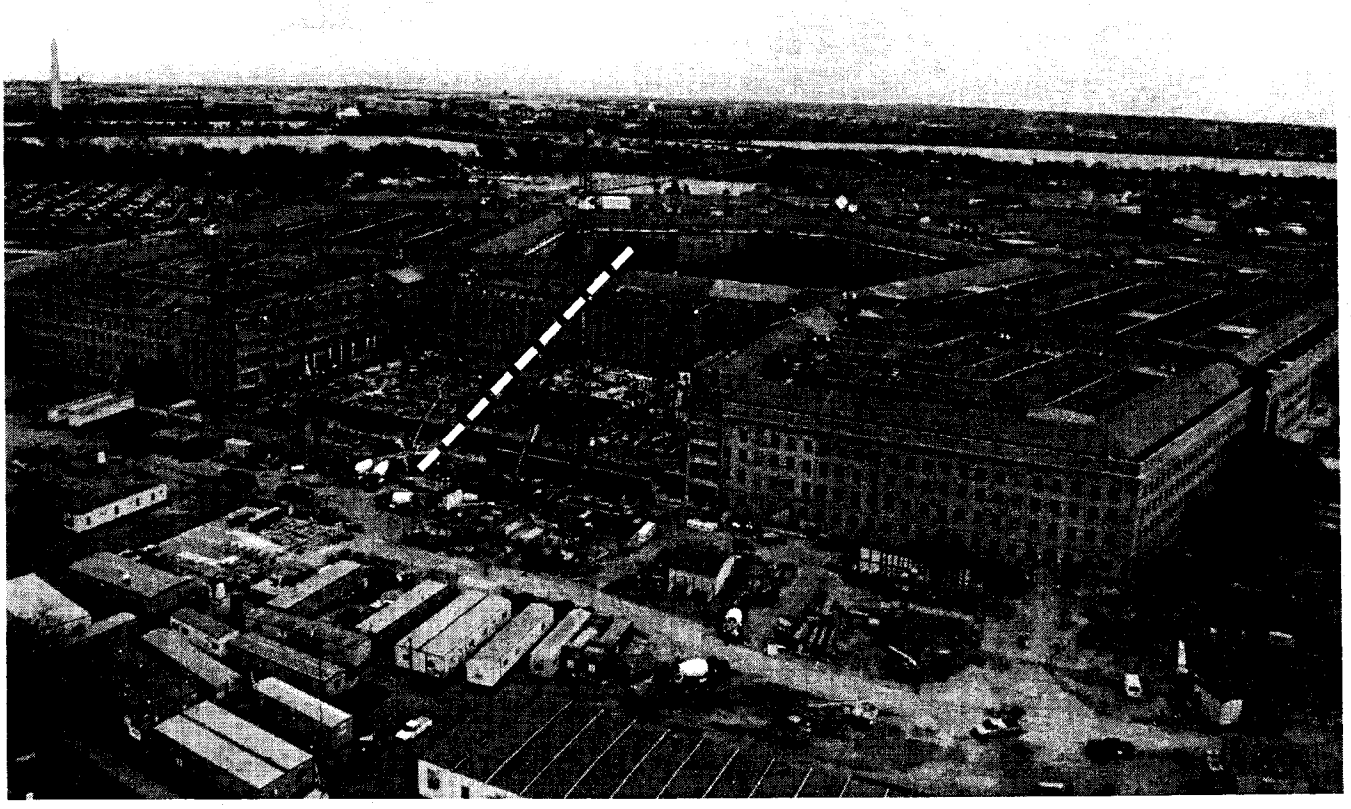
I. PROGRAM OVERVIEW

Program Background

Program Schedule

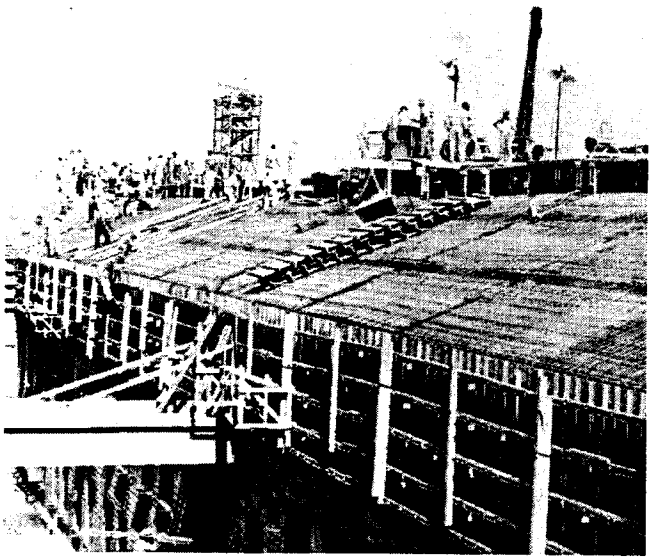
Program Budget

Renovation Sequence



The Phoenix Project, Wedge 1 (right side of white line) and Wedge 2 are visible in this aerial photo of the Pentagon, shot January 3, 2002.

PROGRAM BACKGROUND



At the peak of construction in 1942, 15,000 workers labored around the clock. The Pentagon, covering 29 acres with a 5-acre center courtyard was constructed in just 16 months, from September 11, 1941 to January 1943.

THE NEED

The Pentagon, designated a National Historic Landmark in 1992, has never undergone a major renovation, and after more than 59 years, renovation is essential in order to meet current health, building, ADA, fire, and life safety codes, and provide reliable electrical, air conditioning and ventilating services. Absent a major renovation, the building infrastructure has become increasingly unreliable and unable to fully support the headquarters and nerve center of the national military establishment. Major building engineering systems have deteriorated to such an extent that repairs are no longer effective and entire systems need replacement. The presence of asbestos in the ceiling plaster, heating and ventilating ducts, pipes, and floor coverings is a hazard that makes repairs or alterations extremely disruptive and expensive.

From 1982 through 1990, the Department of Defense discussed with the General Services Administration (then owner of the building) renovation of the Pentagon and, in the mid 1980's, GSA supported the concept of transferring ownership of the building to the Department of Defense in order to proceed with the much needed renovation.

THE TRANSFER

Based on consultation within the Administration and with Congressional committees, legislation was prepared to transfer ownership of the Pentagon from the Administrator of General Services to the Secretary of Defense so that the renovation of the Pentagon could be undertaken.

The Defense Authorization Act of FY 1991 transferred control of the Pentagon Reservation from the Administrator of General Services to the Secretary of Defense. Under the same Act, Congress established the Pentagon Reservation Maintenance Revolving Fund for the expressed intent of renovating the Pentagon, allowing the Secretary of Defense to establish rent rates which support the renovation.

THE PROGRAM

In 1990, a concept plan for the Pentagon Renovation was approved based on renovating the building in five 1,000,000-gross-square-foot "wedges" with renovation of the basement as a separate endeavor. The plan envisioned the complete removal of all mechanical, electrical, and plumbing systems down to the base structure due to the widespread presence of hazardous materials and the high probability of systems failure.

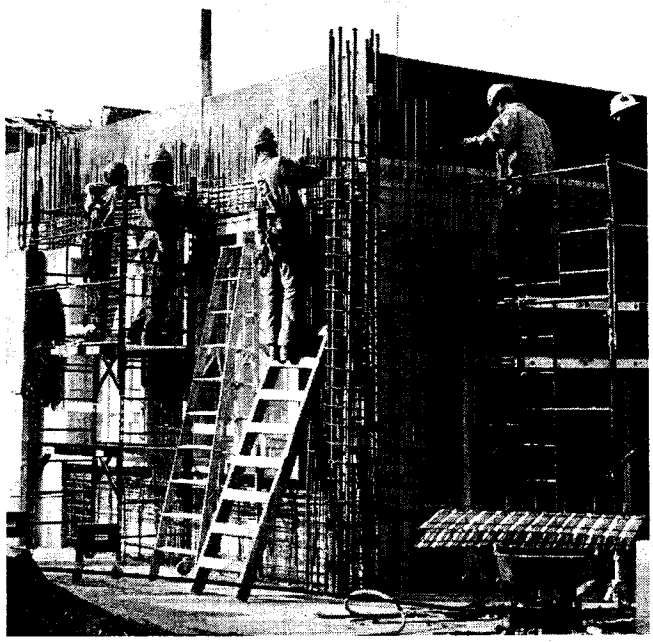
The Renovation Program is providing all new engineering systems, vertical transportation, cable management systems, lighting, and fire and life safety systems.

The renovated Pentagon will provide accessibility for persons with disabilities. It will preserve historic elements, upgrade food service facilities, construct strategically located operation centers, install modern telecommunications support features, comply with energy conservation and environmental requirements, reorganize materials handling, and provide safety improvements in vehicular and pedestrian traffic.

The renovation concept for the Pentagon included, as a first phase, a new Heating and Refrigeration Plant, which has been completed and is operational. In conjunction with the construction of the Heating and Refrigeration Plant, a Center Courtyard Utilities Tunnel was constructed. The tunnel houses various utility lines which will distribute building utilities provided by the new plant.

The second phase of the Program was the renovation of Segment 1 of the Basement and Mezzanine, which started in September 1994 and was completed with the opening of the DiLorenzo TRICARE Health Clinic in March 2000. The third through seventh phases of the Program were envisioned as the renovation of the five wedges of the building from the first to the fifth floor. These areas were determined to be the optimum divisions for renovation while continuing the operation of major utility systems. In order to vacate Wedge 1 prior to renovation, tenants were moved either to nearby leased office space, to swing space identified within the Pentagon, or into a previously renovated building area. On September 11, 2001 tenants were in the process of moving out of Wedge 2 into the newly renovated Wedge 1. The terrorist attack has forced the Renovation Program to re-examine its planned phasing of the renovation to allow Pentagon personnel to continue with the execution and planning of the current war effort.

The Renovation Program is working on several ancillary projects, such as emergency backup power and cooling systems, the Metro Entrance Facility, and the Physical Fitness and Readiness Facility. The Renovation Program's organizational team structure, in-house expertise and innovative acquisition practices allow it to take on related projects on the Reservation when appropriate. Accomplishing ancillary projects in coordination with renovation activities reduces overall costs by coordinating work efforts.



Since September 11, 2001, approximately 1,000 workers have labored around the clock to rebuild the portion of the Pentagon damaged by the terrorist attack. Total recovery of the two million square feet of damaged space is expected to be complete in March 2003.

STATUS

On September 10, 2001, approximately 3,800 people occupied Wedge 1 and were experiencing the benefits of the renovation effort. The bright, clean corridors, well-ventilated offices, and the easily accessible elevators and escalators were quite a change from the dark, dank conditions that many tenants had worked in for years. The majority of the new Wedge 1 occupants had moved from Wedge 2. The Wedge 1 team was five days from completing the final punch list items.

The fire, smoke and water damage that resulted from the impact and ensuing fire of the September 11 attack, led to the displacement of 4,500 tenants from Wedge 1 and Wedge 2 collectively. Significant progress has been made to reoccupy Wedge 1. As of March 2002, over 1500 tenants have moved back into Wedge 1. Wedge 2 was slated for demolition and abatement of hazardous materials in October 2001. However, the events of September 11 led to the re-phasing of Wedge 2 renovation to allow for re-occupancy of approximately half of the wedge to accomodate tenants displaced from the building as a result of the attack. Recovery efforts included utility restoration, construction of new barrier walls, decontamination and recovery of personal effects, remediation of mold, asbestos and lead dust, re-glazing of broken windows and repair of water and smoke damage. Recovery of the entire two million square feet of damaged space in Wedge 1 and Wedge 2 will be complete by Spring 2003.

The Pentagon Transit Center, the Pentagon's new intermodal transportation facility, opened December 16, 2001, signaling the first time since September 11 when buses, rerouted to Pentagon City, could return to the Pentagon. The congressionally mandated Metro Entrance Facility project implements required improvements to physical security by keeping vehicles a minimum of 288 feet from the face of the Pentagon.

The second component of this $36 million project, includes the construction of a new Pentagon entrance facility, which will open in November 2002. The entrance addition will allow direct, above-ground access to the Pentagon from the Transit Center while providing a comfortable and safe entry point for Pentagon personnel. The new entrance will screen all visitors and house the Pentagon Tour and Badge Offices.

The Remote Delivery Facility, which opened in August 2000, implements similar physical security enhancements, receiving and screening over 230 trucks and other delivery vehicles per day. Commissioning and the final link to the Pentagon's building systems was complete in February 2002.

The Pentagon Physical Fitness and Readiness Facility (PFRF) will replace the existing facility with a more spacious, modern facility that meets growing membership fitness and readiness needs based on current usage patterns and future incremental growth. The 120,000-square-foot facility which includes options for an auditorium to replace the current Pentagon auditorium, related television studio and executive motor pool will be located at basement level underneath and adjacent to the Pentagon's Mall Terrace. The PFRF will be built in two phases to accomodate the relocation of Pentagon tenants currently occupying a section of the basement, who will not be vacated until late 2003. Phase One construction will be complete and the new PFRF ready for use by December 2003.

Phase 1 of the the Intake/Outfall project began construction on the intake line in March 2002. The underground intake water line supplies condenser water (141,000 GPM) to the Pentagon air conditioning chillers.

In November 2001, the Roads, Grounds and Security Team was established with the purpose of providing modifications to the existing network of highway and access roads to meet Pentagon security needs. The Program is currently processing the plans for roads and grounds activity for approval by the Secretary of Defense. It is anticipated that the required certifications will be forthcoming.

Milestones have been reached in other ancillary projects, such as completing the installation of new chilled water

line feeders into the building, finishing the repointing of Wedge 1's limestone facade, and wrapping up construction of the National Image Mapping Agency's new location.

PROGRAM CHALLENGES

A complete renovation of the Pentagon is necessary to provide a modern, flexible, and efficient work environment that will endure well into the 21st century. Without a major renovation, the building will continue to deteriorate, ultimately rendering it unable to serve its mission.

To better understand the challenges the renovation team faces, it is important to understand the unique features of the Pentagon itself. Unlike most large office buildings, the Pentagon is the command and control center for our nation's military establishment and headquarters to the senior leadership, including the Secretary of Defense, the Chairman of the Joint Chiefs of Staff and the heads of each of the armed services. It is from within the Pentagon walls that the Department of Defense monitors and deploys forces around the world. Yet, it is within these same walls that renovation activities, often involving heavy construction, must take place.

In terms of size, the Pentagon looks and operates much like a small city: it has its own heating and refrigeration plant, water and sewage facilities, police force, fire station, heliport, child care center, cafeterias, mini-mall, Metro station, and medical clinic. The building itself covers 34 acres and, overall, the Pentagon Reservation includes parking for 10,000 vehicles. In terms of population, the Pentagon's 25,000 employees make it larger than nine out of ten towns in the U.S. The large number of Pentagon personnel, the complexity and the critical nature of their missions, and the sheer magnitude of the building combine to create challenges that can be found in no other renovation project in the world.

The five historic elements of the Pentagon present further challenges to the renovation effort.

1. The five outer facades of the Pentagon.
2. The Center Courtyard and surrounding facades.
3. The terrace fronting the Mall Entrance.
4. The terrace fronting the River Entrance.
5. The Pentagon's distinctive five-sided shape.

Post September 11 Challenges

The attack on the Pentagon has magnified the already formidable challenges faced by the Pentagon Renovation Program.

The 400,000 square feet being reconstructed as part of the Phoenix Project has a direct impact on the coordination of tenant moves, move-in schedules and the amount of swing space leased around the Pentagon. The attack has caused the Program to dramatically increase our focus on security and safety requirements.

Despite the additional challenges, the Pentagon Renovation Program remains committed to moving forward with the project schedule, which calls for completion of construction activities in 2010.

PROGRAM SCHEDULE

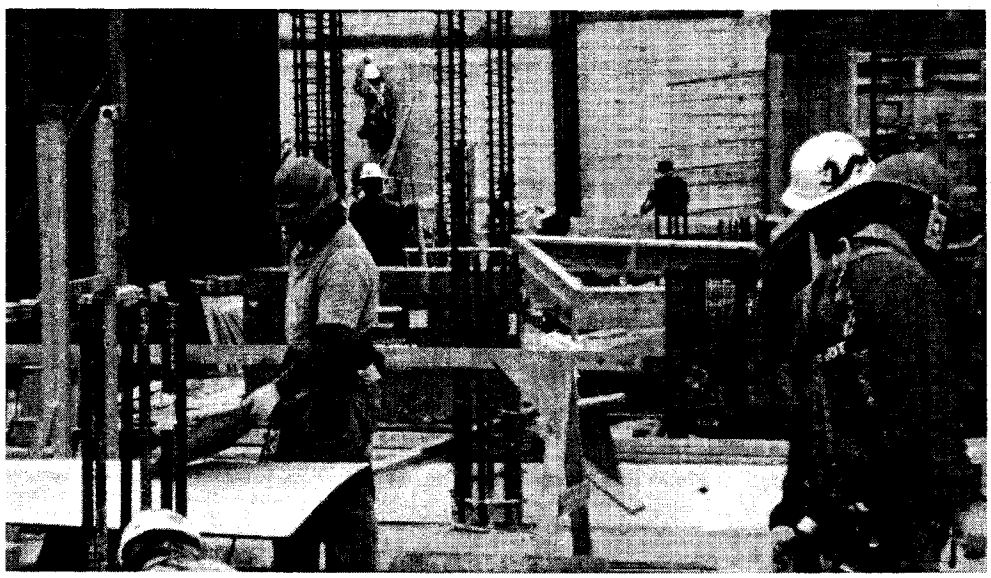
Since last year's report, the completion date of the Pentagon Renovation Program, with the support of the Congressional appropriation of funding, has been moved to December 2010. This reflects a four year advance of the Renovation Program's previously estimated completion date of 2014. This expected time decrease is based on reaction to the September 11, 2001 terrorist attack on the Pentagon. The recent defense appropriation for 2002 that mandates a completion of the renovation by 2010, allocated funds to support the acceleration.

Negotiations are being finalized with the general contractor for Wedges 2 through 5 to implement the new completion schedule of December 2010. To facilitate acceleration of program completion, construction in the basement will provide flexible space, suitable for any use, including automated data processing centers, command and control centers or traditional office space. This work started in February 2002 and will be completed by June 2004.

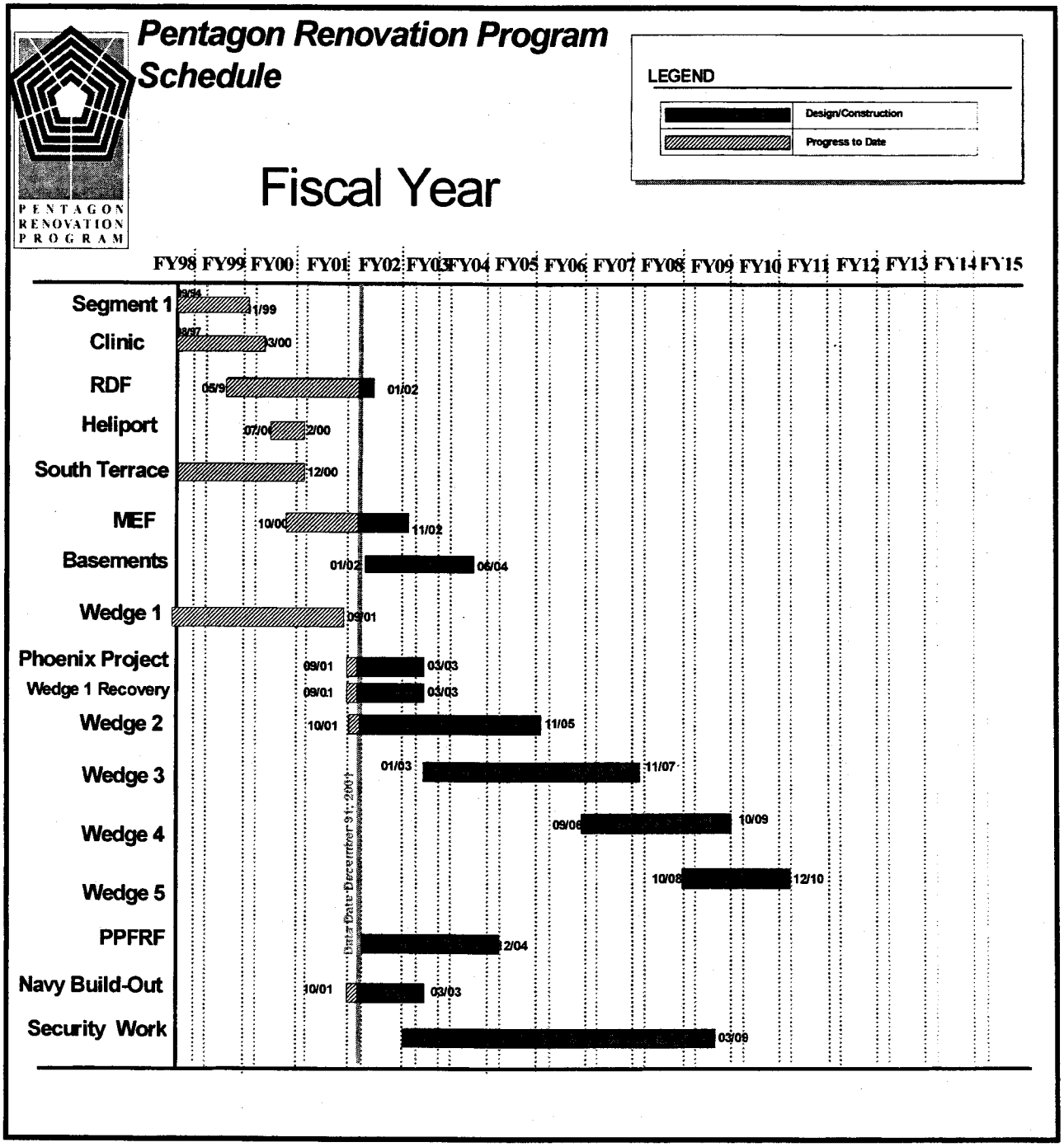
As part of the security enhancements to the Pentagon a Roads and Grounds team has been established and is pursuing the relocation of Route 110 and changes to access from Route 27 to the Pentagon. Goals for these initiatives in our program schedule include completion of this work by 2005.

Other factors implemented to mitigate the impact on the Program schedule include the extensive use of award fees and incentive fees to motivate contractor partnering and performance, the evaluation of contractor proposed master schedules as a selection factor, and the nearly exclusive use of design-build contracts. The use of performance specifications in the design-build contracts allow the contractor to maximize innovations to reduce the schedule and budget.

The estimated completion date of 2010 includes the full scope of renovation activities including tenant move-out, demolition and abatement, core and shell construction and tenant fit-out.



Workers place formwork on the third floor of the Phoenix Project. The necessity to construct a safer, stronger Pentagon is the driving factor behind the advanced schedule.


Pentagon Renovation Program Schedule
PENTAGON RENOVATION PROGRAM
LEGEND
Design/Construction
Progress to Date
Fiscal Year
FY98 FY99 FY00 FY01 FY02 FY03 FY04 FY05 FY06 FY07 FY08 FY09 FY10 FY11 FY12 FY13 FY14 FY15
Segment 1
Clinic
RDF
Heliport
South Terrace
MEF
Basements
Wedge 1
Phoenix Project
Wedge 1 Recovery
Wedge 2
Wedge 3
Wedge 4
Wedge 5
PPFRF
Navy Build-Out
Security Work
1/99
3/00
01/02
2/00
12/00
11/02
06/04
03/03
03/03
11/05
11/07
10/09
12/10
2/04
03/03
03/09
Data Date December 31, 2001

PROGRAM BUDGET

SOURCE OF FUNDS

Section 2804 of the Department of Defense Authorization Act, 1991 (Public Law 101-510, see Appendix), established the Pentagon Reservation Maintenance Revolving Fund. The Act transferred responsibility for the operation, maintenance, protection, repair, and renovation of the Pentagon Reservation from the General Services Administration to the Secretary of Defense. The revolving fund is the funding source for the Pentagon Renovation Project. In addition, it finances a full range of building services for Department of Defense components, including the military departments, and other activities housed within the Pentagon Reservation.

The renovation was designed to be budget-neutral to the Department of Defense in that the Department could operate, maintain, protect, and renovate the Pentagon for the rent the Department would have paid to the General Services Administration over a 12 to 14 year period.

Accordingly, the Pentagon Reservation Maintenance Revolving Fund has been designed to operate on a break-even basis over the long term. Revenue for the revolving fund may be generated from various sources; however, the fund depends primarily upon monies collected from a user charge for space and building services. These charges are paid by the Department of Defense components and other tenants using Pentagon Reservation facilities or land, with rates corresponding to six categories of space: office, storage, special, joint use, commercial support, and outside parking. The rates are established to recover the cost of day-to-day operations, maintenance, protection of the Reservation, and essential capital improvements, including all costs associated with the Pentagon Renovation Program.

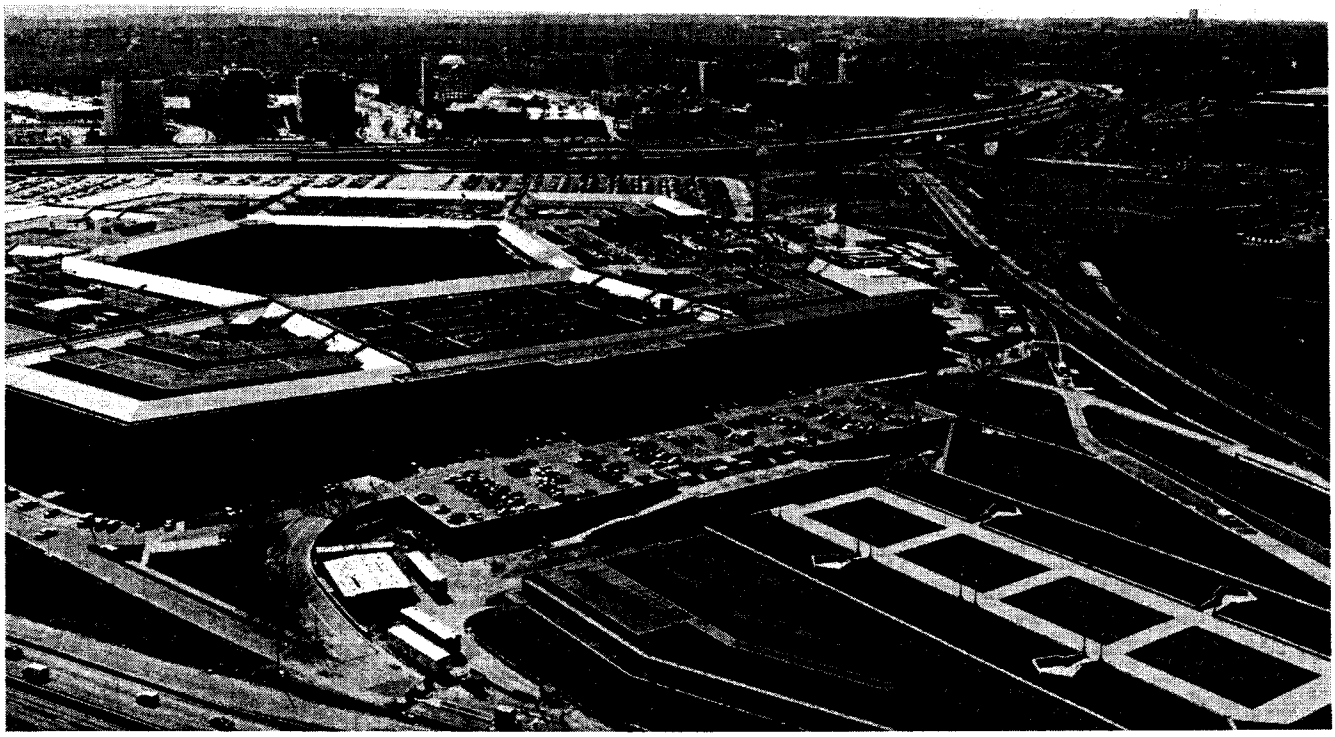
CERTIFICATION OF COST

Section 8060 of the FY 2002 Defense Appropriations Act (Public Law 107-117) requires the Secretary of Defense to certify that the total cost for the planning, design construction and installation of equipment for the renovation of wedges 2 through 5 of the Pentagon Reservation, cumulatively, will not exceed four times the total cost for the planning, design, construction and installation of equipment for the renovation of Wedge 1. The cost of the renovation of Wedge 1 shall be adjusted for any increase or decrease in costs attributable to economic inflation.

In accordance with the referenced Act, the calculation of cost limitation and cost of each wedge does not include any cost incurred for repair and reconstruction as a result of terrorist attack on September 11, 2001, currently estimated at $576,000,000, nor costs attributable to additional security requirements deemed essential by the Secretary of Defense, nor costs attributable to compliance with new requirements of Federal, State, or local laws.

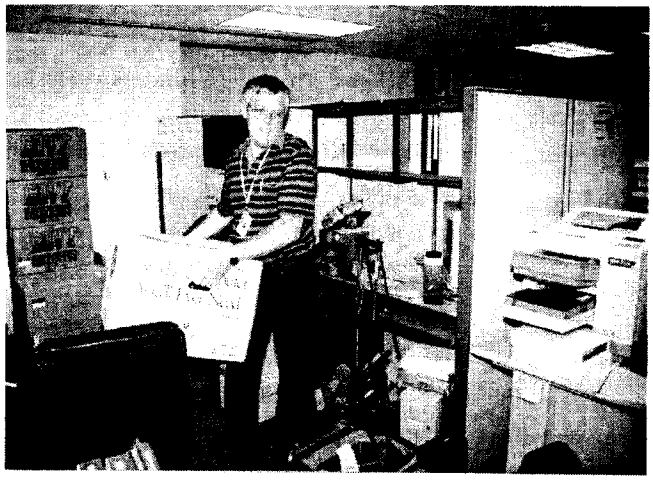
Internal management controls are in place to insure accurate tracking and monitoring of costs associated with the certification ceiling and to segregate costs of ancillary projects.

Consistent with the cost estimates prepared for projects in the Military Construction Program, this limitation does not include the cost of: 1) purchase and installation of Information Management and Telecommunications equipment, 2) rental and operation of leased swing space, 3) purchase and installation of furniture for the renovated Pentagon, and 4) separately authorized ancillary projects and security enhancements directed prior to the terrorist attacks. The Department of Defense Appropriations Act for FY 2002 and the required certification are included in the Appendix.

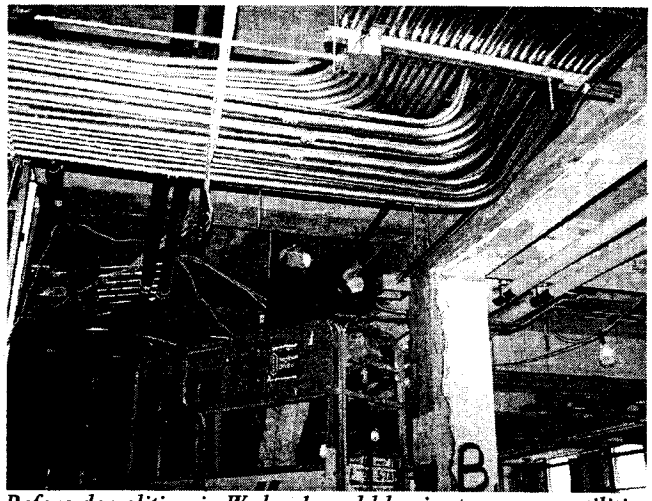


The Congressional appropriation to advance the renovation of Wedges 2 through 5 by four years has a sweeping affect on the Renovation Program. Basement space, intentionally left empty, will now be built-out for tenant use to accommodate new directives.

RENOVATION SEQUENCE



Over 25,000 tenant moves will be carefully orchestrated throughout the course of the renovation process.



Before demolition in Wedge 1 could begin, temporary utilities and communication lines had to be installed.

Abatement of windows in Wedge 1.

The Pentagon Renovation consists of several individual efforts of work that all follow a similar sequence towards completion.

MOVE-OUT

One of the major challenges faced by the Renovation Program on a daily basis is the necessity of working around 20,000 people. Before renovation of an occupied area can begin, the people in that space must be moved to leased office space, temporary space built out within the Pentagon, or new permanent space after the completion of Wedge 1. This move includes all of the tenants' personal belongings, computer equipment and telephones. A major factor in the move-out process is the fact that Pentagon employees cannot afford any downtime in their daily activities. Therefore, the swing space must be renovated and operational to meet the needs of the displaced Pentagon tenants before the move-out process can occur. After the move, tenants are typically up and running at full speed within a 24-hour period.

TEMPORARY MECHANICAL, ELECTRICAL, PLUMBING AND COMMUNICATIONS

Temporary utilities, and communications are necessary to keep the Pentagon tenants surrounding the area under construction operational with minimal disruption. Temporary barrier walls are then constructed to ensure the safety and security of the tenants and to prevent noise, dust, and hazardous work conditions from being a distraction.

DEMOLITION & ABATEMENT

Before construction can begin, the area must undergo the demolition of all existing utilities and the abatement of hazardous materials including asbestos, lead-based paint, and

PCBs. This is a very expensive and time consuming effort but absolutely essential in order to assure the health and safety of Pentagon tenants.

CORE & SHELL

Core and shell construction includes the build-out of common elements in an area, including walls and public corridors, and the rebuilding of primary utility systems.

TENANT FIT-OUT

Tenant fit-out is the building of interior office space based on the requirements of the intended tenants to the universal space concept. This phase also includes rebuilding of secondary utility systems.

INFORMATION MANAGEMENT & TELECOMMUNICATIONS (IM&T)

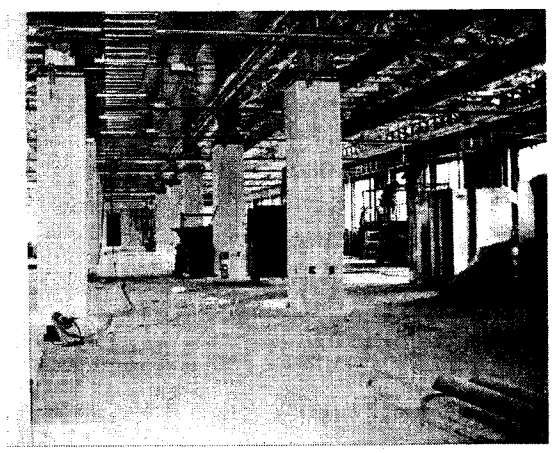
IM&T is an extensive effort to meet the requirements of the existing tenants while ensuring that the technological needs of future tenants can be met without another major renovation. Modern telecommunications and information management sources are provided throughout the Pentagon with access to global networks. Backbone communications are renovated and modernized to support voice, data, video, and other user requirements such as local area networks.

FURNITURE, FIXTURES & EQUIPMENT

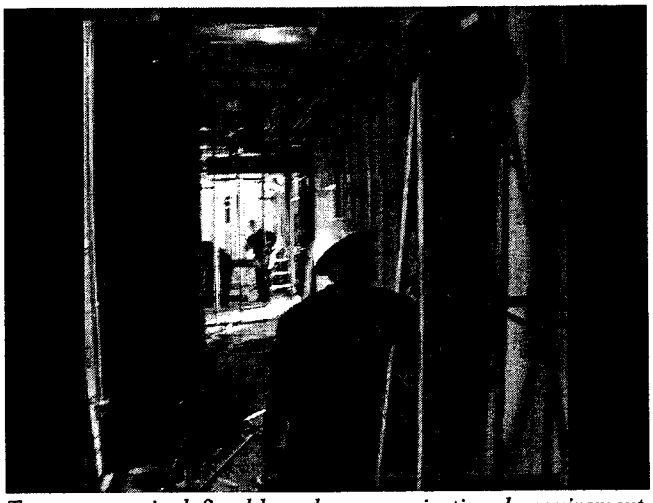
After the interior office space has been fitted-out and the information technology equipment installed, flexible systems furniture is installed to facilitate the operation of a modern office environment. The systems furniture includes a spine-wall work station configuration, providing easily accessible pathways for electrical power and for telecommunications. This allows much greater flexibility in both the initial furniture layout and future reconfigurations.

SECURITY

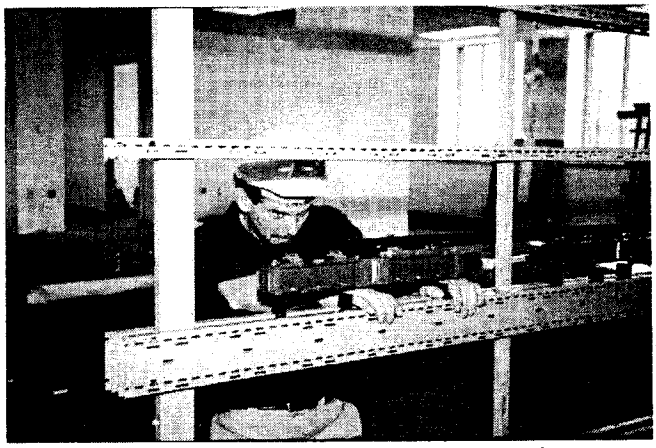
The security of the Pentagon is a top priority to the Renovation Program. Security checks and upgrades are implemented throughout construction and security accreditation is essential to the acceptance of the completed



Wedge 1 core and shell construction.

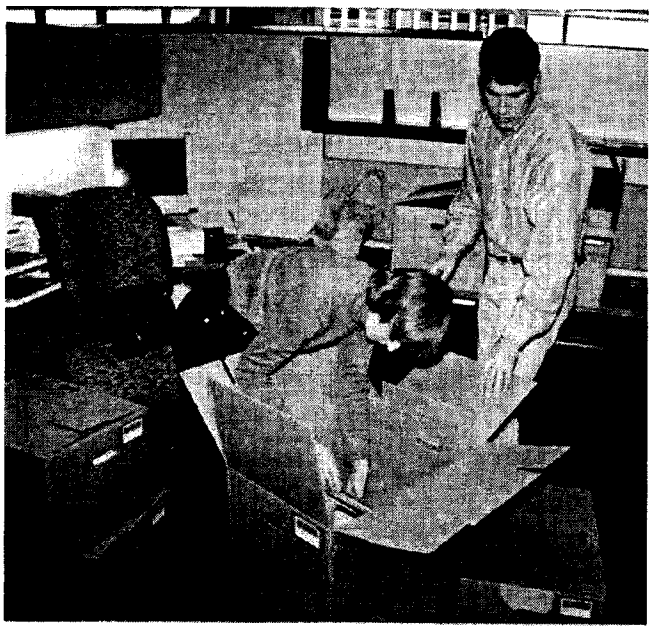


Tenant space is defined based on organizational requirement. Pictured here is future office space for the National Imaging and Mapping Association.



A worker installs the spinewall for office systems furniture in Wedge 1. The IM&T lines run through the spinewall to connect up to four separate workstations.

A Pentagon Renovation team member works with Metro personnel prior to the opening of the Pentagon Transit Center.



The Renovation Program's Relocation Team strives to have Pentagon tenants completely operational in their new office in the next business day following a move.

COMMISSIONING

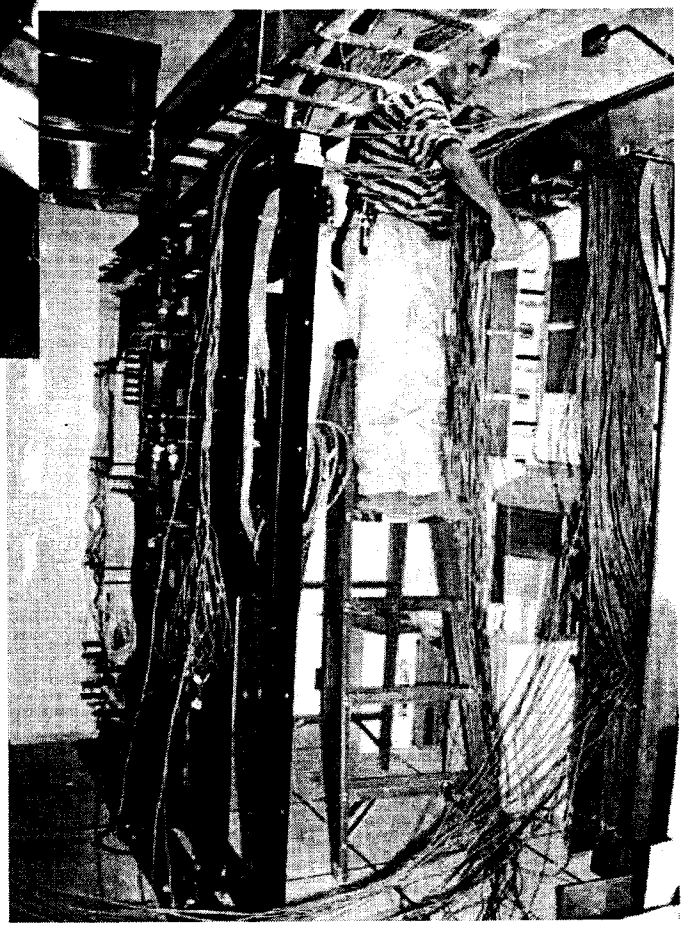
Commissioning is the process of verifying and documenting the performance of building systems in accordance with the design and the owner's functional and operational needs. Commissioning starts in the design phase and extends through the construction process and warranty period.

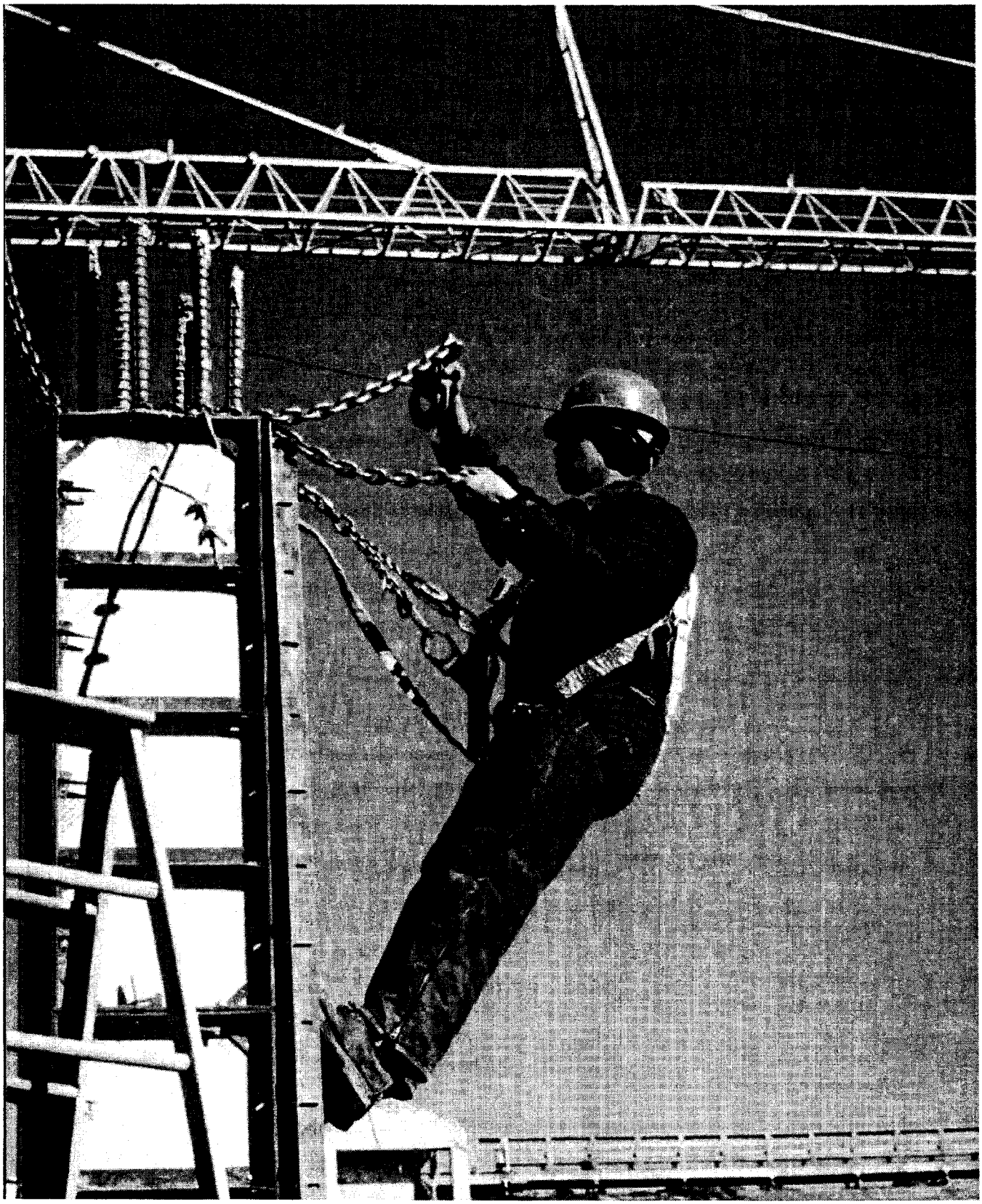
MOVE-IN

The culmination of every renovation effort is the move-in of tenants to the renovated space. As with the move-out, the Renovation Program strives to minimize any downtime the tenants may experience in their daily operations. Tenants are typically back to full operation within 24 hours of vacating their office for their newly renovated space in the Pentagon. This includes the relocation of all personal items and the re-commissioning of computers and telephones to the IM&T infrastructure.

Workers install the original communications cable in the early 1940s (left). In most cases, these original lines have never been documented or removed. The new lines have been placed on top of the old. It is estimated that there are 16,000 miles of lines in the unrenovated Pentagon.

Below, a worker installs new data and phone lines through a telecommunications closet in Wedge 1.





A worker on the Phoenix Project erects formwork before placing the concrete for a structural support column.

II. WORK IN PROGRESS

PHOENIX PROJECT

WEDGE 1

- Floors 1-5

SOUTH TERRACE PEDESTRIAN BRIDGES

WEDGES 2-5

SWING SPACE

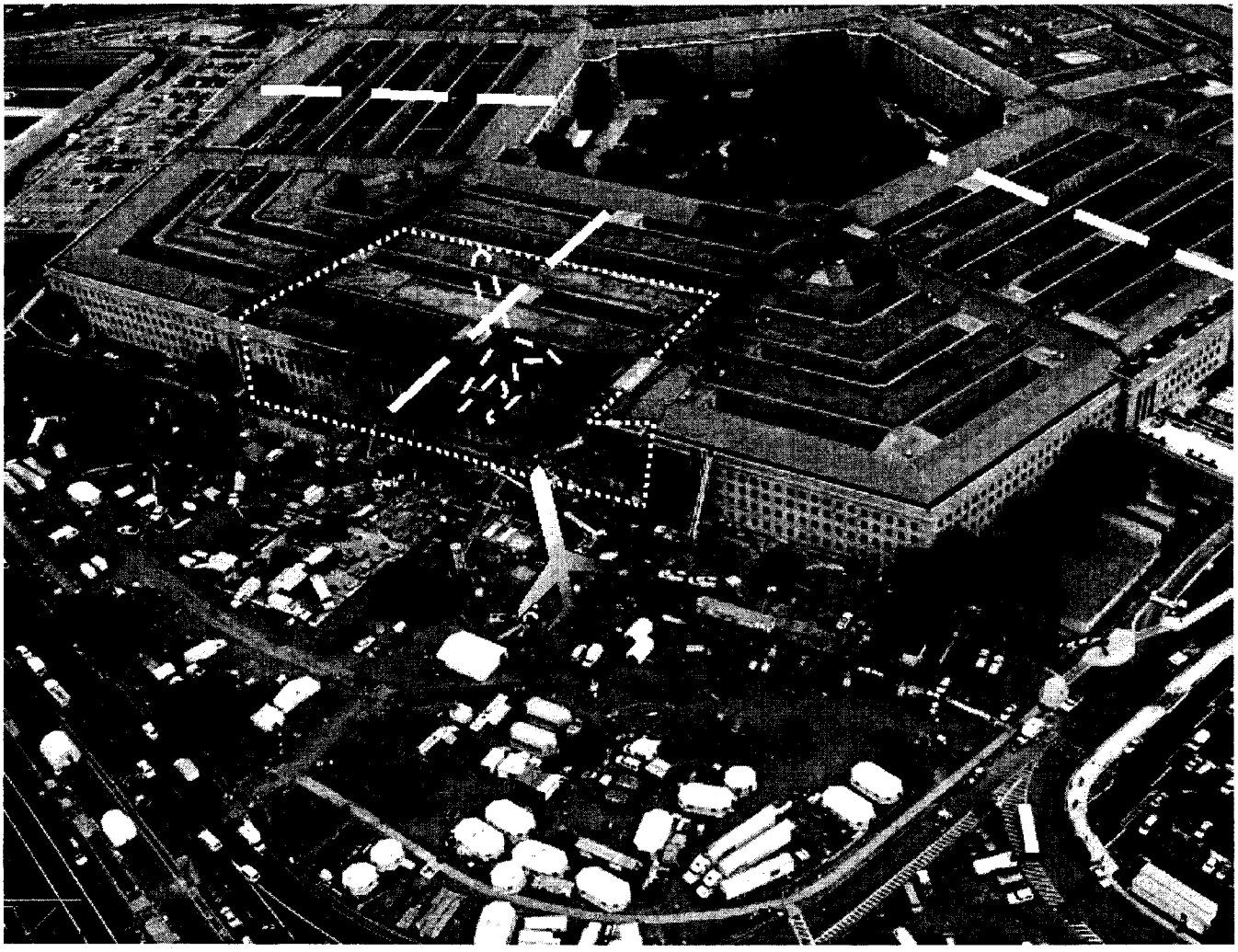
BASEMENT/MEZZANINE

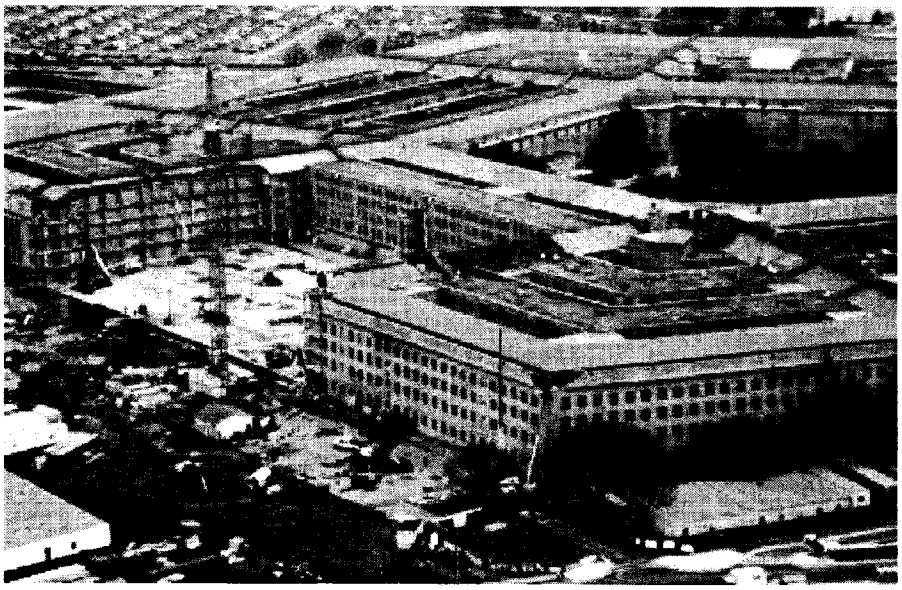
- Segments 2 and 3

METRO ENTRANCE FACILITY

ANCILLARY PROJECTS

- Remote Delivery Facility
- Chilled Water Line Feeders
- Limestone Cleaning & Repointing
- Relocation of the NIMA Office
- Condenser Intake Outfall Line for the Heating and Refrigeration Plant
- Roads, Grounds & Security
- Physical Fitness and Readiness Facility





The photo above illustrates the path of the plane and the area of structural damage resulting from the attack on the Pentagon. Dubbed the Phoenix Project, the Pentagon will rise from the ashes of September 11th, like the mythical bird from ancient Greek and Egyptian legend.

The photo to the left was taken shortly after demolition was completed and reconstruction began.

PHOENIX PROJECT

The Phoenix Project involves rebuilding the section of the Pentagon that suffered structural damage as a result of the September 11 attack. The area of work extends from Corridor 4 to Corridor 5 through the outer three rings of the Pentagon, E, D, and C. The 400,000 square feet of space falls in the along the dividing line of Wedge 1 and Wedge 2. The Phoenix Project scope of work includes rebuilding the core and shell of Wedge 1 and shell of Wedge 2.

Within minutes following the attack, the Pentagon Renovation Program took action to provide personnel, equipment and materials for the rescue and recovery effort. Architects, engineers and construction personnel with extensive knowledge of the Pentagon proved to be a valuable resource to the efforts of the rescue teams. According to FBI officials, a crime scene investigation of this magnitude normally would require a minimum of eight to twelve weeks to complete. However, the prompt support of the Renovation Program, the Pentagon Building Management Office and the construction contractors helped reduce the period of on-site investigation to less than three weeks.

Following the investigation phase, the Pentagon Renovation Program assisted the Military District of Washington and the Pentagon tenants in recovering salvageable personal and business effects from the project site prior to demolition. In all, approximately 4,500 tenants were displaced from the affected areas. These people had to be moved to other spaces within the Pentagon or leased space outside of the building.

In the weeks immediately following the attack, 10,000 tons of debris were hauled from the collapsed area of the building to safely continue the recovery effort. A total of 50,000 tons of debris were moved from the site during demolition.

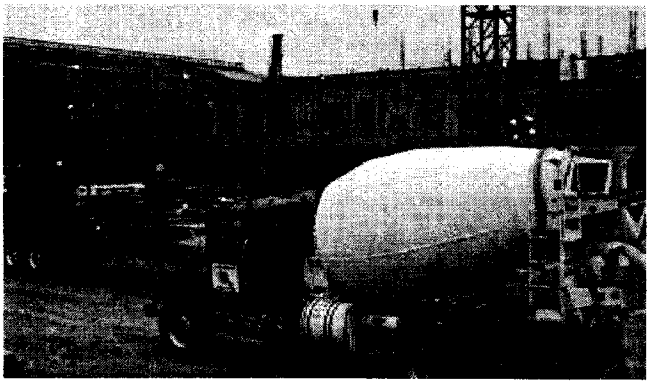
Full-scale demolition began on October 18, 2001, starting with the disassembly of outer limestone cladding on the exterior of the building. Reconstruction of the demolished

PHOENIX PROJECT HIGHLIGHTS

- **400,000 square feet of space demolished**
- **Over 50,000 tons of debris removed**
- **21,000 cubic yards of concrete required for construction**
- **PENREN goal is to have the E-ring at point of impact re-built and occupied by September 11, 2002**

The E-ring wall begins to rise on the exterior of the Phoenix Project.

November 5, 2001 - Demolition work progresses 24 hours a day, 6 days a week. Demolition was completed four weeks ahead of an aggressive eight week schedule.



January 15, 2002 - A concrete truck arrives on-site to continue the pouring of the E-ring wall.

area began on November 19 immediately following completion of demolition with the concrete being placed for the first new structural columns.

Once the core and shell work is complete, the Wedge 1 team will complete tenant fit-out construction on the Wedge 1 side of the Phoenix Site. The shell work on the Wedge 2 side will be completed to match the concurent renovation work progressing inside Wedge 2. The Wedges 2 – 5 team will complete core and tenant fit-out construction in this area.

CHALLENGES

Aside from the emotional toll the attack had on the renovation personnel, there were a number of logistical and structural issues to overcome in order to start the reconstruction of the Phoenix Project. Structural damage caused by the impact to the concrete columns and floor slabs and constructability considerations required a greater area of demolition than originally expected. On a demolition project of this size, a schedule of approximately six months would have been typical. For the Phoenix Project, an aggressive schedule of two months was determined necessary to achieve the goal of reoccupying the E-ring by September 11, 2002. The demolition was completed 4 weeks ahead of the already aggressive schedule through the hard work of the crews that worked 24 hours a day, 7 days a week.

Due to the demolition of the building structure, it was necessary to identify alternate telecommunication pathways to re-establish communications in adjacent restored tenant areas prior to the build-out of telecommunications closets in the Phoenix site. A temporary electrical vault was required to replace the one destroyed in the attack and to provide electrical service to these tenant areas.

Working from the original 1941 construction drawings proved to be another challenge. Of the first 44 structural columns that needed to be replaced, 38 of the pile caps that support the columns were in a different location or were a different size than shown on the drawings. Four pile caps were missing altogether. Only two were found as expected. This necessitated the construction of concrete beams at ground level to evenly distribute weight

which would have otherwise been eccentric on load-bearing srufaces.

MILESTONES

September 11, 2001 - Hijacked American Airlines Flight 77 slammed into the Pentagon at 350 miles-per-hour, carrying approximately 10,000 gallons of jet fuel.

September 25, 2001 - The decision was made to delay the start of demolition until after the memorial ceremony held on October 11, 2001 at the Pentagon. By this time, over 10,000 tons of debris had been removed to stabilize the shifting structure to conduct rescue, recovery and evidence searches.

October 18, 2001 - The full-scale demolition began of 400,000 square feet of space. Work continued 24 hours a day, 7 days a week.

November 19, 2001 - Demolition was completed and reconstruction began, four weeks ahead of the agressive eight week schedule.

February 5, 2001 - The first blast resistant window was installed in the newly constructed E-ring of the Phoenix Project. By this time, the concrete slabs were complete for the second and third floors and work was progressing rapidly on the fourth floor slab. The E-ring wall had risen to the third floor.

September 11, 2002 - A memorial ceremony will be held at the site of the attack. Pentagon tenants will be able to watch the ceremony from the window of their new E-ring offices at the point of the plane's impact.

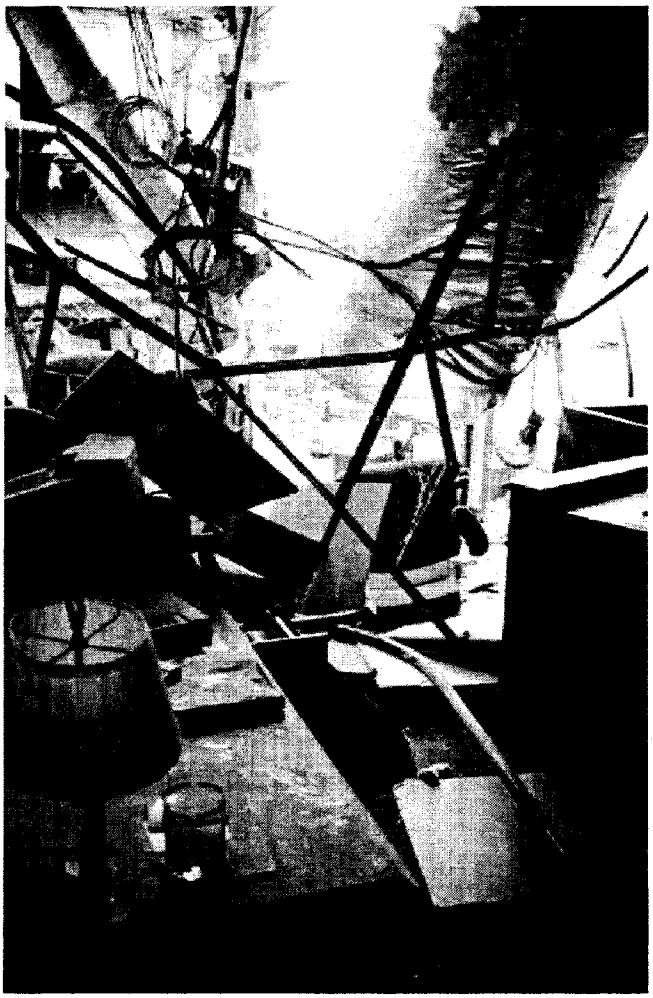
March 2003 - All of the areas damaged in the attack will be completely recovered, rebuilt and re-occupied.

Life-Saving Structural Improvements at the Pentagon

The renovation of Wedge 1 improved the resistance of the Pentagon to blast events by introducing blast-resistant windows, structural steel columns, and a geo-technical mesh. These security improvement slowed the plane as it entered the building, reducing the extent to which it penetrated the rings and helping to prevent the immediate collapse of the structure directly above the area of impact, giving building occupants additional time to escape. Of particular note is the performance of the blast-resistant windows adjacent to the impact area. Most remained intact, saving lives and reducing the number of injuries.

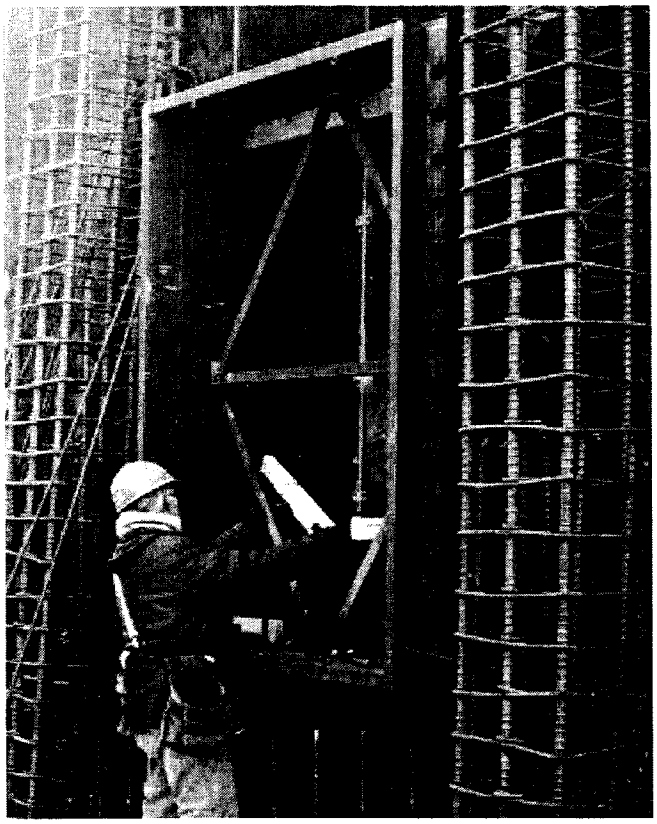
To the left, formwork is prepared for one of the new structural columns that will support the fourth floor.

A photographic illustration of the tremendous progress made on reconstruction since September 11, 2001. Demolition began on October 18, and reconstruction began on November 19. The photos culminate with a picture of the rising D-ring wall, taken on January 30, 2002.

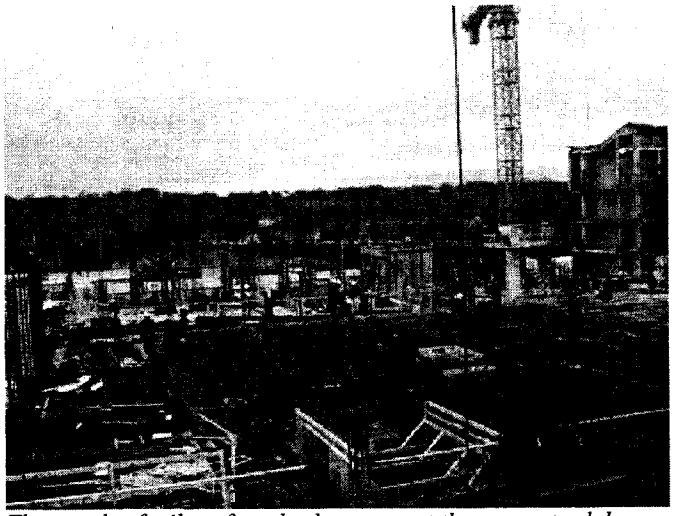


September 12, 2001 - Fire and rescue workers battled blazes that burned for two-and-a-half days after the crash, mostly in Wedge 2, where sprinklers had not yet been installed. The damage to the exterior of the building was widely publicized but the interior damage (right) paints a picture of what Pentagon tenants were faced with. After the attack, Renovation personnel and Defense Protective Service officers escorted Pentagon tenants back to their offices to retrieve the few personal items and business documents that survived the fire.

November 5, 2001 - The demolition of the structurally damaged area progressed at a breathtaking pace.



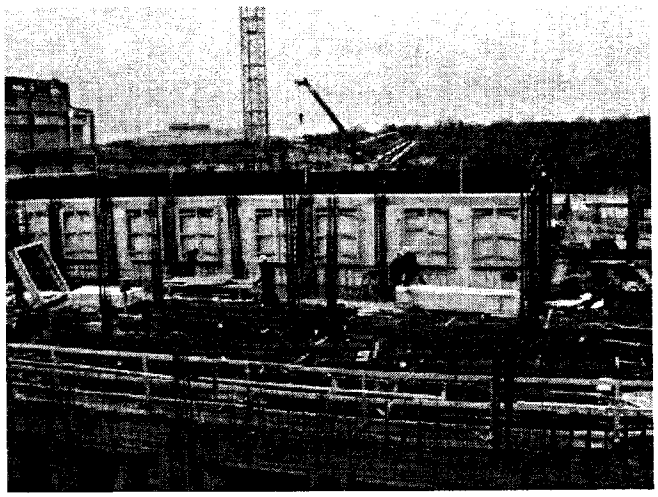
December 28, 2001 - Installation of the first E-ring window frame.

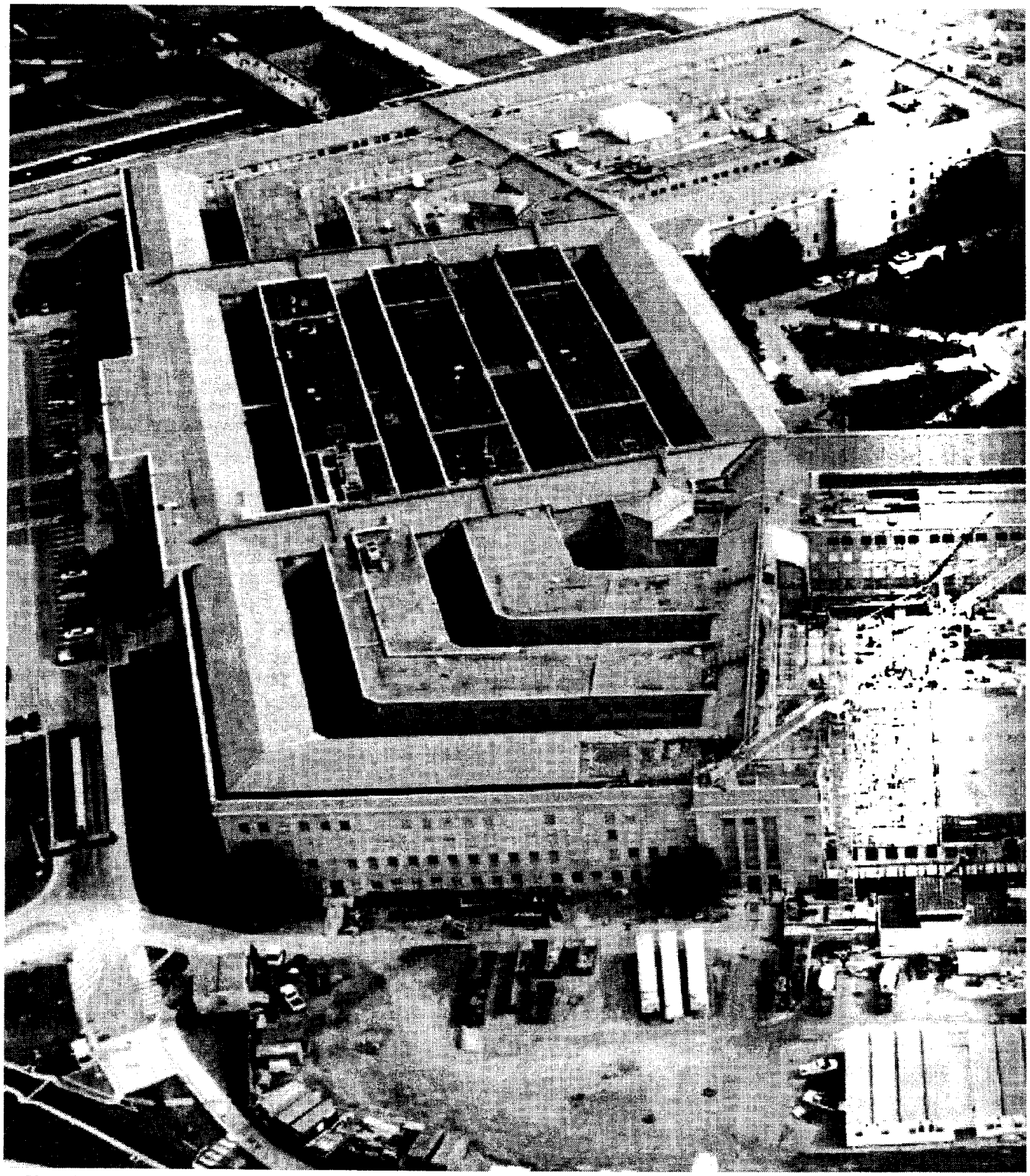


Thousands of miles of steel rebar support the concrete slab for the second floor.

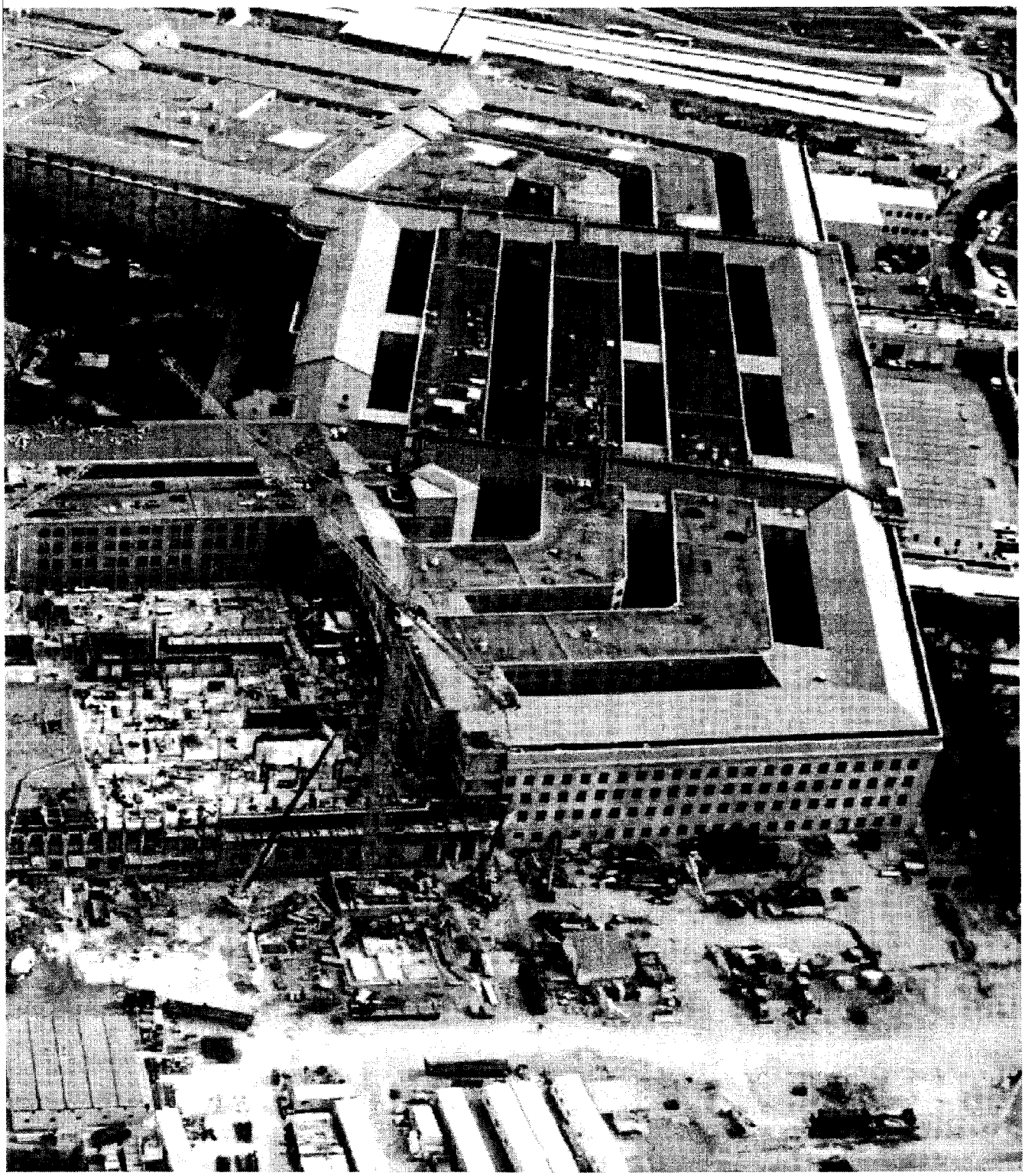
Workers labor around the clock to erect the structure. Formwork for a structural column is secured in place.

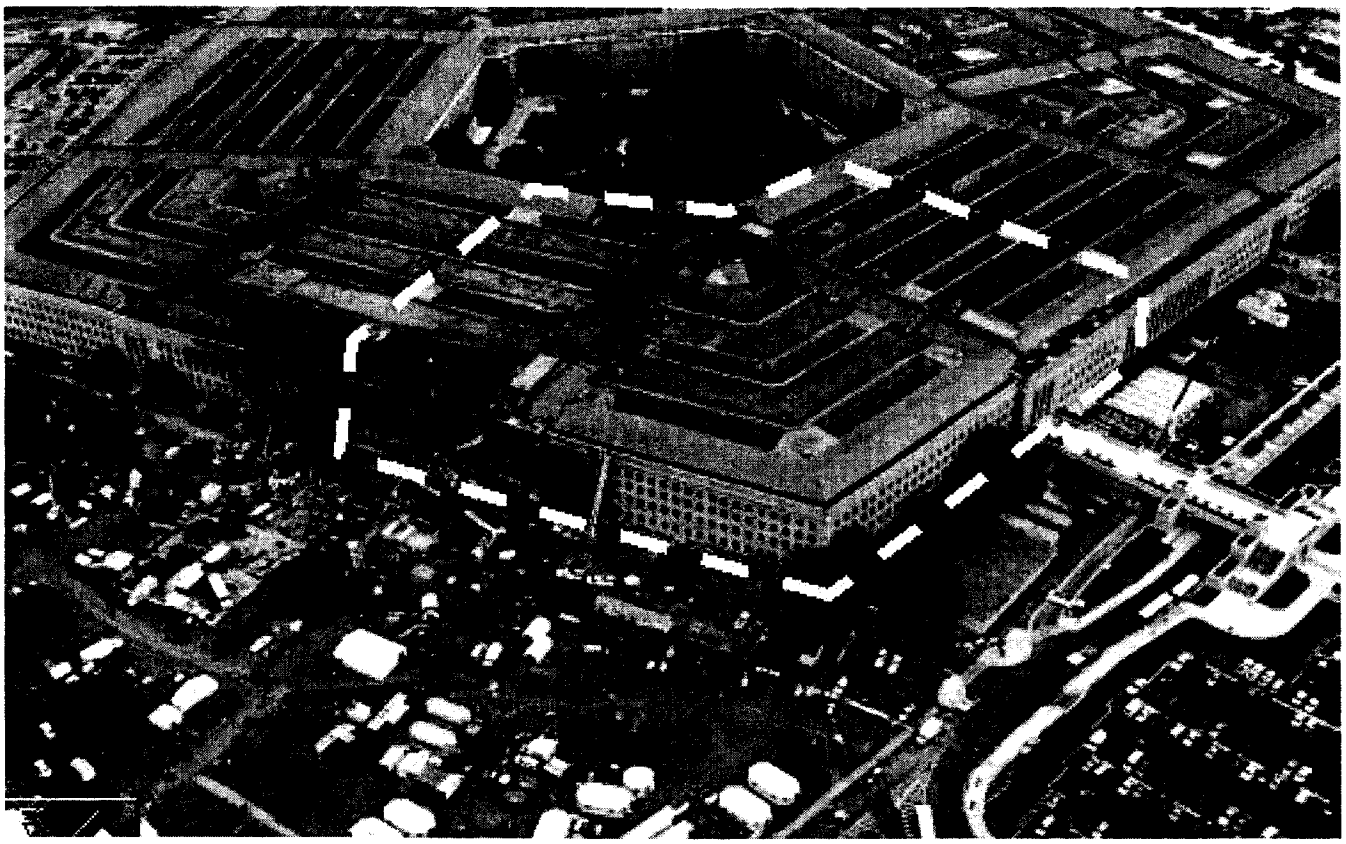
The above aerial photo was taken January 3, 2002. The second floor and E-ring wall are taking shape. The photo to the right was shot January 30, 2002. The white surface behind the window frames is a plastic form liner that will replicate the look created in 1941 by the use of wooden planks as a concrete form. This shows the construction of the third floor D-ring lightwell.

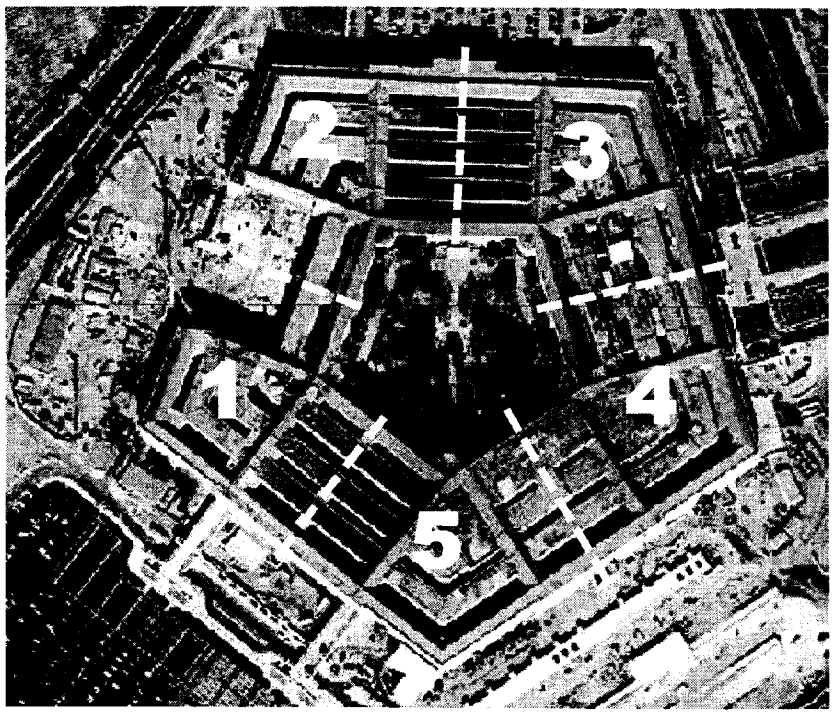




This photo, taken on February 6, 2002, is a good representation of the size of the Phoenix Project. Visible just above the project is the five-acre courtyard in the center of the Pentagon.







The photo above outlines Wedge 1. Nearly all of the one million square feet of space suffered damage to varying degrees. The photo to the left was shot on November 20, 2001, the day after demolition was complete on the Phoenix Project. When core and shell work on the Phoenix Project is complete, tenant fit-out construction will be accomplished in conjunction with the remainder of the Wedge1 rebuild effort.

WEDGE 1

The renovation of the five floors in Wedge 1, approximately 1 million square feet of space, began in 1998. The project included environmental abatement, major structural demolition, installation of new utilities, and the build-out of tenant areas. The 5,000 occupants of Wedge 1 moved out of the wedge between January 1, 1998, and December 31, 1998 into various swing space locations. Some moved to other areas of the Pentagon, but most were relocated to temporarily leased office space. Part of the relocation process involved the design and modification of these leased spaces to maintain the tenants' connectivity with the Pentagon.

The culmination of the renovation of Wedge 1 was moving the new occupants into the renovated office space. The majority of the new occupants came from Wedge 2. Approximately 3,800 people had been moved into Wedge 1 as of September 11, 2001. The project was within five days of completing the final punch list items when the terrorist attack occurred.

Since September 11, significant progress has been made to recover and re-occupy Wedge 1 space. Some areas have been completed, with many offices rapidly being returned to their condition prior to the attack on the Pentagon.

WEDGE 1 HIGHLIGHTS

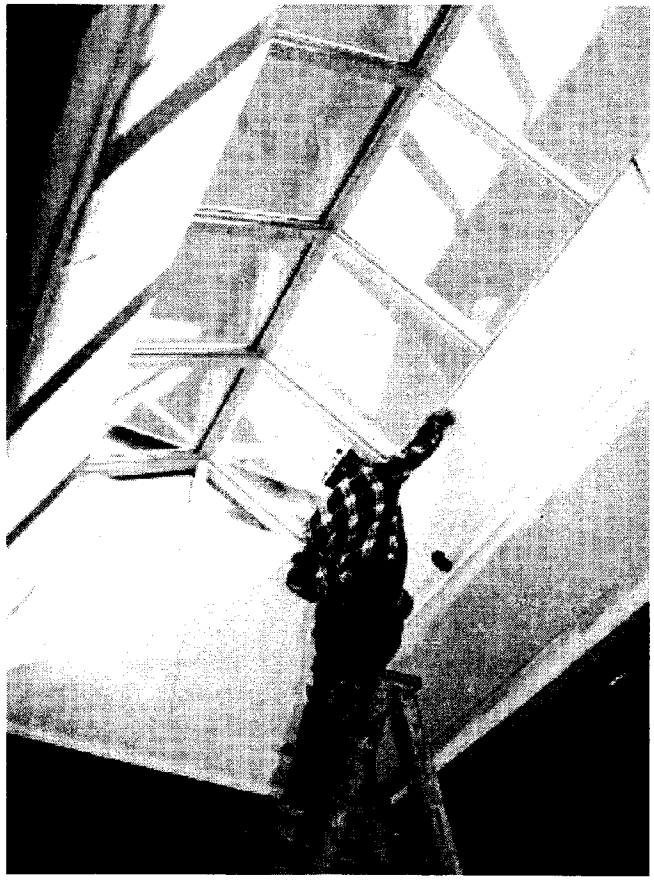
- **Recently received an award from the Association of General Contractors**
- **1,000,000+ square feet of building space**
- **1,282 new energy efficient windows**
- **386 historic blast resistant windows installed**
- **5,000 personnel relocated to swing space**
- **83 million pounds of debris removed**
- **28 million pounds of asbestos contaminated material removed**
- **70 percent of removed materials recycled**
- **A new bank of escalators traversing all five floors**
- **8 new elevators to increase vertical mobility**
- **New energy management control system**
- **New heating and cooling system**
- **New telecommunications infrastructure**
- **Five days from completion on 9/11**

CHALLENGES

All major construction in Wedge 1 had been complete prior to September 11, 2001. Careful review of the building structure was undertaken after the attack, and complete demolition of the C, D and E rings between Corridor 4 and Corridor 5 was necessary. The Phoenix Project encompasses the rebuilding of the structural elements and core and shell systems that were destroyed. The recovery of those areas outside of the Phoenix Project site and tenant fit-out of the Phoenix site are within the scope of the Wedge 1 and Wedge 2 projects. A goal of September 11, 2002 has been established for the tenant fit-out in the E-ring directly adjacent to the area of impact, with the completion of all other areas by March 2003.

A key turn over ceremony was held to commemorate the first Navy tenants to move into Wedge 1.

David O. Cooke, Director of Administration and Management (center left) and Pentagon Renovation Program Manager, Lee Evey (center, right) at the Wedge 1 Ribbon Cutting ceremony on March 8, 2001.



The skylights in the new Wedge 1 cafeteria, between the B and C-rings on the second floor, survived the blast from the terrorist attack without a crack. However, the cafeteria itself (pictured next page) suffered severe water and smoke damage.

In the aftermath of the attack, all portions of Wedge 1 suffered damage to varying degrees. Workers immediately began to remove damaged furniture, drywall, insulation, carpet, ceiling tile, and mechanical and electrical equipment that could not be refurbished or recovered. Much of these operations were accomplished under abatement conditions, since mold had grown in most of the Wedge 1 areas. The majority of this work was accomplished by December 2001.

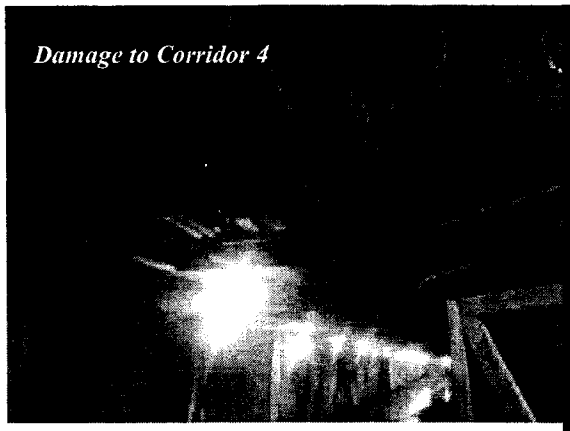
All of the telecommunications closets along Corridor 4 were destroyed in the attack and the majority of the remaining closets suffered significant smoke and water damage to active equipment. The only items not requiring total replacement included cable, cable tray and conduit systems. Due to the fact that all classified voice and data closets were destroyed, the Information Management and Telecommunications team was required to take extraordinary efforts to reroute and redirect communications systems to allow the rapid reoccupancy of tenant spaces.

Approximately 95 percent of all furniture in Wedge 1 was destroyed or significantly damaged. As soon as all furniture was removed or refurbished, new orders were placed according to tenant requirements.

In order to begin demolition and abatement work, it was necessary to isolate Wedge 1 from the rest of the building. To accomplish this task, mechanical, electrical, plumbing and communications systems had to be disconnected in Wedge 1 while ensuring that the rest of the building remained operational.

MILESTONES

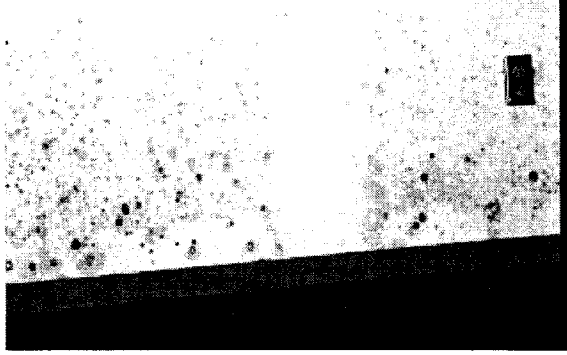
With a strong determination to get the Wedge 1 portion of the Pentagon back into operation, the Renovation team has performed around the clock to get the tenant spaces ready for reoccupancy. As of March 2002, 1,500 individuals have been moved back into permanent space. Phased move-ins will continue through March 2003, with reoccupancy for the next phase scheduled for the Summer of 2002. E-ring of the Phoenix area is scheduled for occupancy on September 11, 2002, and full occupancy of the Wedge is expected by March 2003.



Damage to Corridor 4

Smoke and water damage in the cafeteria. The remains of the double glass doors from Corridor 4 can be seen on the floor.

Mold flew up the walls from the millions of gallons of water pumped into Wedge 1 and 2 to fight the fires. Workers had to cut and replace all drywall six feet from the floor in this hallway.

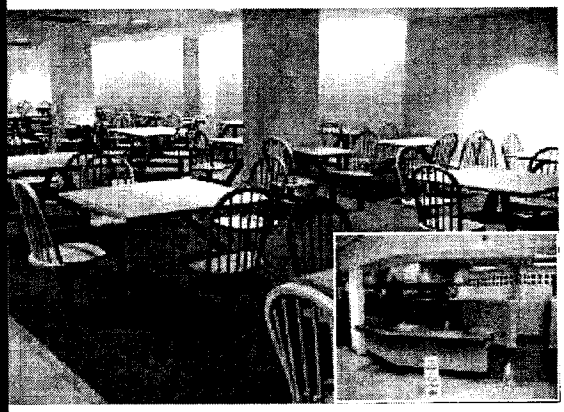


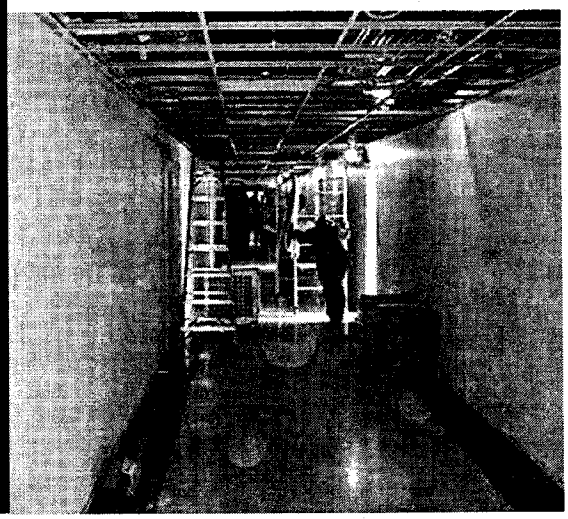
Then & Now

The photos on the left depict the damage done to various areas of Wedge 1 as a result of the 9/11 attack.

Many areas not in the direct path of Flight 77 suffered water damage from the newly installed sprinkler system. Debris and smoke damage from the ensuing explosion affected other areas like the new cafeteria.

To the right, the results of the many hours of work crews spent on cleanup and reconstruction of these areas.





Above, Pentagon employees using the Corridor 2 bridge to enter and vacate the building. Below, an aerial view of the Pedestrian Bridges.

SOUTH TERRACE PEDESTRIAN BRIDGES

The South Terrace Pedestrian Bridges Project includes two pedestrian bridges over Rotary Road, renovation of the loading dock, and connection to the second floor of the Pentagon at Corridors 2 and 3. The main purpose of the project is to provide separation of vehicular and pedestrian access while easing traffic congestion along Rotary Road. The bridges also serve to bring all pedestrians into and out of the Pentagon on the second floor, which will be the standard for all Pentagon entrances.

A five-phased construction plan was conceived for the South Terrace. Phases 1-3 included the Corridor 2 bridge and lobby entrance, new dockmaster offices, and the renovation of the eastern half of the existing South Terrace loading dock. Phases 4 and 5 include the bridge at the Corridor 3 building entrance and the bus stop wall connecting the two bridges, which also provides a visual and security barrier to the loading dock operation.

Due to the construction of the new Remote Delivery Facility, only the eastern half of the existing South Loading Dock was renovated. The western half was converted into occupiable tenant space.

After September 11, North Rotary Road, passing under the pedestrian bridges was closed and several lanes of parking spaces were eliminated. Traffic flow and parking returned to normal in February 2002. The cranes from the Phoenix Project can be seen in the background.

CHALLENGES

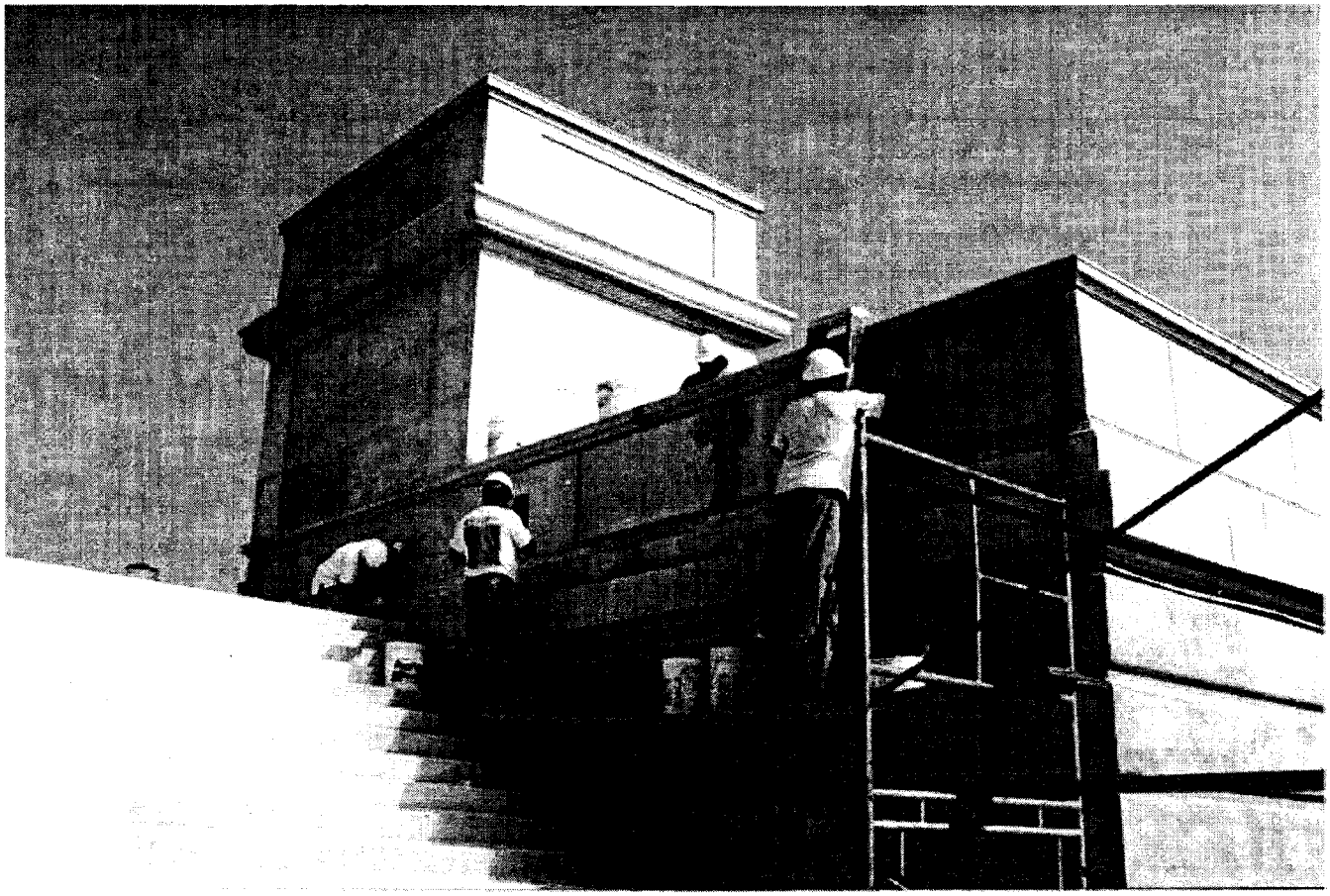
Due to the terrorist attack, Defense Protective Service has been operating under a heightened level of security. As a result, it was decided to indefinitely delay the opening of the Corridor 3 entrance into the Pentagon.

MILESTONES

The first bridge was completed in December 1999. The second bridge, and connecting bus stop wall, was completed in January 2001.

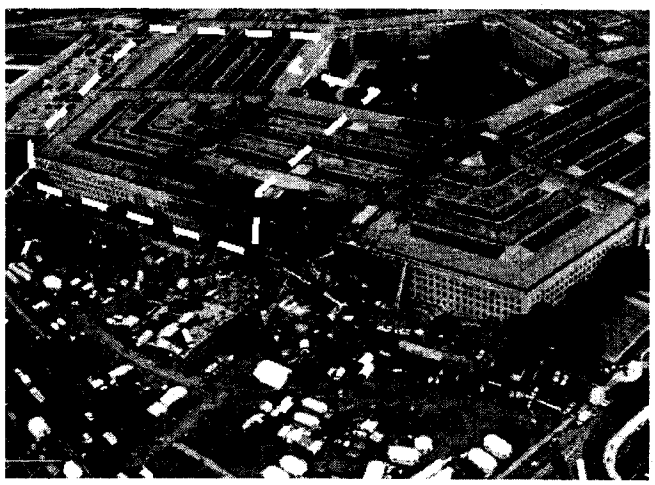
SOUTH TERRACE PEDESTRIAN BRIDGES

- **Awarded "Project of the Year, 2000" by the National Capitol Chapter of the Construction Management Association of America**
- **Moves Pentagon access to the 2nd floor**
- **Elevation of bridges provides safe walkway for pedestrians and easier flow of vehicle traffic.**



The new limestone cladding used on the South Terrace Pedestrian Bridges was mined from the same vein of stone in Indiana used during the Pentagon's original construction in 1941.

II. Work in Progress



From left to right: The outlined area highlights the one million square feet of Wedge 2 affected by the blast, ensuing fire and inevitable water and smoke damage. Wedge 2 had not yet been renovated and did not have an adequate sprinkler system. The fire in Wedge 2 continued to burn for about two and a half days. Prior to the attack, demolition and abatembent work had been scheduled to begin in Wedge 2 in December 2001. The abatement worker is dressed in a protective Tyvek suit and respirator due to the presence of asbestos, lead and mold. The scope of Wedge 2 renovation was cut in half to recover occupiable office space for Pentagon tenants to continue the execution and planning of the war effort. Demolition and abatement work continues in Wedge 2, adjacent to the recovered areas.

WEDGES 2-5

Wedges 2-5 make up 80 percent of Pentagon building space, approximately 4,500,00 square feet. The project will require relocating 20,000 tenants.

In addition to bringing the Pentagon into compliance with modern building, life safety, ADA and fire codes, the work to be accomplished includes removal of all hazardous materials, new elevators and escalators to improve vertical circulation, security and telecommunications upgrades, and design and installation of state of the art, energy efficient building systems. The project will maximize use of energy saving building materials and recycled products. Renovated spaces will be modern, efficient, and flexible. A key feature of the design is its universal space concept, which allows for great flexibility in reconfiguring spaces as tenants and/or functions change over time.

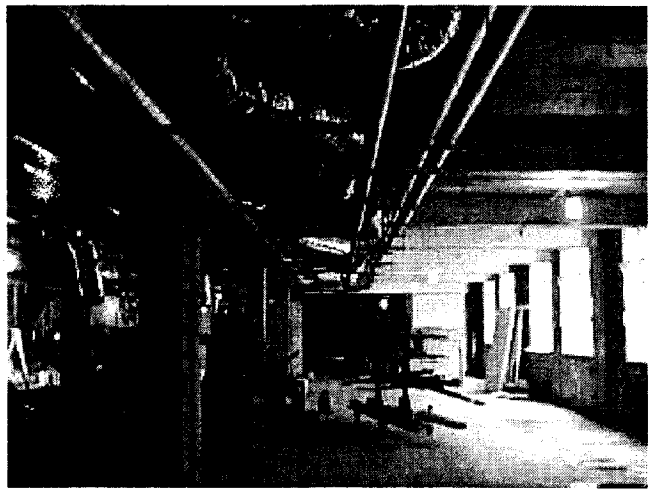
Following the September 11 attack, Wedge 2 construction was re-phased to allow for rapid re-occupancy of approximately half the wedge to accommodate tenants displaced from the building as a result of the attack. Recovery efforts to allow reoccupancy included utility restoration, construction of new barrier walls, decontamination and recovery of personal effects, remediation of mold, asbestos and lead dust, re-glazing of broken windows, and repair of water and smoke damage.

WEDGE 2-5 HIGHLIGHTS

- **4,500,000 square feet of building space**
- **Need to move the 20,000 people who occupy Wedges 2-5**
- **5,000 tenants to be coordinated/relocated during each phase**
- **Communication connectivity required for relocated tenants**
- **Design-build project delivery method planned**
- **Implementation of very flexible universal space concept**
- **Temporary utilities required for each phase to maintain existing building services**
- **Providing utilities for future occupiable use of Basement/ Mezzanine**
- **Demolition/abatement removal estimates:**
  - ***-332 million pounds of debris***
  - ***-115 million pounds of hazardous material***
  - ***-Goal of 70% material to be recycled***
- **New building elements:**
  - ***- Energy saving building elements/materials***
  - ***- Elevators/escalators***
  - ***- Automated building control systems***
  - ***- Thermal insulated and blast-resistant windows***
  - ***- Security upgrades***
  - ***- Building code and ADA compliance***
- **Relocation and build-out of Defense Secretaries/Operation centers**
- **Relocation and planning for food service and retail building functions**
- **External historical features preserved**

A view of the fifth floor of Wedge 2, where demolition work is almost complete

These photos show Wedge 2 areas on the fourth floor, where demolition has been completed and core and shell work has begun. In the top photo, new windows have been installed. Below, a view of some intial ductwork.



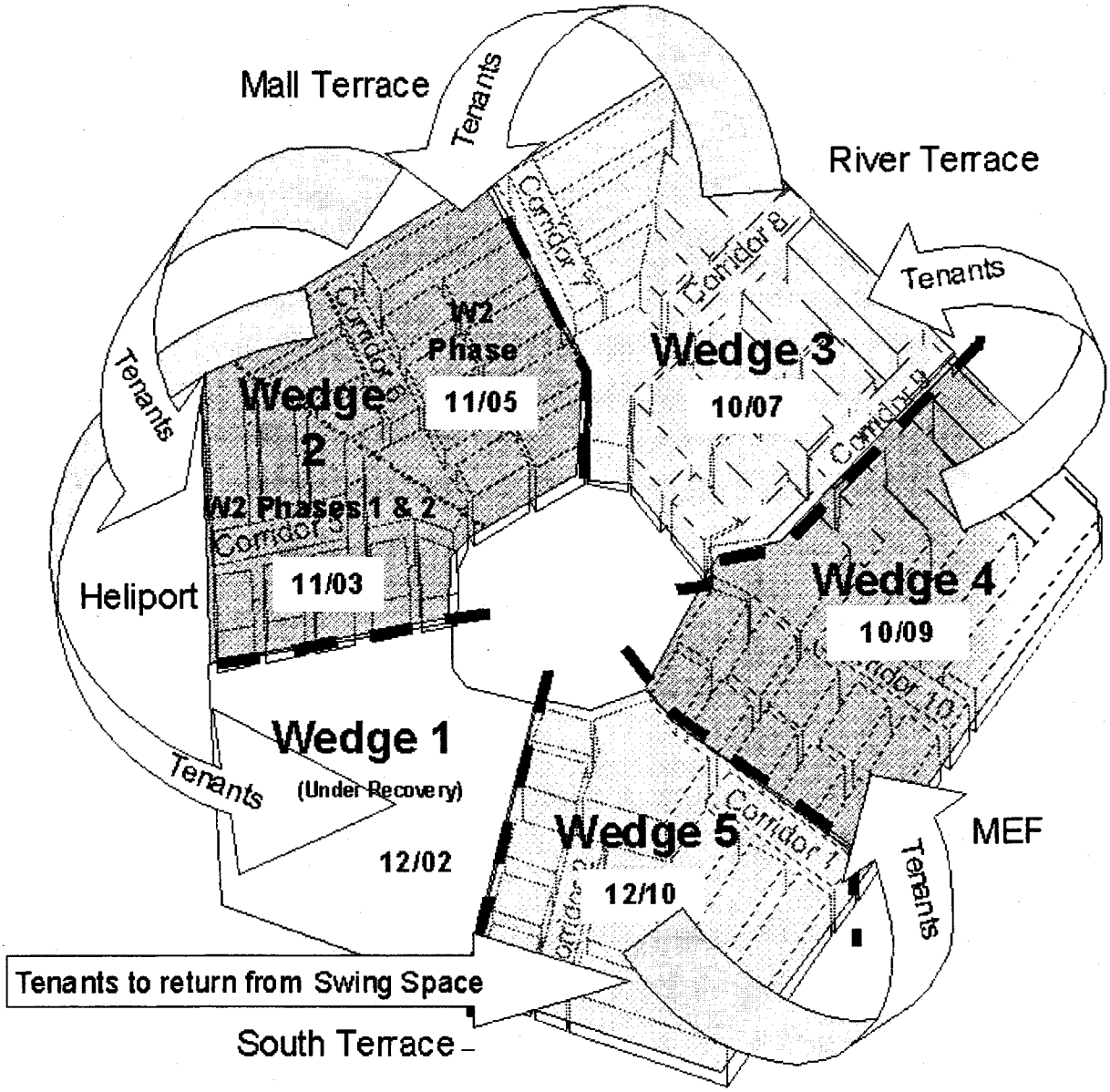
CHALLENGES

One of the challenges the team faces is to select building systems and materials with reasonable first costs (construction cost) to stay within budget while attempting to minimize the life-cycle cost of operating the Pentagon in future years. A key schedule risk is performing demolition and construction activities while keeping the building fully operational and working around its 20,000 occupants. Also logistically challenging is the planning and coordination of multiple tenant relocations to populate newly renovated areas. Approximately 5,000 tenants need to be moved during each phase of renovation.

MILESTONES

The renovation of Wedges 2-5 will be accomplished in phases, starting with Wedge 2. Renovation of follow-on wedges will proceed as tenants relocate to completed areas. The project, previously scheduled for overall completion in December 2014, has be accelerated to complete 48 months sooner in December 2010.

Recovery of the re-occupancy areas was completed by February 2002. Under the new phasing plan, Wedge 2 will be accomplished in 3 phases, with the first two phases scheduled for completion in October 2003 and the third phase in November 2005.



The renovation of the Pentagon needed a "jump start" to meet the conflicting demands of keeping tenants operational to continue the war effort while maintaining efforts to meet the advanced completion schedule of 2010. The phasing diagram above indicates that tenants will relocate from the recovered portion of Wedge 2 into Wedge 1 and the first phase of Wedge 2 by November 2003.

The Pentagon Renovation Program had moved approximately 5,000 tenants into swing space in the Pentagon and leased office space to accomodate the renovation of Wedge 1. In all, approximately one million square feet of swing space was renovated to complete this mission. Due to the terrorist attack, 800,000 square feet of office space was leased by General Services Administration to accomodate the 4,600 people displaced from the Pentagon. The Renovation Program provided logistical support and personnel for this effort.

SWING SPACE

Early in the planning process, it was determined that the most efficient way to renovate the Pentagon while keeping the building operational for its 25,000 tenants was to relocate one-fifth of the building's personnel from their current location in the Pentagon into temporary offices, or swing space, in and around the building. The vacated "wedge" is then demolished and abated of all hazardous materials before being built-out to meet the needs of the tenants in the adjacent wedge, who will move-in upon completion of the space.

Because full connectivity from external swing space to the Pentagon is so critical, three main external swing space buildings have been built-out with classified and unclassified telecommunications backbones, local area networks, telephone lines, and electronic mail. These three buildings feature modern office space with new systems furniture, state-of-the-art voice and data communications systems, and sophisticated security systems. It will be necessary for these swing space buildings to remain occupied by displaced Pentagon employees throughout the entire renovation, however, smaller leased spaces will be vacated and those leases terminated at the completion of Wedge 3. During calendar year 2000, swing space leases and lease delegation authority were transferred from the US Army Corps of Engineers to the Office of the Secretary of Defense, Washington Headquarter Services - Space Policy and Acquisition Division, which now supports the Renovation Program with these activities.

In addition to the previously built-out external swing space, the Renovation Program does not anticipate a need for additional swing space due to the profile of upcoming tenants affected by future wedge construction. As renovation work progresses around the building, the list of essential personnel who must remain inside the Pentagon during renovation is increasing and will peak with Wedges 3 and 5. Everyone who could afford to move out of the building for the duration of the renovation is already located in external swing space.

During this past year, approximately 120,000 square feet of swing space identified within the Pentagon was occupied by Wedge 2 tenants not slated to move into Wedge 1. Such areas include:

- The former DiLorenzo Clinic (approximately 30,000 square feet)
- A large portion of space vacated as a result of a planned tenant move to Federal Office Building #2 (approximately 65,000 square feet).
- The former Defense Post Office (approximately 12,500 square feet)
- A portion of the public cafeteria located near Corridors 1 and 2 on the Second Floor (approximately 11,000 square feet).

The first swing space move-outs into newly renovated areas of the Pentagon began in early 2001 with a move into the new Remote Delivery Facility, followed by the re-occupancy of Wedge 1.

CHALLENGES

As a result of the September 11 attack and the congressional direction to complete the overall renovation by 2010, the swing space requirements may drastically change.

Further complicating the swing space mission is the need to eliminate the use of the Butler Building due to security reasons. When the last tenants move in the spring of 2002, the Butler Building will be removed from the swing space inventory and will be used for material storage.

4,600 people were displaced from Wedges 1 and 2 as a result of the terrorist attack and there was an immediate need for 800,000 square feet of additional swing space. As part of the emergency response, General Services Administration, in coordination with RE & F took over the coordination of identifying and building out this space while the Pentagon Renovation Program recovered the least damaged spaces in Wedge 1 and Wedge 2 for rapid reoccupancy.

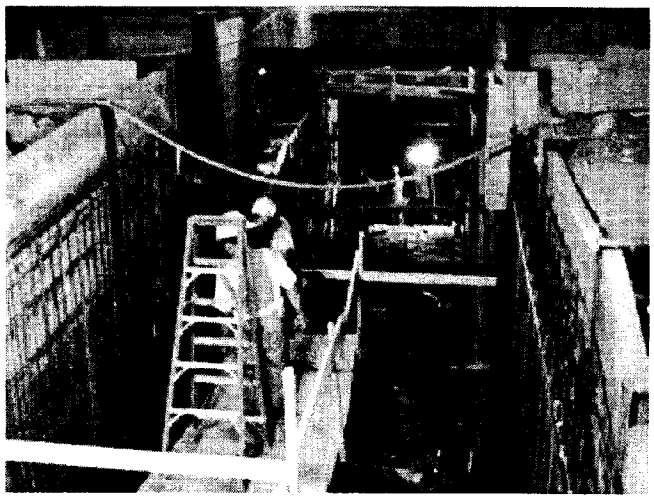
SWING SPACE HIGHLIGHTS

- **910,000 square feet (45 floors) renovated**
- **Over 7,000 personnel moves accomplished**
- **New communications systems installed**
- **Connectivity with the Pentagon maintained**

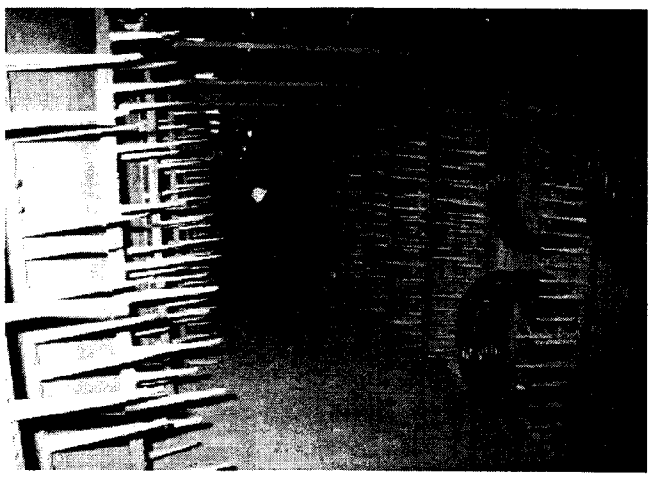
MILESTONES

The need for swing space will be ongoing throughout the renovation process. The projected completion date for the renovation of the Pentagon is 2010.

Program Manager Lee Evey, (left) checking in with Swing Space tenants.



Above, excavation work progresses on the General Purpose Switch Room Tunnel, a project essential to the modernization of information and telecommunications in the Pentagon. Below, the existing A-ring steam tunnel has been cleared of all old utilities. The metal racks will be used to shelve conduits for data cable and wiring.



BASEMENT/MEZZANINE SEGMENTS 2-3

Segment 2A1 and Segment 3 of the Pentagon's Basement and Mezzanine levels comprise approximately 500,000 square feet of below ground space. In 2001, the plan to suspend renovation work in the basement other than some portions of Segment 3A, which will be used for the new Physical Fitness and Readiness Facility, was revised to include build-out of approximately 30,000 square feet of space within the basement for permanent general office space for the Navy. The Navy will fund this construction effort. The Pentagon Renovation Program will provide for a new "four spot" electrical vault, in which the Program will initially install two transformers and associated switchgear.

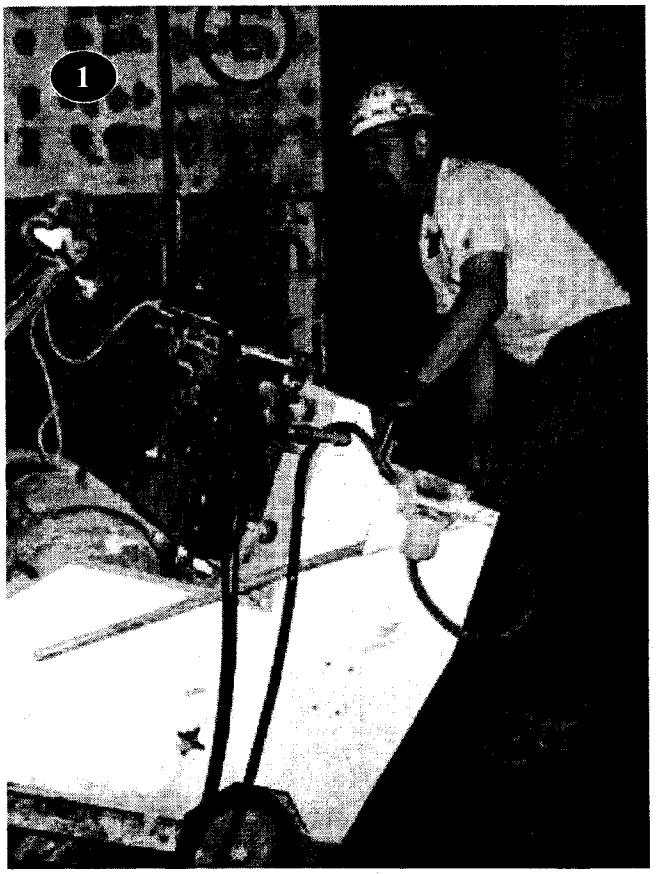
An enhanced universal space plan is being implemented in the basement to facilitate the Congressional directive to accelerate renovation of the Pentagon. This will be flexible space that can be used for a variety of purposes during construction, including control centers, data processing or general office space.

CHALLENGES

Tenants moved into the basement could be adversly affected by construction overhead as renovation work advances around the building.

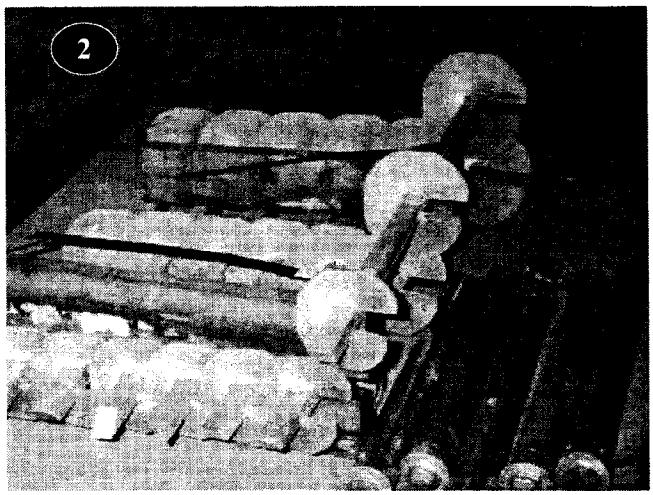
MILESTONES

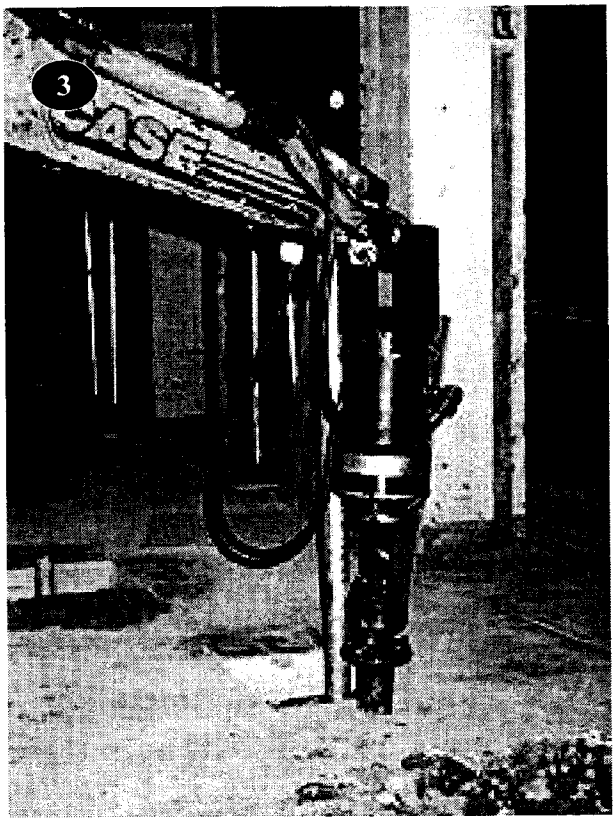
Construction started in January 2002 with installation of helical screwed piles that will support a new structural floor slab. The project is to be completed by December 2002.



BASEMENT/MEZZANINE SEGMENT HIGHLIGHTS

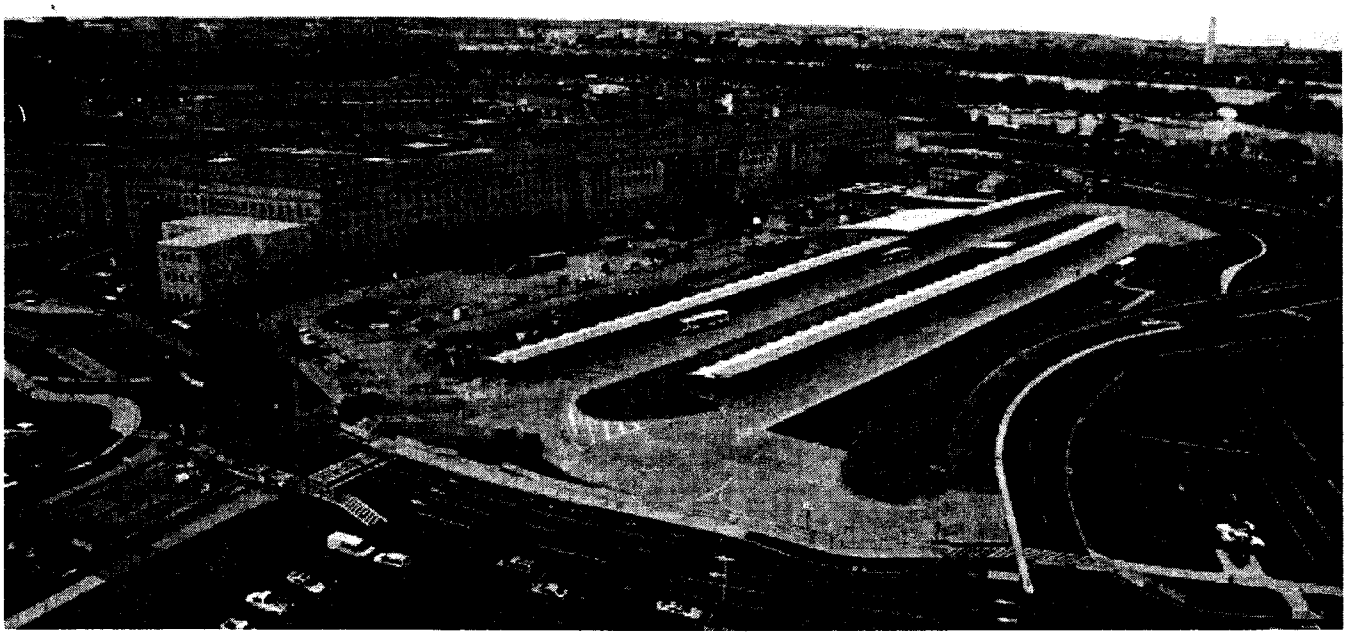
- **150,000 square feet of space demolished and abated in preparation for new construction to begin.**
- **175 linear feet of tunnel added to communications trenches.**
- **1,200 personnel moved into renovated space.**
- **30,000 square feet prepared for new construction.**





Preparing the helical screwed piles.
A worker first cuts out a rectangular area in the floor (1), to mark the area where the screws (2) are to be machine driven (3). The slabs are placed on top of the helical screws.

II. Work in Progress



The new Pentagon Transit Center increases the distance between buses and the face of the Pentagon.

For the weekend of the grand opening, project managers covered the lights with a red, white, and blue film for a patriotic feel.

METRO ENTRANCE FACILITY

The Metro Entrance Facility project was directed by Congress in the FY2000 Department of Defense Appropriations Act in response to threat assessments that identified the need to improve the physical security of the Pentagon. These initiatives involved relocating the bus station away from the face of the Pentagon and removing the existing direct entry into the building from the Metrorail station. Under the revised site configuration, all persons entering the Pentagon will be screened in a building addition that will serve as a public access control area. This addition will also house the Pentagon Tour Office and Badge Office.

The new Pentagon Transit Center, which opened December 16, 2001, is of significant interest to the surrounding communities as 34,000 people transit through the facility each day. Working closely with the Washington Metropolitan Area Transit Authority, members of Congress and their staffs, as well as the public, the Pentagon Renovation Program was able to address the concerns of the various interested parties and incorporate their needs into the design, while still meeting the Department of Defense security requirements. It is important to note that mass transit operations and access into the Pentagon will be maintained during all phases of the project.

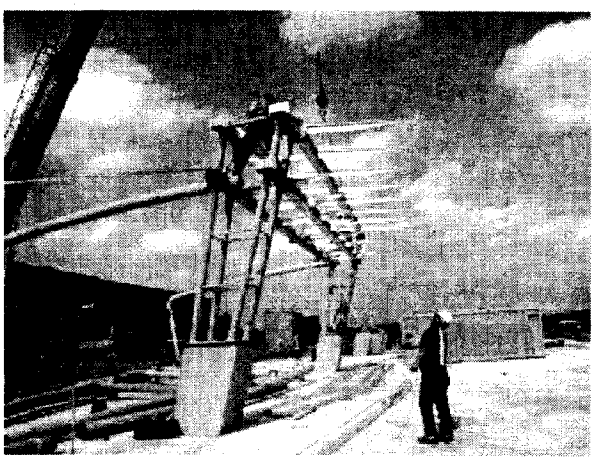
The Metro Entrance Facility is the second project within the Pentagon Renovation Program to use a design-build project delivery system. A single design-build team is responsible for the design and construction of the project.

Construction of the new bus station included two bus platforms and realigned roadways, a Metro sales office, and support spaces. Additionally, the Pentagon Renovation Program will provide the infrastructure to support future transportation technology.

METRO ENTRANCE FACILITY HIGHLIGHTS

- **34,000 People use the facility on a daily basis.**
- **New security enhancements, such as better lighting and closed circuit TVs added.**
- **Mass Transit Operations and Pentagon Access Maintained for duration of the project.**

David O. Cooke, Director of Administration and Management addresses the crowd, including Congressman Jim Moran (center), at the grand opening ceremony of the Pentagon Transit Center. The new intermodal transportation facility opened December 16, 2001.



Workers erect the "whale bone" structure for the shelter that will eventually help to sheild Metro bus users from the elements.

Concrete is placed to form the tunnel between the upper and lower bus platforms.

Passengers boarding and leaving buses at the new Pentagon Transit Center.

CHALLENGES

Temporary utilities for the Metro Entrance Facility project will be needed to support the multiple phases of construction required for maintaining mass transit operations and access into the Pentagon throughout construction.

Finally, given the nature of the construction and the high volume of traffic flowing through the facility each day, temporary barricades and walkways will be used extensively to protect facility users from the hazards associated with construction.

MILESTONES

Phase One - The entire facility design and construction of a taxi staging area, was awarded in September 2000.

Phase Two - The option for the construction of the bus facility and the building addition, was awarded in January 2001.

Construction began in April 2001. As a result of the terrorist attack on September 11, 2001, all bus traffic was rerouted to Pentagon City Mall where it remained until the completion of the new facility. Direct access from the Metro platform into the Pentagon was permanently eliminated.

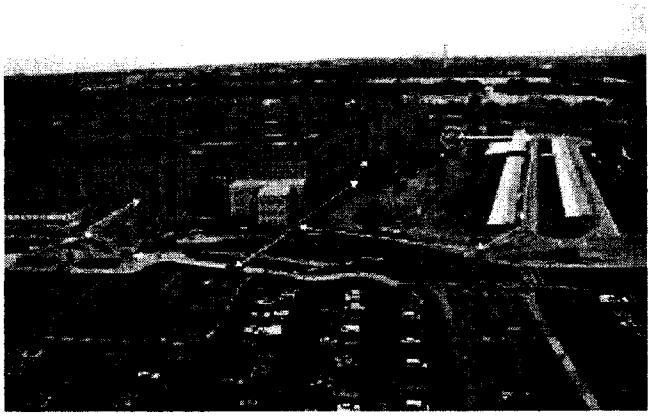
December 16, 2001, the new Pentagon Transit Center opened for business and bus traffic was allowed to return to the Pentagon.

Phase Three - Following the transition of bus operations to the new facility, construction began on the Pentagon building addition and the interface zone between the Pentagon, Metrorail station exits, and the bus facility.

In June 2003, a temporary path will open providing Pentagon personnel and visitors with a direct path into the Pentagon on ground level.

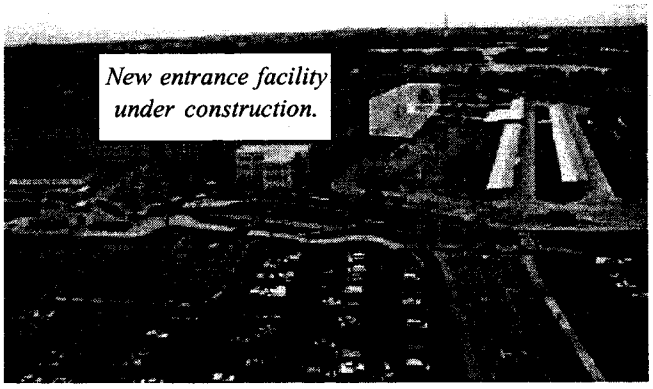
Project completion is scheduled for early November 2003.

Pentagon Renovation Personnel meets with representatives from WMATA.

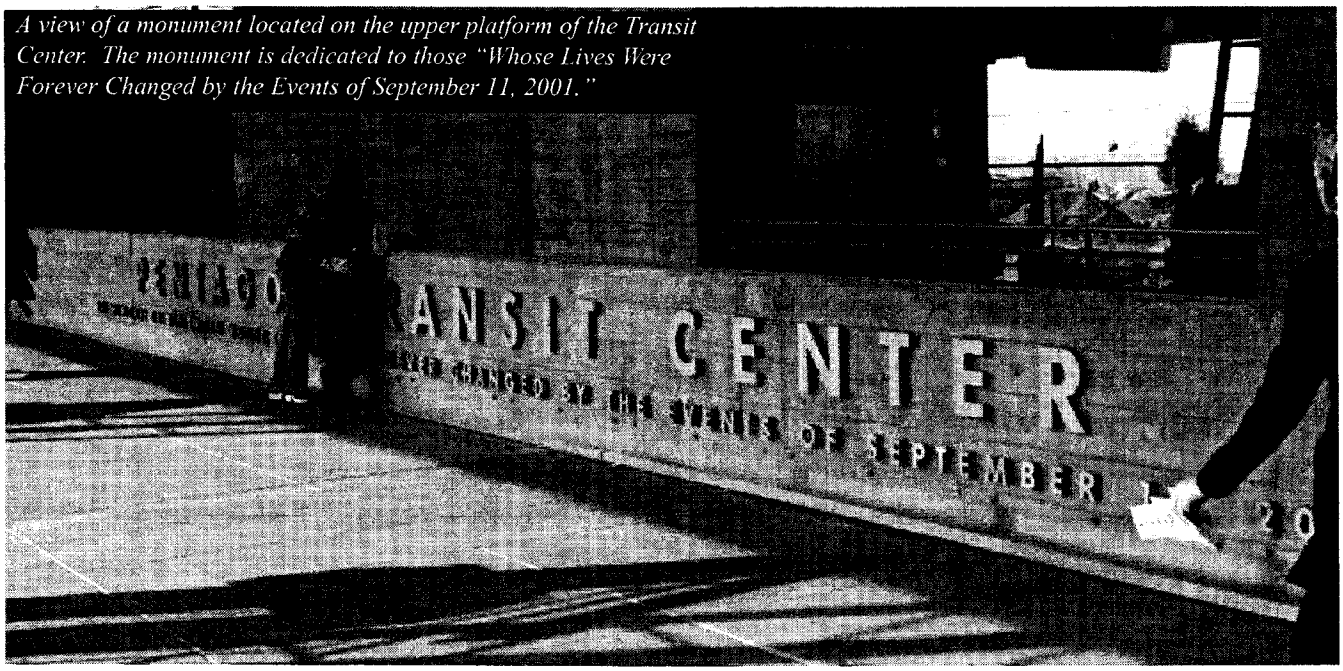


The current path of pedestrian travel from the Pentagon Transit Center into the Pentagon.

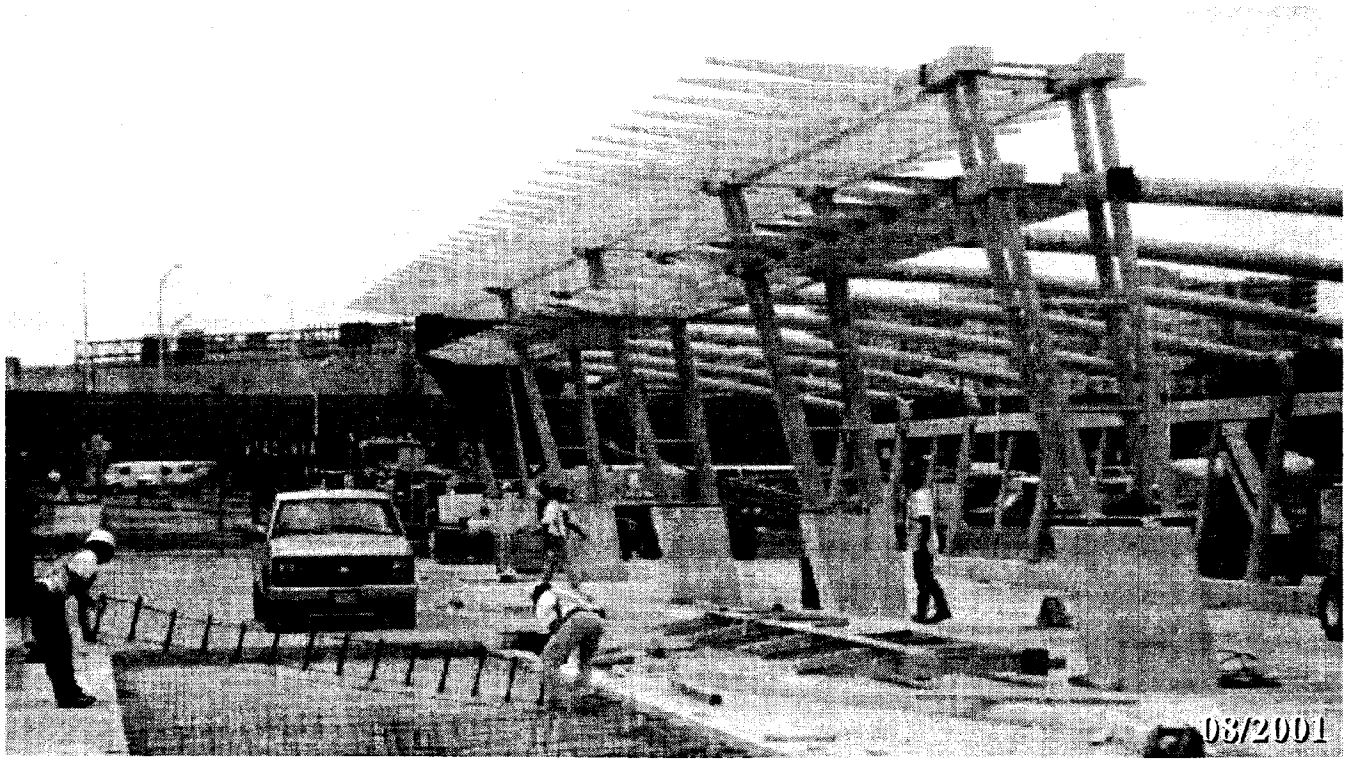
In Summer 2002, a direct path into the Pentagon will be opened at ground level. Pedestrians will be protected from the surrounding construction site by temporary barrier walls. The route will be similar to the final configuration when the new entrance facility is complete in November 2002.



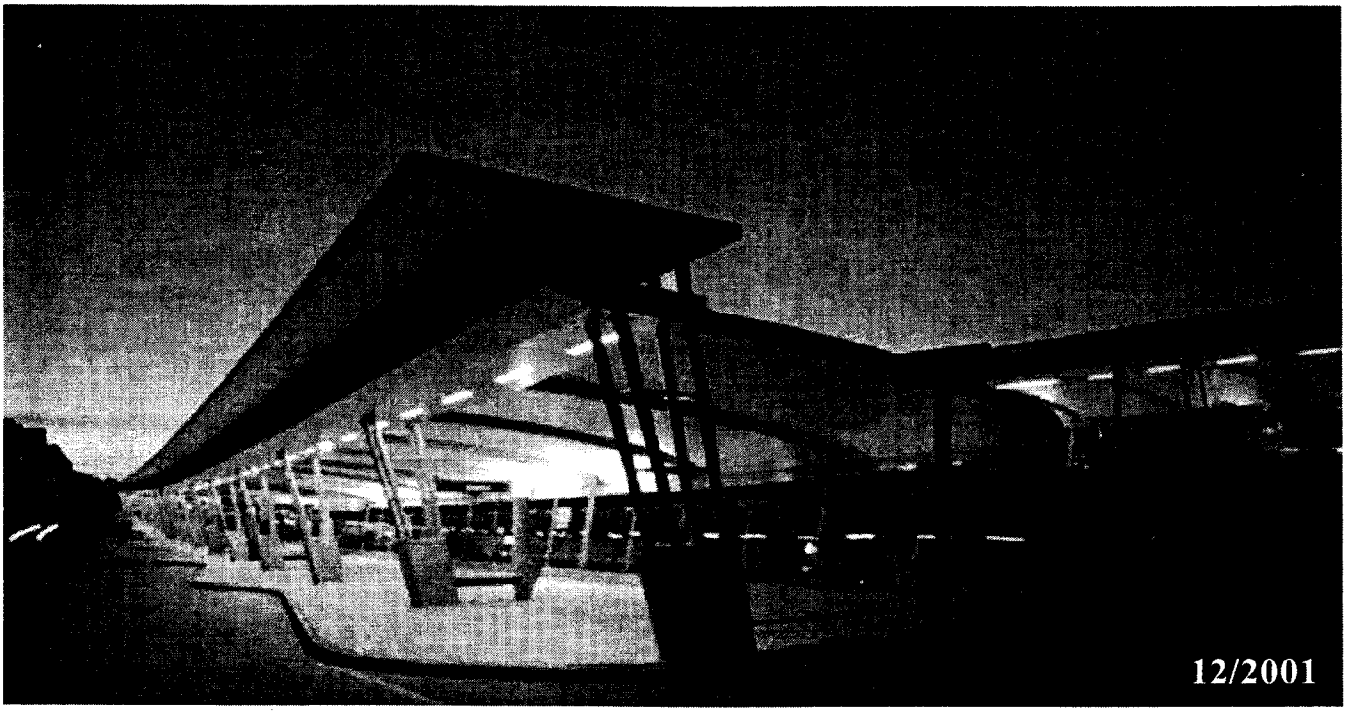
New entrance facility under construction.

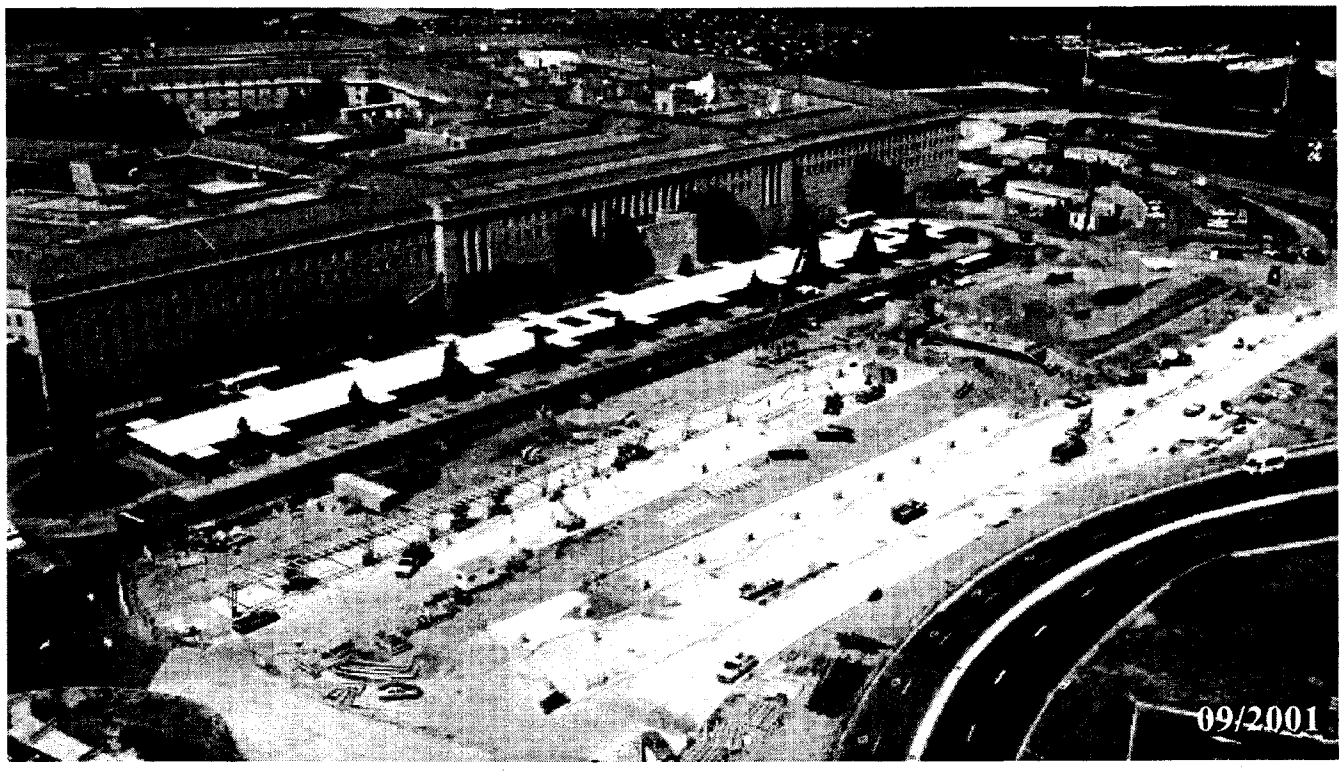


A view of a monument located on the upper platform of the Transit Center. The monument is dedicated to those "Whose Lives Were Forever Changed by the Events of September 11, 2001."

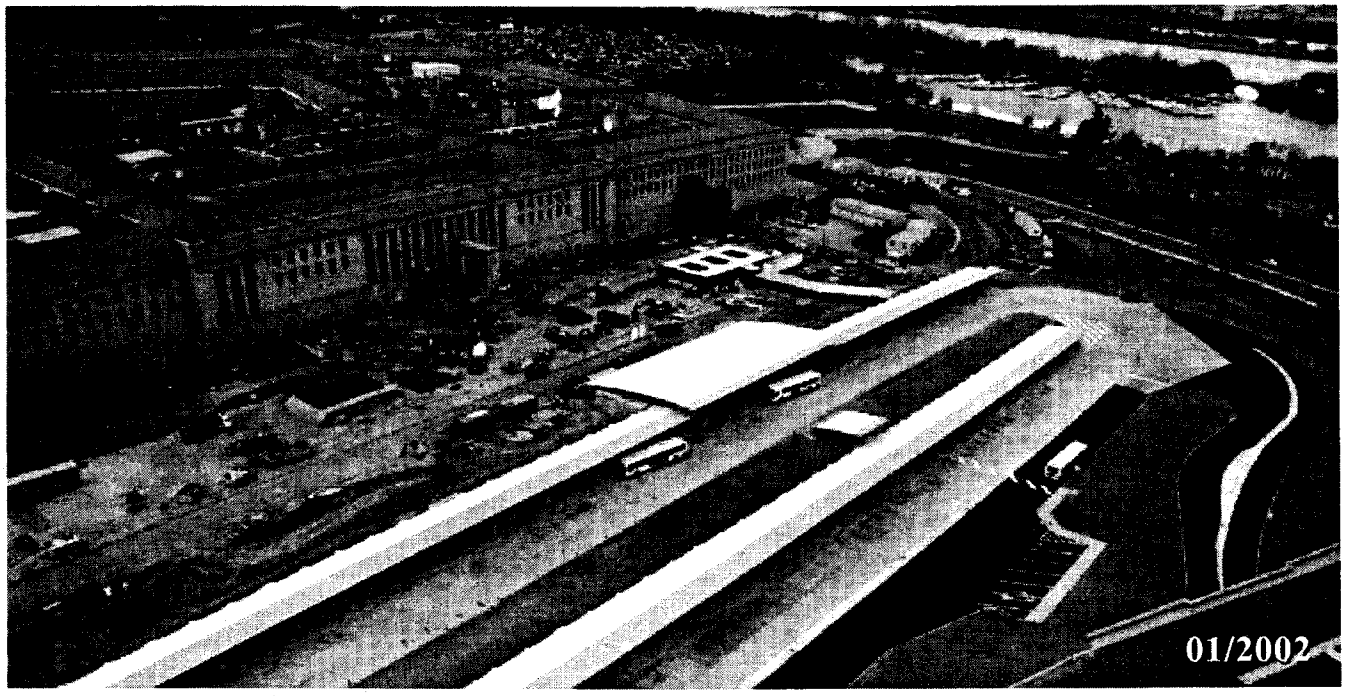


In the Photo above, workers building the shelter structure above the bus platforms. Below, the finished structure, illuminated with our nation's colors, just prior to the opening of the new bus loop, the first Phase of the MEF project.

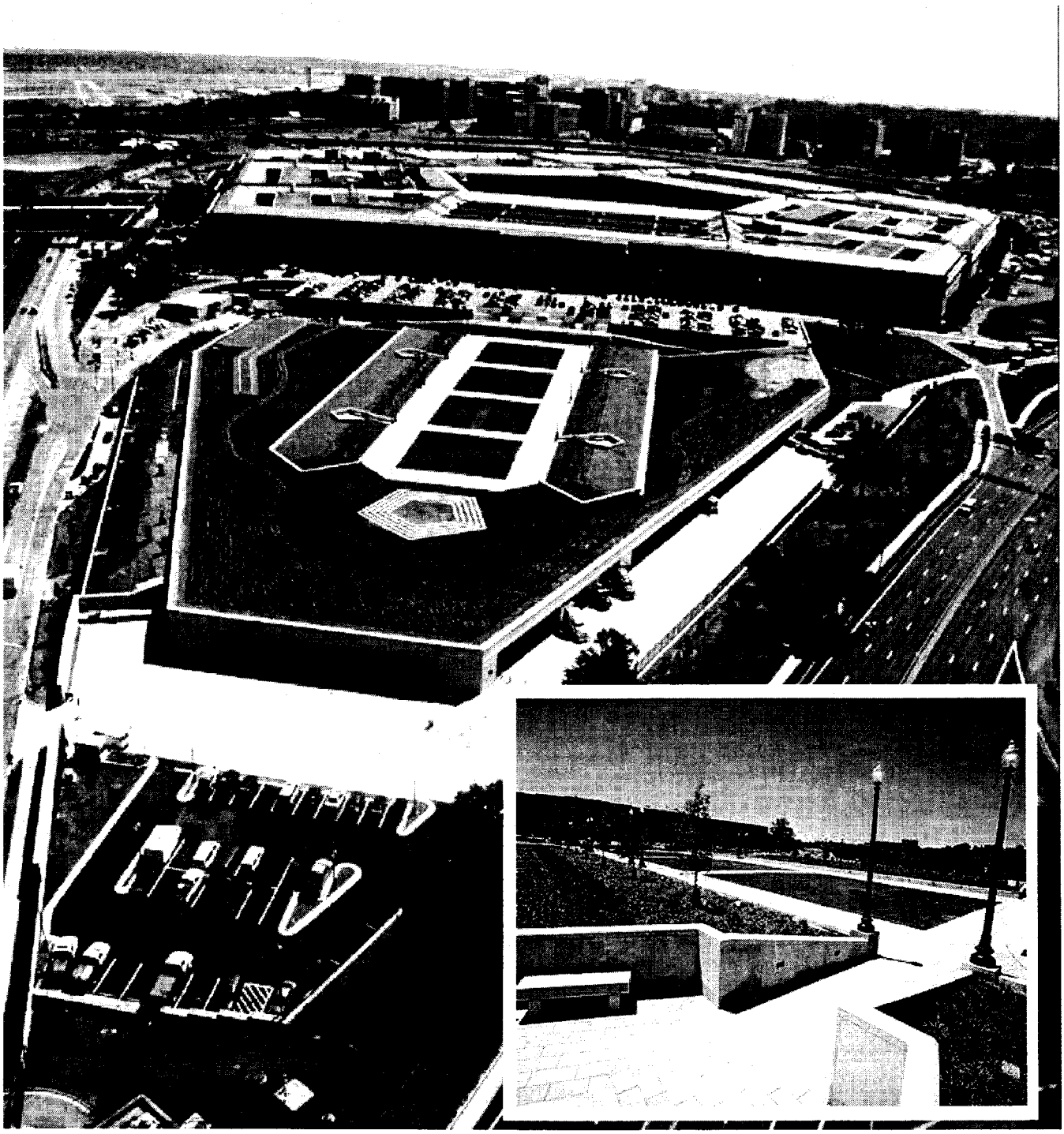




Security was a priority in building the new Metro Entrance Facility before the attack on September 11. Above, the former location of the bus loop is visible as the new bus platforms are built. Below, the new location of the bus loop is visible as, construction activity continues on Phase 2, the new entrance facility.



II. Work in Progress



The Remote Delivery Facility is located adjacent to the Pentagon's Mall Terrace between Rt. 110 (left) and Rt. 27 (right).

REMOTE DELIVERY FACILITY

The Remote Delivery Facility (RDF) is the new 250,000-square foot shipping and receiving facility adjoining the Pentagon. Phases 1 and 2, which included the Loading Dock Area and Building Support offices, were in full operation as of January 2001. The RDF significantly improved the physical security of the Pentagon by providing a secure consolidated location to receive and screen thousands of items shipped to the building each day.

Landscaping and roof irrigation was completed in November 2001. Approximately two acres of the roof area was planted with grass and different varieties of plants.

The last phase of the project is the commissioning of the physical plant, which is nearing completion. The project remains under budget.

CHALLENGES

The RDF was the point for screening all incoming deliveries and shipments to the Pentagon prior to September 11. The loading dock area was used for a variety of different purposes in the aftermath of the attack.

MILESTONES

May 17, 1999 - Excavation work began

August 31, 2000 - Phase one was completed with the opening of the receiving facility.

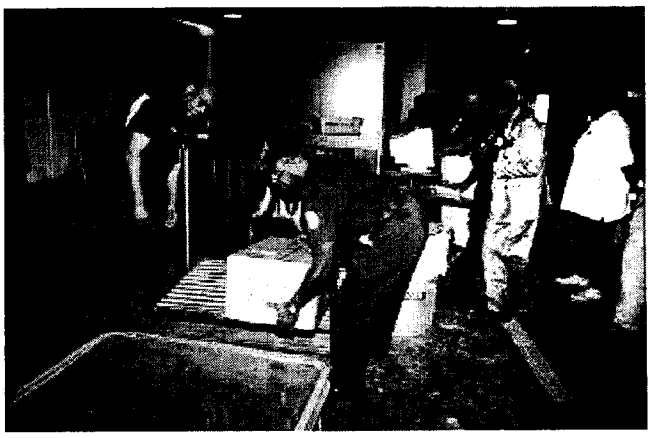
December 2000 - Building support offices were complete and operational.

November 2001 - Roof landscaping and irrigation complete.

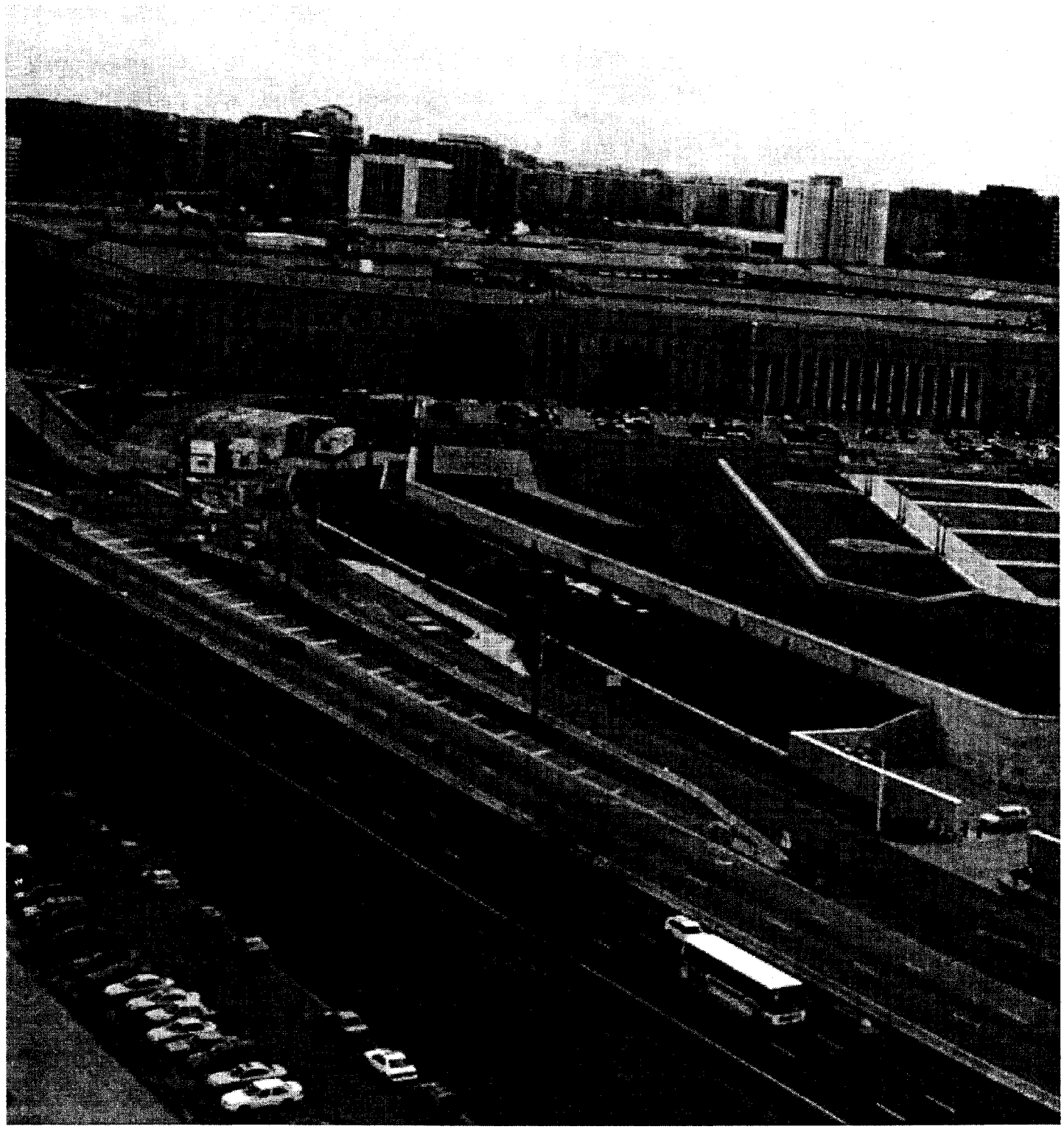
February 2002 - Tie-in to the Pentagon building systems is scheduled. Completion of Phase 3 physical plant complete.

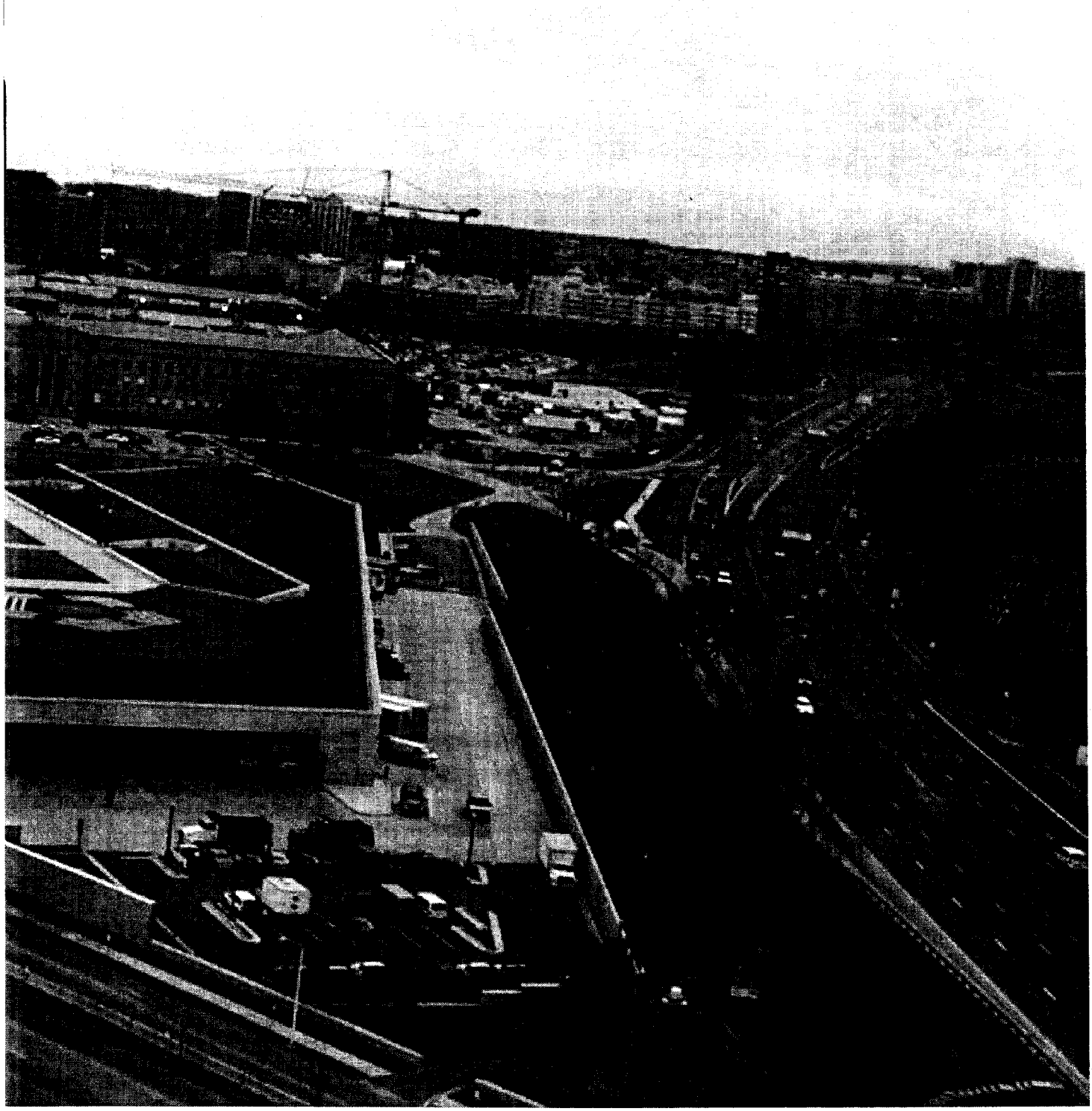
REMOTE DELIVERY FACILITY HIGHLIGHTS

- **38 Loading Docks**
- **Receives an average of 250 trucks per day - thousands of packages**
- **Material screening, handling and security functions**
- **Maintenance shops and light industrial operations**
- **The roof is landscaped to create a park-like atmosphere**
- **First major project to utilize a design-build, incentive/award fee delivery system**



All packages are scanned through an X-ray machine at the RDF before being delivered to the Pentagon.





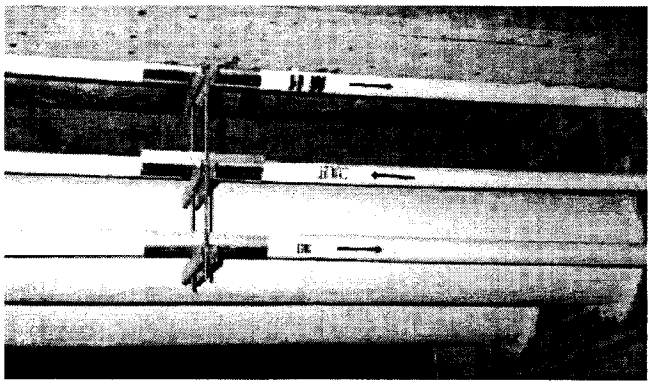
The location of the Remote Delivery Facility enhances Pentagon security by diverting all delivery vehicles from the surrounding highways away from the building.

CHILLED WATER LINE FEEDERS

CHILLED WATER LINE FEEDER HIGHLIGHTS

- **900 feet of new 36-inch pipe**
- **Half of the Line is Below Ground**
- **The remaining half of the line is installed in existing utility tunnel**
- **Small and disadvantaged business contractor**

The installation of new chilled water line feeders into the building is complete. This project connects the chilled water lines of the Heating and Refrigeration Plant from their termination point in South Parking to the new chilled water loop installed in the Center Courtyard. The two new 36-inch lines complete the chilled water main piping for the building's air-conditioning system. Two separate small disadvantaged businesses completed the project, which had been abandoned by the original contractor.



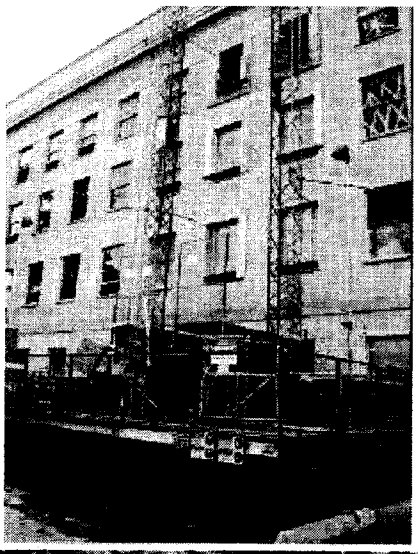
Chilled Water Line feeders in the Utility Tunnel.

Workers preparing for the installation of new Chilled Water Line Feeders.

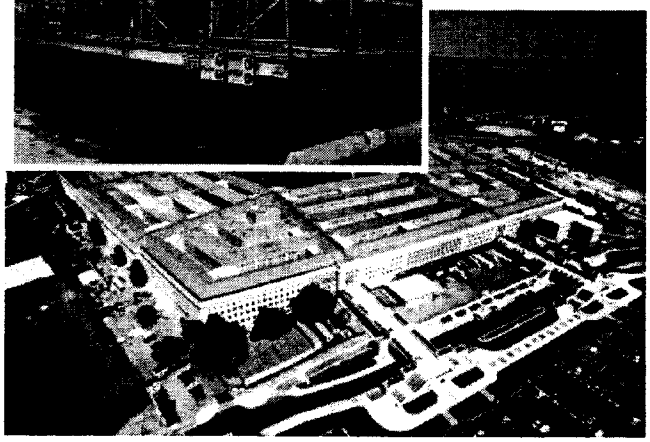
LIMESTONE CLEANING & REPOINTING

The Pentagon Renovation Program was requested to undertake and manage the cleaning and repointing of the exterior Wedge 1 façade of the Pentagon. The Renovation Program negotiated a contract for this effort in June 2001. This incorporated the demolition and rebuilding of the corner apex of the Wedge 1 exterior, which showed evidence of structural failure. The work on this project was performed by a small disadvantaged business.

The cleaning crew had just vacated their work platform in preparation for relocation when the aircraft hit the building adjacent to the platform on September 11.



The Program was able to complete exterior facade improvements on Wedge 1 (pictured below) despite the 9/11 attack.



CHALLENGES

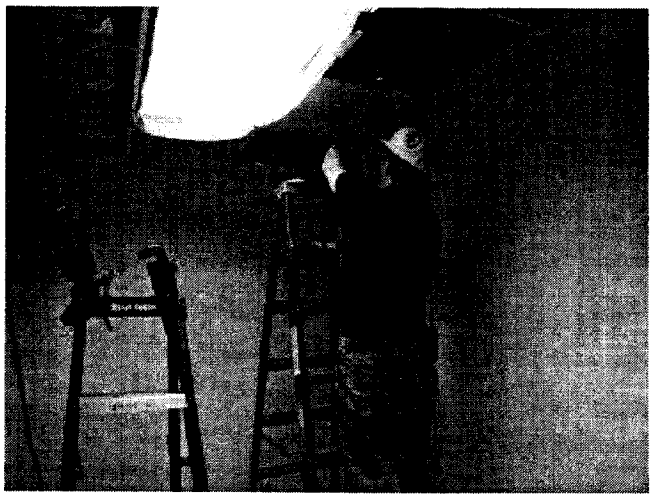
This contract was briefly suspended as a result of the September 11 attack on the Pentagon.

MILESTONES

The Wedge 1 cleaning and repointing project was completed in January 2002.

RELOCATION OF THE NATIONAL IMAGING AND MAPPING AGENCY

To provide effective and efficient space to accomplish their mission, it is necessary to relocate the National Imaging and Mapping Agency (NIMA) office, which is presently situated in Basement area. They will be relocated to a permanent facility adjacent to Wedge 1 in the vicinity of Corridor 3. The Program negotiated a design-build contract in August, 2001.



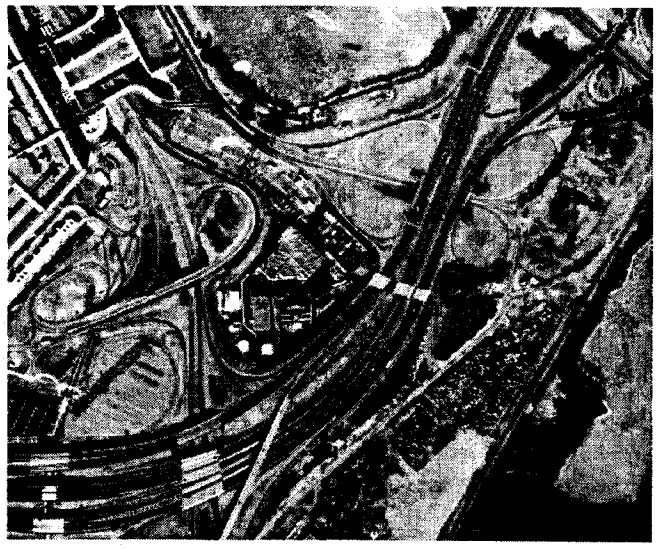
After a brief delay, Tenant Fit-Out work progresses rapidly in the NIMA office.

CHALLENGES

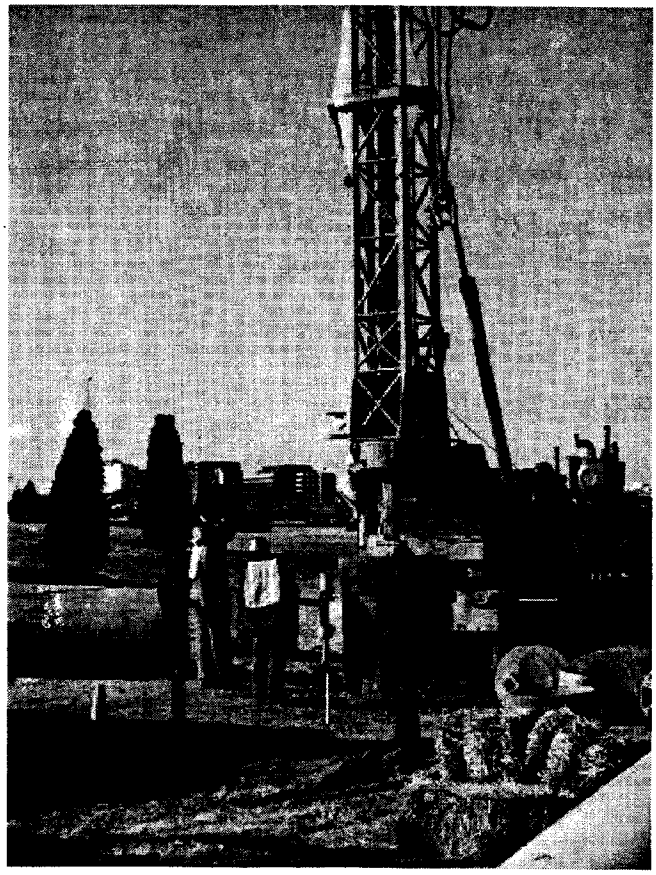
The contract was briefly suspended as a result of the September 11 attack.

MILESTONES

Tenant move-in is anticipated in April 2002.



Initial site planning is being done for the new screen house, which will be located adjacent to the H&RP.



Preliminary drilling for the water intake line along the banks of Boundary Channel Lagoon. Workers will drill about 70' into the earth, where the intake lines will be placed and tunneled to the H&RP.

PENTAGON HEATING AND REFRIGERATION PLANT (H&RP), INTAKE/OUTFALL PROJECT

The Pentagon Heating and Refrigeration Plant (H&RP) Intake/Outfall Project will install a new condenser water system to the H&RP plant. The underground intake water line supplies condenser water (141,000 GPM) to the Pentagon air conditioning chillers. The underground outfall line dispenses warmed condenser water into Roaches Run Waterfowl Sanctuary. The intake line, which is 600 feet long and 88 inches in diameter, will be micro-tunneled, 70' deep from the Pentagon H&RP to Boundary Channel Lagoon and pass under the WMATA Metro-Rail Yellow Line. There will be an intake structure built at Boundary Channel Lagoon and a new screen house built at the H&RP. The outfall line, 1600 feet in length, will be primarily open cut from the H&RP to Roaches Run Waterfowl Sanctuary to install a 72-inch outfall line. A small portion at the end of the outfall line will be tunneled under the CSX Railroad. At the Railroad tracks, the 72-inch outfall line will be split into dual 42-inch lines and micro-tunneled 12 feet under the CSX Railroad tracks. There will be a small outfall structure built at Roaches Run Waterfowl Sanctuary.

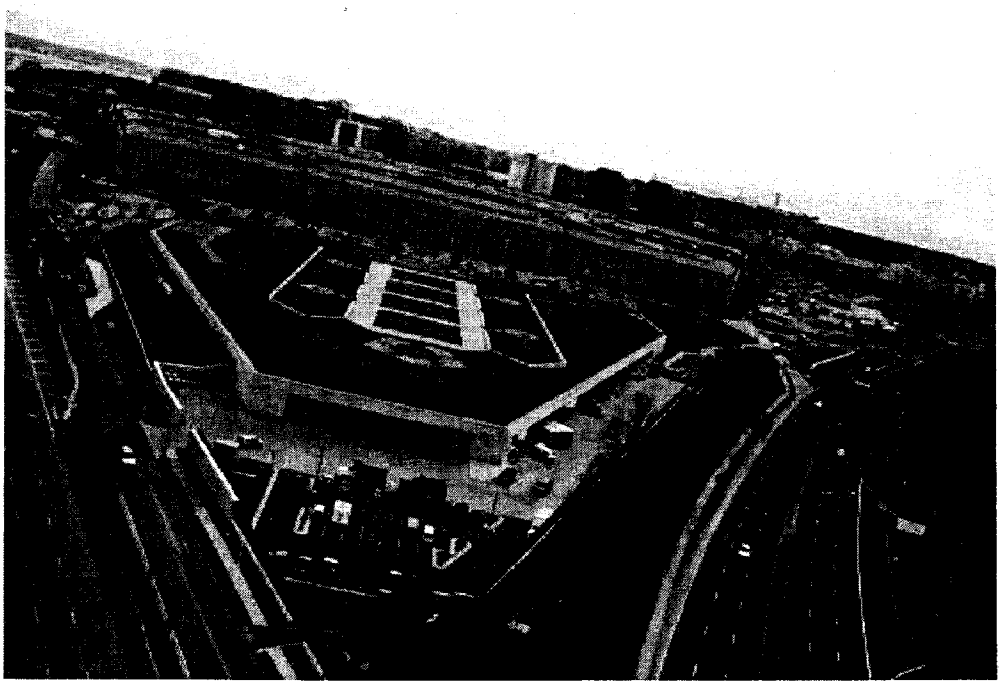
The 50 percent design submittal was delivered in January 2002 and construction began in March 2002. Phase 1 of the project is the intake tunnel, the intake structure at Boundary Channel Lagoon, and a portion of the Screen House at the H&RP. Phase 2 is the completion of the of the Screen House at the H&RP, open cut the 72" outfall line, the boring two 42" tunnels under CSX Railroad, and construction an outfall structure on Roaches Run Waterfowl Sanctuary.

MILESTONES

The remaining work on the screen house and the entire outfall line and structure has been included in the project as options and will begin when funding becomes available, estimated FY 03. The project is on schedule and within budget. Phase one is scheduled to be complete in October 2003.

ROADS, GROUNDS & SECURITY TEAM

The Roads, Grounds and Security Team was established in November 2001 with the purpose of providing modifications to the existing Reservation road network so that new Reservation security needs can be accommodated. These modifications will be accomplished through use of a five-year term contract design-build, incentive/ award fee delivery system. The Phase I RFQ for these services was advertised on January 15, 2002.



Plans are underway to construct a secure delivery lane to the Remote Delivery Facility. Other future projects include a security bypass around the River Terrace.

Individual projects anticipated on the Pentagon Reservation as part of this Program include the installation of a secure access lane from Route 27 to the Remote Delivery Facility, and a security bypass to move vehicular traffic away from the River Terrace of the Pentagon. In addition, the program is reviewing the creation of an internal security response lane around the perimeter of the Pentagon, parking lot reconfigurations, and approach control for existing Reservation access roads. Additional security enhancement projects will be included in the program as needs are identified. The estimated cost of identified individual projects is $50 million.

MILESTONES

Contract award for the first individual project, the installation of the Route 27 / secure RDF delivery lane, is targeted for Summer 2002. Construction is slated to begin in early Fall 2002.

PHYSICAL FITNESS AND READINESS FACILITY HIGHLIGHTS

- **Functional Full Basketball Court and Half Courts**
- **Volleyball/Badminton Courts/Multi Purpose Room**
- **Squash and Handball/Racquetball Courts**
- **Running Track**
- **Lap Pool**
- **Weight Room and Heavy/Speedbag Area**
- **Cardiovascular Room**
- **Aerobics/Cycle/Multi Purpose Room**

A 3-D conceptual drawing, showing full court basketball courts and a jogging track.

PHYSICAL FITNESS AND READINESS FACILITY

The Pentagon Physical Fitness and Readiness Facility (PFRF) will replace the existing 55-year-old Pentagon Athletic Facility with a larger, modern facility that meets membership fitness and readiness needs based on current usage patterns and anticipated incremental growth. The 120,000-square-foot facility will be located at basement level underneath and adjacent to the Pentagon's Mall Terrace.

Tenants, previously occupying the basement areas that will be used for Phase I of the PFRF, were moved out before the basement was demolished as part of the Segment 3A project. Because the area designated as Segment 3B is occupied by other activities and will not be vacated until late 2003, the construction of the PFRF must be accomplished in two phases.

Facility Amenity options include an auditorium, television studio and tech center, senior executive motor pool and mezzanine level general office space.

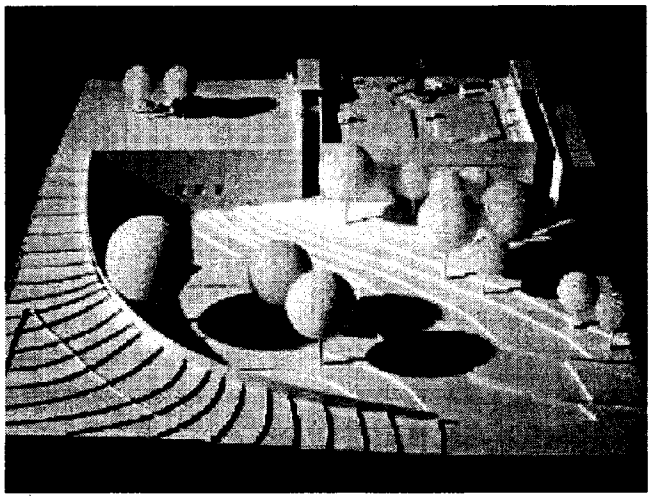
CHALLENGES

The contract was awarded as scheduled on September 14, 2001. The Notice to Proceed was issued on December 4, 2001 following an evaluation of the impact on the facility as a result of September 11th. The design presented to the selection committee will include significant force protection and security enhancements and the design will be completed in Fall 2002.

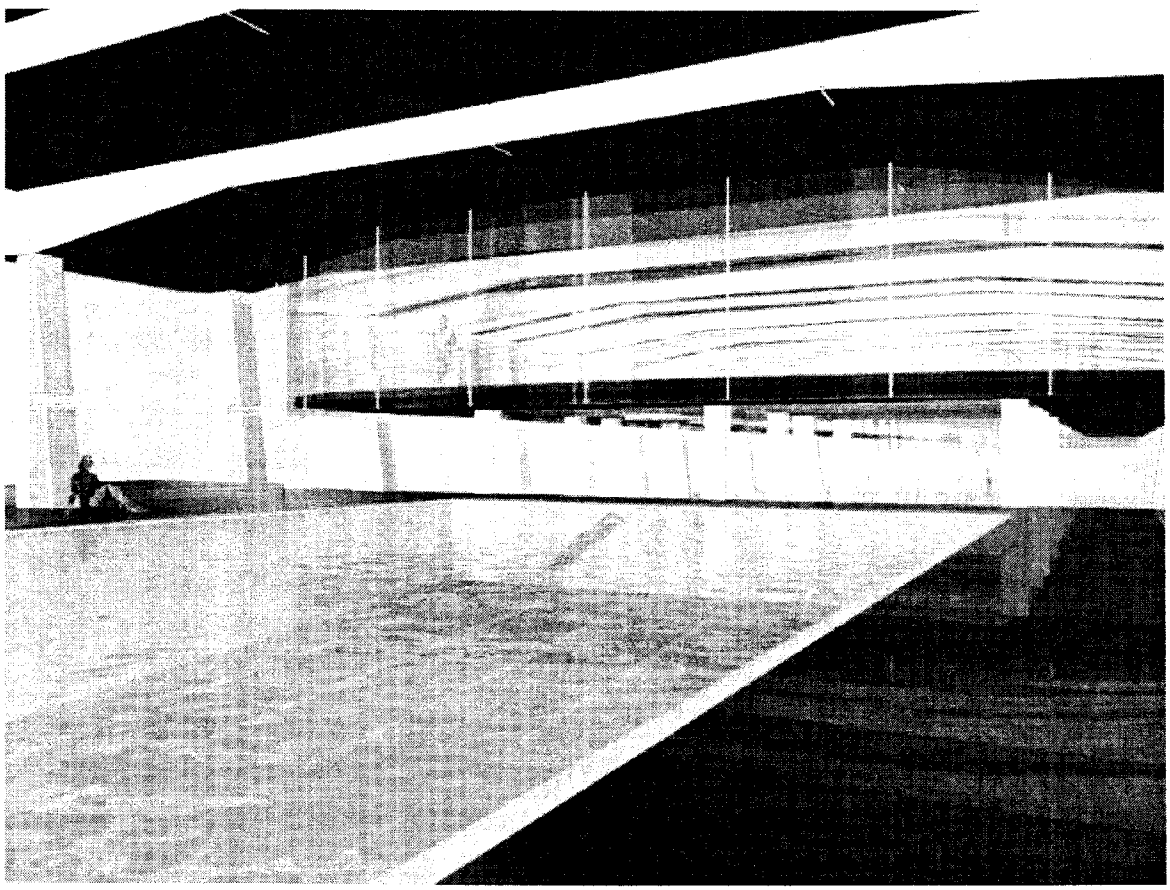
MILESTONES

Demolition began in March 2002. Phase 1 construction is expected to be complete in December 2003 when the facility will be open for use by Pentagon personnel. Phase 2 construction is expected to be completed in December 2004.

This photo shows the location and phasing plan for the Physical Fitness & Readiness Facility.



A 3-D rendering of the new PFRF structure.



The new facility will feature a pool, along with full and half court basketball facilities. A jogging track will overlook the basketball courts.

Following the September 11 attack, the Pentagon Renovation Program held dailiy morning briefings to keep Pentagon tenants informed about the rescue and recovery efforts. These briefings continue to be held once a week.

III. PROCESS IMPROVEMENTS

Force Protection

Acquisition

Information Management and Telecommunications (IM&T)

Commissioning

Tenant Moves

Sustainable and Constructability Design

Program Management

FORCE PROTECTION

Department of Defense security requirements are the driving factor behind many decisions affecting the Pentagon Renovation Program.

Meeting the Force Protection needs of the Department of Defense has always been a top priority of the Pentagon Renovation Program. Early initiatives included the construction of the Remote Delivery Facility, a 250,000-square foot shipping and receiving facility, adjoining the Pentagon. The Remote Delivery Facility significantly improves physical security by providing a secure, consolidated location for receiving and screening thousands of items shipped to the building each day. The Remote Delivery Facility opened for operation on August 31, 2000. The area of the building containing maintenance shops was completed in December 2001. The entire project was completed in February 2002, with the tie-in of the facility systems to the Pentagon.

The Metro Entrance Facility Project was the result of a Congressional mandate to upgrade the security of the Pentagon's Metro Entrance. The first phase was the relocation of the bus loop to increase the standoff distance between the Pentagon and buses and other large vehicles. This was completed on December 16, 2001 with the opening of the new Pentagon Transit Center. The second phase of the project includes the construction of a new entrance facility adjacent to the face of the Pentagon. This will provide a more secure entrance and screening point for Pentagon visitors.

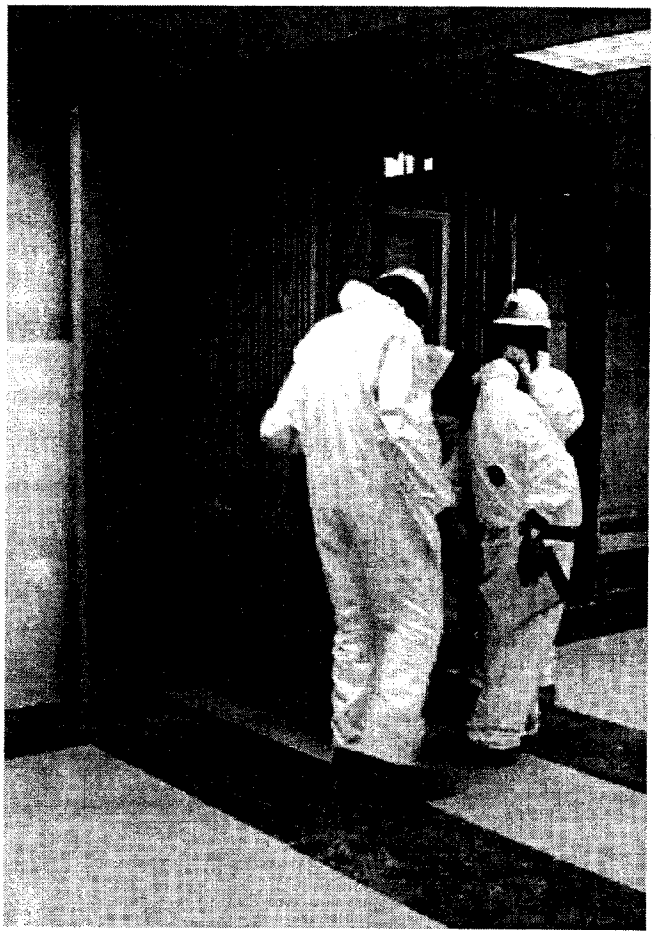
Additional enhancements were incorporated into the Pentagon's fire and life safety systems, including fire sprinklers, automatic fire doors, compliance with the Americans with Disabilities Act to facilitate emergency egress and redundant exterior communications. The replacement of exterior high pressure water lines ensures dependability in the event of a fire or other life threatening event. New monitoring and control systems have been installed as part of a new Building Operations Command Center. This allows all of the Pentagon's building systems to be accessed from a single location.

The security enhancements made to Wedge 1 are credited with saving lives on September 11. Three features in particular have been recognized as contributing to the low casualty rate. New blast-resistant window units were installed in all of the E-ring offices and the inner courtyard. Steel beams were installed to reinforce the outer wall and a geo-technical mesh, similar to Kevlar, was stretched between the steel beams to prevent debris from becoming shrapnel in the event of an exterior explosion. The blast windows directly above and adjacent to the airplane's point of impact did not shatter and the steel reinforcements prevented the E-ring from collapsing for approximately 30 minutes after impact. These extra security measures proved invaluable and will be replicated with minor adjustments during the renovation of Wedges 2 through 5.

The Renovation Program convened a task force to evaluate the performance of the Pentagon's infrastructure in the wake of September 11.

In the aftermath of the terrorist attack, the U.S. Army Corps of Engineers, at the request of the Pentagon Renovation Program, conducted a structural analysis, the "Pentagon Rebuild Retrofit Study," to determine how the building and its components performed. After examining building design, materials and operations, it was determined that the building performed remarkably well. Nevertheless, there is room for improvement.

Similarly, the Pentagon Renovation Program convened a



Task force members inspect an automated smoke door. Tyvek suits and masks were required due to mold contamination.

The fire continued to burn in Wedge 2 for two and a half days.

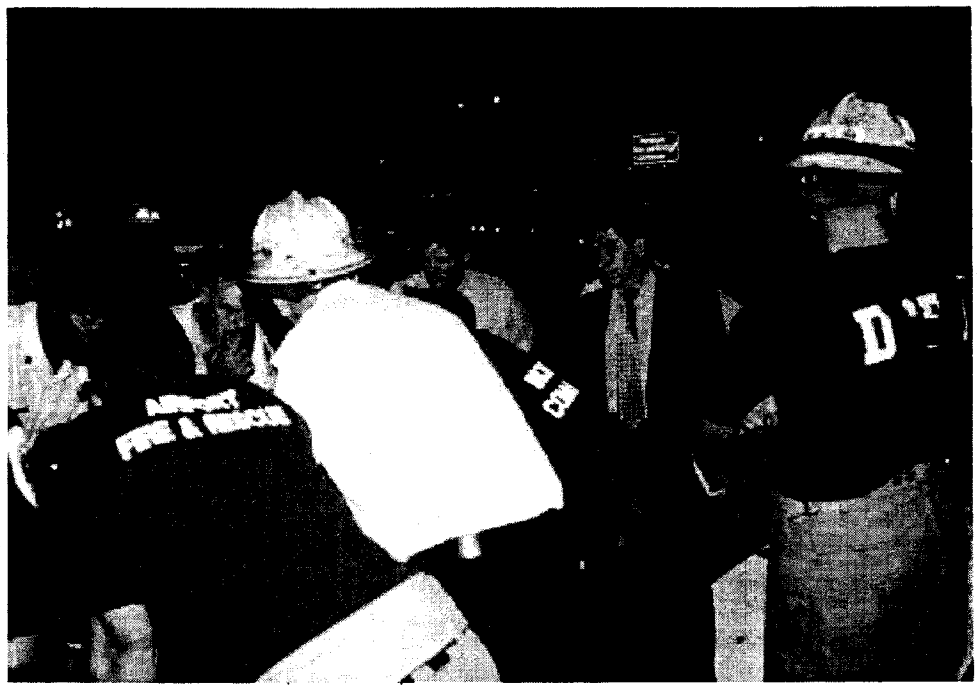
task force including members of the Pentagon Building Management Office, Federal Facilities Division, and responding rescue and fire personnel to evaluate the building's performance and enhance emergency preparedness. Those individuals that were in the vicinity of impact on September 11 were interviewed and asked to share their experiences and give suggestions. The information gathered from the task force interviews were consolidated into 26 primary recommendations that will be integrated into the performance specification requirements for future Pentagon renovation contracts.

A second multi-agency task force, the Pentagon Force Protection Project Action Team, including members of the Pentagon Renovation Program, is reviewing lessons learned and formulating ways to better enhance the Pentagon's force protection.

Lessons learned include the need for better education about emergency evacuation procedures. For example, the automatic smoke doors in Wedge 1 operated as they should. They deployed from side closets as smoke filled the hallways, thus preventing the circulation of smoke to other areas of the building. With the touch of a waist-high handle, they open wide enough for a wheel chair to pass before shutting automatically. However, Pentagon personnel that encountered the closed smoke doors became disoriented by the unfamiliar barriers. Even if all personnel were trained on their operation, the handle to retract the wall should probably be located near the floor, where survivors are more likely to be crawling towards safety to avoid the smoke. Appropriate changes are being implemented.

Short-term, the project action team is developing an "Integrated Emergency Plan" which couples the existing Pentagon fire emergency plan with a larger, better-equipped Incident Response Team. This larger Incident Response Team will be composed of Pentagon personnel that are experienced in techniques including backpack pressurized breathing equipment and are trained to Firefighter 2

level. This Incident Response Team will additionally develop a collaborative relationship with external organizations such as area fire and rescue teams, which will clearly outline the person in charge. The Incident Response Team, as experts in Pentagon operations and maintenance, will report, in the event of an incident, to the Incident Commander of the local county fire department.



Deputy Secretary of Defense, Paul Wolfowitz, visits the crash site the night of September 11.

The need for an upgraded emergency notification system became apparent as well. The public address system on September 11 was inaudible in many non-renovated areas of the Pentagon. As done in Wedge 1, the Pentagon Renovation Program will, as part of the renovation process, install stand-alone public address systems within every room in the Pentagon. An automatic messaging system that delivers emergency announcements via telephone is also being considered.

Long-term, the Pentagon Renovation Program will harden newly renovated radial corridors with Concrete Masonry Units (CMUs) and make them better resistant to fire with fire-rated wall board. The building will thus be compartmentalized, making it more difficult for fire to spread. These hardened corridors will additionally serve as areas of refuge and enhance blast resistance and protection from a chemical, biological or radiological attack. Additional improvements will be made to handicapped access and egress as renovation continues.

The Pentagon Renovation Program is working with agencies including the U.S. Army Corp of Engineers, the Defense Threat Reduction Agency and Arlington County to better strengthen building components. In the short term, the Pentagon Renovation Program is working with Defense Protective Services to increase stand-off distances from the face of the Pentagon.

Long term planning involves hardening and strengthening mission critical facilities and support utilities..

ACQUISITION

Fiscal Year 2001 (FY 2001) began with the expectation of a year-long focus on conducting competitions for the award of new Pentagon Renovation projects, an activity which required careful planning and execution. The year concluded with an unexpected surge of expedited, emergency contracting activity in response to the September 11 terrorist attack on the Pentagon. The Renovation Program successfully executed these diverse activities such that the Program is on track to conclude the renovation by 2010.

Execution of the design-build agreement for Wedges 2-5.

Wedges 2-5

With the beginning of FY 2001, the source selection for the award of the remaining Wedges 2-5 contract was in its second and final phase. Three of the best design-build construction teams in the nation had been selected in Phase 1 to compete for the eventual contract award, which was valued at $700 million (without inflation).

Three other design-build competitions were also being conducted concurrently: the Pentagon Physical Fitness and Readiness Facility, Navy Basement build out and the Pentagon's Heating and Refrigeration Plant Intake and Outfall system.

All the above acquisitions were structured and executed around three interdependent principles that have been central to the Renovation Program's success:

- Conduct an open competition and select a contractor based on best value as defined by past performance, quality of work and cost.
- Include performance-based requirements in the contract to induce creative, innovative thinking.
- Offer incentives to keep the contractor focused on customer satisfaction and performance; This creates a win-win for both parties.

The year culminated in the award of the W2-5 contract, The W2-5 source selection is undoubtedly the largest and most complex in the Program's history. The source selection included the use of techniques such as early and continuous industry involvement; emphasis on past performance, performance-based requirements, oral presentations, build to budget, best value, most probable cost analysis, and full and open unsuccessful offeror debriefings. While it's unlikely the Program will sponsor another competition of this magnitude and complexity, its all-encompassing business approach has made it the springboard from which others are now derived and appropriately tailored.

Participation by Socio-Economic Concerns

Following September 11, the Program made a concerted effort to quickly identify small and small disadvantaged business companies to aid in the Pentagon recovery effort both as prime contractors and subcontractors. The Renovation joined forces with George Mason University's Procurement Technical Assistance Program (PTAP) office to co-sponsor a Small Business Industry Day on October 23, 2001 at the University's Johnson Center in Fairfax, Virginia. To ensure that small businesses across the country

were informed, we called upon local congressional offices for their assistance in getting the word out to their constituents. Five hundred visitors attended (some from as far away as the West Coast) representing over 350 small and small disadavantaged businesses. The Renovation Program prime contractors and several current subcontractors attended to discuss potential subcontracting prospects.

As a result of the Industry Day, over 300 businesses have registered in our database, giving us an initial pool of small businesses that can be accessed by our contracting officers in search of small business prime contractors, and to our prime contractors in search of small business subcontractors.

Following the Industry Day, the Renovation Program participated in several other events to further increase the awareness of small business in potential prime and subcontract opportunities. These included a Small Business Administration Job Fair, a Native American & Alaskan American Workshop, and a Procurement Fair and Business Expo sponsored by Congressman Albert Wynn.

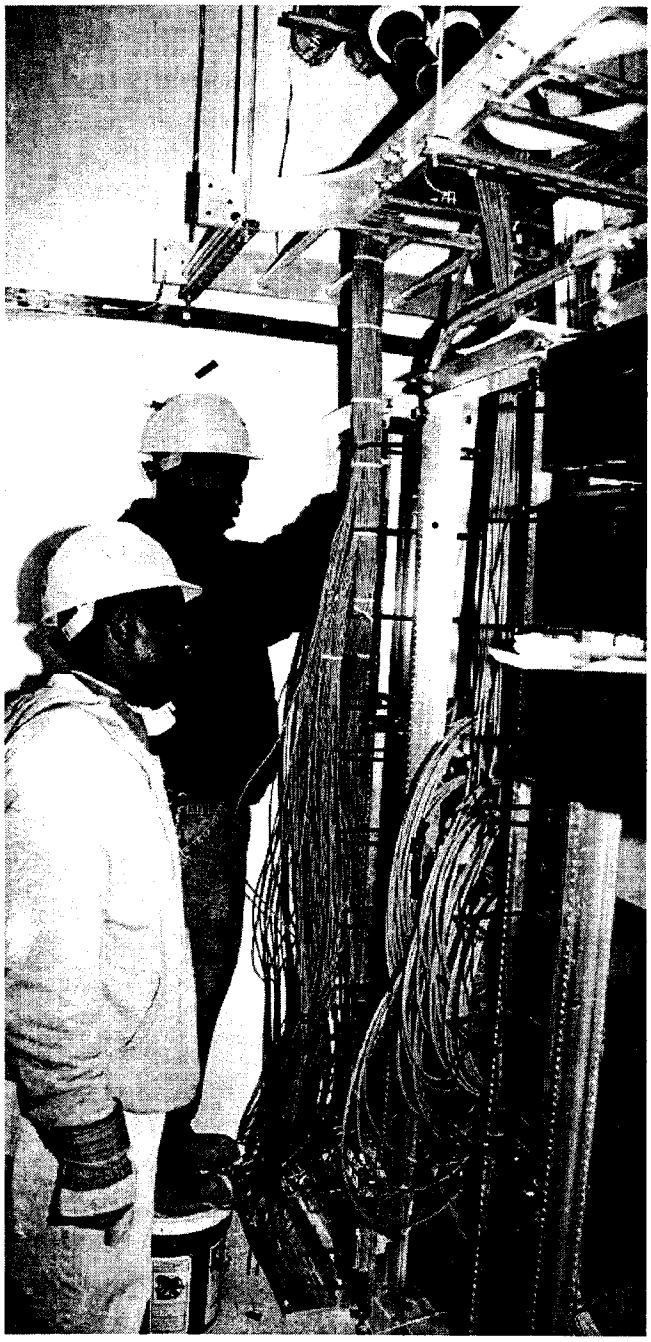
Program staff met with 379 companies at the Small Business Expo on October 23, 2001.

September 11 Rescue & Recovery Support

On September 11, our mission grew considerably. Within hours after the terrorist attack on the Pentagon, Renovation personnel mobilized on-site contractors with available heavy equipment to assist Arlington County fire and rescue operations. Program contracting officers acquired or leased tents, chairs, emergency lighting, generators, and other rescue equipment, gear, and supplies totaling over $60,000 in the month following the attack. These purchases supported on-site rescue, recovery, and investigation activities executed by the FBI, FEMA, Arlington County, and the DoD. The availability of the IMPAC Credit Card mechanism made this type of support possible, and the FBI credited this type of support with dramatically reducing the amount of time they typically would have needed to complete an investigation of this magnitude.

Within five days of the attack, the Program had issued emergency letter contracts valued not to exceed $570 million to recover and reconstruct the damaged portions of the building.

INFORMATION MANAGEMENT & TELECOMMUNICATIONS (IM&T)



Telecommunications technicians install new telephone lines in Wedge 1.

Related to the Pentagon Renovation Program is a necessary modernization of the building's information management and telecommunications infrastructure and systems. The basic information system infrastructure in the Pentagon was installed long before the advent of personal computers, facsimile machines, video teleconferencing, and digital telephone service, and has evolved without a design plan. In 1943, when the Pentagon was built, there was one telephone for every three employees. Over the last 57 years, new information technology capabilities have emerged and the new systems have been laid on top of the old. Over time, this merging of technology has become unmanageable and not easily upgraded. As requirements emerged, facilities and systems were added with little or no regard to existing capabilities or long term requirements. The individual military departments and agencies engineered and installed equipment and cables to meet their immediate specific needs.

The 25,000+ workers at the Pentagon require state-of-the-art systems and netronics that will provide immediate access to local as well as world-wide networks and the tools to rapidly collect data, analyze it, and present it to decision makers in a timely manner. This requirement defines the objectives of the IM&T Project:

- Provide modern telecommunications and information management services throughout the Pentagon with access to global networks. The communications network will support voice, data, and video at varying security levels.

- Define, procure, integrate, and test hardware and software items necessary to meet functional requirements for a consolidated Network Systems Management Center.

- Relocate all command and operations centers to renovated facilities. These include the Air Force Operations Group, Navy Command Center, Marine

Corps Command Center, National Military Command Center, and the Army Operations Center.

- Modernize and consolidate the functions of the seven technical control facilities in a single Pentagon Consolidated Technical Control Facility.

- Relocate the Defense Information Systems Agency, Joint Staff Support Center, Command and Control Automated Data Processing Centers from existing facilities into one new facility located in renovated space.

- Paralleling the Command and Control Automated Data Processing efforts, develop a consolidated, shared Business Automated Data Processing Center which will provide a modernized data processing facility for Army and Air Force systems. The Business Automated Data Processing Center will house mainframe processors, large servers, and their peripheral equipment, including storage devices and network processors.

- Three to four consolidated server facilities will be built in each wedge. These server facilities will allow the many server requirements of all services and agencies to be consolidated into these 18 common facilities without the need to build hundreds of special purpose facilities throughout the building.

- Provide the renovated Pentagon with improved voice communications currently provided by 22 Command and Control, Tactical, and Administrative telephone switches located in 12 different facilities. Refurbish, upgrade and install the primary and secondary classified and unclassified Command and Control telephone switches. Install the Main telephone patch panel in the General Purpose Switch Room and reduce the number of telephone switches in the Pentagon from 22 to eight.

IM&T Security Improvements

Basic Concepts/Goals

- Provide dispersion and multiple nodes (points of presence) for selected, vital command communications systems to enhance survivability from attack.

- Provide smart technology with capacity to route command communications systems around a breach from attack in the system.

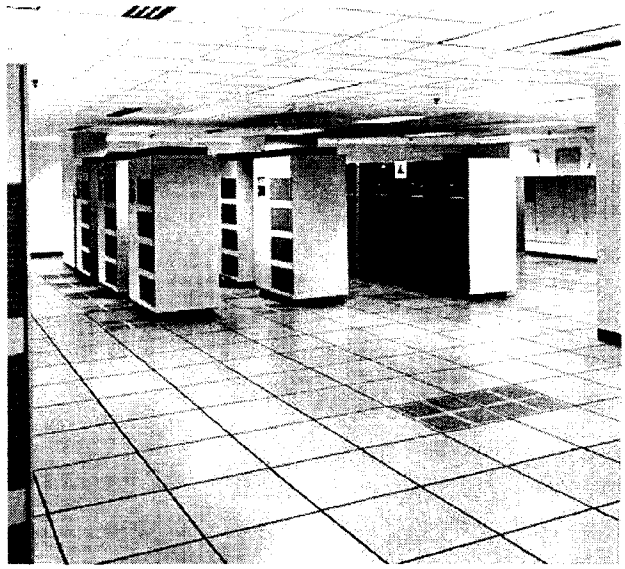
Systems selected for survivability enhancement

- Voice Telecommunications

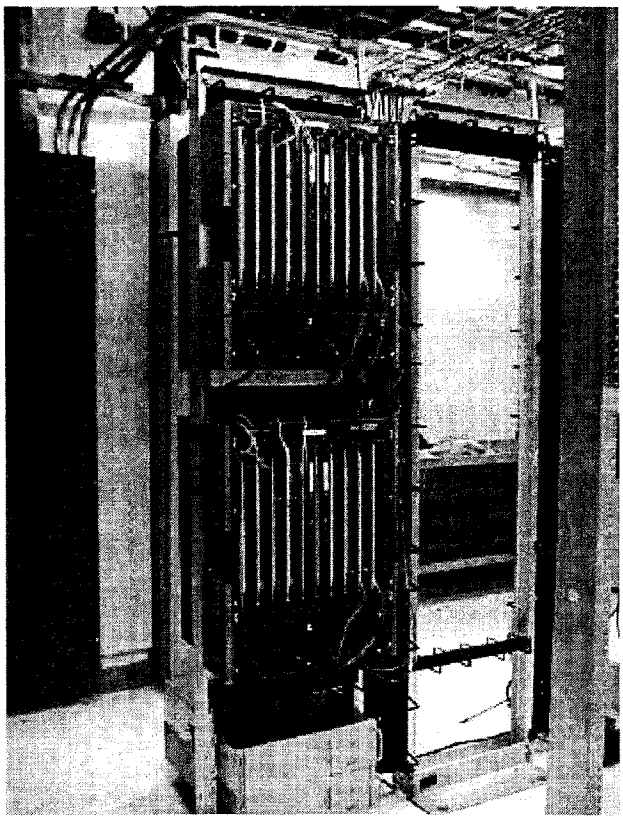
- Network (Electronic Transport Systems)

- Data (Electronic Storage & Retrieval Systems)

- Messaging (Electronic Communications Systems



A consolidated server room in Wedge 1.



A new Data Switch unit in Wedge 1. The unit will be online in March 2002.

- Replace the 130 radio systems distributed throughout the building with 1 Consolidated Radio Room in each wedge.

The renovated Pentagon will include a 30,000-line administrative telephone switch providing voice services through optical fiber-based distributed telephony; common user systems such as e-mail and messaging; collocated automatic data-processing facilities; an information infrastructure of fiber optic and copper cable; a common user data, voice, video backbone (4 levels of classification); and a single Network Systems Management Center. In an effort to maintain currency with evolving technologies, a higher bandwidth network technology (Gigabit) insertion within the data communications network of the renovated Pentagon was implemented, thereby providing for increased data bandwidth availability for information technology services.

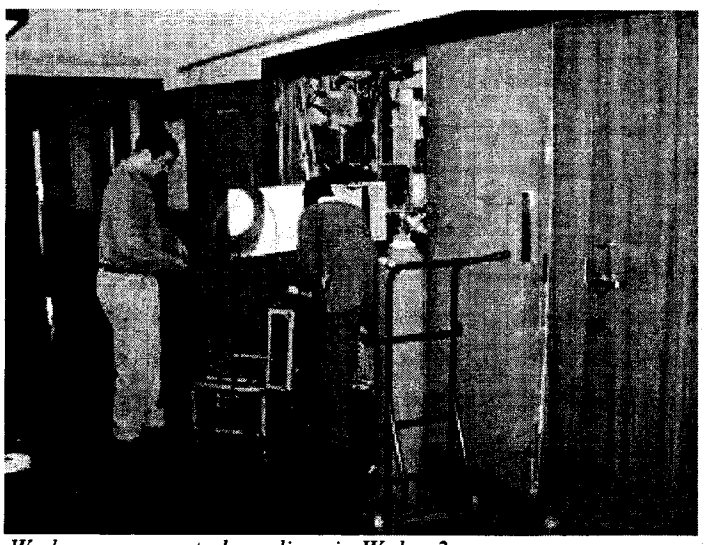
The Renovation Program's IM&T team continues implementation of the distributed telephone switching architecture, which employs fiber optic cabling to facilitate redundancy and survivability of voice services while eliminating massive pathway and copper cabling requirements in the building.

IM&T PROJECT STATUS

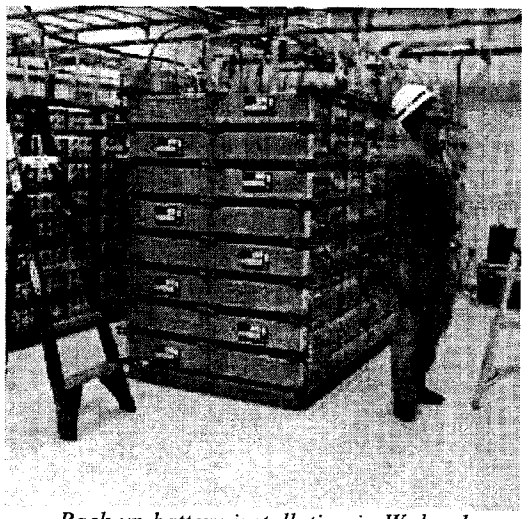
This past year has been fast-paced and much has been accomplished. The primary emphasis in 2001 was completing renovation of the first above-ground Wedge of the Pentagon. This work was only weeks away from completion when terrorist struck the Pentagon on September 11 and damaged and/or destroyed much of the newly-completed Wedge 1 and portions of Wedge 2. The IM&T Project Office has been significantly engaged in recovery operations resulting from that attack and in restoring the Pentagon to it's pre-attack condition in addition to continuing to implement the IT renovation for the remainder of the building.

CHALLENGES

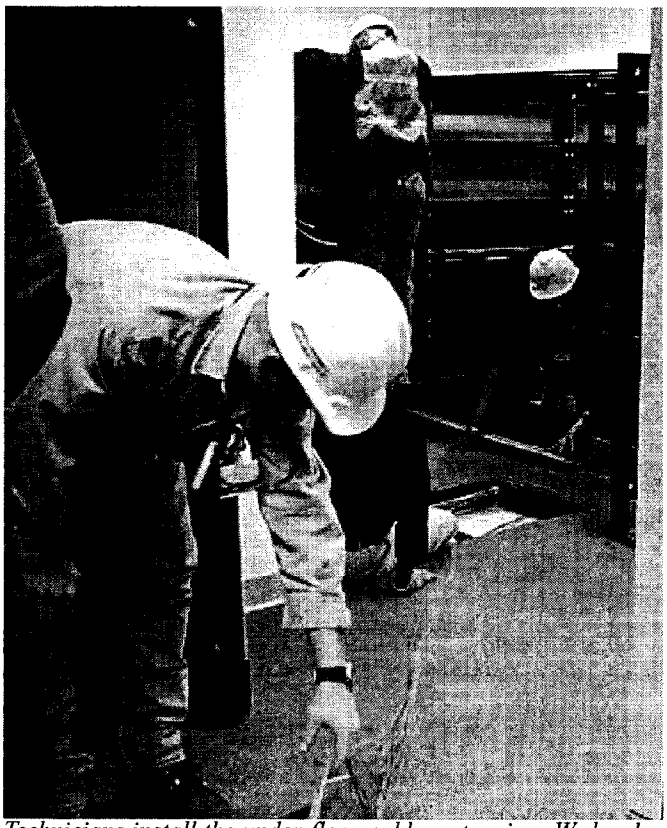
One of the biggest challenges faced by IM&T workers is the coordination involved with doing new system updates without disrupting the current systems being used by Pentagon employees. Adding to the difficulty is the 16,000 miles of undocumented wiring that exists in unrenovated wedges of the Pentagon.



Workers reconnect phone lines in Wedge 2.



Back up battery installation in Wedge 1



Technicians install the under-floor cable system in a Wedge 1 tech facility.

COMMISSIONING

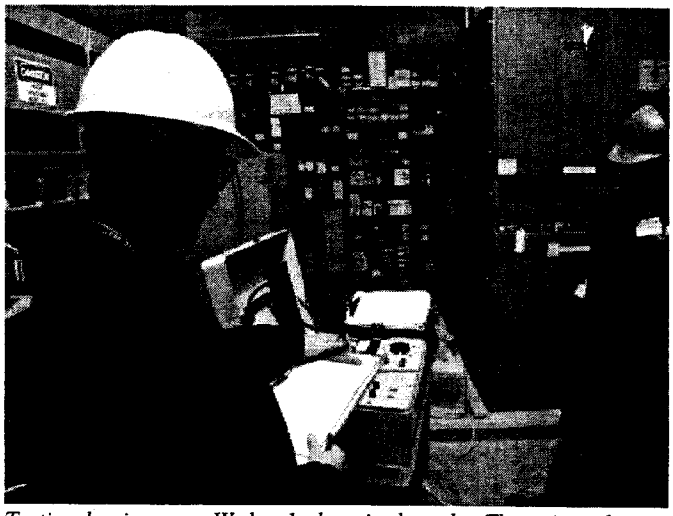
Commissioning is the process verifying and documenting that the performance of building systems achieve the design intent and meet the owner's functional and operational needs.

The primary goal of Commissioning is:

1. *Identifying and documenting Owner needs and requirements of the facility;*
2. *Verifying that designed systems are commensurate with Owner needs;*
3. *Verifying that systems installed are operable and maintainable;*
4. *Testing of systems to verify that they are performing optimally;*
5. *Verifying that design intent, installation, Operations and Maintenance requirements are well-documented;*
6. *Training operators and facility staff to ensure maintainability.*

COMMISSIONING BENEFITS

- **Improved system performance**
- **Improved operation and maintenance**
- **Improved indoor air quality**
- **Improved energy efficiency**
- **Reduced warranty callbacks**



Testing begins on a Wedge 1 electrical vault. The original vault was destroyed in the September 11 attack. This particular test measures the integrity of the wiring that feeds the vault.

Commissioning goes beyond testing, adjusting, and balancing and traditional inspection services. Commissioning involves functional performance testing to determine how well building systems, such as fire safety, mechanical and electrical systems, work together. Commissioning seeks to determine whether equipment meets a facility's operational goals or whether it needs to be adjusted to improve efficiency and overall performance. These activities are not, as many owners and managers believe, part of the typical design and construction process or part of standard operations and maintenance procedures.

IMPLEMENTATION STATUS

The integration of the Commissioning process into Pentagon Renovation Projects was accomplished in phases. Seven major projects incorporating

Commissioning are: the TRICARE Health Clinic, Wedge 1, the Remote Delivery Facility, the Metro Entrance Facility, Intake/Outfall, the Physical Fitness and Readiness Facility and Wedges 2-5.

The TRICARE Clinic was completed in February 2000, with commissioning incorporated near the end of core and shell construction. Final commissioning close out documentation and warranty were completed in 2001.

The Wedge 1 core and shell construction phase was just beginning when commissioning activities began. Commissioning included building system design reviews and equipment and product data submittal reviews. As with the TRICARE Clinic, commissioning activities included reviews of operations and maintenance manuals, training plans, equipment startup checklists, functional performance tests, and "as-built" drawings. For Wedge 1, operations and maintenance manuals were expanded upon, providing detailed system descriptions tying together various component O&M manuals. The Wedge 1 commissioning also included execution of equipment startup checklists and functional performance tests for life safety, mechanical, and electrical systems.

The Remote Delivery Facility is the first Pentagon Renovation project to start commissioning with the onset of construction. Commissioning here began with technical reviews of the Conceptual Design, Basis of Design, and the Design Intent documents, and continued throughout all design phases and into the construction phase. Commissioning activities included reviews of operations and maintenance manuals, training plans, equipment startup checklists, functional performance tests, and 'as built' drawings.

For the Metro Entrance Facility, Wedges 2-5, Intake/Outfall, and Physical Fitness and Readiness Facility projects the commissioning process was also fully integrated from the start. Commissioning activities here began with technical reviews of the Conceptual Design and RFP design criteria. After award of each project,

THE GOAL OF COMMISSIONING:

"Commissioning seeks to determine whether equipment meets a facility's operational goals or whether it needs to be adjusted to improve efficiency and overall system performance."

SCOPE OF COMMISSIONING SERVICES

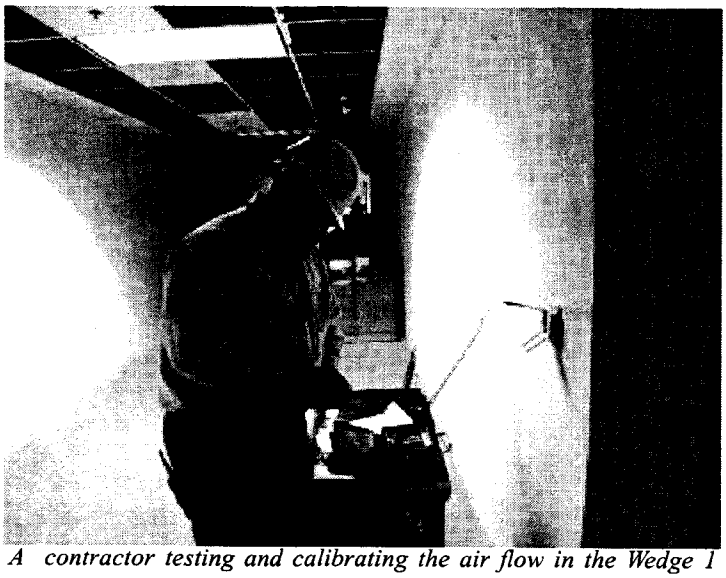
Commissioning at the Pentagon includes the following building systems:

1. Normal Power Supply System
2. Emergency Power Supply System
3. Standby Power Supply System
4. Life Safety Systems
5. Fuel Oil Leak Detection System
6. Waterproofing System
7. Heating, Ventilation, and Air Conditioning Systems
8. Direct Digital Controls Systems (Energy Management and Controls Systems)
9. Fire Alarm/Fire Protection and Fire Suppression Systems
10. Electrical Distribution System
11. Building Envelope (including energy efficiency)
12. Potable Water System (including cross connection control/backflow prevention)

commissioning has followed the same path laid out by the Remote Delivery Facility, incorporating lessons learned from the TRICARE Clinic, Wedge One, and the Remote Delivery Facility.

CHALLENGES

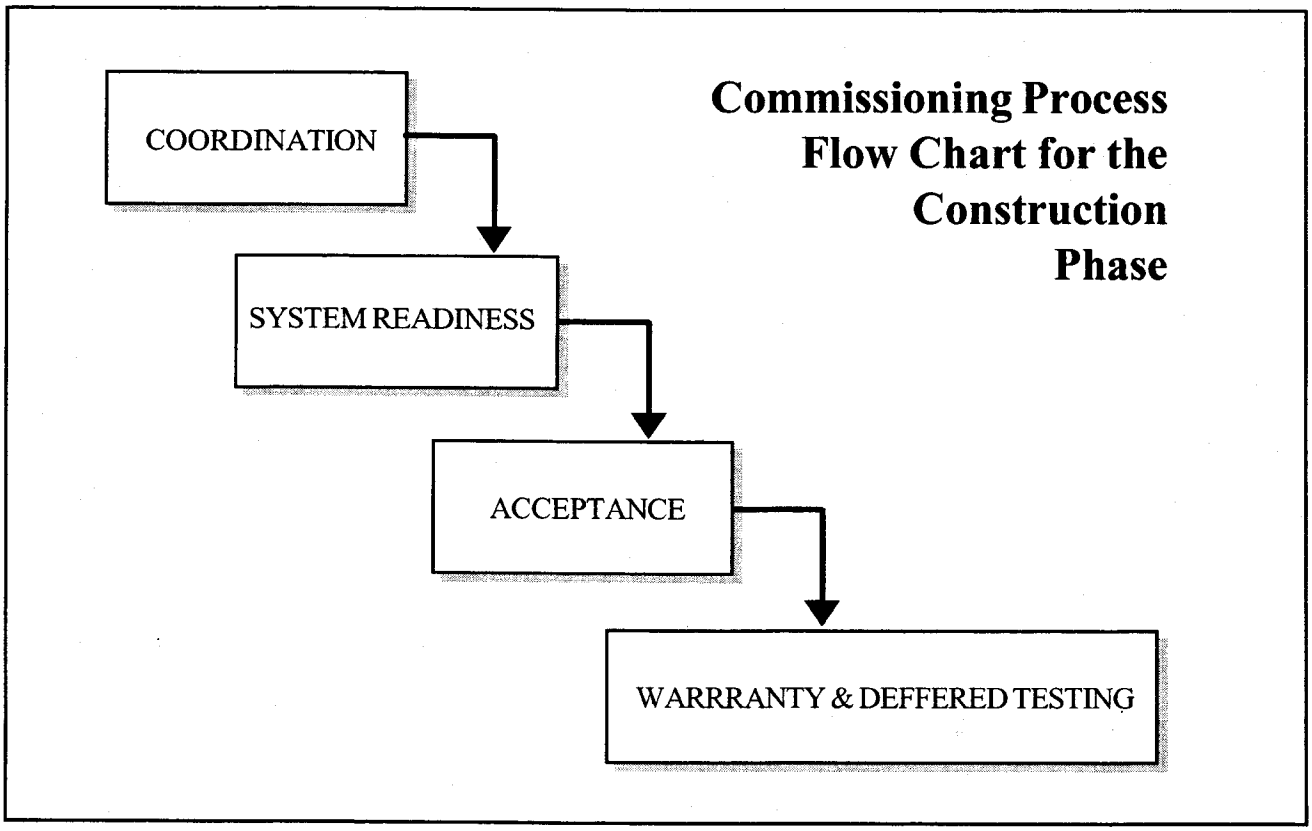
Due to the September 11 attack, the commissioning effort at Wedge 1 had to be modified to incorporate retesting of systems. Some areas affected by the blast or subsequent fire, smoke, and water damage had to be retro-commissioned.



A contractor testing and calibrating the air flow in the Wedge 1 HVAC ducts.

REQUIREMENT

Executive Order 12902, March 8, 1994, Energy Efficiency and Water Conservation at Federal Facilities, Section 306, requires that a facility commissioning program be established for all new or renovated buildings and refers specifically to ensuring that performance standards, as set forth in 10 CFR 435, are met.


Commissioning Process Flow Chart for the Construction Phase
COORDINATION
SYSTEM READINESS
ACCEPTANCE
WARRRANTY & DEFFERED TESTING

TENANT MOVES

Due to logistical constraints presented by the building, its security requirements, and the necessity to minimize downtime and disruption to employees' daily activities, the Renovation Program has created an innovative process to relocate tenants while maintaining the renovation schedule. To accomplish these tasks, the Pentagon Renovation Program established a Relocation Planning Team (RPT), whose primary responsibility includes:

- Providing agency-specific relocation checklists, which give the tenants an "itemized" list of tasks to be accomplished prior to, during, and after, the move. In addition, each move involves:
  - *Relocation Handbooks, which instruct tenants on packing and labeling procedures and "Move Packets", which include pre-printed labels and check-out sheets;*
  - *Post-move questionnaires are provided, which give the tenants an opportunity to provide the Program feedback on the relocation process, new space, furniture, systems, etc. These documents and forms have been made accessible to all Pentagon employees electronically, thus saving the government printing costs.*
- Coordinating the logistical and security requirements between the movers and the affected agencies, such as the Defense Protective Service, Information Management and Telecommunications, the Dockmaster, and the Pentagon Building Management Office.

The RPT has saved the Government approximately 25-percent, when compared with industry standards through very comprehensive up-front planning and an intimate understanding of the dynamics of the Pentagon itself.

Navy tenants inspect Wedge 1 before moving in to their new offices.

The decision to procure moving services through a multiple award contract has enabled flexibility in move assignments, maintained move contractors in a consistently competitive environment, and removed constraints on resources while still ensuring a prudent expenditure of funds. Some notable accomplishments are:

- Negotiating cost for each move and overseeing the move to ensure adherence to the Government's requirements.
- Tracking, coordinating and overseeing the delivery and installation of furniture, furnishings, and equipment for tenants being relocated to renovated space as well as coordinating and overseeing the removal of surplus items. This is accomplished with a small disadvantaged contractor
- Coordinating cleanup of the new space prior to occupancy. This is also accomplished with a small disadvantaged contractor
- Relocation of approximately 11,800 personnel from various wedges to external swing space locations, as well as to internal Pentagon locations.

The process developed by the RPT has further saved the government money by establishing moving service contracts that allow the Program to handle activities that

may not usually fall under a mover's purview. For example, the movers can provide cleaning services, subcontracting services for specialty equipment with warranties that require a certain vendor to perform the services, personal computer de-certification and re-certification services, etc. This flexibility allows the Program to handle a variety of tenant requirements.

Understanding the difficulty in adhering to schedules of the magnitude the Pentagon renovation requires, the Program procured 104,000 square-feet of warehouse space to temporarily store new construction materials, furniture, furnishings, and information technology equipment in support of the renovation.

To many, the successful relocation of the tenant to temporary or permanent space represents the end of the process. For the Program, however, the activities following the relocation are critical to the overall success of the renovation. The space vacancy and turnover process has been a significant factor for the renovation schedule. The coordination between the Renovation Program and all stakeholders to de-certify a space for demolition has been honed into a finely tuned process. The Program is responsible for removing the surplus furniture, furnishings, and equipment from vacated tenant space. To do this, the Program must inventory, identify surplus, and present to potential customers any furniture, furnishings, and equipment not being relocated to renovated space. Based on the condition of the surplus items, the Renovation Program has to determine, in accordance with applicable regulations, if the items will be presented for re-use within the government, donated to charitable organizations or deemed excess property and officially disposed of. The Renovation Program must then coordinate with the various other partners in order to allow the disconnection of utilities, removal of secure lines, telephone lines and equipment, etc. The Program then coordinates a trash removal activity with its cleaning contractor in order to officially turn over a space to the demolition and abatement contractor to begin renovation. These myriad coordination activities have been reduced to a one-month duration after tenant move-out.

Movers deliver computers from Wedge 2 into the newly renovated Wedge 1.

POST SEPTEMBER 11 ACTIVITIES

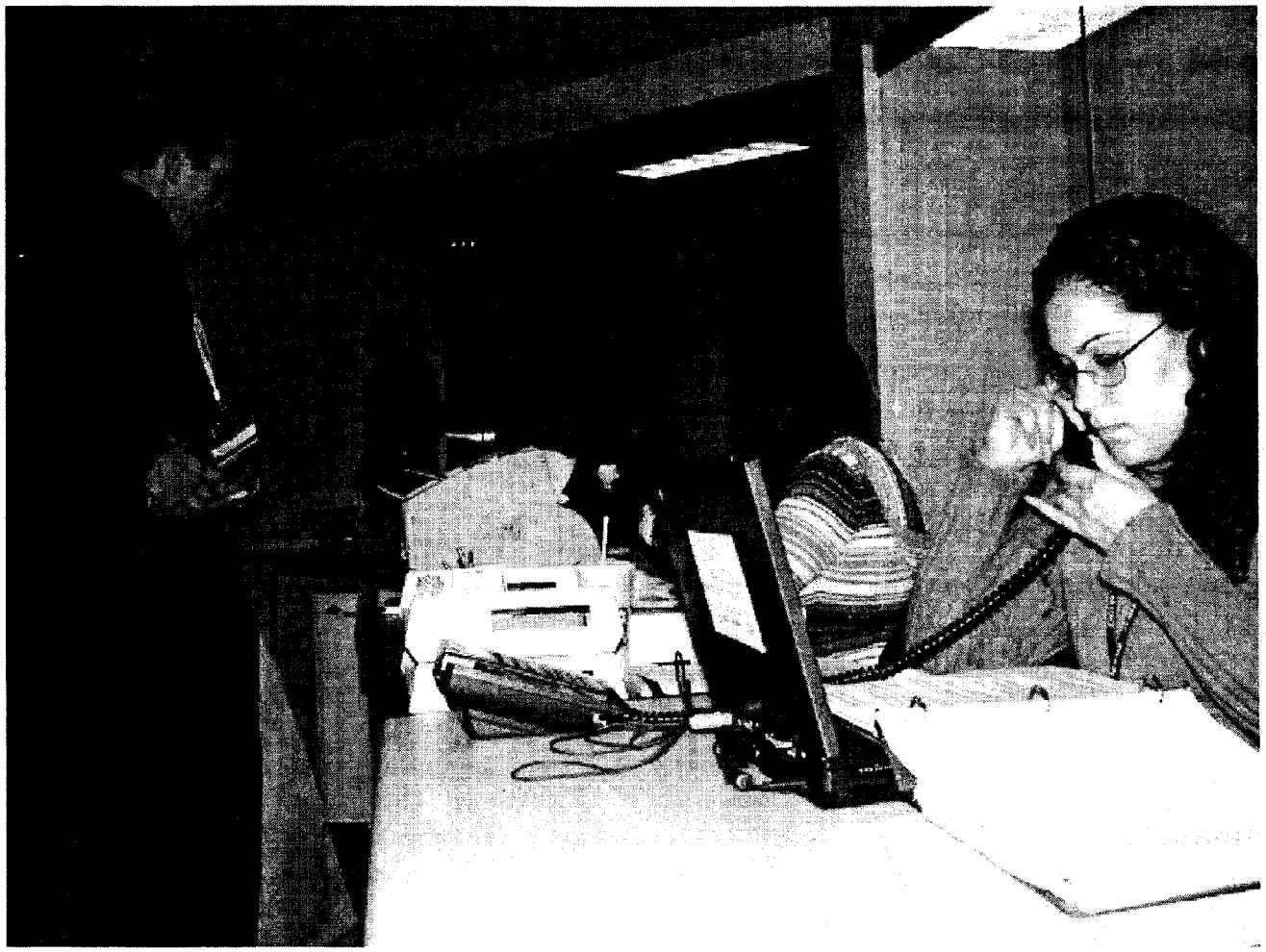
The Relocation Planning Team and its vendors responded quickly and effectively, assisting the Pentagon occupants with:

- Removing salvageable furniture, furnishings and equipment from the damaged areas in the Pentagon and placing them in short term storage.
- Conducting around the clock moves in support of displaced tenants due to the incident.

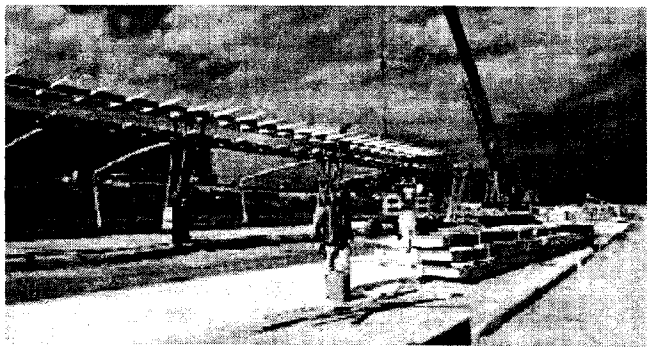
ACTIVITY STATUS - PROJECTS IN DESIGN

The Renovation Program has a back-to-basics approach for all activities. Based on the lessons learned from the Wedge 1 move-outs and subsequent moves into swing space and new permanent space, the Program will perform the following activities by simplifying our move process, and begin to work closely with the design-build contractor in support of the following activities:

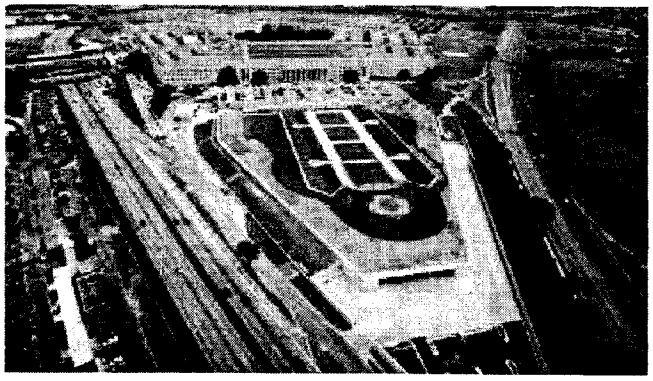
- **FY 2003** – The Renovation Program will handle the furniture tracking, delivery, and installation oversight, as well as the relocation planning, moves, and surplus removal services as it relates to the occupancy of Wedges 2 and swing spaces. The renovation will continue to provide pre-move cleaning and minor repair services for the renovated Pentagon space. Again, this wil be accomplished using a smal disadvantaged business. In addition, the Renovation Program will continue to use its three moving services contractors in support of the moves.



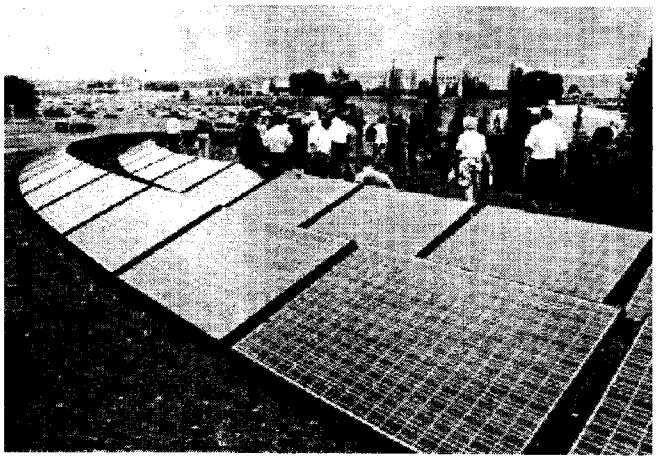
Wedge 1 Help Desk staff are available to provide Pentagon tenants with an immediate response to move-related questions.



During construction of the new bus facility recycled materials were used. Recycled concrete was used for the base material of all roadways and sidewalks



Landscaping on the RDF roof. Between 12"-18" of topsoil was placed on the roof to allow planting of grass and other varieties of plants and shrubs. The Potomac River is being used as an alternative irrigation system.



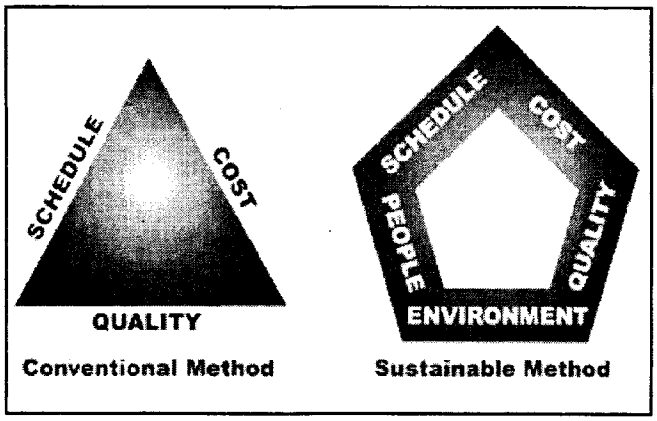
Solar array panel testing site used to increase energy efficiency. At max load the solar panels can produce 30kw/hr.

SUSTAINABLE CONSTRUCTION

The Pentagon Renovation Program (PENREN) is committed to incorporating sustainable design considerations and innovative management processes into each project undertaken. While many organizations have recently stated their support for sustainable design and its precepts, the Program has progressed beyond mission statements, charters, and verbal expression of support. In August 2001, as a culmination of previous efforts, the Integrated Sustainable Design and Constructability (ISDC) Team became a viable part of the organization at the Program. Since September 11, the Pentagon Renovation Program and its ISDC Team shouldered the additional responsibility of integrating and balancing sustainable design issues with Force Protection measures necessary to protect the Pentagon.

The complex nature of PENREN projects requires the ISDC Team to incorporate sustainable design into the overall acquisition and management strategy of the Program. The acquisition strategy includes innovative "performance-based" contracting, and "design-build" methodology.

The ISDC Team charter is to "be an ongoing source of information, guidance and direction for the reasonable integration of sustainable design and construction for all Pentagon Renovation projects." To illustrate the breadth and significance of the Program's commitment to excellence in sustainable design, the following projects will be attempting to obtain Leadership in Energy and Environmental Design (LEED) certification from the United States Green Building Council (USGBC) over the next ten years: (1) the Metro Entrance Facility (MEF); (2) Wedges 2-5; (3) the Remote Delivery Facility; (4) the Intake/Outfall Project (5) the Physical Fitness and Readiness Facility; and (6) the Phoenix Project.



The Integrated Sustainable Design and Constructability Team incorporates a new "Sustainable & Constructability" design methodology into the construction process.

10 York Turbo Master Chillers with 3000hp electric motors, which take in water from the Potomac River cool it & condense it and return it to the River. The chillers use Freon 22 and are .62kw/ton efficient.

Metro Entrance Facility Highlights on Meeting LEED Certification Criteria

- Met Site Prerequisite for Erosion and sedimen tation Control.
- Prevent loss of soil during construction by storm water runoff and/or wind erosion, includ ing protecting topsoil by stockpiling for reuse.
- Prevent sedimentation of storm sewer or receiving streams and/or air pollution with dust and particulate matter

Alternative Transportation:
Locate building within ½ mile of a commuter rail.

Landscape and Exterior Design to Reduce Heat Islands:
Use ENERGY STAR roof-compliant, high-reflectance roofing AND low-emissivity roofing for a minimum of 75% of the roof surface.

Light Pollution Reduction:
Meet Lighting for Exterior Environments AND design interior and exterior lighting such that zero direct beam illumination leaves the building site.

The benches at the new facility are constructed from Ipe' wood. Ipe' wood is naturally weather and insect resistant that is forested from a Forest Stewardship Council certified forest.

PROGRAM MANAGEMENT

Like any major project, the Pentagon Renovation Program involves multiple, often competing interests. Every organization has a unique stake in the outcome of the renovation. Beyond traditional owner-contractor interests, the project owner, the Department of Defense, is an amalgam of organizational components and interests. In addition, there are regional energy, transportation, historical, and planning groups whose considerations that must be incorporated into the renovation process.

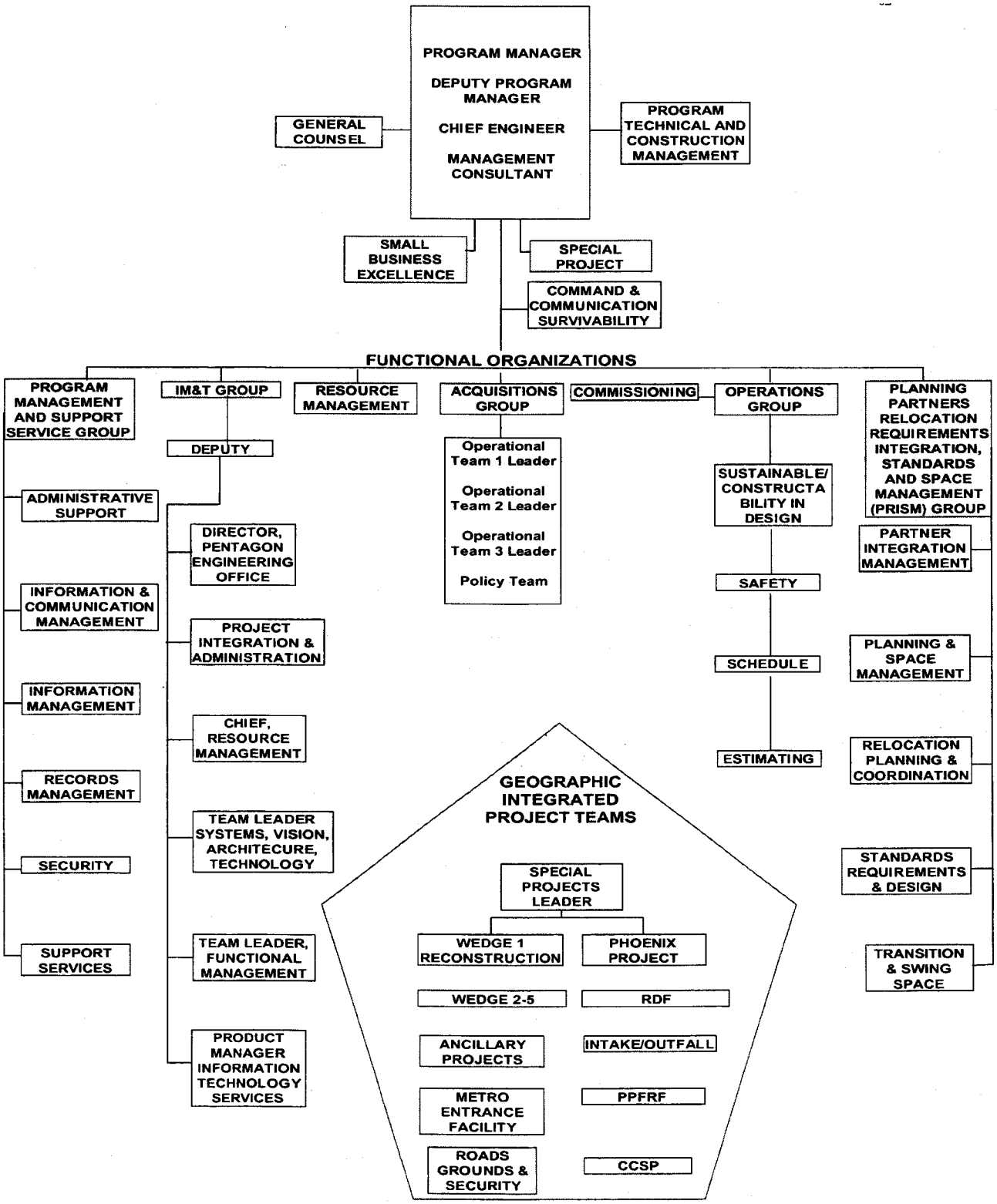
Special "All Hands" meetings are held to keep Program members abreast of all activities and projects, and to address staff and managment concerns.

Following September 11, the Program staff has continued to work long hours. For example, on the Phoenix Project, workers continued to work two 10-hour shifts, six days a week. While there are many challenges with keeping the PENREN staff focus positive, PENREN senior leadership continues to motivate the staff through individual recognition and awards. A Certificate of Appreciation was presented to each employee by the OSD in recognition of group achievement for their efforts following the September 11 attack. PENREN has received tremendous support and assistance from companies, corporations, industries, and private citizens across the country. The Program acknowledges these contributions with a personal thank you letter from the Program Manager.

Demonstrated pride and patriotism by all Program staff have made it possible for PENREN to keep focus and stay ahead of schedule.

Daily foreman's meetings are held to keep construction projects on track.

PENTAGON RENOVATION PROGRAM TEAM STRUCTURE



IV. APPENDIX

Glossary of Terms

Work Completed Timeline

Media and Political Interest

FY 2000 - National Defense Authorization Act
(Federal Building 2)

FY 1991 - Legislative Authorization

FY 2000/01 - Department of Defense Appropriations Act

FY 2002 - Department of Defense Appropriation Act

Contact Information

GLOSSARY OF TERMS

As-builts
A graphic representaton that reflects actual post-construction/renovation conditions. As-built drawings are submitted to the property owner as part of the commissioning process.

Ancillary Projects
Projects outside the scope of work of the Pentagon Renovation Program. They are outside of the Congressional Cost Cap. This work is taken on by the Pentagon Renovation serving as a construction agent. costs for these projects are not funded by Renovation funds.

Backbone
The primary infrastructure for the transmission of data including major telecommunications components.

Back-to-Basics
Cost reduction initiatives implemented by the Pentagon Renovation Program after building conditions lead to increased schedule and cost, nearly exceeding the Congressional Cost Cap.

Best value
Best value source selection is typically based on past performance, management approach, technical approach, probable cost, and small and disadvantaged business support.

Core and Shell
Building common elements in an area, such as walls and public corridors and rebuilding the primary utility systems.

Design-bid-build
The standard procedure for construction contracts. Separate contracts are awarded to a design company and a construction company. Little or no partnering takes place, which often leads to conflict between parties.

Design-build
The approach adopted by PENREN to construction contracts that allows design and construction to operate as a single entity under one contract, thus allowing us to better meet the requirements of the intended tenant.

Fiscal Year (FY)
Time period between October 1 through September 31; used rather than Calendar Year for budget purposes.

Fit-out
Building and designing of interior office space for the intended tenant.

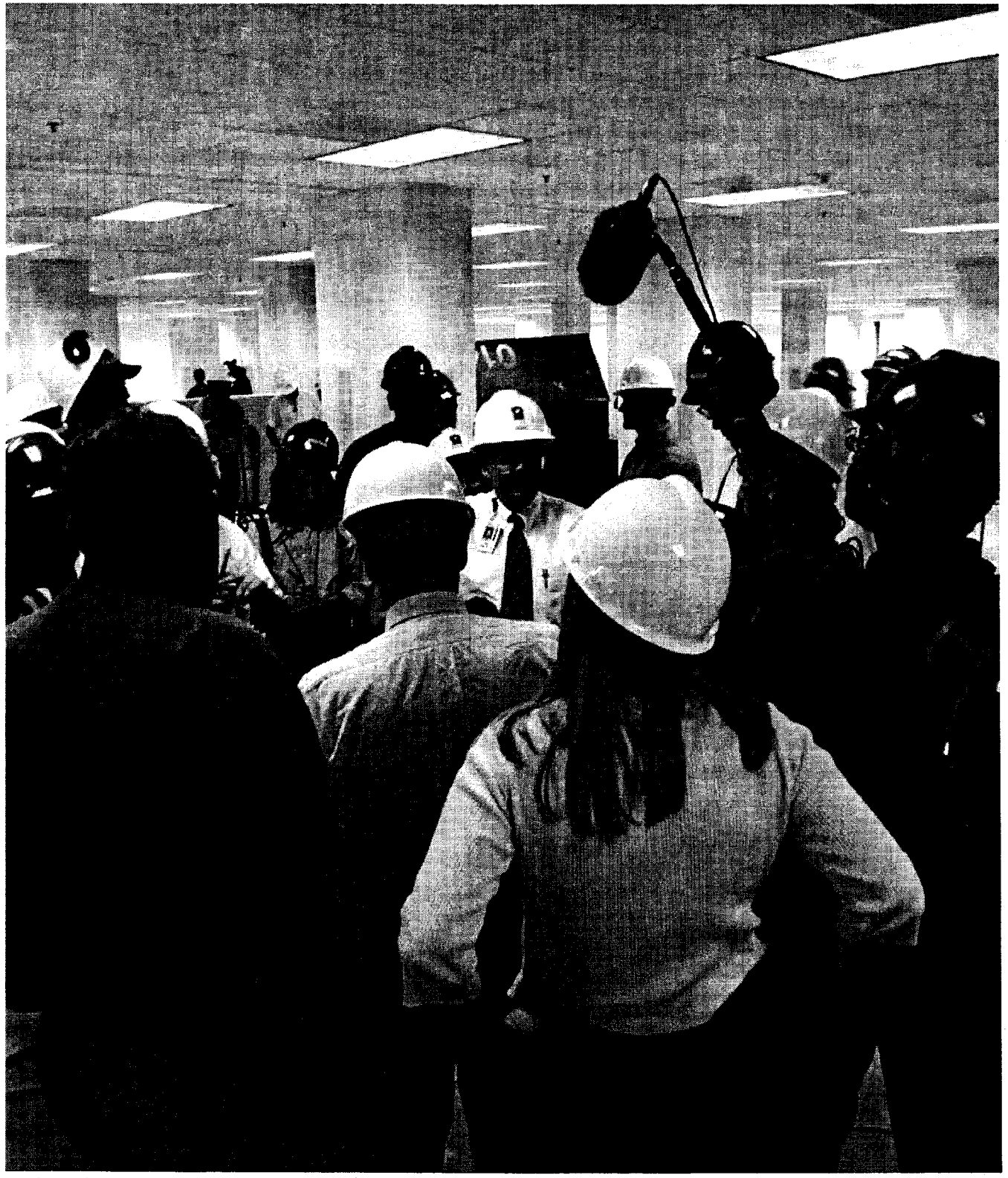
Lessons learned
A process whereby PENREN identifies methods and areas of improvement in order to minimize making repeated mistakes.

Punch list
A list of outstanding construction deficiencies, usually minor, which require correction before the job will be considered complete.

Spine-Wall
The demountable wall found in systems furniture that carries electrical and telecommunications wiring.

Swing space
Temporary tenant space built-out in areas in and around the Pentagon. Occupied while the existing space is being renovated.

Systems Furniture
Demountable partitioned office furniture that provides greater flexibility than standard office furniture.



Media and political interest surrounding the Renovation Program continues to be high.

WORK COMPLETED TIMELINE

1996

November	North Parking Pedestrian Ramp (1)

1997

January	River Terrace Handicapped Access (2)
February	Sewage Lift Station (3)
June	Center Courtyard Utility Tunnel (4)
August	Classified Waste Incinerator (5)
September	Heating and Refrigeration Plant (6)
October	River Terrace Vehicle Bridge (7)

1998

May	Corridor 8 Entrance Renovation (8)
August	River Terrace Renovation (9)

1999

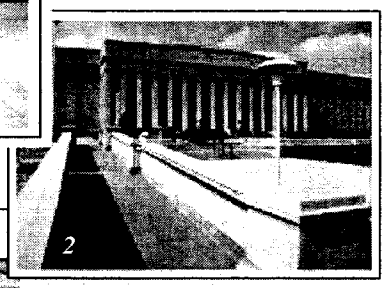
June	Renovation and Furnishing of Swing Space Facilities (10)
September	Mug Handle Infill (11)
October	Basement Segment 2A2 (12)

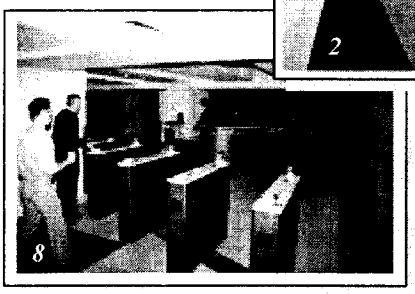
2000

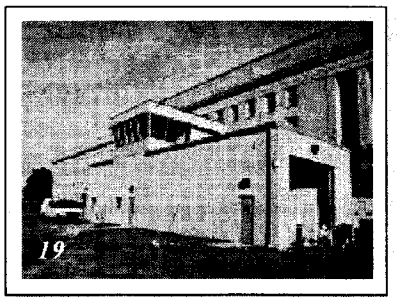
March	Basement/Mezzanine Segment 1 (13)
March	DiLorenzo TRICARE Health Clinic (14)
August	Remote Delivery Facility Phase 1 (15)
September	Replacement of Underground Water Lines (16)
October	Basement 3A Demolition and Abatement (17)
December	Remote Delivery Facility Phase 2 (18)

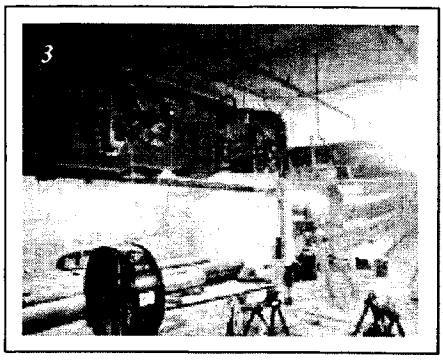
2001

January	Heliport and Fire Station Control Tower (19)
February	South Terrace Pedestrian Bridges (20)
September	Wedge 1 (21)
December	Pentagon Transit Center (22)





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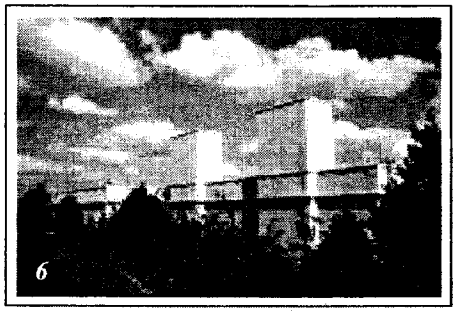
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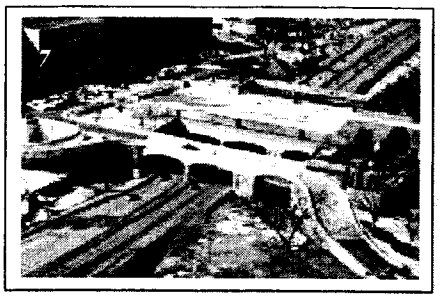
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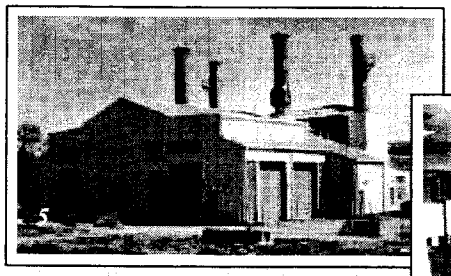
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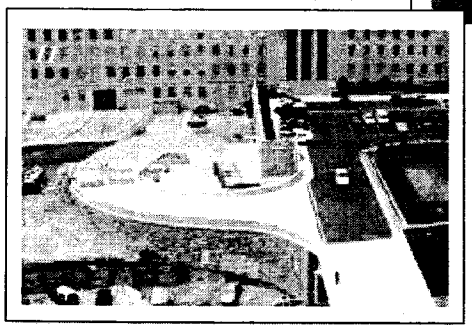

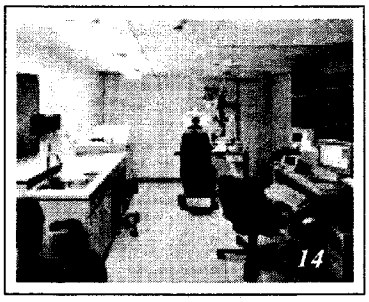
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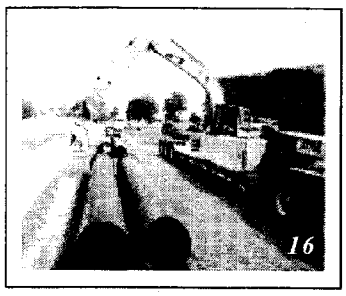
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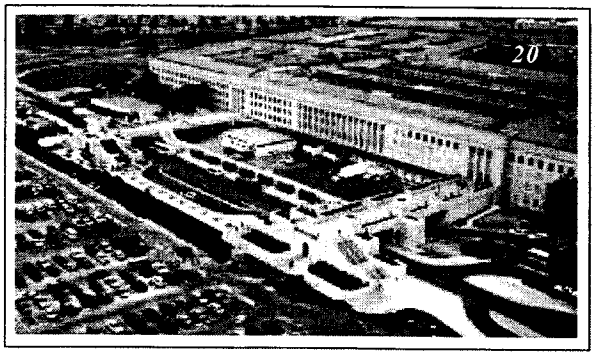
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CORRIDORS
3 AND 4
WEDGE 1
21

22

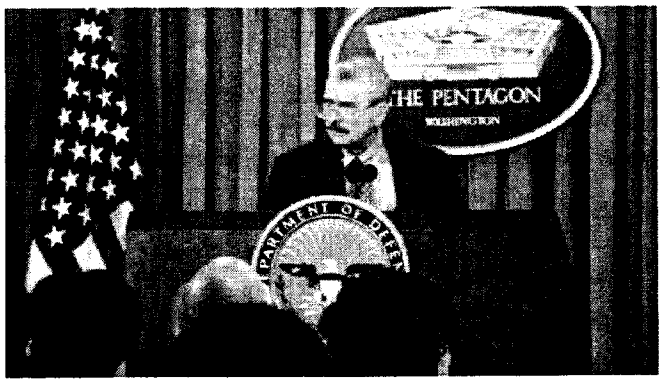
MEDIA & POLITICAL INTEREST

Media and political interest surrounding the Pentagon Renovation Program and the reconstruction effort continues to be high. Through it all, the men and women working around the clock stay focused and dedicated to building a safer, stronger Pentagon. Included here is a representative sample of activities surrounding the Phoenix Project.

4 Oct 01 - Pentagon Renovation Deputy Program Manager, Mike Sullivan, briefs members of NATO on the Renovation Program's response to the September 11 attack.

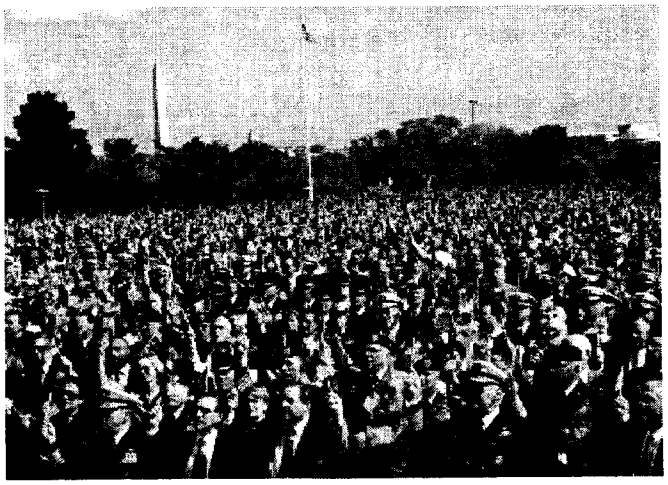
10 Oct 01 - Mike Sullivan (center) briefs the Secretary General of NATO, Lord Robertson.

11 Oct 01 - A memorial service (right) was held at the Pentagon to honor the victims and their families. The Renovation Program began full-scale demolition of the crash site one week later.

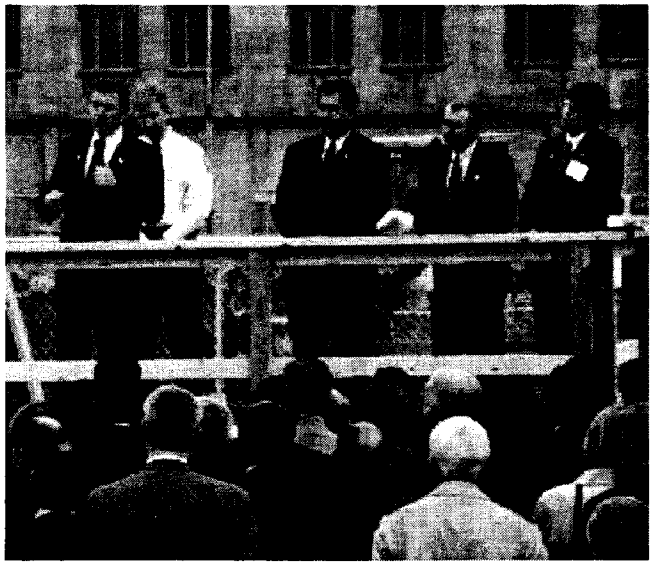


2 Oct 01 - Pentagon Renovation Program Manager, Lee Evey, speaks to members of the press about the progress and plans of the Renovation Program in the wake of September 11.

5 Oct 01 - Over 70 representatives from local, national and international press visit the crash site for the first time. Lee Evey explains how the Pentagon was affected by the attack. In all, approximately 2 million square feet of space were affected.



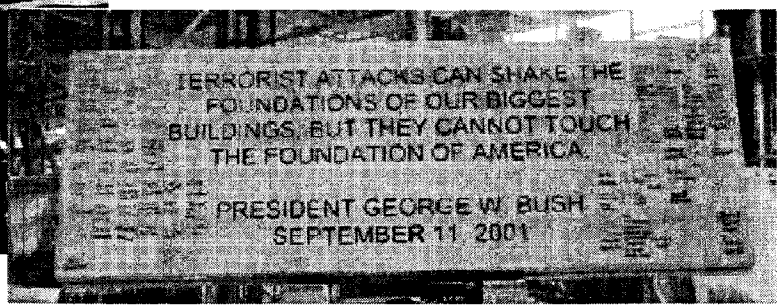
19 Nov 01 - Lee Evey is interviewed by Scott Pelley for 60 Minutes II. This is the second time the Renovation Program has been featured on the CBS news program. On this day, demolition was completed and reconstruction began.



29 Nov 01 - Attorney General John Ashcroft speaks to a group from the United States Attorneys' National Convention during a visit to the Phoenix Project.

6 Dec 01 - Minnesota Governor Jesse Ventura visits the Phoenix Project to thank the construction crews and military personnel for their dedication and hard work.

11 Dec 01 - On the three-month anniversary of the attack, a National Moment of Remembrance Ceremony was held on the Phoenix Project site. Secretary of Defense Donald Rumsfeld, General Richard Myers, Chairman of the Joint Chiefs of Staff, and honored guests salute the flag during the playing of the National Anthem.



21 Dec 01 - On the same day the Olympic Torch made visited the Pentagon, the Pheonix Project received a delivery from The Bybee Stone Company in Indiana. Workers inscribed and signed a special slab with a quote from President Bush.

FY 2000 - NATIONAL DEFENSE AUTHORIZATION ACT (FEDERAL BUILDING 2)

Subtitle F—Expansion of Arlington National Cemetery

SEC. 2881. TRANSFER FROM NAVY ANNEX, ARLINGTON, VIRGINIA.

(a) LAND TRANSFER REQUIRED- The Secretary of Defense shall provide for the transfer to the Secretary of the Army of administrative jurisdiction over three parcels of real property consisting of approximately 36 acres and known as the Navy Annex (in this section referred to as the 'Navy Annex property').

(b) USE OF LAND- (1) Subject to paragraph (2), the Secretary of the Army shall incorporate the Navy Annex property transferred under subsection (a) into Arlington National Cemetery.

(2) The Secretary of Defense may reserve not to exceed 10 acres of the Navy Annex property (of which not more than six acres may be north of the existing Columbia Pike) as a site for—

(A) a National Military Museum, if such site is recommended for such purpose by the Commission on the National Military Museum established under section 2901; and

(B) such other memorials that the Secretary of Defense considers compatible with Arlington National Cemetery.

(c) REDEMPTION OF LAND FOR CEMETERY USE- Immediately after the transfer of administrative jurisdiction over the Navy Annex property, the Secretary of Defense shall provide for the removal of any improvements on that property and shall prepare the property for use as a part of Arlington National Cemetery.

(d) ESTABLISHMENT OF MASTER PLAN- (1) The Secretary of Defense shall establish a master plan for the use of the Navy Annex property transferred under subsection (a).

(2) The master plan shall take into account (A) the report submitted by the Secretary of the Army on the expansion of Arlington National Cemetery required at page 787 of the Joint Explanatory Statement of the Committee of Conference to accompany the bill H.R. 3616 of the One Hundred Fifth Congress (House Report 105-436 of the 105th Congress), and (B) the recommendation (if any) of the Commission on the National Military Museum to use a portion of the Navy Annex property as the site for the National Military Museum.

(3) The master plan shall be established in consultation with the National Capital Planning Commission and only after coordination with appropriate officials of the Commonwealth of Virginia and of the County of Arlington, Virginia, with respect to matters pertaining to real property under the jurisdiction of those officials located in or adjacent to the Navy Annex property, including assessments of the effects on transportation, infrastructure, and utilities in that county by reason of the proposed uses of the Navy Annex property under subsection (b).

(4) Not later than 180 days after the date on which the Commission on the National Military Museum submits to Congress its report under section 2903, the Secretary of Defense shall submit to Congress the master plan established under this subsection.

(e) IMPLEMENTATION OF MASTER PLAN- The Secretary of Defense may implement the provisions of the master plan at any time after the Secretary submits the master plan to Congress.

(f) LEGAL DESCRIPTION- In conjunction with the development of the master plan required by subsection (d), the Secretary of Defense shall determine the exact acreage and legal description of the portion of the Navy Annex property reserved under subsection (b)(2) and of the portion transferred under subsection (a) for incorporation into Arlington National Cemetery.

(g) REPORTS- (1) Not later than 90 days after the date of the enactment of this Act, the Secretary of the Army shall submit to the Secretary of Defense a copy of the report to Congress on the expansion of Arlington National Cemetery required at page 787 of the Joint Explanatory Statement of the Committee of Conference to accompany the bill H.R. 3616 of the One Hundred Fifth Congress (House Report 105-736 of the 105th Congress).

(2) The Secretary of Defense shall include a description of the use of the Navy Annex property transferred under subsection (a) in the annual report to Congress under section 2674(a)(2) of title 10, United States Code, on the state of the renovation of the Pentagon Reservation.

(h) DEADLINE- The Secretary of Defense shall complete the transfer of administrative jurisdiction required by subsection (a) not later than the earlier of—

(1) January 1, 2010; or

(2) the date when the Navy Annex property is no longer required (as determined by the Secretary) for use as temporary office space due to the renovation of the Pentagon.

Under the current schedule for the renovation of the Pentagon, it is anticipated the Navy Annex property and facility will be used as temporary and permanent office space until the conclusion of the renovation program. After that time, all the facility occupants will be relocated to either the Pentagon and/or other government controlled space.

(2) The Secretary of Defense shall include a description of the use of the Navy Annex property transferred under subsection (a) in the annual report to Congress under section 2674(a)(2) of title 10, United States Code, on the state of the renovation of the Pentagon Reservation.

Washington Headquarters Service (WHS), Real Estate & Facilities Division (RE&FD) Response to Section 2881

It is currently planned that, in accordance with Section 2881 of the FY 2000 Defense Appropriations Act, the Secretary of Defense will assign administrative jurisdiction of the Navy Annex property to the Secretary of the Army by January 1, 2010.

Further, in accordance with Section 2881 of the FY 2000 Defense Appropriations Act, by September 2001, the Secretary of Defense will establish a master plan for the use of the Navy Annex property that will take into account (A) the report submitted by the Secretary of the Army on the expansion of Arlington National Cemetery required at page 787 of the Joint Explanatory Statement of the Committee of Conference to accompany the bill H.R. 3616 of the One Hundred Fifth Congress, and (B) the recommendation of the Commission on the National Military Museum to use a portion of the Navy Annex property as a site for the National Military Museum.

FY 1991 - LEGISLATIVE AUTHORIZATION

SEC 2804. OPERATION AND CONTROL OF THE PENTAGON RESERVATION

(a) IN GENERAL - (1) Chapter 159 of title 10, United States Code, is amended by inserting after section 2673 the following new section:

"§2674. Operation and control of the Pentagon Reservation

"(a)(1) Jurisdiction, custody, and control over, and responsibility for, the operation, maintenance, and management of the Pentagon Reservation is transferred to the Secretary of Defense.

"(2) Before March 1 of each year, the Secretary of Defense shall transmit to the Committees on Armed Services of the Senate and the House of Representatives, the Committee on Environment and Public Works of the Senate and the Committee on Public Works and Transportation of the House of Representatives a report on the state of the renovation of the Pentagon Reservation and a plan for the renovation work to be conducted in the fiscal year beginning in the year in which the report is transmitted.

"(b) The Secretary may appoint military or civilian personnel or contract personnel to perform law enforcement and security functions for property occupied by, or under the jurisdiction, custody,

Nov. 5 DEFENSE AUTHORIZATION ACT P.L. 101-510

Sec. 2804 and control of the Department of Defense, and located at the Pentagon Reservation. Such individuals—

"(1) may be armed with appropriate firearms required for

personal safety and for the proper execution of their duties,

whether on Department of Defense property or in travel status; and

"(2) shall have the same powers as sheriffs and constables to

enforce the laws, rules, or regulations enacted for the protection of persons and property.

"(c)(1) The Secretary may prescribe such rules and regulations as the Secretary considers appropriate to ensure the safe, efficient, and secure operation of the Pentagon Reservation, including rules and regulations necessary to govern the operation and parking of motor vehicles on the Pentagon Reservation.

"(2) Any person who violates a rule or regulation prescribed under this subsection is liable to the United States for a civil penalty of not more than $1000.

"(3) Any person who willfully violates any rule or regulation prescribed pursuant to this subsection commits as Class B misdemeanor.

"(d) The Secretary of Defense may establish rates and collect charges for space, services, protection, maintenance, construction, repairs, alterations, or facilities provided at the Pentagon Reservation-

"(e)(1) There is established in the Treasury of the United States a revolving fund tobe known as the Pentagon Reservation Maintenance Revolving Fund (hereafter in this section referred to as the'Fund'). There shall be deposited into the Fund funds collected by the Secretary of space and services and other items provided an organization or entity using any facility or land on the Pentagon Reservation pursuant to subsection (d).

"(2) Monies deposited into the Fund shall be available, without fiscal year limitation, for expenditure for real property management, operation, protection, construction, repair, alteration, and related activities for the Pentagon Reservation.

"(f) In this section:

"(1) The term 'Pentagon Reservation' means that area of land (consisting of approximately 280 acres) and improvements thereon, located in Arlington, Virginia, on which the Pentagon Office Building, Federal Building Number 2, the Pentagon heating and sewage treatment plants, and other related facilities are located, including various areas designated for the parking of vehicles.

"(2) The term 'National Capital Region' means the geographic area located within the boundaries of (A) District of Columbia, (B) Montgomery and Prince Georges Counties in the State of Maryland, (C) Arlington, Fairfax, Loudoun, and Prince William Counties and the City of Alexandria in the Commonwealth of Virginia, and (D) all cities and other units of government within the geographic areas of such District, Counties, and City."

(2) The table of sections at the beginning of such chapter is amended by inserting after the item relating to section 2673 the following new item:

"2674. Operation and control of the Pentagon Reservation."

P.L. 101-510 LAWS OF 101st CONG—2nd SESS. Nov. 5 Sec. 2804

(b) TRANSFER OF FUNDS FOR FISCAL YEAR, 1991.—For fiscal year 1991, the Secretary of Defense may transfer into the Pentagon Reservation Maintenance Revolving Fund (established by section 2674(e) of title 10, United States Code), from funds appropriated to the military departments and the Defense Agencies, amounts equal to the amounts that would otherwise be paid by the military departments and the Defense Agencies to the General Services Administration for the use of the Pentagon Reservation.

FY 2000/01 - DEPARTMENT OF DEFENSE APPROPRIATIONS ACT

The Department of Defense Appropriations Act, 2000, Public Law 106-79, Section 8064 (Oct. 25, 1999)

SEC. 8064. (a) None of the funds appropriated in this Act may be transferred to or obligated from the Pentagon Reservation Maintenance Revolving Fund, unless the Secretary of Defense certifies that the total cost for the planning, design, construction and installation of equipment for the renovation of the Pentagon Reservation will not exceed $1,222,000,000.

(b) The Secretary shall, in conjunction with the Pentagon Renovation, design and construct secure secretarial offices and support facilities and security-related changes to the subway entrance at the Pentagon Reservation.

The Department of Defense Appropriations Act, FY 2001, Public Law 106-259, Section 8061 (Aug. 9, 2001)

SEC. 8061. None of the funds appropriated in this Act may be transferred to or obligated from the Pentagon Reservation Maintenance Revolving Fund, unless the Secretary of Defense certifies that the total cost for the planning, design, construction and installation of equipment for the renovation of the Pentagon Reservation will not exceed $1,222,000,000.

FY 2002- DEPARTMENT OF DEFENSE APPROPRIATIONS ACT

The Department of Defense Appropriations Act, FY 2002, Public Law 107-117, Section 8060 (Jan. 10, 2002)

Sec. 8060. (a) Limitation on Pentagon Renovation Costs.—Not later than the date each year on which the President submits to Congress the budget under section 1105 of title 31, United States Code, the Secretary of Defense shall submit to Congress a certification that the total cost for the planning, design, construction, and installation of equipment for the renovation of wedges 2 through 5 of the Pentagon Reservation, cumulatively, will not exceed four times the total cost for the planning, design, construction, and installation of equipment for the renovation of wedge 1.

(b) Annual Adjustment.—For purposes of applying the limitation in subsection (a), the Secretary shall adjust the cost for the renovation of wedge 1 by any increase or decrease in costs attributable to economic inflation, based on the most recent economic assumptions issued by the Office of Management and Budget for use in preparation of the budget of the United States under section 1104 of title 31, United States Code.

(c) Exclusion of Certain Costs.—For purposes of calculating the limitation in subsection (a), the total cost for wedges 2 through 5 shall not include— (1) any repair or reconstruction cost incurred as a result of the terrorist attack on the Pentagon that occurred on September 11, 2001; (2) any increase in costs for wedges 2 through 5 attributable to compliance with new requirements of Federal, State, or local laws; and (3) any increase in costs attributable to additional security requirements that the Secretary of Defense considers essential to provide a safe and secure working environment.

(d) Certification Cost Reports.—As part of the annual certification under subsection (a), the Secretary shall report the projected cost (as of the time of the certification) for— (1) the renovation of each wedge, including the amount adjusted or otherwise excluded for such wedge under the authority of paragraphs (2) and (3) of subsection (c) for the period covered by the certification; and (2) the repair and reconstruction of wedges 1 and 2 in response to the terrorist attack on the Pentagon that occurred on September 11, 2001.

(e) Duration of Certification Requirement.—The requirement to make an annual certification under subsection (a) shall apply until the Secretary certifies to Congress that the renovation of the Pentagon Reservation is completed.

COST CERTIFICATION LETTERS SENT TO:

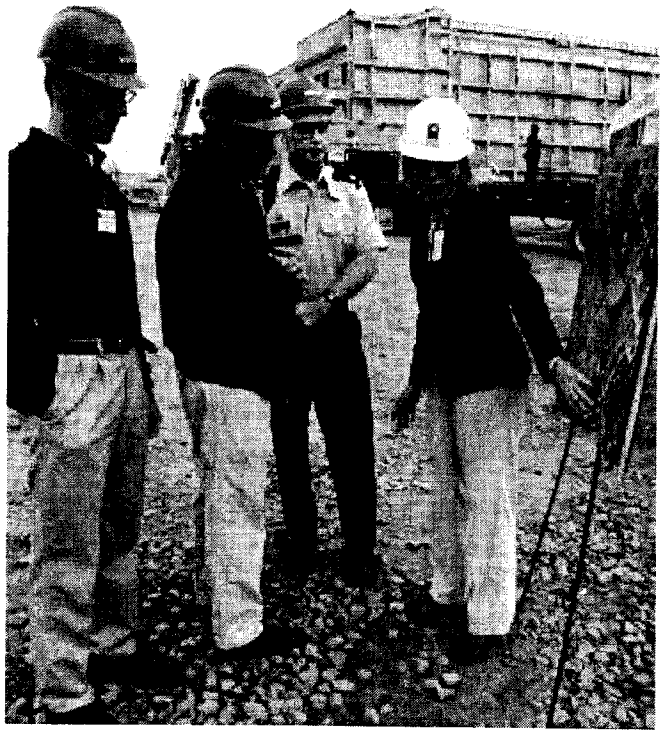
United States Senate

Honorable Richard B. Cheney, President of the Senate
Honorable Carl Levin, Chairman , Committee on Armed Services
Honorable John Warner, Ranking Minority Member, Committee on Armed Services
Honorable James M Jeffords, Chairman, Committee on Environment and Public Works
Honorable Bob Smith, Ranking Minority Member, Committee on Environment and Public Works
Honorable Robert C. Byrd, Chairman, Committee on Appropriations
Honorable Danile K. Inouye, Chairman, Subcommittee on Defense, Committee on Appropriations
Honorable Ted Stevens, Ranking Minority Member, Committee on Appropriations

United States House of Representatives

Honorable J. Dennis Hastert, Speaker
Honorable Bob Stump, Chairman, Committee on Armed Services
Honorable Ike Skelton, Ranking Minority Member, Committee on Armed Services
Honorable Don Young, Chairman, Committee on Transportation and Infrastructure
Honorable James L. Oberstar, Ranking Minority Member, Committee on Transportation and Infrastructure
Honorable C.W. (Bill) Young, Chairman, Committee on Appropriations
Honorable, David R. Obey, Ranking Minority Member, Committee on Appropriations

CONTACT INFORMATION



The Pentagon Renovation Program frequently provides tours of renovation activities for Pentagon personnel and government officials

The Pentagon Renovation Program web site is the single best resource for additional information regarding renovation activities. The site is updated on a regular basis and includes in-depth historical information about the original construction of the Pentagon and the early day of the Renovation Program. Please feel free to call the Information and Communications Office at (703) 693-8933 or our helpline at (703) 693-4357 (HELP) for additional assistance.

http://renovation.pentagon.mil.