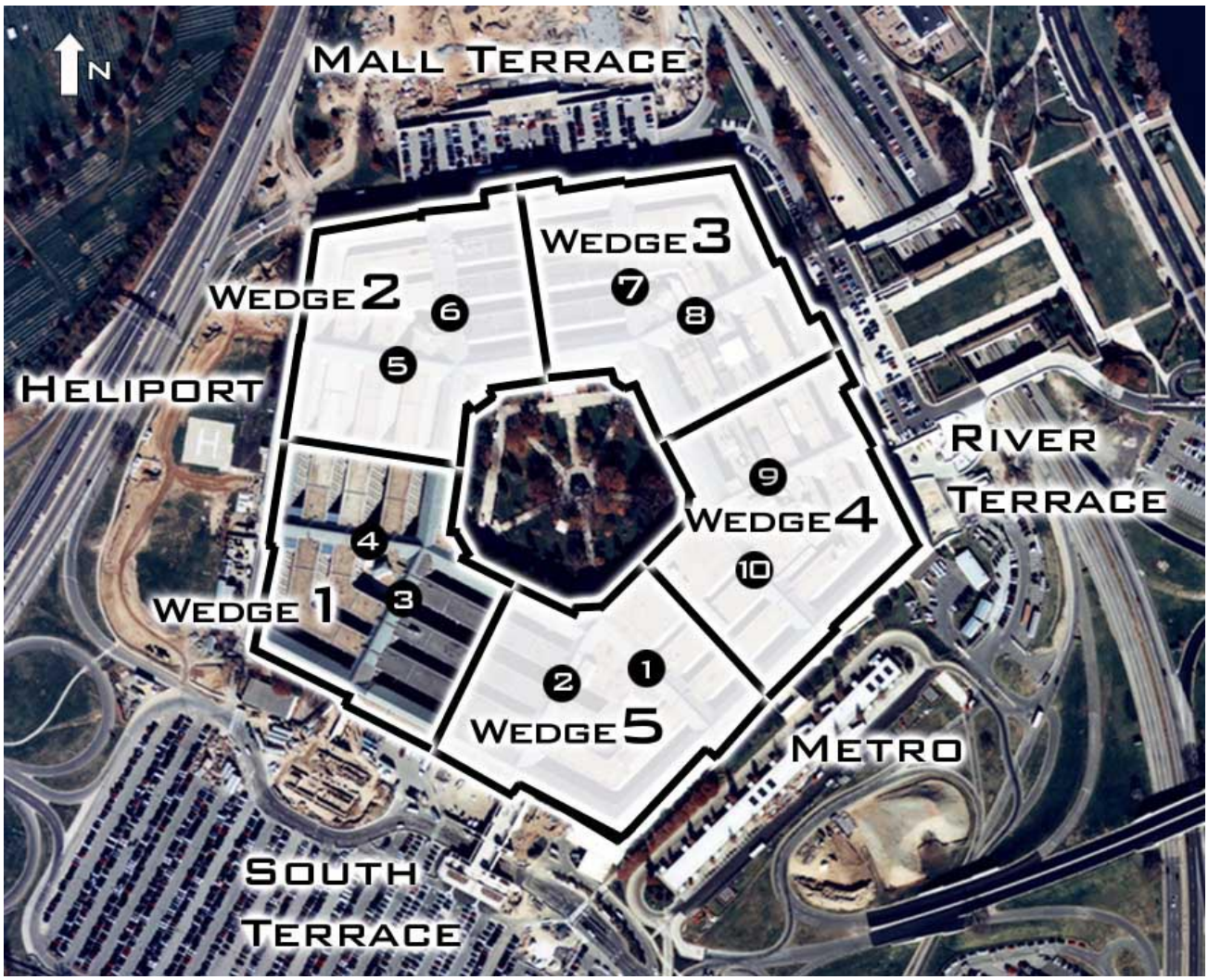
Aerial view of the Pentagon at the corner of the Metro (left) and River Terrace (right) facades. The point marks the center of Wedge 4.



Wedges 2-5 Locator

WEDGES 2-5

FLOORS 1-5

Aerial view of the Mall Terrace, which lies at the midpoint between Wedges 2 and 3.

Wedges 2 through 5 (all five floors) are currently being planned as a single acquisition, with phased construction. The approved acquisition strategy will utilize a design/build project delivery method, with performance based requirements. The objective is to realize cost savings with one prime construction contractor through the benefits of a true partnering environment by minimizing the learning curve on each wedge. The Pentagon Renovation's primary schedule risks are working around and moving tenants to accomplish construction. Thus the construction contractor's input during design will be instrumental in providing a truly constructable and coordinated solution.

Construction will be phased, with completion scheduled one wedge at a time. This includes: moving tenants from Wedge 2 into Wedge 1, Wedge 3 into Wedge 2, etc.; installing temporary utilities needed to keep the other wedges operational; demolition/abatement; core & shell construction; tenant fit-out construction; and move in. The use of one construction contractor will help to identify and plan work in portions of other wedges, potentially resulting in schedule and budget improvements.

The Metro Entrance and South Terrace facades meet at the center point of Wedge 5.

The Wedge 2-5 team is currently developing the project's performance requirements to reflect the Program's "Back to Basics" goals. This effort will become part of the project "requirements package" which will be used to obtain construction contractor proposals. One of the challenges the team faces is to reduce first costs (construction cost) to meet the Renovation's "cap" cost, while attempting to minimize the life-cycle cost of operating the Pentagon in future years. Reducing first costs does not always provide an efficient and cost-effective solution for reducing future building operational expenses, which in the end, could increase the taxpayer's burden by increased energy or maintenance expenses. However, to meet the Pentagon Renovation's cap cost, the first cost reduction approach has become a controlling criteria.

The Wedge 2-5 acquisition approach will use two-phased design-build procurement procedures in accordance with FAR 36.3. Phase I is the Request for Qualifications leading to the establishment of a pool of contractors to compete in Phase II. Phase II is the Request for Proposals leading to contract award, currently planned for the 2nd quarter of Fiscal Year 2001. The start of actual construction for the first portion of the next renovation phase (Wedge 2) is directly tied to the completion of Wedge 1.

Minimizing disruptions to the Secretarial offices along the Mall and River Terraces will pose unique challenges to the renovation team.

MOVE-OUT

Wedge 2 tenants are scheduled to move into the renovated Wedge 1 in conjunction with the Wedge 1 tenant fit-out completion schedule. Temporary utilities and demolition/abatement will start immediately after the wedge is vacated.

Wedge 2-5 Highlights

- 4,000,000 gross square feet of building space
- 20,000 people occupy Wedges 2-5, requiring 20,000+ moves
- 5,000 tenants to be coordinated/relocated during each phase
- Communication connectivity required for relocated tenants
- Design-build project delivery method planned
- Temporary utilities required for each phase to maintain existing building
- Demoliton/abatement removal:
  -60 million pounds of debris
  -12 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 for Defense Secretaries/Operation centers
- Relocation and planning for food service and retail building functions

A view inside Wedge 1 where floor slabs have been removed to clear the way for new elevators. Eventually, each wedge will be gutted and cleared down to the bare column structure seen here.

Aerial view (Feb. 2000) of the Pentagon's heliport and fire station showing excavated trenches for new water lines.

Underground Water Line Locator

POWER/SITE

REPLACEMENT OF UNDERGROUND WATER LINES

The Underground Water Lines project was awarded on June 9, 1999, to replace federally-owned water mains serving the Pentagon. These lines provide domestic water to the building, process water for the heating and refrigeration plant, and water for fire protection. The existing lines, first installed in the 1940's, were badly deteriorated and near the end of their service life. The contractor constructed four new water meter vaults, replaced 1,100 feet of 24-inch water main, and provided four new 10- inch water lines into the building.

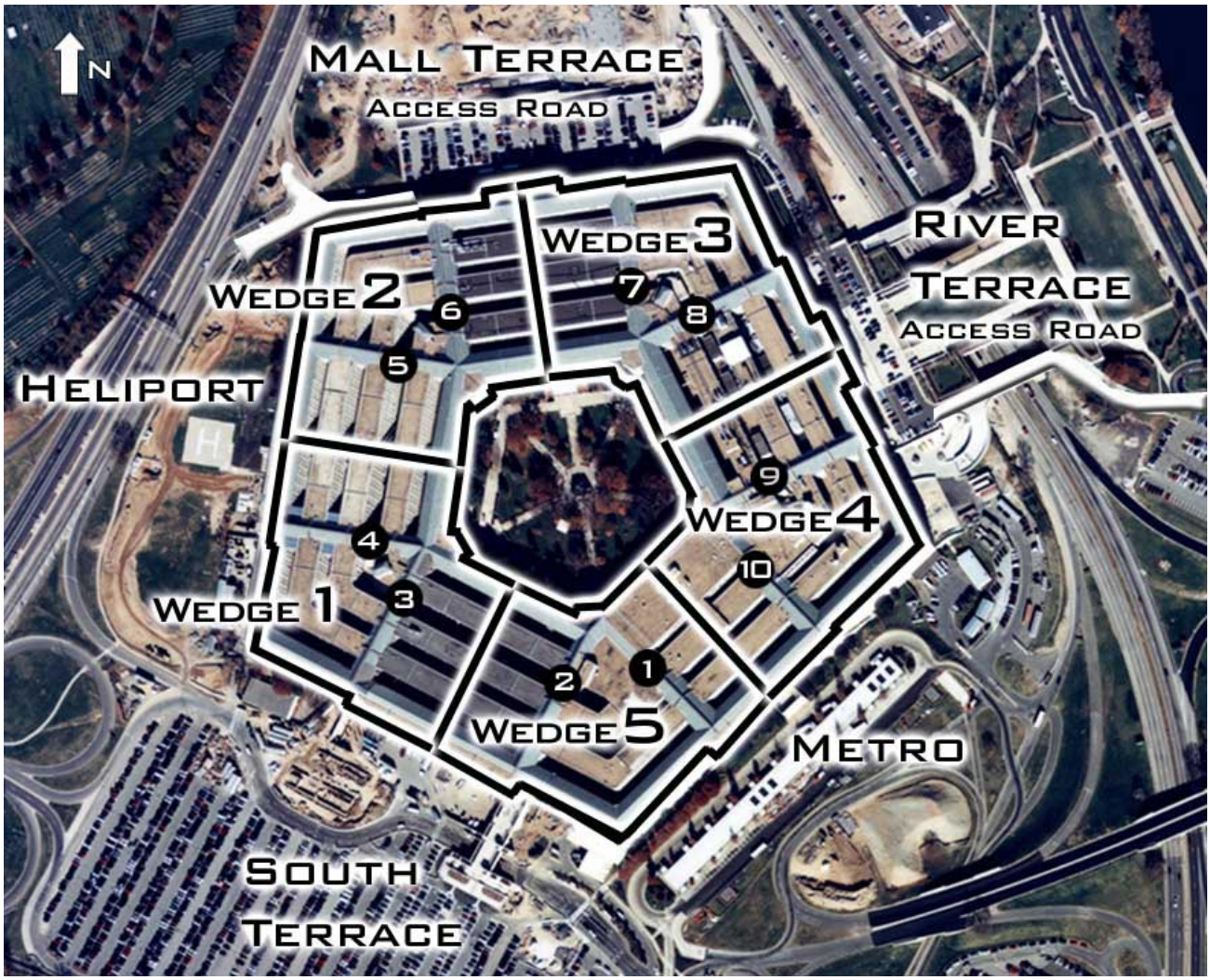
CHILLED WATER LINE HIGHLIGHTS

- 1,100 feet of 24-inch water line
- 4 new 10-inch feeds into building
- 3 new water meters
- Small and Disadvantaged Business contract

A new 24-inch water line lies in a trench near the Pentagon heliport.

A back-hoe is used to place a Jersey Barrier along the walkway around the Pentagon heliport. The area is being restricted to clear the way for placement of new water lines.

The River Terrace bypass lane has been prepped for asphalt paving. Crash bollards, a card reader and gate arm shells have been placed on the concrete island.



Access Road Widening Project Locator

ACCESS ROAD WIDENING

The Access Road Widening Project consists of the excavation and installation of an asphalt-covered bypass lane to allow authorized vehicles to gain access to the Pentagon utilizing an alternate lane during traffic tie-ups at the guard booths. The modifications were performed at the River Terrace and Mall Annex entrances. A third entrance at the Mall Terrace will be completed under another contract. Concrete islands, crash bollards, and conduit for DPS forces to install road gates and control devices, were installed by the contractor. The Pentagon Building Management Office will complete land scaping and the Defense Protection Service (DPS) will complete installation of security devices.

The majority of the physical construction associated with these lanes and the landscaping is complete. The installation of security devices continues. The DPS contractor is performing the balance of the work.

This was a design-build contract, awarded on September 17, 1999. It required only 30 days from contract award to construction completion.

HIGHLIGHTS:

- Security improvements to River Terrace Access Road
- Completed in 30 days
- Small and Disadvantaged Business contract

Island at River Terrace for gate arm and card reader has been formed. Concrete placement is underway. Crash bollards to the left of the formwork were installed during the pour.

A trench was dug in South Terrace Parking to accommodate the rerouting of a chilled water line.

Chilled Water Line Locator

CHILLED WATER LINE FEEDERS

The installation of new chilled water line feeders into the building is nearly 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 will complete the chilled water main piping for the building's air-conditioning system.

HIGHLIGHTS:

- 900 feet of new 36-inch pipe
- Half of the line is below ground
- Half of the line is installed in existing utility tunnel
- Small and Disadvantaged Business contract

A trench was excavated for a new 36-inch chilled water line.

Installation of the new chilled water line.

New chilled water line connections near the South Terrace Pedestrian Bridge.

The new Remote Delivery Facility will divert trucks and other large vehicles away from the Pentagon and serve as a secured screening facility for all items entering the building. Truck bays in the foreground begin to take shape.

Remote Delivery Facility (RDF) Locator

ANCILLARY PROJECTS

REMOTE DELIVERY FACILITY (RDF)

The Remote Delivery Facility is a new 250,000-square foot building being constructed adjacent to the Pentagon's Mall Terrace. When completed, the RDF will significantly improve the physical security of the Pentagon by providing a secure consolidated location for receiving and screening thousands of items shipped to the building each day. The new one-story facility, which will be connected to the Pentagon via an access tunnel, includes thirty-eight loading docks, an x-ray area, and space for associated material handling functions. Additionally, the building will house the Pentagon's maintenance shops and other light industrial operations.

Workers construct shoring for the roof structure of the new Remote Delivery Facility.

The RDF, which is on a 24 month fast-track schedule for security reasons, is the first major project to be accomplished at the Pentagon utilizing a design/build project delivery system. Following a highly competitive two-phase best-value source selection, the design/build contract was awarded in April 1999. The winning design exceeds all of the established performance criteria, and successfully integrates the building into the site through the use of extensive berming and landscaping. The contract type is unique in that although it is fixed-price, it contains incentive provisions. These provisions provide the opportunity for the sharing of cost overruns or underruns and award fee provisions which provide the opportunity for the contractor to earn profit based on the government's satisfaction with his overall performance.

Heavily reinforced columns rise on the Remote Delivery Facility site.

Workers install a complex system of roof beams and slabs for the Remote Delivery Facility.

The Remote Delivery Facility will include 38 truck bays. In the foreground, concrete has been placed for several of the bays.

Design of the RDF was completed in December 1999 and construction is well underway.

Not Applicable

MOVE-OUT

A tenant move-out is not applicable to this project. However, it was necessary to inform tenants of the loss of approximately 600 parking spaces from the Mall parking lot. This was accomplished through the Renovation Program's web site, posters, hand delivered notices, and meetings.

TEMP MEP/COMM

Foundation work and installation of underground utilities began in late August 1999, and are now nearly complete.

DEMO & ABATE

Before construction of the RDF could begin, a section of Mall Terrace parking had to be removed. By storing the excavated soil at sites around the Pentagon Reservation instead of moving it to a dump site 20 miles away, the Program saved close to $1,000,000.

CORE & SHELL

Placement of structural floor slabs, columns, walls, and roof slabs is underway.

Not Started

TENANT FIT-OUT

Not Started

INFORMATION MANAGEMENT & TELECOMMUNICATIONS (IM&T)

Not Started

FURNITURE, FIXTURES, & EQUIPMENT (FF&E)

SECURITY

Security is the reason for the existence of the RDF. Careful attention has been paid to security needs and requirements throughout design and construction.

COMMISSIONING

The RDF is the first project to completely integrate the commissioning process from the start of planning and design. As a result, the project is on schedule and within budget.

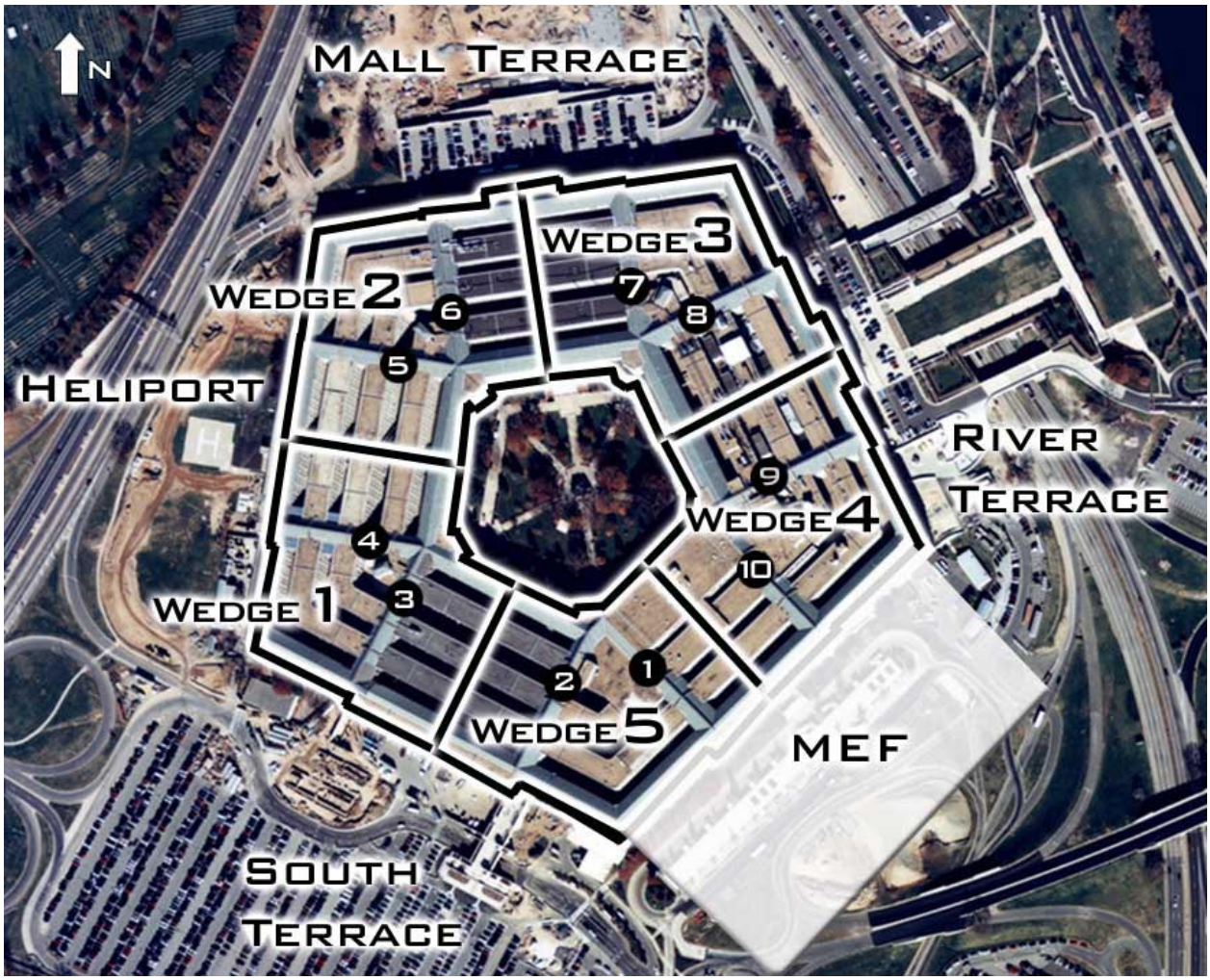
MOVE-IN

The project is currently within budget and on schedule for first phase occupancy by Fall 2000 and second phase occupancy by Winter 2000. Final completion will occur by Spring 2001.

Workers excavate soil near new pilings.

An artistic rendering of the completed Remote Delivery Facility. After landscaping has been complete, the RDF will be almost undectable from the surrounding roadways.

Aerial view of the Pentagon Metro Entrance looking east. 16,000 employees enter the building from this facility. Thousands more use the station as a transfer point.



Metro Entrance Facility (MEF) Locator

METRO ENTRANCE FACILITY (MEF)

Based on recent security assessments, the need for a new Metro Entrance Facility (MEF) has become evident. This new facility will improve the physical security of the Pentagon by eliminating the existing direct entry into the building and providing maximum standoff of vehicles and pedestrians from the building. The project objectives are as follows:

- Achieve security of the Metro entrance.
- Organize Pentagon arrival, access, and circulation areas to create a more secure environment and entrance.
- Balance security concerns against a welcoming front entrance.
- Phase and synchronize facility construction to maintain current transportation functions, Pentagon access, and minimize impacts to other construction efforts.
- Minimize the visual and physical impact of the MEF on the Pentagon.

The existing Metro bus loop allows vehicles to be within close proximity to the Pentagon and occupied office space. Current security initiatives require the loop to be relocated farther away from the building.

The Government intends to award a design-build, fixed price, incentive (firm target) contract with an award fee. The MEF acquisition and source selection are being conducted in accordance with the Federal Acquisition Regulation (FAR), Part 15.

A two-phase, best-value approach will be utilized for this source selection: Phase One is a Request for Qualifications (RFQ) and Phase Two is a Request for Proposals (RFP). Contract award is anticipated by the end of July, 2000.

View of the escalators leading from the Metro station and into the Pentagon. The top of the escalators are within the building perimeter.

Aerial view of the Pentagon Heliport Fire Station and Control Tower.

Heliport Fire Station and Control Tower Locator

HELIPORT FIRESTATION AND CONTROL TOWER

Under negotiation is a Small and Disadvantaged Business (8a) contract to upgrade the Heliport Fire Station and Control Tower. The fire station is being extended to improve berthing facilities and provide access for newer fire-fighting equipment. The control tower project will upgrade electrical and mechanical systems, and bathroom facilities. The roof will also be replaced. A third part of this contract will install a new 500-foot communications ductbank from the building near the heliport to connect with a contractor trunk line at South parking. Contract award is anticipated by February 1, 2000.

HIGHLIGHTS:

- Expands fire station for berthing of new equipment
- Upgrades mechanical/electrical systems in Control Tower
- New 500-foot communication duct bank for connection to Bell Atlantic
- Small and Disadvantaged Business contract

Aerial view looking north at the Pentagon Heliport Fire Station and Control Tower. Renovations are needed to meet the current needs of both facilities.