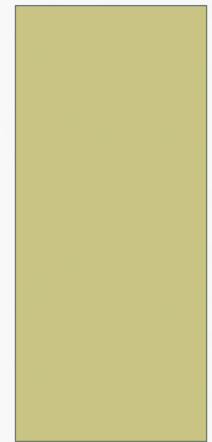


FORT MONMOUTH  
PLANNING, ENGINEERING, ARCHITECTURAL &  
ENVIRONMENTAL CONSULTING SERVICES  
OVERVIEW

DAN SCHNEPF, PRINCIPAL  
FRANK TYBOROSKI, DIRECTOR, FEDERAL PRACTICES  
MATRIX DESIGN GROUP, INC.



# PRESENTATION OVERVIEW:

- Task A: Buildings & Infrastructure
- Task B: GIS-Based Cost Modeling

# BUILDINGS – GENERAL OBSERVATIONS

- Building core and shell in good condition
- Building interior generally needs upgrading
- Mechanical, Electrical and Plumbing systems need replacement
  - Do not meet current codes
  - Some systems so old replacement parts not available
- Environmental concerns
  - Asbestos present in most buildings
  - Lead-based paint present in most buildings
  - Naturally occurring hazards – mold, pigeon droppings
- Compliance Issues
  - Americans with Disabilities Act
  - State Historic Preservation Office

# HOUSING

- Typical housing types were assessed
- Reuse potential for all units assessed good
  - Like use suggested
  - Some renovations to meet current codes required at most units
    - Primarily electric, plumbing, HVAC and accessibility
- Located in specific neighborhoods
  - Adjacent units have similar architectural style and character
  - Units segregated by grade (GOQ, SOQ, FGQ, CGQ, SrNCO, NCO)
- All units assessed are eligible for listing on Historic Register

# OFFICE/LABORATORY:

- Office/Laboratory buildings assessed
  - Two buildings 100K± s.f.
  - One building (Myer Center) > 670K s.f.
  - All present unique opportunities/challenges
- Structures generally in good condition
  - Varying levels of maintenance, even within individual buildings
  - Varying levels of tenant improvement, even within same building
- Code compliance
  - All buildings have significant issues to address to meet codes
  - Most buildings require modifications to meet ADA requirements
  - Some buildings need upgrades to meet life safety codes
- Reuse potential
  - Like use suggested for most buildings
  - Investment required to bring to market

# CIVIC/INDUSTRIAL/STORAGE:

- Specialized use buildings were assessed
  - Fitness Center
  - Post Office
  - Museum
  - Fabrication Shop/Test Cell
- Serviceable, but limited reuse potential
  - Specific nature of most buildings limits it to like reuse
  - Capital investment to renovate might exceed cost to build new
- Additional Challenges/Opportunities
  - Museum eligible for Historic Register (convert back to theater?)
  - Charles Wood Fabrication Shops front to rail
  - Pulse Power (2707) reuse for high bay area

# INFRASTRUCTURE AND UTILITIES

- Systems Assessed
  - Water Distribution
  - Stormwater Collection
  - Electrical Distribution
  - Gas Distribution
  - Telecommunications
  - Geothermal
  - Transportation
- Systems Not Assessed
  - Sanitary Sewer (Assessed under separate contract)

# WATER DISTRIBUTION

- Potable Water provided by New Jersey American Water
  - May have problems meeting future demands with existing capacity
- Storage
  - Two elevated and one above ground storage tanks~1 million gal.
  - Charles wood elevated tower in use – boosts fire capacity
  - Generally serviceable, will require action to meet AWWA and OSHA
- Distribution
  - Distribution system near end of its expected service life
  - Combination of ductile iron, transite and plastic pipes
  - Reliable but requires high level of maintenance
- Challenges
  - Aged system
  - Need for metering



# STORMWATER COLLECTION

- Surface collection – discharges to multiple natural outfalls
  - Post subject to flooding during high water events (Nor'easters)
  - Potential for infiltration into sanitary sewer and in ground utilities
  - Frequent flooding of basements
- Storm collection system
  - Natural swales and concrete culverts
  - Aged and in poor condition
- Stormwater Quality
  - Stormwater Pollution Prevention Plan Implemented in 1994
  - Best management practices used to protect stormwater quality
  - Facility in compliance with all recommended BMPs.
- Challenges
  - Proximity to water, particularly main post area
  - Aged infrastructure

# ELECTRICAL DISTRIBUTION

- Jersey Central Power and Light Company provides power to site
  - Only one entry point for Main Post and one for Charles Wood area
  - Substations, switchgear and transformers aged, need replacement
  - Utility provider has capacity to meet expanded need
- Distribution
  - Primarily overhead
  - Most major facilities have generators (diesel or natural gas)
- Subsystems
  - All critical components aged but well maintained (every 2 years)
- Challenges
  - Major system components at end of service life
  - High water table makes putting distribution in-ground expensive
  - Entire site currently only metered in one location

# GAS DISTRIBUTION

- Franchised System – New Jersey Natural Gas is utility provider
- Existing System
  - Distribution system owned and maintained by New Jersey Natural Gas
  - Each building is individually metered
- System Capacity
  - New Jersey Natural Gas installing a new 16-inch high pressure main
  - Will meet demand for next 10 years
- System Requirement
  - Projected natural gas demand for redevelopment are 219,000 CFH
  - Includes 151,000 CFH for 10 year and additional 68,000 CFH for 20 year
  - Substantial system expansion required to meet 20-year plan

# TELECOMMUNICATIONS

- Predominantly buried fiber optic cable
  - Buried lines mostly sleeved (PVC, Steel, Concrete)
  - Some pole-mounted copper cables still in use on site
- Ring System
  - Consists of 144 fiber cables
  - Sixty buildings, including all large units, are connected to the ring
  - Some smaller buildings have DSL
- Largest Service Provider is Verizon
  - Cellular Tower located in 900 area of main post
  - Elevated water tower in Charles Wood area hosts cellular antennae
- Generally the telecom equipment is in good condition

# GEO THERMAL

- Geothermal systems installed on post starting ca. 1997
  - Ten buildings with active systems on main post
  - Five buildings with active systems on Charles Wood
  - One building with partial system (360)
  - Seven buildings with inactive systems
- Used to provide heating/cooling to the buildings
  - Steady state system, maintains ambient temperature ~74 degrees
  - Installed systems good economic incentive for prospective owners
- No commercial application
  - Limited to heating and cooling of individual buildings
  - Land intensive – well fields require significant amount of land
  - High capital cost up front – long amortization

# TRANSPORTATION

- Existing Roadway Totals
  - Primary – 68,478 lf
  - Secondary – 31,507 lf
  - Tertiary – 76,542 lf
  - Abandoned 15,216 lf
- Existing pavements generally in good condition
  - Roadways will need to be widened to meet NJDOT criteria
  - Recommend using NJDOT standards as each municipality differs
  - New utilities should be installed in roadways
- Access to site strong component of its value
  - Garden State Parkway, Route 35, Route 36, Tinton Avenue

# TRANSPORTATION

- Roads
  - Roads in older section of post have 8" concrete base, marl subbase
  - Roads west of Wilson Road primarily blacktop on aggregate base course
  - Main roads have concrete curbs, most in good condition
  - Secondary roads have minimal curb, most in need of repair
- Parking
  - Parking lots generally in fair condition
- Rail
  - No direct access to rail on post
  - New Jersey transit uses rail to north and south of post
    - Little Silver
    - Monmouth Park
  - 2500 Series Fabrication Shops in Charles Wood front rail spur

# GIS-BASED COST MODELING:

- GIS-Based Cost Model
  - Develop GIS data for proposed infrastructure
    - Water, Sanitary, Storm
    - Roadway
    - Telecom, Electric, Gas, & Geothermal
  - Finalize unit costs & indirect costs
  - Generate cost estimate reports summarized by Key Area
  - Create proposed infrastructure improvement maps with preferred alternatives



# GIS-BASED DECISION SUPPORT SYSTEM & COST MODEL:

- Develop Cost Estimates for Proposed Infrastructure Improvements
  - Derived Using Combination of GIS and Unit Cost Data
  - Creates Dynamic Link Between Physical and Cost Data
    - Proposed Alignments, Quantities or Attributes Change
    - Cost Summaries Automatically Updated
- Provides Several Cost Summary Report Options
  - Detailed Reports Summarized by Project
  - Simplified Reports with Global Site-Wide Costs
    - Useful When Evaluating Multiple Capital Improvement Scenarios
    - Includes Direct and Indirect Expenses

# FACILITY INVENTORY AND ASSESSMENT:

- Incorporate Data Collected from Field Inspections
- Provide Cost Data for 3 Alternatives
  - Demolition
  - Continued Use with Minimal Renovation
    - O&M for Vacant Units with Later Reuse Potential
  - Renovation for New Use

# FACILITY INVENTORY AND ASSESSMENT:

## Building 2700 : Myer Center Fort Monmouth : Monmouth County, NJ



Vicinity Map



Front



Interior Hallway



### General Information

**Key Area:** Tinton Falls  
**Buildings in Series:**  
 N/A  
**Current Use:** Labs/Admin  
**Year Built:** 1955  
**Approximate Footprint Area (Square Feet):** 673,540

**Register Eligible:** Yes

### Architectural

**Number of Stories:** 5  
**Number of Stories Above Ground:** 4  
**Number of Stories Below Ground:** 1

### General Description:

Five-story office, administrative and communications lab

### Exterior Wall Material:

Steel frame with CMU in-fill

### Exterior Wall Finish:

Exterior Insulation and Finish System (EIFS)

### Exterior Wall Condition:

Fair

### Foundation Type:

Unseen - likely reinforced concrete column and wall footings

### Basement Floor Construction Type:

Slab on Grade

### Roof Type:

Flat

January 2011

## Building 2700 : Myer Center Fort Monmouth : Monmouth County, NJ



Rear



Rear



Roof



### Roof Covering:

EPDM membrane over rigid insulation, rock ballast, internal drains, aluminum flashing. Many abandoned HVAC components on the roof.

### Exterior Glazing:

Aluminum, tinted double-pane fixed and awning type installed in 1980's. Some original single pane windows on basement level in service areas.

### Interior Wall Construction:

Combination of CMU masonry walls, 2x4 stud with gypsum drywall, transite wall panels, demountable partition walls

### Interior Wall Finish:

Paint

### Interior Floor System:

Reinforced concrete slab

### Interior Floor Finish:

Various finishes of vermiculite slab including asbestos tile, vinyl tile, short carpets

### Interior Ceiling System:

2x2 and 2x4 suspended acoustical grid, exposed ceiling in service areas

### Interior Door Material:

Wood and hollow metal doors on hollow metal frames, predominately knob style hardware

### Accessibility

**Entry:** Yes

**Restroom:** Yes - most

**Parking:** Yes

**Elevator:**

Yes - four each 4,000 lb capacity + one 10,000 lb freight elevator

January 2011

# FACILITY INVENTORY AND ASSESSMENT:

**Building 2700 : Myer Center**  
**Fort Monmouth : Monmouth County, NJ**

**Stair Construction:**

Steel

**Stair Finish:** Various

[Life Safety](#)

**Fire Alarm:**

Yes - Cerbus / Notifier

**Exit Signage:** Yes

**Emergency Lighting:**

Yes - Generator Backed and Battery backed wall packs

**Sprinkler:**

No

**Exit Stairs:** No

**Fire Rated Doors:** No

[Electrical](#)

**Electric Service Size:**

(2) 7500kVA, 12470V delta - 4160/2400V wye,  
 (7) 4160V delta - 480/277V and 208/120V  
 Substations

**Distribution Condition:**

Poor - original to building, outdated

**Generator/Uninterruptable Power Supply:**

Multiple Generators, natural gas #2 oil and Power Distribution Units

**Security:**

Credential reader, motion detection, CCTV

**Interior Lighting Type:**

Varies; 1 lamp surface mounted, highbay pendant, 2'x4' and 2'x2' fluorescent recessed trays, incandescent

**Lighting Condition:** Fair

[Plumbing](#)

**Restroom Type:**

Six sets of male and female bathrooms on each floor; 70% have been renovated with new finishes, fixtures and for handicapped accessibility

**Restroom Fixtures:**

Non-water conserving

**Restroom Partition Type:**

Varies, metal or solid color reinforced composite

**Restroom ADA Compliant:**

Yes, 70%

[Mechanical](#)

**HVAC System Type:**

Two pipe system provides either chilled water or hot water to AHU coils which are manually switched twice per year. Lab spaces have independent HVAC systems. Generally poor condition overall with most controls and units being 1950's to 1980's vintage and some systems are not operational.

**Fuel Source:**

Electric and Gas

**Distribution System:**

Ducted supply, & exhaust. Combination Ducted return and plenum return.

**Heating System Type:**

(2) 8369 BTU boilers

**Building 2700 : Myer Center**  
**Fort Monmouth : Monmouth County, NJ**

[Landscaping](#)

**Parking:** Yes

**Parking Type:** Surface, paved

**Landscape Type:** Grass, shrubs, trees

**Exterior Lighting Type:** Incandescent

[Indoor Environmental](#)

**Suspected Hazardous Building Materials:** Yes

**Suspected Asbestos:** Yes

**Suspected Lead Based Paint:** Yes

**Suspected Radon:** Yes

[Cost](#)

**Alternative 1 (Demo):** \$0.00

**Alternative 2 (Remodel):** \$0.00

**Alternative 3 (Replace/Reconstruct):** \$0.00

[Source](#)

**File Name:**

Building 2700 Condition Assessment.pdf

# UTILITY INVENTORY AND ASSESSMENT:

- Evaluate Condition and Capacity of Existing Utilities
- Develop Cost Data for Maintenance/Repair
  - Identify Areas of Concern
  - Develop O&M Schedules
- Develop Cost Data for New Construction
  - Support Requirements of Redevelopment Plan
  - Provide Basis for Just-In-Time Delivery of Infrastructure Components
  - Layout New Distribution/Collection Networks

# FINE-TUNE DEVELOPMENT PLAN:

- Overlay GIS Data Layers to Identify Development Plan Opportunities and Constraints

