

Robert J. Dole VA Medical Center
Wichita, KS

Design Narrative

MEP Systems

Prepared For:
M+HFG
Wichita, Kansas

PEC Project No.:
180248-000

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Date:
July 26, 2018



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ROBERT J DOLE VA MEDICAL CENTER – WICHITA, KS

Project Description:

This project consists of approximately 3,200 square feet of remodel within Building 6 on the Wichita VA campus. The building will be completely remodeled and MEP systems modernized.

DESIGN – MECHANICAL SYSTEMS

Existing Mechanical System:

The existing building is served by several thru the window packaged AC units and steam radiators. The existing MPS line enters the building along the North wall in the basement, then reduces to LPS, before distributing throughout the building to the perimeter under-window radiators.

There is currently no outside air being brought mechanically into the building. The exhaust air in the basement is vented through an existing opening at a window well with an inline fan. The restrooms on the first and second floor have ceiling mounted exhaust fans connected to ductwork that routes up through the building and exits within the attic space through the North wall.

All existing controls are local to the equipment.

The existing domestic water main enters Building 6 through the West wall in the basement. There is an existing 19-gallon water heater located in the basement that serves the five lavatories in the building. The existing domestic water main also serves Building 21 through a 2" line that exits the basement on the North wall in the existing mechanical/housekeeping space.

Proposed Mechanical System:

Per the VA, the steam radiators are to be removed and not replaced with new steam radiators. The chosen mechanical system for Building 6 is indoor upright air handlers with DX cooling and Steam Heating. There shall be four air handlers, two located in the basement and two located in the attic. The basement units will serve the basement and first floor, splitting distribution between North and South exposures. The attic units will serve the attic and second floor, splitting distribution between North and South exposures. The condensing units will be located on the Northeast lawn of Building 6. Steam supply and return mains are currently in Building 6 and will be reconnected to. There is an existing pressure reducing valve and condensate receiver that are both in good condition, per VA staff, and shall be reused. Outside air will be brought to the air handlers through a gravity intake hood for attic units and by a duct through an existing window well for the basement units. The basement outside air duct must be a minimum of 6'-0" above finished grade.

Exhaust Air

Exhaust air will be handled through local ceiling mounted exhaust fans. The exhaust fans will discharge exhaust air through exterior sidewall wall caps. The wall caps shall be field paintable and provided with a birdscreen and backdraft damper.

Room Conditioning:

Space requirements will be determined per the calculated space heating and cooling loads and the NIH Design Requirements Manual. Space temperatures will be designed to 74°F and 70°F for cooling and heating, respectively.

Proposed Plumbing System:

Per the VA, 100% of the plumbing within the building needs to be removed and replaced. All existing waste and storm drain lines near Building 6, as shown on the drawings, shall be scoped and cleaned out of debris. The new waste piping will reconnect to the existing main. The existing domestic water entrance, along the basement West wall, will be reconnected to and will be re-routed to serve the new floor plan. Hot water will be served by an electric tank water heater located in the basement. There will be an expansion tank and recirculating pump also located in the basement. Per the VA plumbing design manual, the water heater shall be capable of producing and maintaining 140°F water and will be served to the fixtures at 110°F through a main mixing valve located in the basement.

SCHEMATIC DESIGN – ELECTRICAL SYSTEMS

Existing Conditions and Demolition:

An existing 200A, 120/208V, single phase Normal Power Panelboard and existing 60A, 120/208V, single phase Emergency Power Panelboard are located in the basement of Building 6. The emergency power panelboard will be reused for this project. The normal power panelboard will be removed and replaced with a 250A, 120/208V, single phase panelboard. All existing light fixtures, lighting devices, electrical devices, and low voltage devices will be removed entirely, with the exception of the devices in the existing IT Closet in the basement. Electrical devices installed in an exterior wall will be replaced in the exact same place to the maximum extent possible. Existing boxes and conduit within the exterior wall will be reused as necessary. All other existing electrical circuiting and raceways will be removed back to the existing panel locations. Existing circuit breakers within existing panelboards that are remaining shall be re-used for new circuits. The existing telephone and fiber services to the building will remain in place and be reused for this project. All existing phone and data drops will be completely removed back to the existing telecom closet. The existing Fire Alarm Panel located in the basement will remain in place and be reused for this project. The existing Fire Alarm loop which enters the building in the basement will remain and be reused for this project.

Electrical Distribution:

All feeders shall be copper and sized for the full ampacity of the overcurrent device from which it is fed. Circuit breakers being added into existing panelboards shall match the make, model, and AIC rating of existing circuit breakers within the panel.

Building Lighting and Controls:

Lighting levels will follow IES recommendations. Utility spaces, including storage, electrical, mechanical, and janitorial areas will be provided with LED strip lighting fixtures. These spaces will be provided with manual on-off control. Office, educational and conference type spaces will utilize LED 2x4 troffer lighting fixtures. These spaces will be provided with automatic controls.

Fire Alarm:

Fire alarm devices and smoke detectors will be installed within the building as required. These devices will be connected to the existing fire alarm system serving the building.

Phone and Data Systems:

New phone and data drops will be routed back to the existing telecom closet in the basement.