Attachment 2 - APPENDIX II
Updated: 7/10/2026

DESCRIPTION OF EXISTING FACILITIES

Figure 1 Jefferson Labs Campus

Table of Contents

Contents

Attachment 2 - APPENDIX II **1**
DESCRIPTION OF EXISTING FACILITIES **1**
Table of Contents **2**
DESCRIPTION OF EXISTING FACILITIES **3**
BUILDING: 2 ..... 4~~5~~
BUILDING: 5A ..... 6~~7~~
BUILDING: 5B ..... 12~~13~~
BUILDING: 5C ..... 17~~18~~
BUILDING: 5D ..... 21~~22~~
BUILDING: 6 storage only ..... 25~~26~~
BUILDING: 7 ..... 29~~30~~
BUILDING: 9 ..... 33~~34~~
BUILDING: 10 ..... 36~~37~~
BUILDING: 11 ..... 40~~41~~
BUILDING: 12 ..... 43~~44~~
BUILDING: 14A ..... 47~~48~~
BUILDING: 14B ..... 50~~51~~
BUILDING: 14C ..... 54~~55~~
BUILDING: 15 ..... 58~~59~~
BUILDING: 16 ..... 62~~63~~
BUILDING: 17 ..... 65~~66~~
BUILDING: 20 Abandoned ..... 68~~69~~
BUILDING: 21 ..... 71~~72~~
BUILDING: 26 ..... 74~~75~~
BUILDING: 28 ..... 79~~80~~
BUILDING: 31 ..... 81~~82~~
BUILDING: 32 ..... 84~~85~~
BUILDING: 37 ..... 86~~87~~
BUILDING: 44 ..... 89~~90~~
BUILDING: 45 ..... 93~~94~~
BUILDING: 46 ..... 96~~97~~
BUILDING: 50 ..... 99~~100~~
BUILDING: 51 113
BUILDING: 52 118
BUILDING: 53A 122
BUILDING: 53B, C, D and E 127
BUILDING: 54 130
BUILDING: 60 134
BUILDING: 62 138
BUILDING: 62A 144
BUILDING: 85 149
BUILDING: Trailers 151
BUILDING: 70, 71, 72, 73, & 74 152
ATTACHMENT 2 - APPENDIX III DESCRIPTION OF UTILITY SYSTEMS 153

DESCRIPTION OF EXISTING FACILITIES

This Appendix provides the SP with an overview of the existing facilities at the Jefferson Laboratory Complex by providing a general description of the Architecture, building function at the facility, function of the major systems in each building, and the major and special equipment.

Performance Work Statement (PWS).

- This Appendix is not a listing of only SP-occupied facilities; rather, it describes all facilities at the Center. A list of SP-occupied facilities is included at Exhibit 15-1 to the PWS.

- Some systems and items of equipment are described as being in poor operating condition. These items shall be maintained in as good working order as possible, but shall not be replaced without prior COTR approval.

- Some systems and items of equipment are described as being inoperative. These items are included herein for informational purposes only. They shall not be repaired or otherwise maintained without COTR approval.

- "Critical Environmental Conditions" (see Appendix I for definition) are indicated for each building where they are needed. These conditions are monitored by the EMCS Systems and the ranges of values (i.e., temperature ranges and tolerances) are programmed therein by the governments EMCS staff.

- HVAC Systems are monitored by Siemens Apogee, Johnson Metasys, or Trane Tracer Summit building automation systems. All are direct digital control (DDC) systems and include many control points. Temperature and Humidity for individual rooms in laboratory and animal holding spaces shall be included under the “Critical Environment Conditions.”

BUILDING: 2

SQAURE FOOTAGE: 18,432 SF

NO. FLOORS: 2

FUNCTION

This building houses chillers that supplies chilled water to other buildings on campus for the purpose of space air conditioning. Generators in this building provide backup/emergency power supply to this building. They don't serve as backup/emergency power source to any other building on campus.

ARCHITECTURAL

Bldg. 2 is located on campus of FDA Jefferson Laboratories, 3900 NCTR Road, Jefferson, Arkansas 72079. It is located near to Bldg. 14 and Bldg. 7. The building was constructed in 2025. Building consists of two floors. First floor houses a office room, rest room, janitorial room, break room, server room, electrical room, chiller and generator bay. Chiller bay houses several pumps, expansion tank, two 1500-ton chillers and one 250-ton chiller served by one 7664 gpm and one 640 gpm cooling towers respectively. Both the cooling towers are located outdoor on west side of the building and there is provision to accommodate additional future two 1500-ton future chillers, one 7664 gpm cooling tower. Generator bay houses two 1500 KW diesel generators and two-day fuel tanks next to generators and there is provision to accommodate additional future two 1500 KW diesel generators. There are two outdoor fuel tanks for serving these generators. Second floor have penthouse housing supply fans for generator, one storage room and roof.

STRUCTURE

SUBSTRUCTURE: The substructure consists of cast-in-place concrete perimeter foundation walls with spread footings, and a raised cast-in-place concrete first floor slab.

SUPERSTRUCTURE: The superstructure is of steel-framed construction and a steel-framed roofing system supporting a metal roof deck.

BUILDING EXTERIOR EXTERIOR WALLS: The exterior facades consist of solid block walls on lower half portion, and metal panel on upper half portion.

EXTERIOR WINDOWS: The building has glass window on east side.

EXTERIOR DOORS: The exterior doors consist of glazed, storefront-type units with push handle-type hardware and metal units set in metal jambs. Four roll-up doors serving generator and chiller bays.

ROOFING: The building has a sloped, two ply bituminous, metal deck roof with metal flashing. The east side entranceway has scoped canopy. Roofing was installed by platinum roofing company with a 20 yr. warranty.

BUILDING INTERIOR

PARTITIONS: Interior walls consist of metal studded partitions.

INTERIOR DOORS: The interior door assemblies consist of metal and wood units, set in metal jambs, equipped with pull-handle or knob- type hardware.
WALL FINISHES: Walls are of painted gypsum board.

FLOOR FINISHES: The building interior floor finishes consist of commercial vinyl tile (VCT) in office are and exposed concrete in bay area.

CEILING FINISHES: Ceiling finishes consist of suspended acoustic tiles in office area and exposed metal roof deck in bay

area.

CONVEYING: Since the building has two floors. Second floor can be accessed through indoor stairs.

SITEWORK: Exterior pedestrian and vehicular paved surfaces consist of cast-in-place concrete.

HANDICAPPED PARKING: There is adequate area for handicapped parking adjacent to the building.

CRITICAL ENVIRONMENTAL CONDITIONS: None

EXISTING SYSTEMS IN FACILITY

HVAC SYSTEM: Office area has two ceiling mounted direct expansion (DX) cassette units. Chiller bay have exhaust fans on roof for ventilation and for exhausting toxic refrigerant in case of leak. Generator bay have exhaust fans on roof for ventilation purpose. There are several unit heaters in chiller bay, mezzanine (above office area), generator bay, penthouse, stairs. There are four air intake fans in penthouse supplying air in generator bay for the generators.

CONTROLS & INSTRUMENTATION: Control systems are interfaced to a Siemens Apogee DDC system for monitoring purpose.

PLUMBING: Domestic water is supplied to the building by the campus distribution system. Domestic water heater for domestic use is installed in mezzanine area. Storm water is removed from the roof with help of downspout to ground drainage. The sanitary system is gravity piping to the site system.

FIXTURES: There is one unisex restroom with wash basin and water closet fixtures. There is one janitorial room is equipped with a utility sink. Individual DX cooled drinking fountains are provided in corridor.

ELECTRICAL

ELECTRICAL SERVICE & DISTRIBUTION: Electrical power for this building is supplied from the 480 V switchgear located in electrical room (2-107) of this building. The 480V switchgear is fed from transformer T1 and T2 located on southwest corner of this building. Each of this transformer is fed from vista switches located west side of Bldg. 7. Each vista switch is fed from Bldg. 9. Electrical panels are surface mounted in electrical room 2-107. The 480V switchgear is backed by generator.

EMERGENCY LIGHT & POWER SYSTEMS: This building obtains its emergency power from the generator in this building. Exit lighting and emergency lighting have battery backup.

LIGHTING & BRANCH WIRING: Interior lightings are LED lighting.

COMMUNICATIONS & SECURITY: Internet and telecom services of this building is provided through campus fiber glass. Network servers is installed in room 2-102 of this building.

FIRE PROTECTION: The building has wet fire suppression system and is equipped is an automatic fire alarm system. Handheld fire extinguishers are located throughout the building. Fire alarm panel is installed in room 2-102 of this building.

~~Building 2 Equipment~~

Equipment Code	Equipment Description	Manufacturer	Model Number	Serial Number	Building Code	Room Code
210000011	TOWER, COOLING__2 CT1A__	MARLEY	NC8422UAN2SGF	10258551-A1	NCTR-02-CT1A	100
210000012	TOWER, COOLING__2 CT1B__	MARLEY	NC8422UAN2SGF	10258551-A2	NCTR-02-CT1B	100
210000013	TOWER, COOLING__2 CT3__	MARLEY	NC8402QAN1SGF	10258552-A1	NCTR-02-CT3	100
214000156	HEATER, WATER__#1__28 GALLONS__	BRADFORD WHITE	RE130L6-1NCZZ	ZL52410152	NCTR-02	113
214000157	HEATER, WATER__#2__80 GALLONS__	BRADFORD WHITE	SLE280T6-1SEVV	ZF51660590	NCTR-02	113
304000005	TANK, DIESEL__#1__	HALL TANK	NOT LISTED	E79133032	NCTR-02	OUTSIDE
304000006	TANK, DIESEL__#2__	HALL TANK	NOT LISTED	E79133033	NCTR-02	OUTSIDE
304000007	TANK, DAY__#1__	PREFERRED UTILITIES MFG CORPORATION	NOT LISTED	NOT LISTED	NCTR-02	112
304000008	TANK, DAY__#2__	PREFERRED UTILITIES MFG CORPORATION	NOT LISTED	NOT LISTED	NCTR-02	112
304000009	TANK, PORTABLE DIESEL__300 GALLONS__	N/A	N/A	N/A	NCTR-02	112
304000010	TANK, PORTABLE DIESEL__300 GALLONS__	N/A	N/A	N/A	NCTR-02	112
422000370	CHILLER, 2__#1__	TRANE	CVHH150DAAML0MGKRBBJNJB0AG00ALD0000W0000AN	L24E01476	NCTR-02	111
422000371	CHILLER, 2__#2__	TRANE	CVHH150DAAML0AGKTBBJPGB0AG00ALD0000W0000AN	L24E01477	NCTR-02	111
422000372	CHILLER, 2__#5__	TRANE	HDWA300/DWA300FAAFL0KCBMFCACFABG000W0100AB	L24E01479	NCTR-02	111
423000158	UNIT, EVAPORATOR__2-DSS-1__ELECTRICAL ROOM__	SAMSUNG	AR36BSHUMGMN	0XB0PAGWA00079W	NCTR-02	107
423000159	UNIT, CONDENSER__R410A__2-DSCU-2__ELECTRICAL ROOM__	SAMSUNG	AR36BSHUMGMX	BNQYP3CW900299W	NCTR-02	113
423000160	UNIT, EVAPORATOR__2-DSS-2__IT ROOM__	SAMSUNG	AR18TSFABWKN	0GWNPDBT600674M	NCTR-02	102
423000161	UNIT, CONDENSER__R410A__IT ROOM__	SAMSUNG	AR18TSFABWKX	0UM9PAFR800109Z	NCTR-02	113

BUILDING: 5A

SQAURE FOOTAGE: 39,800 SF

NO. FLOORS: 1

ARCHITECTURAL

Building 5A is located at the FDA Jefferson Laboratories, in Jefferson, Arkansas. It is the west portion of a larger structure, which incorporates Buildings 5A, 5B, 5C, and 5D. The original building was constructed in 1952 and there have been a number of alterations since that time. The overall 39,800 square foot one-story structure contains animal holding areas, animal support areas, office space, restrooms, and utility areas.

STRUCTURE

SUBSTRUCTURE:

The substructure consists of cast-in-place concrete perimeter foundation walls with spread footings, and a raised cast-in-place concrete first floor slab.

SUPERSTRUCTURE:

The superstructure is of steel-framed construction and a steel-framed roofing system supporting a concrete roof deck with an original built up roofing system. A steel-framed roofing structure has been added over the original building.

BUILDING EXTERIOR

EXTERIOR WALLS:

The exterior facades consist of painted clay tile block walls, painted concrete masonry unit walls and painted metal fasciae.

EXTERIOR WINDOWS:

The building has no windows.

EXTERIOR DOORS:

The exterior doors consist of glazed, storefront-type units with pull handle-type hardware and metal units set in metal jambs, with knob-type hardware. Two roll-up doors serve the delivery dock and the dirty process area dock.

ROOFING:

The building has a sloped, standing seam, metal roofing system with metal flashing. The north side entranceway and south side canopy have flat, built up roofing systems.

BUILDING INTERIOR

PARTITIONS:

Interior walls consist primarily of poured concrete, clay tile block, concrete masonry unit block and metal studded partitions.

INTERIOR DOORS:

The interior door assemblies consist of metal units, set in metal jambs, equipped with pull-handle or knob-type hardware.

WALL FINISHES:

Walls are of painted masonry and gypsum board.

FLOOR FINISHES:

The building interior floor finishes consist of exposed and epoxy-coated concrete.

CEILING FINISHES:

Ceiling finishes are of painted plaster or gypsum board, or are exposed to the steel roof support system and deck.

CONVEYING:

The building is all on one level. Exterior stairs provide access to the roof level.

SITEWORK:
Exterior pedestrian and vehicular paved surfaces consist of cast-in-place concrete.

HANDICAPPED PARKING:

There is adequate area for handicapped parking adjacent to the building. A handicapped accessible ramp provides access to the main entrance at the northwest area of the building.

FACILITY FUNCTION

This section of building 5 consists of animals holding rooms, shower facilities and process equipment area. The building was partially renovated in 1999, 2005 and 2012. The building contains 20 animal rooms, "clean" and "dirty" support areas containing special equipment used for animal care, men and women's change units, as well as office, storage areas and mechanical rooms that contain the supply fans and HEPA filter housings (major mechanical room in building 5B-120, 5B-180 and in the Building 5A penthouse).

CRITICAL ENVIRONMENTAL CONDITIONS

At the present time 15 animal holding rooms are being utilized requiring a constant environmental condition of 77°+ 3°F temperature, 40-60% relative humidity, and a positive static pressure differential to ensure the cleanliness of the areas. Other critical conditions that require routine maintenance and monitoring are, air flow direction and HEPA filter condition.

EXISTING SYSTEMS IN FACILITY

HVAC SYSTEM

The HVAC systems are 100% outside air systems providing HEPA filtered (99.97% above 0.3 micron particle size) air to the space with individual room control for temperature and humidity. Chilled water is furnished by the campus centralized district cooling system. The temperature and humidity in the animal holding areas are controlled utilizing hot water reheat and variable air volume control. The humidity is controlled by dehumidification at the cooling coils with humidification from in-duct steam humidifiers. The static pressure is controlled by variable speed drives on supply systems.

DISTRIBUTION SYSTEMS:

The building has ducted air handlers with air to air heat exchangers that are roof mounted or located in Bldg 5B mechanical room 180 providing 100 percent outside air to zone control boxes. Steam, heating hot water and chilled water is supplied from site utilities. The exhaust fans that provide exhaust for animal rooms and restrooms are incorporated into the air handlers.

Chilled water is supplied from site AW, air conditioning, water system. Heating hot water is provided from steam converters in the 5B building. Space humidity is provided by steam humidifiers.

TERMINAL & PACKAGE UNITS:

The building has zone control boxes mounted in the ceilings and in the penthouse.

CONTROLS & INSTRUMENTATION:

Electric thermostats and humidity sensors are interfaced to a Siemens Apogee DDC system for control.

PLUMBING:

In the processing area, plumbing has been replaced (2004), excluding in slab sewer lines to all processing equipment.

Building 5A is also served by the industrial and sanitary sewer systems, the low pressure steam system, the low pressure steam condensate system, and the central plant compressed air system, hot and cold water system.

PIPING:

Domestic water is supplied to the building by the site distribution system, with distribution by copper piping. Domestic hot water for the building is provided from hot water system in the penthouse installed in 2012.

Storm water is removed from the rooftops by gutters with leaders to ground drainage. The sanitary system is gravity piping to the site system. The process equipment waste water goes to a sump pump and is pump to the gravity fed system.

FIXTURES:

There are men's and women's multi-fixture restrooms - shower rooms with vitreous china lavatories, urinals and water closet fixtures. The janitorial closet is equipped with a utility sink. Individual DX cooled drinking fountains are provided.

ELECTRICAL

ELECTRICAL SERVICE & DISTRIBUTION:

Electrical power for building 5A is supplied from the 480 V switchgear located in building 5B. Transformers are provided for lights and receptacle power distribution throughout the building. Panels are typically recessed mounted in corridors and also located in utility spaces at selected areas within the building.

EMERGENCY LIGHT & POWER SYSTEMS:

Building 5A obtains emergency power service from the emergency generating system at building 5B. Exit lighting and emergency lighting as well as selected critical equipment appear to be connected to the emergency power distribution system.

LIGHTING & BRANCH WIRING:

Interior lighting generally consists of fluorescent fixtures equipped with type T8 lamps and ballasts. Typical interior fixtures are two by four with lens. Exterior lighting is generally provided through surface mounted cylinders and HID wall packs.

COMMUNICATIONS & SECURITY:

The facility is equipped with a conventional fire alarm system with control panel, enunciator, initiation and alert devices. Some portions of the facility are equipped with fire alarm initiation and alert devices believed to be tied in to the fire alarm control panel serving building 5B. Telecom service is provided through fiber optic cabling and multiple pair copper terminating in a dedicated telecom closet. The facility is equipped with a security system.

FIRE PROTECTION

This building is only partially protected by an automatic fire alarm system. The section west of corridor 132 has a old Simplex system in place but is not functional and will be replaced. The Animal care section and Air handler ERU-3 is served by a Simplex 4005 system in Bldg 5B. . See Appendix III Description of Existing Utilities for more details.

Handheld fire extinguishers are located throughout the building.

SPECIAL EQUIPMENT

Two (2) large industrial sterilizers (one is a gas sterilizer) are no longer in service. One (1) tunnel rack washer, one (1) enclosed rack washer, a tunnel cage washer with a bedding dispenser, one (1) tunnel bottle washer is in service as of 2012.

SPECIAL MAINTENANCE ATTENTION

All of the critical environmental conditions are monitored and controlled within AAALAS specified limits at all times. All processing area equipment must be calibrated and certified to comply with AAALAS requirements.

BUILDING: 5B

SQUARE FOOTAGE: 76,550 SF

NO. FLOORS: 1

Description

ARCHITECTURAL

Building 5B is located at the FDA Jefferson Laboratories, in Jefferson, Arkansas. It is a portion of a larger structure, which incorporates Buildings 5A, 5B, 5C, and 5D. The original building was constructed in 1952 and there have been a number of alterations since that time. The overall 76,550 square foot one-story structure, with a partial basement, contains office space, laboratory areas, restrooms, storage and utility areas.

Per the 2003 International Building Code, Building 5B is classified as Business occupancy, Use Group B, and Construction Type II, Noncombustible.

STRUCTURE

SUBSTRUCTURE:

The substructure consists of cast-in-place concrete perimeter foundation walls with spread footings, and a raised cast-in-place concrete first floor slab.

SUPERSTRUCTURE:

The superstructure is of steel-framed construction and a steel-framed roofing system supporting a concrete roof deck.

BUILDING EXTERIOR

EXTERIOR WALLS:

The exterior facades consist of painted clay tile block walls and painted concrete walls. EXTERIOR WINDOWS: The building has no windows.

EXTERIOR DOORS:

The exterior doors consist of glazed, storefront-type units with pull handle-type hardware; metal units set in metal jambs, with knob-type hardware, and metal rollup doors.

ROOFING:

Is a Flat Roof w/gen star G.T.A roof.

BUILDING INTERIOR

PARTITIONS:

Interior walls consist primarily of poured concrete, clay tile block, concrete masonry unit block and metal studded partitions.

INTERIOR DOORS:

The interior door assemblies consist of metal units, set in metal jambs, and wood units, set in wood jambs, equipped with pull-handle, lever or knob-type hardware.

WALL FINISHES:

Walls are of painted masonry, plaster, and gypsum board. Restrooms utilize vinyl wallpaper and ceramic tile wall finishes.

FLOOR FINISHES:

The building interior floor finishes consist of carpet, and exposed and epoxy-coated concrete. Restrooms utilize vinyl sheet and ceramic tile floor finishes.

CEILING FINISHES:

Ceiling finishes are of acoustical tiles in an exposed suspension grid system, painted plaster, or gypsum board, or are exposed to steel roof support system and deck.

CONVEYING:

The building is primarily all on one level. A ramp leads to the partial basement. Exterior stairs provide access to the roof level.

BUILDING PERIMETER

SITEWORK:

Exterior pedestrian and vehicular paved surfaces consist of cast-in-place concrete and bituminous concrete.

HANDICAPPED PARKING:

There is adequate area for handicapped parking adjacent to the building. A handicapped accessible ramp provides access to the main entrance at the north side of the building.

MECHANICAL HVAC

COOLING GENERATION:

The building houses a pair of 450-TON liquid chillers that are part of the site AW air conditioning water system. Chilled water is circulated by three secondary 40-HP pumps and a 25-HP primary pump with VFD control. Condenser water is circulated to a remote cooling tower by 50-HP vertical pumps also with VFD control.

A third chiller 175-TON is not connected to the system.

HEAT GENERATION:

The building has a solar heat exchange system that is not operational. The system has a 264 panels arranged in groups of 6 in 7 rows. There are 2 10,000-gallon capacity tanks in a basement space.

DISTRIBUTION SYSTEMS:

The building has air to air heat recovery air handlers, 100% outside air, for the laboratories. These are located in mechanical room 5B-170 providing supply air to zone control boxes. The offices are served by a return air system with 100% economizer locate in mechanical room 5B/116. Steam and chilled water is supplied from site utilities. Roof-mounted fans provide exhaust for laboratories and restrooms.

Chilled water is supplied from site AW, air conditioning, water system. Heating hot water is provided from steam converters in the mechanical room. Space humidity is provided by duct steam humidifiers.

TERMINAL & PACKAGE UNITS:

The building has zone control boxes mounted in the ceilings.

CONTROLS & INSTRUMENTATION:

A mix of pneumatic and electric thermostats and humidity sensors are interfaced to a DDC system for control. Control air is provided by the site supply with a simplex 10-HP air compressor with a 50-gallon capacity tank and mechanical dryer as backup.

PLUMBING

PIPING:

Domestic water is supplied to the building by the site distribution system, with distribution by copper piping. Domestic hot water for the building is provided from two 2,500-gallon tank steam converters. There is also a 400-gallon preheat tank. There is also a 50-gallon electric water heater in room 117 for lab use.

Storm water is removed from the rooftops by roof drains with leaders to ground drainage. The sanitary system is gravity piping to the site system.

FIXTURES:

There are men's and women's multi-fixture restrooms with vitreous china lavatories, urinals and water closet fixtures. The janitorial closet is equipped with a utility sink. Individual DX cooled drinking fountains are provided.

FIRE PROTECTION

This building is protected by EST3 fire alarm system with a master fire alarm control panel in 5B-117, and is being upgraded as part of the fire alarm and Mass Notification System (MNS) project. See Appendix III Description of Existing Utilities for more details.

Handheld fire extinguishers are located throughout the building.

ELECTRICAL

ELECTRICAL SERVICE & DISTRIBUTION:

The position of a 480V, 3000A automatic transfer switch (ATS) determines whether electrical power is supplied from a 2500 kVA transformer or from the 1 MW generator backup power source. The ATS supplies main building switchgear in room 5B-120. This switchgear also supplies connected buildings 5A, and 5C.

Dry-type transformers are provided for light and receptacle power distribution throughout the building. Panels are typically recessed mounted in lab spaces and also located in utility spaces at selected areas within the building.

EMERGENCY LIGHT & POWER SYSTEMS:

The facility is equipped with a 1 MW standby power plant with two portable diesel engine driven generators and synchronizing panelboard. Upon loss of normal power, the ATS switches the building to generator power. Exit lights have battery backup. Egress lighting is provided by self-contained wall-mounted light/battery packs.

LIGHTING & BRANCH WIRING:

Interior lighting generally consists of fluorescent fixtures equipped with type T8 lamps and ballasts. Typical interior fixtures are two by four with lens. Exterior lighting is generally provided through surface mounted cylinders and HID wall packs.

COMMUNICATIONS & SECURITY:

Telecom service is provided through fiber optic cabling and multiple pair copper terminating in electrical closet 113. The facility is equipped with a security system.

FACILITY FUNCTION

This section of building 5 contains several major areas. It contains the Pathology and Research Laboratories, a Training Center, a small lab for smoke studies, and the mechanical equipment rooms to support the Phototoxicity area. The partial basement functions as a piping tunnel to the laboratory areas.

The Pathology Laboratory area is approximately 27,000 square feet separated into two distinct areas between columns 8 and 12 and columns 17 and 22. A large unassigned area (approximately 7,687 sq. ft.) separating the two areas is utilized as a storage area. Part of this area is used as storage by Pathology. The area contains primarily general laboratory space and offices.
The Training Center contains a large training room and several offices. This area is separate from the rest of the building.

A 370 square foot lab is located in Room 5B-109 and is suitable for CTP Smoke Studies.

The fourth major area in this section of the building is the mechanical rooms for the Phototoxicity area in

building 5A and for this section. These mechanical rooms are separate.

CRITICAL ENVIRONMENTAL CONDITIONS

Temperatures, humidity's, fume hoods, chilled and heating water systems, ventilation and filtration systems and their associated control and monitoring alarm points, fire alarm, and lighting systems. The CTP Smoke Lab (5B-109) requires a constant environmental condition of 77°F temperature, 60% relative humidity, and a negative static pressure differential to ensure proper pressurization. Other critical conditions that require routine maintenance and monitoring is air flow direction.

SPECIAL EQUIPMENT

Vacuum pumps, fume hoods, laboratory refrigerators and freezers, staining equipment, ice makers, and various
laboratory items.

SPECIAL MAINTENANCE ATTENTION

The lab and building environmental conditions are critical and require continuous monitoring and control. All of the critical environmental conditions that are monitored and controlled must be maintained within AAALAS specified limits at all times. All monitoring equipment must be calibrated and certified to comply with AAALAS requirements.

CRITICAL SYSTEMS

HVAC equipment including chillers, air handling units, pumps, fans, hot water converters, deionized water system, condensing units, laboratory fume hoods, and laboratory refrigerators and freezers.

BUILDING: 5C

SQUARE FOOTAGE: 50,787

NO. FLOORS: 1

Description

ARCHITECTURAL

Building 5C is located at the FDA Jefferson Laboratories, in Jefferson, Arkansas. It is a portion of a larger structure, which incorporates Buildings 5A, 5B, 5C, and 5D. The original building was constructed in 1952 and there have been a number of alterations since that time. The overall 50,787 square foot one-story structure contains office space, laboratory areas, storage areas and utility areas.

Per the 2003 International Building Code, Building 5C is classified as Business occupancy, Use Group B, and Construction Type II, Noncombustible.

STRUCTURE

SUBSTRUCTURE:

The substructure consists of cast-in-place concrete perimeter foundation walls with spread footings, and a raised cast-in-place concrete first floor slab.

SUPERSTRUCTURE:

The superstructure is of steel-framed construction and a steel-framed roofing system supporting a concrete roof deck.

BUILDING EXTERIOR

EXTERIOR WALLS:

The exterior facades consist of painted clay tile block walls and painted concrete walls.

EXTERIOR WINDOWS:

The windows consist of fixed and operable units, with insulated and non-insulated glazing, set in metal frames.

EXTERIOR DOORS:

The exterior doors consist of metal units set in metal jambs, with pull-handle or knob-type hardware, and metal rollup doors.

ROOFING:

Has a flat Roof w/gen star G.T.A roof.

BUILDING INTERIOR

PARTITIONS:

Interior walls consist primarily of poured concrete, clay tile block, concrete masonry unit block and metal studded partitions.

INTERIOR DOORS:

The interior door assemblies consist primarily of metal units, set in metal jambs, and wood units, set in wood jambs, equipped with pull-handle, lever or knob-type hardware. Some interior doors are of glazed, aluminum-framed, storefront-type units, equipped with pull-handle type hardware.

WALL FINISHES:

Walls are primarily of glazed clay tile blocks, painted masonry, plaster and gypsum board. Some areas utilize sound absorbing-type wall covering panels.

FLOOR FINISHES:

The building interior floor finishes consist primarily of carpet, exposed and epoxy-coated concrete, and vinyl composition floor tiles. Computer areas utilize a raised floor system with removable tiles.

CEILING FINISHES:

Ceiling finishes are of acoustical tiles in an exposed suspension grid system, painted plaster or gypsum board, or are exposed to steel roof support system and deck.

CONVEYING:

The building is all on one level. Exterior stairs at Building 5B provide access to the roof level.

BUILDING PERIMETER

SITEWORK:

Exterior pedestrian and vehicular paved surfaces consist of cast-in-place concrete and bituminous concrete.

HANDICAPPED PARKING:

There is adequate area for parking adjacent to the building. A handicapped accessible ramp at Building 5B provides access to the connected buildings.

MECHANICAL HVAC

The building has large VAV air handler located in Mechanical Room 5C-101A.

DISTRIBUTION SYSTEMS:

Steam and chilled water is supplied from site utilities. Roof-mounted fans provide exhaust for laboratories and restrooms. Chilled water is supplied from site District Cooling System. Heating hot water is provided from steam converters in the 5B building.

TERMINAL & PACKAGE UNITS:

The building has variable-air-volume boxes mounted in the ceilings along with steam space heaters in the warehouse area. The computer space rooms 111 and 111B have Leibert AC units.

CONTROLS & INSTRUMENTATION:

Control and monitoring of the building HVAC equipment is provided by the Siemens Apogee Control System. The local Siemens controls interface with the Siemens Insight Graphics located in Bldg. 54.

PLUMBING

PIPING:

Domestic water is supplied to the building by the site distribution system, with distribution by copper piping. Domestic hot water for the building is provided from the 5B mechanical equipment.

Storm water is removed from the rooftops by roof drains with leaders to ground drainage. The sanitary system is gravity piping to the site system.

FIXTURES:

There are men's and women's multi-fixture restrooms - shower rooms with vitreous china lavatories, urinals and water closet fixtures. The janitorial closet is equipped with a utility sink. Individual DX cooled drinking fountains are provided.

FIRE PROTECTION

This building is protected by an EST3 fire alarm system with a separate FM-200 fire alarm system with VESDA detectors in the 5C-11 Computer Center. This building is part of the fire alarm and Mass Notification System (MNS) upgrade project. See Appendix III Description of Existing Utilities for more details.

Handheld fire extinguishers are located throughout the building.

ELECTRICAL

ELECTRICAL SERVICE & DISTRIBUTION:

Electrical power for building 5C is supplied from the building 5B double-ended switchgear. Transformers are provided for light and receptacle power distribution throughout the building. Panels are typically recessed and surface mounted in corridors and also located in utility spaces at selected areas within the building.

EMERGENCY LIGHT & POWER SYSTEMS:

Exit lighting and emergency lighting systems are equipped with self-contained emergency battery packs with remote heads at some locations.

LIGHTING & BRANCH WIRING:

Interior lighting generally consists of fluorescent fixtures equipped with type T8 lamp and ballasts. Typical interior fixtures are two by four with lens. Exterior lighting is generally provided through surface mounted cylinders and HID wall packs.

COMMUNICATIONS & SECURITY:

The facility is equipped with an addressable conventional fire alarm system with control panel, initiation and alert devices that serve computer room 111. Most of the facility is equipped with fire alarm initiation and alert devices believed to be tied in to the newer fire alarm control panel serving building 5B. Telecom service is provided through fiber optic cabling and multiple pair copper terminating in mechanical room 110.

FACILITY FUNCTION

This area includes offices, a computer room, computer training rooms, instrument and computer repair facilities, a warehouse area, a laboratory, archives areas refrigerated storage rooms.

CRITICAL ENVIRONMENTAL CONDITIONS

Computer room temperatures, Refrigerated storage areas. Zone temperatures, fan status, HVAC alarm status. The Division of Microbiology Lab (5C-107) requires a constant environmental condition of 77°F temperature and a negative static pressure differential to ensure proper pressurization. Other critical conditions that require routine maintenance and monitoring is air flow direction.

SPECIAL EQUIPMENT

Computer room HVAC units and refrigerated storage units.

CRITICAL SYSTEMS

None.

BUILDING: 5D

SQUARE FOOTAGE: 44,800

NO. FLOORS: 1

Description

ARCHITECTURAL

Building, 5D is located at the FDA Jefferson Laboratories, in Jefferson, Arkansas. It is the east portion of a larger structure, which incorporates Buildings 5A, 5B, 5C, and 5D. The original building was constructed in 1952 and there have been a number of alterations since that time. The overall 44,800 square foot one-story structure, with a partial second floor, contains office space, laboratory areas, storage and utility areas.

Per the 2003 International Building Code, Building 5D is classified as Business occupancy, Use Group B, and Construction Type II, Noncombustible.

STRUCTURE

SUBSTRUCTURE:

The substructure consists of cast-in-place concrete perimeter foundation walls with spread footings, and a raised cast-in-place concrete first floor slab.

SUPERSTRUCTURE:

The superstructure is of steel-framed construction and a steel-framed roofing system supporting a concrete roof deck.

BUILDING EXTERIOR

EXTERIOR WALLS:

The exterior facades consist of painted clay tile block walls and painted concrete walls.

EXTERIOR WINDOWS:

The windows consist of fixed and operable units, with insulated glazing, set in metal frames.

EXTERIOR DOORS:

The exterior doors consist of metal units set in metal jambs, with pull-handle type hardware, a glazed storefront-type unit with pull-handle type hardware, and metal rollup doors.

ROOFING:

Has a Flat Roof w/gen star G.T.A roof. A single ply roof was installed above the Penthouse.

BUILDING INTERIOR

PARTITIONS:

Interior walls consist primarily of poured concrete, clay tile block, concrete masonry unit block and metal studded partitions.

INTERIOR DOORS:

The interior door assemblies consist primarily of metal units, set in metal jambs, and wood units, set in metal jambs, equipped with pull-handle or knob-type hardware.

WALL FINISHES:

Walls are primarily of glazed or painted clay tile blocks, painted masonry, plaster, and gypsum board. Some areas utilize painted modular panels. Some restrooms utilize vinyl wallpaper.

FLOOR FINISHES:

The building interior floor finishes consist primarily of carpet, exposed and epoxy-coated concrete, and vinyl composition floor tiles. The restrooms utilize vinyl sheet goods floor covering.

CEILING FINISHES:

Ceiling finishes are of acoustical tiles in an exposed suspension grid system, painted plaster or gypsum board, or are exposed to steel roof support system and deck.

CONVEYING:

The building is essentially all on one level. Two interior steel stairways provide access to the second floor Mechanical Room. Exterior stairs at Building 5B provide access to the roof level.

BUILDING PERIMETER

SITEWORK:

Exterior pedestrian and vehicular paved surfaces consist of cast-in-place concrete and bituminous concrete.

HANDICAPPED PARKING:

There is adequate designated handicapped parking at the south side of the building. A handicapped accessible ramp provides access to the building. A grade-level entrance at the east end of the building also provides for access.

MECHANICAL HVAC

DISTRIBUTION SYSTEMS:

The building has ducted air handlers that are located in the penthouse providing supply air to zone control boxes. Steam, heating hot water and chilled water is supplied from site utilities. Roof-mounted fans provide exhaust for sterilizer equipment and restrooms. Chilled water is supplied from site AW, air conditioning, water system. Heating hot water is provided from steam converters in the 5B building.

TERMINAL & PACKAGE UNITS:

The building has zone control boxes mounted in the ceilings.

CONTROLS & INSTRUMENTATION:

A mix of pneumatic and electric thermostats and humidity sensors are interfaced to a Siemens Apogee DDC system for control.

PLUMBING

PIPING:

Domestic water is supplied to the building by the site distribution system, with distribution by copper piping. Domestic hot water for the building is provided from the 5B mechanical equipment.

Storm water is removed from the rooftops by roof drains with leaders to ground drainage. The sanitary system is gravity piping to the site system.

FIXTURES:

There are men's and women's multi-fixture restrooms - shower rooms with vitreous china lavatories, urinals and water closet fixtures. The janitorial closet is equipped with a utility sink. Individual DX cooled drinking fountains are provided.

FIRE PROTECTION

This building is protected by an old Simplex 2001 fire alarm system with control panels in room 150 and hallway 102. The building is being upgraded as part of the fire alarm and Mass Notification System (MNS) project with a remote Annunciator panel in room 102. See Appendix III Description of Existing Utilities for more details.

Handheld fire extinguishers are located throughout the building.

ELECTRICAL

ELECTRICAL SERVICE & DISTRIBUTION:

Power service for building 5D is supplied from 480 V switchgear in building 85. Transformers are provided for light and receptacle power distribution throughout the building. Panels are typically recessed and surface mounted in corridors and also located in utility spaces at selected areas within the building.

EMERGENCY LIGHT & POWER SYSTEMS:

Exit lighting and emergency lighting systems are equipped with self-contained emergency battery packs with remote heads at some locations.

LIGHTING & BRANCH WIRING:

Interior lighting generally consists of fluorescent fixtures equipped with type T8 lamp and ballasts. Typical interior fixtures are two by four with lens. Exterior lighting is generally provided through surface mounted cylinders, HID wall packs and arm mounted high pressure sodium fixtures.

COMMUNICATIONS & SECURITY:

The facility is equipped with a conventional fire alarm system with control panel, initiation and alert devices throughout most areas within the facility. Telecom service is provided through multiple pair copper with extension from 5C.

FACILITY FUNCTION

This section of building 5 contains a large diet preparation processing area, an office area, a health service area, and a mechanical space.

The diet preparation area contains a refrigerated warehouse for bulk feed storage; a clean room used for sterilizing and processing laboratory animal feed; a dosed-feed mixing and packaging area with supporting laboratory and chemical storage; a conditioned warehouse for storing dosed/packaged feed; shower rooms for operating personnel and a mechanical room that houses two (2) hood-air compressors and a vacuum pump for supporting the clean room mixer unit.

An office area is located adjacent to the diet preparation area.

A health services facility contains the offices, labs and examination rooms for support of the health service programs at JLC. This area is air conditioned separately.

A large mechanical space (3,180 ft.) is located on the second floor and contains the supply fans, the heating and cooling units, chillers, and pumps.

CRITICAL ENVIRONMENTAL CONDITIONS

Space temperature and humidity of clean rooms; feed storage areas, mixing-packaging and laboratory areas. HEPA filter, ventilation systems, refrigeration equipment and fire alarm status.

SPECIAL EQUIPMENT

Two large industrial sterilizers with vacuum systems, one small sterilizer, hot water converter with circulating pump, one 5 cu. ft. mixer, three 2 cu. ft. mixers, three 5 cu. ft. mixer-processors with auxiliary components, two 3 cu. ft. mixer-processors with auxiliary components, eight air showers, one grinder, one transfer conveyor, three hood air compressor units, one clean room, three laboratory fume hoods, eight packaging cabinet units with recycled filtered air systems, tunnel washers and acid water system.

SPECIAL MAINTENANCE ATTENTION

Special maintenance and attention is required on all equipment and environmental conditions that are monitored and controlled. These conditions must be maintained within AAALAS specified limits at all times. All monitoring equipment must be calibrated and certified to comply with AAALAS requirements.

CRITICAL SYSTEMS

HVAC equipment serving the Diet Prep mixing and packaging areas.

BUILDING: 6 storage only

This building's HVAC is shut down and is currently being used as a storage facility only and contains a large walk-in cooler/freezer. The walk-in cooler/freezer is fed by an electric panel in Building 26 which is capable of providing emergency power.

SQUARE FOOTAGE: 11,090 sq. ft.

NO. FLOORS: 1

Description

ARCHITECTURAL

Building 6 is located at the center of FDA's Jefferson Regional Labs campus behind building 14 facilities in the town of Jefferson, Arkansas. This one story structure was built in 1952 and was renovated in 1978 and has approximately 11,090 SF of space. The building consists of animal rooms, laboratories, offices and storage.

Per the 2003 International Building Code, Section 602, the building is classified as Business Occupancy, Use Group B, having a Construction Type of Type II, Noncombustible.

The handicapped accessibility for this facility was assessed utilizing the Uniform Federal Accessibility Standards (UFAS), Federal Standards 795, April 1, 1988, & P.L. 90-460 and ADAAG 2002. There is large ramp located at the rear of the building and concrete steps leading into the main entrances. There are no handicapped accessible restrooms.

STRUCTURE

SUBSTRUCTURE:

The building has a cast-in-place reinforced concrete slab on grade.

SUPERSTRUCTURE:

The building has steel steal columns and beams and light-weight concrete roof deck as structural frame.

BUILDING EXTERIOR

EXTERIOR WALLS:

The exterior walls consist of multiple withes of clay tile masonry with perimeter steel column supports.

EXTERIOR WINDOWS:

There are few windows in the building and they consist of aluminum framed fixed type units with (tempered safety) non-insulated glazing.

EXTERIOR DOORS:

The entrance doorways consist of steel door with vision and full panels and overhead roll-up doors at the loading dock. Hardware consists of exit devices, pulls and closers. Service doorways consist of painted flush metal doors and frames, closers and mortise locksets with knobs.

ROOFING:

The roof consist of singly ply EPDM-roof system with painted aluminum gravel stop, internal roof drains, and roof hatch. It was manufactured by IB Roof Systems installed on 01/09/2002 with a 15 yr. warranty.

BUILDING INTERIOR

PARTITIONS:

Interior partitions consist mainly of plaster over mesh and some renovated walls with gypsum wallboard on metal studs. There are some exposed clay tile walls throughout the building.

INTERIOR DOORS:

Interior doors consist mainly of painted flush hollow core wood doors set in painted metal frames with knob type mortise hardware and some closers. There are some fully glazed (tempered safety) framed doors in painted frames with push/pull hardware and borrowed lights.

WALL FINISHES:

Interior walls are generally painted plaster on mesh and few painted gypsum wall board.

FLOOR FINISHES:

The floors are predominately epoxy, painted concrete, and few vinyl composition tile or carpet. The toilet rooms have ceramic tile floors.

CEILING FINISHES:

The ceilings consist of painted plaster and gypsum wallboard.

MECHANICAL

HVAC

The HVAC system is no longer in use. The building has HEPA filtered supply and exhaust air systems for the protection of the
animals and the surrounding environment. Pressure relationships between most rooms are carefully maintained as are temperatures and humidity's. These items are monitored by a Siemens Apogee building automation system. There is a heat reclaim cycle, which recovers some of the air conditioning energy and more of the heating requirements. Control is by hot water reheat. The preheat is steam. Chilled water is furnished to the building by the campus centralized district cooling system controlled via DDC and is part of the Siemens Apogee building automation system. There is also a backup air cooled water chiller that can be manually valved in if the need arises. There is redundancy in the pumping systems.

DISTRIBUTION SYSTEMS:

The building has ducted air handlers that are roof mounted, providing 100 percent outside air. Steam, heating hot water and chilled water is supplied from site utilities. Roof-mounted fans provide exhaust for

animal rooms and restrooms.

CONTROLS & INSTRUMENTATION:

A mix of pneumatic and electric thermostats and humidity sensors are interfaced to a Siemens Apogee DDC system for control.

PLUMBING

PIPING:

Domestic water is supplied to the building by the site distribution system, with distribution by copper piping. Heating hot water is provided from steam converters. Storm water is removed from the rooftops by roof drains with leaders to ground drainage. The sanitary system is gravity piping to the site system.

FIXTURES:

There are men's and women's multi-fixture restrooms with vitreous china lavatories, urinals and water closet fixtures. The janitorial closet is equipped with a utility sink. Individual DX cooled drinking fountains are provided.

FIRE PROTECTION:

Handheld fire extinguishers are located in the corridors.

ELECTRICAL

ELECTRICAL SERVICE & DISTRIBUTION:

What had been the buildings service and distribution system has been, largely, abandoned in place. Some future project will include renovation of the electrical service and distribution system. A few loads remain, however, and those are supplied by circuits originating in adjacent building 26.

EMERGENCY LIGHT & POWER SYSTEMS: Abandoned.

LIGHTING & BRANCH WIRING: Abandoned.

COMMUNICATIONS & SECURITY: Abandoned

FACILITY FUNCTION

Storage Only

CRITICAL ENVIRONMENTAL CONDITIONS

. Temperatures in storage areas 06-110 and 06-111.

SPECIAL EQUIPMENT

A walk-in cooler and freezer located in room 06-111.

SPECIAL MAINTENANCE ATTENTION

The environmental control equipment requires continuous monitoring and repair to maintain critical conditions.

CRITICAL SYSTEMS

HVAC equipment including chillers, pumps, supply and exhaust fans.

BUILDING: 7

SQUARE FEET: 16,500 SF

NO. FLOORS: 3

Description

ARCHITECTURAL

Building 7 is located off Black Road, behind Building 5 facilities at the west side of Jefferson Regional Labs campus in the town of Jefferson, Arkansas. This three story structure has one story attachment that serves as break room for workers, built in 1952 and has approximately 16,500 SF of space. The building consists of mainly boilers, few offices, storage and lunch room and it is the main boiler plant for the campus.

Per the 2003 International Building Code, Section 602, the building is classified as Business Occupancy, Use Group B, having a Construction Type of Type II, Noncombustible.

The handicapped accessibility for this facility was assessed utilizing the Uniform Federal Accessibility Standards (UFAS), Federal Standards 795, April 1, 1988, & P.L. 90-460 and ADAAG 2002. Handicap accessibility is not required for this facility and there is none in the building.

STRUCTURE

SUBSTRUCTURE:

The building has a cast-in-place reinforced concrete slab on grade.

SUPERSTRUCTURE:

The building has steel steal columns, long span girders and beams and light-weight concrete roof deck as structural frame.

BUILDING EXTERIOR

EXTERIOR WALLS:

The exterior walls consist of multiple withes of painted clay tile masonry with perimeter and interior steel column supports with diagonal bracing and horizontal steel girths.

EXTERIOR WINDOWS:

The exterior windows consist of combination of three-section tall windows with hopper opening at the top and mechanical louvers that are rusted, located north side of building. The tall windows are insulated double glazing.

EXTERIOR DOORS:

The entrance doorways consist of dilapidated steel sliding door with full glazing panels and service doorways consist of rusted and painted flush metal doors and frames, closers, and mortise locksets with knobs. Hardware consists of exit devices, pulls and closers.

ROOFING:

The roof consist of three ply modified bitumen roofing system with painted aluminum gravel stop, internal roof drains, and roof hatch. It manufacture is Unknown installed on 9/7/2002 with a 20 yr. warranty.

BUILDING INTERIOR

PARTITIONS:

Interior partitions consist mainly of exposed clay tile masonry and minimal walls with gypsum wallboard on metal studs.

INTERIOR DOORS:

Interior doors consist mainly of painted flush hollow core wood doors set in painted metal frames with knob type mortise hardware and some closers. There are some fully glazed (tempered safety) framed doors in painted frames with push/pull hardware and borrowed lights.

WALL FINISHES:

Interior walls are generally unpainted clay tile masonry few plaster on mesh wall finish.

FLOOR FINISHES:

The floors are predominately exposed and painted concrete. There is vinyl composition tile finish in the break room. The toilet rooms have ceramic tile floors.

CEILING FINISHES:

The ceilings consist of exposed structures, painted plaster and suspended acoustic ceiling tile in the break rooms.

INSULATION:

Boiler piping is insulated with fiberglass type insulation with jacket. According to site personnel, asbestos pipe insulation has been removed.

MECHANICAL BOILERS

The building contains three fire-tube boilers and all related auxiliary equipment. Their function is to provide high pressure steam to the site, primarily for heating purposes.

The Boilers were installed separately beginning in 2012 and ending in 2015. They are fire-tube boilers manufactured by Cleaver Brooks. They are currently rated at 25,875 lbs. per hour at 150 PSI.

The plant has "Black Start" capability. Should the natural gas supply be interrupted, the plant can start one

boiler from gas supplied from a pressurized bottle. Once steam is generated, the reciprocating fuel oil pump can be put in service to deliver liquid fuel.

BOILER AUXILIARY EQUIPMENT

The three boilers are supported by the following auxiliary equipment and related electrical, piping, valves, valve operators and control systems: boiler feed water pumps, forced draft fans, induced draft fans, condensate return system with pumps supplying a direct contact deaerator, chemical feed pumps, boiler water sampling station, control air system including instrument air filter and back-up compressor, boiler and burner management system, make-up water softeners, and motor driven fuel oil pump.

HVAC

The building is provided with roof mounted exhaust fans to ventilate the boiler room portion of the building. The fans replace manually operated vents previously installed in the same location. Heat is provided by steam to cabinet type heater located in restrooms and offices and overhead unit heaters in the boiler room.

Conditioned air is supplied to the second floor locker room via a window mounted air conditioner and to the first floor office by a small split system with ductwork, registers and diffusers..

Control for the HVAC equipment is provided by local thermostats.

PLUMBING

Natural gas is supplied by the local utility for the three steam heating boilers. Distribution is via black steel threaded, flanged and welded piping. A metering station with isolation valves is located outside on the north elevation.

Domestic and boiler water make-up water for the building is supplied by the local well water supply system. The 6 inch line is equipped with two parallel, double check, triple cock, backflow preventers. Distribution is primarily by steel with some copper piping.

Domestic hot water is provided to the building by a 40 gallon, 4000 watt, electric water heater located in the boiler room, second floor. Drinking water is provided by stainless steel drinking fountains.

The building has staff restroom facilities. The restroom has a wall-mounted water closet, sink and wall-mounted urinal with a shower assembly in the locker room. A janitors sink and boiler water chemistry testing sink are located on the second level.

The sanitary sewer piping is threaded steel with some hub cast iron connected to the site sewer system and transported to the waste water treatment plant at the Pine Bluff Arsenal. Storm water is removed from the building roof by internal roof drains connected to the site storm water removal system.

FIRE PROTECTION

The building is protected by ABC type portable fire extinguishers located throughout.

ELECTRICAL

ELECTRICAL SERVICE & DISTRIBUTION:

Electrical power is supplied from a pad-mounted mounted transformer at 480Y/277 to a 600A service disconnect switch. A main distribution panelboard is located in the third floor.

EMERGENCY LIGHT & POWER SYSTEMS:

Emergency power for emergency lighting is provided by a 350 KW diesel generator. The building is equipped with emergency battery units and exit lighting units located throughout the building.

LIGHTING & BRANCH WIRING:

Interior lighting consists of a combination of 1 x 4 and 2 X 4, recessed and pendant mounted fluorescent fixtures utilizing T8 lamps and electronic ballasts.

COMMUNICATIONS & SECURITY:

The building does not have a fire alarm system. The building does have telephone and data systems.

FACILITY FUNCTION

Building 7 is the central steam generating plant for the JLC complex. The building houses three industrial quality boilers. The system includes three fire-tube boilers, each with a capacity of 25,785 lb. per hr of steam at 150 psig. The building also houses a small lab, office and restroom. There is an instrument shop on the 2nd floor of the building.

CRITICAL ENVIRONMENTAL CONDITIONS

Steam header pressure. This is monitored at building 7 and 54.

SPECIAL EQUIPMENT

None.

SPECIAL MAINTENANCE ATTENTION

One boiler must be maintained in a standby status in the winter months to months to be placed in operation immediately to ensure continuous service to the JLC complex.

BUILDING: 9

SQUARE FOOTAGE: 2,570

NO. FLOORS: 1

Description

ARCHITECTURAL

Building 9 is located off DeWitt Road at south side of the Jefferson Regional Labs campus in the town of Jefferson, Arkansas. This one story structure was built in 1969 and has approximately 2,570 SF of space. The building consists of mainly electrical room and storage.

Per the 2003 International Building Code, Section 602, the building is classified as Utility Occupancy, Use Group U, having a Construction Type of Type III, unprotected, as determined in field observations.

The handicapped accessibility for this facility was assessed utilizing the Uniform Federal Accessibility Standards (UFAS), Federal Standards 795, April 1, 1988, & P.L. 90-460 and ADAAG 2002. Handicap accessibility is not required in this facility and none is found in the building.

STRUCTURE

SUBSTRUCTURE:

The building has a cast-in-place reinforced concrete slab on grade.

SUPERSTRUCTURE:

The building has steel open-web joists, steal beams and light-weight concrete roof deck as structural frame.

BUILDING EXTERIOR

EXTERIOR WALLS:

The exterior walls consist of multiple withes of clay tile masonry with perimeter steel column supports.

EXTERIOR WINDOWS:

There few windows in the building and they consist of aluminum framed fixed type units with (tempered safety) non-insulated glazing.

EXTERIOR DOORS:

The entrance doorways consist of tall steel door with louver. Hardware consists of exit devices, pull and closers. Service doorways consist of painted flush metal doors and frames, closers and mortise locksets with knobs.

ROOFING:

The roof consist of modified bitumen roofing system with painted aluminum gravel stop, internal roof drains, and roof hatch manufactured by Flintlastic installed on 5/29/1995 with a 12 yr. warranty.

BUILDING INTERIOR

PARTITIONS:

There are no discernible interior partitions observed.

WALL FINISHES:

Interior walls are generally exposed clay tile masonry.

FLOOR FINISHES:

The floors are predominately concrete and painted concrete.

CEILING FINISHES:

The ceilings consist of exposed structure.

MECHANICAL

HVAC

DISTRIBUTION SYSTEMS:

The building has a ceiling mounted, gas fired unit heater. This is the only piece of HVAC equipment in the building.

PLUMBING

PIPING:

Domestic water is supplied to the building by the site distribution system, with distribution by copper piping. Heating hot water is provided from steam converters. Storm water is removed from the rooftops by roof drains with leaders to ground drainage. The sanitary system is gravity piping to the site system.

FIXTURES:

There is one multi-fixture restroom with vitreous china lavatories, urinals and water closet fixtures.

FIRE PROTECTION:

Handheld fire extinguishers are located throughout the building.

ELECTRICAL

ELECTRICAL SERVICE & DISTRIBUTION:

Please note that construction of a project to replace the main electrical switchgear in building 9 is expected to begin in FY 2015. Building 9 houses the facility's main electrical switchgear. One room is dedicated to control power batteries. Building house loads consist of the batteries, lighting, and convenience

receptacles. For description of the 15 kV switchgear and the distribution system, refer to "CAMPUS ELECTRICAL SYSTEMS".

Power for lighting within building 9 is 120/240 volts single phase 3-wire, and is derived from a 15 KVA 13.2 KV volt transformer in the main 15 KVA switchboard. This service supplies a lighting.

EMERGENCY LIGHT & POWER SYSTEMS:

The building is equipped with battery-backup emergency lighting. There is no emergency generation.

LIGHTING & BRANCH WIRING:

Interior lighting consists of pendant mounted incandescent fixtures utilizing compact fluorescent lamps.

FACILITY FUNCTION

This building is the main electrical distribution point for the JLC Campus.

CRITICAL ENVIRONMENTAL CONDITIONS

Voltage, current, load.

SPECIAL EQUIPMENT

None.

SPECIAL MAINTENANCE ATTENTION

None.

CRITICAL SYSTEMS

Battery charging equipment for the 125-volt station battery can be down a maximum of 10 hours.

BUILDING: 10

SQUARE FOOTAGE: 21,300

NO. FLOORS: 2

Description

ARCHITECTURAL

Building 10 is located on Winn Road, almost in the middle of the Jefferson Regional Labs campus in the town of Jefferson, Arkansas. This two-story building was renovated in 2000 both inside and at the exterior with new stucco skin over existing clay tile masonry. The original facility was built in 1952 and renovated in 2000 and it has approximately 21,300 SF of space. The building consists of main library, mezzanine with glass guardrails, conference rooms, offices, and storage.

Per the 2003 International Building Code, Section 602, the building is classified as Assembly Occupancy, Use Group A-3, having a Construction Type of Type IIB, Noncombustible.

The handicapped accessibility for this facility was assessed utilizing the Uniform Federal Accessibility Standards (UFAS), Federal Standards 795, April 1, 1988, & P.L. 90-460 and ADAAG 2002. The building has ramp access and the restrooms are handicap accessible.

SUBSTRUCTURE:

The building has a cast-in-place reinforced concrete slab on grade.

SUPERSTRUCTURE:

The building has steel joists, columns, and steel purlins as structural frame.

BUILDING EXTERIOR

EXTERIOR WALLS:

The exterior walls consist of patterned and painted stucco over existing clay tile masonry.

EXTERIOR WINDOWS:

The exterior windows consist of combination of anodized aluminum framed window walls in-between column bays at north elevation and fixed pocket windows at south elevation with insulated double-glazing.

EXTERIOR DOORS:

The entrance doorways consist of protruding cone shaped anodized aluminum storefront system with sidelights and transoms and metal framed wood and glass door at the other exit in the building. The doors have full panel glazing and all glazing is insulated. Hardware consists of exit devices, pulls, and closers. Service doorways consist of painted flush metal doors and frames, closers, exit devices and mortise locksets with knobs and pulls. Some of the service doors have vision panels with non-insulated glazing.

ROOFING:

The roof consist of hip type standing seam metal roofing system with perimeter gutters, and downspout. It was installed by CWR construction with a 15 year warranty. Date of installation not available at the time of this document.

BUILDING INTERIOR

PARTITIONS:

Interior partitions consist mainly of gypsum wall board on metal studs, concrete masonry units, and glass and metal partition walls.

INTERIOR DOORS:

Interior doors consist mainly of painted flush hollow core wood doors set in painted metal frames with knob type mortise hardware and some closers. There are some fully glazed (tempered safety) framed doors in painted frames with push/pull hardware and borrowed lights.

WALL FINISHES:

Interior walls are generally painted gypsum wallboard, wallpaper and painted plaster on masonry wall finish.

FLOOR FINISHES:

The floors are predominately vinyl tile or carpet. The toilet rooms have ceramic tile.

CEILING FINISHES:

The ceilings consist mainly of acoustical ceiling tiles in a suspended system and painted gypsum board or exposed underside of concrete structure above.

MECHANICAL

HVAC

This building has two recirculated air handling units controlled by VFD's tied into VAV space control boxes controlled by the Trane Tracer Summit building automation system. The chilled water

furnished to the building by the campus centralized district cooling system is controlled via DDC and is part of the Siemens Apogee building automation system.

DISTRIBUTION SYSTEMS:

The building has a ducted air handlers that are located in the building attic space and in the mechanical room, providing 100 percent outside air to zone control boxes. Steam, heating hot water and chilled water is supplied from site utilities. Chilled water is supplied from site AW, air conditioning, water system.

TERMINAL & PACKAGE UNITS:

The building has zone control boxes mounted in the ceilings.

CONTROLS & INSTRUMENTATION:

Electric thermostats and humidity sensors are interfaced to a DDC system for control.

PLUMBING

There are two restrooms and a break room.

PIPING:

Domestic water is supplied to the building by the site distribution system, with distribution by copper piping. Heating hot water is provided from steam converters. Storm water is removed from the rooftops by gutters with leaders to ground drainage. The sanitary system is gravity piping to the site system.

FIXTURES:

There are men's and women's multi-fixture restrooms with vitreous china lavatories, urinals, and water closet fixtures. The janitorial closet is equipped with a utility sink. Individual DX cooled drinking fountains are provided.

FIRE PROTECTION:

This building is protected by Siemens Fire Finder. Audible and visual alarm signaling, manual pull stations and detection devices are part of the fire alarm and Mass Notification System (MNS). See Appendix III Description of Existing Utilities for more details.

Handheld fire extinguishers are located throughout the building.

ELECTRICAL

ELECTRICAL SERVICE & DISTRIBUTION:

Electrical service is supplied from a pad-mounted transformer to a 400A service disconnect switch at 480Y/277 V. A distribution panelboard is located in the mechanical room and supplies power to transformers, and power panels located throughout the building.

EMERGENCY LIGHT & POWER SYSTEMS:

An automatic transfer switch supplies some IT and (what had once been emergency) mechanical loads from the building 54 generator.

LIGHTING & BRANCH WIRING:

Interior lighting consists of a combination of 1 x 4 and 2 X 4, recessed and surface mounted fluorescent fixtures utilizing T8 lamps and electronic ballasts. Incandescent lamped recessed fixtures, and HID lamped cylinder style fixtures are used in some areas. Exterior lighting is provided by a limited amount of building wall mounted HID lamped light fixtures.

COMMUNICATIONS & SECURITY:

The main fire alarm control panel is located in the first floor mechanical room. Alarms are broadcast throughout the building. The building has telephone, security, and data systems.

FACILITY FUNCTION

This building is a Library/Conference Center for the JLC. It contains the JLC Library on the west half and four conference rooms on the east half as well as JLC's backup IT data storage units. The conference porting of the building is used as a shelter facility in case of accidents at the Pine Bluff Arsenal.

CRITICAL ENVIRONMENTAL CONDITIONS

IT Data Storage Room Temperature.
Building Filtered Pressurization Equipment status and Controls.

SPECIAL EQUIPMENT

Building pressurization and filtration system and its associated controls.

SPECIAL MAINTENANCE ATTENTION

None.

BUILDING: 11

SQUARE FOOTAGE: 10,393

NO. FLOORS: 1

Description

ARCHITECTURAL

Building 11 is located off Lawrence Road at north side of the Jefferson Regional Labs campus in the town of Jefferson, Arkansas. This one story structure was built in 1952 and has approximately 10,393 SF of space. The building consists of mainly water treatment and distribution plant and few offices.

Per the 2003 International Building Code, Section 602, the building is classified as Utility Occupancy, Use Group U, having a Construction Type of Type III, unprotected, as determined in field observations.

The handicapped accessibility for this facility was assessed utilizing the Uniform Federal Accessibility Standards (UFAS), Federal Standards 795, April 1, 1988, & P.L. 90-460 and ADAAG 2004. Handicap accessibility is not required in this facility and none is found in the building.

STRUCTURE

SUBSTRUCTURE:

The building has a cast-in-place reinforced concrete slab on grade.

SUPERSTRUCTURE:

The building has steel open-web joists, steal beams and light-weight concrete roof deck as structural frame.

BUILDING EXTERIOR

EXTERIOR WALLS:

The exterior walls consist of multiple withes of clay tile masonry with perimeter steel column supports.

EXTERIOR WINDOWS:

There few windows in the building and they consist of aluminum framed hopper type units with (tempered safety) non-insulated glazing.

EXTERIOR DOORS:

The entrance doorways consist of steel doors with louver and vision panels. Hardware consists of exit devices, pulls, and closers. Service doorways consist of painted overhead roll-up door and flush metal doors and frames, closers and mortise locksets with knobs.

ROOFING:

The roof consist of modified bitumen roofing system with painted aluminum gravel stop, internal roof drains, and roof access is by ladder.It was manufactured by Firestone Polyiso Tapered and installed on 08/17/2003 with a 20 yr. warranty.

BUILDING INTERIOR

PARTITIONS:

The interior partition consists of mainly colored clay tile masonry.

WALL FINISHES:

Interior walls are generally exposed clay tile masonry.

FLOOR FINISHES:

The floors are predominately concrete and painted concrete.

CEILING FINISHES:

The ceilings consist of exposed structure and painted plaster in the offices and storage.

MECHANICAL

HVAC

DISTRIBUTION SYSTEMS:

The building does not have any HVAC systems except for one electrically fed unit heater.

PLUMBING

PIPING:

Domestic water is supplied to the building by the site distribution system, with distribution by copper piping. Heating hot water is provided from steam converters. Storm water is removed from the rooftops by roof drains with leaders to ground drainage. The sanitary system is gravity piping to the site system.

FIXTURES:

There are men's and women's multi-fixture restrooms with vitreous china lavatories, urinals and water closet fixtures.

FIRE PROTECTION:

The building does not have an automated fire alarm system protection. Handheld fire extinguishers are located throughout the building.

ELECTRICAL

ELECTRICAL SERVICE & DISTRIBUTION:

Electrical service to this building is supplied from a pad-mounted transformer to a 600A service disconnect switch at 480Y/277 V.

EMERGENCY LIGHT & POWER SYSTEMS:

Standby power is provided by a portable generator.

LIGHTING & BRANCH WIRING:

Interior lighting consists of 2 X 4 pendant mounted fluorescent fixtures utilizing T8 lamps and electronic ballasts.

COMMUNICATIONS & SECURITY:

The building does not have a fire alarm system. The building has a telephone system.

FACILITY FUNCTION

Building 11 is the central water treatment and distribution plant. The plant consists of an aerator tower, upflow clarifier, pressure filters, two 150,000 gallon clear wells transfer pumps (one powered by diesel engine for emergency fire protection), three elevated storage tanks with combined capacity of 950,000 gallons. Water is distributed throughout the complex.

Water is supplied to the water treatment plant from three (3) deep wells at the maximum rate of about 1500 GPM.. One well is on JLC property and two wells are on Pine Bluff Arsenal.

The building is heated and ventilated. The office area is cooled by a window air conditioner. Compressed air systems consist of 2-175 HP rotary screw compressors, filter units, receiver tank and air dryer. System operating pressure is 90 psi.

CRITICAL ENVIRONMENTAL CONDITIONS

None.

MAJOR EQUIPMENT

Lime addition system, chemical feed systems, aerator tower and clarifier filters, deep wells (3 each), transfer pumps and elevated storage tanks. 2-175 HP rotary screw air compressors and air dryer.

SPECIAL EQUIPMENT

Chlorinator and chemical feed pump.

SPECIAL MAINTENANCE ATTENTION

None.

BUILDING: 12

SQUARE FOOTAGE: 27,144

NO. FLOORS: 1

Description

ARCHITECTURAL

Building 12, the main cafeteria is located close to Daniel Road near the main gate entrance to the Jefferson Regional Labs campus in the town of Jefferson, Arkansas. This one story structure was built in 1952 and has approximately 27,144 SF of space. The building consists of mainly dining hall, kitchen and preparation area, offices, large conference rooms, mechanical room and storage.

Per the 2003 International Building Code, Section 602, the building is classified as Assembly Occupancy, Use Group A, having a Construction Type of Type IIB, noncombustible as determined in field observations.

The handicapped accessibility for this facility was assessed utilizing the Uniform Federal Accessibility Standards (UFAS), Federal Standards 795, April 1, 1988, & P.L. 90-460 and 2004 ADAAG 2002. Handicap ramp is provided at rear entrance of the building and the restrooms have been updated for wheelchair accessibility.

SUBSTRUCTURE:

The building has a cast-in-place reinforced concrete slab on grade.

SUPERSTRUCTURE:

The building has steel open-web joists, steal beams, and lightweight concrete roof deck as structural frame.

BUILDING EXTERIOR

EXTERIOR WALLS:

The exterior walls consist of multiple withes of clay tile masonry with perimeter steel column supports.

EXTERIOR WINDOWS:

The windows are aluminum framed fixed units with insulated glazing. Some of the original window units have non-insulated glazing.

EXTERIOR DOORS:

The entrance doorways consist of aluminum storefront systems with sidelights and transoms. Hardware consists of exit devices, pulls, and closers. The doors have full panel glazing and all glazing is non-insulating. Service doorways consist of painted flush metal doors and frames, closers, exit devices and

mortise locksets with knobs and pulls. Service door have transoms and vision panels with non-insulated glazing.

ROOFING:

This building has a Flat mechanically Fastened-SP5RM roof, manufactured by installed byAll Seasons Roofing, Inc. on 03/29/2010 with a 15 yr. warranty.

BUILDING INTERIOR

PARTITIONS:

The interior partition consists of mainly colored clay tile masonry, and gypsum wallboard walls.

WALL FINISHES:

Interior walls are generally painted gypsum wallboard, plastered walls and painted clay tile masonry.

FLOOR FINISHES:

The floors are predominately vinyl tile or carpet. The kitchen, adjacent halls, and the toilet rooms hav ceramic tile floor finishes.

CEILING FINISHES:

The ceilings consist mainly of acoustical ceiling tiles in a suspended system and painted gypsum board or exposed underside of concrete structure above.

MECHANICAL

HVAC

The penthouse has two factory fabricated air handling systems. A steam preheat coil is located in the second outside air intake. There is steam coils located in each of the supply zone ducts. The duct system is overhead in the kitchen and dining area. Chilled water is furnished to the building by the campus centralized district cooling system controlled via DDC and is part of the Siemens Apogee building automation system.

DISTRIBUTION SYSTEMS:

The building has ducted air handlers that are roof mounted or located in the building mechanical room, providing 100 percent outside air to zone control boxes. Steam, heating hot water and chilled water is supplied from site utilities. Roof-mounted fans provide exhaust for restrooms. Air handling equipment for contracts/procurement, cafeteria and conference rooms, condensing units, hot water system, and exhaust fans.

Chilled water is supplied from site AW, air conditioning, water system.

CONTROLS & INSTRUMENTATION:

A mix of pneumatic and electric thermostats and humidity sensors are interfaced to a DDC system for control.

PLUMBING

Since the building contains a cafeteria, there are special plumbing facilities utilized such as a food preparation system, dishwashing system, large hot water storage facility, oil water separator, walk-in coolers and large restrooms.

PIPING:

Domestic water is supplied to the building by the site distribution system, with distribution by copper piping. Heating hot water is provided from steam converters. Storm water is removed from the rooftops by roof drains with leaders to ground drainage. The sanitary system is gravity piping to the site system. The building is served with water, natural gas, low pressure steam and condensate systems and cooling water from the central system.

FIXTURES:

There are men's and women's multi-fixture restrooms with vitreous china lavatories, urinals and water closet fixtures. The janitorial closet is equipped with a utility sink. Individual DX cooled drinking fountains are provided.

FIRE PROTECTION:

The building has no automated fire alarm system and is being upgraded as part of the fire alarm and Mass Notification System (MNS) project with Fire Alarm Control panel in room 100. See Appendix III Description of Existing Utilities for more details.

Handheld fire extinguishers are located throughout the building.

ELECTRICAL

ELECTRICAL SERVICE & DISTRIBUTION:

Electrical service to this building is supplied from a pad-mounted transformer to a 600A service disconnect switch at 480Y/277 V.

EMERGENCY LIGHT & POWER SYSTEMS:

The building is not equipped with an emergency generator for emergency lighting. The building is equipped with emergency exit lights located throughout the building.

LIGHTING & BRANCH WIRING:

Interior lighting consists of 2 X 4, recessed and surface mounted fluorescent fixtures utilizing T8 lamps and electronic ballasts. Exterior lighting is provided by canopy mounted HID lamped light fixtures.

COMMUNICATIONS & SECURITY:

The building does not have a fire alarm system. The kitchen hoods do have suppression systems. The building has telephone and data systems.

FACILITY FUNCTION

The building contains the kitchen and cafeteria, contracts and procurement offices, an auditorium and conference rooms. The building has a penthouse area that serves as a mechanical room for the HVAC equipment, a basement area containing the electrical equipment and piping tunnel arrangement for the plumbing.

CRITICAL ENVIRONMENTAL CONDITIONS

Temperatures, for HVAC systems, freezers, refrigerators and fire alarm.

SPECIAL EQUIPMENT

Tunnel dishwasher, two (2) walk-in coolers, various refrigerators and freezers in cafeteria, kitchen equipment, ice maker and water dispenser.

SPECIAL MAINTENANCE ATTENTION

All kitchen equipment.

CRITICAL SYSTEMS

Kitchen coolers and freezers.

BUILDING: 14A

SQUARE FOOTAGE: 19,608

NO. FLOORS: 1

Description

ARCHITECTURAL

Building 14A is located off Winn Road and in the center of the Jefferson Regional Labs campus in the town of Jefferson, Arkansas. This one story structure is part of three sections of the animal research-building complex; it was built in 1952 and has approximately 19,608 SF of space. The building consists of chemical laboratories, animal holding, offices, mechanical room, and storage.

Per the 2003 International Building Code, Section 602, the building is classified as Business Occupancy, Use Group B, having a Construction Type of Type IIB, noncombustible as determined in field observations.

The handicapped accessibility for this facility was assessed utilizing the Uniform Federal Accessibility Standards (UFAS), Federal Standards 795, April 1, 1988, & P.L. 90-460 and ADAAG 2004. There is no observable handicap ramp provided at front entrance of the building and the restrooms are not wheelchair accessible.

SUBSTRUCTURE:

The building has a cast-in-place reinforced concrete slab on grade supported by reinforced concrete footing.

SUPERSTRUCTURE:

The building has rigid framed steel columns and beams and steel joists for roof structure.

BUILDING EXTERIOR

EXTERIOR WALLS:

The exterior walls consist of about ten feet high skirting wall of painted clay tile masonry and upper walls consist of composite metal panel wall systems.

EXTERIOR WINDOWS:

The windows are aluminum framed fixed units with non-insulated glazing and some louvers at the mechanical penthouse.

ROOFING:

This building has a Metal Canopy roof, manufactured by Mesco Metal Buildings Company installed by Mesco Metal Buildings Company on 01/01/1999 with a 20 yr. warranty.

ELECTRICAL

ELECTRICAL SERVICE & DISTRIBUTION:

Electrical service to this building supplied from a pad-mounted transformer to one 600A service disconnect switch (14A and 14B) and one 800A service disconnect switch (14C) at 480Y/277 V.

EMERGENCY LIGHT & POWER SYSTEMS:

Standby power is provided by a 625kVA diesel generator located external from the building. This generator provides standby power to loads in buildings 14A, 14B, and 14C. The building is equipped with emergency lighting fixtures, and exit signs located throughout the building.

LIGHTING & BRANCH WIRING:

Interior lighting consists of a combination of 1 x 4 and 2 X 4, recessed, surface, and pendant mounted fluorescent fixtures utilizing T8 lamps and electronic ballasts.

COMMUNICATIONS & SECURITY:

The building does not have a fire alarm system. The building has telephone and data systems.

FACILITY FUNCTION

Building 14 is one of the primary buildings at JLC used for research. The section of the building referred to as 14A houses animal holding areas. There are six conventional animal holding rooms along the west end of the building. This building also houses a chemistry laboratory.

CRITICAL ENVIRONMENTAL CONDITIONS
Chemistry Laboratory system and animal room temperatures, relative humidity's, lights status, emergency power system status, and HVAC systems.

EXISTING SYSTEMS IN FACILITY

HVAC SYSTEM

The HVAC system serving the animal rooms is a air to air heat recovery systems located in the mechanical penthouse. A 100% outside air system provides conditioned air to the laboratories. Chilled and hot water supplied to coils on two Trane air handling units provide conditioned air to the building. This conditioned air is supplied to each space by vav boxes equipped with hot water reheats. They are controlled by the Trane Tracer Summit building automation system. Chilled water is normally furnished by the campus district cooling system but can be supplied by a 90 ton Trane or a 50 ton Bohn backup water cooled chiller located in mechanical room 107. The back up chillers, have to be manually valved in and controlled. The air handler that supplies rooms 108, 109, 111, 112 along with rooms 101 and 102 in building 14B is located in mechanical room 107. Animal rooms 101,102,103,104,105,106 and labs 109,111,112,113,and 114 in Building 14B is supplied conditioned air by a large Trane air handler located on the roof of the building.

ELECTRICAL.

POWER DISTRIBUTION

Building 14 is served at 480 volts, 3 phase, and 3 wire via two separate feeders (each with a separate service entrance point) from substation #1A. The large (800 amp) service is through a main switchboard in the mechanical room at the east end of the building. This switchboard supplies three chillers and three motor control centers, MCC4, 5 and 6.

The smaller (400 amp) service is through two additional motor control centers (MCC 1 and MCC2) located in the west end of the building. Motor control center 2 subfeeds yet another control center. (MCC3).

EMERGENCY POWER

Emergency power installed in 1974 is obtained from a 500 kilowatt General Motors diesel driven standby generator located on the west end of the building, and is distributed to the various emergency panels and motor control centers via 3 automatic transfer switches.

FIRE PROTECTION

The building has no operational automated fire alarm system and is being upgraded as part of the fire alarm and Mass Notification System (MNS) project with Fire Alarm Control panel in mechanical room107. See Appendix III Description of Existing Utilities for more details.

Handheld fire extinguishers are located throughout the building.

MAJOR EQUIPMENT

Supply fans, exhaust fans, chillers and condensing units, and filter housings.

SPECIAL EQUIPMENT

None

SPECIAL MAINTENANCE ATTENTION

All animal care and support equipment is to be monitored and repaired to ensure minimum down time.

CRITICAL SYSTEMS

HVAC equipment serving animal areas.

BUILDING: 14B

SQUARE FOOTAGE: 17,798

NO. FLOORS: 1

Description

ARCHITECTURAL

Building 14B is located off Winn Road and in the center of the Jefferson Regional Labs campus in the town of Jefferson, Arkansas. This one story structure is in the middle of three sections of the animal research building complex; it was built in 1952 and has approximately 17,798 SF of space. The building consists of laboratories, animal holding and cleaning areas, offices, mechanical room and storage.

Per the 2003 International Building Code, Section 602, the building is classified as Business Occupancy, Use Group B, having a Construction Type of Type IIB, noncombustible as determined in field observations.

The handicapped accessibility for this facility was assessed utilizing the Uniform Federal Accessibility Standards (UFAS), Federal Standards 795, April 1, 1988, & P.L. 90-460 and ADAAG 2002. There are no observable handicap ramp provided at front entrance of the building and the restrooms are not wheelchair accessible.

SUBSTRUCTURE:

The building has a cast-in-place reinforced concrete slab on grade supported by reinforced concrete footing.

SUPERSTRUCTURE:

The building has rigid framed steel columns and beams and steel joists for roof structure.

BUILDING EXTERIOR

EXTERIOR WALLS:

The exterior walls consist of about ten feet high skirting wall of painted clay tile masonry and upper walls consist of composite metal panel wall systems.

EXTERIOR WINDOWS:

The windows are aluminum framed fixed units with non-insulated glazing and some louvers at the mechanical penthouse.

EXTERIOR DOORS:

The entrance doorways consist of painted flush metal doors and frames, closers, exit devices and mortise locksets with knobs and pulls. Service doors have transoms and vision panels with non-insulated glazing.

Hardwar consists of exit devices, pulls, and closers. Some of the doors have full panel glazing and all glazing is non-insulating.

ROOFING:

The roof consists of gable type standing seam metal roofing system with gutters and downspouts, and roof access is through the penthouse stairs. It was manufactured by Mesco Metal Buildings Company installed by Mesco Metal Buildings Company on 01/01/1999 with a 20 yr. warranty. The old flat roof which now serves as the flooring for the mechanical space was upgraded in 2013 by CWR Construction. The foam insulation was removed and the surface was upgraded with styrofoam insulation, hardboard, and 60 mil PVC liner to make the floor water proof and cleanable.

BUILDING INTERIOR

PARTITIONS:

The interior partition consists of mainly clay tile masonry and gypsum wallboard walls.

WALL FINISHES:

Interior walls are generally painted gypsum wallboard, plastered walls and painted clay tile masonry.

FLOOR FINISHES:

The floors are predominately vinyl tile, carpet, concrete and painted concrete. The toilet rooms have concrete and ceramic tile floor finishes.

CEILING FINISHES:

The ceilings consist mainly of acoustical ceiling tiles in a suspended system and painted gypsum board or exposed underside of concrete structure above.

MECHANICAL

HVAC

The HVAC system utilizes chilled water supplied by the campus district cooling system to feed three different air-handlers to deliver conditioned air to the building spaces. Rooms 109, 111, 112, 113, and 114 are supplied from the large Trane air handler AHU14A1 on the roof of building 14A. The rest of non-animal spaces in Building 14B are supplied conditioned air from the small Trane air handler AHU-14B 1. In 2013 a new 15,000 cfm air handler was installed on the Penthouse to serve the animal holding areas in 14B. The air handler is equipped with air-to-air heat recovery coils and 100% outside air for the animal rooms or future laboratories. Rooms 103,104 and 105 are cooled by a Bryant heat pump located on the Roof of the Building. Hot water is supplied for heating needs via the buildings own hot water supply system located in the mechanical room 14A 107. Air is exhausted from the building by several exhaust fans on the roof of the building.

DISTRIBUTION SYSTEMS:

The building has ducted air handlers that are mounted in the attic space, or located in the building mechanical rooms, providing 100 percent outside air to zone control boxes. Steam, heating hot water and

chilled water is supplied from site utilities. Roof-mounted fans provide exhaust for animal rooms and restrooms. Chilled water is supplied from site AW, air conditioning, water system.

TERMINAL & PACKAGE UNITS:

The building has zone control boxes mounted in the ceilings.

CONTROLS & INSTRUMENTATION:

A mix of pneumatic and electric thermostats and humidity sensors are interfaced to a DDC system for control. The Air Handler serving the 14B animal holding areas uses the Siemens DDC controls and interfaces with the Siemens Insight Software in Building 54.

PLUMBING

PIPING:

Domestic water is supplied to the building by the site distribution system, with distribution by copper piping. Domestic hot water for the building is provided from the site system. Heating hot water is provided from steam converters. Storm water is removed from the rooftops by gutters with leaders to a ground drainage. The sanitary system is gravity piping to the site system.

FIXTURES:

There are men's and women's multi-fixture restrooms with vitreous china lavatories, urinals and water closet fixtures.

FIRE PROTECTION

The building has a Simplex fire alarm control panel in room 114 but it's not operational and is being upgraded with a remote Annunciator as part of the fire alarm and Mass Notification System(MNS) project. See Appendix III Description of Existing Utilities for more details.

Handheld fire extinguishers are located throughout the building.

ELECTRICAL

ELECTRICAL SERVICE & DISTRIBUTION:

Electrical service to this building supplied from a pad-mounted transformer to one 600A service disconnect switch (14A and 14B) and one 800A service disconnect switch (14C) at 480Y/277 V.

EMERGENCY LIGHT & POWER SYSTEMS:

Standby power is provided by a 625kVA diesel generator located external from the building. This generator provides standby power to loads in buildings 14A, 14B, and 14C. The building is equipped with emergency lighting fixtures, and exit signs located throughout the building.

LIGHTING & BRANCH WIRING:

Interior lighting consists of a combination of 1 x 4 and 2 X 4, recessed and surface mounted fluorescent fixtures utilizing T8 lamps and electronic ballasts.

COMMUNICATIONS & SECURITY:

The main fire alarm control panel is located in the first floor mechanical room. Alarm devices are monitored and alarms are broadcast throughout the building. The building has telephone and data systems.

FACILITY FUNCTION

Section B of building 14 is a continuation of the animal holding facility. This section contains the animal support area at JLC, a laboratory area containing four small labs, a change unit, and a seven room complex that contains 2 animal holding rooms and 3 behavioral testing rooms.

CRITICAL ENVIRONMENTAL CONDITIONS

Animal room temperatures and humidity's and light status.

MAJOR EQUIPMENT

Supply and exhaust fans, three large walk in refrigerator/freezers, and a Bryant heat pump.

SPECIAL EQUIPMENT

None

SPECIAL MAINTENANCE ATTENTION

None

CRITICAL SYSTEMS

HVAC equipment serving animal rooms.

BUILDING: 14C

SQUARE FOOTAGE: 13,664

NO. FLOORS: 1

Description

ARCHITECTURAL

Building 14C is located off Winn Road and in the center of the Jefferson Regional Labs campus in the town of Jefferson, Arkansas. This one story structure is at west side of three sections of the animal research building complex; it was built in 1952 and has approximately 13,664 SF of space. The building consists of laboratories, animal holding, offices, mechanical room, and storage.

Per the 2003 International Building Code, Section 602, the building is classified as Business Occupancy, Use Group B, having a Construction Type of Type IIB, noncombustible as determined in field observations.

The handicapped accessibility for this facility was assessed utilizing the Uniform Federal Accessibility Standards (UFAS), Federal Standards 795, April 1, 1988, & P.L. 90-460 and ADAAG 2002. There is no observable handicap ramp provided at front entrance of the building and the restrooms are not wheelchair accessible.

SUBSTRUCTURE:

The building has a cast-in-place reinforced concrete slab on grade supported by reinforced concrete footing.

SUPERSTRUCTURE:

The building has rigid framed steel columns and beams and steel joists for roof structure.

BUILDING EXTERIOR

EXTERIOR WALLS:

The exterior walls consist of about ten feet high skirting wall of painted clay tile masonry and upper walls consist of composite metal panel wall systems.

EXTERIOR WINDOWS:

The windows are aluminum framed fixed units with non-insulated glazing and some louvers at the mechanical penthouse.

EXTERIOR DOORS:

The entrance doorways consist of painted flush metal doors and frames, closers, exit devices and mortise locksets with knobs and pulls. Service doors have transoms and vision panels with non-insulated glazing.

Hardwar consists of exit devices, pulls, and closers. Some of the doors have full panel glazing and all glazing is non-insulating.

ROOFING:

The roof consists of gable type standing seam metal roofing system with gutters and downspouts, and roof access is through the penthouse stairs. It was manufactured by Mesco Metal Buildings Company installed by Mesco Metal Buildings Company on 01/01/1999 with a 20 yr. warranty.

BUILDING INTERIOR

PARTITIONS:

The interior partition consists of mainly clay tile masonry and gypsum wallboard walls.

WALL FINISHES:

Interior walls are generally painted gypsum wallboard, plastered walls and painted clay tile masonry.

FLOOR FINISHES:

The floors are predominately vinyl tile, carpet, concrete and painted concrete. The toilet rooms have concrete and ceramic tile floor finishes.

CEILING FINISHES:

The ceilings consist mainly of acoustical ceiling tiles in a suspended system and painted gypsum board or exposed underside of concrete structure above.

MECHANICAL

HVAC

Chilled water is supplied from the campus district cooling loop to two McQuay air handlers located on the roof of the building for all of the building. All laboratory spaces use 100% outside air with static pressure temperature, humidity, and alarm monitoring and control via DDC as a part of the Siemens Apogee building automation system. HEPA filtering systems are used on both entering and leaving air. All air handlers, blowers and duct systems are located in the penthouse of the building. Exhaust air from the labs are designed to go through either the fume hoods or by-pass above the fume hood into the exhaust system.

DISTRIBUTION SYSTEMS:

The building has ducted air handlers that are mounted in the attic space, or located in the building mechanical rooms, providing 100 percent outside air to zone control boxes. Steam, heating hot water and chilled water is supplied from site utilities. Roof-mounted fans provide exhaust for animal rooms and restrooms. Chilled water is supplied from site AW, air conditioning, water system.

TERMINAL & PACKAGE UNITS:

The building has zone control boxes mounted in the ceilings.

CONTROLS & INSTRUMENTATION:

A mix of pneumatic and electric thermostats and humidity sensors are interfaced to a DDC system for control.

PLUMBING

The building is served by sanitary and industrial sewer, potable water (hot and cold), natural gas, compressed air, chilled water from the central plant system and vacuum.

PIPING:

Domestic water is supplied to the building by the site distribution system, with distribution by copper piping. Domestic hot water for the building is provided from the site system. Heating hot water is provided from steam converters. Storm water is removed from the rooftops by gutters with leaders to a ground drainage. The sanitary system is gravity piping to the site system.

FIXTURES:

There are men's and women's multi-fixture restrooms with vitreous china lavatories, urinals and water closet fixtures.

FIRE PROTECTION

The building has an automated fire alarm system with a fire alarm control panel in mechanical room 134A. It’s being upgraded as part of the fire alarm and Mass Notification System (MNS) project with a remote Annunciator panel in mechanical room 134A. See Appendix III Description of Existing Utilities for more details.

Handheld fire extinguishers are located throughout the building.

ELECTRICAL

ELECTRICAL SERVICE & DISTRIBUTION:

Electrical service to this building supplied from a pad-mounted transformer to one 600A service disconnect switch (14A and 14B) and one 800A service disconnect switch (14C) at 480Y/277 V.

EMERGENCY LIGHT & POWER SYSTEMS:

Standby power is provided by a 625kVA diesel generator located external from the building. This generator provides standby power to loads in buildings 14A, 14B, and 14C. The building is equipped with emergency lighting fixtures, and exit signs located throughout the building.

LIGHTING & BRANCH WIRING:

Interior lighting consists of a combination of 1 x 4 and 2 X 4, recessed and pendant mounted fluorescent fixtures utilizing T8 lamps and electronic ballasts.

COMMUNICATIONS & SECURITY:

The main fire alarm control panel is located in the first floor room number 108. Alarm devices are

monitored and alarms are broadcast throughout the building. The building has telephone and data systems.

FACILITY FUNCTION

This section of building 14 was renovated for research laboratories. It contains eight general research laboratories, one cold lab (40°F), one cold lab (0°F), special instrument lab, and eight offices. Adjacent to this laboratory area is a mechanical room that contains the buildings hot water system, electrical distribution panels for this end of the building, a backup chilled water pump, a VFD controlled Secondary chilled water pump, condensate tank and pump, a Fire alarm panel, and a backup air compressor for building instrument air.

CRITICAL ENVIRONMENTAL CONDITIONS

Laboratory and freezer temperatures, Chilled and heating water system temperatures and pressures, secondary pump status, supply and exhaust fan status, filter status and fire alarm system.

SPECIAL EQUIPMENT

Refrigerator, freezers, electric stills, dishwashers, vacuum pumps, 10 fume hoods and 4 large vent-a-hoods.

CRITICAL SYSTEMS
HVAC equipment serving laboratories.

BUILDING: 15

SQUARE FOOTAGE: 11,876

NO. FLOORS: 1

Description

ARCHITECTURAL

Building 15 which houses environmental health and protection department is attached to building 53 complex, located near Miles Road at northeast corner of the Jefferson Regional Labs campus in the town of Jefferson, Arkansas. This one story structure was built in 1952 and has approximately 11,876 SF of space. The building consists of offices, conference rooms, mechanical room, and storage.

Per the 2003 International Building Code, Section 602, the building is classified as Business Occupancy, Use Group B, having a Construction Type of Type IIIA, unprotected as determined in field observations.

The handicapped accessibility for this facility was assessed utilizing the Uniform Federal Accessibility Standards (UFAS), Federal Standards 795, April 1, 1988, & P.L. 90-460 and ADAAG 2004. Handicap ramp is provided at front entrance of the building and the restrooms have been updated for wheelchair accessibility.

SUBSTRUCTURE:

The building has a cast-in-place reinforced concrete slab on grade supported by reinforced concrete footing.

SUPERSTRUCTURE:

The building has steel open-web joists, steal beams, and light-weight concrete roof deck as structural frame.

BUILDING EXTERIOR

EXTERIOR WALLS:

The exterior walls consist of painted clay tile masonry with perimeter steel column supports.

EXTERIOR WINDOWS:

The windows are aluminum framed fixed units with non-insulated glazing. Some of the original window units have dried-up glazing sealants and aged metal sash.

EXTERIOR DOORS:

The entrance doorways consist of aluminum storefront systems with sidelights and transoms. Hardware consists of exit devices, pulls, and closers. The doors have full panel glazing and all glazing is non-insulating. Service doorways consist of painted flush metal doors and frames, closers, exit devices and

mortise locksets with knobs and pulls. Service door have transoms and vision panels with non-insulated glazing.

ROOFING:

This building has a Flat Roof w/pea gravel roof manufactured by Advantage Roofing/Construction and installed by Advantage Roofing/Construction on 08/16/2001 with a 20 yr. warranty.

BUILDING INTERIOR

PARTITIONS:

The interior partition consists of mainly clay tile masonry and gypsum wallboard walls.

WALL FINISHES:

Interior walls are generally painted gypsum wallboard, wallpaper, plastered walls and painted clay tile masonry.

FLOOR FINISHES:

The floors are predominately vinyl tile or carpet. The toilet rooms have sheet vinyl floor finishes.

CEILING FINISHES:

The ceilings consist mainly of acoustical ceiling tiles in a suspended system and painted gypsum board or exposed underside of concrete structure above.

MECHANICAL

HVAC

This building was renovated in 2002. Return air is mixed with outside air and conditioned by hot water preheat or Chilled water is supplied from the campus district cooling loop to a McQuay air handler located in mechanical room 114b. This conditioned air is supplied to hot water reheat equipped vav boxes located in each of the office spaces which are DDC controlled by a Siemens Apogee building automation system. Relief air is exhausted to the outside of the building via two exhaust fans located on the roof.

DISTRIBUTION SYSTEMS:

The building has a return air system with 100% economizer that is located in the building mechanical room 114B providing conditioned air to zone control boxes. Steam, heating hot water and chilled water is supplied from site utilities. Roof-mounted fans provide exhaust for restrooms. Chilled water is supplied from site AW, air conditioning, water system. Heating hot water is provided from the a steam to hot water converter located in mechanical room 53A-100.

TERMINAL & PACKAGE UNITS:

The building has zone control boxes mounted in the ceilings.

CONTROLS & INSTRUMENTATION:

Electric thermostats and humidity sensors are interfaced to a DDC system for control.

PLUMBING

The plumbing facilities are typical of modern office usage.

PIPING:

Domestic water is supplied to the building by the site distribution system, with distribution by copper piping. Domestic hot water for the building is provided by an electric 30 gallon, 240 volt, 4500 watt water heater. Storm water is removed from the rooftops by roof drains with leaders to ground drainage. The sanitary system is gravity piping to the site system.

FIXTURES:

There are men's and women's multi-fixture restrooms with vitreous china lavatories, urinals and water closet fixtures. The janitorial closet is equipped with a utility sink. Individual DX cooled drinking fountains are provided.

FIRE PROTECTION

This building is protected by a EST3 fire alarm system that is zoned and includes heat/smoke detectors and normal pull stations and a fire alarm control panel in Corridor 100. This building contains a wet-pipe sprinkler system. Sprinklers are located throughout the building.

ELECTRICAL

ELECTRICAL SERVICE & DISTRIBUTION:

Electrical service is supplied from distribution equipment in building 53A. A distribution panelboard is located in the mechanical room and supplies power to transformers, and power panels located throughout the building.

EMERGENCY LIGHT & POWER SYSTEMS:

The building is not equipped with an emergency generator. Emergency lighting is provided by battery backup equipped light fixtures and exit lights located throughout- the building.

LIGHTING & BRANCH WIRING:

Interior lighting consists of 2 X 4, recessed mounted fluorescent fixtures utilizing T8 lamps and electronic ballasts.

COMMUNICATIONS & SECURITY:

The main fire alarm control panel is located in the first floor room number 102B. Alarm devices are monitored and alarms are broadcast throughout the building. The building has telephone and data systems.

FACILITY FUNCTION

Building 15 was renovated in 2002 and provides general office space for the scientific staff at JLC.

CRITICAL ENVIRONMENTAL CONDITIONS
Temperature, fans, compressor for HVAC systems.

MAJOR EQUIPMENT

Major equipment constitutes the HVAC systems for the building.

SPECIAL EQUIPMENT

None.

SPECIAL MAINTENANCE ATTENTION

None.

CRITICAL SYSTEMS

None.

BUILDING: 16

SQUARE FOOTAGE: 1,073

NO. FLOORS: 1

Description

ARCHITECTURAL

Building 16, the Paint Shop, is located within the 3900 NCTR Drive, Jefferson, AR, 72079-9502. Included in the assessment of the building are adjacent parking area, stairway and light fixtures.

The building is a one (1) story, two room, 1,073 square foot structure built in 1952 and used to store and mix paint.

Per the 2003 IBC, Section 307 the building is classified as High Hazard Occupancy, per NFPA it is classified as Mixed Use - Special Purpose Industrial (NFPA 101, Sec. 28-1.4.1) and Storage (NFPA 101, Sec. 4-1.10). The 2003 IBC, Chapter 6 building construction is Type II A.

BUILDING EXTERIOR

The building envelope is painted hollow clay tile block. The roof is flat with modified bitumen roll roofing material with internal roof drains. The building has single glazed, wire reinforced, metal framed windows. A three-foot wide entry door is located on the west elevation along with manually operated roll up doors. All exterior doors are steel with wood or steel frames. Concrete stairs with metal handrails provide access to the raised first floor. There is a covered concrete pad with containment wall, housing a flammable storage cabinet and liquid product dispensing drum with stand on the east or rear elevation.

ROOFING

This building has a Flat Roof w/pea gravel, manufactured by A&I Construction installed by A&I Construction on 12/16/1998 with a 12 yr. warranty.

BUILDING INTERIOR

The floor is unfinished concrete, the walls are primarily glazed hollow clay tile block, and the ceiling is painted plaster over metal mesh. The interior partition consists of metal angle iron with chain link fencing and Masonite panels attached with a single steel frame steel access door dividing the two rooms.

STRUCTURE

The substructure consists of a raised concrete slab on spread footings. The floor structure is a reinforced concrete slab on grade. The superstructure consists of hollow clay tile block, steel columns and the roof frame consists of open web steel truss.

HANDICAPPED ACCESSIBILITY

The building is not required to be assessed for handicapped accessibility and is exempt per the Codes.

HAZARDOUS MATERIALS

Considering the building age, hazardous materials may be present in areas not renovated.

MECHANICAL

HVAC

The building has wall mounted exhaust fans providing ventilation. The heating equipment consists of a retired ceiling mounted, steam to air unit heater with steam supply and condensate return piping and electric space heaters. There is no cooling equipment in this building.

PLUMBING

Plumbing equipment in this building consists of hose bibbs equipped with anti-siphon devices, an emergency shower-eye wash and internal roof drains. Domestic water is supplied to the building from the JLC site and enters in the paint room.

FIRE PROTECTION

The building has a wet pipe sprinkler system equipped with 12 sprinkler heads, a water motor alarm assembly, main drain, inspectors test drain and flow switch. The sprinkler system riser is air gapped and the system does not appear to be operational. A type ABC portable fire extinguisher is provided. The building is being upgraded as part of the fire alarm and Mass Notification System (MNS) project with Fire Alarm Control panel in room 103. See Appendix III Description of Existing Utilities for more details.

ELECTRICAL

SERVICE AND POWER DISTRIBUTION:

EMERGENCY LIGHTING

The building is not equipped with battery powered emergency lighting fixtures. Exit lighting is not required.

LIGHTING AND BRANCH WIRING

The building uses energy efficient screw in type fluorescent lighting fixtures in vapor tight enclosures for interior lighting. Exterior lighting consists of incandescent lamps housed in weather resistant enclosures with metal cage guards. Duplex receptacles are located throughout.

FIRE ALARM EQUIPMENT

The building is not equipped with a fire alarm system or detection devices

SECURITY AND COMMUNICATIONS EQUIPMENT

The building is not equipped with a security system. The tele-communications system wiring is installed but no telephone was observed.

OTHER EQUIPMENT

The building has a flammable storage locker and paint mixer located in the paint storage and mixing room.

FACILITY FUNCTION

Building 16 is a small isolated building used for storage of flammable liquids.

CRITICAL ENVIRONMENTAL CONDITIONS
None

BUILDING: 17

SQUARE FOOTAGE: 9,553

NO. FLOORS: 1

Description

ARCHITECTURAL

Building 17 is located near Miles Road at northeast corner of the Jefferson Regional Labs campus in the town of Jefferson, Arkansas. This one story was built in 1952 and has approximately 9,553 SF of space. The building consists of woodworking, machine shops, maintenance shop, and general workshop and storage.

Per the 2003 International Building Code, Section 602, the building is classified as Business Occupancy, Use Group B, having a Construction Type of Type IIIA, unprotected as determined in field observations.

The handicapped accessibility for this facility was assessed utilizing the Uniform Federal Accessibility Standards (UFAS), Federal Standards 795, April 1, 1988, & P.L. 90-460 and ADAAG 2002. Handicap ramp is provided at front entrance of the building and the restrooms have been updated for wheelchair accessibility.

SUBSTRUCTURE:

The building has a cast-in-place reinforced concrete slab on grade supported by reinforced concrete footing.

SUPERSTRUCTURE:

The building has steel open-web joists, steal beams, and lightweight concrete roof deck as structural frame.

BUILDING EXTERIOR

EXTERIOR WALLS:

The exterior walls consist of painted clay tile masonry with perimeter steel column supports.

EXTERIOR WINDOWS:

The windows are aluminum framed fixed units with non-insulated glazing. Some of the original window units have dried-up glazing sealants and aged metal sash.

EXTERIOR DOORS:

The entrance doorways consist of roll-up overhead doors at the front of the building and service doorways consist of painted flush metal doors and frames, closers, exit devices and mortise locksets with knobs and pulls. Service door have transoms and vision panels with non-insulated glazing.

ROOFING:

This building has a Flat Ruberoid roof, manufactured by Precision Roofing & Supply Inc. and installed by Precision Roofing & Supply Inc. on 09/07/2002 with a 20 yr. warranty.

BUILDING INTERIOR

PARTITIONS:

The interior partition consists of mainly clay tile masonry and gypsum wallboard walls.

WALL FINISHES:

Interior walls are generally painted gypsum wallboard, plastered walls and painted clay tile masonry.

FLOOR FINISHES:

The floors are predominately vinyl tile or carpet. The toilet rooms have painted concrete floor finishes

CEILING FINISHES:

The ceilings consist mainly of acoustical ceiling tiles in a suspended system and painted gypsum board or exposed underside of concrete structure above.

MECHANICAL

HVAC

The building has electric heaters and a single zone packaged cooling unit with a gas furnace located on the roof and exhaust ventilating system. There are low speed, blade type fans suspended from ceiling for summer ventilation. Window type A/C are provided for office personnel on the north end of the building.

DISTRIBUTION SYSTEMS:

The building has a ducted air handler that is roof mounted. A roof-mounted fan provides exhaust for the restrooms.

CONTROLS & INSTRUMENTATION:

Electric thermostats are used for control.

PLUMBING

The plumbing facilities are typical.

PIPING:

Domestic water is supplied to the building by the site distribution system, with distribution by copper piping. Heating hot water is provided from steam converters. Storm water is removed from the rooftops by gutters with leaders to ground drainage. The sanitary system is gravity piping to the site system.

FIXTURES:

There are men's and women's multi-fixture restrooms with vitreous china lavatories, urinals and water closet fixtures.

FIRE PROTECTION

The building has no automated fire alarm system and is being upgraded as part of the fire alarm and Mass Notification System (MNS) project with Fire Alarm Control panel in room 103. See Appendix III Description of Existing Utilities for more details.

Handheld fire extinguishers are located throughout the building.

ELECTRICAL

ELECTRICAL SERVICE & DISTRIBUTION:

Electrical service is supplied from a pad-mounted transformer to a 225A service disconnect switch at 480Y/277 V. A distribution panelboard is located inside and supplies power to transformers, and power panels located throughout the building.

EMERGENCY LIGHT & POWER SYSTEMS:

The building is not equipped with an emergency generator for emergency lighting. The building is equipped with exit lights located throughout the building.

LIGHTING & BRANCH WIRING:

Interior lighting consists of a combination of 2 X 4, recessed and pendant mounted fluorescent fixtures utilizing T8 lamps and electronic ballasts. Incandescent lamped fixtures are used in the other areas of the building. Exterior lighting is provided by building wall mounted HID lamped light fixtures.

COMMUNICATIONS & SECURITY:

The building does not have a fire alarm system. The building has telephone and data systems

FACILITY FUNCTION

Building 17 is a bedding storage area.

CRITICAL ENVIRONMENTAL CONDITIONS

None.

MAJOR EQUIPMENT

None.

CRITICAL SYSTEMS
None.

BUILDING: 20 Abandoned

SQUARE FOOTAGE: 5,110

NO. FLOORS: 1

Description

ARCHITECTURAL

Building 20, the former chilled water pump house, is located within the 3900 NCTR Drive, Jefferson, AR, 72079-9502. Included in the assessment of the building are adjacent parking area, stairways, and light fixtures.

The building is a one (1) story, four room, 6,762 square foot structure built in 1952 and is currently used to store contractor equipment and supplies.

Per the 2003 IBC, Section 302 and NFPA 101, Section 6.1.13 the building is currently classified as Storage Occupancy. The 2003 IBC, Chapter 6 building construction is Type II A.

BUILDING EXTERIOR

The building envelope is painted hollow clay tile block. The flat roof is asphalt tar and gravel with internal roof drains. The building has single glazed, metal framed windows with operable sections. Entry doors are located on the north and south elevations and are steel with steel frames and knob type hardware.

BUILDING INTERIOR

The floor is unfinished concrete, the walls are primarily glazed hollow clay tile block on the grade level floor and unfinished concrete in the pump area. The ceiling is pre-cast concrete plank throughout with the exception of GWB in the office and restroom. The interior partitions consist of glazed hollow clay tile block. Metal stairs with metal handrails provide access to the pump level, approximately 9.5 feet below grade. Interior doors are located at the restroom and office and are composite with steel frames and lever type hardware.

The Substructure

The substructure consists of a raised concrete slab on spread footings. The floor structure is a reinforced concrete slab on grade. The superstructure consists of hollow clay tile block, steel columns and the roof frame consists of open web steel truss.

HANDICAPPED ACCESSIBILITY

The building is not required to be assessed for handicapped accessibility and is exempt per the Codes.

HAZARDOUS MATERIALS

Considering the building age, hazardous materials may be present in areas not renovated.

MECHANICAL

Abandoned.

HVAC

The building has roof mounted exhaust fans providing ventilation. The heating equipment consists of ceiling mounted, steam to air unit heaters with steam supply and condensate return piping and electric space heaters. There is no cooling equipment in this building.

PLUMBING

Plumbing equipment in this building consists of one restroom with a sink and toilet, emergency shower-eye wash and internal roof drains. Domestic water is supplied to the building from the JLC site and enters in the restroom.

FIRE PROTECTION

Type ABC portable fire extinguishers are provided.

ELECTRICAL

Abandoned.

SERVICE AND POWER DISTRIBUTION:

Electrical power for this abandoned building has been disconnected.

EMERGENCY LIGHTING

Abandoned.

LIGHTING AND BRANCH WIRING

Abandoned.

FIRE ALARM EQUIPMENT

The building is not equipped with a fire alarm system or detection devices.

SECURITY AND COMMUNICATION SYSTEMS

The building is not equipped with a security system. The telecommunications system wiring is installed and a telephone was observed in the office

OTHER EQUIPMENT

The building has a retired chilled water pumping system that includes motors, pumps, valves, piping, and switchgear. There are also overhead beam trolleys, chain falls, and a transport system for removal and installation of heavy equipment.

FACILITY FUNCTION

Abandoned.

Building 20 is an abandoned pump house and was phased out during the district cooling project.

CRITICAL ENVIRONMENTAL CONDITIONS
None

EXISTING SYSTEMS IN FACILITY

MAJOR EQUIPMENT

None.
SPECIAL EQUIPMENT

None.
SPECIAL MAINTENACE ATTENTION.

None.

BUILDING: 21

SQUARE FOOTAGE: 2,199

NO. FLOORS: 1

Description

ARCHITECTURAL

Building 21, the security building, is located within the 3900 NCTR Drive, Jefferson, AR, 72079-9502. Included in the assessment of the building are adjacent walkways and light fixtures.

The building is a one (1) story, 2,199 square foot structure built in 1952 and renovated in 2002 (exterior) and 2004 (interior). Its function is to provide access security control and monitoring services for the site. It contains a central lobby for security screening and monitoring, office, break-room and locker room, restrooms, storage room and equipment room.

Per the 2003 IBC, Section 302 and 2003 NFPA 101, Section 6. 1.11 the building is classified as Business Occupancy. The 2003 IBC, Chapter 6 building construction is Type II A.

BUILDING EXTERIOR

The building envelope is painted hollow clay tile block. The gabled roof is standing seam, powder coated metal installed over the original flat roof with gutters and downspouts discharging to the site. The building has storefront entryways and double glazed, metal framed windows with operable sections and screens. Entry doors are located on all elevations and are aluminum framed with glazing and lever type hardware.

BUILDING INTERIOR

The floor is primarily ceramic tile in the public spaces with carpet used elsewhere. The walls are painted CMU and GWB with some ceramic tile in the restrooms. The ceiling is primarily 2X2 suspended tile with some perforated metal pan. The interior partitions consist of painted hollow clay tile block and CMU. Interior doors are steel or composite material with steel frames, knob and lever type hardware

STRUCTURE

The substructure and floor consists of a reinforced concrete slab on grade with spread footings. The superstructure consists of hollow clay tile block, steel columns and the roof frame consists of steel truss, beams, and bars.

ROOFING:

This building has a Metal Canopy roof, manufactured by Bayou Metal Buildings and installed by Bayou Metal Buildings on 02/25/2000 with a 20 yr. warranty.

HANDICAPPED ACCESSIBILITY

The building was assessed for handicapped accessibility; it is not exempt per applicable accessibility

codes.

HAZARDOUS MATERIALS

Considering the recent complete exterior and interior renovations (2002 and 2004), hazardous materials are not likely to be present.

MECHANICAL

HVAC

The heating and cooling system consists of two HCFC-22 heat pumps of approximately 3 Tons each equipped with an air cooled condenser, air handler, and sharing supply and return ductwork, registers and diffusers and fresh air makeup louvers. The building has ceiling mounted exhaust fans for the restrooms and a ventilation system for the electrical equipment room. Control is by digital thermostat interfaced with a local energy management system.

PLUMBING

Plumbing equipment in this building consists of two accessible restrooms, each with a sink and toilet, hose bibbs with vacuum breakers and a dual level drinking water fountain. Domestic water is supplied to the building from the JLC site and enters in the restroom area. Domestic hot water is provided by compact, 2.75-gallon wall mounted electric water heaters located in the restrooms. The sanitary system in buildings of this vintage is typically hub type cast iron. The system is part of the site sanitary sewer system connected to the waste treatment facility at the Pine Bluff Arsenal.

FIRE PROTECTION

FIRE ALARM EQUIPMENT

The building has a single zone EST fire alarm system control panel in room 103 that's being replaced by a Siemens Fire Finder that will be in room 100. Audible and visual alarm signaling, manual pull stations and detection devices are part of the fire alarm and Mass Notification System (MNS). See Appendix III Description of Existing Utilities for more details.

Handheld fire extinguishers are located throughout the building.

ELECTRICAL

SERVICE AND POWER DISTRIBUTION:

Electrical service is supplied from a pad-mounted transformer to a 100A service disconnect switch at 208Y/120 V.

EMERGENCY LIGHTING

The building is not equipped with battery powered emergency lighting fixtures. Exit lighting with battery backup is installed.

LIGHTING AND BRANCH WIRING

The building uses energy efficient T-8 type, surface mounted and recessed fluorescent lighting fixtures for

interior lighting Occupancy sensors control the lighting in areas not continuously occupied such as the restrooms. Exterior lighting consists of incandescent spotlights and HID units. Duplex receptacles, including some GFCI type, are located throughout the building.

SECURITY AND COMMUNICATION SYSTEMS

The building is equipped with a security system for the site that includes an alarm system, controllable cameras, motion detectors, and monitors. The telecommunications system includes telephones, fiber optic cables and computers with intra and internet connectivity. An un-interruptible power supply is provided for critical communication equipment.

OTHER EQUIPMENT

The building has two metal detectors for screening personnel and one baggage X-Ray inspection machine.

FACILITY FUNCTION

This building is located at the main gate to JLC and contains the security guard station and several administrative offices.

CRITICAL ENVIRONMENTAL CONDITIONS
None.

BUILDING: 26

Arkansas Regional Lab (ORA-Facility)
SQUARE FOOTAGE: 177,867
NO. FLOORS: 4

Description

ARCHITECTURAL
Building 26 is located at the core center of Jefferson Regional Labs campus, sandwiched between buildings 51, 50, and 10 in the town of Jefferson, Arkansas. This three-story facility with a roof penthouse has entrance accentuated by curved cylindrical shaped steel structure also that has sloped steel framed and metal roof entrance canopy. The building was built in 2000 and has approximately 177,867 SF of space. The building consists of mainly research laboratories in the middle of the structure and offices at the perimeter. The mechanical and utility rooms are located at the penthouse and basement.

Per the 2003 International Building Code, Section 602, the building is classified as Business Occupancy, Use Group B, having a Construction Type of Type IA, Noncombustible.

The handicapped accessibility for this facility was assessed utilizing the Uniform Federal Accessibility Standards (UFAS), Federal Standards 795, April 1, 1988, & P.L. 90-460 and ADAAG 2004. Handicap accessibility ramp is provided at the entrance of the building. Most of the restrooms are wheelchair accessible and meet ADAAG accessibility requirements.

SUBSTRUCTURE:

The building has a cast-in-place reinforced concrete slab on grade supported by reinforced concrete footings.

SUPERSTRUCTURE:

The first and second floor structures consist of steel beams supported by steel columns, reinforced CMU block, and metal deck with sprayed-on fireproofing. The roof and dome structures consist of round steel beams that rest on perimeter columns with metal deck as structural frame.

BUILDING EXTERIOR

EXTERIOR WALLS:
The exterior walls consist of predominately colored concrete masonry walls, glass curtain wall at

EXTERIOR WINDOWS:
The exterior windows consist of combination of metal and glass curtain wall system and pocket windows with fixed double insulated glazing and anodized aluminum frame.

EXTERIOR DOORS:

The main entrance doorways consist of aluminum storefront systems with sidelights and transoms. Hardware consists of exit devices, pulls, and closers. The doors have full panel glazing and all glazing is double insulated. Service doorways consist of painted flush metal doors and frames, closers and

mortise locksets with knobs.

ROOFING:

The main roofs consist of three ply modified bitumen roofing system with painted aluminum gravel stop, internal roof drains, scuppers and one foot high parapet and the penthouse and dome structure roofs consist of standing seam metal roof of gable style.

BUILDING INTERIOR

PARTITIONS:
Interior partitions consist mainly of gypsum wallboard on metal studs, metal framed glass partition and concrete masonry walls.

INTERIOR DOORS:

Interior doors consist mainly of painted flush hollow core metal doors set in painted metal frames with lever type mortise hardware and some closers. There are some fully glazed (tempered safety) framed doors in painted frames with push/pull hardware and borrowed lights.

WALL FINISHES:

Interior walls are generally painted plastered gypsum wallboard, wallpaper, and painted CMU.

FLOOR FINISHES:

The floors are predominately sheet vinyl in the labs, painted concrete and vinyl composition tiles at the corridors and common areas, carpet finish in the offices and concrete floor at the mechanical and storage rooms. The toilet rooms have ceramic tile floors.

CEILING FINISHES:

The ceilings consist of exposed structures, painted plaster, and suspended acoustic ceiling tile.

MECHANICAL

CONVEYING
The building has a passenger type electro-hydraulic elevator that serves all floors. The elevator is rated at 2,500 lbs. capacity. The freight elevator is rated at 6,000 lbs. capacity.

COOLING GENERATING SYSTEMS
The building contains two HCFC-123, centrifugal type, water-cooled chillers and related auxiliary support equipment. Chiller Nos. 1 and 2 are rated at 1150 Tons and a 600 ton chiller that was installed in 2010. The building can also receive chilled water from the Central plant chilled water and distribution system. Chillers supplying this loop are located in Buildings 26, 5B, and 53A.

The auxiliary equipment serving the chillers is comprised of chilled water supply pumps, chilled water return pumps equipped with variable speed drives, chemical treatment system, condenser water system, refrigerant monitor, control and monitoring instrumentation with interface to Johnson Metasys BAS located in Bldg. 54.

INSULATION:
Steam, condensate, hot water, domestic cold water and chilled water piping is insulated with fiberglass type insulation with jacket.

HVAC

Air Handlers 1,2 and 3, rated at 70,000 CFM, provide the building with conditioned air with 100 percent fresh air makeup for the laboratory spaces only. Each variable speed drive air handler is provided with chilled water and steam heating coils, pre-air filters, air intake plenum, discharge ductwork, condensate recovery system and control and monitoring instrumentation.
Distribution is by ductwork equipped with fire dampers to VAV boxes, hot water re-heat coils, and diffusers. The offices are served by AHU 4 with a return air fan RFA-1. AHU 5 serves the electrical room located in the basement.

Heating hot water for the duct-mounted re-heaters is generated by steam to hot water heat exchangers or converters located in the basement mechanical equipment room. They are equipped with variable speed drive circulation pumps, traps, valves and associated piping. A high pressure steam reducing station is located in the basement mechanical equipment room where the steam pressure from Building 7, the boiler house, is reduced for building service.

The building is provided with an exhaust ventilation system located in the penthouse. The system is equipped with large variable speed drive exhaust fans EF-A-1, EF-A-2, EF-A-3, and EF-A-4 and multiple small dedicated exhaust fans. All have galvanized steel intake and discharge ductwork. Unit heaters are located in the penthouse and loading dock area.

Cabinet type unit heaters are installed at some ground floor entryways.

Control and monitoring of the building HVAC equipment (Air Handlers 1-5, Exhaust Fans 1-4, were replace with the Siemens DDC control and now interfaces with the Siemens Insight Software in Building 54. The majority of the labs and offices are monitored, controlled and connected to the Johnson Metasys BAS located in Bldg. 54. The control system is a hybrid electro-pneumatic type. A back-up, tank mounted, twin reciprocating, control air compressor is installed to supplement the control air supply from the central plant during interruption of service. Heating and cooling of individual spaces is controlled by local digital thermostats. Several laboratories (A026 - Nano, B023 – Nano, A214 – NCTR, A240 – Food Chemistry, and B122 – Dioxin) were replaced with the Siemens DDC control and now interface with the Siemens Insight Software in Building 54. Several laboratories will be replaced with Siemens DDC controls including the following Dioxin Labs (B114, B118, B-128, B134, B144, B148, B152, B156), the following Pesticide Labs (A324, A344, A348A,B), and the following Food Chemistry Labs (A330, A334).

Hydrogen bottle storage cabinets are equipped with a dedicated exhaust system equipped with a leak detection and alarm system. Explosion relief panels and two independent exhaust fans are installed in the roof above a solvent storage area located in a single story wing on the south elevation. Fume hoods are installed in the majority of the laboratories. The hoods are supplied with make-up air via ceiling mounted supply air grilles. The rooms containing the fume hoods are kept at a positive pressure and have pressure monitoring and alarm instrumentation. A dedicated exhaust fan is provided for a room containing the chemical perchlorate.

PLUMBING

Natural gas is supplied by the local utility for laboratory use only. Distribution is via black steel threaded and welded piping. A pressure control valve, pressure gauges, isolation valve, and strainer is installed on the supply piping at grade level on the north elevation.

Domestic water for the building is supplied by the local well water supply system. A domestic water pressure boosting station with pumps and pressure control is available for use if the need arises. The hot water and cold water supplies on each floor are each equipped with double check backflow preventers located in storage closets on each floor. Distribution i by steel and copper piping. Drinking water is supplied by dual level, accessible, stainless steel drinking fountains on each floor.

Domestic hot water is provided to the building primarily by steam to domestic hot water converters or heat exchangers located in the basement mechanical equipment room. This is a loop system equipped with a circulating pump. There are some small electric hot water heaters installed. Emergency eyewash and shower stations are located throughout the laboratory spaces of the building.

The building has staff and public restroom facilities, janitors sinks and hose bibbs are in strategic locations. These plumbing fixtures, including the darkroom sink on the first floor, are equipped with anti-siphon devices.

The industrial waste water system is comprised of ASTM D4101, flame retardant polypropylene (FRPP) pipe, suitable for use through fire stopped penetrations. The waste is sent to the Building 44, the Industrial Waste Water Treatment Plant for processing prior to joining the site sanitary sewer system. The sanitary sewer piping in buildings of this vintage is typically cast iron no hub and or PVC. In this building, the sanitary waste system is connected to the site sanitary sewer system via three sanitary waste transfer pump stations, each with two sanitary waste transfer pumps. The waste is transported to the wastewater treatment plant at the Pine Bluff Arsenal.

De-ionized water production equipment is installed in the basement mechanical equipment room. Distribution is by two centrifugal pumps via stainless steel and polyethylene piping and valves.

Storm water is removed from the building roof by internal roof drains connected to the site storm water removal system. Overflow scuppers are also installed.

A landscape irrigation system is installed with a control box located in the building.

OTHER PLUMBING SYSTEMS

The building has nitrogen generators installed in the laboratory areas with associated distribution piping, tubing, valves, and pressure controls. A variety of bottled compressed gases is available including hydrogen and argon. Each bottled compressed gas station has associated distribution piping, tubing, and controls.

Vacuum for laboratory uses is provided by water ring vacuum pumps located in the basement mechanical equipment room The system is equipped with supply piping, valves, and control equipment.

Laboratory fume hoods are provided with compressed air, vacuum, and nitrogen.

OTHER EQUIPMENT

The building has built in freezers and coolers equipped with digital temperature controllers and alarms, some with chart recorders.

FIRE PROTECTION

The building is protected by a wet pipe sprinkler system that includes areas such as the mechanical penthouse, hydrogen bottle storage cabinets, corridors, offices, and stairwells. The system is supplied with water from the site domestic water distribution system and enters the building in Room B-168, the Fire Valve Room located in the basement. Equipment in the Fire Valve Room consists of a single check backflow preventer, alarm check valve, alarm retard chamber, flow, and tamper switches and isolation valves.

Additional fire protection equipment in the building includes fire shutters in the light well operated automatically by the fire alarm control system as well as by fusible link melting and ABC type

portable fire extinguishers located throughout. Fire blankets for personnel protection are at select locations on most floors. A twin headed fire department connection is located on the exterior of the building at grade level and Class 1, 2.5 inch fire department connections with standpipe are located in the stairwell and mechanical penthouse. Planned upgrades to this system include the installation of new strobe devices within the Labs to accommodate hearing impaired individuals, conversion of the existing horn notification to a voice system, and to install a new Siemens Fire Finder Panel that will allow interface of the existing MXL-IQ panel to interface with the Campus Siemens Graphics System. The upgrade will also include the integration of a Mass Notification System(MNS). See Appendix III Description of Existing Utilities for more details.

ELECTRICAL

ELECTRICAL SERVICE & DISTRIBUTION:

One electrical service is supplied from a pad-mounted transformer to a 3000A service disconnect switch at 480Y/277 V. A second service is supplied from a pad-mounted transformer to an 800A disconnect switch at 2400Y/1386. A 480Y/277V distribution switchboard supplies power to downstream transformers, and power panels located throughout the building.

EMERGENCY LIGHT & POWER SYSTEMS:

Emergency power for emergency lighting is provided by a 480Y/277 V, 1000 kW, diesel engine generator located remotely from the building. This generator also serves building 50. The building is equipped with emergency lighting circuits supplying select fixtures located throughout the building. The building also has exit fixtures along the paths of egress.

LIGHTING & BRANCH WIRING:

Interior lighting consists of a combination of 1 x 4 and 2 X 4, recessed and pendant mounted fluorescent fixtures utilizing T8 lamps and electronic ballasts. Various other types of lighting fixtures and lamps are also used throughout the facility. Exterior lighting is provided by canopy mounted incandescent and PL lamped light fixtures.

COMMUNICATIONS & SECURITY:

The main fire alarm control panel is located in the basement mechanical room. Alarm devices are monitored and alarms are broadcast throughout the building. The building also has security, telephone, and data systems.

SPECIAL MAINTENANCE ATTENTION

The lab and building environmental conditions are critical and require continuous monitoring and control. This is accomplished utilizing a Johnson Controls METASYS building automation and control system in conjunction with EMCS maintenance and surveillance personnel. TSI laboratory controllers are installed as well and a fire alarm system for personnel safety.

CRITICAL SYSTEMS

Included are HVAC equipment such as chillers, air handling units, pumps, fans, hot water converters, (deionized water system, excluding filtration and control system i.e. these are not part of this contract.), condensing units, laboratory fume hoods, and laboratory refrigerators and freezers.

BUILDING: 28

SQUARE FOOTAGE: 484

NO. FLOORS: 1

Description

ARCHITECTURAL
Building 28, the Golf Cart Charging Station, is located within the 3900 NCTR Drive, Jefferson, AR, 72079-9502. Included in the assessment of the building are adjacent walkways and light fixtures.

The building is a one (1) story, one room, 484 square foot structure built in 1952 and used to garage and charge golf carts for use around the facility.

Per the 2003 IBC, Section 302 the building is classified as Storage Occupancy. The 2003 IBC, Chapter 6 building construction is Type II A.

BUILDING EXTERIOR

The building envelope is painted CMU. The roof is sloped with modified bitumen roll roofing material. The building does not have any windows. A three foot wide entry door is located on the west elevation and a 12 foot wide, motor operated roll up door is located on the south elevation. Both are steel with steel frames.

ROOFING:

This building has a Flat Roof w/pea gravel roof, manufactured by A&I Construction and installed by A&I Construction on 12/16/1998 with a 12 yr. warranty.

BUILDING INTERIOR

The floor is unfinished concrete, the walls are painted concrete block, and the ceiling is painted wood.
STRUCTURE

The substructure consists of a concrete slab on grade on spread footings. The floor structure is a reinforced concrete slab on grade. The superstructure consists of 8-inch hollow concrete masonry units (CMU) and the roof frame consists of 2 inch by 8-inch wood joists with plywood decking.

HANDICAPPED ACCESSIBILITY

The building is not required to be assessed for handicapped accessibility and is exempt per the Codes.
HAZARDOUS MATERIALS

Considering the building age, hazardous materials may be present in areas not renovated.

MECHANICAL

HVAC
The building has louvers to provide natural draft ventilation. There is no heating or cooling equipment in this

building.

PLUMBING

There is no plumbing equipment in this building.

FIRE PROTECTION
The building has a portable fire extinguisher, type ABC but no automated Fire Alarm System.

ELECTRICAL

SERVICE AND POWER DISTRIBUTION:

Electrical service is provided by the site electrical distribution system to a 100A, 120-240V, 1 Phase, 3 Wire panel. Distribution is by conduit and wire to duplex receptacles and lighting fixtures.

EMERGENCY LIGHTING

The building is equipped with a battery powered emergency lighting fixture. Exit lighting is not required.

LIGHTING AND BRANCH WIRING

The building uses energy efficient T-8 type fluorescent, surface mounted lighting fixtures for interior lighting. Exterior lighting consists of incandescent lamps housed in weather resistant enclosures with metal cage guards. Duplex receptacles are located throughout.

FIRE ALARM EQUIPMENT
The building is not equipped with a fire alarm system or detection devices.

SECURITY AND COMMUNICATION SYSTEMS

The building is not equipped with a security system or telecommunications system.

FACILITY FUNCTION

Building 28 is used as a golf cart storage/charging area

CRITICAL ENVIRONMENTAL CONDITIONS
None.
MAJOR EQUIPMENT

None.

SPECIAL EQUIPMENT

None.

CRITICAL SYSTEMS

None.

BUILDING: 31

SQAURE FOOTAGE: 1,603
NO. FLOORS: 1

Description

ARCHITECTURAL

Building 31, the Communications and Copy Center, is located within the 3900 NCTR Drive, Jefferson, AR, 72079-9502. Included in the assessment of the building are adjacent walkways and light fixtures. The building is a one (1) story, six room, 1,603 square foot structure built in 1952 and renovated in 2002 (exterior). Its function is to provide document copying services for the site. It contains a central area for document preparation and copying, offices, restroom and equipment room.
Per the 2003 IBC, Section 302 and NFPA 101, Section 6.1.11 the building is classified as Business Occupancy. The 2003 IBC, Chapter 6 building construction is Type II A.

BUILDING EXTERIOR

The building envelope is painted red brick. The gabled roof is standing seam, powder coated metal installed over the original flat roof with gutters and downspouts discharging to the site. The building has double glazed, metal framed windows with operable sections. A glassed in area, room 104, is being used as a storage area on the west elevation or Jackson Road side. Entry doors, located on the north and west elevations, are metal framed with glazing and knob type hardware.

ROOFING:

This building has a Metal Canopy roof, manufactured and installed by Bayou Metal Buildings No Date for warranty available.

BUILDING INTERIOR

The floor is sheet vinyl in the high traffic areas and in room 104; carpet is used in the remainder of the building. The walls are primarily red brick with some painted GWB. The restroom walls and floor is ceramic tile. The ceiling is primarily 2X2 suspended tile with some perforated metal pan. The interior partitions consist of demountable office partitions and red brick. Interior doors are steel with steel frames and knob type hardware

STRUCTURE

The substructure and floor consists of a reinforced concrete slab on grade with spread footings. The superstructure consists of red brick and steel columns. The roof frame consists of steel truss and corrugated steel decking

HANDICAPPED ACCESSIBILITY

The building was assessed for handicapped accessibility; it is not exempt per applicable accessibility

codes.

HAZARDOUS MATERIALS

Although there has been a recent complete exterior renovation (2002), hazardous materials are still likely to be present in areas not renovated.

MECHANICAL

HVAC

The heating system consists of a 135,000 BTU forced air, gas fired furnace with cooling coil. The cooling system consists of an R-22 air conditioning unit with air-cooled condenser of approximately 3 Tons capacity. The distribution system has supply ductwork, registers, and diffusers. The building has a ceiling mounted exhaust fan for the restroom. Control is by electric thermostat.

PLUMBING

Plumbing equipment consists of a single restroom with a sink and toilet. A drinking water fountain is located in room 100. Domestic water is supplied to the building from the JLC site and enters in the restroom area. Domestic hot water is provided by a 30-gallon electric water heater located in the equipment room. The sanitary system in buildings of this vintage is typically hub type cast iron. The system is part of the site sanitary sewer system connected to the waste treatment facility at the Pine Bluff Arsenal.

Natural gas is supplied for building heat. A pressure reducing station with isolation valve is located outside on the south elevation.

FIRE PROTECTION

The building has no automated fire alarm system but is being upgraded as part of the fire alarm and Mass Notification System (MNS) project with Fire Alarm Control panel in Building 12 room 100. See Appendix III Description of Existing Utilities for more details.

Handheld fire extinguishers are located throughout the building.

ELECTRICAL

SERVICE AND POWER DISTRIBUTION:

Electrical service is provided by the site electrical distribution system to the building service panel. The MDP is rated at 100A, 120-240V, 1 phase, 3W. Distribution throughout the building is primarily by conduit and wire to equipment, duplex receptacles and lighting fixtures. Some surface mounted raceway is used in select locations. A separate 100A, enclosed circuit breaker feeds the air handler and air cooled condenser.

EMERGENCY LIGHTING

The building is not equipped with battery powered emergency lighting fixtures nor exit lighting.

LIGHTING AND BRANCH WIRING

The building uses energy efficient T-8 type, recessed fluorescent lighting fixtures for interior lighting. Occupancy sensors control the lighting in areas not continuously occupied. Exterior lighting consists of photocell controlled HID units. Duplex receptacles are located throughout the building.

FIRE ALARM EQUIPMENT

The building does not have a fire alarm system control panel, audible alarms, visual alarm signaling, manual pull stations, or detection devices.

SECURITY AND COMMUNICATION SYSTEMS

The building is not equipped with a security system. The telecommunications system includes a substantial telephone system backbone enclosed in a metal cabinet, fiber optic cables, telephones, and computers with intra and internet connectivity.

OTHER EQUIPMENT

The building has a large copy machine.

MAJOR EQUIPMENT
HVAC system.

SPECIAL EQUIPMENT

Two telephone PBX consoles and customer administration panel for the AT&T Dimension 2000 telephone system, a 2-way radio base station operator's console, and reproduction machines.

CRITICAL SYSTEMS

None.

BUILDING: 32

SQAURE FOOTAGE: 422

NO. FLOORS: 1

Description

ARCHITECTURAL

Building 32, Storage, is located within the 3900 NCTR Drive, Jefferson, AR, 72079-9502. Included in the assessment of the building are adjacent walkways and light fixtures.

The building is a one (1) story, one room, 422 square foot structure built in 1952 and used to store records.

Per the 2003 IBC, Section 302 and 2003 NFPA 101, Sec. 4-1.10 the building is classified as Storage Occupancy. The 2003 IBC, Chapter 6 building construction is Type II A.

BUILDING EXTERIOR

The building envelope is painted CMU. The flat roof is modified bitumen roll roofing material with an overflow scupper to a downspout discharging to site. The building does not have any windows. A three-foot wide entry door is located on the south elevation and is steel with steel frames.

BUILDING INTERIOR

The floor, walls, and ceiling are unfinished concrete. STRUCTURE

The substructure consists of a concrete slab on grade on spread footings. The floor structure is a reinforced concrete slab on grade. The superstructure consists of 8-inch hollow concrete masonry units (CMU) and the roof frame consists of pre-cast concrete planks.

HANDICAPPED ACCESSIBILITY

The building is not required to be assessed for handicapped accessibility and is exempt per the Codes.
HAZARDOUS MATERIALS

Considering the building age, hazardous materials may be present in areas not renovated.

MECHANICAL

HVAC

The building has a roof mounted ventilation unit that is currently blocked off inside with a metal plate. There is no heating or cooling equipment in this building.

PLUMBING

There is no plumbing equipment in this building. FIRE PROTECTION

The building has a portable fire extinguisher, type ABC.

ELECTRICAL

SERVICE AND POWER DISTRIBUTION:

ELECTRICAL service, with outside disconnect switch, is provided by the site electrical distribution system to a 70A, 120-240V 1 Phase, 3 Wire panel. Distribution is by conduit and wire to receptacles and a lighting fixture.

EMERGENCY LIGHTING

The building is not equipped with a battery powered emergency lighting fixture. Exit lighting is not required. LIGHTING AND BRANCH WIRING

The building uses an energy efficient T-8 type fluorescent, surface mounted lighting fixture for interior lighting. There is no exterior lighting. There are duplex and 220V receptacles.

FIRE ALARM EQUIPMENT

The building is not equipped with a fire alarm system or detection devices. Handheld fire extinguishers are located throughout the building.

SECURITY AND COMMUNICATION SYSTEMS The building is not equipped with a security system or telecommunications system.

FACILITY FUNCTION

Building 32 is a small storage building for retired files.

CRITICAL ENVIRONMENTAL CONDITIONS

None.

EXISTING SYSTEMS IN FACILITY

None.

MAJOR EQUIPMENT

None.

SPECIAL EQUIPMENT

None.

SPECIAL MAINTENANCE ATTENTION

None.

CRITICAL SYSTEMS

None.

BUILDING: 37

SQUARE FOOTAGE: 12,594

NO. FLOORS: 1

Description

ARCHITECTURAL

Building 37 is located near Dewitt Road at south area of the Jefferson Regional Labs campus in the town of Jefferson, Arkansas. This one story structure was built in 1952 and has approximately 12,594 SF of space. The building consists of storage facility for gas cylinders, hazardous waste and equipment, also used as a workshop facility. The building has underground tunnel that leads to building 85.

Per the 2003 International Building Code, Section 602, the building is classified as Utility Occupancy, Use Group U, having a Construction Type of Type IIB, protected and noncombustible as determined in field observations.

The handicapped accessibility for this facility was assessed utilizing the Uniform Federal Accessibility Standards (UFAS), Federal Standards 795, April 1, 1988, & P.L. 90-460 and ADAAG 2004. Handicap accessibility is not required in this facility and none is found in the building.

SUBSTRUCTURE:

The building has a cast-in-place reinforced concrete slab on grade.

SUPERSTRUCTURE:

The building has steel open-web joists, steal beams and lightweight concrete roof deck as structural frame.

BUILDING EXTERIOR

EXTERIOR WALLS:

The exterior walls consist of multiple withes of clay tile masonry with perimeter steel column supports.

EXTERIOR WINDOWS:

There are no discernible windows observed in the building.

EXTERIOR DOORS:

The main doorways consist of roll-up overhead doors and painted steel doors with louver and vision panels. Hardware consists of exit devices, pulls, and closers. Service doorways consist of lush metal doors and frames, closers and mortise locksets with knobs.

ROOFING:

The roof consist of modified bitumen roofing system with painted aluminum gravel stop, internal roof

drains, and it has long cantilevered canopy covering the loading dock.

BUILDING INTERIOR

PARTITIONS:

The interior partition consists of mainly colored clay tile masonry.

WALL FINISHES:

Interior walls are generally exposed clay tile masonry.

FLOOR FINISHES:

The floors are predominately concrete and painted concrete.

CEILING FINISHES:

The ceilings consist of exposed structure and painted plaster in the workshop and storage.

MECHANICAL

HVAC

DISTRIBUTION SYSTEMS:

The building does not have any mechanical systems except for hot water unit heaters located in rooms 104, and 106. There is also an exterior exhaust fan located outside room 106.

CONTROLS & INSTRUMENTATION:

Electric thermostats are used to control the unit heaters.

PLUMBING

PIPING:

Domestic water is supplied to the building by the site distribution system, with distribution by copper piping. Heating hot water is provided from steam converters. Storm water is removed from the rooftops by gutters with leaders to ground drainage.

FIXTURES:

There are men's and women's multi-fixture restrooms with vitreous china lavatories, urinals, and water closet fixtures.

FIRE PROTECTION:

The building is not equipped with a fire alarm system or detection devices. Handheld fire extinguishers are located throughout the building.

ELECTRICAL

ELECTRICAL SERVICE & DISTRIBUTION:

Electrical service is supplied by a feeder from building 85 to a 120/240 volt, 100-amp panel.

EMERGENCY LIGHT & POWER SYSTEMS:

The building is not equipped with an emergency generator for emergency lighting. The building is not equipped with emergency battery units or exit lights.

LIGHTING & BRANCH WIRING:

Interior lighting consists of explosion proof incandescent/cfl lighting fixtures. Exterior lighting is provided by canopy mounted HID lamped light fixtures.

COMMUNICATIONS & SECURITY:

The building does not have a fire alarm system. The building has a telephone handset mounted in an exterior enclosure on the exterior of the building.

FACILITY FUNCTION

Building 37 is primarily a storage building. It has a dock, six storage rooms, a restroom and a large underground area that extends north under building 85. The building has certain rooms used for solvent and hazardous waste storage. The remaining rooms are used by the property office for general items storage.

CRITICAL ENVIRONMENTAL CONDITIONS

Temperature of solvent and hazardous waste storage rooms.

EXISTING SYSTEMS IN FACILITY

MAJOR EQUIPMENT

Sump pump.

SPECIAL MAINTENANCE ATTENTION

The sump pump in the underground section must be maintained in good working condition to protect the building from flooding.

BUILDING: 44

(Wastewater Treatment Facility)
SQUARE FOOTAGE: 7,033
NO. FLOORS: 1

Description

ARCHITECTURAL

Building 44 is located off DeWitt Road at south side of the Jefferson Regional Labs campus in the town of Jefferson, Arkansas. This one story structure was built in 2000 and has approximately 7,280 SF of space. The one story building consists of mainly industrial waste treatment and filtration plant; pump pit, few office labs, locker-room and restrooms.

Per the 2003 International Building Code, Section 602, the building is classified as Utility Occupancy, Use Group U, having a Construction Type of Type III, unprotected, as determined in field observations.

The handicapped accessibility for this facility was assessed utilizing the Uniform Federal Accessibility Standards (UFAS), Federal Standards 795, April 1, 1988, & P.L. 90-460 and ADAAG 2004. Handicap accessibility is not required in this facility and none is found in the building.

STRUCTURE

SUBSTRUCTURE:

The building has a cast-in-place reinforced concrete slab on grade.

SUPERSTRUCTURE:

The building has steel open-web joists, steal beams and light-weight concrete roof deck as structural frame.

BUILDING EXTERIOR

EXTERIOR WALLS:

The exterior walls consist of multiple withes of clay tile masonry with perimeter steel column supports.

EXTERIOR WINDOWS:

There few windows in the building and they consist of aluminum framed fixed type units with (tempered safety) non-insulated glazing.

EXTERIOR DOORS:

The entrance doorways consist of steel door with louver and roll-up steel overhead door. Hardware consists of exit devices, pulls, and closers. Service doorways consist of painted flush metal doors and

frames, closers and mortise locksets with knobs.

ROOFING:

This building has a Flat Roof Ruberoid roof, manufactured by Precision Roofing & Supply Inc. installed by Precision Roofing & Supply Inc. on 09/07/2002 with a 20 yr. warranty.

BUILDING INTERIOR

PARTITIONS:

Interior partitions consist mainly of plaster over mesh and some renovated walls with gypsum wallboard on metal studs. There are some exposed concrete and CMU walls throughout the building.

INTERIOR DOORS:

Interior doors consist mainly of painted flush hollow core metal doors set in painted metal frames with knob type mortise hardware and some closers. There are some fully glazed (tempered safety) framed doors in painted frames with push/pull hardware and borrowed lights.

WALL FINISHES:

Interior walls are generally painted plaster on mesh and few painted gypsum wall board.

FLOOR FINISHES:

The floors are predominately painted concrete, and few vinyl composition tile or carpet. The toilet and locker rooms have sheet vinyl and ceramic tile floors.

CEILING FINISHES:

The ceilings consist of painted plaster, gypsum wallboard, and suspended acoustical ceiling tile.

MECHANICAL

INDUSTRIAL WASTE WATER TREATMENT

The building contains equipment designed to treat industrial waste streams prior to transfer to the Pine Bluff Arsenal wastewater treatment facility. The industrial waste streams flow to the plant-settling basin in dedicated piping from facilities within the campus. An overflow basin adjacent to the settling basin provides a back-up location for excess flow from the settling basin. From the settling basin, the effluent is transferred to filtration equipment systems. These systems include waste sumps, pressure filters, also known as sand filters, carbon filters, transfer pumps, pressure pumps, backwash pumps, vacuum pump, tank mounted reciprocating air compressor, chlorine supply system, and related electrical, piping, valves, valve operators and control systems.

HVAC

The building is provided with two R-22, roof mounted heat pumps of approximately 3 Tons capacity each that supply the office and control room area and one grade level, gas fired, R-22 packaged air conditioning and heating unit for the locker room and shower area. The distribution system is comprised of ductwork, registers, and diffusers.

Exhaust fans ventilate the restrooms, locker and shower rooms, and chlorine room. Ceiling mounted unit heaters are located in the water treatment room.

Control for the HVAC equipment is provided by local thermostats. PLUMBING

Natural gas is supplied by the local utility for the locker room heating and the locker room gas fired hot water heater. Distribution is via black steel threaded piping.

Domestic water for the building is supplied by the local well water supply system. Distribution is by steel and copper Domestic hot water is provided to the office area by a 30 gallon, 4000 watt, electric water heater and to the showers in the locker room by a gas fired, 91 gallon, 200,000 BTU hot water heater. Both located in the water treatment equipment room. Drinking water is provided by stainless steel drinking fountains.

The building has staff restroom and locker room-shower room facilities. The office restroom has a floor mounted water closet and lavatory. The locker room has multiple showers, water closets, and dual basin lavatory. A janitors sink is located in the water treatment equipment room

The sanitary sewer piping is hub cast iron and PVC connected to the site sewer system and transported to the wastewater treatment plant at the Pine Bluff Arsenal. Storm water is removed from the building roofs by internal roof drains discharging to the storm water removal system and overflow scuppers discharging to the site.

FIRE PROTECTION

The building is not equipped with a fire alarm system or detection devices. Handheld fire extinguishers are located throughout the building.

ELECTRICAL

ELECTRICAL SERVICE & DISTRIBUTION:

Electrical service is supplied from a pad-mounted transformer to an 800A service disconnect switch at 480Y/277 V. A distribution panelboard is located in the mechanical room and supplies power to transformers, and power panels located throughout the building.

EMERGENCY LIGHT & POWER SYSTEMS:

The building is not equipped with an emergency generator for emergency lighting. The 250kVA emergency generator located exterior to the building does not function and has been abandoned. The building is not equipped with emergency battery units.

LIGHTING & BRANCH WIRING:

Interior lighting consists of 2 X 4, recessed mounted fluorescent fixtures utilizing T8 lamps and electronic ballasts in the office area. HID fixtures are located in the equipment area. Exterior lighting is provided by pole mounted HID lamped light fixtures.

COMMUNICATIONS & SECURITY:

The main fire alarm control panel is located in room 44-101. Alarm devices are monitored and alarms are

broadcast throughout the building. The building has telephone and data systems.

FACILITY FUNCTION

The facility is used to process the contaminated wastewater to remove the research chemicals before discharging to the sanitary sewage system. (Capacity - 100,000 gallons per day).

CRITICAL ENVIRONMENTAL CONDITIONS

Fire and equipment alarms.

SPECIAL EQUIPMENT
All equipment in this plant is special purpose equipment for waste water treatment systems.

SPECIAL MAINTENANCE ATTENTION

This plant must operate at all times. There is a seven day emergency holding lagoon to allow for repair.

BUILDING: 45

SQUARE FOOTAGE: 21,288

NO. FLOORS: 1

Description

ARCHITECTURAL

Building 45 is located behind Building 44 and off Winn Road and in the southeast area of the Jefferson Regional Labs campus in the town of Jefferson, Arkansas. This single story structure was built in 1952 and has approximately 21,288 SF of space. The building consists predominately of workshop, offices, mechanical room, and storage

Per the 2003 International Building Code, Section 602, the building is classified as Business Occupancy, Use Group B, having a Construction Type of Type IIB, noncombustible as determined in field observations.

The handicapped accessibility for this facility was assessed utilizing the Uniform Federal Accessibility Standards (UFAS), Federal Standards 795, April 1, 1988, & P.L. 90-460 and ADAAG 2004. There is no observable handicap ramp provided at front entrance of the building and the restrooms are not wheelchair accessible.

SUBSTRUCTURE:

The building has a cast-in-place reinforced concrete slab on grade supported by reinforced concrete footing.

SUPERSTRUCTURE:

The building has rigid framed steel columns and beams and steel joists for roof structure.

BUILDING EXTERIOR

EXTERIOR WALLS:

The exterior walls consist of about four feet high skirting wall of painted soldier course brick veneer and upper walls consist of composite metal panel wall systems.

EXTERIOR WINDOWS:

The windows are aluminum framed fixed units with non-insulated glazing and some louvers at the upper walls.

EXTERIOR DOORS:

The entrance doorways consist of painted flush metal doors and frames, closers, exit devices and mortise locksets with knobs and pulls. Service doors have vision panels with non-insulated glazing. Hardware

consists of exit devices, pulls and closers.

ROOFING:

The roof consists of single ply PVC at the rear lower roof and main roof has gable type standing seam metal roofing system with gutters and downspouts, and roof access is through the stairs and ladder. The upper roof has clerestory windows at north side of the building.

BUILDING INTERIOR

PARTITIONS:

The interior partition consists of mainly clay tile masonry and gypsum wallboard walls.

WALL FINISHES:

Interior walls are generally painted gypsum wallboard, plastered walls and painted clay tile masonry.

FLOOR FINISHES:

The floors are predominately concrete and painted concrete. The toilet rooms have concrete and ceramic tile floor finishes.

CEILING FINISHES:

The ceilings consist mainly of painted gypsum board or exposed underside of concrete structure above.

MECHANICAL

HVAC

DISTRIBUTION SYSTEMS:

The building has a ducted air handlers that are roof mounted, providing 100 percent outside air. Steam, heating hot water and chilled water is supplied from site utilities. Roof-mounted fans provide exhaust for restrooms. Chilled water is supplied from site AW, air conditioning, water system. Heating hot water is provided from the site system.

CONTROLS & INSTRUMENTATION:

Electric thermostats and humidity sensors are used for control.

PLUMBING

PIPING:

Domestic water is supplied to the building by the site distribution system, with distribution by copper piping. Domestic hot water for the building is provided by an electric fed 80 gallon, 240 volt, 4500 watt water heater. Storm water is removed from the rooftops by gutters with leaders to a ground drainage. The sanitary system is gravity piping to the site system.

FIXTURES:

There are men's and women's multi-fixture restrooms - shower rooms with vitreous china lavatories, urinals and water closet fixtures. Individual DX cooled drinking fountains are provided.

FIRE PROTECTION:

The building is not equipped with a fire alarm system or detection devices. Handheld fire extinguishers are located throughout the building.

ELECTRICAL

ELECTRICAL SERVICE & DISTRIBUTION:

Electrical service is supplied from a pad-mounted transformer to a 400A service disconnect switch at 480Y/277 V. A distribution panelboard is located in the mechanical room and supplies power to transformers, and power panels located throughout the building.

EMERGENCY LIGHT & POWER SYSTEMS:

The building is not equipped with an emergency generator for emergency lighting. The building is equipped with emergency battery units and exit lights located throughout the building.

LIGHTING & BRANCH WIRING:

Interior lighting consists of a combination of 2 X 4, recessed mounted fluorescent fixtures utilizing T8 lamps and electronic ballasts. Pendant mounted HID lamped fixtures are used in the shop areas.

FACILITY FUNCTION

Building 45 is a maintenance shop building. It contains a carpenter shop, an electric shop, refrigeration shop, pipe shop, and maintenance offices.

CRITICAL ENVIRONMENTAL CONDITIONS
None

MAJOR EQUIPMENT
None

SPECIAL EQUIPMENT

None.
CRITICAL SYSTEMS

None.

BUILDING: 46

SQUARE FOOTAGE: 7,280

NO. FLOORS: 1

Description

ARCHITECTURAL

Building 46 is located behind Building 53 complex and near Davis Road and in the east area of the Jefferson Regional Labs campus in the town of Jefferson, Arkansas. This one story structure was built in 2000 and has approximately 7,280 SF of space. The building consists predominately of solid waste incinerator.

Per the 2003 International Building Code, Section 602, the building is classified as Business Occupancy, Use Group B, having a Construction Type of Type IIB, noncombustible as determined in field observations.

The handicapped accessibility for this facility was assessed utilizing the Uniform Federal Accessibility Standards (UFAS), Federal Standards 795, April 1, 1988, & P.L. 90-460 and ADAAG 2004. There is no observable handicap ramp provided at front entrance of the building and the restrooms are not wheelchair accessible.

SUBSTRUCTURE:

The building has a cast-in-place reinforced concrete slab on grade supported by reinforced concrete footing.

SUPERSTRUCTURE:

The building has rigid framed steel columns and beams and steel joists for roof structure.

BUILDING EXTERIOR

EXTERIOR WALLS:

The exterior walls consist of about eight feet high skirting wall of concrete masonry and upper walls consist of composite metal panel wall systems.

EXTERIOR WINDOWS:

The windows are aluminum framed fixed units with insulated glazing and some louvers at the upper walls.

EXTERIOR DOORS:

The entrance doorways consist of two bays metal overhead doors. Service doors have vision panels with insulated glazing. Hardware consists of exit devices, pulls, and closers.

ROOFING:

The roof consists of standing seam metal roofing system with gutters and downspouts, and roof access is through the ladder.

BUILDING INTERIOR

PARTITIONS:

There are no discernible interior partitions observed.

WALL FINISHES:

Interior perimeter walls are generally painted CMU and insulation filled composite metal wall.

FLOOR FINISHES:

The floors are predominately concrete and painted concrete.

CEILING FINISHES:

The ceilings consist mainly of exposed underside of concrete structure above.

MECHANICAL

HVAC

The building is not air conditioned. There are four ventilation fans located at the apex of the building roof. Each fan has a 3/4 HP motor. The building is heated by two forced air, natural gas, heaters suspended from the building roof. The building is supplied with cold water, natural gas, fuel oil, compressed air and electricity.

DISTRIBUTION SYSTEMS:

The building does not have any Mechanical systems except for an electrically fed unit heate with an integral thermostat.

PLUMBING

The building floor drains discharge into the industrial waste system.

FIRE PROTECTION:

Handheld fire extinguishers are located throughout the building.

ELECTRICAL

Building 46 is fed from panel DPA2 located on the third floor of Building 53 by 480 volt, 3 phase, and 3 wire feeders. Receptacles, 120 volt, and 120 volt control voltage is present in the building.

ELECTRICAL SERVICE & DISTRIBUTION:

Electrical service is supplied from building 53 at 480Y/277 V.

EMERGENCY LIGHT & POWER SYSTEMS:

The building is not equipped with an emergency generator for emergency lighting. The building is not equipped with emergency battery units or exit lights.

LIGHTING & BRANCH WIRING:

Interior lighting consists of pendent mounted HID lamped cylinder style fixtures. The building does not have exterior lighting.

COMMUNICATIONS & SECURITY:

The building does not have a fire alarm system.. The building does not have telephone and data systems.

FACILITY FUNCTION

This building is used as an enclosure for the animal litter incinerator, waste bedding storage and the pneumatic conveying system.

CRITICAL ENVIRONMENTAL CONDITIONS
None.

MAJOR EQUIPMENT

One 1100 pound per hour animal litter incinerator. The incinerator has an automatic feed system composed of screw conveyors and a rotary feed valve. It is also equipped with a hydraulically operated, manual ram feeder for pathological waste. The incinerator has a preheated combustion air system. The incinerator operates at about 2000°F.

One pneumatic conveying system composed of 30 HP exhauster, air/litter cyclone type separator, rotary valve, control panel, waste storage tank, screw conveyors, bag filters and HEPA filters.

SPECIAL EQUIPMENT

None.

SPECIAL MAINTENANCE ATTENTION
Because of its high operating temperature and the constant heating up and cooling down of the incinerator, it is a high maintenance item. The automatic feed system requires close attention and periodic vacuuming out of the feed chamber. The screw conveyors and rotary valves require periodic cleanout and lubrication.

CRITICAL SYSTEMS

The incinerator, when operating, must be maintained above 1650°F or the automatic feed system will not work.

BUILDING: 50

SQUARE FOOTAGE: 116,779

NO. FLOORS: 10 (7 above ground/3 below ground)

Description
ARCHITECTURAL

Building 50 is the tallest and most obvious building in the JLC complex, sandwiched in-between buildings 52 and 54 in the town of Jefferson, Arkansas. An extensive salvaging operation in 1977 removed all equipment from the first floor up. The first floor and mezzanine areas of the building were renovated during the period 1985-1987 to increase shower facilities and provide office space. It contains a secure storage room for some sensitive test chemicals. The basement areas of building 50 have been stripped except for the large waste collection system which serves buildings 50, 52, 62, and 85. The system collects the waste from the four buildings and then transfers it via the industrial waste system to the waste treatment facility at building 44. In 2004 the 6th and 7th floors were renovated for use as general office spaces and has a roof penthouse that contains the mechanical room and the main entrance is defined by a metal roofed and CMU column enclosed colonnade that extends to Building 54. In 2007 the 2nd floor was renovated for use as a mechanical room and file storage area and the 5th floor was renovated for general office spaces. In 2008 the 4th floor and partial 3rd floor were renovated for general office use. In 2010 the remaining 3rd floor was renovated for general office use. The original building was built in 1952, the CMU exterior skin was incorporated in 2000 and the facility has approximately 116,779 SF of space. The building consists of mainly administrative offices, conference rooms, animal support, full function locker-rooms, restrooms and storage.

Per the 2003 International Building Code, Section 602, the building is classified as Business Occupancy, Use Group B, having a Construction Type of Type IA, Noncombustible.

The handicapped accessibility for this facility was assessed utilizing the Uniform Federal Accessibility Standards (UFAS), Federal Standards 795, April 1, 1988, & P.L. 90-460 and ADAAG 2004. Handicap accessibility ramp is provided at the entrance of the building. Most of the restrooms are wheelchair accessible and meet ADAAG accessibility requirements.

SUBSTRUCTURE:
The building has a cast-in-place reinforced concrete slab on grade supported by reinforced concrete footings.

SUPERSTRUCTURE:
The structure consists of steel beams supported by steel columns, reinforced CMU block, and metal deck with sprayed-on fire proofing. The penthouse consists of steel beams that rest on perimeter columns with

steel joists as structural frame.

BUILDING EXTERIOR

EXTERIOR WALLS:
The exterior walls consist of predominately colored concrete masonry walls, glass curtain wall at lower levels and the penthouse exterior has composite metal panel siding.

EXTERIOR WINDOWS:
The exterior windows consist of combination of metal and glass curtain wall system and full height tall windows with fixed double insulated glazing and anodized aluminum frame, also some pocket windows with fixed glazing.

EXTERIOR DOORS:
The main entrance doorways consist of aluminum storefront systems with sidelights and transoms. Hardware consists of exit devices, pulls, and closers. The doors have full panel glazing and all glazing is double insulated. Service doorways consist of painted flush metal doors and frames, closers and mortise locksets with knobs.

ROOFING:
The main roof consists of three ply modified bitumen roofing system with painted aluminum gravel stop, internal roof drains, and the penthouse roof consists of standing seam metal roof of gable style.

BUILDING INTERIOR

PARTITIONS:
Interior partitions consist mainly of gypsum wallboard on metal studs or metal furring. There are some CMU partitions in the building.

INTERIOR DOORS:
Interior doors consist mainly of stained flush solid core wood doors, set in painted metal frames with knob type mortise hardware, vision panels, louvers and some closers. There are some painted flush metal doors and some lever hardware.

ALL FINISHES:
Interior walls are generally painted gypsum wallboard, wallpaper and painted concrete masonry walls.

FLOOR FINISHES:
The floors are predominately vinyl tile or carpet. The toilet rooms have ceramic tile.

CEILING FINISHES:
The ceilings consist mainly of acoustical ceiling tiles in a suspended system and painted gypsum board or exposed underside of concrete structure above.

MECHANICAL

HVAC

The building has six air handlers on the mezzanine level that receive chilled water from the District Cooling Water Loop and heating hot water from the steam to hot water converters also located on the mezzanine level. A main condensate recovery system is located in the basement and receives condensate from the smaller recovery systems and pumps the condensate back to the boiler house. These air handlers provide conditioned air to the first floor and adjacent areas. Chillers supplying this loop are located in Buildings 26, 5B and 53A. The building is equipped with two air handlers on the roof that provide the top four floors with conditioned air. The building is also equipped with an air handler on the 2nd floor that serves both the 2nd and 3rd floors. Each variable speed drive air handler system is provided with chilled water coils, hot water heating coils, air intake and discharge ductwork, condensate recovery system and DDC control and monitoring instrumentation. Distribution is by ductwork, some sections insulated and equipped with VAV boxes, hot water re-heat coils and diffusers. Heating hot water for the hot water coils and duct mounted re-heaters is generated by steam to hot water heat exchangers o converters located in the penthouse and mezzanine mechanical equipment rooms. The penthouse units are equipped with variable speed drive circulation pumps; all have traps, valves, chemical shot feeder and associated piping. High-pressure steam reducing stations with pressure relief valves are located in the mechanical equipment rooms where the steam pressure from Building 7, the boiler house, is reduced for building service. The building is provided with exhaust ventilation systems for elevator machinery rooms, the locker rooms and restrooms and other spaces. All have metal intake and discharge ductwork. Steam unit heaters are located throughout the building in non-continuously occupied spaces.

CONTROLS & INSTRUMENTATION:

Control and monitoring of the building HVAC equipment is provided by the Siemens Apogee Control System. The local Siemens controls interface with the Siemens Insight Graphics located in Bldg. 54.

INSULATION:
Steam, condensate, hot water, domestic cold water and chilled water piping is generally insulated with fiberglass and other types of insulation with jacket.

PLUMBING
Domestic water for the building is supplied by the local well water supply system. The supply enters the building in Room 133 and is equipped with a 4 inch, double check backflow preventer. Distribution is by steel and copper piping.
Domestic hot water is provided to the building primarily by steam to domestic hot water converters or heat exchangers. This is a loop system equipped with circulating pumps.
The building has locker room and restroom facilities. Janitors' sinks and hose bibbs are in strategic locations. These plumbing fixtures are equipped with anti-siphon devices.
The sanitary sewer piping is primarily cast iron no hub. In this building the sanitary waste system is connected to the site sanitary sewer system via a pumped sanitary waste transfer system. The waste is transported to the waste water treatment plant at the Pine Bluff Arsenal. Large waste collection tanks are located in the basement.

Storm water is removed from the building roof by internal roof drains connected to the site storm water removal system.

A large, modern locker room, shower room, and restroom facility was installed on the first floor of building 50 when the area was renovated during the period 1985-1987.

OTHER PLUMBING SYSTEMS
Sump pumps are located in the basement.

FIRE PROTECTION

The building is protected by a wet pipe sprinkler system. The system is supplied with water from the site domestic water distribution system and enters the building in Room 133, the mechanical room. The sprinkler system is equipped with a 75 HP fire pump, 2 HP jockey pump, 8-inch backflow preventer, fire pump relief valve, flow meter, fire pump controller, and auto-transfer switch. Also included are alarm check valve, flow and tamper switches and isolation valves.
Additional fire protection equipment in the building includes ABC type portable fire extinguishers located throughout. Three fire pump test connections and two fire department auto sprinkler standpipe connections are located on the exterior of the building at grade level, west elevation.

A fire alarm system exists for the all floors and mezzanine areas. The system is an automatic and manual system and is interconnected through telephone lines and a coded transmitter. Also, includes a wet pipe sprinkler system on all floors

ELECTRICAL

ELECTRICAL SERVICE & DISTRIBUTION:

Electrical service is supplied from a pad-mounted transformer to a 800A service disconnect switch at 480Y/277 V. A distribution panelboard is located in the mechanical room and supplies power to transformers, and power panels located throughout the building.

EMERGENCY LIGHT & POWER SYSTEMS:

Emergency power for emergency lighting is provided by a 480Y/277 V, 1000kw diesel generator located external to the building. The building is equipped with emergency lighting circuits supplying select fixtures.

LIGHTING & BRANCH WIRING:

Interior lighting consists of 2 X 4, recessed mounted fluorescent fixtures utilizing T8 lamps and electronic ballasts. Exterior lighting is provided by canopy mounted HID lamped light fixtures.

COMMUNICATIONS & SECURITY:

The main fire alarm control panel is located in room 136 on the first floor. Alarm devices are monitored and alarms are broadcast throughout the building. The building has telephone and data systems.

CRITICAL ENVIRONMENTAL CONDITIONS

Six air handling units of 7.5, 5, 5, 5, 5, and 7.5 MHP (all constant volume); eleven exhaust fans, all under 2 HP; and three pumps of 2, 2, and 5 HP which make-up the HVAC system to the renovated first floor. The 4th and 5th, 6th and 7th Floors are served by a two 35,000 CFM VAV AHU's located on the roof. Space temperature control is performed by fan powered VAV with terminal reheats. Fire Pumps with risers located in the North and South stairwell provide fire protection utilizing a wet pipe system with fuse links.
The waste collection system for buildings 50, 51, 52, 62 and 85 is located in the basement and is made up of four waste collection tanks with related pumps, piping, filters and sump pumps.

Level switch on waste collection system pumps. Building HVAC systems status, Fire alarm system and intrusion alarm for sensitive storage room.

BUILDING: 51

SQUARE FOOTAGE: 105,926

NO. FLOORS: 3 (Basement, laboratory - 1st floor, mechanical space - 2nd floor)

Description
ARCHITECTURAL
Building 51 is located in-between Buildings 26, 50, and 60 at the core center of the Jefferson Regional Labs campus in the town of Jefferson, Arkansas. This one story structure was built in 1952 and has approximately 105,926 SF of space. The building consists of addition at northeast corner, constructed in about 2002 and houses the administrative offices. Other uses in the building are laboratories, lab support, storage and mechanical in the basement and mezzanine.
Per the 2003 International Building Code, Section 602, the building is classified as Utility Occupancy, Use Group U, having a Construction Type of Type IIB protected and noncombustible as determined in field observations.
The handicapped accessibility for this facility was assessed utilizing the Uniform Federal Accessibility Standards (UFAS), Federal Standards 795, April 1, 1988, & P.L. 90-460 and ADAAG 2002. Handicap ramp is not provided at front entrance of the building and the restrooms are not for wheelchair accessible.

SUBSTRUCTURE:
The building has a cast-in-place reinforced concrete slab on grade.

SUPERSTRUCTURE:
The building has steel open-web joists, steal beams and light-weight concrete roof deck as structural frame.

BUILDING EXTERIOR

EXTERIOR WALLS:
The exterior walls consist of multiple painted clay tile masonry with perimeter steel column supports.

EXTERIOR WINDOWS:
There few windows in the building and they consist of aluminum framed hopper type units with (tempered safety) non-insulated glazing.

EXTERIOR DOORS:
The main entrance doorways consist of aluminum storefront systems with sidelights and transoms. Hardware consists of exit devices, pulls and closers. The doors have full panel glazing and all glazing is double insulated. Service doorways consist of painted flush metal doors and frames, closers and mortise locksets with knobs.

ROOFING:
This building has a Flat Roof w/pea gravel roof, manufactured by Firestone Polyiso Tapered installed by Wheeler Construction Co. on 08/17/2003 with a 20 yr. warranty.

BUILDING INTERIOR

PARTITIONS:
Interior partitions consist mainly of clay tile masonry, gypsum wallboard on metal studs or metal furring. There are some CMU partitions in the building.

INTERIOR DOORS:
Interior doors consist mainly of stained flush solid core wood doors, set in painted metal frames with knob type mortise hardware, vision panels, louvers and some closers. There are some painted flush metal doors and some lever hardware.

WALL FINISHES:
Interior walls are generally painted clay tile, plaster on mesh,
gypsum wall board, and painted concrete masonry walls.

FLOOR FINISHES:
The floors are predominately vinyl tile or carpet. The toilet rooms have ceramic tile.

CEILING FINISHES:
The ceilings consist mainly of acoustical ceiling tiles in a suspended system and painted gypsum board or exposed underside of concrete structure above.

MECHANICAL

CONVEYING
The building has an electro-hydraulic freight elevator located in the area of Room 51-125A.

HVAC
The building receives chilled water from the Central plant chilled water and distribution system. Chillers supplying this loop are located in Buildings 26, 5B and 53A. Energy recovery air handlers ERU 1,2 and 3, in 2004 and equipped with economizers, provide the building with conditioned air with 100 percent fresh air makeup for the laboratory spaces only. Each variable speed drive air handler is provided with chilled water and steam heating coils, pre-air filters, air intake plenum, discharge ductwork, condensate recovery system, steam humidification and control and monitoring instrumentation.
Distribution is by insulated ductwork to VAV boxes, hot water re-heat coils and diffusers. The building is also provided with a small AHU for an electrical equipment space and an AHU with chilled water and heating coils for the administration spaces.

Heating hot water for the duct mounted re-heaters is generated by steam to hot water heat exchangers or converters located in the mezzanine mechanical equipment room. They are equipped with variable speed drive circulation pumps, traps, valves and associated piping. A high pressure steam reducing station with pressure relief valve is located in the mezzanine mechanical equipment room where the steam pressure from Building 7, the boiler house, is reduced for building service.
The building is provided with a primary exhaust ventilation system, located on the roof, for the laboratory spaces. It is comprised of three 20 HP exhaust fans with inlet and outside air damper control interfaced with the BAS. All have galvanized steel intake ductwork. An exhaust fan, EF-5, located in the basement ventilates that space with a dedicated discharge plenum terminating in a louvered house on the roof..
Control and monitoring of the building HVAC equipment is provided by local controls that interface with the Johnson Metasys BAS located in Bldg. 54. The control system is direct digital control, DDC, type. Heating and cooling of individual spaces is controlled by local digital thermostats.
Fume hoods are installed in the majority of the laboratories. The hoods are supplied with make-up air via ceiling mounted supply air grilles. The rooms containing the fume hoods are kept at a positive pressure and have pressure monitoring and alarm instrumentation.

INSULATION:
Steam, condensate, hot water, domestic cold water and chilled water piping is generally insulated with fiberglass type insulation with jacket.

PLUMBING
Natural gas is supplied by the local utility for laboratory use only. Distribution is via black steel threaded and welded piping.
Domestic water for the building is supplied by the local well water supply system. The water supply is equipped with a 4 inch double check backflow preventer located in the basement. The make-up water for the reheated hot water heating system has a backflow preventer located in the mezzanine equipment area. Distribution is by steel and copper piping. Drinking water is supplied by drinking fountains.
Domestic hot water is provided to the building primarily by steam to domestic hot water converters or heat exchangers located in the basement in a mechanical equipment room. This is a loop system equipped with a circulating pump. There are some small electric hot water heaters installed. Emergency eye wash and shower stations are located throughout the laboratory spaces of the building.
The building has restroom facilities. Janitors' sinks and hose bibbs are in strategic locations. Not all of these plumbing fixtures are equipped with anti-siphon devices.
The sanitary sewer piping is primarily cast iron hub type. The sanitary waste system is connected to the site sanitary sewer system via a sanitary waste transfer pump station located in the sub basement and originally equipped with two sanitary waste transfer pumps. The waste is transported to the waste water treatment plant at the Pine Bluff Arsenal.
Storm water is removed from the building roof by internal roof drains connected to the site storm water removal system. Overflow scuppers are also installed. Sump pumps are located in the basement and sub basement.

OTHER PLUMBING SYSTEMS
A variety of bottled compressed gases is available including carbon monoxide, hydrogen and argon. Each bottled compressed gas station has associated distribution piping, tubing and controls.
Vacuum for laboratory uses was originally provided by vacuum pumps located in the basement. The

system is still equipped with supply piping, valves and control equipment. At the time of the assessment the pumps were not operational.
Two air compressors, one oil free, are located in the basement. They are equipped with supply piping and valves and connected to the compressed air distribution system for the laboratories.

Laboratory fume hoods are provided with compressed air, vacuum or other gas supply capability.

OTHER EQUIPMENT
The building has laboratory type refrigerators, freezers of the low, ultra low temperature and explosion proof type and walk in coolers. Some of the freezers and coolers are equipped with digital temperature controllers and alarms.

FIRE PROTECTION
The building is protected by ABC type portable fire extinguishers located throughout.

ELECTRICAL

ELECTRICAL SERVICE & DISTRIBUTION:

Electrical service is supplied from a pad-mounted transformer to a 800A service disconnect switch at 480Y/277 V. A distribution panelboard is located in the mechanical room and supplies power to transformers, and power panels located throughout the building.

EMERGENCY LIGHT & POWER SYSTEMS:
The building is not equipped with an emergency generator for emergency lighting. The building is equipped with emergency battery units and combination exit lights and emergency lighting units located throughout the building.

LIGHTING & BRANCH WIRING:
Interior lighting consists of 2 X 4, recessed mounted fluorescent fixtures utilizing T8 lamps and electronic ballasts. Incandescent fixtures are used in mechanical rooms and utility closets. Exterior lighting is provided by a minimum of incandescent lamped light fixtures.

COMMUNICATIONS & SECURITY:
The main fire alarm control panel is located in the first floor room number 51-100. Alarm devices are monitored and alarms are broadcast throughout the building. The building has telephone and data systems.

FACILITY FUNCTION

Building 51 is a multi-story laboratory building, with approximately 25 laboratories, and ten offices, on the first floor; all the air conditioning equipment and related duct work, fume hood blowers and electrical motor control centers on the second floor; and the waste piping and collection tanks, hot water system and exhaust system in the basement. The first floor laboratory area was renovated in 1972 to 1974 to provide the initial laboratories at JLC. The building has general and special laboratories.
A freight elevator serves all three floors of the building.

CRITICAL ENVIRONMENTAL CONDITIONS

Supply and exhaust fans status, space temperature and freezers.

MAJOR EQUIPMENT

Three (40, 75, and 100 HP) supply fans, three exhaust fans, 25 fume hood blowers, vacuum pumps, sump pump, and hot water system. There are separate packaged HVAC units for the Mass Spec Lab, several small condensing units and power conditioners for NMR labs.

SPECIAL EQUIPMENT

Refrigerators, freezers, dishwashers, lab vacuum pump, numerous standard laboratory items, three sterilizers, and 25 fume hoods.

CRITICAL SYSTEMS

HVAC equipment status and control points and refrigerator/freezer temperatures.

BUILDING: 52

SQUARE FOOTAGE: 110,135

NO. FLOORS: 4

Description
ARCHITECTURAL

Building 52 is located near Buildings 5D, 62 and is attached to Building 85, south of the Jefferson Regional Labs campus, sandwiched in-between buildings 52 and 54 in the town of Jefferson, Arkansas. This five story facility was built in 1952 and has approximately 110,135 SF of space. The building consists of mainly unprotected and abandoned storage spaces in a dilapidating condition.

Per the 2003 International Building Code, Section 602, the building is classified as Business Occupancy, Use Group B, having a Construction Type of Type I1A, Noncombustible.

The handicapped accessibility for this facility was assessed utilizing the Uniform Federal Accessibility Standards (UFAS), Federal Standards 795, April 1, 1988, & P.L. 90-460 and ADAAG 2002. There is no accessibility ramps provided at the entrance of the building. The restrooms are aged, worn and are not wheelchair accessible.

SUBSTRUCTURE:

The building has a cast-in-place reinforced concrete slab on grade supported by reinforced concrete footings.

SUPERSTRUCTURE:

The structure consists of steel beams supported by steel columns, reinforced CMU block, and metal deck.

BUILDING EXTERIOR

EXTERIOR WALLS:

The exterior walls consist of predominately colored concrete masonry walls.

EXTERIOR WINDOWS:

There are no discernible windows in the building, only rusted and aged louvers.

EXTERIOR DOORS:

The main entrance doorways consist of aluminum storefront systems with sidelights and transoms.

Hardware consists of exit devices, pulls and closers. The doors have full panel glazing and all glazing is double insulated. Service doorways consist of painted flush metal doors, overhead roll-up doors.

ROOFING:

This building has a Flat Roof w/pea gravel roof, manufactured by Firestone Polyiso Tapered installed by Wheeler Construction Co. on 08/17/2003 with a 20 yr. warranty.

BUILDING INTERIOR

PARTITIONS:

Interior partitions consist mainly of clay tile and CMU partitions in the building. The partitions are in dilapidated condition with holes and cracks.

INTERIOR DOORS:

Interior doors consist mainly of stained flush solid core metal doors set in painted metal frames with knob type mortise hardware, vision panels, louvers and some closers.

WALL FINISHES:

Interior walls are generally painted plaster on mesh and painted concrete masonry walls.

FLOOR FINISHES:

The floors are predominately concrete.

CEILING FINISHES:

The ceilings consist mainly of exposed underside of concrete structure above.
MECHANICAL

HVAC

The heating and ventilation system for the majority of the square footage of this building has been removed. The building has a 12.5 Ton, R-22 heat pump with air cooled condenser. The unit is installed on the south elevation that provides conditioned air for approximately 3,000 SF of renovated space on the first floor. Distribution is by metal and flexible ductwork to registers and diffusers. The building is provided with exhaust ventilation system for the first floor electrical equipment room.

Heating and cooling of these conditioned spaces is controlled by local digital thermostats.

PLUMBING

The plumbing system for the majority of the square footage of this building has been removed or retired in place. Domestic water for the building is supplied by the local well water supply system. Distribution is by steel and copper piping. A large industrial waste water holding tank is located in the basement. At the time of the assessment it did not appear to be operational.

Storm water is removed from the building roof by internal roof drains connected to the site storm water removal system. Sump pumps are located in the basement and discharge to the site sewer system.

FIRE PROTECTION

The building is protected by ABC type portable fire extinguishers.

ELECTRICAL

ELECTRICAL SERVICE & DISTRIBUTION:

Electrical service is supplied by a feeder originating in building 85 at 480 V and terminating at a 600A circuit breaker.

EMERGENCY LIGHT & POWER SYSTEMS:

The building is not equipped with an emergency generator for emergency lighting. The building is equipped with emergency battery units and combination exit lights and emergency lighting units located throughout the building.

LIGHTING & BRANCH WIRING:

Interior lighting consists of a combination of 1 x 4 pendant mounted fluorescent fixtures utilizing T8 lamps and electronic ballasts. The building does not have exterior lighting.

COMMUNICATIONS & SECURITY:

The building has telephone and data systems.

FACILITY FUNCTION

Building 52 is one of the larger buildings at JLC. The use by JLC has been by adapting or converting the existing structure to meet a temporary need without extensive renovation cost. The building has four stories and has 6 "lines". The utilization of the building is as follows:

> Basement - Primarily for waste collection in larger collection vessels. Large areas of the basement have been abandoned.
>
> First Floor - The first floor is used as the main passage way through the building to building 5D and 50. The "lines" are abandoned.

Second Floor – Fourth Floor is unused.

CRITICAL ENVIRONMENTAL CONDITIONS
None.

MAJOR EQUIPMENT
None

SPECIAL EQUIPMENT

None

SPECIAL MAINTENANCE ATTENTION

None

CRITICAL SYSTEMS

None.

BUILDING: 53A

SQUARE FOOTAGE: 46,155

NO. FLOORS: 2

Description
ARCHITECTURAL

Building 53A is located at the FDA Jefferson Laboratories, in Jefferson, Arkansas. It is a portion of a larger structure, which incorporates Buildings 53E, 53D, 53C, 53B, 53A and 15. The original building was constructed in 1952 and there have been a number of alterations since that time. The overall 46,155 square foot two-story structure contains office space, laboratory areas, animal holding rooms, animal support rooms, restrooms, storage and utility areas.

Per the 2003 International Building Code, Building 53A is classified as Business occupancy, Use Group B, and Construction Type II, Noncombustible.
STRUCTURE

SUBSTRUCTURE:

The substructure consists of cast-in-place concrete perimeter foundation walls with spread footings, and a cast-in-place concrete slab on grade.

SUPERSTRUCTURE:

The superstructure is of steel-framed construction and a steel-framed roofing system supporting a concrete roof deck.
BUILDING EXTERIOR

EXTERIOR WALLS:

The exterior facades consist of painted clay tile block walls.

EXTERIOR WINDOWS:

The windows are of fixed units with insulated glazing and metal frames.

EXTERIOR DOORS:

The exterior doors consist of a glazed, storefront-type unit with pull handle-type hardware, and metal units set in metal jambs, with knob, latch or pull-type hardware.

ROOFING:

This building has a Flat Modified Bitumen roof, manufactured by A&I Construction installed by A&I Construction on 09/15/1998 with a 15 yr. warranty.
BUILDING INTERIOR

PARTITIONS:

Interior walls consist primarily of concrete masonry unit block and metal studded partitions.

INTERIOR DOORS:

The interior door assemblies consist primarily of metal units, set in metal jambs, equipped with knob-type hardware.

WALL FINISHES:

Walls are of painted masonry, plaster and gypsum board.

FLOOR FINISHES:

The building interior floor finishes consist of carpet, and exposed and epoxy-coated concrete.

CEILING FINISHES:

Ceiling finishes are of acoustical tiles in an exposed suspension grid system, painted plaster or gypsum board, or are exposed to steel roof support system and deck.

CONVEYING:

The building is equipped with a 3,000-pound capacity hydraulic elevator. Two stairwells also connect the two floors. A door from Building 53C provides access to the roof level.
BUILDING PERIMETER

SITEWORK:

Exterior pedestrian and vehicular paved surfaces consist of cast-in-place concrete and bituminous concrete.

HANDICAPPED PARKING:

There is adequate area for handicapped parking adjacent to the south side of building. A handicapped accessible ramp provides access to the main entrance at the north side of the building.
MECHANICAL

HVAC

COOLING GENERATION:

The building houses a 600 ton chiller installed in 1985 and a 1,200 ton chiller installed in 2010 that are part of the site district cooling water system. Chilled water is circulated by three 50-HP pumps and a pair of 75-HP primary pumps with VFD control. Condenser water is circulated to a remote cooling tower by three 40-HP vertical pumps.

DISTRIBUTION SYSTEMS:

The building has multi zone ducted air handlers that are located in mechanical rooms providing supply air to zone control boxes. Supply air is also provided from an air handler in the Bldg C penthouse for animal facilities. Steam for building use is provided from the site system with condensate return. Roof-mounted fans provide exhaust for laboratories and restrooms. Chilled water is supplied from site AW, air conditioning, water system. Heating hot water is provided from steam converters from Bldg C penthouse and circulated by a 5-HP pump. Space humidity is provided.

TERMINAL & PACKAGE UNITS:

The building has zone control boxes mounted in the ceilings.

CONTROLS & INSTRUMENTATION:

In 2005, the HVAC control systems for the Air Handler and the 1st floor animal holding areas were replace with the Siemens DDC control and now interfaces with the Siemens Insight Software in Building 54. Control air is provided by the site supply with a pair of simplex air compressors one is 5-HP the other is 15-HP that is also lab air with a 400-gallon capacity tank and mechanical dryer as backup.

PLUMBING

PIPING:

Domestic water is supplied to the building by the site distribution system, with distribution by copper piping. Domestic hot water for the building is provided from two 30-gallon electric water heaters.

Storm water is removed from the rooftops by roof drains with leaders to ground drainage. The sanitary system is gravity piping to the site system.

FIXTURES:

There are men's and women's multi-fixture restrooms with vitreous china lavatories, urinals and water closet fixtures. The janitorial closet is equipped with a utility sink. Individual DX cooled drinking fountains are provided.

FIRE PROTECTION:

This building has a Siemens networked fire alarm and mass notification system networked with Siemens Fire Finder panels and a graphics PC based computer system located in building 54 with head-end and Annunciator panels. It is part of the fire alarm and Mass Notification System (MNS).

Handheld fire extinguishers are located throughout the building.

ELECTRICAL

ELECTRICAL SERVICE & DISTRIBUTION:

Electrical service is supplied from a pad-mounted transformer to a 3000A service disconnect switch at 480Y/277 V. A distribution panelboard is located in the mechanical room and supplies power to transformers, and power panels located throughout the building. Transformers are provided for light and receptacle power distribution throughout the building. Panels are typically recessed mounted in corridors and also located in utility spaces at selected areas within the building.

EMERGENCY LIGHT & POWER SYSTEMS:

The facility is equipped with three emergency generators. One generator rated for 450 kW was noted as being out of service. The remaining two generators are each rated for 750 kW. All three generators are exterior mounted and provide the source of emergency generated power for all building 53 sections. Exit lighting and emergency lighting as well as selected critical equipment are connected to the emergency power distribution system.

LIGHTING & BRANCH WIRING:

Interior lighting generally consists of fluorescent fixtures equipped with type T8 lamp and ballasts. Typical interior fixtures are two by four with lenses. Exterior lighting is generally provided through an HID floodlight.

COMMUNICATIONS & SECURITY:

The facility is equipped with a conventional fire alarm system with control panel, enunciator, initiation and alert devices. Telecom service is provided through fiber optic cabling terminating in the older main electrical room. The facility is equipped with a security system.

FACILITY FUNCTION

This section of building 53 was renovated in 1977 for general laboratory and office space on the second floor and animal holding space on the first floor. The section contains 11 laboratories, two (2) cold laboratories, 14 offices, 13 animal rooms and restroom facilities. There are two large mechanical rooms in the building; one is located on the first floor adjacent to the animal area and the other on the second floor. In 2013, the 53A-225 area (240 square feet) was renovated to remove a walk-in cooler and convert the space into a laboratory for CTP Smoke Studies.

CRITICAL ENVIRONMENTAL CONDITIONS

Animal room temperature, relative humidity, room lighting, chilled water and heating water system temperatures and pressures, pump status, supply and exhaust fan status, chiller status, filter status, fire alarm status and emergency power status. The CTP Smoke Lab (53A-225) requires a constant environmental

condition of 77°F temperature, 60% relative humidity, and a negative static pressure differential to ensure proper pressurization. Other critical conditions that require routine maintenance and monitoring is air flow direction.

SPECIAL EQUIPMENT

Refrigerator, freezers, dishwashers, vacuum pumps, and other standard laboratory items.

SPECIAL MAINTENANCE ATTENTION

All of the critical environmental conditions are to be monitored and maintained within limits at all times.

CRITICAL SYSTEMS

The equipment comprising the HVAC system is all critical equipment, i.e., AW pumps, HW pumps, chillers, fans and cooling tower, which provide continuous ventilation of conditioned air to the animal holding spaces.

BUILDING: 53B, C, D and E

SQUARE FOOTAGE: 73,395

NO. FLOORS: 3

ROOFING:

This building has a Flat Modified Bitumen roof, manufactured by A&I Construction installed by A&I Construction on 09/15/1998 with a 15 yr. warranty.

FACILITY FUNCTION

These sections of building 53 were renovated during the period 1985-1987. Sections B, C, and D were completely renovated in 2004 the HVAC systems and the laboratory and animal room environments were upgraded to Siemens Controls allowing the building to operate as a true variable volume system.

The third floor contains air handler equipment. The second floor contains general purpose laboratories, cold rooms and offices. The first floor contains animal rooms, procedure rooms, staging rooms, a cold laboratory, specialty laboratories, restrooms, a computer room, animal support equipment and offices.

Sections 53B, C, D and E contain 44 laboratories, 45 animal rooms, 48 offices, three procedure rooms, three staging rooms, one cold laboratory, one computer room, four cold rooms and a large animal support equipment room.

The animal support equipment room houses a rack washer, cage washer, bottle washer, sterilizer, steam kettle, bedding dispenser, bedding storage tanks and pneumatic conveying system. A large animal waste incinerator, remotely located just south of the building, also serves the area.

A large mechanical room located in section 53A houses plant 2 of the campus district cooling system that serves sections 53B, C, D and E. A remote located cooling tower just south of section 53A supplies cooling water for the chillers.

In 2013, the 53B106/111 animal procedure area (921 square feet) was renovated to accommodate laboratory requirements for CTP Smoke Inhalation Studies.

CRITICAL ENVIRONMENTAL CONDITIONS

Animal room temperatures, Animal room humidity's, Cold room temperatures, Sterilization temperatures, Incineration temperatures, Freezer temperatures, Air handling units' status, Chilled water system status, Animal room lights status, Hot water converter temperatures, Emergency generator status. Cooling tower water temperatures. Fire Alarms, Instrument air, glycol pump status. The CTP Smoke Inhalation Labs (53B-106/111) requires a constant environmental condition of 77°F temperature, 60% relative humidity, and a negative static pressure differential to ensure proper pressurization. Other critical conditions that require routine maintenance and monitoring is air flowdirection.

EXISTING SYSTEMS IN FACILITY

HVAC SYSTEM

The HVAC system is a filtered, 100% outside air system with cooling by chilled water produced by the campus district cooling loop and heated by hot water from hot water converters. The system is a terminal reheat system using hot water as a heat source. The cooling water for the condensing units is supplied by a cooling tower located just south of section 53A. The building air supply and exhaust systems are equipped with energy recovery coils. The humidity is controlled with individual space steam humidifiers.

Exhaust air from the facility and energy is not recapture. However, the exhaust from laboratories are ducted back to an air-to-air heat exchanger installed in 2004 to capture lost energy. Animal rooms and process areas exit via HEPA filters located external to the rooms in accessible utility chases.

Plumbing

The building is served with sanitary and industrial sewers, compressed air, potable water, natural gas and vacuum and deionized water for labs via circulating potable water through anion and cation cylinders, which are replaced periodically.

ELECTRICAL

POWER DISTRIBUTION

Electrical service is supplied from the main switchgear in building 53A.

EMERGENCY POWER

Emergency power is supplied from the emergency power system in building 53A.

FIRE PROTECTION:

This building has a Siemens networked fire alarm and mass notification system networked with Siemens Fire Finder panels and a graphics PC based computer system located in building 54 with head-end and Annunciator panels. It is part of the fire alarm and Mass Notification System (MNS).

Handheld fire extinguishers are located throughout the building.

MAJOR EQUIPMENT

There are eight air handling units of 5, 15, 30, 7.5, 2.0, 1.5 and 15 and 100 HP, two water chillers with a minimum capacity of 675 tons each, one cooling tower (3900 gpm @ 95°/85°F), 8 exhaust fans, one 1500 lb. per hour solid waste incinerator, two 750 KW emergency generators, one tunnel rack washer, one tunnel cage washer, one tunnel bottle washer, sterilizer, steam kettle, 17 pumps, one pneumatic conveyor system and an animal bedding dispenser.

SPECIAL EQUIPMENT

There are 5 cold rooms, a special animal watering system, high purity laboratory water systems,

freezers, dishwashers, dryers, vacuum pumps, refrigerators and standard laboratory items.

SPECIAL MAINTENANCE ATTENTION

All of the critical environmental conditions are to be monitored and maintained within limits at all times.

CRITICAL SYSTEMS

HVAC equipment supporting animal holding areas and laboratories.

BUILDING: 54

SQUARE FOOTAGE: 20,473

NO. FLOORS: 2

Description
ARCHITECTURAL

Building 54 is located off Winn Road near Building 53 complex at north side of the Jefferson Regional Labs campus in the town of Jefferson, Arkansas. This one story structure was built in 1952, the front facade is defined by metal roofed colonnade with CMU enclosed columns and it has approximately 20,473 SF of space. The building consists of mainly offices, gym, game room, computer room, mechanical room and storage.

Per the 2003 International Building Code, Section 602, the building is classified as Assembly Occupancy, Use Group A, having a Construction Type of Type IIB, noncombustible as determined in field observations.

The handicapped accessibility for this facility was assessed utilizing the Uniform Federal Accessibility Standards (UFAS), Federal Standards 795, April 1, 1988, & P.L. 90-460 and ADAAG 2002. Handicap ramp is not provided at front entrance of the building and the restrooms have been updated for wheelchair accessibility.

SUBSTRUCTURE:

The building has a cast-in-place reinforced concrete slab on grade.

SUPERSTRUCTURE:

The building has steel open-web joists, steal beams and light-weight concrete roof deck as structural frame.

BUILDING EXTERIOR

EXTERIOR WALLS:

The exterior walls consist of painted clay tile masonry with perimeter steel column supports.

EXTERIOR WINDOWS:

The windows are aluminum framed fixed units with insulated glazing. Some of the original window units have non-insulated glazing.

EXTERIOR DOORS:

The entrance doorways consist of aluminum storefront systems with sidelights and transoms. Hardware consists of exit devices, pulls and closers. The doors have full panel glazing and all glazing is non-insulating. Service doorways consist of painted flush metal doors and frames, closers, exit devices and mortise locksets with knobs and pulls. Service door have transoms and vision panels with non-insulated glazing.

ROOFING:
This building has a Flat Modified Bitumen roof, manufactured by A&I Construction installed by A&I Construction on 09/15/1998 with a 15 yr. warranty.
BUILDING INTERIOR

PARTITIONS:

The interior partition consists of mainly colored clay tile masonry, and gypsum wallboard on metal studs.

WALL FINISHES:

Interior walls are generally painted gypsum wallboard, plastered walls and painted clay tile masonry.

FLOOR FINISHES:

The floors are predominately vinyl tile or carpet. The kitchen, adjacent halls and the toilet rooms have ceramic tile floor finishes.

CEILING FINISHES:

The ceilings consist mainly of acoustical ceiling tiles in a suspended system and painted gypsum board or exposed underside of concrete structure above.
MECHANICAL HVAC

DISTRIBUTION SYSTEMS:

The building has a ducted air handlers that are roof mounted or located in the building mechanical rooms providing 100 percent outside air to zone control boxes. Steam, heating hot water and chilled water is supplied from site utilities. Chilled water is supplied from site AW, air conditioning, water system.

TERMINAL & PACKAGE UNITS:

The building has zone control boxes mounted in the ceilings.

CONTROLS & INSTRUMENTATION:

Electric thermostats and humidity sensors are interfaced to a DDC system for control.

PLUMBING

PIPING:

Domestic water is supplied to the building by the site distribution system, with distribution by copper piping. Domestic hot water for the building is provided from the site system. Heating hot water is provided from steam converters. Storm water is removed from the rooftops by gutters with leaders to a ground drainage. The sanitary system is gravity piping to the site system.

FIXTURES:

There are men's and women's multi-fixture restrooms with vitreous china lavatories, urinals and water closet fixtures. Individual DX cooled drinking fountains are provided.

FIRE PROTECTION:

This building has a Siemens networked fire alarm and mass notification system networked with Siemens Fire Finder panels and a graphics PC based computer system with head-end and Annunciator panels. It is part of the fire alarm and Mass Notification System (MNS) project.

Handheld fire extinguishers are located throughout the building.

ELECTRICAL

ELECTRICAL SERVICE & DISTRIBUTION:

Electrical service is supplied from a pad-mounted transformer to a 400A service disconnect switch at 480Y/277 V. A distribution panelboard is located in the mechanical room and supplies power to transformers, and power panels located throughout the building.

EMERGENCY LIGHT & POWER SYSTEMS:

Standby power for telephone, network, and EMCS equipment is provided by a 250kVA diesel generator located near the building. The building is equipped with emergency lighting circuits supplying select fixtures and exit signs located throughout the building.

LIGHTING & BRANCH WIRING:

Interior lighting consists of a combination of 1 x 4 and 2 X 4, recessed and surface mounted fluorescent fixtures utilizing T8 lamps and electronic ballasts. Exterior lighting is provided by building mounted HID lamped light fixtures and canopy mounted lighting fixtures.

COMMUNICATIONS & SECURITY:

The main fire alarm control panel for the site is located in room 54-204. Alarm devices are monitored and

alarms are broadcast throughout the building. The building has telephone and data systems.

FACILITY FUNCTION

Building 54 is a multi-purpose building, housing a health and physical fitness area, , storage rooms, restrooms the campus Occupational Health Unit, and Quality Assurance Staff on the first floor and the EMCS control room and mechanical rooms on the second floor. The building has a loading dock.

CRITICAL ENVIRONMENTAL CONDITIONS

Space temperature, supply and exhaust fan status.

MAJOR EQUIPMENT

7-1/2 HP supply fan, 20 HP exhaust fan, and sump pumps.

SPECIAL EQUIPMENT

A 2-way radio base station control console is located in the EMCS control room.

This building has been modified to include a pressurization/filtration outside air unit. This unit was installed in 1999. The unit is to be activated during PBA chemical accidents to house JLC employees.

SPECIAL MAINTENANCE ATTENTION

None.

CRITICAL SYSTEMS

None.

BUILDING: 60

SQUARE FOOTAGE: 15,044

NO. FLOORS: 2 (Basement/Laboratories - 1 st floor)

Description
ARCHITECTURAL
Building 60 is attached to Building 51 and located at the core center, east side of the Jefferson Regional Labs campus in the town of Jefferson, Arkansas. This one story structure which has a basement was built in 1952 and it has approximately 15,044 SF of space. The building consists of mainly chemical laboratories, offices, mechanical room and storage.
Per the 2003 International Building Code, Section 602, the building is classified as Assembly Occupancy, Use Group A, having a Construction Type of Type IIIA, unprotected as determined in field observations. The handicapped accessibility for this facility was assessed utilizing the Uniform Federal Accessibility Standards (UFAS), Federal Standards 795, April 1, 1988, & P.L. 90-460 and ADAAG 2002. Handicap ramp is not provided at front entrance of the building and the restrooms have been updated for wheelchair accessibility.

SUBSTRUCTURE:
The building has a cast-in-place reinforced concrete slab on grade.

SUPERSTRUCTURE:
The building has steel open-web joists, steal beams and light-weight concrete roof deck as structural frame.
BUILDING EXTERIOR

EXTERIOR WALLS:
The exterior walls consist of painted clay tile masonry with perimeter steel column supports.

EXTERIOR WINDOWS:
The windows are aluminum framed fixed units with insulated glazing. Some of the original window units have non-insulated glazing.

EXTERIOR DOORS:
The entrance doorways consist of aluminum storefront systems with sidelights and transoms. Hardware consists of exit devices, pulls and closers. The doors have full panel glazing and all glazing is non-insulating. Service doorways consist of painted flush metal doors and frames, closers, exit devices and mortise locksets with knobs and pulls. Service door have transoms and vision panels with non-insulated glazing.

ROOFING:
This building has a Flat Roof w/gen star G.T.A roof, manufactured by Flintlastic installed byRiver City Painting & Construction on 5/25/1992 with a 12 yr. warranty.

BUILDING INTERIOR

PARTITIONS:

The interior partition consists of mainly colored clay tile masonry, and gypsum wallboard on metal studs.
WALL FINISHES:
Interior walls are generally painted gypsum wallboard, plastered walls and painted clay tile masonry.

FLOOR FINISHES:
The floors are predominately vinyl tile, sheet vinyl or carpet. The and the toilet rooms have sheet viny floor finishes.

CEILING FINISHES:
The ceilings consist mainly of acoustical ceiling tiles in a suspended system and painted gypsum board or exposed underside of concrete structure above.
MECHANICAL HVAC

DISTRIBUTION SYSTEMS:
The building has a ducted air handlers that are roof mounted or located in the building mechanical rooms providing 100 percent outside air to zone control boxes. Steam, heating hot water and chilled water is supplied from site utilities. Chilled water is supplied from site AW, air conditioning, water system. Roof-mounted fans provide exhaust for animal rooms and restrooms.

TERMINAL & PACKAGE UNITS:
The building has zone control boxes mounted in the ceilings.

CONTROLS & INSTRUMENTATION:
Electric thermostats and humidity sensors are interfaced to a DDC system for control.
PLUMBING

PIPING:
Domestic water is supplied to the building by the site distribution system, with distribution by copper piping. Domestic hot water for the building is provided from the site system. Heating hot water is provided from steam converters. Storm water is removed from the rooftops by gutters with leaders to a ground drainage. The sanitary system is gravity piping to the site system.

FIXTURES:
There are men's and women's multi-fixture restrooms with vitreous china lavatories, urinals and water

closet fixtures. The janitorial closet is equipped with a utility sink.

FIRE PROTECTION:
This building has a Siemens networked fire alarm and mass notification system networked with Siemens Fire Finder panels and a graphics PC based computer system located in building 54 with head-end and Annunciator panels. It is part of the fire alarm and Mass Notification System (MNS) project.

ELECTRICAL

ELECTRICAL SERVICE & DISTRIBUTION:

Electrical service is supplied from a pad-mounted transformer to a 400A service disconnect switch at 480Y/277 V. A distribution panelboard is located in the mechanical room and supplies power to transformers, and power panels located throughout the building.

EMERGENCY LIGHT & POWER SYSTEMS:
The building is not equipped with an emergency generator for emergency lighting. The building is equipped with a limited amount of emergency battery units and exit lights located throughout the building.

LIGHTING & BRANCH WIRING:
Interior lighting consists of 2 X 4, recessed mounted fluorescent fixtures utilizing T8 lamps and electronic ballasts. Exterior lighting is provided by a minimum of building mounted HID lamped light fixtures.

COMMUNICATIONS & SECURITY:
The building does not have a fire alarm control panel. The building has telephone and data systems.

FACILITY FUNCTION

Building 60 is a laboratory building housing the Microbiology and Immunology research laboratories and offices. The building has five laboratories, four offices, and two cold rooms on the first floor. There are four temporary laboratories and a storage room in the basement. A large mechanical room separates building 60 from building 51.

CRITICAL ENVRIONMENTAL CONDITIONS.
Space temperatures, supply and exhaust fan status; condensing unit status, freezers and refrigerators status.
MAJOR EQUIPMENT
HVAC equipment, including one Trane 60 ton water cooled chilled, supply and exhaust fans, and cold room equipment.
SPECIAL EQUIPMENT

Four sterilizers, refrigerators, freezers, incubators, hot air sterilizers, and biological hoods.

SPECIAL MAINTENANCE ATTENTION

None.

CRITICAL SYSTEMS

In the spring, summer, and fall months, the supply and exhaust fan and one refrigeration compressor must remain in operation for the laboratories.

BUILDING: 62

SQUARE FOOTAGE: 72,100

NO. FLOORS: 4

Description

ARCHITECTURAL

Building 62 is sandwiched between Buildings 85, 52 and 50 and it is located off Miles Road at northeast side of the Jefferson Regional Labs campus in the town of Jefferson, Arkansas. This three story structure, plus basement, was built in 1962 and partially renovated in 2000 and 2009-2013. The building consists of mainly laboratories, BSL3 suite, animal holding rooms, surgery/necropsy suite, MRI suite, animal support, offices, mechanical rooms and storage.

Per the 2003 International Building Code, Section 602, the building is classified as Assembly Occupancy, Use Group A, having a Construction Type of Type IIB, noncombustible as determined in field observations.

The handicapped accessibility for this facility was assessed utilizing the Uniform Federal Accessibility Standards (UFAS), Federal Standards 795, April 1, 1988, & P.L. 90-460 and ADAAG 2002. Handicap ramp is provided at side entrance of the building and the restrooms have been updated for wheelchair accessibility.

SUBSTRUCTURE:

Part of the building has a cast-in-place reinforced concrete slab on grade, while the majority of the building has a basement.

SUPERSTRUCTURE:

The building has steel open-web joists, steel beams and light-weight concrete roof deck as structural frame.

BUILDING EXTERIOR

EXTERIOR WALLS:

The exterior walls consist of painted clay tile masonry with perimeter steel column supports.

EXTERIOR WINDOWS:

The windows are aluminum framed operable units with insulated glazing. Some of the original window units have non-insulated glazing.

EXTERIOR DOORS:

The entrance doorways consist of aluminum storefront systems with sidelights and transoms and hollow metal doors and frames. Hardware consists of exit devices, pulls and closers. The doors have full panel glazing and all glazing is non-insulating. Service doorways consist of painted flush metal doors and frames, closers, exit devices and mortise locksets with knobs and pulls. Service door have transoms and vision panels with non-insulated glazing.

ROOFING:

This building has a Flat Ruberoid roof, manufactured by Precision Roofing & Supply Inc. installed by Precision Roofing & Supply Inc. on 05/28/2025 with a 20 yr. warranty.

BUILDING INTERIOR

PARTITIONS:

The interior partition consists of mainly colored clay tile masonry, concrete masonry block walls and gypsum wallboard on metal studs.

WALL FINISHES:

Interior walls are generally painted gypsum wallboard, plastered walls and painted clay tile masonry.

FLOOR FINISHES:

The floors for laboratories, animal rooms, clean and dirty corridors, surgery/necropsy suite and process area and restrooms are either epoxy vinyl flake floor system or acrylic floor system. Offices are carpet and main corridor is VCT. The change room is ceramic tile floor.

CEILING FINISHES:

The ceilings consist mainly of acoustical ceiling tiles in a suspended system in offices and main corridor. The ceilings for laboratories, animal rooms, clean and dirty corridors, surgery/necropsy suite and process area and restrooms are painted gypsum board.

MECHANICAL HVAC

The building receives chilled water from the Central plant chilled water and distribution system. Chillers supplying this loop are located in Buildings 26, 5B and 53A. The chilled water circulation pumps within the building have variable speed drives.

The Building 62 has three 100% outside air, air handlers with air-to-air heat exchangers serving the animal rooms, laboratories and surgery/necropsy suite. The office air handler system is a return air handling system with economizer cycle. The second floor labs, including the BSL3 suite has a dedicated 100% outside air handling unit. These units have chilled water and steam heating coils, UV lights, supply and discharge ductwork and control and monitoring instrumentation. Small split system units and exhaust fans are provided for certain areas of 62. A mechanical penthouse was added over the existing non- human primate holding rooms in 2012-2013 to house air handling unit, duct terminal units, steam pressure reducing station, etc.

Distribution is by ductwork, insulated and equipped with VAV boxes, hot water re-heat coils and diffusers. The VAV boxes serving the labs and animal rooms have steam humidifiers.

Heating hot water for the terminal box re-heat coils is generated by steam to hot water heat exchangers or converters located on the third floor mechanical equipment room. They are equipped with variable speed drive circulation pumps, traps, valves, chemical shot feeder and associated piping. A high pressure steam reducing station with pressure relief valves is located in the mechanical equipment room where the steam pressure from Building 7, the boiler house, is reduced for building service.

The building is provided with an exhaust ventilation system of which the bio-safety areas are equipped with HEPA filters. Fume hoods are installed in the majority of the laboratories. The hoods are supplied with make-up air via ceiling mounted supply air grilles. The majority of the laboratories including the rooms containing the fume hoods have pressure monitoring and alarm instrumentation. The fume hoods are exhausted and returned to the air-to-air heat exchanger for heat recovery then exhausted to the outside. All have metal intake and discharge ductwork.

Steam unit heaters are located in the mechanical rooms.

Control and monitoring of the building HVAC equipment is provided by local controls that interface with the BAS located in Bldg. 54. Some sections of the control system are DDC while others are hybrid electro-pneumatic type with a partial DDC overlay. Heating and cooling of individual spaces is controlled by local thermostats. A refrigerant monitor is located in the basement of Bldg. 62.

INSULATION:

Steam, condensate, hot water, domestic cold water and chilled water piping is generally insulated with fiberglass and other types of insulation with jacket.

PLUMBING

Domestic water for the building is supplied by the local well water supply system. The make-up water to the hot water heating systems is backflow protected. Distribution is by steel and copper piping. Drinking water is supplied by drinking fountains.

Domestic hot water is provided by either electric hot water heater or by instantaneous hot water heaters at the point of use. Emergency eye wash and shower stations are located in the labs throughout the building.

The building has restroom facilities. Janitors sinks and hose bibbs are in strategic locations. These plumbing fixtures, including the laboratory sinks in 62, are equipped with anti-siphon devices.

The sanitary sewer piping is both cast iron, hub and no hub and PVC. In this building the sanitary waste system is connected to the site sanitary sewer system via a sanitary waste transfer system. The waste is transported to the waste water treatment plant at the Pine Bluff Arsenal. A lift station is located in the sub-basement with a pair of transfer pumps piped to Building 50.

De-ionized water production equipment is installed in the basement.

Storm water is removed from the building roofs of 62 by internal roof drains connected to the site storm water removal system.

OTHER PLUMBING SYSTEMS

A variety of bottled compressed gases is available including carbon dioxide. Each bottled compressed gas station has associated distribution piping, tubing and controls.

Vacuum for laboratory uses is provided by a vacuum pump located in the basement. Laboratory fume hoods are provided with compressed air, vacuum and nitrogen.

Sump pump stations with two pumps each are located throughout the basement and sub basement.

Two 2.5 inch adjacent hose connection stations, located outside the building on the south elevation, are connected to vertical pipes arising out of the ground. It was not possible to determine if these unidentified valves are connected to anything such as sump pump discharge lines.

OTHER EQUIPMENT

Building 62 has freezers and coolers equipped with digital temperature controllers and alarms that report to Building 54 EMCS.

FIRE PROTECTION

This building has a Siemens networked fire alarm and mass notification system networked with Siemens Fire Finder panels and a graphics PC based computer system located in building 54 with head-end and Annunciator panels. It is part of the fire alarm and Mass Notification System (MNS) project. The main panel is located in the penthouse in Building 62A.

ELECTRICAL

ELECTRICAL SERVICE & DISTRIBUTION:

Electrical service is supplied from a pad-mounted transformer to a 400A service disconnect switch at 480Y/277 V. An externally located distribution switchboard is located supplies power to transformers, and power panels located throughout the building.

EMERGENCY LIGHT & POWER SYSTEMS:

The building is equipped with an emergency generator for partial loads in the building; including.

LIGHTING & BRANCH WIRING:

Interior lighting consists of a combination of 1 x 4 and 2 X 4, recessed, wall and pendant mounted fluorescent fixtures utilizing T8 lamps and electronic ballasts. Exterior lighting is provided by a minimum amount of building mounted HID lamped light fixtures.

COMMUNICATIONS & SECURITY:

The main fire alarm control panel is located in the penthouse of Building 62A. Alarm devices are monitored and alarms are broadcast throughout the building. The building has telephone and data systems. Some exterior doors are roughed-in for card reader entry security system.

FACILITY FUNCTION

Building 62A first floor consists of both non-human primate rooms, process area, surgery/necropsy suite, rodent animal holding rooms, MRI suite, laboratories, offices, restrooms, shower and change facility and storage. All but the change rooms was renovated in the timeframe from 2009-2013.

The second floor area was renovated in 2004 as Bio Safety Level 3 (BSL-3) containment areas . This area consists of a group of separately isolated labs that include three BSL-3 isolation suites containing one class two safety cabinet separated by a large general wet lab area and a second group of seven BSL-3 isolation suites containing two class two safety cabinets. Entrance into this floor is by security card access only and is a highly secured area. The third floor area contains mechanical equipment to support the laboratory and animal holding areas.

CRITICAL ENVIRONMENTAL CONDITIONS

Animal room temperature and humidity's, static pressure relationships between lab areas, light status, HVAC system temperatures, supply and exhaust fan status, and basement sump level states, and fire alarm status.

MAJOR EQUIPMENT

HVAC system with supply and exhaust fans, pumps, condensing units, filters, sump pumps, cold room refrigeration equipment, heat pumps, fume hoods, steam sterilizers, glassware washers, elevator, and a rack washer.

SPECIAL EQUIPMENT

Refrigerators, freezers, incubators, sterilizers, other standard laboratory items, and reverse osmosis water system.

SPECIAL MAINTENANCE ATTENTION

Control of animal room environmental conditions and static pressure relationships between laboratories.

CRITICAL SYSTEMS HVAC

Equipment status and control points serving the animal areas and BSL-3 Laboratory areas.

BUILDING: 62A

SQUARE FOOTAGE: 14,800

NO. FLOORS: 2

Description

ARCHITECTURAL

Building 62A is an addition to the north side of Building 62. This two story structure was built in 1996. The addition to the building consists of brick veneer with CMU backup, the whole addition has approximately 14,800 SF of space. The building consists of mainly of animal holding, animal support (process areas), offices, mechanical room and storage.

Per the 2003 International Building Code, Section 602, the building is classified as Assembly Occupancy, Use Group A, having a Construction Type of Type IIB, noncombustible as determined in field observations.

SUBSTRUCTURE:

The building has a cast-in-place reinforced concrete slab on grade.

SUPERSTRUCTURE:

The building has steel open-web joists, steel beams and light-weight concrete roof deck as structural frame.

BUILDING EXTERIOR

EXTERIOR WALLS:

The exterior walls consist of brick veneer with concrete masonry back-up walls.

EXTERIOR WINDOWS:

The windows are aluminum framed fixed units with insulated glazing. Some of the original window units have non-insulated glazing.

EXTERIOR DOORS:

The entrance doorways consist of aluminum storefront systems with sidelights and transoms. Hardware consists of exit devices, pulls and closers. The doors have full panel glazing and all glazing is non-insulating. Service doorways consist of painted flush metal doors and frames, closers, exit devices and mortise locksets with knobs and pulls. Service door have transoms and vision panels with non-insulated

glazing.

ROOFING:

This building has a Flat Ruberoid roof, manufactured by Precision Roofing & Supply Inc. installed by Precision Roofing & Supply Inc. on 09/07/2002 with a 20 yr. warranty.

BUILDING INTERIOR

PARTITIONS:

The interior partition consists of mainly concrete masonry block walls and gypsum wallboard on metal studs.

WALL FINISHES:

Interior walls are generally painted gypsum wallboard, plastered walls and painted concrete masonry units.

FLOOR FINISHES:

The floors are predominately epoxy coated concrete.

CEILING FINISHES:

The ceilings consist mainly of painted gypsum board.

MECHANICAL HVAC

The building receives chilled water from the Central plant chilled water and distribution system. Chillers supplying this loop are located in Buildings 26, 5B and 53A. The chilled water circulation pump within the building has variable speed drives.

Building 62A is equipped with one (1) air handler that provide this section of the building with 100 percent fresh air makeup, conditioned air for the laboratory, animal spaces and the MRI suite and rodent animal rooms (installed in 2009 in building 62). The variable speed drive air handler is provided with chilled water and steam heating coils, steam humidification equipment, HEPA filters, air intake and discharge ductwork, condensate recovery system and control and monitoring instrumentation.

Distribution is by ductwork, insulated and equipped with VAV boxes, hot water re-heat coils and diffusers. The VAV boxes serving the labs and animal rooms have steam humidifiers.

Heating hot water for the terminal box re-heat coils is generated by steam to hot water heat exchangers or converters located in the penthouse mechanical equipment room. They are equipped with variable speed drive circulation pumps, traps, valves, chemical shot feeder and associated piping. A high pressure steam

reducing station with pressure relief valves is located in the mechanical equipment room where the steam pressure from Building 7, the boiler house, is reduced for building service.

The building is provided with an exhaust ventilation system of which the bio-safety areas are equipped with HEPA filters.

Steam unit heaters are located in the mechanical penthouse.

Control and monitoring of the building HVAC equipment is provided by local controls that interface with the BAS located in Bldg. 54. Some sections of the control system are DDC while others are hybrid electro-pneumatic type with a partial DDC overlay. Heating and cooling of individual spaces is controlled by local thermostats.

INSULATION:

Steam, condensate, hot water, domestic cold water and chilled water piping is generally insulated with fiberglass and other types of insulation with jacket.

PLUMBING

Domestic water for the building is supplied by the local well water supply system. The make-up water to the hot water heating systems is backflow protected. Distribution is by steel and copper piping. Drinking water is supplied by drinking fountains.

Domestic hot water is provided to the building primarily by steam to domestic hot water converters or heat exchangers. This is a loop system equipped with a circulating pump. Emergency eye wash and shower stations are located throughout the building.

The sanitary sewer piping is both cast iron, hub and no hub and PVC. In this building the sanitary waste system is connected to the site sanitary sewer system via a sanitary waste transfer system. The waste is transported to the waste water treatment plant at the Pine Bluff Arsenal. De-ionized water production equipment is installed in the basement.

Storm water is removed from the building roof 62A by internal roof drains connected to the site storm water removal system. Overflow scuppers are installed on the roof of 62A.

OTHER EQUIPMENT

According to the MOSS database, 62A may have freezers and coolers equipped with digital temperature controllers and alarms, some with chart recorders. Because this is a quarantined primate area, access was not possible.

FIRE PROTECTION

This building has a Siemens networked fire alarm and mass notification system networked with Siemens Fire Finder panels and a graphics PC based computer system located in building 54 with head-end and Annunciator panels. It is part of the fire alarm and Mass Notification System (MNS) project.

ELECTRICAL

ELECTRICAL SERVICE & DISTRIBUTION:

The electrical service for building 62 also serves building 62A.

EMERGENCY LIGHT & POWER SYSTEMS:

The building is equipped with an emergency generator for partial loads in the building; including hvac controls panels and critical hvac equirpment.

LIGHTING & BRANCH WIRING:

Interior lighting consists of a combination of 1 x 4 and 2 X 4, recessed, wall and pendant mounted fluorescent fixtures utilizing T8 lamps and electronic ballasts. Exterior lighting is provided by a minimum amount of building mounted HID lamped light fixtures.

COMMUNICATIONS & SECURITY:

The main fire alarm control panel is located in the penthouse of Building 62A. Alarm devices are monitored and alarms are broadcast throughout the building. The building has telephone and data systems. Some exterior doors are roughed-in for card reader entry security system.

FACILITY FUNCTION

Building 62A consists of both non-human primate rooms, rodent rooms, process areas for each, offices and storage areas. Shower and change facility for 62A is located in Building 62.

CRITICAL ENVIRONMENTAL CONDITIONS

Animal room temperature and humidity's, static pressure relationships between lab areas, light status, HVAC system temperatures, supply and exhaust fan status and fire alarm status.

MAJOR EQUIPMENT

HVAC system with supply and exhaust fans, pumps, condensing units, filters, heat pumps, steam sterilizers, glassware washers, and rack washers.

SPECIAL EQUIPMENT

SPECIAL MAINTENANCE ATTENTION

Control of animal room environmental conditions and static pressure relationships between clean and dirty corridors.

CRITICAL SYSTEMS HVAC

Equipment status and control points serving the animal areas.

BUILDING: 85

SQUARE FOOTAGE: 175,000

NO. FLOORS: 3

ROOFING:

This building has a Flat CertainTeed roof, manufactured by Advantage Roofing /Construction installed by Advantage Roofing /Construction on 08/16/2001 with a 20 yr. warranty.

FACILITY FUNCTION

Building 85 is a large concrete building at the rear of the JLC complex that is used primarily for storage. The east end of the building has a large loading dock and office that are used by the Property and Supply personnel for receiving, checking and distributing incoming supplies and equipment. It houses a "general store" for supplies and several restrooms. The remainder of the building is three stories with only the first floor in general use. This first floor area consists of approximately 18 cubicles that are used for storage and has several abandoned restrooms and offices. The basement contains the Government owned stock of spare parts and related maintenance supplies and materials that is operated and maintained by the Maintenance Contract. The second floor has a large plenum chamber with mechanical rooms on each end of the plenum chamber that contain the supply and exhaust systems for the building.

CRITICAL ENVIRONMENTAL CONDITIONS

Refrigerator temperature (Property area).

EXISTING SYSTEMS IN FACILITY

Mechanical.

HVAC SYSTEM

The east section of the building is heated with overhead steam unit heaters and is ventilated with exhaust fans in the summer months. The offices are air conditioned with a package air conditioning unit.

The HVAC system in the remainder of the building is designed the same as most of the older buildings at JLC. The incoming air is preheated with steam and space temperature controlled with terminal steam reheat coils controlled with pneumatic controls. The cooling coils are furnished chilled water from the central plant system. At the present time, the system is not operating in this building. Only minimum ventilation and heating is maintained for protection of the building.

Plumbing

The building has restrooms connected to water and sanitary sewage. Other services in the building are industrial sewage, steam, compressed air and chilled and cooling water from central systems.

The floor drains collect in a waste tank and is pumped to building 52 for gravity flow to building 50. The system consists of collection vessels, pumps, and liquid level control and sump pumps.

The majority of the services in the building have been abandoned and only maintained to protect the safety of the building from leakage and flooding.

ELECTRICAL.

Electrical service is supplied from a pad-mounted transformer to a 400A service disconnect switch at 480Y/277 V. A distribution panelboard is located in the mechanical room and supplies power to transformers, and power panels located throughout the building.

EMERGENCY POWER

Exit lights and egress lighting are equipped with battery backup

FIRE ALARM SYSTEM

Building 85 does not have a fire alarm system.

MAJOR EQUIPMENT

Supply and exhaust fans, sump pump, and waste collection tank pumps, and condensate pumps.

SPECIAL EQUIPMENT
None

SPECIAL MAINTENANCE ATTENTION

None.

CRITICAL SYSTEMS

None.

BUILDING: Trailers

SQUARE FOOTAGE: 7,000

NO.: 2 Trailers

FACILITY FUNCTION

There are 2 trailers in use be JLC as temporary office space. (T05, and T45)

CRITICAL ENVIRONMENTAL SYSTEMS.

None.

EXISTING SYSTEMS IN FACILITY

The trailers are heated and air conditioned. Each trailer has toilet facilities. The large trailer (T45) is heated and cooled by four (4) heat pump units. The trailers have normal lighting and convenience outlets.

MAJOR EQUIPMENT

HVAC units.

SPECIAL EQUIPMENT

None.

SPECIAL MAINTENANCE ATTENTION

None.

CRITICAL SYSTEMS

None.

BUILDING: 70, 71, 72, 73, & 74

VISITING SCIENTIST DORMITORY

SQUARE FOOTAGE: 4,863

NO. FLOORS: 1

FACILITY FUNCTION

This facility consists of 4 duplexes plus a common building. Its function is to provide housing for visiting scientists. The great room in the common building may also be used for training. The common building provides washer, dryer and kitchen facilities for the occupants.

CRITICAL ENVIRONMENTAL CONDITIONS

None.

EXISTING SYSTEMS IN FACILITY

HVAC.

Each unit in each duplex is heated and cooled by electric heat pump.

Plumbing

The plumbing is connected to the sanitary waste system. Waste flows by gravity to a collection basin where it is ground and pumped to the JLC sanitary waste system by two alternating grinder pumps.

ATTACHMENT 2 - APPENDIX III
DESCRIPTION OF UTILITY SYSTEMS
Table of Contents

Table of Contents 1
INTRODUCTION 2
I. MECHANICAL DISTRIBUTION SYSTEMS 2
A. Cooling Water (CW) 2
System CW-1 3
System CW-2 3
System CW-3 3
B. Potable Water (WP) 3
C. Chilled Water (AW) 3
Chiller Plant #1 3
Chiller Plant #2 4
Chiller Plant #3 4
Backup AW System AW-5 4
Backup AW System AW-6 4
Backup AW System AW-14 5
D. Steam System (HS, HC, LC, LS) 5
E. Sanitary Sewer (SS) 5
F. Industrial Sewer 5
G. Fuel Oil (FO) 5
H. Natural Gas (NG) 5
I. Instrument Air (IA, CA) 6
J. Hot Water System (HW) 6
System HW-62A 6
System HW-5A 6
System HW-6 6
System HW-14E 6
System HW-14W 6
System HW-53A 6
System HW-53B 7
System HW-62-1 7
System HW-62A-2 7
K. Solar System Not part of this contract. 7
II. ELECTRICAL DISTRIBUTION SYSTEM 7
A. The Main Switchgear 7
i. Section Breakdown 7
ii. Sub Stations 7
III. TELEPHONE SYSTEM 7
IV. FIRE ALARM AND MASS NOTIFICATION SYSTEMS 8
Building 5 9
Building 10 10
Building 12 and 31 11
Building 13 12
Building 14 Upgrades 13
Building 16 and 17 14
Building 21 15
Building 26 16
Building 51 17
Building 53 18
Building 54 19
Building 60 20
Building 62 21

INTRODUCTION

The JLC campus was originally constructed in 1951– 1952 with renovation conducted during early 1960's and the last 10 years. The basic utility systems (steam generating, sewer, and distribution systems) have remained essentially the same through the years. The purpose of this section is to describe these systems. Included are attachments to aid in the description of the systems. The major systems are as follows:

Mechanical:

The mechanical utility systems consist of the following: cooling water potable water (which is also the fire protection systems), air conditioning water, high pressure steam (100 psig) and condensate return, sanitary sewer, industrial sewer, distillate fuel, diesel fuel, natural gas, compressed air, and service water. These systems are, either underground, in utility tunnels or overhead. Piping below grade is generally cast iron with Dresser couplings or bell and spigot. The Dresser couplings have begun to require maintenance due to bolt features. A new potable water and fire protection system was installed in 1992.

Electrical:

Electrical power for the main campus is supplied at 13.8 kV from an Entergy-owned substation located immediately south of building 9 which houses the main electrical switchgear for the campus. The campus electrical distribution is composed of 15 kV rated underground cables interconnected by switches into loops which supply power to buildings via pad-mount transformers at 480Y/277 V.

Telephone: Not included in this contract.

I. MECHANICAL DISTRIBUTION SYSTEMS

This section shall include the following piped utility systems:

Systems	Piping Code
Cooling Water	CW
Potable Water	WP
Hot Water	HW
Chilled Water	AW
Steam & Condensate	HS,LC, LS
Sanitary Sewer	SS
Industrial Sewer (process sewer)	PS, & IW
Fuel Oil	FO
Natural Gas	NG
Instrument Air	IA
Compressed Air	CA
Well Water	WW

Other piping systems at the JLC exist which have been abandoned due to changes in requirements at the Center. These systems or component parts might at some time become useful, but they are not to be included in the Center's preventive maintenance program.

A. Cooling Water (CW)

The cooling water is distributed through three (3) separate systems designated as CW-1, CW-2, and CW-3.

System CW-1

Serves Chiller Plant # 1 located at Building 26. Cooling water is produced by the large cooling tower adjacent to building 14A.

System CW-2

Serves Chiller Plant #2 located at Building 53B. Cooling water is produced by the large cooling tower adjacent to building 53B and has been replaced in 2010.

System CW-3

Serves Chiller Plant #3 located at Building 5B. Cooling water is produced by the large cooling tower adjacent to building 5B

The Cooling tower and associated equipment at Building 20 has been removed.

B. Potable Water (WP)

A deep well located on JLC property north of the parking lot is the source for water for JLC.
Water from this well (WW) is pumped through an iron/manganese removal system into a clear well located in the water treatment building (building 11). The water is then chemically treated, chlorinated, and pumped to the elevated storage tanks. The (WP) water systems are classified as potable systems and are distributed through a new piping system to the points of service. A new deep well is being drilled just north of building 17 just outside the perimeter fence on the main campus.

C. Chilled Water (AW)

Chilled Water (AW) is supplied by the District Cooling System which is a buried piping system which links the three (3) chiller plants to the rest of the center. The AW is produced at:

Chiller Plant #1

Is located in building 26 and includes 3 centrifugal water cooled Trane chillers 2 at 1150 tons and one new 600 ton chiller.

Style	Manufacturer	Model	Style	Serial Number	Type	Date of Last Eddy Current Test
Chiller 1	Trane	CVHF1280	Hermetic	L98G04789 #CH-A-1	Centrifugal	4/18/2013
Chiller 2	Trane	CVHF1280	Hermetic	L98H04935 #CH-A-2	Centrifugal	4/18/2013
Chiller 3	Trane	CVHF058	Hermetic	L10D01911	Centrifugal	4/18/2013

Chiller Plant #2

Is located in building 53 and uses one centrifugal water cooled Trane chillers 2 at 1200 tons , the other 650 ton is out of service.

Style	Manufacturer	Model	Style	Serial Number	Type	Date of Last Eddy Current Test
Chiller 1	Trane	CVHF130G	Hermetic	L09M03012	Centrifugal	1/21/2014
Chiller 2	Trane			**OUT OF SERVICE**		

Chiller Plant #3

Is located in building 5B and includes 2 water cooled centrifugal 450 ton York chillers and (total 900 tons).

Style	Manufacturer	Model	Style	Serial Number	Type	Date of Last Eddy Current Test
Chiller 1	York	YTK1C3	Open Drive	GLEM053161 #1	Centrifugal	1/14/2015
Chiller 2	York	YTK1C3	Open Drive	GLEM163208 #2	Centrifugal	1/14/2015

Backup AW System AW-5

Is located in building 5B, has a York 175 ton screw chiller with water cooled condensers to produce chilled water for building 5A. Manual operation only.

Backup AW System AW-6

Is located in building 6 and has 160 ton Trane chiller with air cooled condensers to produce chilled water for building 6. Manual operation only.

Backup AW System AW-14

Is located in building 14A and has a 90 ton Trane chiller with water cooled condensers to produce chilled water for building 14A. Manual operation only.

D. Steam System (HS, HC, LC, LS)

The existing system consists of the equipment located in Building 7 (central boiler plant), the overhead supply and return lines, and the steam condensate return pumps located at each building.

Steam is generated in Building 7, the central boiler plant at 100 psig. The boiler plant houses three industrial quality boilers. The system consists of one (1) water-tube boiler with a capacity of 80,000 lb/hr. of steam at 175 psig and two (2) fire tube boilers, each with a capacity of 25,875 lb/hr of steam at 150 psig. The plant includes equipment to treat boiler water. All three boilers are equipped to fire using natural gas or No. 2 fuel oil. Fuel oil is used only for testing or training purposes and as a backup fuel source. Auxiliary equipment is electric motor driven. Electronic controllers are used to operate the boilers. The condition of the boiler plant is sound, as is the condition of the overhead distribution system.

E. Sanitary Sewer (SS)

This is vitreous clay, cast iron gravity flow collection system that collects sanitary waste from the various buildings and allows this waste to flow to the Pine Bluff Arsenal through an 18" main for treatment. The system has a capacity of 216,000 gallons per day.

F. Industrial Sewer

The industrial sewer system (IS) is a vitreous clay, cast iron, glass, ductile iron, gravity flow collection system for waste from the research areas. This waste contains undetectable levels of research chemicals. This waste system is treated by the Industrial Wastewater Treatment Facility and then discharged into the sanitary sewer system. The waste water treatment plant (PS) consists of an equalization basin; emergency holding pond, a process building that contains the process filters adsorption columns, associated pumps, and a laboratory; and an incinerator. This plant has a capacity of 100,000 gallons per day. The treatment process consists of re-lifting pumping into the equalization basin and then pumping through media filters, carbon adsorption columns to holding tanks, then to the sanitary sewer system.

G. Fuel Oil (FO)

The fuel oil system (Area 8) serves as a fuel backup system for the central steam plant (Building 7). The system consists of two (2), 28,000 gallon, above ground tanks for storing #2 fuel oil, piping to Building 7, fuel oil transfer pump station, oil/water separator, and associated controls. Also included in Area 8, but no longer used for #2 fuel oil storage, are two (2) 1,000,000 gallon above ground tanks. These tanks will be emptied of sludge and cleaned in the future but will not be used for fuel storage.

Each tank is surrounded by an earth dike system. The drain water flows through an oil/water separator. The water is then discharged to open ditch and separated oil is removed and disposed.

H. Natural Gas (NG)

A 10-inch medium pressure underground pipe serves the complex. At the boiler house, the

pressure is reduced to approximately 30 pounds. There is a cathodic protection system installed on the system. A separate piping system serves building 45.

I. Instrument Air (IA, CA)

The compressed air system consists of a central plant system, located in building 11, with two 150 HP, 480 volt, and lubricated compressors. Each compressor is equipped with inter-cooler, a regenerating desiccant dryer and filters are also located in the building. Any one of the compressors is capable of providing the entire plant requirement for compressed air under the present operating conditions.

Air from this system is piped overhead to the various buildings and structures throughout the JLC complex. Buildings renovated recently have local air compressors to supply instrument air to the instruments and controls. These compressors are furnished with refrigerated air dryers, which are an integral part of the compressed air system.

J. Hot Water System (HW)

For the most part, the buildings are heated by steam to air heating systems. However, some of the more recently renovated buildings have hot water systems that operate as combination space heating and processing heating. For the most part, the hot water space heating is limited to animal rooms and laboratories. There are hot water systems in each building which function as domestic hot water systems. In addition to the domestic hot water systems, there are five (5) circulating hot water systems.

System HW-62A

This system is located in building 62A and animal holding and quarantine facility. System capacity 120 gpm. Special water treatment is required for corrosion and/or bacteria control.

System HW-5A

This system is located in building 6 and is used for animal room heating. Its capacity is approximately 600 gallons and circulates 100 F water at approximately 400 gpm for animal room heating. Special water treatment is required for corrosion and/or bacteria control.

System HW-6

This system is located in building 6 and is used for animal room heating. HW-6 capacity is approximately 400 gallons.

System HW-14E

This system is located in the east end of Building 14 and is primarily used for laboratory heating. HW-14E capacity is approximately 270 gpm. Special water treatment is required for corrosion and/or bacteria control.

System HW-14W

This system is located in the west end of building 14 and is used for animal room and laboratory heating. Special water treatment is required for corrosion and/or bacteria control.

System HW-53A

This system is located in the east end of building 53. System capacity is approximately 164 gpm. Special water treatment is required for corrosion and/or bacteria control.

System HW-53B

Located on the 3rd floor of building 53C circulates 70 gpm. Special water treatment is required.

System HW-62-1

Is located on the 3rd floor of building 62, circulates 100 gpm hot water to the Tissue Culture laboratory on the second floor. Special water treatment is required.

System HW-62A-2

Is located on the mezzanine floor of building 62A, circulates hot water to the Quarantine Facility on the first floor. Special water treatment is required.

K. Solar System Not part of this contract.

II. ELECTRICAL DISTRIBUTION SYSTEM

A. Entergy's Substation D

Electrical power for Jefferson Labs main campus (excluding dormitories) is provided by Entergy's substation "D" that is connected to a 115kV aerial bus between Entergy's White Bluff generating station 10 miles to the north and Entergy's Woodward Substation 10 miles to the south. Substation "D" consists of two 7500 kVA nameplate (each is fan cooled to provide capacity of 10,000 kVA), 115 kV delta to 13.8 kV wye transformers, voltage regulators, and associated protective devices. Two underground 13.8 kV feeders connect to the main switchgear in Building 9.

B. Building 9 Main Switchgear

From Entergy's substation described above, electrical power is distributed to the main campus of Jefferson Laboratories via the main electrical switchgear located in Building 9. The main switchgear consists of vacuum circuit breakers arranged in a main-tie-main configuration. The tie circuit breaker is left normally open so that the campus load is divided between the two Entergy transformers described above. Feeder breakers supply the medium-voltage looped distribution system as well as power factor correction capacitors located just south of Building 9.

C. Medium Voltage (13.8 kV) Primary Distribution System

The underground 13.8 kV primary distribution system consists of 15kV rated conductors in a system of manholes and duct banks. Pad-mounted SF6 switches interconnect the conductors to form loops that can be energized independently from four circuit breakers in the main electrical switchgear. Pad-mounted transformers, located near the buildings they serve, are connected via this switches, to the primary distribution system at 13.8 kV delta and supply 480Y/277V to building services.

III. TELEPHONE SYSTEM

This is not a part of this contract.

IV. FIRE ALARM AND MASS NOTIFICATION SYSTEMS

The JLC campus has a complex fire alarm and mass notification system that includes Siemens Fire Finder, Simplex 4500, and Edwards EST control and monitoring panels and ties into the Siemens Apogee DDC building automation system in the EMCS Control Center in Building 54. The voice notification systems have control panels independent from the fire alarm control panels. The following Buildings are part of a Fire Alarm and Mass Notification System (MNS. The tables listed below describe the equipment in each building.

Building 5

Description:	Note		Units
Detectors			240
Control/Relay Modules			5
Manual Stations			22
Special Detectors	Duct		12
Door Hold Opens			
FA Notification Devices			194
Fire Alarm Control Panel			
FA Annunciator Panels			1
Computer Graphics System			
Graphics Panel			
MNS Notification Strobes			
Standard Speakers	with volume cont		200
Special Speakers			36
MNS Control Panels			1
MNS Aux Panels			4
Dialer/Transmitter			
Fire Protection Eng. Design			
Fire Protection Eng. Review			1
Fire Protection Eng. Inspect.			4
Prog. Of existing FACP/Grap			1
Demolition			1
Conduit			2
Electrical Power Circuits			3

Building 10

Description:	Note		Units
Detectors			16
Control/Relay Modules			
Manual Stations			8
Special Detectors	Duct		12
Door Hold Opens			
FA Notification Devices			10
Fire Alarm Control Panel			1
FA Annunciator Panels			1
Computer Graphics System			
Graphics Panel			
MNS Notification Strobes			
Standard Speakers	with volume cont		
Special Speakers			
MNS Control Panels			
MNS Aux Panels			
Dialer/Transmitter			
Fire Protection Eng. Design			
Fire Protection Eng. Review			1
Fire Protection Eng. Inspect.			4
Prog. Of existing FACP/Grap			1
Demolition			
Conduit			
Electrical Power Circuits			

Building 12 and 31

Description:	Note	Units
Detectors		38
Control/Relay Modules		2
Manual Stations		10
Special Detectors	Duct	2
Door Hold Opens		
FA Notification Devices		36
Fire Alarm Control Panel		1
FA Annunciator Panels		
Computer Graphics S stem		
Graphics Panel		
MNS Notification Strobes		
Standard Speakers		56
Special Speakers		
MNS Control Panels		1
MNS Aux Panels		1
Fiber		1
Fire Protection Eng. Design		
Fire Protection Eng. Review		1
Fire Protection Eng. Insect.		1
Prog. Of existing FACP/Graphics		1
Demolition		
Conduit		1
Electrical Power Circuits		1

Building 13

Description:	Note	Units
Detectors		16
Control/Relay Modules		1
Manual Stations		3
Special Detectors	Duct	2
Door Hold Opens		
FA Notification Devices		19
Fire Alarm Control Panel		1
FA Annunciator Panels		1
Computer Graphics System		
Graphics Panel		
MNS Notification Strobes		
Standard Speakers		60
Special Speakers		2
MNS Control Panels		1
MNS Aux Panels		2
Fiber		1
Fire Protection Eng. Design		
Fire Protection Eng. Review		1
Fire Protection Eng. Inspect.		1
Prog. Of existing FACP/Graphics		1
Demolition		1
Conduit		
Electrical Power Circuits		1

Building 14

Description:	Note		Units
Detectors			114
Control/Relay Modules			3
Manual Stations			19
Special Detectors	Duct		7
Door Hold Opens			
FA Notification Devices			81
Fire Alarm Control Panel			1
FA Annunciator Panels			2
Computer Graphics System			
Graphics Panel			
MNS Notification Strobes			
Standard Speakers	with volume cont		86
Special Speakers			6
MNS Control Panels			1
MNS Aux Panels			3
Dialer/Transmitter			
Fire Protection Eng. Design			
Fire Protection Eng. Review			1
Fire Protection Eng. Inspect.			4
Prog. Of existing FACP/Graphics			
Demolition			1
Difficult work in Hard lid "A" area			1
Conduit			1
Electrical Power Circuits			3

Building 16 and 17

Description:	Note	Units
Detectors		13
Control/Relay Modules		2
Manual Stations		8
Special Detectors	Duct	2
Door Hold Opens		
FA Notification Devices		12
Fire Alarm Control Panel		1
FA Annunciator Panels		1
Computer Graphics System		
Graphics Panel		
MNS Notification Strobes		
Standard Speakers		14
Special Speakers		3
MNS Control Panels		1
MNS Aux Panels		1
Fiber		1
Fire Protection En g. Design		
Fire Protection Eng. Review		1
Fire Protection En g. Inspect.		1
Pro g. Of existing FACP/Grap		1
Demolition		1
Conduit		1
Electrical Power Circuits		1

Building 21

Description:		Note	Units
Detectors			8
Control/Rela Modules			1
Manual Stations			4
Special Detectors		duct	1
Door Hold O ens			
FA Notification Devices			4
Fire Alarm Control Panel			
FA Annunciator Panels			
Computer Gra hics S stem			
Graphics Panel			
MNS Notification Strobes			
Standard S eakers		with volume cont	7
Special5 eakers			0
MNS Control Panels			1
MNS Aux Panels			1
Dialer/Transmitter			
Fire Protection En . Desi n			
Fire Protection En . Review			1
Fire Protection En . Insect.			3
Pro . Of existing FACP/Gra			1
Demolition			1
Conduit			1
Electrical Power Circuits			1

Building 26

Description:	Note	Units
Detectors		
Control/Relay Modules		
Manual Stations		
Special Detectors	Duct	
Door Hold Opens		
FA Notification Devices		99
Fire Alarm Control Panel		1
FA Annunciator Panels		
Computer Graphics System		
Graphics Panel		
MNS Notification Strobes		
Standard Speakers		285
Special Speakers		17
MNS Control Panels		1
MNS Aux Panels		6
Fiber		1
Fire Protection Eng. Design		
Fire Protection Eng. Review		1
Fire Protection Eng. Inspect.		I
Prog. Of existing FACP/Graphics		1
Demolition		1
Conduit		1
Electrical Power Circuits		1

AHUs 1, 2, 3 – Replaced existing DDC controllers and enclosures for AHUs 1, 2, and 3.
Exhaust Fans 1, 2, 3, 4 - Replaced existing DDC controllers and enclosures.
Exhaust Fans 10, 12, 16, 18, 21, 27 and DC-1 - Replaced existing DDC controllers and enclosures.
AHU 1 and AHU 3 VFDs - Provided and installed (2) New 200 HP Variable Frequency Drives.
EFs - 1 and 4 - Provided and installed (2) New 100 HP Variable Frequency Drives.
AHU 4, Replace existing DDC controllers and enclosures for AHU-4. Reuse all existing field devices including valves and actuators, damper actuators, sensors, and all existing wiring and conduits.
AHU 5, Replace existing DDC controllers and enclosures for AHU-5. Reuse all existing field devices including valves and actuators, damper actuators, sensors, and all existing wiring and conduits.
B023 – Nano – Replaced DDC controls
A026 – Nano – Replaced DDC controls
A214 - NCTR– Replaced DDC controls
A240 - Food Chemistry– Replaced DDC controls
B122 - Dioxin– Replaced DDC controls

Building 51

Description:	Note	Units
Detectors		12
Control/Relay Modules		1
Manual Stations		
Special Detectors	Duct	
Door Hold Opens		
FA Notification Devices		15
Fire Alarm Control Panel		
FA Annunciator Panels		
Computer Graphics System		
Graphics Panel		
MNS Notification Strobes		
Standard Speakers		67
Special Speakers		8
MNS Control Panels		
MNS Aux Panels		
Fiber		
Fire Protection Eng. Design		
Fire Protection Eng. Review		
Fire Protection Eng. Inspect.		
Prog. Of existing FACP/Graphics		1
Demolition		1
Conduit		
Electrical Power Circuits		

Building 53

Description:	Note	Units
Detectors		347
Control/Relay Modules		16
Manual Stations		37
Special Detectors		
Door Hold Opens		
FA Notification Devices		208
Fire Alarm Control Panel		1
FA Annunciator Panels		2
Computer Graphics System		1
Graphics Panel		
MNS Notification Strobes		
Standard Speakers		249
Special Speakers		22
MNS Control Panels		1
MNS Aux Panels		1
Dialer/Transmitter		
Fire Protection Eng. Design		
Fire Protection Eng. Inspect.		
Demolition		1
Conduit		2
Electrical Power Circuits		6

Building 54

Description:	Note	Units
Detectors		48
Control/Relay Modules		3
Manual Stations		6
Special Detectors	Duct	3
Door Hold Opens		
FA Notification Devices		41
Fire Alarm Control Panel		
FA Annunciator Panels		1
Computer Graphics System		
Graphics Panel		
MNS Notification Strobes		
Standard Speakers		50
Special Speakers		1
MNS Control Panels		1
MNS Aux Panels		1
Dialer/Transmitter		
Fire Protection Enq. Design		
Fire Protection Eng. Review		1
Fire Protection Eng. Inspect.		4
Prog. Of existing FACP/Graphics		1
Demolition		
Conduit		1
Electrical Power Circuits		1

Building 60

Description:	Note	Units
Detectors		33
Control/Relay Modules		2
Manual Stations		5
Special Detectors	Duct	2
Door Hold Opens		
FA Notification Devices		20
Fire Alarm Control Panel	Replace Bldg 51	1
FA Annunciator Panels		1
Computer Graphics System		
Graphics Panel		
MNS Notification Strobes		
Standard Speakers		21
Special Speakers		10
MNS Control Panels		1
MNS Aux Panels		1
Dialer/Transmitter		
Fire Protection Eng. Design		
Fire Protection Eng. Review		1
Fire Protection Eng. Inspect.		4
Prop. Of existing FACP/Graphics		
Demolition		1
Conduit		1
Electrical Power Circuits		1

Building 62

Description	Note	Units
Detectors		148
Control/Relay Modules		6
Manual Stations		17
Special Detectors	Duct	11
Door Hold Opens		
FA Notification Devices		80
Fire Alarm Control Panel		0
FA Annunciator Panels		0
Computer Graphics System		
Graphics Panel		
MNS Notification Strobes		
Standard Speakers	with volume cont	33
Special Speakers		20
MNS Control Panels		1
MNS Aux Panels		3
Dialer/Transmitter		
Fire Protection Eng. Design		
Fire Protection Eng. Review		1
Fire Protection Eng. Inspect.		4
Prog. Of existing FACP/Graphics	Relocation	1
Demolition		1
Linear heat detection	Basement	1
Conduit		1
Electrical Power Circuits		2