

CAPITAL RESERVE EVALUATION
of
XXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXX, Colorado

Prepared for:
XXXXXXXXXXXXXXXXXXXXXXXXXXXX

December 2, 2008

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Commercial Building Inspection

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Property: XXXXXXXXXXXXXXXXXXXXXXXX, Colorado

EXECUTIVE SUMMARY

Date of Report: December 2, 2008

Client: XXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXX
XXXXXXXXXXXX

Property: XXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXX, Colorado

Scope of Work:

Fred L. Thrall, LLC (Consultant) herein presents a Capital Reserve Evaluation of the physical elements of the Property, based in part on a walk-through survey (non-intrusive visual inspection) of the Property performed by Consultant on November 24-25, 2008.

General Description:

The Property is currently developed as a multiple-owner medical office facility; as the Property is a condominium, the site is reportedly not a part of the property. The Property is located on the west side of XXXXXXXXXXXXXXXX in the City of XXXXXXXX, Colorado; it is zoned P (Public) and appears to be developed in accordance with this zoning.

The building is a three-story plus basement structure of approx. 67,124 gross square feet (per Project Architect). It was apparently originally constructed in 2003; interior tenant finish has subsequently been performed. The building currently appears to be 100% occupied.

Conclusions:

In this Consultant's opinion, the Property is suitable as an institutional-grade medical office facility. The original construction exhibits excellent workmanship with very good materials; maintenance has been conducted with appropriate care. The general condition of the Property is considered to be VERY GOOD in comparison to properties of its age and type in the greater Denver area.

Recommendations:

Repairs and modernization, to bring the building into compliance with current code and best practice, are estimated to cost approximately \$31,000 in the immediate future. Capital Reserves, to provide for replacement of materials & systems whose Expected Useful Life (EUL) terminates within the next 10 years, are expected to total \$2,000 in years 2-5 and \$111,000 in years 6-10. These cost estimates do not include Normal Maintenance, or renewing finishes in the interior of the individual suites, which should be covered by a separate finish allowance.

PROBABLE COSTS to REMEDY PHYSICAL DEFICIENCIES

Following are ball-park estimates by the Consultant of probable cost for:

- Immediate repair of significant deficiencies (as defined on Page 4)
- Capital Reserves necessary for repairs or replacement within a 10-year time period.

These cost estimates are approximations only for the purpose of establishing the general range of costs that might be incurred in the near future (within 10 years from report date). This estimate does not include Capital Reserves necessary for repairs or replacement beyond this 10-year time period. This estimate does not include costs of Normal Maintenance. This estimate does not include renewing in the interior of the individual suites, which should be covered by a separate finish allowance. All costs are shown in December 2008 dollars.

To obtain actual and accurate cost estimates, it is necessary that Client consult further with this or other qualified professionals, service companies and/or contractors to determine the exact nature and scope of repairs, and to obtain firm cost estimates for making such repairs.

EUL = Expected Useful Life. REL = Remaining Expected Life.

DESCRIPTION	EUL	REL	IMMEDIATE	2-5 YEARS	6-10 YEARS
SITWORK: (see Note 1)					
1. Seal & restripe asphalt pavement	6	0	\$ 12,700		\$ 12,700
2. Grind sidewalk joints			\$ 200		
3. Replace caulking at sidewalk	8	3		\$ 2,400	
4. Replace 2 concrete steps			\$ 1,500		
5. Repaint exterior steel on site	12	7			\$ 1,900
6. Replace steel rail posts					\$ 2,400
7. Re-sod as needed			\$ 6,400		
8. Underground fuel tank (comment only)					
9. Flood hazard (comment only)					
10. Future infrastructure (comment only)					
UTILITIES:					
1. Inspect acid receptor (Normal Maintenance)					
2. No separate electric meter (comment only)					
3. No separate gas meter (comment only)					
BUILDING EXTERIOR:					
1. Repaint exterior field-painted steel	12	7			\$ 2,900
ROOF:					
1. Transfer roof warranty			\$ 1,500		
2. Bi-annual inspection (Normal Maintenance)					
INTERIOR: (see Note 2)					
1. Common areas: replace carpet as needed	12	7			\$ 66,300
HVAC:					
1. Replace in-line pumps as needed	12	7			\$ 4,400
2. Conduct air balance			\$ 8,900		

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DESCRIPTION	EUL	REL	IMMEDIATE	2-5 YEARS	6-10 YEARS
PLUMBING:					
1. Replace submersible pumps as needed	12	7			\$ 20,200
TOTALS			\$ 31,200	\$ 2,400	\$ 110,800

Note 1: This estimate includes costs of repair of site improvements, even though Client apparently shares this responsibility in a cooperative agreement with XXXXXXXXXXXXXXXXXXXX. Negotiation with XXXXXXXXXXXXXXXXXXXX may be required.

Note 2: Finishes in the interior of the individual suites will likely need to be renewed from time-to-time, particularly as suites change ownership or use. This issue is beyond the scope of this report, as it should be covered by a separate finish allowance by the individual condo owners.

SCOPE OF WORK

Per contract with XXXXXXXXXXXXXXXXXXXXXXXXXX (Client) dated October 14, 2008, Fred L Thrall, LLC (Consultant) performed a Capital Reserve Evaluation, including a walk-through survey (non-intrusive visual inspection) of the Property performed by Consultant on November 24-25, 2008. This Capital Reserve Evaluation addresses the physical elements of the Property, including:

1. Site improvements & Utilities
2. Exterior & Interior finishes (including moisture control)
3. Structural
4. Roofing
5. Conveying systems
6. Mechanical (HVAC), Plumbing & Electrical

The purpose of this Capital Reserve Evaluation is to inform the Client of the general physical condition of the Property, in the Consultant's opinion, and to assist in establishing a budget for capital reserves for repairs and replacement in the near future (10 years from report date). The scope of work includes:

- Construction defects, inadequate materials or systems
- Deferred maintenance
- Physical obsolescence
- Building code violations, fire & life safety violations
- Non-compliance with Title III of the Americans with Disabilities Act (ADA)

This Capital Reserve Evaluation only addresses significant physical deficiencies to the extent that one or more of the following applies:

- Repair will likely cost more than \$3,000
- The issue is likely to significantly affect the long-term value of the property
- The issue is a material building code or life-safety violation, or bodily-injury liability.

Please refer to the Limitation of Observations listed on Page 23 of this report, which describes in greater detail the scope of this survey and applicable exclusions. This report is confidential to the Client and his assigns, and Consultant assumes no liability for its use by any party other than Client.

This Report does not identify minor or inexpensive repairs and maintenance that should be part of a normal operating budget (Normal Maintenance); further, it does not identify repairs and maintenance items of significant cost (such as exterior painting, carpet replacement, etc.) that in the Consultant's opinion are not expected to be required within the next 10 years.

Subsequent studies by this Consultant are available upon request. It is also recommended that other qualified professionals, service companies and/or contractors be consulted to determine the exact nature and scope of repairs, and to obtain firm cost estimates for making such repairs.

CURRENT ADOPTED BUILDING CODES

Following are the governing building codes as currently adopted by the City of XXXXXXXX:

- 2006 International Building Code (IBC)
- 2006 International Fire Code (IFC)
- 2006 International Mechanical Code (IMC)
- 2006 International Plumbing Code (IPC)
- 2006 International Fuel Gas Code (IFGC)
- 2005 National Electrical Code (NEC)

DOCUMENT REVIEW & INTERVIEWS

REGULATORY REVIEW:

Consultant researched information available online from the XXXXXXXX County Assessor’s Office.

Consultant also researched local jurisdictional records via telephone and online as follows:

- City of XXXXXXXX Building Department: Core & Shell Certificate of Occupancy issued 10/31/03; numerous other permits for tenant finish. No outstanding permits or violations on file.
- City of XXXXXXXX Planning Department: No outstanding zoning violations or compliance cases on file.
- City of XXXXXXXX Fire Marshall: Last inspection 3/08; no outstanding violations on file.
- State of Colorado, Division of Oil & Public Safety: A 10,000-gallon underground diesel fuel tank exists on the site; a 300-500-gallon surface spill occurred in 2003, but was properly cleaned-up.

DOCUMENTS REVIEW:

The following construction documents were reviewed:

- Civil, Structural, Mechanical & Electrical drawings (marked “As-Builts”) for OSB-1, issued by XXXXXXXXXXXXXXXXXXXX, CO, dated 3/20/02
- Tenant Finish drawings for Suite #300 issued by XXXXXXXXXXXXXXXXXXXX, CO, dated 3/8/04.

INTERVIEWS:

The following individuals were interviewed by the Consultant:

- Mr. XXXXXXXX, Facilities Coordinator, XXXXXXXXXXXXXXXXXXXX
- Mr. XXXXXXXX, Maintenance Engineer, XXXXXXXXXXXXXXXXXXXX
- Ms. XXXXXXXX, Manager, Com. Center, XXXXXXXXXXXXXXXXXXXX
- Several tenants (identity confidential).

PROPERTY PROFILE

General property data is as follows:

<u>Address of Property</u>	XXXXXXXXXXXXXXXXXXXXXXX, Colorado
<u>Jurisdiction</u>	City of XXXXXXXX, XXXXXXXX County, Colorado
<u>Parcel Number</u>	XXXXXXXXXXXXXXX
<u>Zoning</u>	P (Public)
<u>Use of Property:</u>	Medical offices
<u>Occupancy:</u>	Currently 100% occupied
<u>Year Built:</u>	2003
<u>Renovations:</u>	Interior finish construction
<u>Land Area:</u>	None (condominium)
<u>Number of Stories:</u>	Three plus Basement
<u>Building size:</u>	Basement: 16,496
	1 st : 15,928
	2 nd : 17,959
	3 rd : 16,741
	Total: 67,124 gross square feet (per Project Architect)

SUMMARY OPINION

It is the Consultant’s opinion that:

- The Property is suitable as an institutional-grade medical office facility.
- The original construction exhibits excellent workmanship with very good materials; maintenance has been conducted with appropriate care. Overall condition is VERY GOOD in comparison to properties of its age and type in the greater Denver area.
- The improvements are generally in compliance with building codes applicable at the time of construction, except as noted herein.
- The improvements are generally in compliance with applicable requirements of Title III of the Americans with Disabilities Act (ADA), except as noted herein.

The undersigned Fred L. Thrall, Manager of Fred L. Thrall, LLC, hereby certifies that he personally conducted the inspection of the Property and prepared this Capital Reserve Evaluation, that all significant (as defined on Page 4) issues observed are noted herein, and that opinions expressed herein are independent and un-biased.

Fred L. Thrall, LLC

By: Fred L. Thrall, Manager

PROPERTY DESCRIPTION & OBSERVATIONS

Consultant performed on November 24-25, 2008 a walk-through survey (non-intrusive visual inspection) of the Property. A description of the improvements, and a listing of significant (as defined on Page 4) physical deficiencies observed is as follows.

SITWORK:

Description:

The Property is currently developed as a multiple-owner medical office facility. As the Property is a condominium, the site is reportedly not a part of the property; however, the Client reportedly has responsibility for site maintenance through a cooperative agreement with XXXXXXXXXXXXXXXXXXXX. The Property is located on the west side of XXXXXXXX in the City of XXXXXXXX, Colorado; it is zoned P (Public) and appears to be developed in accordance with this zoning. Vehicle access to the site is from XXXXXXXX east of the Property.

Site is generally flat. Storm drainage is by surface runoff and underground storm sewer, leading to public underground storm sewer. The site appears to be in the floodplain of XXXXXXXXXXXX, which flows nearby off the NW corner of the site.

Parking areas are asphalt pavement. Curbs and sidewalks are concrete.

Landscaping consists of grass, gravel, trees & shrubs with an irrigation sprinkler system. There are concrete retaining walls maximum 12' high, with a cast stone cap and a painted steel guardrail, at the north, west & south sides of the building. There are concrete steps, with painted steel handrails, down to an exit door from the Basement on the west side of the building.

One monitoring well (for monitoring groundwater contamination) was observed in the west parking area; State of Colorado, Division of Oil & Public Safety reports a 10,000-gallon underground diesel fuel tank on the site, and that a 300-500-gallon surface spill occurred in 2003, but was properly cleaned-up.

Significant physical deficiencies or concerns:

1. Expected Useful Life (EUL) of asphalt pavement will be prolonged if it is regularly seal-coated with an asphalt emulsion. Recommend sealing the asphalt pavement and re-striping at this time and every 6 years thereafter.
2. Concrete sidewalk at the north patio and at the east side has sunk as much as 1"; these present a trip hazard. Grind joints as needed.
3. Caulking between concrete sidewalk and building wall has deteriorated; this caulking has a EUL of approx. 8 years. Remove & replace this caulking within the next 2-5 years.
4. Nosings at 2 concrete steps at west side of building exhibit spalling; it is likely the rebar was cast too close to the surface. Cut-out and replace these steps.
5. Paint coating on exterior steel (railings, bollards) appears to be original to the building construction; this paint coating has a EUL of approx. 12 years. Repaint all exterior steel within the next 6-10 years.
6. Steel guardrails and handrails are rusting badly at the base; rail posts were not galvanized. Repaint rail posts. Prepare for replacement of rail posts within the next 6-10 years.

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7. Turf on west side is stressed. Re-sod as needed.
8. Underground diesel fuel tank presents a liability for groundwater contamination. Client should assess its comfort level with this liability.
9. City records list the Property as being in 100-year Flood Hazard zone. Client should assess its comfort level with this liability.
10. City records indicate that future infrastructure requirements may apply to the Property. Recommend further investigation to determine if Client has any liability for future assessments.

UTILITIES:

Description:

Potable water service is provided by the City of XXXXXXXX to the Property (subject condominium) from the main hospital; it enters the building in a 4" ductile iron pipe into the Mechanical Room in the Basement. There are two fire hydrants nearby, off the SE & SW corners of the building.

Sanitary sewer exits the building on the east side (clean-outs observed) and runs to public sewer provided by the City of XXXXXXXX. There is an underground acid waste receptor on the east side of the building, which reportedly drains to the public sanitary sewer. There is also a sump pit with duplex ejector pump (see Plumbing) for groundwater control off the SE corner of the building, which reportedly drains to the public storm sewer.

There appears to be no natural gas service to the building, as steam is supplied from the Central Utility Plant.

Electrical service is provided by Xcel Energy to the Property from the main hospital; it enters the building to Main Electric Panels as follows (see Electrical):

- Normal: Panel OD1A with sub-meter located in the 1st Floor Electric Room
- Critical: Panel OCH1A with sub-meter located in the 1st Floor Electric Room
- Life Safety: Panel OLH1A with sub-meter located in the 1st Floor Electric Room
- Equipment:
 - Panel OEHBA located in the Basement Mechanical Room
 - Panel UOLBA located in the Basement Electric Room
 - Disconnect for Elevator P-1 located in the Basement Elevator Equipment Room
 - Panel PH4H located in the Mechanical Penthouse

Telephone service is provided by QWEST to the Property from the main hospital; it enters the building to telephone switches in the 1st Floor Telephone Room and individual tenant suites. In addition, there is data service (wire and fiber-optic cabling) extending from the Data Center in the main hospital to Telephone Rooms on Basement & 1st Floor, and Server Rooms in individual tenant suites.

Significant physical deficiencies or concerns:

1. Acid waste receptor was not opened and inspected. Recommend the acid waste receptor system be inspected and serviced by a specialist (Normal Maintenance). Recommend further investigation to determine if liability for wastewater, ground or groundwater contamination exists.
2. There is no separate utility company electric meter for the building. Large equipment (for space cooling and distribution of cooling water & steam) is powered by the Central Utility Plant; these electric utility costs must be pro-rated and billed by the building management. Other electric loads (ventilation, lighting and local equipment loads) are sub-metered; these electric utility costs must be compiled and billed by the building management.
3. There is no separate utility company gas meter for the building. Large equipment (for steam generation) is served by gas service in the Central Utility Plant; these gas utility costs (space heating and domestic hot water) must be pro-rated and billed by the building management.

BUILDING EXTERIOR:

Description:

The building is a three-story plus basement structure of approx. 67,124 gross square feet (per Project Architect), currently used as a medical office building. It was apparently originally constructed in 2003.

Exterior walls are:

- Face brick
- Limestone column cladding, and wall accent north side
- Cast stone accent band, and cap on balcony walls (with painted steel guardrails) & columns
- Pre-finished metal paneling between windows 3rd Floor
- Pre-finished metal paneling at Mechanical Penthouse

Soffits are pre-finished metal paneling. Canopies at east side and SW corner are painted structural steel. Awning on north side is a clear anodized aluminum sunscreen.

Windows are:

- Fixed 1” double-pane insulating glass and coated spandrel glass (tempered where required by Code) set in 4” dark-gray pre-finished aluminum frame.

Exterior doors are:

- 1” double-pane insulating tempered glass set in wide-stile dark-gray pre-finished aluminum door in 4” aluminum storefront frame with rim or concealed vertical-rod panic exit device, overhead closer, threshold & weatherstrips. There is a Stanley automatic operator at the North Entry doors.
- (Balconies) 1” double-pane insulating tempered glass set in dark-gray pre-finished aluminum sliding patio door in aluminum frame with deadbolt, threshold & weatherstrips.

Significant physical deficiencies or concerns:

1. Paint coating on exterior field-painted steel (balcony railings, steel framing at canopies, roof coping) appears to be original to the building construction; this paint coating has an Expected Useful Life (EUL) of approx. 12 years. Prepare for repainting within the next 6-10 years.

FOUNDATION & STRUCTURE:

Description:

Underground foundations were not visible, but are reportedly cast-in-place (CIP) concrete drilled piers with concrete grade beams. Basement floor slab is concrete on grade, reportedly 5" thick.

Basement foundation walls are CIP reinforced concrete.

Vertical support for 1st Floor structure is CIP concrete columns (typically 18" x 18") and CIP concrete bearing walls.

Stairs are concrete fill on metal pan treads with steel stringers, risers and handrails.

1st Floor structure is 10½" thick CIP concrete flat slabs, bearing on concrete columns and bearing walls.

Vertical support for 2nd Floor, 3rd Floor and Roof structure is steel tube columns (typically 6"x6" and 8"x8").

2nd & 3rd Floor structure is 5¼" CIP concrete fill on 2" metal decking on steel wide-flange beams at 10' +/- o.c., bearing on steel tube columns.

Roof structure is 5½" CIP concrete fill on 2" metal decking on steel wide-flange beams at 10' +/- o.c., bearing on steel tube columns.

Significant physical deficiencies or concerns:

None.

ROOF:

Description:

Flat roof: Roofing system is a mechanically-attached white thermoplastic (TPL) membrane with heat-welded seams over an unknown amount of board insulation. Roof membrane is reportedly a replacement roof, installed ca. 2005.

Penetrations in the membrane are typically sealed with clamped rubber boots. There is one 30" x 96" roof hatch with interior ships-ladder in the north stair to access the roof. Parapet walls of flat roofs are constructed adhered TPL membrane turned up the inside wall, tucked under a field-painted sheet metal coping; joints in the coping are covered with sheet metal plates. There are attachments for window washer scaffold, and there is a manual hoist, 1150# capacity, on the west side of the roof.

Drainage of the roof is generally at 1/4" per foot from the north/south centerline to 6 combination roof drain & overflow drains; roof drains are connected to interior piping which drains to underground storm sewer; overflow drains are connected to interior piping which drains to the surface of the site. Condensate from the HVAC units in the Mechanical Penthouse drains directly onto the roof.

Sloped roof: Roofing is standing-seam enamel-coated steel. Roofing appears to be original to the building construction. Pitch is approx. 4 1/2-on-12. Sloped roofs drain to the surface of the site.

Balconies: Roofing is 2'x2' concrete pavers on pedestals over insulation over a drainage sheet over an unknown membrane. Drainage of the balconies is presumably to interior roof drains under the concrete pavers (not visible), with interior piping which drains to underground storm sewer.

Significant physical deficiencies or concerns:

1. Flat roof membrane likely has considerable time remaining on a warranty. Investigate transfer of roof warranty; however, it likely excludes "gales, windstorms, hurricanes & tornadoes" (a gale is any wind gust over 39 MPH, a windstorm >64 MPH, and a hurricane >73 MPH). So the warranty may not cover wind damage.
2. Evidence of minor leak problems was observed. Recommend a bi-annual inspection and repair of all leak possibilities (Normal Maintenance).

CONVEYING SYSTEMS (Elevators)

Description:

Elevator cabs: Floors are glue-down carpet. Walls are plastic laminate panels with a stainless steel handrail US32D finish. Ceilings are suspended stained wood panels with indirect fluorescent lighting. Inside doors, frames and trim are stainless steel US32D finish; outside doors and frames are stainless steel US32D finish. Elevators appear to be in compliance with all ADA requirements. Capacities are as follows:

- o Elevator P-1 (east): 3500#
- o Elevator P-2 (west): 4500#

Elevator motors: Equipment is in an Elevator Equipment Room in the Basement. Motors are Otis hydraulic, 125 fpm speed, 50 HP 480V 3-phase, and are apparently serviced under contract with Otis. Annual safety test is performed by Professional Elevator Inspections, Boulder, CO (last test 8/08).

Significant physical deficiencies or concerns:

None.

INTERIOR:

Description: The Property (subject condominium) is used primarily for medical offices and appears to be currently 100% occupied. Selected businesses were interviewed regarding their procedures for handling biohazardous and other toxic waste, and for the presence of regulated hazardous chemicals. Proper safety procedures appear to be employed by all selected businesses.

BASEMENT:

Lobby & Hallways: Floors are glue-down carpet. Walls are painted gypsum board with vinyl base. Ceilings are 2'x4' suspended acoustic tile 8'-10" high. Fire extinguishers are 5# ABC dry-chemical in a recessed wall cabinet, last serviced 2/08.

Bathrooms: Floors are ceramic tile. Walls are painted gypsum board with ceramic tile base and a ceramic tile wainscot 57" high. Ceilings are painted gypsum board 8'-0" high. Wheelchair space provided is > 60".

Tenant suites: Floors are typically glue-down carpet. Walls are vinyl wallcovering and painted gypsum board with vinyl base. Ceilings are 2'x4' suspended acoustic tile 8'-8" high.

Business in Suite #G10 conducts a laboratory operation; the following risks were observed or disclosed:

- Biohazardous waste disposed into Sharps containers, and then collected regularly by XXXXXXXXXXXXXXXXXXXX.
- Small quantities of test chemicals (Xylenes, formaldehyde, alcohol, acids & bases) are mostly consumed; small quantities are disposed of down the sink drains; some are collected regularly by XXXXXXXXXXXXXXXXXXXX.

1st FLOOR:

Lobby & Hallway: Floors are glue-down carpet. Walls are painted gypsum board and slate tile with stained wood base. Ceilings are painted gypsum board 9'-10" and 10'-7" high, and 2'x2' suspended acoustic tile 8'-8" high. Fire extinguishers are 5# ABC dry-chemical in a recessed wall cabinet, last serviced 2/08.

Bathrooms: Floors are ceramic tile. Walls are vinyl wallcovering with ceramic tile base and a ceramic tile wainscot 74" high. Ceilings are painted gypsum board 8'-11" high. Toilet partitions are enameled steel, floor mounted. Wheelchair space provided is > 60".

Tenant suites: Floors are typically glue-down carpet; Suite #110 has seamless linoleum. Walls are painted gypsum board with vinyl base. Insulation of exterior walls is unknown. Ceilings are 2'x4' suspended acoustic tile 8'-8" high.

Business in Suite #110 conducts a medical office operation; the following risks were observed or disclosed:

- Biohazardous waste disposed into Sharps containers, and then collected regularly by Medical Systems of Denver.

2nd FLOOR:

Lobby: Floors are glue-down carpet. Walls are painted gypsum board and slate tile with stained wood base. Ceilings are painted gypsum board 9'-10" high. Fire extinguishers are 5# ABC dry-chemical in a recessed wall cabinet, last serviced 2/08.

Bathrooms: Floors are ceramic tile. Walls are vinyl wallcovering with ceramic tile base and a ceramic tile wainscot 57" high. Ceilings are painted gypsum board 8'-0" high. Wheelchair space provided is > 60".

Tenant suite: Floors are typically glue-down carpet. Walls are vinyl wallcovering and painted gypsum board with vinyl base. Insulation of exterior walls is unknown. Ceilings are 2'x4' suspended acoustic tile 8'-8" high.

Business in Suite #200 conducts a medical office operation; the following risks were observed or disclosed:

- Biohazardous waste disposed into Sharps containers, and then collected regularly by XXXXXXXXXXXXXXXXXXXX
- Small quantities of a regulated chemical (Gluteraldehyde) are mostly consumed; small quantities are diluted and disposed of down the sink drains.

3rd FLOOR:

Lobby & Hallway: Floors are glue-down carpet. Walls are painted gypsum board and slate tile with stained wood base. Ceilings are painted gypsum board 9'-10" high, and 2'x2' suspended acoustic tile 8'-8" high. Fire extinguishers are 5# ABC dry-chemical in a recessed wall cabinet, last serviced 2/08.

Bathrooms: Floors are ceramic tile. Walls are vinyl wallcovering with ceramic tile base and a ceramic tile wainscot 57" high. Ceilings are painted gypsum board 8'-0" high. Wheelchair space provided is > 60".

Tenant suites: Floors are typically glue-down carpet; Suite #310 has seamless linoleum. Walls are painted gypsum board with vinyl base. Insulation of exterior walls is unknown. Ceilings are 2'x4' suspended acoustic tile 8'-8" high.

Business in Suite #310 conducts a medical office operation; the following risks were observed or disclosed:

- Biohazardous waste disposed into Sharps containers, and then collected regularly by Stericycle.

Interior doors are:

- 1^{3/4}" stained solid core wood (maple veneer) door in painted steel frame with heavy-duty cylindrical lever lockset US26D finish
- 1^{3/4}" painted hollow metal door in painted steel frame with heavy-duty cylindrical lever lockset US26D finish.

Significant physical deficiencies or concerns:

1. Carpeting in common areas appears to be original to the building construction; this carpeting has an Expected Useful Life (EUL) of approx. 12 years. Prepare for replacement of carpet as needed within the next 6-10 years.

HVAC (Heating, Ventilating & Air Conditioning):

Description:

HEATING: Heating is provided to the entire building by steam circulated from the Central Utility Plant elsewhere on the campus. Central Utility Plant presumably utilizes gas-fired steam boiler(s); steam is then circulated through a steam pressure-reducing station to (a) a heat exchanger in the Basement Mechanical Room of the building that transfers the heat to a heating water system, which is then pumped to heating coils in air handling units (see Ventilation) in the Mechanical Penthouse of the building, to re-heat coils in fan-powered terminal (variable air volume = VAV) boxes (see Ventilation) located above the ceiling throughout the building, and to one cabinet unit heater in the ceiling of the east entry, and (b) to a hot water generator (similar to a heat exchanger) that transfers the heat to a domestic hot water system (see Plumbing). The following equipment was observed:

- PRV-B-2: Spence steam pressure-reducing station, located in Basement Mechanical Room
- HX-4: Bell & Gossett steam-to-hot water shell + tube heat exchanger, 2452 MBTUH capacity, located in Basement Mechanical Room
- PB-05: Bell & Gossett base-mounted heating water pump, 5 HP 65 GPM with variable frequency drive (VFD), located in Basement Mechanical Room
- P-4-1: Bell & Gossett in-line heating water pump, 1 HP 57 GPM, located in Mechanical Penthouse
- P-4-2: Bell & Gossett in-line heating water pump, 1 HP 57 GPM, located in Mechanical Penthouse
- CP-2: Armstrong duplex base-mounted condensate lift pumps, 9 GPM, located in Basement Mechanical Room
- CUH-104: cabinet unit heater, located in the ceiling of the east entry

Hot water piping is black iron, insulated. Construction drawings show a steam humidification system, and redundant heat exchanger and recirculating pumps, but this equipment was not installed.

COOLING: Cooling is provided to the entire building by chilled water circulated from the Central Utility Plant elsewhere on the campus. Central Utility Plant presumably utilizes large electric centrifugal chiller(s) which reject heat to outdoor cooling tower(s); chilled water is then circulated to chilled water coils in air handling units (see Ventilation) in the Mechanical Penthouse of the building, and to small fan coil units (FCU's) suspended from the structure. The following equipment was observed:

- PB-06: Bell & Gossett base-mounted chilled water pump, 10 HP 60 GPM with VFD, located in Basement Mechanical Room
- FCU-B02: MagicAire FCU, 3-ton cooling capacity, located in Basement Mechanical Room
- FCU-B05: MagicAire FCU, 2-ton cooling capacity, located in Elevator Equipment Room in the Basement.

VENTILATION: Conditioned air is circulated throughout the building by large custom air handling units (AHU's) with supplemental hot water heating coils and chilled water cooling coils; fresh air is provided by outside air intakes through the AHU's. Conditioned air is distributed via sheet metal and insulated flexible ducting to terminal (variable air volume = VAV) boxes; it appears there is a VAV box for every 400+/- square feet of occupied space.

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Return air is provided to the RTU's via the ceiling plenum. In addition, there are exhaust fans located on the roof providing general ventilation and specific exhaust from the lab in Suite #G10. The following equipment was observed:

- (2 each) PH-4: Temptrol custom AHU, located in the Mechanical Penthouse, with supplemental hot water heating coils 1055 MBTUH and chilled water cooling coils 1350 MBTUH, with circulation fans as follows:
 - Supply fan 100 HP, 95,000 CFM with VFD
 - Return fan 30 HP, 70,000 CFM with VFD
- (100+/- each) TB: Krueger fan-powered terminal (VAV) box, with hot water re-heat coils, heating capacity varying from 5.6 to 64.1 MBTUH, located above the ceilings
- (50+/- each) TB: Krueger VAV box, for air modulation only, located above the ceilings
- EF-R-06: Aerovent general exhaust fan, 5 HP 6000 CFM, located on the roof
- EF-R-07: Aerovent general exhaust fan, 3 HP 5000 CFM, located on the roof
- EF-L-01: Aerovent lab exhaust fan, 15 HP 10000 CFM, located on the roof.

CONTROLS: Heat exchanger, FCU's, cabinet unit heater, AHU's and VAV boxes are controlled by a Johnson Controls METASYS digital energy management system; Main Control Panel is presumably located in the Central Utility Plant; local control panels are located in the Basement Mechanical Room and the Mechanical Penthouse.

Systems for the subject Property have to-date been maintained by XXXXXXXXXXXXXXXX; however, in the future the systems will apparently be maintained under a service contract with MTECH Mechanical Technologies Group, Boulder, CO. Equipment all appears to be original to the building construction. Expected Useful Life (EUL) of HVAC equipment is shown on Page 25.

Capacity calculations:

Cooling: $67,124 \text{ SF} / 225 \text{ tons} = 1 \text{ ton per } 298 \text{ SF}$
 AMPLE range for this type of building

Heating: $2452 \text{ MBTUH} / 67,124 \text{ SF} = 37 \text{ BTUH per SF}$
 SUFFICIENT range for this type of building.

Significant physical deficiencies or concerns:

1. In-line pumps (P-4-1 & P-4-2) are original to the building construction; these units have a EUL of approx. 12 years. Prepare for replacement of in-line pumps within the next 6-10 years.
2. Occupants complained about uneven heating & cooling; some of this is due to rooms not having individual thermostatic control. Recommend an air balance (adjustment of air flows through supply diffusers) be performed, to verify that system is operating as designed.

PLUMBING:

Description:

Potable water service enters the building in a 4" ductile iron pipe into the Basement Mechanical Room. Interior water supply piping is copper, insulated. Hot water is provided by a steam-to-hot water generator (similar to a heat exchanger) that transfers the heat to the domestic hot water system. The following equipment was observed:

- DHWG-3: BTUMAX steam-to-hot water generator, 1800 MBTUH capacity, located in the Basement Mechanical Room
- PB-10: Bell & Gossett in-line recirculating pump, 0.75 HP 15 GPM, manufactured ca. '07 (replacement), located in Basement Mechanical Room.

Waste & vent piping above grade is Tyler no-hub cast iron. Acid waste piping is Schedule 40 polyvinyl chloride (PVC). Interior roof drain piping is Tyler no-hub cast iron. There are several sump pits in the Basement to control groundwater:

- Sewage ejector pit with duplex submersible pump SE-2, Weil 4 HP each with high water alarm, located in the Basement Mechanical Room
- Acid Waste ejector pit with duplex submersible pump AWE-1, Camac 1.5 HP each with high water alarm, located in the Basement Mechanical Room
- Sump pit with duplex submersible pump for groundwater control, Weil, located in Basement Elevator pit
- Sump pit with duplex submersible pump SP-4 for groundwater control, Weil, located off the SE corner of the building.

Plumbing fixtures are:

- Sinks in 1st Floor Bathrooms are vitreous china in Corian countertop with auto sensor faucet
- Sinks in other bathrooms are typically vitreous china in plastic laminate countertop with single-lever knob faucet (no countertops on 3rd Floor)
- Lab and Exam Room sinks are typically stainless steel with double-lever faucet
- Toilets in 1st Floor Bathrooms are commercial wall-hung with flush valve with auto sensor control
- Toilets in other bathrooms are commercial floor-mounted with flush valve with auto sensor control
- Urinals are waterless
- Water coolers are Elkay, handicap-style, US32D finish, in a recessed wall alcove
- Mop basins in Janitor's Closets are molded terrazzo.

Bathrooms appear to be in compliance with all ADA (Title III of the Americans with Disabilities Act) requirements.

Fire sprinkler service enters the building from the main hospital in a 6" service into the Basement, and distributes in 2 zones using black iron pipe. One zone is for the 4" standpipe in the north stair, and one zone is for the 4" standpipe in the south stair and 2½" riser through a gate valve, tamper switch and flow switch to overhead sprinklers on each floor. The Fire Department pumper connection is located on the NE corner of the building. System was last serviced and tested 3/08 by Fire Inspection Services, Wheat Ridge, CO.

Equipment all appears to be original to the building construction, except pump PB-10. Expected Useful Life (EUL) of HVAC equipment is shown on Page 25.

Significant physical deficiencies or concerns:

1. Submersible pumps appear original to the building construction; these units have a EUL of approx. 12 years. Prepare for replacement of submersible pumps within the next 6-10 years.

ELECTRICAL:

Description:

Electrical service is provided by Xcel Energy to the Property from the main hospital as follows:

NORMAL SYSTEM: From Main Switchboard MDS-1 (3000 amp 480 volt 3-phase 4-wire) with Xcel Energy demand meter in the main hospital to:

- Panel OD1A: 1200A 277/480V 3Φ 4W 24-circuit panel (MB = 1200A) with sub-meter, located in 1st Floor Electric Room, with breakers as follows:
 - 225A breaker serving Panel OHBA: 225A 277/480V 3Φ 4W 42-circuit panel (MB = 225A), located in Basement Electric Room, for exterior lights & pumps, and with breakers serving:
 - 45KVA 480/240V transformer serving Panel OLBA: 100A 120/208V 3Φ 4W 42-circuit panel (MB = 100A), located in Basement Electric Room, for Lab outlets
 - 45KVA 480/240V transformer serving Panel OLBB: 225A 120/208V 3Φ 4W 42-circuit panel (MB = 150A), located in Basement Electric Room, for Basement outlets
 - 175A breaker serving Elevator P-2
 - 225A breaker serving Panel OH1A: 225A 277/480V 3Φ 4W 42-circuit panel (MB = 225A), located in 1st Floor Electric Room, for 1st Floor lights, and with breaker serving:
 - 75KVA 480/240V transformer serving Panel OL1A: 225A 120/208V 3Φ 4W 84-circuit panel (MB = 225A), located in 1st Floor Electric Room, for 1st Floor outlets
 - 225A breaker serving Panel OH2A: 225A 277/480V 3Φ 4W 42-circuit panel (MB = 225A), located in 2nd Floor Electric Room, for 2nd Floor lights, and with breaker serving:
 - 75KVA 480/240V transformer serving Panel OL2A: 225A 120/208V 3Φ 4W 84-circuit panel (MB = 225A), located in 2nd Floor Electric Room, for 2nd Floor outlets
 - 225A breaker serving Panel OH3A: 225A 277/480V 3Φ 4W 42-circuit panel (MB = 225A), located in 3rd Floor Electric Room, for 3rd Floor lights, and with breaker serving:
 - 75KVA 480/240V transformer serving Panel OL3A: 225A 120/208V 3Φ 4W 84-circuit panel (MB = 225A), located in 3rd Floor Electric Room, for 3rd Floor outlets.

CRITICAL SYSTEM: From Main Switchboard MDS-2 (3000A 480V 3Φ 4W) with Xcel Energy demand meter, through Panel CDH1A in the main hospital to:

- Panel OCH1A: 225A 277/480V 3Φ 4W 42-circuit panel (MB = 225A) with sub-meter, located in the 1st Floor Electric Room, for 1st Floor lights, and with breakers serving:
 - Panel OCHBA: 100A 277/480V 3Φ 4W 42-circuit panel (MB = 100A) with sub-meter, located in Basement Electric Room, for Basement lights, and with breaker serving:
 - 45KVA 480/240V transformer serving Panel OCLBA: 150A 120/208V 3Φ 4W 42-circuit panel (MB = 150A), located in Basement Electric Room, for Basement outlets
 - 45KVA 480/240V transformer serving Panel OCL1A: 150A 120/208V 3Φ 4W 84-circuit panel (MB = 150A), located in 1st Floor Electric Room, for telecom outlets and VAV's, and with breaker serving:
 - Panel PH4L: 30A 120/208V 3Φ 4W 12-circuit panel (MB = 30A), located in Mechanical Penthouse, for PH lights & outlets.

LIFE SAFETY SYSTEM: From Main Switchboard MDS-2 (3000A 480V 3Φ 4W), through Panel LDH1A in the main hospital to:

- Panel OLH1A: 100A 277/480V 3Φ 4W 42-circuit panel (MB = 100A) with sub-meter, located in the 1st Floor Electric Room, for emergency lights, and with breaker serving:
 - 30KVA 480/240V transformer serving Panel OLL1A: 100A 120/208V 3Φ 4W 42-circuit panel (MB = 100A), located in 1st Floor Electric Room, for fire alarm.

EQUIPMENT SYSTEM: From Main Switchboard MDS-2 (3000A 480V 3Φ 4W), through Panel EDH1AA in the main hospital to:

- Panel PH4H: 600A 277/480V 3Φ 4W 14-circuit panel (MB = 600A), located in the Mechanical Penthouse, for AHU's & pumps

And through Panel EDH1BB in the main hospital to:

- 175A 480V disconnect for Elevator P-1
- Panel OEHBA: 400A 277/480V 3Φ 4W 42-circuit panel (MB = 400A), located in the Basement Electric Room, for FCU's and sump pumps
- Through a power converter to Panel UOLBA: 150A 120/208V 3Φ 4W 84-circuit panel (MB = 150A), located in Basement Electric Room, for Lab outlets.

Reportedly there is emergency electric service, provided by diesel emergency generators in the main hospital, serving the Critical and Life Safety Systems. No uninterruptible power supply (UPS) battery-backup system for the subject Property was observed.

Wiring is copper in conduit and flexible metallic cable (BX). There is a complete grounding system in the building through a master ground bar, including a ground to the copper water pipe at the water service entrance, an earth ground, and a ground to the building steel. Outlets in the Bathrooms and near sinks are GFCI-protected. There is an extensive lightning protection system on the roof.

Exterior lighting is provided by:

- High-intensity discharge (HID) dual & single-head fixtures on 20'+/- high painted steel poles throughout the parking areas
- HID single-head fixtures on 14'+/- high painted steel poles along the sidewalks
- HID wall packs mounted on the building
- Recessed compact fluorescent (CFL) high-hats at soffits.

Interior light fixtures are typically:

- 2'x4' 3-tube 34W T-8 recessed fluorescent troffer with flat acrylic lens
- Recessed compact fluorescent (CFL) high-hat
- 8' long 2-tube 34W T-8 suspended indirect fluorescent fixture
- 2'x4' and 2'x2' 2-tube 34W T-8 recessed indirect fluorescent troffer
- 4' long 2-tube 34W T-8 fluorescent fixture in light alcove.

Exit lights and emergency lighting have been installed.

Telephone service is provided by QWEST to the Property from the D'Mark in the main hospital; it enters the building to telephone switches in the 1st Floor Telephone Room and individual tenant suites, thence via CAT-5E UL-rated cabling to RJ-45 voice outlets in each suite. Data service (wire and fiber-optic cabling) extends from the Data Center in the main hospital to patch

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panels in Telephone Closets on Basement & 1st Floor, and Server Rooms in individual tenant suites, thence via CAT-5E UL-rated data cabling to RJ-45 data outlets in each suite.

There is an electronic fire alarm system, complete with pull stations, horn/strobe alarms with speakers, smoke detectors, duct detectors, remote annunciator, and a Notifier fire alarm control panel (FACP) located in the 1st Floor Electric Room, remotely-monitored by Safe Systems Inc., Boulder, CO. System was last inspected and tested 3/08 by Fire Inspection Services, Wheat Ridge, CO.

Capacity calculation:

$2775 \pm \text{ amps} \times 480 \text{ volts} \times 1.732 = 2307 \text{ kilowatts}$

$2307 \text{ kilowatts} / 67,124 \text{ SF} = 34.4 \text{ watts per SF}$

AMPLE range for this type of building.

Significant physical deficiencies or concerns:

None.

LIMITATIONS OF OBSERVATIONS

1. This Capital Reserve Evaluation is conducted in general accordance with ASTM Standard E2018-01 for Property Condition Assessments. This survey will not identify every deficiency in the property; unexpected repairs should still be anticipated. This Capital Reserve Evaluation should not be considered as a guarantee or warranty of any kind.
2. The scope of the walk-through survey is the visually-accessible components of the improvements to the Property. The survey is not a technically-exhaustive investigation. A representative sample of building components are viewed in areas that are accessible at the time of the survey. Many building components are concealed behind finished surfaces, furniture and/or storage, and cannot be observed. No dismantling or destructive testing of building components, or test operation of building equipment and systems is performed.
3. Environmental comments provided herein do not constitute a Phase I investigation, and as such does not qualify the Client for the “Innocent Landowner” defense. While Consultant may comment upon environmental hazards observed, this inspection and report does not qualify as a certified mold, asbestos or radon survey.
4. This survey constitutes a Tier I level of ADA due diligence: visual accessibility survey only.
5. This Consultant does not purport to be registered or licensed as a professional engineer or architect, industrial hygienist, building code specialist, or scientific testing agency. This Capital Reserve Evaluation is not to be construed as a building code, safety, regulatory or environmental compliance inspection.
6. This Capital Reserve Evaluation only addresses significant physical deficiencies to the extent that one or more of the following applies:
 - Repair will likely cost more than \$3,000
 - The issue is likely to significantly affect the long-term value of the property
 - The issue is a material building code or life-safety violation, or bodily-injury liability.
7. Not included in the scope of this survey are services such as:
 - a. Document review of property history or seismic hazard
 - b. Assessment of geological, geotechnical or hydrological conditions
 - c. Calculation of structural capacities or adequacy
 - d. Detailed calculation of heating/cooling capacities, adequacy or efficiency
 - e. Detailed calculation of electrical capacities or adequacy
 - f. Phase I assessment of environmental hazards
 - g. Analysis and testing of indoor air quality, including the presence of carbon monoxide, carbon dioxide and radon gas
 - h. Sampling and laboratory analysis to determine the presence of hazardous materials
 - i. Testing of any nature, including domestic water quality, fire sprinkler systems, gas leaks and piping condition, or test operation of any mechanical, electrical, plumbing, kitchen, laundry or other equipment
 - j. Assessment of any specialized systems, such as security systems, water conditioning systems, pools, spas, and the like.

CONSULTANT'S QUALIFICATIONS

FRED L. THRALL

EDUCATION:

- BS in Civil Engineering (structural engineering major): Virginia Tech
- Masters in Business Administration (MBA): George Mason University
- Training in environmental inspections: Stewart Environmental
- Completion of Commercial Inspection Course by Inspection Training Associates

ACCREDITATION:

- LEED 2.0 Accredited Green Building Professional: US Green Building Council

EXPERIENCE: 40+ years experience in all phases of commercial real estate development.

- **Commercial Building Inspector**, advising clients in the purchase & construction of commercial buildings from 700 SF to 400,000 SF such as:
 - 820 Main Street, Longmont, CO (66,000 SF historic school building built 1926)
 - 175 S. Union Blvd, CO Springs, CO (270,000 SF hospital)
 - Cimarron Plaza, Ft. Collins, CO (43,000 SF shopping center)
 - 1285 S. Fordham, Longmont, CO (102,000 SF manufacturing facility)
 - 275 S. Cherry Street, Denver, CO (11-story 135,000 SF office building)
- **Asset Manager** of portfolio of 1,700,000 SF (42 buildings, 75 tenants) of light manufacturing & office space. Conducted complete inspections annually of each building.
- **Leasing Manager**; handling commercial lease transactions of up to \$85,000,000 in value such as:
 - Maxtor Corporation (450,000 SF office and R&D)
 - Gart Sports (25,000 SF retail)
 - Office Depot (28,000 SF retail)
- **Partner in a real estate development** firm, creating projects up to \$50,000,000 in value including:
 - One Bethesda Center (12-story 340,000 SF urban mixed-use center)
 - 1750 Old Meadow Rd. (7-story 200,000 SF office building)
- **Vice President / Project Manager of commercial construction** firms, building projects such as:
 - Kettering Jr. High School (135,000 SF)
 - The Barns at Wolf Trap (performing arts complex)
 - Juvenile Detention Center (State of Maryland)
 - Landover Industrial Center (225,000 SF)

EXPECTED USEFUL LIFE of BUILDING COMPONENTS

The useful lives of the listed items vary considerably with their initial quality and level of maintenance. The list is based on good quality components and a level of maintenance over the useful life that is consistent with manufacturer specifications. Life Cycle stated is average; components may fail sooner or later than predicted. Components may be removed sooner than predicted due to changes in use or conditions.

EUL = Expected Useful Life.

CATEGORY	COMPONENT	LIFE CYCLE	MEDIAN EUL
Site Improvements	Concrete pavement	15-35	25
	Asphalt pavement	10-30	20
	Concrete retaining walls	40-60	50
	Masonry retaining walls	20-30	25
	Chain link fencing	10-20	15
	Wood fencing	8-15	12
Exterior wall systems	Masonry exterior	40-80	60
	Prefinished metal paneling	30-50	40
	Wood siding	15-25	20
	Aluminum siding	25-35	30
	EIFS synthetic stucco	15-25	20
	Paint on steel & wood	10-15	12
	Paint on masonry or concrete	10-20	15
	Caulking (vertical)	10-25	18
Caulking (flat)	5-10	8	
Windows & exterior doors	Aluminum windows	25-35	30
	Wood windows	30-40	35
	Aluminum & glass doors	20-30	25
	Steel doors	15-25	20
	Overhead doors	20-40	30
Roofing systems	Built-up asphalt	10-25	18
	Elastomeric (EPDM & TPL)	15-30	22
	Polyurethane foam	10-20	15
	Asphalt shingles	20-30	25
	Metal standing-seam	30-50	40
Elevators	Hydraulic or geared traction	20-40	30
Interior finishes	Carpet	8-15	12
	Vinyl flooring	10-25	18
	Ceramic & stone flooring	20-40	30
	Demountable partitions	15-30	22
	Paint on walls	10-25	18
	Paint on ceilings	15-30	22
	Acoustical ceiling grid	20-30	25
	Acoustical ceiling tile	10-20	15
	Interior doors	25-35	30
	Door hardware	10-20	15

HVAC systems	Rooftop package units	10-25	18
	Split-system condensers	10-25	18
	Heat pump condensers	10-25	18
	Evaporative coolers	15-25	20
	Package chillers	25-30	28
	Cooling towers (metal)	15-25	20
	Heat exchangers	25-30	28
	Gas-fired water boilers	20-40	30
	Electric water boilers	15-20	18
	Gas-fired steam boilers	30-40	35
	Gas-fired furnace / fan coil	10-25	18
	Gas-fired unit heaters	10-20	15
	Gas-fired radiant heaters	15-25	20
	Centrifugal fans	20-30	25
	Axial fans	15-25	20
	Bath fans	10-20	15
	VAV boxes	15-25	20
	Dampers	15-25	20
	Ductwork	30-50	40
	Insulation	10-30	20
Base-mounted pumps	15-25	20	
In-line pumps	10-15	12	
Control systems	10-25	18	
Plumbing systems	Steel or iron piping	30-50	40
	Copper piping	25-40	32
	Water heaters (gas & electric)	10-20	15
	Submersible pumps	10-15	12
	Fixtures	15-30	22
	Fire sprinkler valves	25-35	30
Electrical systems	Transformers	25-35	30
	Generators	15-30	22
	Switchboards & panels	30-40	35
	Motors	15-25	20
	Power wiring	25-45	35
	Fixtures	10-20	15
	Communications cabling	10-20	15
Fire alarm systems	15-25	20	

Sources:

1. Arizona School Facilities Board, 2003
2. Tolin Mechanical Systems Company, Denver, CO, 2007
3. New York State Division of Housing & Community Renewal, 1990

Fred L. Thrall, LLC

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APPENDIX #1: SITE MAP

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APPENDIX #2: PHOTOGRAPHS