## Building Disciplines Replacement Cost Summary

<table>
<thead>
<tr>
<th>TRADE</th>
<th>POOR ($) (1-5 YEARS)</th>
<th>FAIR ($) (5-10 YEARS)</th>
<th>GOOD ($) (10-20 YEARS)</th>
<th>EXCELLENT ($) (20+ YEARS)</th>
<th>TOTAL ($)</th>
<th>$/GSF</th>
<th>PERCENT OF BUILDING TOTAL (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MECHANICAL</td>
<td>3,941,000</td>
<td>916,800</td>
<td>4,857,800</td>
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<td>8,714,600</td>
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<td>PLUMBING</td>
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<td>3,499,200</td>
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<td>FIRE PROTECTION</td>
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<td>2,070,000</td>
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<td><strong>TOTAL</strong></td>
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<td><strong>142,500</strong></td>
<td><strong>1,054,300</strong></td>
<td><strong>3,004,400</strong></td>
<td><strong>13,591,300</strong></td>
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<td>7.8</td>
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**No Critical Items Identified for This Building**

*Note: Cost Estimates are Construction Costs are in 2013 dollars to Replace in Kind unless otherwise noted.*
<table>
<thead>
<tr>
<th>SYSTEM/COMPONENT</th>
<th>POOR (1-5 YEARS)</th>
<th>FAIR (5-10 YEARS)</th>
<th>GOOD (10-20 YEARS)</th>
<th>EXCELLENT (20+ YEARS)</th>
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<tbody>
<tr>
<td><strong>CHILLED WATER SYSTEM</strong></td>
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<td>Chilled Water Piping</td>
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<td><strong>PROCESS COOLING SYSTEM</strong></td>
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<tr>
<td>Condenser Water Loop and Refrigeration Units for Cold Rooms</td>
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<td>Small Process Cooling Systems</td>
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<td><strong>STEAM AND CONDENSTATE SYSTEM</strong></td>
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<tr>
<td>Steam and Condensate Piping (1960 &quot;west&quot; building)</td>
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<td>313,900</td>
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<td>313,900</td>
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<tr>
<td>Steam and Condensate Piping (1965 &quot;east&quot; building)</td>
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<td>313,900</td>
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<tr>
<td><strong>HEAT EXCHANGER</strong></td>
<td></td>
<td></td>
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<tr>
<td>Heat Exchanger 1 (Basement Insectary)</td>
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<tr>
<td>Heat Exchanger 2 (AHU preheat in 1960 &quot;east&quot; penthouse)</td>
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<td>Heat Exchanger 3 (VAV/CAV reheat in 1960 &quot;east&quot; penthouse)</td>
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<td>60.AHU-1</td>
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<td><strong>AIR HANDLER</strong></td>
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<td>64.AHU-1</td>
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<td>155,800</td>
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<td>64.AHU-2</td>
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<td>165,300</td>
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<td>64.AHU-4</td>
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<td>64.AHU-5</td>
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<td>AHU P-3 (basement Insectary)</td>
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<tr>
<td></td>
<td>POOR (1-5 YEARS)</td>
<td>FAIR (5-10 YEARS)</td>
<td>GOOD (10-20 YEARS)</td>
<td>EXCELLENT (20+ YEARS)</td>
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<td><strong>NATURAL GAS SYSTEM</strong></td>
<td>Natural Gas Piping</td>
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<td>Mechanical Controls</td>
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<tr>
<td><strong>MECHANICAL TOTAL</strong></td>
<td>3,941,000</td>
<td>916,800</td>
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<td></td>
<td>4,857,800</td>
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<tr>
<td>% OF TOTAL</td>
<td>81.1</td>
<td>18.9</td>
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</table>
Both 1960 and 1965 portions of the building are served by a single chilled water supply and return from the campus chilled water system. The size of the pipes is approximately 8". The piping enters the basement of the 1965 building at the north side of the building. The chilled water is metered. There are no chilled water pumps.

Chilled water in this building serves AHUs (the building is fully air conditioned) and cooling for a condenser water loop (via plate and frame heat exchanger). Chilled water does not appear to be used for any lab process or cold room.

The campus chilled water piping is from 2002, replacing a steam absorption chilled that used to be in a pit in basement mechanical room 30.

<table>
<thead>
<tr>
<th>Overall Condition</th>
<th>Poor</th>
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</thead>
<tbody>
<tr>
<td>Date Installed</td>
<td>01/01/1965</td>
</tr>
<tr>
<td>Remaining Useful Life</td>
<td>Exceeded Nominal Useful Life: 30 Years</td>
</tr>
<tr>
<td>Replacement Cost</td>
<td>$246,800</td>
</tr>
</tbody>
</table>

Chilled water supply and return entrance to the building.

Chilled water meter.

Chilled water cooling coil piping connections at AHU in penthouse.
<table>
<thead>
<tr>
<th>Item ID</th>
<th>299668</th>
</tr>
</thead>
</table>
| Description | The 1965 building has a condenser water loop that provides condenser water to remote DX refrigeration units that serve cold rooms in the center core area of each floor. The heat exchanger and pumping package is located in the basement mechanical room of the 1965 portion of the building. The remote water-cooled DX refrigeration units are located in closets adjacent to the cold rooms. Typically there are four refrigeration units per floor, on floors 1 through 5.

This system dates to 1965 original construction but the piping was recently replaced. The condenser water loop was previously cooled by a cooling tower but was recently converted to be cooled by the chilled water system, using a plate-and-frame heat exchanger. Only the duplex pumping package and associated piping appears to be 1965 original. The DX refrigeration units are of varying age and typically are 208V / 3phase powered. |
| Overall Condition | Poor |
| Date Installed | 01/01/1965 |
| Remaining Useful Life | Exceeded Nominal Useful Life: 30 Years |
| Replacement Cost | $298,600 |
Plate and frame heat exchanger for condenser water loop, in the basement of the 1965 portion of the building.

One of two pumps for the condenser water loop, in the basement of the 1965 portion of the building.

Typical cold room, at 1st floor building core.

Typical mechanical room for water-cooled DX cooling unit.

Multiple cooling units for cold rooms, in mechanical room 146.

Condenser water piping for cold room cooling units, in mechanical room 146.
Refrigeration unit serving room 142.
**Small Process Cooling Systems Assessment Data**

<table>
<thead>
<tr>
<th>Item ID</th>
<th>299685</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Other than the water-cooled DX units serving the cold rooms in the 1965 building (see condenser water description), there are few other free standing process cooling systems. Adding Morrill Hall to the campus chilled water loop appears to have eliminated a number of small DX process cooling systems. And some no longer appear to be in use. In the 1960 building the one cold room that was accessible was not being cooled. In the penthouse, five small air-cooled condensing units were seen on the floor, rejecting their heat into the penthouse. Some of these units may no longer be in use. No process condensing units were seen on the roof.</td>
</tr>
<tr>
<td>Overall Condition</td>
<td>Poor</td>
</tr>
<tr>
<td>Date Installed</td>
<td>1/1/1965</td>
</tr>
<tr>
<td>Remaining Useful Life</td>
<td>Exceeded Nominal Useful Life: 30 Years</td>
</tr>
<tr>
<td>Replacement Cost</td>
<td>$20,400</td>
</tr>
<tr>
<td>Comments</td>
<td>This information is based on existing drawings and field survey of the basement, penthouse, roof, and one cold room in the 1960 building. Typically the lab spaces could not be accessed due to the live animals being stored there and the sensitive research being conducted there.</td>
</tr>
</tbody>
</table>
Air-cooled condensing unit in 1960 penthouse.

Air-cooled condensing unit in 1965 penthouse.

Two air-cooled condensing unit in 1965 penthouse.

Air-cooled condensing unit in 1965 penthouse.
### Steam and Condensate Piping (1960 "West" Building) Assessment Data

<table>
<thead>
<tr>
<th>Item ID</th>
<th>299662</th>
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<tbody>
<tr>
<td>Description</td>
<td>The 1960 portion of the building and the 1965 portion of the building are each served by a different steam and condensate line from the campus steam system. Steam is used in this building for AHU preheat coils, zone booster coils, lab processes as described below, perimeter radiation, humidifiers for animal hold facilities, and two newer steam-to-hot water heat exchangers serving zone reheats and AHU preheats in the penthouse. Labs in the 1960 building appear to have steam available at fume hoods for lab use. High pressure steam is also used in the 1965 building in some fume hoods, but steam is apparently used for equipment such as cage washers, autoclaves, and sterilizers. The 1960 building has two condensate receivers, a duplex vacuum-type condensate receiver in room 6 in the basement that appears to serve most of the building, and a duplex condensate receiver in basement room 6A that appears to serve the distribution piping in the room. These are both newer than original construction. The condensate is metered. Most all original construction steam and condensate return piping seen in this building appears to be covered with an insulation that may contain asbestos. An asbestos warning sticker appears on some of the piping.</td>
</tr>
<tr>
<td>Overall Condition</td>
<td>Poor</td>
</tr>
<tr>
<td>Date Installed</td>
<td>1/1/1963</td>
</tr>
<tr>
<td>Remaining Useful Life</td>
<td>Exceeded Nominal Useful Life: 30 Years</td>
</tr>
<tr>
<td>Replacement Cost</td>
<td>$313,900</td>
</tr>
<tr>
<td>Comments</td>
<td>Humidifiers serving animal holding facilities could not be accessed to determine their condition or method of operation. The steam traps are reported to be actively maintained.</td>
</tr>
</tbody>
</table>
Steam piping entrance in basement of 1960 building.

Steam distribution piping and valves in basement room 6A of 1960 building.

Duplex condensate receiver in basement room 6A of 1960 building.

Duplex vacuum-type condensate receiver in basement room 6 of 1960 building.

Cabinet unit heater in 1960 building is heated by steam.

Fin tube (steam) heater 6th floor unisex toilet, in 1960 building.
Cabinet unit heater in the 1960 building stairs is heated by steam.
### Steam and Condensate Piping (1965 "East" Building) Assessment Data

<table>
<thead>
<tr>
<th>Item ID</th>
<th>299663</th>
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</thead>
<tbody>
<tr>
<td>Description</td>
<td>The 1960 portion of the building and the 1965 portion of the building are each served by a different steam and condensate line from the campus steam system. The 1965 building has a 10&quot; low pressure steam line and a 3&quot; condensate return line that enters the building at the north side of the building, in the basement mechanical room. The 1965 building also has a 3&quot; high pressure steam line that is apparently used with sterilizers/autoclaves (see below). Steam is used in the 1965 building for most AHU heating coils, most zone reheat coils, perimeter radiation, domestic hot water heating, lab/process work as described below, plus a newer steam-to-hot water heat exchanger used in a newer AHU and some newer zone reheat coils (for the basement Insectary area). Labs in the 1965 building do not appear to use steam in any fume hood, but high pressure steam is apparently used for lab equipment such as cage washers, autoclaves, and sterilizers. The 1965 building has a vacuum-type condensate receiver in the basement. This is newer than original construction. The condensate is metered. There is also a small duplex condensate receiver at AHU P-3 in the basement, serving the steam-to-hot water heat exchanger and humidifier that serve this AHU. Most all original construction steam and condensate return piping seen in this building appears to be covered with an insulation that may contain asbestos. An asbestos warning sticker appears on some of the piping.</td>
</tr>
<tr>
<td>Overall Condition</td>
<td>Poor</td>
</tr>
<tr>
<td>Date Installed</td>
<td>01/01/1965</td>
</tr>
<tr>
<td>Remaining Useful Life</td>
<td>Exceeded Nominal Useful Life: 30 Years</td>
</tr>
<tr>
<td>Replacement Cost</td>
<td>$313,900</td>
</tr>
<tr>
<td>Comments</td>
<td>The steam traps are reported to be actively maintained.</td>
</tr>
</tbody>
</table>
Low pressure steam and condensate piping entrance in basement room 30A in 1965 building. The main steam valves are leaking.

Duplex vacuum-type condensate receiver in basement mechanical room 30 in 1965 building. The main steam valves are leaking.

Pressure reducing valve for high pressure steam in basement room 30A in 1965 building. The main steam valves are leaking.

Typical lab fin tube (steam) perimeter heating in the 1965 portion of the building.

<table>
<thead>
<tr>
<th>Item ID</th>
<th>299665</th>
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<tbody>
<tr>
<td>Description</td>
<td>This steam-to-hot water heat exchanger is in the basement mechanical room of the 1965 portion of the building. This heat exchanger serves an air handler (AHU-P3) and hot water reheat coils for the basement Insectary area. This equipment is from a 2007 renovation of the Insectary. The hot water loop uses a 25% glycol solution. Inline (close-coupled) duplex pumps are Bell &amp; Gossett inline Series 80, 1-1/2 x 1-1/2 x 7B, 38.5 GPM @ 35 ft., 1750 RPM, 1.5 HP, 208V / 3 phase.</td>
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<td>Date Installed</td>
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<td>Remaining Useful Life</td>
<td>29 Years Nominal Useful Life: 35 Years</td>
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<tr>
<td>Manufacturer</td>
<td>ITT Bell &amp; Gossett</td>
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<tr>
<td>Model Number</td>
<td>SU 84-2</td>
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<tr>
<td>Serial Number</td>
<td>984790-02</td>
</tr>
<tr>
<td>Replacement Cost</td>
<td>$96,100</td>
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</table>
Heat exchanger in 1965 basement mechanical room.

Duplex pumps for the hot water heating loop for the basement insectary. The pumps are in the 1965 basement mechanical room.
HEAT EXCHANGER 2 (AHU PREHEAT IN 1960 "EAST" PENTHOUSE) ASSESSMENT DATA

<table>
<thead>
<tr>
<th>Item ID</th>
<th>299667</th>
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<tbody>
<tr>
<td>Description</td>
<td>This steam-to-hot water heat exchanger is located in the penthouse of the 1960 &quot;east&quot; portion of the building. This heat exchanger serves the roof-mounted AHU (AHU-60-2R) installed as part of a 2009 major renovation. Duplex pumps are inline (close coupled) Aurora Pumps, 140 GPM @ 80 ft., 1750 RPM, 208V / 3 phase.</td>
</tr>
<tr>
<td>Date Installed</td>
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<tr>
<td>Overall Condition</td>
<td>Excellent</td>
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<tr>
<td>Remaining Useful Life</td>
<td>31 Years Nominal Useful Life: 35 Years</td>
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<tr>
<td>Equipment Tag</td>
<td>HX-1</td>
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<tr>
<td>Replacement Cost</td>
<td>$158,200</td>
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</table>

HEAT EXCHANGER 2 (AHU PREHEAT IN 1960 "EAST" PENTHOUSE) SURVEY PHOTOGRAPHS

Heat exchanger HX-1 in penthouse of 1960 portion of building.

Duplex pumps for HX-1 hot water heating loop in penthouse of 1960 building.
HEAT EXCHANGER 3 (VAV/CAV REHEAT IN 1960 "EAST" PENTHOUSE) ASSESSMENT DATA

<table>
<thead>
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<tbody>
<tr>
<td>Description</td>
<td>This steam-to-hot water heat exchanger is located in the penthouse of the 1960 &quot;east&quot; portion of the building. This heat exchanger serves VAV/CAV zone reheat coils located in the penthouse. These coils and this hot water loop were installed as part of a 2009 major renovation. Duplex pumps are inline (close coupled) Aurora Pumps, 81 GPM @ 100 ft., 1750 RPM, 7.5 HP, 208V / 3 phase.</td>
</tr>
<tr>
<td>Overall Condition</td>
<td>Excellent</td>
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<tr>
<td>Date Installed</td>
<td>01/01/2009</td>
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<tr>
<td>Remaining Useful Life</td>
<td>31 Years Nominal Useful Life: 35 Years</td>
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<tr>
<td>Equipment Tag</td>
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<td>Manufacturer</td>
<td>Thrush Co.</td>
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<td>Replacement Cost</td>
<td>$236,100</td>
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HEAT EXCHANGER 3 (VAV/CAV REHEAT IN 1960 "EAST" PENTHOUSE) SURVEY PHOTOGRAPHS

Heat exchanger HX-2 in penthouse of the 1960 portion of the building.
Pumps for HX-2 hot water heating loop, in penthouse of 1960 portion of the building.
Hot water reheat coil at CAV box located in penthouse of 1960 portion of the building.
**60. AHU-1 ASSESSMENT DATA**

<table>
<thead>
<tr>
<th>Item ID</th>
<th>299676</th>
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<tbody>
<tr>
<td><strong>Description</strong></td>
<td>60.AHU-1 is original to the 1960 building construction. This AHU is located in the penthouse and serves most of the 4th, 5th, and 6th floors of the 1960 building. There are other climate-controlled animal holding rooms that have their own process air handling. This AHU has a supply fan at 13,020 CFM, 7.5 HP motor and a return/exhaust fan at 11,120 CFM, 2 HP motor, both fans 208V / 3 phase. This AHU serves a dual-duct system on the 4th, 5th, and 6th, floors, with zone dual-duct mixing boxes. This AHU has a steam preheat coil, a chilled water cooling coil, and an additional steam heating coil for the dual-duct system. The dual-duct mixing boxes typically do not have an additional fan and do not have an additional heating or cooling coil. A few climate-controlled spaces appear to have a steam reheat coil. The ductwork is possibly lined ductwork (based on facility staff reports), which would be in poor condition and likely to introduce fibers in to the supply air ductwork. The AHU and most of the associated ductwork is insulated with a material that may contain asbestos (testing required).</td>
</tr>
<tr>
<td>Date Installed</td>
<td>1/1/1963</td>
</tr>
<tr>
<td><strong>Overall Condition</strong></td>
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<tr>
<td>Remaining Useful Life</td>
<td>Exceeded Nominal Useful Life: 30 Years</td>
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<tr>
<td><strong>Equipment Tag</strong></td>
<td>60.AHU-1</td>
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<tr>
<td><strong>Size/Capacity</strong></td>
<td>13,000 CFM</td>
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<td><strong>HP/kW</strong></td>
<td>Supply fan: 7.5 HP</td>
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<td><strong>Voltage</strong></td>
<td>208V / 3 phase</td>
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<tr>
<td><strong>Replacement Cost</strong></td>
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</tr>
<tr>
<td><strong>Comments</strong></td>
<td>Lab spaces in this building typically could not be accessed as part of this survey.</td>
</tr>
</tbody>
</table>
60.AHU-1 in the 1960 penthouse.

60.AHU-1 in the 1960 penthouse.

60.AHU-1 in the 1960 penthouse.

60.AHU-1 in the 1960 penthouse.
**AHU - 1 Assessment Data**

<table>
<thead>
<tr>
<th>Item ID</th>
<th>299683</th>
</tr>
</thead>
</table>
| Description | This AHU serves the south side of the basement and the southwest quadrant of the 1st, 2nd, and 3rd floors. This AHU is located in the 1965 penthouse and appears to be 1965 original construction (the cooling coil appears to be newer). The AHU has a chilled water cooling coil and a steam preheat coil (medium pressure steam). This AHU is constant volume and has some return air from exhaust/return fan E-1. Supply air to spaces typically have a zone reheat coil (steam). This AHU's supply fan is 18,000 CFM, 15hp motor, 208V / 3 phase. The floor-mounted exhaust fan is 16,300 CFM, 5hp motor, 208V / 3 phase. The exhaust fan discharges to louvers in the side walls of the penthouse. The supply fan has been fitted with a variable-frequency drive for balancing. This unit shares a common outside air intake plenum with 64.AHU-2.
| Overall Condition | Poor |
| Date Installed | 01/01/1965 |
| Remaining Useful Life | Exceeded Nominal Useful Life: 30 Years |
| Equipment Tag | 64.AHU-1 |
| Size/Capacity | 18,000 CFM |
| HP/kW | Supply fan: 15 HP |
| Voltage | 208V / 3 phase |
| Replacement Cost | $155,800 |
64. AHU-1 in penthouse.
This AHU serves the third floor of the bridge to Burrill Hall, and the southwest quadrant of the 4th, 5th, and 6th floors.

This AHU is located in the 1965 penthouse and appears to be 1965 original construction (the cooling coil appears to be newer). The AHU has a chilled water cooling coil and a steam preheat coil (medium pressure steam). This AHU is constant volume and has some return air from exhaust/return fan E-2. Supply air to spaces typically have a zone reheat coil (steam).

This AHU’s supply fan is 22,850 CFM, 15hp motor, 208V / 3 phase. The floor-mounted exhaust fan is 18,890 CFM, 5hp motor, 208V / 3 phase. The exhaust fan discharges to louvers in the side walls of the penthouse. The supply fan has been fitted with a variable-frequency drive for balancing.

This unit shares a common outside air intake plenum with 64.AHU-1.

The ductwork is possibly lined, per building staff. The age of the lining may be an issue if fibers flake off into the supply air stream.

This AHU and all associated ductwork seen in the penthouse appears to be insulated with a material that possibly contains asbestos. There are asbestos warning stickers on this material.

<table>
<thead>
<tr>
<th>Overall Condition</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date Installed</td>
<td>01/01/1965</td>
</tr>
<tr>
<td>Remaining Useful Life</td>
<td>Exceeded Nominal Useful Life: 30 Years</td>
</tr>
<tr>
<td>Equipment Tag</td>
<td>64.AHU-2</td>
</tr>
<tr>
<td>Size/Capacity</td>
<td>22,850 CFM</td>
</tr>
<tr>
<td>HP/kW</td>
<td>Supply fan: 15 HP</td>
</tr>
<tr>
<td>Voltage</td>
<td>208V / 3 phase</td>
</tr>
<tr>
<td>Replacement Cost</td>
<td>$187,800</td>
</tr>
</tbody>
</table>
64.AHU-2 in penthouse.

Exhaust fan E-2 in penthouse.

Exhaust fan E-2 in penthouse.
### 64.AHU-3 Assessment Data

<table>
<thead>
<tr>
<th>Item ID</th>
<th>299681</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>This AHU serves the east side of the basement and the southeast quadrant and hallways of the 1st, 2nd, and 3rd floors. This AHU is located in the 1965 penthouse and appears to be 1965 original construction (the cooling coil appears to be newer). The AHU has a chilled water cooling coil and a steam preheat coil (medium pressure steam). This AHU is constant volume and has some return air from exhaust/return fan E-3. Supply air to spaces typically have a zone reheat coil (steam). This AHU's supply fan is 18,850 CFM, 15hp motor, 208V / 3 phase. The floor-mounted exhaust fan is 13,820 CFM, 3hp motor, 208V / 3 phase. The exhaust fan discharges to louvers in the side walls of the penthouse. The supply fan has been fitted with a variable-frequency drive for balancing. This unit shares a common outside air intake plenum with 64.AHU-4. The ductwork is possibly lined, per building staff. The age of the lining may be an issue if fibers flake off into the supply air stream. This AHU and all associated ductwork seen in the penthouse appears to be insulated with a material that possibly contains asbestos. There are asbestos warning stickers on this material.</td>
</tr>
<tr>
<td>Date Installed</td>
<td>01/01/1965</td>
</tr>
<tr>
<td>Remaining Useful Life</td>
<td>Exceeded Nominal Useful Life: 30 Years</td>
</tr>
<tr>
<td>Equipment Tag</td>
<td>64.AHU-3</td>
</tr>
<tr>
<td>Size/Capacity</td>
<td>18,850 CFM</td>
</tr>
<tr>
<td>HP/kW</td>
<td>Supply fan: 15 HP</td>
</tr>
<tr>
<td>Voltage</td>
<td>208V / 3 phase</td>
</tr>
<tr>
<td>Replacement Cost</td>
<td>$165,300</td>
</tr>
</tbody>
</table>
64.AHU-3 in penthouse.

Common intake plenum section between 64.AHU-3 and 64.AHU-4 in penthouse.

64.AHU-4 in penthouse.

64.AHU-4 in penthouse.

64.AHU-4 in penthouse.

Exhaust/return fan E-3 in penthouse.
Exhaust/return fan E-3 in penthouse.
64. AHU - 4 ASSESSMENT DATA

<table>
<thead>
<tr>
<th>Item ID</th>
<th>299679</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date Installed</td>
<td>01/01/1965</td>
</tr>
</tbody>
</table>
| Description  | This AHU serves the southeast quadrant of the fourth, fifth, and sixth floors. These spaces include labs and offices. This AHU is located in the 1965 penthouse and appears to be 1965 original construction (the cooling coil appears to be newer). The AHU has a chilled water cooling coil and a steam preheat coil (medium pressure steam). This AHU is constant volume and has some return air from exhaust/return fan E-4. Supply air to spaces typically have a zone reheat coil (steam). This AHU's supply fan is 17,770 CFM, 15hp motor, 208V / 3 phase. The floor-mounted exhaust fan is 13,200 CFM, 3hp motor, 208V / 3 phase. The exhaust fan discharges to louvers in the side walls of the penthouse. The supply fan has been fitted with a variable-frequency drive for balancing.
| Overall Condition | Poor |
| Date Installed | 01/01/1965 |
| Remaining Useful Life | Exceeded Nominal Useful Life: 30 Years |
| Equipment Tag | 64.AHU-4 |
| Size/Capacity | 17,770 CFM |
| HP/kW | Supply fan: 15 HP |
| Voltage | 208V / 3 phase |
| Replacement Cost | $155,900 |

UIUC/UIS MEP CONDITION ASSESSMENT
UIUC PROJECT NUMBER U12151
CANNON DESIGN PROJECT NUMBER 4009.01
MORRILL HALL
0242 - PAGE 30
64.AHU-4 in penthouse.

Common outside air intake section between 64.AHU-3 and 64.AHU-4 in penthouse.

Exhaust fan E-4 in penthouse.

Exhaust fan E-4 in penthouse.
<table>
<thead>
<tr>
<th>Item ID</th>
<th>299678</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date Installed</td>
<td>01/01/1965</td>
</tr>
<tr>
<td>Remaining Useful Life</td>
<td>Exceeded Nominal Useful Life: 30 Years</td>
</tr>
<tr>
<td>Equipment Tag</td>
<td>54.AHU-5</td>
</tr>
<tr>
<td>Size/Capacity</td>
<td>22,600 CFM</td>
</tr>
<tr>
<td>HP/kW</td>
<td>Supply fan: 15 HP</td>
</tr>
<tr>
<td>Voltage</td>
<td>208V / 3 phase</td>
</tr>
<tr>
<td>Replacement Cost</td>
<td>$180,900</td>
</tr>
</tbody>
</table>

This AHU serves the north side of the first floor, the north side of the second floor, the north side of the third floor, and the second floor bridge.

This AHU is located in the 1965 penthouse and appears to be 1965 original construction (the cooling coil is newer). The AHU has a chilled water cooling coil and a steam preheat coil (medium pressure steam). This AHU is constant volume and has some return air from exhaust/return fan E-5. Supply air to spaces typically have a zone reheat coil (steam). Some spaces have return air, and some lab spaces appear to use lab exhaust.

This AHU's supply fan is 22,500 CFM, 15hp motor, 208V / 3 phase. The floor-mounted exhaust fan is 22,755 CFM, 5hp motor, 208V / 3 phase. The exhaust fan discharges to louvers in the side walls of the penthouse. The supply fan has been fitted with a variable-frequency drive for air balancing.

The ductwork is possibly lined, per building staff. The age of the lining may be an issue if fibers flake off into the supply air stream.

This AHU and all associated ductwork seen in the penthouse appears to be insulated with a material that possibly contains asbestos. There are asbestos warning stickers on this material.

Overall Condition Poor

Voltage 208V / 3 phase
64. AHU-5 Survey Photographs

64.AHU-5 in penthouse.

64.AHU-5 in penthouse.

64.AHU-5 in penthouse.

64.AHU-5 in penthouse.

64.AHU-5 in penthouse.

Exhaust fan E-5 in penthouse.

Exhaust fan E-5 in penthouse.
Exhaust fan E-5 in penthouse.
**64. AHU - 6 ASSESSMENT DATA**

<table>
<thead>
<tr>
<th>Item ID</th>
<th>299677</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>This AHU serves animal holding rooms in the basement. This AHU is located in the 1965 penthouse and appears to be 1965 original construction (the cooling coil appears to be newer). The AHU has a chilled water cooling coil and a steam preheat coil (medium pressure steam). This AHU is constant volume and has some return air from exhaust/return fan E-6. Supply air to spaces have a zone reheat coil (steam). This unit also has a Trane DX cooling coil in the supply air ductwork immediately downstream of the AHU. This coil is tied to a Trane condensing unit on the roof above. The condensing unit is Trane model RAUA-3006-MD, S/N J80H-0601, 208V / 3 phase, R-22 refrigerant, 133 RLA. This AHU's supply fan is 5,500 CFM, 5hp motor, 208V / 3 phase. The floor-mounted exhaust fan is 5,850 CFM, 1hp motor, 208V / 3 phase. The exhaust fan discharges to louvers in the side walls of the penthouse. The ductwork is possibly lined, per building staff. The age of the lining may be an issue if fibers flake off into the supply air stream. This AHU and all associated ductwork seen in the penthouse appears to be insulated with a material that possibly contains asbestos. There are asbestos warning stickers on this material.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Overall Condition</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date Installed</td>
<td>01/01/1965</td>
</tr>
<tr>
<td>Remaining Useful Life</td>
<td>Exceeded Nominal Useful Life: 30 Years</td>
</tr>
<tr>
<td>Equipment Tag</td>
<td>64.AHU-6</td>
</tr>
<tr>
<td>Size/Capacity</td>
<td>5,550 CFM</td>
</tr>
<tr>
<td>HP/kW</td>
<td>Supply fan: 5 HP</td>
</tr>
<tr>
<td>Voltage</td>
<td>208V / 3 phase</td>
</tr>
<tr>
<td>Replacement Cost</td>
<td>$147,100</td>
</tr>
<tr>
<td>Comments</td>
<td>This cooling coil apparently provided backup cooling for the animal holding rooms in the basement in the days when the building used a steam absorption chiller. Now that the building is on the campus chilled water system this backup system may not be considered active. The disconnect on the roof-mounted condensing unit is on, but this system may not have been used for many years.</td>
</tr>
</tbody>
</table>
AHU-6 in penthouse.

Backup cooling coil above AHU-6 in penthouse.

AHU-6 in penthouse.

Exhaust fan E-6 in penthouse.

AHU-6 in penthouse.

Condensing unit for AHU-6 backup cooling coil.
Condensing unit for AHU-6 backup cooling coil.

Exhaust fan E-6 in penthouse.
This AHU serves the north side of the fourth floor, the north side of the fifth floor, and the north side and center area of the sixth floor. These spaces include labs and offices.

This AHU is located in the 1965 penthouse and appears to be 1965 original construction (the cooling coil appears to be newer). The AHU has a chilled water cooling coil and a steam preheat coil (medium pressure steam). This AHU is constant volume and has some return air from exhaust/return fan E-7. Supply air to spaces typically have a zone reheat coil (steam).

This AHU's supply fan is 19,750 CFM, 15hp motor, 208V / 3 phase. The floor-mounted exhaust fan is 19,400 CFM, 5hp motor, 208V / 3 phase. The exhaust fan discharges to louvers in the side walls of the penthouse. The supply fan has been fitted with a variable-frequency drive for balancing.

The ductwork is possibly lined, per building staff. The age of the lining may be an issue if fibers flake off into the supply air stream.

This AHU and all associated ductwork seen in the penthouse appears to be insulated with a material that possibly contains asbestos. There are asbestos warning stickers on this material.

<table>
<thead>
<tr>
<th>Item ID</th>
<th>299680</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>This AHU serves the north side of the fourth floor, the north side of the fifth floor, and the north side and center area of the sixth floor. These spaces include labs and offices.</td>
</tr>
<tr>
<td>Date Installed</td>
<td>01/01/1965</td>
</tr>
<tr>
<td>Size/Capacity</td>
<td>19,750 CFM</td>
</tr>
<tr>
<td>HP/kW</td>
<td>Supply fan: 15 HP</td>
</tr>
<tr>
<td>Voltage</td>
<td>208V / 3 phase</td>
</tr>
<tr>
<td>Overall Condition</td>
<td>Poor</td>
</tr>
<tr>
<td>Remaining Useful Life</td>
<td>Exceeded Nominal Useful Life: 30 Years</td>
</tr>
<tr>
<td>Equipment Tag</td>
<td>64.AHU-7</td>
</tr>
<tr>
<td>Replacement Cost</td>
<td>$170,400</td>
</tr>
</tbody>
</table>
### AHU - 3 (Basement Insectary) Assessment Data

<table>
<thead>
<tr>
<th>Item ID</th>
<th>299669</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>This AHU was installed as part of a 2007 renovation of the basement insectary. It replaced an older AHU. This AHU has hot water heating, chilled water cooling, and humidification. This AHU is 100% outside air. Air is exhausted from the spaces by duplex exhaust fans located on the roof. This unit is constant volume, with hot water zone reheat coils in the air distribution ductwork. The supply fan for this AHU has a VFD for balancing. Humidification is by a steam-to-clean steam heat exchanger system, located next to the AHU in the 1965 basement mechanical room. This humidifier is a DriSteem STS-100C-DI, 100 PPH capacity, S/N 1146452-01-01. Exhaust fans on the roof are duplex (100% backup). Exhaust fans are Greenheck, model 16-BISW-41-10-11, 3171 RPM.</td>
</tr>
<tr>
<td>Date Installed</td>
<td>01/01/2007</td>
</tr>
<tr>
<td>Overall Condition</td>
<td>Excellent</td>
</tr>
<tr>
<td>Remaining Useful Life</td>
<td>24 Years Nominal Useful Life: 30 Years</td>
</tr>
<tr>
<td>Equipment Tag</td>
<td>00242-SF15</td>
</tr>
<tr>
<td>Size/Capacity</td>
<td>3450 CFM</td>
</tr>
<tr>
<td>HP/kW</td>
<td>Supply fan 5.0 HP</td>
</tr>
<tr>
<td>Voltage</td>
<td>208V / 3 phase</td>
</tr>
<tr>
<td>Replacement Cost</td>
<td>$115,400</td>
</tr>
<tr>
<td>Comments</td>
<td>The outside air intake for this AHU is very close to the ground outside. This may create issues during heavy snowfall or rain.</td>
</tr>
</tbody>
</table>
A H U P - 3 (B A S E M E N T  I N S E C T A R Y )  S U R V E Y  P H O T O G R A P H S

- Duplex exhaust fans on the roof serve the basement Insectary area.
- AHU P-3 in 1965 basement mechanical room.
- Variable-Frequency Drive for AHU P-3 supply fan, in 1965 basement mechanical room.
- Humidifier for AHU P-3.
- Outside air intake louver for AHU P-3.
### AHU-60-R2 (AKA 09.AHU-1) ASSESSMENT DATA

<table>
<thead>
<tr>
<th>Item ID</th>
<th>299672</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>This air handler was installed as part of a 2009 major renovation in the 1960 portion of the building. This renovation combined many smaller AHUs (and one larger AHU) in the penthouse into one large AHU, and combined many different exhaust systems into three large exhaust fans. The exhaust air is pulled through a heat recovery module (using two runaround coils, not a rotating wheel) on the new AHU. Air valves are used to maintain constant exhaust rates from different lab spaces using the large exhaust fans. This air handler and its associated exhaust fans (GE-60-2A, GE-60-2B, and GE-60-2C) are located on the roof. The exhaust airstream is pulled through the AHU heat recovery section and then over to the exhaust fans through a 48&quot; diameter exhaust duct that runs across the roof. This air handling unit provides 100% outside air at constant volume. This unit has a chilled water cooling coil and a hot water heating coil (with runaround pump), in addition to the abovementioned heat recovery coils (heat pipes). This air handling unit serves the basement, 1st, 2nd and 3rd floors (other than special climate rooms that may have their own process air handler). The spaces typically have a zone reheat coil (steam) that is 1960 original construction. Some of the small AHUs removed as part of the 2009 renovation were replaced with a CAV box in the penthouse that has a hot water reheat coil. This air handler has prefilters and HEPA filters on both the exhaust air (upstream of the heat recovery coils) and supply air (downstream of the heat recovery coils). The outside air intake has prefilters and bag filters. The unit has humidification through a steam-to-clean steam humidifier. The three exhaust fans (only two fans run at any given time) are each Plastifer model AXJT-FSW 3000, 1361 RPM, 20 HP motor, 208V / 3 phase; 12,310 CFM. The newer supply and exhaust systems tie into existing (1960 original construction) supply and exhaust ductwork. The supply ductwork is believed to be lined ductwork, which would be in poor condition and could shed fibers in the airstream. The older ductwork seen in the field is also insulated with a material that may contain asbestos (testing required).</td>
</tr>
<tr>
<td>Date Installed</td>
<td>01/01/2009</td>
</tr>
<tr>
<td><strong>Remaining Useful Life</strong></td>
<td>26 Years Nominal Useful Life: 30 Years</td>
</tr>
<tr>
<td><strong>Equipment Tag</strong></td>
<td>AHU-60-2R</td>
</tr>
<tr>
<td><strong>Manufacturer</strong></td>
<td>Air Flow Equipment</td>
</tr>
<tr>
<td><strong>Serial Number</strong></td>
<td>2586</td>
</tr>
<tr>
<td><strong>Size/Capacity</strong></td>
<td>26,000 CFM</td>
</tr>
<tr>
<td><strong>HP/kW</strong></td>
<td>Supply fan: (2) fans at 20 HP each</td>
</tr>
<tr>
<td><strong>Voltage</strong></td>
<td>208V / 3 phase</td>
</tr>
<tr>
<td><strong>Replacement Cost</strong></td>
<td>$311,000</td>
</tr>
<tr>
<td><strong>Comments</strong></td>
<td>There are 16 separate lab exhausts that are combined (using air valves) and pulled through the heat recovery side of the AHU.</td>
</tr>
</tbody>
</table>
Lab spaces in this building typically could not be accessed as part of this survey.
AHU-60-R2 (AKA 09.AHU-1) SURVEY PHOTOGRAPHS

AHU-60-2R on roof.


48" dia. exhaust duct between exhaust fans and AHU.

48" dia. exhaust duct between exhaust fans and AHU.

Typical ductwork (in second floor lab space) may be insulated with a material that contains asbestos (testing required).

CAV box with hot water reheat coil, in 1960 penthouse.
**Toilet Exhaust Assessment Data**

<table>
<thead>
<tr>
<th>Item ID</th>
<th>299671</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Toilet exhaust is by roof-mounted exhaust fans. There is one exhaust fan for the 1960 building and one for the 1965 building. The fan for the 1960 building appears to have been replaced since original construction. The fan for the 1965 building appears to be original. Exhaust for the 1960's building is described by building staff as inadequate.</td>
</tr>
<tr>
<td>Date Installed</td>
<td>01/01/1965</td>
</tr>
<tr>
<td>Overall Condition</td>
<td>Poor</td>
</tr>
<tr>
<td>Remaining Useful Life</td>
<td>Exceeded Nominal Useful Life: 30 Years</td>
</tr>
<tr>
<td>Size/Capacity</td>
<td>1960 building: 1750 CFM; 1965 building: 3340 CFM</td>
</tr>
<tr>
<td>HP/kW</td>
<td>1960 building: 1/6 HP; 1965 building: 1/2 HP</td>
</tr>
<tr>
<td>Voltage</td>
<td>120V / 1 phase</td>
</tr>
<tr>
<td>Replacement Cost</td>
<td>$6,000</td>
</tr>
</tbody>
</table>

**Toilet Exhaust Survey Photographs**

- Toilet exhaust fan for the 1960 building (foreground).
- The toilet exhaust fan for the 1965 building is at the far left.
**LAB / PROCESS EXHAUST FANS ASSESSMENT DATA**

<table>
<thead>
<tr>
<th>Item ID</th>
<th>299684</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Between the 1960 and 1965 portions of the building there are approximately 70 fans providing lab or process exhaust. In general these fans are in poor condition and generally original building construction. The 1965 building has approximately 50 fans that serve fume hoods and are nearly identical. These fans are located in racks that are 3 fans tall and are generally located in the northeast corner of the 1965 penthouse. Each of these fans exhausts 830 CFM with a 3/4 or 1/2 HP motor. These fans discharge through the roof with exhaust ducts that extend well above the roof. The 2009 renovation of the 1960 building penthouse eliminated a number of exhaust fans and replaced them with large exhaust fans that provide heat recovery through AHU-60-2R. Approximately 10 roof-mounted process exhaust fans remain on the 1960 roof. Approximately half of the fume hood exhaust fans use 8” diameter transite ductwork. Transite is possibly an asbestos-containing material. Some of the exhaust ducts in the penthouse have an asbestos warning sticker.</td>
</tr>
<tr>
<td>Overall Condition</td>
<td>Poor</td>
</tr>
<tr>
<td>Date Installed</td>
<td>01/01/1965</td>
</tr>
<tr>
<td>Remaining Useful Life</td>
<td>Exceeded Nominal Useful Life: 30 Years</td>
</tr>
<tr>
<td>Replacement Cost</td>
<td>$1,180,800</td>
</tr>
<tr>
<td>Comments</td>
<td>Building staff have stated that a renovation of the 1965 building that is similar to the renovation of the 1960 building (where exhaust fans are combined to allow for heat recovery) is one of the top priorities for future work in the building.</td>
</tr>
</tbody>
</table>
Fume hood fans in the 1965 building penthouse.

Fume hood ducts in the 1965 building penthouse.

Exhaust fan E-9 in the 1965 building penthouse.

Exhaust fan E-9 in the 1965 building penthouse.
Exhaust fan E-8 in the 1965 building penthouse.

Exhaust fan discharges on the roof of the 1965 building.

Exhaust fans on the roof of the 1960 building.
Exhaust fans on the roof of the 1960 building.

Exhaust fan on the roof of the 1960 building.

Exhaust fan on the roof of the 1960 building.

Fume hood fans in the 1965 building penthouse.
Natural gas piping for this building is served from the adjacent Medical Sciences Building (where the meter is located) and enters Morrill Hall in the basement steam/mechanical room of the 1960 portion of the building.

Natural gas is mainly used for the labs in this building. The main exception is the small natural gas generator in the basement of the 1965 portion of the building. This generator apparently serves as electrical backup to animal holding facilities and/or cold rooms.

The small size of the piping at the meter suggests that this may be a medium pressure (2 psig) gas service to the building, with regulators used to reduce the pressure as required inside. The labs would probably not require this higher pressure but it may be necessary for the generator.

The gas service does not appear to continue across the bridge to Burrill Hall.

There are valve cabinets located in the corridor outside each lab area containing a natural gas shut-off for that room.

Natural gas appears to be available in most if not all of the labs.

<table>
<thead>
<tr>
<th>Overall Condition</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date Installed</td>
<td>1/1/1963</td>
</tr>
<tr>
<td>Remaining Useful Life</td>
<td>Exceeded Nominal Useful Life: 40 Years</td>
</tr>
<tr>
<td>Replacement Cost</td>
<td>$255,300</td>
</tr>
</tbody>
</table>
Natural gas-fired generator in basement mechanical room of 1965 building.

Typical lab gas shut-off valve cabinet in 1st floor corridor.

Natural gas meter at the northeast corner of the Medical Sciences Building. This meter serves both the Medical Sciences Building and Morrill Hall.

Natural gas piping entry at steam/mechanical room in the 1960 portion of Morrill Hall.
<table>
<thead>
<tr>
<th><strong>MECHANICAL CONTROLS ASSESSMENT DATA</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Item ID</strong></td>
</tr>
<tr>
<td><strong>Description</strong></td>
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<tr>
<td><strong>Overall Condition</strong></td>
</tr>
<tr>
<td><strong>Date Installed</strong></td>
</tr>
<tr>
<td><strong>Remaining Useful Life</strong></td>
</tr>
<tr>
<td><strong>Replacement Cost</strong></td>
</tr>
<tr>
<td><strong>Comments</strong></td>
</tr>
</tbody>
</table>
Duplex air compressor in 1965 basement mechanical room.

Air compressor in 1965 basement mechanical room.

Air compressor in 1965 penthouse.

Air compressor in 1960 penthouse.
<table>
<thead>
<tr>
<th>SYSTEM/COMPONENT</th>
<th>POOR (1-5 YEARS)</th>
<th>FAIR (5-10 YEARS)</th>
<th>GOOD (10-20 YEARS)</th>
<th>EXCELLENT (20+ YEARS)</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DOMESTIC COLD WATER SYSTEM</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domestic Cold Water Service</td>
<td>221,300</td>
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<tr>
<td><strong>DOMESTIC HOT WATER SYSTEM</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Domestic Hot Water</td>
<td>246,800</td>
<td></td>
<td></td>
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<tr>
<td><strong>PLUMBING FIXTURES SYSTEM</strong></td>
<td></td>
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<tr>
<td>Plumbing Fixtures</td>
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<tr>
<td><strong>SANITARY WASTE AND VENT SYSTEM</strong></td>
<td></td>
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<tr>
<td>Sanitary and Vent Piping</td>
<td>643,200</td>
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<tr>
<td><strong>STORM DRAINAGE SYSTEM</strong></td>
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<tr>
<td>Storm Drainage and Sub-Soil Drainage</td>
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<td>544,600</td>
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<td><strong>PROCESS WATER SYSTEM</strong></td>
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<tr>
<td>Deionized Water</td>
<td>229,800</td>
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<td>229,800</td>
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<tr>
<td>Lab Cold Water</td>
<td>323,400</td>
<td></td>
<td></td>
<td></td>
<td>323,400</td>
</tr>
<tr>
<td>Lab Hot Water</td>
<td>323,400</td>
<td></td>
<td></td>
<td></td>
<td>323,400</td>
</tr>
<tr>
<td>Well Water for Labs</td>
<td>93,600</td>
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<td></td>
<td>93,600</td>
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<tr>
<td><strong>COMPRESSED-AIR</strong></td>
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<td></td>
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</tr>
<tr>
<td>Lab Compressed Air</td>
<td>331,900</td>
<td></td>
<td></td>
<td></td>
<td>331,900</td>
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<tr>
<td><strong>PLUMBING TOTAL</strong></td>
<td>3,499,200</td>
<td></td>
<td></td>
<td></td>
<td>3,499,200</td>
</tr>
<tr>
<td>% OF TOTAL</td>
<td>100.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
A 6" domestic cold water service enters the building on the north side of the 1965 basement mechanical room. A 6" domestic cold water service enters the building on the north side of the 1960 basement mechanical room. A 4" domestic water line ties these two services together.

Per existing drawings these water services do not tie to any fire protection service (with changes made as part of the 2011 fire protection project). Field survey shows a newer 3" or 4" line tied to the 1965 service (upstream of the meter), with new RPZ backflow preventer and new piping. This line appears to be a fill line for a condenser water or process loop.

In the 1960 building, the domestic cold water appears to serve both the restrooms and the labs. In the 1965 building the domestic cold water service ties to the building restrooms (potable water), but cold water to the labs is provided by an isolated lab cold water system (“non-potable”) located in the penthouse. The domestic cold water fills this system through an indirect (air gap) connection.

There is no booster pump. The piping appears to be mainly galvanized steel. Due to the age of this piping the system is considered to be in poor condition.

<table>
<thead>
<tr>
<th>Item ID</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>299650</td>
<td>A 6&quot; domestic cold water service enters the building on the north side of the 1965 basement mechanical room. A 6&quot; domestic cold water service enters the building on the north side of the 1960 basement mechanical room. A 4&quot; domestic water line ties these two services together. Per existing drawings these water services do not tie to any fire protection service (with changes made as part of the 2011 fire protection project). Field survey shows a newer 3&quot; or 4&quot; line tied to the 1965 service (upstream of the meter), with new RPZ backflow preventer and new piping. This line appears to be a fill line for a condenser water or process loop. In the 1960 building, the domestic cold water appears to serve both the restrooms and the labs. In the 1965 building the domestic cold water service ties to the building restrooms (potable water), but cold water to the labs is provided by an isolated lab cold water system (“non-potable”) located in the penthouse. The domestic cold water fills this system through an indirect (air gap) connection. There is no booster pump. The piping appears to be mainly galvanized steel. Due to the age of this piping the system is considered to be in poor condition.</td>
</tr>
<tr>
<td>Date Installed</td>
<td>1/1/1963</td>
</tr>
<tr>
<td>Remaining Useful Life</td>
<td>Exceeded Nominal Useful Life: 50 Years</td>
</tr>
<tr>
<td>Replacement Cost</td>
<td>$221,300</td>
</tr>
</tbody>
</table>
Incoming water service to the 1965 basement mechanical room, with valves and meters.

Incoming water service to the 1960 basement mechanical room, with valves and meters.
Domestic hot water is produced at two hot water tanks that have steam-to-hot water heat exchanger coil. The campus steam system is used to provide the steam. These tanks are located in the northeast corner of the basement mechanical room in the 1965 portion of the building. These tanks serve both the 1960 and 1965 portions of the building.

In the 1960 building, the domestic hot water appears to serve both the restrooms and the labs. In the 1965 building the domestic hot water service ties to the building restrooms (potable water), but water to the labs is provided by an isolated lab hot water system ("non-potable") located in the penthouse. The domestic hot water system fills this system through an indirect (air gap) connection, though the lab hot water storage tank in the penthouse has a steam heating coil to maintain the hot water temperature.

The system has a circulator pump. There are hot water return lines in each set of risers (hot water return lines do not extend beyond the risers).

The water heaters are original construction. The circulator pumps are newer. The piping appears to be mainly galvanized steel. Due to the age of this piping the system is considered to be in poor condition.

<table>
<thead>
<tr>
<th>Item ID</th>
<th>299655</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Domestic hot water is produced at two hot water tanks that have steam-to-hot water heat exchanger coil. The campus steam system is used to provide the steam. These tanks are located in the northeast corner of the basement mechanical room in the 1965 portion of the building. These tanks serve both the 1960 and 1965 portions of the building. In the 1960 building, the domestic hot water appears to serve both the restrooms and the labs. In the 1965 building the domestic hot water service ties to the building restrooms (potable water), but water to the labs is provided by an isolated lab hot water system (&quot;non-potable&quot;) located in the penthouse. The domestic hot water system fills this system through an indirect (air gap) connection, though the lab hot water storage tank in the penthouse has a steam heating coil to maintain the hot water temperature. The system has a circulator pump. There are hot water return lines in each set of risers (hot water return lines do not extend beyond the risers). The water heaters are original construction. The circulator pumps are newer. The piping appears to be mainly galvanized steel. Due to the age of this piping the system is considered to be in poor condition.</td>
</tr>
<tr>
<td>Date Installed</td>
<td>01/01/1965</td>
</tr>
<tr>
<td>Remaining Useful Life</td>
<td>2 Years Nominal Useful Life: 50 Years</td>
</tr>
<tr>
<td>Manufacturer</td>
<td>Aerco</td>
</tr>
<tr>
<td>Model Number</td>
<td>6410-30-B</td>
</tr>
<tr>
<td>Serial Number</td>
<td>one heater is 4007</td>
</tr>
<tr>
<td>Replacement Cost</td>
<td>$246,800</td>
</tr>
<tr>
<td>Comments</td>
<td>The original domestic hot water heating equipment in the 1960 building has been demolished. Both buildings are served by the system in the 1965 building.</td>
</tr>
</tbody>
</table>
Steam-heated domestic water heaters located in the basement of the 1965 portion of the building.

A circulator pump for domestic hot water.
**PLUMBING FIXTURES ASSESSMENT DATA**

<table>
<thead>
<tr>
<th>Item ID</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>299654</td>
<td>The 1960 and 1965 portions of the building each have a single toilet stack. There is a single unisex toilet on each floor of the 1960 portion. There is a single toilet room in the 1965 portion, which is a men's room on some floors and a women's room on the other floors. Per the U of I ADA web page, Men's Room 156 on the 1st floor and Women's Room 256 on the 2nd floor are accessible restrooms. The fixtures appear to be 1960's original, possibly with newer manual flush valves added to the toilets and urinals. The few lab fixtures observed appeared to be 1960's original and were in fair to poor condition. Emergency showers appear to use domestic cold (not tempered) water.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Overall Condition</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date Installed</td>
<td>1/1/1963</td>
</tr>
<tr>
<td>Remaining Useful Life</td>
<td>Exceeded</td>
</tr>
<tr>
<td>Replacement Cost</td>
<td>$541,300</td>
</tr>
</tbody>
</table>
Unisex restroom on the 6th floor of the 1960 portion of the building.

Lab workroom sink on 5th floor of the 1965 portion of the building.

Lab workroom sink on 5th floor of the 1965 portion of the building.
In the 1965 building, sanitary and vent piping for some of the labs is clear glass acid-resistant piping. These acid-resistant piping risers tie into cast-iron sanitary piping in the basement (overhead). Typically these acid-resistant risers tie into a cast iron horizontal run at a tie-in point for a cast iron riser. Underground sanitary is all cast iron. Risers for the restrooms are cast iron.

For the 1960 building, risers appear to be all cast iron, though existing drawings show that the sanitary riser for the restrooms are kept separate from the risers for the labs.

For the 1960 building, sanitary piping in the basement is to an ejector pit.

For the 1965 building, sanitary piping for the basement appears to be by gravity, with the exception of the pit that previously housed the absorption chiller. This pit has a sump pit serving floor drains. There are also 3 sump pits serving elevator shafts.

An 8" sanitary line exits the 1965 building near the northwest corner of the 1965 basement. One 6" and one 8" sanitary lines exit the 1960 building on the north side of the building. The 1960 and 1965 sanitary exits combine at a manhole outside of the building.

Per facility staff the lab waste goes to a neutralization facility. This routing is not apparent in the field unless the entire building sanitary discharge is routed to a treatment facility.

<table>
<thead>
<tr>
<th>Item ID</th>
<th>299651</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>In the 1965 building, sanitary and vent piping for some of the labs is clear glass acid-resistant piping. These acid-resistant piping risers tie into cast-iron sanitary piping in the basement (overhead). Typically these acid-resistant risers tie into a cast iron horizontal run at a tie-in point for a cast iron riser. Underground sanitary is all cast iron. Risers for the restrooms are cast iron. For the 1960 building, risers appear to be all cast iron, though existing drawings show that the sanitary riser for the restrooms are kept separate from the risers for the labs. For the 1960 building, sanitary piping in the basement is to an ejector pit. For the 1965 building, sanitary piping for the basement appears to be by gravity, with the exception of the pit that previously housed the absorption chiller. This pit has a sump pit serving floor drains. There are also 3 sump pits serving elevator shafts. An 8&quot; sanitary line exits the 1965 building near the northwest corner of the 1965 basement. One 6&quot; and one 8&quot; sanitary lines exit the 1960 building on the north side of the building. The 1960 and 1965 sanitary exits combine at a manhole outside of the building. Per facility staff the lab waste goes to a neutralization facility. This routing is not apparent in the field unless the entire building sanitary discharge is routed to a treatment facility.</td>
</tr>
<tr>
<td>Overall Condition</td>
<td>Poor</td>
</tr>
<tr>
<td>Date Installed</td>
<td>1/1/1963</td>
</tr>
<tr>
<td>Remaining Useful Life</td>
<td>Exceeded Nominal Useful Life: 50 Years</td>
</tr>
<tr>
<td>Replacement Cost</td>
<td>$643,200</td>
</tr>
</tbody>
</table>
Acid-resistant piping vents through roof.

Acid-resistant (glass) piping vent to roof.

Glass piping store room in basement steam room.

Ejector pit in basement of the 1960 building.

8" sanitary (left) and 6" storm (right) exit from the basement of the 1960 building.
<table>
<thead>
<tr>
<th>Item ID</th>
<th>299652</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>The building has a flat roof and uses roof drains. The penthouse level is slightly set back from the outside walls of the lower floors of the building, so there are roof drains on the very narrow (and mostly inaccessible) area of roof between the walls of the penthouse and the outline of the building. This narrow roof area is apparently has frequent leaks due to the difficulty in installing a proper roof over the area. There are no secondary roof drains or scuppers. Both the 1960 and the 1965 portions of the building have perforated drain piping, under the basement floor and within the foundation of the building. These drain to separate sump pits in the basement mechanical rooms. The 1960 building has one 6&quot; and one 8&quot; storm drain exit on the north side of the building. The 1965 building has one 8&quot; and two 6&quot; storm drain exits on the south side of the building.</td>
</tr>
<tr>
<td>Date Installed</td>
<td>1/1/1963</td>
</tr>
<tr>
<td>Overall Condition</td>
<td>Poor</td>
</tr>
<tr>
<td>Remaining Useful Life</td>
<td>Exceeded Nominal Useful Life: 50 Years</td>
</tr>
<tr>
<td>Replacement Cost</td>
<td>$544,600</td>
</tr>
</tbody>
</table>
STORM DRAINAGE AND SUB-SOIL DRAINAGE SURVEY PHOTOGRAPHS

Duplex sump pit in the basement mechanical room of the 1965 building.

Duplex sump pit (right) in the basement mechanical room of the 1960 building.

The roof of Morrill Hall.

Roof drain at the narrow roof area between the penthouse walls and the walls of the lower floors.

Underside of the narrow roof area between the penthouse walls and the walls of the lower floors.

Roof drain.
8” sanitary exit (left) and 6” storm drain exit (right) in the basement mechanical room of the 1960 building.
Deionized Water Assessment Data

<table>
<thead>
<tr>
<th>Item ID</th>
<th>299660</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Deionized water is supplied to the labs of the 1965 portion of the building. The deionized water is supplied from room 20 of Burrill Hall, nearby to the north. A 2” pipe from Burrill Hall enters the building in the steam/mechanical room of the 1965 portion of Morrill Hall. This 2” pipe is routed to a storage tank in the penthouse of the 1965 portion of the building. This tank has a float sensor to activate a refill pump in Burrill Hall. The system appears to serve a limited number of lab workrooms located in the center middle core section of the 1965 building. Deionized water serves the humidifier at AHU P-3 in the 1965 basement mechanical room. Existing drawings are unclear, but the system may also serve humidifiers for animal holding stations in the 1965 building. The drawings for the 1960 building show humidifiers that use cold water, but these may have been replaced/reconfigured to use deionized water at a later date. The tank has newer recirculation pump with deionization cylinders. The tank and piping (other than the newer recirculation system) are 1965 original construction. The deionized water tank and piping in the penthouse and basement appears to be covered in insulation that possibly contains asbestos. The tank has a sticker that warns of asbestos. Most deionized water piping seen in the building is newer plastic pipe.</td>
</tr>
<tr>
<td>Overall Condition</td>
<td>Poor</td>
</tr>
<tr>
<td>Date Installed</td>
<td>01/01/1965</td>
</tr>
<tr>
<td>Remaining Useful Life</td>
<td>Exceeded</td>
</tr>
<tr>
<td>Replacement Cost</td>
<td>$229,800</td>
</tr>
</tbody>
</table>
2” deionized water (vertical pipe at right) enters the steam/mechanical room in the basement of the 1965 portion of Morrill Hall.

Deionized water storage tank in the penthouse of the 1965 portion of Morrill Hall.

Deionized water fill line and recirculation pump in the penthouse of the 1965 portion of Morrill Hall.

The plastic piping in a 6th floor lab workroom is believed to be for deionized water.

Deionized water (plastic pipe) at humidifier for AHU P-3 in 1965 mechanical room in basement.
<table>
<thead>
<tr>
<th>Item ID</th>
<th>299656</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>In the 1965 building, cold (unheated) water is provided to the labs (all areas other than the toilet rooms) through a cold water system that is isolated from the domestic water supply. This non-potable water system is located in the penthouse. There is a cold water storage tank and a separate cold water pressure tank that is pressurized by a duplex pump system. The storage tank feeds the basement and 1st, 2nd and 3rd floors by gravity. The pressure tank feeds the 4th, 5th and 6th floors. The domestic cold water system fills the storage tank via an air gap connection. Emergency showers on the lab floors appear to be fed from this non-potable cold water supply. The tanks and all of the piping appear to be original 1965 construction. The close-coupled duplex pumps are newer. The tanks and piping appear to be covered with insulation that likely contains asbestos, as this material has asbestos warning stickers on it.</td>
</tr>
<tr>
<td>Overall Condition</td>
<td>Poor</td>
</tr>
<tr>
<td>Date Installed</td>
<td>01/01/1965</td>
</tr>
<tr>
<td>Remaining Useful Life</td>
<td>Exceeded</td>
</tr>
<tr>
<td>Replacement Cost</td>
<td>$323,400</td>
</tr>
<tr>
<td>Comments</td>
<td>Lab users have complained about the water quality provided by this system.</td>
</tr>
</tbody>
</table>
Lab cold water pressure tank in the penthouse of the 1965 building.

Lab cold water storage tank (left) in the penthouse of the 1965 building.

Lab faucet (labeled “non potable”) in 6th floor lab workroom.

Lab water piping seen in 6th floor lab workroom is in poor condition and is insulated with a material that possibly contains asbestos. A section of the piping appears to have been replaced with copper pipe.
**LAB HOT WATER ASSESSMENT DATA**

<table>
<thead>
<tr>
<th>Item ID</th>
<th>299657</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>In the 1965 building, hot water is provided to the labs (all areas other than the toilet rooms) through a hot water system that is isolated from the domestic water supply. This non-potable water system is located in the penthouse. There is a hot water storage tank and a separate hot water pressure tank that is pressurized by a duplex pump system. The storage tank feeds the basement and 1st, 2nd and 3rd floors by gravity. The pressure tank feeds the 4th, 5th and 6th floors. The domestic hot water system fills the storage tank via an air gap connection. The hot water storage tank maintains its temperature via a steam heating coil inside the tank. The tanks and all of the piping appear to be original 1965 construction. The close-coupled duplex pumps are newer. The tanks and piping appear to be covered with insulation that likely contains asbestos, as this material has asbestos warning stickers on it. The lab hot water system has a recirculation piping system, with recirculating pumps located on the 2nd floor.</td>
</tr>
<tr>
<td>Overall Condition</td>
<td>Poor</td>
</tr>
<tr>
<td>Date Installed</td>
<td>01/01/1965</td>
</tr>
<tr>
<td>Remaining Useful Life</td>
<td>Exceeded Nominal Useful Life: 30 Years</td>
</tr>
<tr>
<td>Replacement Cost</td>
<td>$323,400</td>
</tr>
<tr>
<td>Comments</td>
<td>Lab users have complained about the water quality provided by this system.</td>
</tr>
</tbody>
</table>
Lab hot water pressure tank in the penthouse of the 1965 building.

Lab hot water storage tank (at right, with steam heating coil) in the penthouse of the 1965 building.

Duplex pumps (foreground) for lab hot water pressure tank.

Lab hot water return header in penthouse.
Morrill Hall has a well water system to support animal holding facilities. The well water is supplied from Burrill Hall, nearby to the north. A 2” aluminum pipe from Burrill Hall enters the building in the steam/mechanical room of the 1965 portion of Morrill Hall. This well water system feeds certain lab facilities on every floor except the 6th.

This 2” aluminum pipe is routed to a storage tank in the penthouse of the 1965 portion of the building. This tank has a float sensor to activate a refill pump in Burrill Hall. The fill line makes an indirect (air gap) connection at the top of the tank. Another 2” line feeds the lab facilities by gravity. The tank and piping all appear to be 1965 original construction.

The well water tank and all observed well water piping appears to be covered in insulation that possibly contains asbestos. The tank has a sticker that warns of asbestos.

<table>
<thead>
<tr>
<th>Item ID</th>
<th>299659</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Morrill Hall has a well water system to support animal holding facilities. The well water is supplied from Burrill Hall, nearby to the north. A 2” aluminum pipe from Burrill Hall enters the building in the steam/mechanical room of the 1965 portion of Morrill Hall. This well water system feeds certain lab facilities on every floor except the 6th. This 2” aluminum pipe is routed to a storage tank in the penthouse of the 1965 portion of the building. This tank has a float sensor to activate a refill pump in Burrill Hall. The fill line makes an indirect (air gap) connection at the top of the tank. Another 2” line feeds the lab facilities by gravity. The tank and piping all appear to be 1965 original construction. The well water tank and all observed well water piping appears to be covered in insulation that possibly contains asbestos. The tank has a sticker that warns of asbestos.</td>
</tr>
<tr>
<td>Overall Condition</td>
<td>Poor</td>
</tr>
<tr>
<td>Date Installed</td>
<td>01/01/1965</td>
</tr>
<tr>
<td>Remaining Useful Life</td>
<td>Exceeded Nominal Useful Life: 30 Years</td>
</tr>
<tr>
<td>Replacement Cost</td>
<td>$93,600</td>
</tr>
</tbody>
</table>
2” aluminum pipe (vertical pipe at left) enters Morrill Hall in the steam/mechanical room in the basement of the 1965 portion of the building.

Well water tank in the penthouse of the 1965 portion of the building.

Well water gravity feed line from well water tank in penthouse.
<table>
<thead>
<tr>
<th>Item ID</th>
<th>299658</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Compressed air for lab use comes from a compressor in nearby Burrill Hall, and there is also a simplex compressor in the basement of the 1960 portion of Morrill Hall that is described by facility personnel as serving lab air. The air from Burrill Hall comes into the steam/mechanical room in the basement of the 1965 building via a 3” pipe. Possibly these two systems are tied together or possibly they serve different systems (at different pressures). Compressed air appears to be available in most if not all lab areas. There are two additional air compressors in the penthouse, and it is unclear if they serve lab air or temperature control air.</td>
</tr>
<tr>
<td>Date Installed</td>
<td>01/01/1965</td>
</tr>
<tr>
<td>Overall Condition</td>
<td>Poor</td>
</tr>
<tr>
<td>Remaining Useful Life</td>
<td>Exceeded Nominal Useful Life: 30 Years</td>
</tr>
<tr>
<td>Replacement Cost</td>
<td>$331,900</td>
</tr>
</tbody>
</table>
Lab air compressor in basement mechanical room of 1960 portion of Morrill Hall.

Compressed air line (middle riser) enters the steam/mechanical room of the 1965 portion of Morrill Hall.
<table>
<thead>
<tr>
<th>SYSTEM/COMPONENT</th>
<th>POOR (1-5 YEARS)</th>
<th>FAIR (5-10 YEARS)</th>
<th>GOOD (10-20 YEARS)</th>
<th>EXCELLENT (20+ YEARS)</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FIRE ALARM SYSTEM</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>332,200</td>
</tr>
<tr>
<td>Fire Alarm System</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>332,200</td>
</tr>
<tr>
<td><strong>SPRINKLER SYSTEM</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2,000,000</td>
</tr>
<tr>
<td>Fire Sprinklers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2,000,000</td>
</tr>
<tr>
<td><strong>STANDPIPE SYSTEM</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>70,000</td>
</tr>
<tr>
<td>Fire Standpipes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>70,000</td>
</tr>
<tr>
<td><strong>FIRE PROTECTION TOTAL</strong></td>
<td>332,200</td>
<td>2,070,000</td>
<td></td>
<td>2,402,200</td>
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</tr>
<tr>
<td>% OF TOTAL</td>
<td>13.8</td>
<td>86.2</td>
<td></td>
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<tr>
<td><strong>FIRE ALARM SYSTEM ASSESSMENT DATA</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------------------------</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Item ID</strong></td>
<td>298919</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>The fire alarm in the building was upgraded a few years ago. A new Siemens XLS panel was provided near the main lobby. All horns/strobes were added or updated to bring the building up to code. Elevator recall is established via smoke detectors in the elevator lobbies.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Overall Condition</strong></td>
<td>Good</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Date Installed</strong></td>
<td>01/01/2009</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Remaining Useful Life</strong></td>
<td>16 Years Nominal Useful Life: 20 Years</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Manufacturer</strong></td>
<td>Siemens</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Model Number</strong></td>
<td>XLS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Recommendation</strong></td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Replacement Cost</strong></td>
<td>$332,200</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Comments</strong></td>
<td>Although the building is 6 stories, there is no fire command center. There are multiple bridges that connect this building to adjacent buildings.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**FIRE ALARM SYSTEM SURVEY PHOTOGRAPHS**

- FACP
- Horn Strobe
- Fire Doors
FIRE SPRINKLERS ASSESSMENT DATA

<table>
<thead>
<tr>
<th>Item ID</th>
<th>299648</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Wet pipe fire sprinklers were added to portions of this project in 2011. The fire sprinklers are fed from the adjacent Medical Sciences Building (building 191) by crossing the breezeway between the two buildings at the basement level. The sprinkler service continues on to Burrill Hall (building 138) by crossing the second-floor bridge between the two buildings, though existing drawings show capped lines for future connection where the bridge connects to Burrill Hall. There is a fire pump for this system, located in the Medical Sciences Building. This fire pump has a generator backup. The main fire sprinkler riser is located in the center stairs of the building. The fire sprinkler riser has a zone valve and a standpipe connection at each floor (basement, first, second, third, fourth, fifth, sixth and penthouse), but currently only the basement, first, second, and third floors have sprinklers. The floors that have sprinklers have full coverage.</td>
</tr>
<tr>
<td>Overall Condition</td>
<td>Excellent</td>
</tr>
<tr>
<td>Date Installed</td>
<td>01/01/2011</td>
</tr>
<tr>
<td>Remaining Useful Life</td>
<td>48 Years Nominal Useful Life: 50 Years</td>
</tr>
<tr>
<td>Replacement Cost</td>
<td>$2,000,000</td>
</tr>
</tbody>
</table>
Fire sprinkler main running from Medical Sciences Building to Morrill Hall at basement of breezeway/stairs.

Fire sprinkler main entering the center stairs at the basement. This is the bottom of the main fire sprinkler riser for this building.

Top of main fire sprinkler riser, at penthouse level of the center stairs. There is a zone valve for future use at the penthouse level, but the penthouse does not currently have sprinklers.

Main fire sprinkler riser at 5th floor center stairs. There is a zone valve for future use, but the 5th floor does not currently have sprinklers.

Main sprinkler riser at third floor center stairs. The third floor is fully sprinkled.

Fire sprinkler main at second floor center stairs. The 6" sprinkler line shown continues on to serve Burrill Hall.
Upright sprinklers at second floor lab area.

Pendant sprinklers in ceiling of second-floor bridge to Burrill Hall. The fire protection main to Burrill Hall is located above the ceiling here.

Sidewall sprinklers at first floor lobby.

Sprinkler in ceiling of 1st floor corridor.
<table>
<thead>
<tr>
<th>Item ID</th>
<th>299649</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>2-1/2&quot; hose valve connections (with 1-1/2&quot; hose adapters) are located on all floors (including the basement and the penthouse) at the main fire riser in the center stairs. These hose valves were installed as part of the 2011 fire protection project that added sprinklers to the basement, first, second, and third floor levels. This fire riser is fed from the adjacent Medical Sciences Building (where a fire pump is located). Additionally there is an older (original construction) set of hose valve cabinets, with three hose valve cabinets on each floor (including the basement but not the penthouse; there appears to be only one of these older hose valve cabinets in the penthouse). The hoses are no longer in place but the 2-1/2&quot; hose valves remain in service. As part of the 2011 fire protection project the risers for these older hose valve cabinets were disconnected from the original domestic water service and tied to the new fire protection main coming from the Medical Sciences Building, so while original construction these hose valve cabinets remain in service.</td>
</tr>
<tr>
<td>Overall Condition</td>
<td>Excellent</td>
</tr>
<tr>
<td>Date Installed</td>
<td>01/01/2011</td>
</tr>
<tr>
<td>Remaining Useful Life</td>
<td>48 Years Nominal Useful Life: 50 Years</td>
</tr>
<tr>
<td>Replacement Cost</td>
<td>$70,000</td>
</tr>
</tbody>
</table>
Fire protection riser with 2-1/2” hose valve connection (and 1-1/2” hose adapter) at the penthouse level of the center stairs.

Fire protection riser with 2-1/2” hose valve connection (and 1-1/2” hose adapter) at the 4th floor level of the center stairs.

Older hose valve cabinet (with 2-1/2 hose valve plus 1-1/2” hose adapter) in penthouse. This hose valve cabinet is in service.

A siamese connection at west end of Morrill Hall.
<table>
<thead>
<tr>
<th>SYSTEM/COMPONENT</th>
<th>POOR (1-5 YEARS)</th>
<th>FAIR (5-10 YEARS)</th>
<th>GOOD (10-20 YEARS)</th>
<th>EXCELLENT (20+ YEARS)</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MEDIUM VOLTAGE SYSTEM</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium Voltage System</td>
<td>38,600</td>
<td></td>
<td></td>
<td></td>
<td>38,600</td>
</tr>
<tr>
<td><strong>SUBSTATION</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium Voltage System - Substation</td>
<td>34,200</td>
<td></td>
<td></td>
<td></td>
<td>34,200</td>
</tr>
<tr>
<td>Medium Voltage System - Substation West</td>
<td>34,200</td>
<td></td>
<td></td>
<td></td>
<td>34,200</td>
</tr>
<tr>
<td><strong>LOW VOLTAGE SYSTEM</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Voltage System</td>
<td>518,400</td>
<td></td>
<td></td>
<td></td>
<td>518,400</td>
</tr>
<tr>
<td><strong>EMERGENCY POWER SYSTEM</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emergency Power System</td>
<td>65,300</td>
<td></td>
<td></td>
<td></td>
<td>65,300</td>
</tr>
<tr>
<td><strong>GENERATOR</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emergency Power System - Generator</td>
<td>37,900</td>
<td></td>
<td></td>
<td></td>
<td>37,900</td>
</tr>
<tr>
<td><strong>INTERIOR LIGHTING</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interior Lighting System</td>
<td>1,009,800</td>
<td></td>
<td></td>
<td></td>
<td>1,009,800</td>
</tr>
<tr>
<td><strong>EMERGENCY LIGHTING SYSTEM</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emergency Lighting System</td>
<td>22,200</td>
<td></td>
<td></td>
<td></td>
<td>22,200</td>
</tr>
<tr>
<td><strong>EXIT LIGHTING SYSTEM</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Exit Lighting System</td>
<td>17,600</td>
<td></td>
<td></td>
<td></td>
<td>17,600</td>
</tr>
<tr>
<td><strong>LIGHTING CONTROL SYSTEM</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lighting Controls System</td>
<td>271,200</td>
<td></td>
<td></td>
<td></td>
<td>271,200</td>
</tr>
<tr>
<td><strong>EXTERIOR LIGHTING SYSTEM</strong></td>
<td></td>
<td></td>
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<tr>
<td>Exterior Lighting System</td>
<td>21,200</td>
<td></td>
<td></td>
<td></td>
<td>21,200</td>
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<tr>
<td><strong>ELECTRICAL TOTAL</strong></td>
<td>1,949,700</td>
<td>103,100</td>
<td>17,600</td>
<td>2,070,500</td>
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<tr>
<td>% OF TOTAL</td>
<td>94.2</td>
<td>5.0</td>
<td>0.9</td>
<td></td>
<td></td>
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<tr>
<td><strong>MEDIUM VOLTAGE SYSTEM ASSESSMENT DATA</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------------------------</td>
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<td></td>
</tr>
<tr>
<td><strong>Item ID</strong></td>
<td>298913</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>Two 4,160V substations (east and west) provide power to the building. Integral transformers step the voltage down to 120/208V on the low voltage system.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Overall Condition</strong></td>
<td>Poor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Date Installed</strong></td>
<td>1/1/1963</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Remaining Useful Life</strong></td>
<td>Exceeded Nominal Useful Life: 40 Years</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Manufacturer</strong></td>
<td>Westinghouse</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Voltage</strong></td>
<td>4,160V</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Recommendation</strong></td>
<td>Due to the age of the system, suggest replacing in-kind.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Replacement Cost</strong></td>
<td>$38,600</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**MEDIUM VOLTAGE SYSTEM SURVEY PHOTOGRAPHS**

East Sub - Main MV

East Sub - Main MV
<table>
<thead>
<tr>
<th>Item ID</th>
<th>298908</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Condition</td>
<td>Poor</td>
</tr>
<tr>
<td>Date Installed</td>
<td>01/01/1964</td>
</tr>
<tr>
<td>Remaining Useful Life</td>
<td>Exceeded Nominal Useful Life: 40 Years</td>
</tr>
<tr>
<td>Equipment Tag</td>
<td>not observed</td>
</tr>
<tr>
<td>Manufacturer</td>
<td>Westinghouse</td>
</tr>
<tr>
<td>Model Number</td>
<td>not observed</td>
</tr>
<tr>
<td>Serial Number</td>
<td>not observed</td>
</tr>
<tr>
<td>Size/Capacity</td>
<td>600A</td>
</tr>
<tr>
<td>Voltage</td>
<td>4,160V</td>
</tr>
<tr>
<td>Recommendation</td>
<td>Due to the age of the substation, suggest replacing in-kind.</td>
</tr>
<tr>
<td>Replacement Cost</td>
<td>$34,200</td>
</tr>
<tr>
<td>Item ID</td>
<td>298909</td>
</tr>
<tr>
<td>-------------</td>
<td>--------</td>
</tr>
<tr>
<td>Description</td>
<td>4,160V Morrill Hall West Substation. 500 KVA transformer steps the voltage to 120/208V. Provides service to the new Addition (west) side of the building. 500 KVA Xfmr: Serial # 7013615. Meter (read manually by staff each month): 29-070-187, 242-E1</td>
</tr>
<tr>
<td>Date Installed</td>
<td>01/01/1965</td>
</tr>
<tr>
<td>Overall Condition</td>
<td>Poor</td>
</tr>
<tr>
<td>Remaining Useful Life</td>
<td>Exceeded Nominal Useful Life: 40 Years</td>
</tr>
<tr>
<td>Equipment Tag</td>
<td>not observed</td>
</tr>
<tr>
<td>Manufacturer</td>
<td>Westinghouse</td>
</tr>
<tr>
<td>Model Number</td>
<td>not observed</td>
</tr>
<tr>
<td>Serial Number</td>
<td>not observed</td>
</tr>
<tr>
<td>Size/Capacity</td>
<td>600A</td>
</tr>
<tr>
<td>Voltage</td>
<td>4,160V</td>
</tr>
<tr>
<td>Recommendation</td>
<td>Due to the age of the substation, suggest replacing in-kind.</td>
</tr>
<tr>
<td>Replacement Cost</td>
<td>$34,200</td>
</tr>
<tr>
<td>Item ID</td>
<td>298910</td>
</tr>
<tr>
<td>--------------</td>
<td>--------</td>
</tr>
<tr>
<td>Description</td>
<td>On the East side of the building, from the Medium Voltage substation, three bus ducts provide power to all 6 floors. The bus ducts are labeled, A, B and C and alternate between floors with a 400A disconnect each per floor. The bus duct runs beneath the ceiling and provides power to all the laboratory 100A panels outside each lab. The west side of the building, fed from the Medium Voltage sub provides power to individual lighting and appliance panelboards in electrical rooms on each floor. The low voltage system and panelboards are original to the building and it was commented that circuit capacity is reaching the maximum limit.</td>
</tr>
<tr>
<td>Overall Condition</td>
<td>Poor</td>
</tr>
<tr>
<td>Date Installed</td>
<td>1/1/1963</td>
</tr>
<tr>
<td>Remaining Useful Life</td>
<td>Exceeded  Nominal Useful Life: 40 Years</td>
</tr>
<tr>
<td>Manufacturer</td>
<td>Cutler Hammer</td>
</tr>
<tr>
<td>Recommendation</td>
<td>Panelboards and equipment are near the end of life. Recommend replacing in kind.</td>
</tr>
<tr>
<td>Replacement Cost</td>
<td>$518,400</td>
</tr>
</tbody>
</table>
Bus Duct - East Side
Bus Duct - Electrical Room
Lab Panel
<table>
<thead>
<tr>
<th>Item ID</th>
<th>298912</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>A 55KW, 208V natural gas generator, located indoors, provides power for lighting on the east side/west side and HVAC for the animal suites.</td>
</tr>
<tr>
<td>Overall Condition</td>
<td>Good</td>
</tr>
<tr>
<td>Date Installed</td>
<td>01/01/2000</td>
</tr>
<tr>
<td>Remaining Useful Life</td>
<td>12 Years Nominal Useful Life: 25 Years</td>
</tr>
<tr>
<td>Equipment Tag</td>
<td>not observed</td>
</tr>
<tr>
<td>Manufacturer</td>
<td>Onan / Cummins</td>
</tr>
<tr>
<td>Model Number</td>
<td>K800337290</td>
</tr>
<tr>
<td>Serial Number</td>
<td>not observed</td>
</tr>
<tr>
<td>Size/Capacity</td>
<td>55KW</td>
</tr>
<tr>
<td>Voltage</td>
<td>208/120V</td>
</tr>
<tr>
<td>Recommendation</td>
<td>-</td>
</tr>
<tr>
<td>Replacement Cost</td>
<td>$65,300</td>
</tr>
</tbody>
</table>
| Comments     | ATS - Power Sentry (Onan) 120/208V, 225A
Generator is exercised thru the monthly maintenance program. |
<table>
<thead>
<tr>
<th>Item ID</th>
<th>298911</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>A 55KW, skid mount, 208V natural gas, 7.5L, Onan generator, located indoors, provides power for lighting on the east and west side and HVAC for the animal suites.</td>
</tr>
<tr>
<td>Overall Condition</td>
<td>Good</td>
</tr>
<tr>
<td>Date Installed</td>
<td>01/01/2000</td>
</tr>
<tr>
<td>Remaining Useful Life</td>
<td>12 Years</td>
</tr>
<tr>
<td>Nominal Useful Life:</td>
<td>25 Years</td>
</tr>
<tr>
<td>Equipment Tag</td>
<td>not observed</td>
</tr>
<tr>
<td>Manufacturer</td>
<td>Onan / Cummins</td>
</tr>
<tr>
<td>Model Number</td>
<td>55-GEN-15R-178060</td>
</tr>
<tr>
<td>Serial Number</td>
<td>K800337290</td>
</tr>
<tr>
<td>Size/Capacity</td>
<td>55KW</td>
</tr>
<tr>
<td>Voltage</td>
<td>208/120V</td>
</tr>
<tr>
<td>Recommendation</td>
<td>-</td>
</tr>
<tr>
<td>Replacement Cost</td>
<td>$37,900</td>
</tr>
</tbody>
</table>
| Comments        | ATS - Power Sentry (Onan)  
|                 | 120/208V, 225A     |
|                 | Generator is exercised thru the monthly maintenance program. |
## Interior Lighting System Assessment Data

<table>
<thead>
<tr>
<th>Item ID</th>
<th>298914</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>2x4 fluorescent fixtures provide lighting throughout corridors and offices. Lab spaces are recessed fluorescent fixtures. Stairwell lighting utilizes indirect fixtures. All interior lighting for the building has been upgraded to T-8 lamps or CFL as part of the campus initiative.</td>
</tr>
<tr>
<td>Overall Condition</td>
<td>Poor</td>
</tr>
<tr>
<td>Date Installed</td>
<td>01/01/1964</td>
</tr>
<tr>
<td>Remaining Useful Life</td>
<td>Exceeded Nominal Useful Life: 25 Years</td>
</tr>
<tr>
<td>Recommendation</td>
<td>Based on the age of the lighting fixtures, recommend replacement in-kind. Retrofit report says a survey has been completed for lamp upgrades, but no retrofit as taken place yet.</td>
</tr>
<tr>
<td>Replacement Cost</td>
<td>$1,009,800</td>
</tr>
</tbody>
</table>

## Interior Lighting System Survey Photographs

- Corridor Lighting
- Stairwell Lighting
<table>
<thead>
<tr>
<th><strong>Item ID</strong></th>
<th>298916</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>Emergency lighting is provided by the generator via the overhead lighting. There is no lighting on the exterior building doors, thus egress lighting is insufficient per code.</td>
</tr>
<tr>
<td><strong>Overall Condition</strong></td>
<td>Poor</td>
</tr>
<tr>
<td><strong>Date Installed</strong></td>
<td>1/1/1963</td>
</tr>
<tr>
<td><strong>Remaining Useful Life</strong></td>
<td>Exceeded Nominal Useful Life: 25 Years</td>
</tr>
<tr>
<td><strong>Recommendation</strong></td>
<td>Provide luminaires adjacent to building exits (powered by the generator) to satisfy code required egress lighting of 1 footcandle.</td>
</tr>
<tr>
<td><strong>Replacement Cost</strong></td>
<td>$22,200</td>
</tr>
</tbody>
</table>
**EXIT LIGHTING SYSTEM ASSESSMENT DATA**

<table>
<thead>
<tr>
<th>Item ID</th>
<th>298915</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>All exit lighting in the building has been upgraded as part of the 2012 campus initiative.</td>
</tr>
<tr>
<td>Overall Condition</td>
<td>Excellent</td>
</tr>
<tr>
<td>Date Installed</td>
<td>01/01/2012</td>
</tr>
<tr>
<td>Remaining Useful Life</td>
<td>24 Years</td>
</tr>
<tr>
<td>Nominal Useful Life: 25 Years</td>
<td></td>
</tr>
<tr>
<td>Recommendation</td>
<td>-</td>
</tr>
<tr>
<td>Replacement Cost</td>
<td>$17,600</td>
</tr>
</tbody>
</table>

**EXIT LIGHTING SYSTEM SURVEY PHOTOGRAPHS**

![Exit Sign](image)
<table>
<thead>
<tr>
<th>Item ID</th>
<th>298918</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>There are no automatic lighting controls in the building. All lighting is controlled by manual on/off switches.</td>
</tr>
<tr>
<td>Overall Condition</td>
<td>Poor</td>
</tr>
<tr>
<td>Date Installed</td>
<td>1/1/1963</td>
</tr>
<tr>
<td>Remaining Useful Life</td>
<td>ExceededNominal Useful Life: 20 Years</td>
</tr>
<tr>
<td>Recommendation</td>
<td>Upgrade to automatic controls for interior lighting (occupancy/vacancy sensors or central control panels).</td>
</tr>
<tr>
<td>Replacement Cost</td>
<td>$271,200</td>
</tr>
</tbody>
</table>
# Exterior Lighting System Assessment Data

<table>
<thead>
<tr>
<th>Item ID</th>
<th>298917</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>There is only 1 exterior lighting on the building, at the loading dock. Fixture appears to be CFL. No other lighting at exit doors for security or general lighting on the building.</td>
</tr>
<tr>
<td>Overall Condition</td>
<td>Poor</td>
</tr>
<tr>
<td>Date Installed</td>
<td>1/1/1963</td>
</tr>
<tr>
<td>Remaining Useful Life</td>
<td>Exceeded</td>
</tr>
<tr>
<td>Nominal Useful Life: 25 Years</td>
<td></td>
</tr>
<tr>
<td>Recommendation</td>
<td>Provide luminaires adjacent to building exits (powered by the generator) to satisfy code required egress lighting of 1 footcandle.</td>
</tr>
<tr>
<td>Replacement Cost</td>
<td>$21,200</td>
</tr>
</tbody>
</table>

# Exterior Lighting System Survey Photographs

Exterior Light
## COMMUNICATIONS DISCIPLINE REPLACEMENT COST SUMMARY

<table>
<thead>
<tr>
<th>SYSTEM/COMPONENT</th>
<th>POOR (1-5 YEARS)</th>
<th>FAIR (5-10 YEARS)</th>
<th>GOOD (10-20 YEARS)</th>
<th>EXCELLENT (20+ YEARS)</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DATA SYSTEM</strong></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Communication Infrastructure System</td>
<td></td>
<td></td>
<td></td>
<td>619,000</td>
<td>619,000</td>
</tr>
<tr>
<td><strong>SECURITY ACCESS CONTROL SYSTEM</strong></td>
<td></td>
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</tr>
<tr>
<td>Access Control System</td>
<td></td>
<td>142,500</td>
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<td></td>
<td>142,500</td>
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<tr>
<td><strong>COMMUNICATIONS TOTAL</strong></td>
<td>142,500</td>
<td>619,000</td>
<td></td>
<td></td>
<td>761,500</td>
</tr>
<tr>
<td>% OF TOTAL</td>
<td>18.7</td>
<td>81.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item ID</td>
<td>303667</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>-------------</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td>The building is fed with 12 strands of single mode fiber and 500 copper pairs with each pair grounded and individually protected by a fuse/surge arrestor. Fiber and copper originate from Node #4. The building IDF is located in room 6 on the lower level. Fiber distributes from the building IDF to the hub room (telecommunication room) within 100 meters of end-use equipment and lands at rack mounted fiber switches within the hub room. There is 1 hub room located in room 334 within the building. The hub room is equipped with 5 free standing racks, wire management, and overhead ladder cable tray. The hub room has sprinkler protection but does not have a dedicated cooling system; the room is conditioned/exhausted by the base building system. Equipment within the hub room is backed up with a stand-alone UPS (APC Smart UPS 750). Outlet standards typically have 1°C stubbed to cable management. Standard outlet consists of two network cables and two data jacks. Station cable consists of a mix of Cat 5, Cat 5e, Cat 6 and Cat 6e (Mohawk). The building is typically equipped with WIFI throughout (coverage not noted).</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall Condition</td>
<td>Good</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date Installed</td>
<td>UIUC network upgrade complete (date range 2006 to 2012)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remaining Useful Life</td>
<td>20 Years Nominal Useful Life: 20 Years</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Replacement Cost</td>
<td>$619,000</td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

**COMMUNICATION INFRASTRUCTURE SYSTEM SURVEY PHOTOGRAPHS**

- Bldg 242 IDF
- Hub room racks
- Hub room UPS
<table>
<thead>
<tr>
<th>Item ID</th>
<th>298920</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>There is one card reader in the building at the entrance to the animal suite in the basement. Nothing else is on the system or in the building. Other restricted areas of the building are simply just keyed doors.</td>
</tr>
<tr>
<td>Overall Condition</td>
<td>Fair</td>
</tr>
<tr>
<td>Date Installed</td>
<td>01/01/2000</td>
</tr>
<tr>
<td>Remaining Useful Life</td>
<td>7 Years</td>
</tr>
<tr>
<td>Nominal Useful Life: 20 Years</td>
<td></td>
</tr>
<tr>
<td>Recommendation</td>
<td>-</td>
</tr>
<tr>
<td>Replacement Cost</td>
<td>$142,500</td>
</tr>
</tbody>
</table>
Morrill Hall contains 6 floors plus a basement and penthouse. The penthouse is used exclusively for mechanical equipment. Morrill Hall contains classrooms, administrative offices, laboratories, and animal quarters. The Life Safety Code classifies the building as a Business occupancy.

Morrill Hall is provided with a manual fire alarm system. Manual pull stations are provided at all exits from each floor. Alarm bells are provided in corridors throughout the building. An old style Simplex fire alarm control panel is located on the first floor of the building (recessed into CMU block).

Morrill Hall is a non-sprinklered building with a Class I standpipe system. Fire Department hose connections are located throughout the building at every stairway.

**OCCUPANT LOAD/EXITING**

**Basement:** 185 occupants; 2 exits required (4 exits provided that include 1 exterior exit accessible via Mechanical Room 30); 37" exit door width required (144" provided, 108" without exit via Room 30); door and corridor widths are sufficient for occupants served

**First Floor (LED):** 536 occupants; 3 exits required (5 exits provided); 108" exit door width required including exit discharge onto floor from floors above and below (389" provided); door and corridor widths are sufficient for occupants served

**Second Floor:** 325 occupants; 2 exits required (3 exits provided); 65" exit door width required (109" provided); door and corridor widths are sufficient for occupants served

**Third Floor:** 284 occupants; 2 exits required (3 exits provided); 57" exit door width required (113" provided); door and corridor widths are sufficient for occupants served

**Fourth Floor:** 291 occupants; 2 exits required (3 exits provided); 57" exit door width required (177" provided); door and corridor widths are sufficient for occupants served

**Fifth Floor:** 272 occupants; 2 exits required (3 exits provided); 55" exit door width required (113" provided); door and corridor widths are sufficient for occupants served

**Sixth Floor:** 249 occupants; 2 exits required (3 exits provided); 50" exit door width required (111" provided); door and corridor widths are sufficient for occupants served

**Penthouse:** 59 occupants; 2 exits required (2 exits provided); 32" exit door width required (71" provided); door and corridor widths are sufficient for occupants served
<table>
<thead>
<tr>
<th>Item ID</th>
<th>REQUIREMENT NUMBER</th>
<th>INSPECTION DATE</th>
<th>IDENTIFIED ISSUE</th>
<th>LEGACY VALUE</th>
<th>PERCENT COMPLETE</th>
<th>POOR</th>
<th>FAIR</th>
<th>CODE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>305576</td>
<td>REQ-47585</td>
<td>11/13/2006</td>
<td>Conveying: Elevator Controls Not ADA Compliant</td>
<td>61,600</td>
<td>0.0</td>
<td>61,600</td>
<td></td>
<td></td>
<td>61,600</td>
</tr>
<tr>
<td>305564</td>
<td>REQ-49279</td>
<td>11/13/2006</td>
<td>Interior Doors: Non ADA Compliant Hardware</td>
<td>476,500</td>
<td>0.0</td>
<td>476,500</td>
<td></td>
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<td>476,500</td>
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<tr>
<td>305582</td>
<td>REQ-49392</td>
<td>11/13/2006</td>
<td>Other Equipment: Provide ADA Compliant Room Signage</td>
<td>56,700</td>
<td>0.0</td>
<td>56,700</td>
<td></td>
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<td>56,700</td>
</tr>
<tr>
<td>305575</td>
<td>REQ-48536</td>
<td>11/13/2006</td>
<td>Wall Finishes: Damaged and Worn Paint Surface</td>
<td>104,100</td>
<td>38.0</td>
<td>64,500</td>
<td></td>
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<td>64,500</td>
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<tr>
<td>305567</td>
<td>REQ-61037</td>
<td>11/13/2006</td>
<td>Floor Finishes: Carpet End of Life</td>
<td>3,000</td>
<td>0.0</td>
<td>3,000</td>
<td></td>
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<tr>
<td>305574</td>
<td>REQ-61046</td>
<td>11/13/2006</td>
<td>Wall Finishes: Damaged and Worn Masonry Paint Surface</td>
<td>712,000</td>
<td>38.0</td>
<td>441,500</td>
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<td>441,500</td>
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<tr>
<td>305572</td>
<td>REQ-48192</td>
<td>11/13/2006</td>
<td>Floor Finishes: VAT End of Life Sixth Floor</td>
<td>215,100</td>
<td>0.0</td>
<td>215,100</td>
<td></td>
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<td>215,100</td>
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<tr>
<td>305569</td>
<td>REQ-61033</td>
<td>11/13/2006</td>
<td>Floor Finishes: VAT End of Life First Floor</td>
<td>215,100</td>
<td>0.0</td>
<td>215,100</td>
<td></td>
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<td>215,100</td>
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<tr>
<td>305568</td>
<td>REQ-61040</td>
<td>11/13/2006</td>
<td>Floor Finishes: VAT End of Life Fifth Floor</td>
<td>215,100</td>
<td>0.0</td>
<td>215,100</td>
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<td>215,100</td>
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<tr>
<td>305571</td>
<td>REQ-61045</td>
<td>11/13/2006</td>
<td>Floor Finishes: VAT End of Life Second Floor</td>
<td>215,100</td>
<td>0.0</td>
<td>215,100</td>
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<td>215,100</td>
</tr>
<tr>
<td>305570</td>
<td>REQ-61050</td>
<td>11/13/2006</td>
<td>Floor Finishes: VAT End of Life Fourth Floor</td>
<td>215,100</td>
<td>0.0</td>
<td>215,100</td>
<td></td>
<td></td>
<td>215,100</td>
</tr>
<tr>
<td>305573</td>
<td>REQ-61251</td>
<td>11/13/2006</td>
<td>Floor Finishes: VAT End of Life Third Floor</td>
<td>215,100</td>
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<td>215,100</td>
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<tr>
<td>305562</td>
<td>REQ-47272</td>
<td>10/8/2002</td>
<td>Electrical Doors: Replace Non-Compliant Fire Doors and Frames</td>
<td>3,600</td>
<td>0.0</td>
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<td>3,600</td>
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<tr>
<td>305565</td>
<td>REQ-61031</td>
<td>11/13/2006</td>
<td>Interior Doors: Non-Compliant FRR</td>
<td>7,200</td>
<td>0.0</td>
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<tr>
<td>305577</td>
<td>REQ-42194</td>
<td>11/13/2006</td>
<td>Conveying: Elevator Motor/Control End of Service Life</td>
<td>216,000</td>
<td>0.0</td>
<td>216,000</td>
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<td>216,000</td>
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<tr>
<td>305559</td>
<td>REQ-46952</td>
<td>11/13/2006</td>
<td>Exterior Doors: Replace Weatherstripping</td>
<td>4,300</td>
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<td>4,300</td>
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<tr>
<td>305583</td>
<td>REQ-48685</td>
<td>11/13/2006</td>
<td>Means of Egress: Corridor Obstructions</td>
<td>4,700</td>
<td>0.0</td>
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<td>4,700</td>
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<tr>
<td>305560</td>
<td>REQ-49390</td>
<td>11/13/2006</td>
<td>Exterior Windows: End of Life</td>
<td>541,700</td>
<td>0.0</td>
<td>541,700</td>
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<td>541,700</td>
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<tr>
<td>305581</td>
<td>REQ-55942</td>
<td>11/13/2006</td>
<td>Equipment and Furnishings: Lab Casework End of Life</td>
<td>1,972,400</td>
<td>0.0</td>
<td>1,972,400</td>
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<td>1,972,400</td>
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<tr>
<td>305566</td>
<td>REQ-61034</td>
<td>11/13/2006</td>
<td>Ceiling Finishes: Aged ACT</td>
<td>775,100</td>
<td>15.0</td>
<td>658,800</td>
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<td>658,800</td>
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<tr>
<td>305561</td>
<td>REQ-61048</td>
<td>11/13/2006</td>
<td>Roofing: Aged Built-Up</td>
<td>14,000</td>
<td>0.0</td>
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<tr>
<td>305584</td>
<td>REQ-61271</td>
<td>12/1/2006</td>
<td>Storm Drain: Building Drainage Poor</td>
<td>993,900</td>
<td>0.0</td>
<td>993,900</td>
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<td>993,900</td>
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<tr>
<td>Item ID</td>
<td>REQUIREMENT NUMBER</td>
<td>INSPECTION DATE</td>
<td>IDENTIFIED ISSUE</td>
<td>LEGACY VALUE</td>
<td>PERCENT COMPLETE</td>
<td>POOR</td>
<td>FAIR</td>
<td>CODE</td>
<td>TOTAL</td>
</tr>
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<td>---------</td>
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<td>------------------------------------------------------</td>
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</tr>
<tr>
<td>305563</td>
<td>REQ-61060</td>
<td>11/13/2006</td>
<td>Interior Doors: End of Life</td>
<td>791,400</td>
<td>0.0</td>
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<td>791,400</td>
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</tr>
<tr>
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<td></td>
<td>GENERAL LEGACY ITEMS TOTALS</td>
<td>8,028,600</td>
<td>5.3</td>
<td>5,213,900</td>
<td>2,380,100</td>
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<td>MEP LEGACY ITEMS ITEMS</td>
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</tr>
<tr>
<td>305579</td>
<td>REQ-47008</td>
<td>11/13/2006</td>
<td>Communications and Security: Fire Alarm System Non-Addressable</td>
<td>587,000</td>
<td>0.0</td>
<td>587,000</td>
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<td>587,000</td>
</tr>
<tr>
<td>305578</td>
<td>REQ-47352</td>
<td>11/13/2006</td>
<td>Asbestos: Remove Damaged Insulation</td>
<td>31,700</td>
<td>1.0</td>
<td>31,300</td>
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<td>31,300</td>
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<tr>
<td>305580</td>
<td>REQ-56785</td>
<td>11/13/2006</td>
<td>Data: Upgrade Network Infrastructure</td>
<td>205,600</td>
<td>0.0</td>
<td>205,600</td>
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<td>205,600</td>
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<tr>
<td></td>
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<td></td>
<td>MEP LEGACY ITEMS TOTALS</td>
<td>824,200</td>
<td>0.0</td>
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<td>792,500</td>
<td></td>
<td>823,900</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>TOTALS</td>
<td>8,852,800</td>
<td>4.8</td>
<td>5,245,200</td>
<td>3,172,600</td>
<td>8,300</td>
<td>8,426,100</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>% OF LEGACY VALUE</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Poor = VFA Priorities 1, 2, and 3; Fair – VFA Priority 4; and Code – VFA Priority 5</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Date Inspected</strong></td>
<td>11/13/2006</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>The existing fire alarm is in functional condition but must be incorporated with newer additions and upgrades to meet code standards should any renovations within the building take place. Many of the signaling (bells or red lights) devises do not meet the ADAAG 4.28 under alarms. The strobe lights should be a xenon type unit. Most of the bathrooms were also not equipped with strobes. Per NFPA 101 Section 7-6.1.4, Fire alarm systems shall be installed and tested per the requirements of NFPA 70 and 72. Due to the size of the building an addressable FACP should be installed in lieu of floor zones. See correction for locations.</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Requirement Category</strong></td>
<td>Accessibility</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Requirement Name</strong></td>
<td>Communications and Security: Fire Alarm System Non-Addressable (Legacy)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Condition</strong></td>
<td>Fair</td>
<td></td>
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</tr>
<tr>
<td><strong>Percent Complete</strong></td>
<td>0.0</td>
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</tr>
<tr>
<td><strong>Recommendation</strong></td>
<td>Furnish and install a new addressable fire alarm system. This will include the fire alarm panel, pull or break glass stations, fire-strobe and horn (ADA type), smoke detectors, outside red beacon, etc. Mounting heights, to meet code requirements are: manual pull stations (48” AFF to center), audible/visual units (80” AFF or 6” below ceiling, whichever is lower). The estimate does not include connection to the existing campus system. The enclosed costs are for budgetary purposes only. Specifications on equipment/area must be field verified for accuracy. See comments for details. Note the pull station in the hall next to room 139 is blocked. A difficulty factor of 20% has been applied to represent typical costs associated with working in older buildings or confined areas, such as higher staging costs, additional demolition, addition physical and equipment resources and may not account for project specific items such as timing requirements, hidden conditions, and the organizing of multiple deficiencies corrections where issues other than costs are the prime considerations.</td>
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</tr>
<tr>
<td><strong>Estimated Cost</strong></td>
<td>586,998.00</td>
<td></td>
<td></td>
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<tr>
<td><strong>Estimated Remaining Cost</strong></td>
<td>586,998.00</td>
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<td>Legacy Assessment Data: REQ - 47585</td>
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<td><strong>Date Inspected:</strong> 11/13/2006</td>
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<tr>
<td><strong>Description:</strong> The elevator does not meet UFAS sections 4.10.4 and 4.10.14 requirements. There are no hall lanterns (visible signal) and no emergency communications device.</td>
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<tr>
<td><strong>Requirement Category:</strong> Accessibility</td>
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</tr>
<tr>
<td><strong>Requirement Name:</strong> Conveying: Elevator Controls Not ADA Compliant (Legacy)</td>
<td></td>
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<tr>
<td><strong>Condition:</strong> Fair</td>
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<td></td>
</tr>
<tr>
<td><strong>Percent Complete:</strong> 0.0</td>
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<tr>
<td><strong>Recommendation:</strong> Install hall lanterns at each elevator entrance, min. 72&quot; above finished floor and emergency intercommunication system.</td>
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<tr>
<td><strong>Estimated Cost:</strong> 61,615.00</td>
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</tr>
<tr>
<td><strong>Estimated Remaining Cost:</strong> 61,615.00</td>
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<table>
<thead>
<tr>
<th>Legacy Assessment Data: REQ - 49279</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Date Inspected:</strong> 11/13/2006</td>
</tr>
<tr>
<td><strong>Description:</strong> Interior doors generally have knob style hardware which should be replaced with lever type hardware in accordance with ADA Section 4.26.</td>
</tr>
<tr>
<td><strong>Requirement Category:</strong> Accessibility</td>
</tr>
<tr>
<td><strong>Requirement Name:</strong> Interior Doors: Non ADA Compliant Hardware (Legacy)</td>
</tr>
<tr>
<td><strong>Condition:</strong> Fair</td>
</tr>
<tr>
<td><strong>Percent Complete:</strong> 0.0</td>
</tr>
<tr>
<td><strong>Recommendation:</strong> Remove and replace hardware on Accessible Doors in compliance with ADAAG Section 4.13.9 Door Hardware.</td>
</tr>
<tr>
<td><strong>Estimated Cost:</strong> 476,460.00</td>
</tr>
<tr>
<td><strong>Estimated Remaining Cost:</strong> 476,460.00</td>
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<tr>
<td>LEGACY ASSESSMENT DATA: REQ-49392</td>
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<tr>
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<tr>
<td><strong>Date Inspected</strong></td>
</tr>
<tr>
<td><strong>Description</strong></td>
</tr>
<tr>
<td><strong>Requirement Category</strong></td>
</tr>
<tr>
<td><strong>Requirement Name</strong></td>
</tr>
<tr>
<td><strong>Condition</strong></td>
</tr>
<tr>
<td><strong>Percent Complete</strong></td>
</tr>
<tr>
<td><strong>Recommendation</strong></td>
</tr>
<tr>
<td><strong>Estimated Cost</strong></td>
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<table>
<thead>
<tr>
<th>LEGACY ASSESSMENT DATA: REQ-48536</th>
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<tbody>
<tr>
<td><strong>Date Inspected</strong></td>
</tr>
<tr>
<td><strong>Description</strong></td>
</tr>
<tr>
<td><strong>UIUC Comments: Percent Complete Information</strong></td>
</tr>
<tr>
<td>U08061 – Morrill Hall – Sprinkler and Fire Alarm Upgrades</td>
</tr>
<tr>
<td><strong>Total Complete to Date:</strong></td>
</tr>
<tr>
<td><strong>Requirement Category</strong></td>
</tr>
<tr>
<td><strong>Requirement Name</strong></td>
</tr>
<tr>
<td><strong>Condition</strong></td>
</tr>
<tr>
<td><strong>Percent Complete</strong></td>
</tr>
<tr>
<td><strong>Recommendation</strong></td>
</tr>
<tr>
<td><strong>Estimated Cost</strong></td>
</tr>
<tr>
<td><strong>Action Date</strong></td>
</tr>
<tr>
<td><strong>LEGACY ASSESSMENT DATA: REQ - 61037</strong></td>
</tr>
<tr>
<td>----------------------------------------</td>
</tr>
<tr>
<td><strong>Date Inspected</strong></td>
</tr>
<tr>
<td><strong>Description</strong></td>
</tr>
<tr>
<td><strong>Requirement Category</strong></td>
</tr>
<tr>
<td><strong>Requirement Name</strong></td>
</tr>
<tr>
<td><strong>Condition</strong></td>
</tr>
<tr>
<td><strong>Percent Complete</strong></td>
</tr>
<tr>
<td><strong>Recommendation</strong></td>
</tr>
<tr>
<td><strong>Estimated Cost</strong></td>
</tr>
<tr>
<td><strong>Estimated Remaining Cost</strong></td>
</tr>
<tr>
<td><strong>Action Date</strong></td>
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</table>

<table>
<thead>
<tr>
<th><strong>LEGACY ASSESSMENT DATA: REQ - 61046</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Date Inspected</strong></td>
</tr>
<tr>
<td><strong>Description</strong></td>
</tr>
</tbody>
</table>
| **UIUC Comments: Percent Complete Information** | *U08061 – Morrill Hall – Sprinkler and Fire Alarm Upgrades*  
___38%: Substantial Completion Date: 4/2011  
Total Complete to Date: 38% |
<p>| <strong>Requirement Category</strong> | Appearance |
| <strong>Requirement Name</strong> | Wall Finishes: Damaged and Worn Masonry Paint Surface (Legacy) |
| <strong>Condition</strong> | Poor |
| <strong>Percent Complete</strong> | 38.0 |
| <strong>Recommendation</strong> | Prep and repaint the wall surfaces on all floors. |
| <strong>Estimated Cost</strong> | 712,034.00 |
| <strong>Estimated Remaining Cost</strong> | 441,461.08 |
| <strong>Action Date</strong> | 11/13/2011 |</p>
<table>
<thead>
<tr>
<th><strong>LEGACY ASSESSMENT DATA:</strong></th>
<th><strong>REQ - 47352</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Date Inspected</td>
<td>11/13/2006</td>
</tr>
<tr>
<td>Description</td>
<td>The old insulation in the mechanical areas, penthouse and basement, have areas badly damaged and the insulation is likely to be asbestos bearing.</td>
</tr>
<tr>
<td><em>UIUC Comments: Percent Complete Information</em></td>
<td></td>
</tr>
<tr>
<td><em>U05001 – Morrill Hall – Replace Condensor Piping</em>_</td>
<td>1%: Substantial Completion Date: 2/2010</td>
</tr>
<tr>
<td>Total Complete to Date</td>
<td>1%</td>
</tr>
<tr>
<td>Requirement Category</td>
<td>Asbestos</td>
</tr>
<tr>
<td>Requirement Name</td>
<td>Asbestos: Remove Damaged Insulation (Legacy)</td>
</tr>
<tr>
<td>Condition</td>
<td>Poor</td>
</tr>
<tr>
<td>Percent Complete</td>
<td>1.0</td>
</tr>
<tr>
<td>Recommendation</td>
<td>Remove damaged insulation, sample for asbestos material, remove as necessary, and re-insulate piping, fittings and tanks. Sizes and lengths are for estimating only. Confirm all material in the field. A difficulty factor of 40% has been applied to this deficiency to account for known historical data on campus mechanical installations and may not account for project specific items such as timing requirements, hidden conditions, and the organizing of multiple deficiencies corrections where issues other than costs are the prime considerations. A difficulty factor of 20% has been applied to represent typical costs associated with working in older buildings or confined areas, such as higher staging costs, additional demolition, addition physical and equipment resources and may not account for project specific items such as timing requirements, hidden conditions, and the organizing of multiple deficiencies corrections where issues other than costs are the prime considerations.</td>
</tr>
<tr>
<td>Estimated Cost</td>
<td>31,652.00</td>
</tr>
<tr>
<td>Estimated Remaining Cost</td>
<td>31,335.48</td>
</tr>
<tr>
<td>Action Date</td>
<td>11/13/2009</td>
</tr>
<tr>
<td>Date Inspected</td>
<td>11/13/2006</td>
</tr>
<tr>
<td>------------------</td>
<td>------------</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>The sixth floor may contain asbestos containing material (ACM) in the form of vinyl asbestos floor tile (VAT). The flooring in many areas has exceeded its expected useful life and should be replaced. This flooring should be removed and replaced with UIUC approved floor covering (VCT).</td>
</tr>
<tr>
<td><strong>Requirement Category</strong></td>
<td>Asbestos</td>
</tr>
<tr>
<td><strong>Requirement Name</strong></td>
<td>Floor Finishes: VAT End of Life Sixth Floor (Legacy)</td>
</tr>
<tr>
<td><strong>Condition</strong></td>
<td>Poor</td>
</tr>
<tr>
<td><strong>Percent Complete</strong></td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Recommendation</strong></td>
<td>Replace flooring as indicated in the sixth floor. ACM abatement assumed. Assume 14,577 SF.</td>
</tr>
<tr>
<td><strong>Estimated Cost</strong></td>
<td>215,079.00</td>
</tr>
<tr>
<td><strong>Estimated Remaining Cost</strong></td>
<td>215,079.00</td>
</tr>
<tr>
<td><strong>Action Date</strong></td>
<td>11/13/2011</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date Inspected</th>
<th>11/13/2006</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>The first floor may contain asbestos containing material (ACM) in the form of vinyl asbestos floor tile (VAT). The flooring in many areas has exceeded its expected useful life and should be replaced. This flooring should be removed and replaced with UIUC approved floor covering (VCT).</td>
</tr>
<tr>
<td><strong>Requirement Category</strong></td>
<td>Asbestos</td>
</tr>
<tr>
<td><strong>Requirement Name</strong></td>
<td>Floor Finishes: VAT End of Life First Floor (Legacy)</td>
</tr>
<tr>
<td><strong>Condition</strong></td>
<td>Poor</td>
</tr>
<tr>
<td><strong>Percent Complete</strong></td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Recommendation</strong></td>
<td>Replace flooring as indicated in the first floor. ACM abatement assumed. Assume 14,577 SF.</td>
</tr>
<tr>
<td><strong>Estimated Cost</strong></td>
<td>215,079.00</td>
</tr>
<tr>
<td><strong>Estimated Remaining Cost</strong></td>
<td>215,079.00</td>
</tr>
<tr>
<td><strong>Action Date</strong></td>
<td>11/13/2011</td>
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# Legacy Assessment Data: REQ-61040

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<tr>
<th>Date Inspected</th>
<th>11/13/2006</th>
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</thead>
<tbody>
<tr>
<td>Description</td>
<td>The fifth floor may contain asbestos containing material (ACM) in the form of vinyl asbestos floor tile (VAT). The flooring in many areas has exceeded its expected useful life and should be replaced. This flooring should be removed and replaced with UIUC approved floor covering (VCT).</td>
</tr>
<tr>
<td>Requirement Category</td>
<td>Asbestos</td>
</tr>
<tr>
<td>Requirement Name</td>
<td>Floor Finishes: VAT End of Life Fifth Floor (Legacy)</td>
</tr>
<tr>
<td>Condition</td>
<td>Poor</td>
</tr>
<tr>
<td>Percent Complete</td>
<td>0.0</td>
</tr>
<tr>
<td>Recommendation</td>
<td>Replace flooring as indicated in the fifth floor. ACM abatement assumed. Assume 14,577 SF.</td>
</tr>
<tr>
<td>Estimated Cost</td>
<td>215,079.00</td>
</tr>
<tr>
<td>Action Date</td>
<td>11/13/2011</td>
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# Legacy Assessment Data: REQ-61045

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<tr>
<th>Date Inspected</th>
<th>11/13/2006</th>
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</thead>
<tbody>
<tr>
<td>Description</td>
<td>The second floor may contain asbestos containing material (ACM) in the form of vinyl asbestos floor tile (VAT). The flooring in many areas has exceeded its expected useful life and should be replaced. This flooring should be removed and replaced with UIUC approved floor covering (VCT).</td>
</tr>
<tr>
<td>Requirement Category</td>
<td>Asbestos</td>
</tr>
<tr>
<td>Requirement Name</td>
<td>Floor Finishes: VAT End of Life Second Floor (Legacy)</td>
</tr>
<tr>
<td>Condition</td>
<td>Poor</td>
</tr>
<tr>
<td>Percent Complete</td>
<td>0.0</td>
</tr>
<tr>
<td>Recommendation</td>
<td>Replace flooring as indicated in the second floor. ACM abatement assumed. Assume 14,577 SF.</td>
</tr>
<tr>
<td>Estimated Cost</td>
<td>215,079.00</td>
</tr>
<tr>
<td>Action Date</td>
<td>11/13/2011</td>
</tr>
</tbody>
</table>
### Legacy Assessment Data: REQ - 61050

<table>
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<tr>
<th>Date Inspected</th>
<th>11/13/2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>The fourth floor may contain asbestos containing material (ACM) in the form of vinyl asbestos floor tile (VAT). The flooring in many areas has exceeded its expected useful life and should be replaced. This flooring should be removed and replaced with UIUC approved floor covering (VCT).</td>
</tr>
<tr>
<td>Requirement Category</td>
<td>Asbestos</td>
</tr>
<tr>
<td>Requirement Name</td>
<td>Floor Finishes: VAT End of Life Fourth Floor (Legacy)</td>
</tr>
<tr>
<td>Condition</td>
<td>Poor</td>
</tr>
<tr>
<td>Percent Complete</td>
<td>0.0</td>
</tr>
<tr>
<td>Recommendation</td>
<td>Replace flooring as indicated in the fourth floor. ACM abatement assumed. Assume 14,577 SF.</td>
</tr>
<tr>
<td>Estimated Cost</td>
<td>215,079.00</td>
</tr>
<tr>
<td>Estimated Remaining Cost</td>
<td>215,079.00</td>
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<tr>
<td>Action Date</td>
<td>11/13/2011</td>
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### Legacy Assessment Data: REQ - 61251

<table>
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<tr>
<th>Date Inspected</th>
<th>11/13/2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>The third floor may contain asbestos containing material (ACM) in the form of vinyl asbestos floor tile (VAT). The flooring in many areas has exceeded its expected useful life and should be replaced. This flooring should be removed and replaced with UIUC approved floor covering (VCT).</td>
</tr>
<tr>
<td>Requirement Category</td>
<td>Asbestos</td>
</tr>
<tr>
<td>Requirement Name</td>
<td>Floor Finishes: VAT End of Life Third Floor (Legacy)</td>
</tr>
<tr>
<td>Condition</td>
<td>Poor</td>
</tr>
<tr>
<td>Percent Complete</td>
<td>0.0</td>
</tr>
<tr>
<td>Recommendation</td>
<td>Replace flooring as indicated in the third floor. ACM abatement assumed. Assume 14,577 SF.</td>
</tr>
<tr>
<td>Estimated Cost</td>
<td>215,079.00</td>
</tr>
<tr>
<td>Estimated Remaining Cost</td>
<td>215,079.00</td>
</tr>
<tr>
<td>Action Date</td>
<td>11/13/2011</td>
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<tr>
<td>LEGACY ASSESSMENT DATA: REQ-47272</td>
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<tr>
<td>----------------------------------</td>
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<tr>
<td><strong>Date Inspected</strong>: 10/8/2002</td>
<td></td>
</tr>
<tr>
<td><strong>Description</strong>: Doors and frames are missing proper labeling. In accordance with NFPA 80, Standard for Fire Doors and Fire Windows, sections 1-6 and 2-3, only labeled fire doors and frames shall be used. See also NFPA 110 chapter 5 -2.1, 2 hour doors are required on electrical rooms. See correction for locations.</td>
<td></td>
</tr>
<tr>
<td><strong>Requirement Category</strong>: Building Code</td>
<td></td>
</tr>
<tr>
<td><strong>Requirement Name</strong>: Electrical Doors: Replace Non-Compliant Fire Doors and Frames (Legacy)</td>
<td></td>
</tr>
<tr>
<td><strong>Condition</strong>: Critical</td>
<td></td>
</tr>
<tr>
<td><strong>Percent Complete</strong>: 0.0</td>
<td></td>
</tr>
<tr>
<td><strong>Recommendation</strong>: Replace the door to room electrical room 174. room 105 vault not rated. A difficulty factor of 20% has been applied to represent typical costs associated with working in older buildings or confined areas, such as higher staging costs, additional demolition, addition physical and equipment resources and may not account for project specific items such as timing requirements, hidden conditions, and the organizing of multiple deficiencies corrections where issues other than costs are the prime considerations.</td>
<td></td>
</tr>
<tr>
<td><strong>Estimated Cost</strong>: 3,625.00</td>
<td><strong>Estimated Remaining Cost</strong>: 3,625.00</td>
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<th>LEGACY ASSESSMENT DATA: REQ-61031</th>
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<tbody>
<tr>
<td><strong>Date Inspected</strong>: 11/13/2006</td>
</tr>
<tr>
<td><strong>Description</strong>: Several of the interior door assemblies leading to mechanical rooms, elevator machine rooms, and the storage rooms do not comply with NFPA 101, Section 7.1.3, 8.2 and 8.4.1.3 with regards to fire resistance rated construction. The door assemblies exhibit the following deficiency: the labels identifying the door assemblies fire resistance rated (FRR) construction are either missing or have been painted over. Considering these conditions, door assemblies should be considered for replacement. Note: Recertification of the existing assemblies by the authority having jurisdiction (AHJ) will eliminate the need for assembly replacement.</td>
</tr>
<tr>
<td><strong>Requirement Category</strong>: Building Code</td>
</tr>
<tr>
<td><strong>Requirement Name</strong>: Interior Doors: Non-Compliant FRR (Legacy)</td>
</tr>
<tr>
<td><strong>Condition</strong>: Poor</td>
</tr>
<tr>
<td><strong>Percent Complete</strong>: 0.0</td>
</tr>
<tr>
<td><strong>Recommendation</strong>: With the AHJ, or field engineer from either Underwriters Laboratory or Warnock Hersey, recertify existing FRR assemblies. Building staff to remove paint from existing labels.</td>
</tr>
<tr>
<td><strong>Estimated Cost</strong>: 7,182.00</td>
</tr>
<tr>
<td><strong>Action Date</strong>: 11/13/2007</td>
</tr>
</tbody>
</table>
**LEGACY ASSESSMENT DATA: REQ - 42194**

Date Inspected
11/13/2006

Description
The elevator has antiquated equipment and control equipment, which has exceeded its designed life expectancy. Replacement parts while available are becoming more difficult to obtain and are cost prohibitive. Replace all existing motor control equipment and switches/starter. If this elevator is used in the transportation of people then a fireman recapture system will also be required. The existing elevator control system will not support this type of upgrade. See ASME 1996 Section 211.3 to 211.8. See cost correction for locations.

Requirement Category
Integrity

Requirement Name
Conveying: Elevator Motor/Control End of Service Life (Legacy)

Condition
Poor

Percent Complete
0.0

Recommendation
Replace the existing freight elevator with a new unit. This will include all of the component, car, doors and controllers and fireman recaptures system (if needed). A difficulty factor of 40% has been applied to this deficiency to account for known historical data on campus mechanical installations and may not account for project specific items such as timing requirements, hidden conditions, and the organizing of multiple deficiencies corrections where issues other than costs are the prime considerations.

Estimated Cost
215,988.00

Estimated Remaining Cost: 215,988.00

Action Date
11/13/2011

**LEGACY ASSESSMENT DATA: REQ - 46952**

Date Inspected
11/13/2006

Description
The weather-stripping on the exterior doors to Morrill Hall is either deteriorating or missing. Weather tightness is lacking.

Requirement Category
Integrity

Requirement Name
Exterior Doors: Replace Weatherstripping (Legacy)

Condition
Poor

Percent Complete
0.0

Recommendation
Replace weatherstripping at exterior doors. Assume 9 doors.

Estimated Cost
4,326.00

Estimated Remaining Cost: 4,326.00

Action Date
11/13/2011
<table>
<thead>
<tr>
<th>Legacy Assessment Data: Req - 48685</th>
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<td><strong>Description</strong></td>
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<tr>
<td><strong>Requirement Category</strong></td>
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<tr>
<td><strong>Requirement Name</strong></td>
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<tr>
<td><strong>Condition</strong></td>
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<td><strong>Percent Complete</strong></td>
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<tr>
<td><strong>Recommendation</strong></td>
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<tr>
<td><strong>Estimated Cost</strong></td>
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<td><strong>Condition</strong></td>
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<td><strong>Percent Complete</strong></td>
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<td><strong>Recommendation</strong></td>
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<tr>
<td><strong>Estimated Cost</strong></td>
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<tr>
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<td><strong>Action Date</strong></td>
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<tr>
<td>Requirement Category</td>
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<tr>
<td>Integrity</td>
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<tr>
<td><strong>Date Inspected</strong></td>
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<tr>
<td><strong>Description</strong></td>
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<tr>
<td><strong>Requirement Category</strong></td>
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<tr>
<td><strong>Requirement Name</strong></td>
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<tr>
<td><strong>Condition</strong></td>
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<tr>
<td><strong>Percent Complete</strong></td>
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<tr>
<td><strong>Recommendation</strong></td>
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<tr>
<td><strong>Estimated Cost</strong></td>
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## Legacy Assessment Data: Req - 61271

<table>
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<tr>
<th>Date Inspected</th>
<th>12/1/2006</th>
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<tbody>
<tr>
<td>Description</td>
<td>Foundation leaks and basement / ground floor damage has been observed and reported to be caused by localized flooding due to inadequate storm water drainage around the building. In addition this flooding around the building during storms has created hazardous conditions for students and staff members on the walkways. At the request of the facilities planning office the action provided is an approximation for the piping and surge reservoir required for the quick collection and controlled release of storm water to the City Storm system. A comprehensive Civil Engineering design and review is required to provide an actual resolution to the storm drainage issues.</td>
</tr>
<tr>
<td>Requirement Category</td>
<td>Integrity</td>
</tr>
<tr>
<td>Requirement Name</td>
<td>Storm Drain: Building Drainage Poor (Legacy)</td>
</tr>
<tr>
<td>Condition</td>
<td>Fair</td>
</tr>
<tr>
<td>Percent Complete</td>
<td>0.0</td>
</tr>
<tr>
<td>Recommendation</td>
<td>Improve the storm drainage system for the building and its connection to the primary storm drainage system around the Champaign / Urbana campus main quad. Consideration should be made to insure proper drainage of the building roof and immediate surrounding site (25 feet) and the water flow that is expected during the 24 hour rainfall in a 100 year storm. This estimate is for budgetary purposes only and not intended for contract review. Example: Building SF = 40,000 with 4 stories = 10,000 SF foot print, plus immediate site 25 ft around the 400 foot perimeter = 10,000 SF for total drainage 20,000 SF with Rain fall of approximately 6.5 inches per 24 hour 100 year storm = 11,000 cubic feet or 82,200 gallons per day. (7.48gal/ft³) Estimated excavation for piping is 100 ft from bldg and 250 feet from street storm main.</td>
</tr>
<tr>
<td>Estimated Cost</td>
<td>993,930.00</td>
</tr>
<tr>
<td>Estimated Remaining Cost</td>
<td>993,930.00</td>
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## Legacy Assessment Data: Req - 61060

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<th>Date Inspected</th>
<th>11/13/2006</th>
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<tbody>
<tr>
<td>Description</td>
<td>The majority of the interior swing doors throughout Morrill Hall are reaching the end of their effective life. Planning for their replacement within 5 to 7 years should be started.</td>
</tr>
<tr>
<td>Requirement Category</td>
<td>Reliability</td>
</tr>
<tr>
<td>Requirement Name</td>
<td>Interior Doors: End of Life (Legacy)</td>
</tr>
<tr>
<td>Condition</td>
<td>Fair</td>
</tr>
<tr>
<td>Percent Complete</td>
<td>0.0</td>
</tr>
<tr>
<td>Recommendation</td>
<td>Remove existing doors and frames. Dispose. Reset new doors in new hollow metal frames. Assume 657 doors.</td>
</tr>
<tr>
<td>Estimated Cost</td>
<td>791,377.00</td>
</tr>
<tr>
<td>Estimated Remaining Cost</td>
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</tr>
<tr>
<td><strong>Date Inspected</strong></td>
<td>11/13/2006</td>
</tr>
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</tbody>
</table>
| **Description**   | Upgrade existing voice/data system to Cat 5 or Cat 6 to meet occupant requirements.  
In 2006 reassessment, VFA observed that this requirement is still not completed. |
| **Requirement Category** | Voice/Data System |
| **Requirement Name** | Data: Upgrade Network Infrastructure (Legacy) |
| **Condition** | Fair |
| **Percent Complete** | 0.0 |

**Recommendation**

(Cont. from Deficiency)

The dollar estimates are based on a combination of average costs drawn from completed building upgrade projects, the existence of partial network upgrades, and physical challenges a building may pose.

The estimates DO NOT include costs for constructing Communication Equipment Rooms, additional power, or additional cooling needed for network equipment. CITES has typically never borne these costs and has no tracking history for them.

There may be a several week delay between the completion of a project and the updating of CITES wiring/jack database; thus, the number of jacks most recently added may not be reflected in this list.

Only campus buildings for which CITES has a record of data jacks are included on this list.

Housing buildings and campus-leased buildings are not included on this list.

**Estimated Cost** | 205,551.00  
**Estimated Remaining Cost:** | 205,551.00