



## Agriculture Building (006)

1220 "N" Street, Sacramento, CA 95814

### Facility Condition Assessment

June 2015

*Prepared for the State of California Department of General Services*





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## EXECUTIVE SUMMARY

### BACKGROUND

This Facility Condition Assessment (FCA), prepared by EMG Corporation (EMG) in collaboration with the Department of General Services (DGS) Real Estate Services Division (RESA) and the consulting team of Hellmuth, Obata & Kassabaum, Inc. (HOK), is a component of a comprehensive long-range strategic asset management plan for DGS's portfolio of general-purpose office buildings. The goal is to determine the best course of action to address DGS's general-purpose office buildings' infrastructure deficiencies and space needs with a focus on controlling long-term costs.

The DGS portfolio comprises nearly 17 million gross square feet (GSF) of state-owned office facilities statewide, contained within 54 general-purpose state-owned office building sites. The FCA inventories and evaluates each of the DGS general purpose office buildings to benchmark current condition and establish a replacement value. This FCA assesses the infrastructure conditions for the Agriculture Building (006).

The assessment methodology identifies infrastructure systems and components requiring immediate repair or replacement based on their useful life expectancy. In addition, the FCA projects the capital funding needs over a ten-year lifecycle horizon period of 2015 to 2024. The assessments evaluate envelope, structure, plumbing, heating, air conditioning, energy and lighting controls, electrical, data/communications, elevators, fire protection and suppression, security, and utility capacity and systems. The replacement value is determined by multiplying the existing building square footage (SF) by the cost per SF to construct a new, similar building on a similar site.

### OBJECTIVE

The objective of the FCA is to identify the capital reserves for infrastructure lifecycle repair/replacement needs over the ten-year lifecycle. The FCA projections will become the basis for the Facility Condition Index (FCI). The FCI is the ratio of immediate repair costs or capital reserve needs to the current replacement value of the existing building. The FCI is a key performance indicator that is used to objectively quantify and evaluate the current condition of a building and can be used to compare the relative condition of the subject building with other buildings within the same portfolio and as a trending matrix for infrastructure "health" over time.

The Agriculture Building (006) FCI ratio will be incorporated as a comparative factor in the overall DGS portfolio analysis, enabling DGS to accurately rank and prioritize building repair/replacement needs in the long-range strategic plan.

## SCOPE OF ASSESSMENT

The EMG evaluation team, comprised of engineers and architects, visited the Agriculture Building (006) on January 5 and 6, 2015. The evaluation team reviewed available engineering studies and construction documents to familiarize themselves with the physical conditions. The evaluation team conducted a walk-through of the building to observe building systems and components, identify physical deficiencies, and formulate recommendations to remedy any deficiencies.

## SURVEY FINDINGS

One of the major goals of the FCA is to calculate the FCI, which gives an indication of a building's overall condition. Two FCI ratios are calculated and presented – Current Year and Ten-Year. The Current Year FCI is the ratio of Immediate Repair Costs to the building's Current Replacement Value. Similarly, the Ten-Year FCI is the ratio of anticipated Capital Reserve Needs over the next ten years to the Current Replacement Value.

The values are based on a scale from 0-100 percent. A lower FCI ratio indicates that the building's infrastructure is in "Good" condition. Based on industry standards, a "Good" condition building will have an FCI ratio at or below five percent. A "Fair" condition building will have an FCI ratio between five and ten percent. A "Poor" condition building will have an FCI ratio between 10 and 65 percent. A building with an FCI ratio exceeding 65 percent is considered "Very Poor" and is a candidate for replacement or divestment.

The table below represents summary-level findings for the FCA. The deficiencies identified in this assessment can be combined with potential new construction requirements to develop an overall strategy that can serve as the basis for a portfolio-wide capital improvement funding strategy. Key findings from the assessment include:

Key Finding	Metric
Current Replacement Value	\$45,563,410
Immediate Repair Costs (12 months)	\$1,683,799
1-5 Year Capital Needs	\$1,532,913
6-10 Year Capital Needs	\$675,035
Total 10-Year Capital Reserve Needs	\$3,891,747

$$FCI = \frac{\text{Immediate Repair Costs or Ten-Year Capital Reserve Needs}}{\text{Current Replacement Value of Building}}$$

**Current Year FCI**

$$\text{Current FCI} = \frac{\$1,683,799}{\$45,563,410}$$

**Ten-Year FCI**

$$\text{Ten-Year FCI} = \frac{\$3,891,747}{\$45,563,410}$$

Current Year FCI	Ten-Year FCI
<b>3.70 % = <i>Good Condition</i></b>	<b>8.54 % = <i>Fair Condition</i></b>

The major issues contributing to the Immediate Repair Costs and the Current Year FCI ratio are summarized below:

- Repair, coat, and paint the exterior concrete walls.
- Interior finish replacements are recommended, including painting, new flooring, and acoustic ceiling tiles.
- Upgrades to the fire alarm system are recommended, including the addition of strobes and horns that were not part of the 2005 upgrade.

Further detail on the specific costs that make up the Immediate Repair Costs can be found in the cost tables in the appendices.

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## INTRODUCTION

### BUILDING BACKGROUND

The Agriculture Building (006) was constructed in 1936. The building originally housed the State Motor Vehicles Department, including the Highway Patrol. The building, located at 1220 N Street in Sacramento, is registered as a historic structure. The architectural significance of the building is best understood in the context of the group of three International/Moderne State buildings located at 1020 N, 1120 N, and 1220 N Street. Together, the three buildings document a historic phase of state office building construction. Any renovations to the property are subject to the Secretary of the Interior Standards and Guidelines for the Rehabilitation of Historic Buildings as administered by the State Historic Preservation Office.

State Architect George McDougall, speaking of the building's sister building at 1120 N Street, remarked in 1937 that "the citizens of California, and those of Sacramento in particular, may be assured that this building with its sister structure, the Motor Vehicles Building [1220 N St.], measures up to the loveliness of our beloved capital city of Sacramento and to the dignity and power of the sovereign State of California." The building is directly associated with the increasing importance of the automobile in California from the 1930s through the 1950s, when California far exceeded any other state in the number of registered automobiles. Still in government service, the building currently houses the Department of Food & Agriculture.

The four-story reinforced concrete building, which also includes basement, is nearly identical to the Transportation Building at 1120 N Street. It reflects the International style of architecture in its rectangular form, proportions, fenestration patterns, and minimal ornamentation. Touches of the Moderne style are expressed in the fluted spandrels. The entrance is flanked by tiled green terra cotta panels depicting interpretive scenes of the various functions of the Motor Vehicles Department. The lobby retains some original appointments, such as 1930s mailboxes and stainless-aluminum banisters. The elevator doors, although replacements, are a faithful recreation of the original doors. Many of the office wings retain their pebble-glass doors and transom windows.

A major infrastructure renovation designed by Dean Unger and Associates was completed in 2005. The renovation project entailed a structural retrofit, building system upgrades, abatement of hazardous materials, and tenant improvements.

The gross area of the building is 127,010 SF with a net usable area of 91,995 SF. The ratio of net usable to gross building area is 72.4 percent. The occupant capacity is 299. There is no on-site parking.

## BUILDING DESCRIPTION

The building construction consists of cast-in-place concrete beams and columns on a concrete slab with spread footing and pile caps. The roof structure is flat with a single-ply PVC membrane.

The exterior façade includes painted concrete walls with aluminum-framed windows and storefront-type doors.

The interior walls are painted drywall and restrooms have a ceramic tile wainscot. The floor finishes include, carpet, commercial carpet tiles, vinyl composition tiles, and ceramic tiles in restrooms. The ceilings are finished with acoustic tiles and painted drywall.

There are two traction passenger elevators and one hydraulic freight elevator.

The building is served by the DGS Central Utility Plant and therefore has no on-site boilers or chillers. Air handling units throughout the building provide conditioned air to the interior spaces.

Domestic hot water is supplied by a steam-to-hot water heat exchanger.

Life safety systems include fire extinguishers, a fire alarm system, and fire sprinklers.

The landscaping consists of perimeter planters at the main entrance on the south elevation of the building. Landscaped areas are watered by a drip irrigation system. The sidewalks throughout the property are constructed of cast-in-place concrete. Ramps with metal handrails are located on the west elevation of the building.

### Project Statistics

Item	Description
Project Name	Agriculture Building
Building ID	006
Property Type	Administration
Year Built	1936
Number of Stories	4
Occupied	Yes
Land Area (acres)	0.73
Gross Square Feet (GSF)	127,010

## FACILITY CONDITION ASSESSMENT

The goal of the FCA is to gather the data necessary to understand the existing building's condition, identify strategies to meet the building's lifecycle needs, and create the foundation for a long-range strategic plan.

### COMPONENTS OF THE FCA

#### Current conditions analysis

The current condition analysis identifies the existing building's immediate requirements, including deferred maintenance, recommended discretionary improvements, and code non-compliance issues.

#### Anticipated building reserve analysis

The anticipated building reserve analysis projects the ongoing degradation of the building's components and costs associated with the reserve or replacement of these components as they reach the end of their useful lives.

#### Funding needs analysis

The funding needs analysis results in a summary report of deferred maintenance and systems reserve funding needs.

### CALCULATION OF FUNDING NEEDS

Calculating probable funding needs involves identifying and quantifying the building's infrastructure systems or components that require immediate or future action over their lifecycle horizon. Funding needs are segregated into two categories, Immediate Repair Costs and Capital Reserve Needs. A Replacement Value is calculated and a Remaining Useful Life Estimate is determined as well as Opinions of Probable Cost in order to establish the FCI. The terms are defined as follows:

#### Immediate Repair Costs

Immediate Repair Costs are Opinions of Probable Cost that require immediate action as a result of: (1) material existing or potentially unsafe conditions, (2) material building or fire code violations, or (3) conditions that, if left un-remedied, have the potential to result in, or contribute to, critical element or system failure within **one year** that will likely result in a significant escalation of its remedial cost. Immediate Repair Costs are items which require action within year one.

### **Capital Reserve Needs**

Capital Reserve Needs are recurring probable expenditures, which are not considered operation or maintenance expenses, that should be budgeted annually. In general, Capital Reserve Needs are reasonably predictable both in terms of frequency and cost. However, Capital Reserve Needs may also include components or systems that have an indeterminable life but nonetheless have a potential liability for failure within a ten-year period. The Capital Reserve Needs presented in the FCA represent average industry costs as of 2015, without inflation. The Ten-Year Expenditure Forecast table in Appendix G includes inflation by assuming a five percent annual inflation rate on Total Capital Needs by year.

### **Current Replacement Value**

Current Replacement Value is determined by multiplying the existing building's SF by the Cost per SF to construct a new, similar building on a similar site. Current Replacement Value is not an appraised or market value for the purposes of a property sale. To estimate the cost per SF, EMG referenced Marshall & Swift's *Marshall Valuation Service*. This building cost data index is an industry standard, adjusted annually, and relied upon by the insurance industry, as well as other agencies and organizations. Cost per SF is calculated by adjusting Marshall & Swift's unit cost for a Government Office Building to account for factors related to building systems, class of construction, and location to reflect the estimated cost of construction at the subject building site.

### **Remaining Useful Life**

Remaining Useful Life (RUL) estimate is based upon site observations, research, and judgment, along with reference to Expected Useful Life (EUL) tables from various industry sources. A sample copy of the EUL table is included in the appendices. EMG estimates when a system or component will likely need replacement based on a visual review of the current condition and the RUL estimate. Exposure to the elements, quality of installation, extent of use, and quality and amount of preventive maintenance exercised are factors that impact the effective age of a system or component. As a result, a system or component might have an effective age that is greater or less than its actual chronological age. The RUL of a system or component equals the EUL less its effective age.

### **Opinions of Probable Cost**

Opinions of Probable Cost are estimates for individual repair or replacement and are a key consideration of this engagement. These estimates may be based on invoice or bid documents provided by the owner or building manager, cost estimates developed by construction resources (such as R.S. Means), or EMG's experience with similar properties, city cost indexes, and projections of economic conditions. Where quantities cannot be derived from building plans, lump sum costs or allowances are utilized.

Opinions of Probable Cost should only be construed as preliminary, order-of-magnitude budgets. Actual costs will likely vary from EMG's estimates depending on type and design of suggested remedy, quality of materials and installation, manufacturer and type of equipment or system selected, field conditions, whether a physical deficiency is repaired or replaced in whole, phasing of the work (if applicable), quality of contractor, market conditions, and whether competitive pricing is solicited. ASTM E2018-08<sup>1</sup> recognizes that certain Opinions of Probable Cost cannot be developed within the scope of an FCA without further study. Instances where a visual inspection is not possible and further study is recommended, EMG provides a cost estimate of the additional study in the FCA.

### **Facility Condition Index**

The FCI gives an indication of a building's overall state of condition. The values are based on a 0-100 percent scale. The Current Year FCI is the ratio of Immediate Repair Costs to Current Replacement Value. The Ten-Year FCI is the ratio of Capital Reserve Needs (2015 – 2024) to Current Replacement Value. The Ten-Year FCI is calculated using uninflated 2015 dollars because the year of project implementation is likely unknown or subject to change. Since both the repair/replacement costs and Current Replacement Value will increase at the same inflation rate, the impacts of inflation do not significantly affect the FCI ratio.

### **SCOPE OF ASSESSMENT**

The evaluation team conducted a walk-through survey of Agriculture Building (006) on January 5 and 6, 2015. The survey included analysis and observation of the building's interior and exterior, including the roofs. The evaluation team interviewed the building maintenance staff to inquire about the subject property's previous repairs and replacements and their costs, level of preventive maintenance exercised, pending repairs and improvements, and frequency of repairs and replacements. Opinions were developed based on the site evaluation, interviews with relevant maintenance providers and facilities managers, and previous experience with comparable properties. The evaluation team questioned those knowledgeable of the subject property's physical condition and operation (or knowledgeable of similar systems) to gain comparative information to use in evaluation of the subject property. In addition, the building staff provided documents and information to the evaluation team that were relevant to the subject property's physical improvements, extent, and type of use and assisted the team in identifying potential discrepancies between reported information and observed conditions.

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<sup>1</sup> ASTM 2018-08 is the national guideline for preparing a Facility Condition Assessment published by the American Society for the Testing of Materials.

The evaluation team made a visual assessment for compliance with the American with Disabilities Act (ADA) Accessibility Guidelines and the California Title 24 disabled access requirements. Items determined to be out of compliance are included in the repair/replacement costs. The assessments did not include detailed measurements to determine compliance under the regulations.

The data collected in the FCA are the basis of the projected ten-year Capital Reserve Needs. The goals of the FCA are:

- Benchmark current building condition with recommended corrections for deficiencies to establish the Immediate Repair Costs.
- Estimate life expectancy of various building systems and components to establish the Capital Reserve Needs for infrastructure lifecycle repair/replacement for the ten-year assessment period from 2015 to 2024.
- Provide estimates for corrections for Immediate Repairs Costs and projections for Capital Reserve Needs for lifecycle component replacement within the ten-year projection timeframe.
- Serve as a guide for future replacement, repairs, and improvements and assist DGS in prioritizing its capital budget and expenditures across its real estate portfolio.

## **PRIORITY RANKING**

The recorded existing conditions, identified problems and deficiencies, documented corrective action, and quantities of recommended repairs and/or replacements are documented during the assessment process. Data are collected and entered directly into the assessment and capital planning database using tablet computers. Based on the discussions with the client and industry standards, a Priority Ranking is calculated for each cost observation. The Priority Ranking calculation is a function of four key categories.

### **PRIORITY RANKING CATEGORIES**

#### **Building Mission Ranking**

A building can be ranked on a scale of one to ten based on conversations with the client regarding the importance of each building to the overall mission of the building. The properties reviewed during this assessment are all general-purpose office buildings and for the purposes of this study are all ranked the same for Building Mission.

#### **Remaining Useful Life Ranking**

The EUL projection of the component is calibrated against the RUL as estimated by the field assessor. This ratio is then utilized as a factor in the priority ranking. An RUL of zero years is given the highest priority and always results in ranking the component as Priority 1.

**Asset Component Category**

Each material or system (asset) evaluated is assigned a unique Unifomat code. The Unifomat designation is then associated with a ranking based on the overall importance to the operation of the building. An asset that is related to the building envelope, e.g. roof, window, or exterior siding, is assigned a higher ranking than a component such a flooring, carpeting, or other finish material.

**Functional Asset Categories**

The cost associated with each asset or component evaluated is assigned to a category to include: Code Compliance, Facility Operations, Environmental Factors, Facility Functionality, and Integrity of the Facility. The Asset Categories are given a ranking based on their relative importance. For example, Code Compliance is ranked higher than Maintenance.

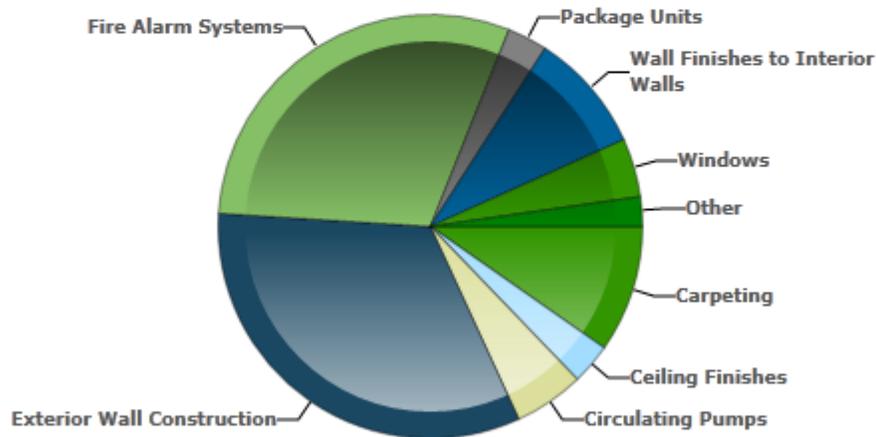
**PRIORITY RATIO**

The four categories above are assigned a numerical value and the values are multiplied together for each cost observation. The resulting number is then assigned a priority by the capital planning software with the lower range assigned Priority 1 and the higher range of numbers assigned among Priority 2, Priority 3, and Priority 4. Priority 5 is reserved for code issues that were permitted by the code at the time of construction but would be required only if a major renovation or code compliance project were to be undertaken.

The physical condition of building systems and related components are typically defined as being in one of four conditions: Good, Fair, Poor, or Very Poor, or a combination thereof. For the purposes of this report, the following definitions are used:

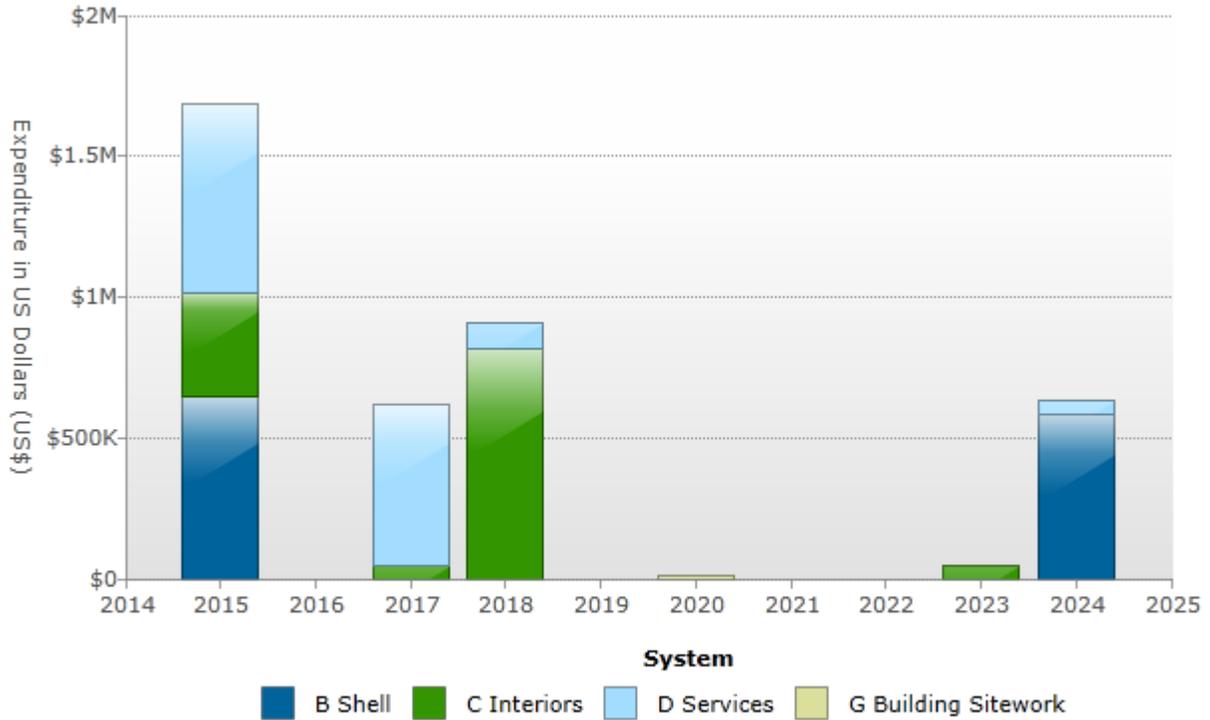
Condition	Definition
Good	In new or well-maintained condition, with no visual evidence of wear, soiling, or other deficiencies.
Fair	Subjected to wear and soiling but is still in a serviceable and functioning condition.
Poor	Subjected to hard or long-term wear. Nearing the end of its useful or serviceable life.
Very Poor	Subjected to hard or long-term wear. Has reached the end of its useful or serviceable life. Renewal is now necessary.

### Distribution of Immediate Needs by Building System



Level	Building System	Estimated Cost
B1012	Upper Floors Construction	\$1,755
B2011	Exterior Wall Construction	\$552,822
B2021	Windows	\$75,226
B2031	Glazed Doors & Entrances	\$15,116
C1021	Interior Doors	\$273
C3012	Wall Finishes to Interior Walls	\$154,585
C3025	Carpeting	\$163,464
C3031	Ceiling Finishes	\$52,383
D1011	Passenger Elevators	\$16,000
D1012	Freight Elevators	\$500
D3022	Circulating Pumps	\$89,867
D3052	Package Units	\$51,336
D3068	Building Automation Systems	\$4,216
D5037	Fire Alarm Systems	\$506,255
	<b>Total</b>	<b>\$1,683,799</b>

### Total Capital Needs By System and Year



Year	Building System							Total
	A Sub-Structure	B Shell	C Interiors	D Services	E Equip. & Furnishings	F Spec. Const. & Demolition	G Bldg. Site Work	
2015	\$0	\$644,919	\$370,705	\$668,175	\$0	\$0	\$0	\$1,683,799
2017	\$0	\$0	\$48,255	\$567,307	\$0	\$0	\$0	\$615,562
2018	\$0	\$0	\$817,283	\$89,867	\$0	\$0	\$0	\$907,151
2020	\$0	\$0	\$0	\$0	\$0	\$0	\$10,200	\$10,200
2023	\$0	\$0	\$44,652	\$0	\$0	\$0	\$0	\$44,652
2024	\$0	\$579,826	\$0	\$50,557	\$0	\$0	\$0	\$630,383
<b>Total</b>	<b>\$0</b>	<b>\$1,224,746</b>	<b>\$1,280,895</b>	<b>\$1,375,906</b>	<b>\$0</b>	<b>\$0</b>	<b>\$10,200</b>	<b>\$3,891,747</b>

## CURRENT REPLACEMENT VALUE

The Current Replacement Value has been determined as \$45,563,410 for the Agriculture Building (006). The Current Replacement Value is the existing building SF multiplied by the Cost per SF to construct a new, similar building. As noted previously, the basis of the Cost per SF amount is the Marshall & Swift Cost Valuation system. A copy of the cost calculation is included in Appendix H of this report.

Building Area	Cost/SF	Current Replacement Value
127,010 GSF	\$359	\$45,563,410

## FACILITY CONDITION INDEX

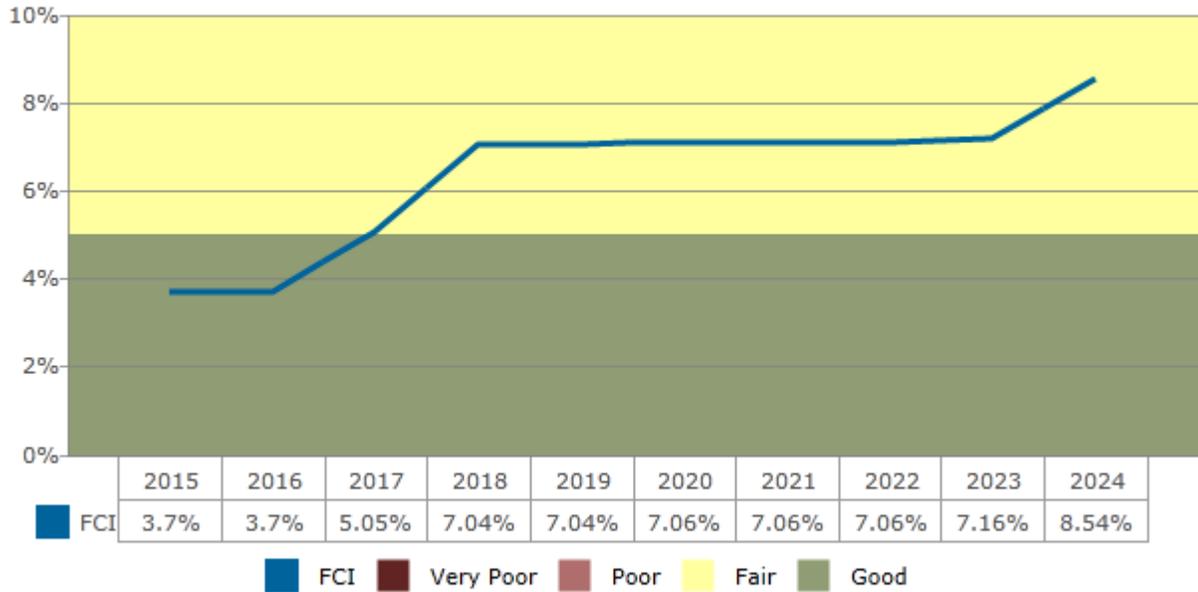
The FCI<sup>1</sup> is an indication of a building’s current and future overall condition. According to industry standards an FCI ratio of 65 percent, or the “rule of two-thirds,” is the threshold for identifying potential candidates for replacement or divestment.<sup>2</sup> Once the FCI ratio reaches 65 percent, or roughly two-thirds of the Current Replacement Value of the estimated cost to replace a building, it may not be prudent to continue to fund repairs. In cases where aggressive facilities planning is expected to be necessary, this threshold may be adjusted to address more pressing needs.

Condition	Definition	Value
Good	In new or well-maintained condition, with no visual evidence of wear, soiling or other deficiencies.	0% to 5%
Fair	Subjected to wear and soiling but is still in a serviceable and functioning condition.	Greater than 5% to 10%
Poor	Subjected to hard or long-term wear. Nearing the end of its useful or serviceable life.	Greater than 10% to 65%
Very Poor	Subjected to hard or long-term wear. Has reached the end of its useful or serviceable life. Renewal is now necessary.	Greater than 65%

<sup>2</sup> Sean C. Rush (1991). *Managing the Facilities Portfolio: a Practical Approach to Institutional Facility Renewal and Deferred Maintenance*. National Association of College and University Business Officers. pp. 26–66. ISBN 978-0-915164-59-2.

The chart below indicates the cumulative effects of the FCI ratio over the ten-year study period assuming the required funds are NOT provided to address the identified repairs and replacements for each year.

**Cumulative Effects of FCI over the Study Period**



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# APPENDICES

## APPENDIX A: ACCESSIBILITY ISSUES

Item	Description
C1035 Identifying Devices	C1035 Directional Signage
Condition	Fair
Qty / UOM	8 / EA
RUL (years)	2
Location	Throughout building

**Recommendations:**

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
B2031	Install automatic door openers	7.0 - EA	2159.5	CC - Accessibility	Priority 1	2015	15,116
C1021	Replace ADA signage on restroom doors	2.0 - EA	136.4	CC - Accessibility	Priority 2	2015	273
C1035	Replace C1035 Directional Signage	8.0 - EA	316.2	CC - Accessibility	Priority 2	2017	2,530

**Cost Summary:**

Year	Total Expenditures
2015	\$15,389
2017	\$2,530



**APPENDIX B: GENERAL ASSESSMENT INFORMATION**

**A Substructure Systems**

**A10 FOUNDATIONS**

Item	Description
A1031 Standard Slab on Grade	A1011 Wall Foundations
Condition	Good
Qty / UOM	31750 / SF
RUL (years)	22
Location	Entire ground floor

OBSERVATIONS/COMMENTS:

There is no evidence of cracking or displacement.

## B Shell Systems

### B10 SUPERSTRUCTURE

Item	Description
<b>B1012 Upper Floors Construction</b>	B1012 Concrete Beams and Floor Slab
<b>Condition</b>	Fair
<b>Qty / UOM</b>	150 / SF
<b>RUL (years)</b>	15
<b>Location</b>	Basement
<b>Basement Floor Construction</b>	Concrete Cast-In-Place System
<b>Basement Floor Decking</b>	Concrete
<b>Upper Floor Construction</b>	Concrete Cast-In-Place System

**OBSERVATIONS/COMMENTS:**

There are numerous small holes on the walls and ceiling in the basement. It is recommended that the holes be patched and surface repainted.

**COST RECOMMENDATIONS:**

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
B1012	Patch and paint concrete walls in basement at old pipe penetrations and small holes	150.0 - SF	11.7	IN - Appearance	Priority 2	2015	1,755

**COST SUMMARY:**

Type	Year	Total Expenditures
B10 Superstructure	2015	\$1,755

**B20 EXTERIOR ENCLOSURE**

Item	Description
B2011 Exterior Wall Construction	B2011 Exterior Wall Painted Concrete Parging Finish
Condition	Poor - Fair
Qty / UOM	38700 / SF
RUL (years)	0
Location	Throughout exterior

OBSERVATIONS/COMMENTS:

The exterior concrete parging is peeled and requires refinishing and painting.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
B2011	Replace B2011 Exterior Wall Painted Concrete Parging Finish	38,700.0 - SF	14.3	IN - Appearance	Priority 1	2015	552,822

Item	Description
<b>B2021 Windows</b>	B2021 Windows, single pane
<b>Condition</b>	Fair
<b>Qty / UOM</b>	130 / EA
<b>RUL (years)</b>	10
<b>Location</b>	Throughout exterior
<b>Window Type</b>	Fixed
<b>Windows Material</b>	Aluminum
<b>Windows Glazing</b>	Single Glazed
<b>Window Operation</b>	Manual

**OBSERVATIONS/COMMENTS:**

The single pane aluminum windows were installed in 1936. Based on conversation with the building staff they are considered historical assets. It is recommended to reseal windows and replace gaskets rather than complete replacement.

**COST RECOMMENDATIONS:**

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
B2021	B2021 Repair and reseal exterior windows	1,976.0 - LF	38.1	OP - Maintenance	Priority 2	2015	75,226

Item	Description
<b>B2031 Glazed Doors &amp; Entrances</b>	B2031 Entrance double doors to office area
Condition	Good
Qty / UOM	4 / EA
RUL (years)	20
Location	Front Entrance
Door Hardware	Push Plate
Door Operation	Manual
Glass Type	Tempered Glass
Door Frame	Metal Framed
Door Use	Entrance

OBSERVATIONS/COMMENTS:

No further action required.

Item	Description
<b>B2031 Glazed Doors &amp; Entrances</b>	B2031 Glazed Doors & Entrances
Condition	Good
Qty / UOM	13 / EA
RUL (years)	23
Location	Building entrances
Door Hardware	Lever
Door Operation	Manual
Glass Type	Tempered Glass
Door Frame	Metal Framed
Door Use	Entrance

OBSERVATIONS/COMMENTS:

As part of 2009 DGS ADA Accessibility Survey, it is recommended to install automatic door openers, with 12-volt DC actuators at building entrances.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
B2031	Install automatic door openers	7.0 - EA	2159.5	CC - Accessibility	Priority 1	2015	15,116

COST SUMMARY:

Type	Year	Total Expenditures
B20 Exterior Enclosure	2015	\$643,164

**B30 ROOFING**

Item	Description
B3011 Roof Finishes	B3011 Single Ply Membrane Roof
Condition	Good
Qty / UOM	322 / SQ
RUL (years)	9
Location	Roof
Insulation	Rigid
Flashings and Trim	Metal
Roof Eaves and Soffits	No
Roof Drainage	Metal Gutter And Down Spouts
Roof Warranty	Unknown

OBSERVATIONS/COMMENTS:

Upper and lower level roof sections are single ply membranes and were replaced in 2005. Some standing water was observed during roof inspection. Based on their estimated RUL, replacement is anticipated.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
B3011	Replace B3011 Single Ply Membrane Roof	322.0 - SQ	1800.7	OP - Maintenance	Priority 4	2024	579,826

COST SUMMARY:

Type	Year	Total Expenditures
B30 Roofing	2024	\$579,826

## C Interiors Systems

### C10 INTERIOR CONSTRUCTION

Item	Description
C1021 Interior Doors	C1021 Interior Doors/Signage
Condition	Good
Qty / UOM	19 / EA
RUL (years)	10
Location	All Floor

OBSERVATIONS/COMMENTS:

All restrooms were upgraded in 2005. The basement restrooms which are not compliant have ADA door signage which requires replacement with appropriate restroom signage.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
C1021	Replace ADA signage on restroom doors	2.0 - EA	136.4	CC - Accessibility	Priority 2	2015	273

Item	Description
<b>C1021 Interior Doors</b>	C1021 Interior Doors
<b>Condition</b>	Good
<b>Qty / UOM</b>	100 / EA
<b>RUL (years)</b>	15
<b>Location</b>	All Floors

OBSERVATIONS/COMMENTS:

No further action is required.

Item	Description
<b>C1035 Identifying Devices</b>	C1035 Directional Signage
<b>Condition</b>	Fair
<b>Qty / UOM</b>	8 / EA
<b>RUL (years)</b>	2
<b>Location</b>	Throughout building

OBSERVATIONS/COMMENTS:

Directional signage in the lobby area and hallways requires replacement.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
C1035	Replace C1035 Directional Signage	8.0 - EA	316.2	CC - Accessibility	Priority 2	2017	2,530

COST SUMMARY:

Type	Year	Total Expenditures
C10 Interior Construction	2015	\$273
C10 Interior Construction	2017	\$2,530

**C20 STAIRS**

Item	Description
<b>C2011 Regular Stairs</b>	C2011 Fire exit stairs
<b>Condition</b>	Good
<b>Qty / UOM</b>	5600 / SF
<b>RUL (years)</b>	20
<b>Location</b>	Stairwells
<b>Stairs Frame</b>	Concrete
<b>Stair Riser</b>	Closed
<b>Stair Treads</b>	Concrete-Filled/Metal Pan
<b>Stair Railings</b>	Metal
<b>Stair Soffit Finishes</b>	Plaster
<b>Stair Handrail Finishes</b>	Painted

**OBSERVATIONS/COMMENTS:**

There are two fire exit stairs with fire sprinklers and one interior stair next to elevator lobby. Two additional two metal framed fire exit stairs (Northwest & Northeast) were added in 2005. It is recommended that the stairwells be repainted in conjunction with other interior painting work.

**C30 INTERIOR FINISHES**

Item	Description
<b>C3012 Wall Finishes to Interior Walls</b>	C3012 Paint Interior Walls, Drywall
Condition	Fair
Qty / UOM	72480 / SF
RUL (years)	0
Location	Throughout building

OBSERVATIONS/COMMENTS:

Periodic finish replacements will be required.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
C3012	Replace C3012 Paint Interior Walls, Drywall	72,480.0 - SF	2.1	IN - Appearance	Priority 2	2015	154,585

Item	Description
<b>C3012 Wall Finishes to Interior Walls</b>	C3012 Elevator lobbies
Condition	Good
Qty / UOM	14750 / SF
RUL (years)	2
Location	Throughout interior

OBSERVATIONS/COMMENTS:

The elevator lobby ceilings are stained and faded. Repainting is required.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
C3012	C3012 Repaint elevator lobbies	14,750.0 - SF	3.1	IN - Appearance	Priority 3	2017	45,725

Item	Description
C3024 Flooring	C3024 Vinyl Tile
Condition	Good
Qty / UOM	355 / SY
RUL (years)	8
Location	Throughout the interior
Floor Toppings	Light Weight Concrete

OBSERVATIONS/COMMENTS:

Periodic finish replacements will be required.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
C3024	Replace C3024 Vinyl Tile	355.0 - SY	125.8	IN - Appearance	Priority 4	2023	44,652

Item	Description
<b>C3025 Carpeting</b>	C3025 Carpet Tiles - Standard
<b>Condition</b>	Fair
<b>Qty / UOM</b>	8460 / SY
<b>RUL (years)</b>	3
<b>Location</b>	Throughout the interior
<b>Floor Toppings</b>	Light Weight Concrete
<b>Traffic Membranes</b>	Epoxy / Urethane Coated

OBSERVATIONS/COMMENTS:

Replacement of deteriorated carpet should be accomplished during the next year. Additional periodic carpet replacements will be required.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
C3025	C3025 Replace portions of carpet that have deteriorated	1,692.0 - SY	96.6	IN - Appearance	Priority 3	2015	163,464
C3025	Replace C3025 Carpet Tiles - Standard	8,460.0 - SY	96.6	IN - Appearance	Priority 3	2018	817,283

Item	Description
<b>C3031 Ceiling Finishes</b>	C3021 Drywall Ceilings
<b>Condition</b>	Fair
<b>Qty / UOM</b>	11800 / SF
<b>RUL (years)</b>	0
<b>Location</b>	In various locations throughout the building

OBSERVATIONS/COMMENTS:

The painted drywall ceilings in the restrooms and elevator lobby will require repair and painting in conjunction with fire alarm upgrade when horns and strobe lights are installed.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
C3031	Replace C3021 Drywall Ceilings	11,800.0 - SF	4.4	IN - Appearance	Priority 2	2015	52,383

Item	Description
<b>C3032 Suspended Ceilings</b>	C3032 Acoustical Ceiling Tile
<b>Condition</b>	Good
<b>Qty / UOM</b>	905 / CSF
<b>RUL (years)</b>	10
<b>Location</b>	Throughout the building

OBSERVATIONS/COMMENTS:

The suspended ceilings were replaced as part of Seismic renovation in 2005.

COST SUMMARY:

Type	Year	Total Expenditures
C30 Interior Finishes	2015	\$370,432
C30 Interior Finishes	2017	\$45,725
C30 Interior Finishes	2018	\$817,283
C30 Interior Finishes	2023	\$44,652

## D Services Systems

### D10 CONVEYING SYSTEMS

Item	Description
D1011 Passenger Elevators	D1011 Traction Elevator Machinery and Controls
Condition	Poor - Fair
Qty / UOM	2 / EA
RUL (years)	2
Location	Elevator Shaft

OBSERVATIONS/COMMENTS:

Two original elevators have had their cab interior and exterior remodeled in 2005. Mechanical traction gear and controls are original. Refer to the elevator report in the appendices for details.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D1011	5-year load test	2.0 - EA	3000.0	CC - Building Code	Priority 1	2015	6,000
D1011	Reprogram emergency call system in elevator #2	2.0 - EA	400.0	CC - Life Safety	Priority 1	2015	800
D1011	Adjust elevators to run at proper speed	2.0 - EA	4000.0	OP - Maintenance	Priority 2	2015	8,000
D1011	Clean oil leak in machine reoom and pit	1.0 - EA	1200.0	OP - Maintenance	Priority 2	2015	1,200
D1011	Replace D1011 Traction Elevator Machinery and Controls	2.0 - EA	164012.9	IN - Beyond Rated Life	Priority 2	2017	328,026

Item	Description
D1012 Freight Elevators	D1011 Hydraulic Elevators, 5000 LB
Condition	Fair - Good
Qty / UOM	1 / EA
RUL (years)	15
Location	On first floor

OBSERVATIONS/COMMENTS:

The freight elevator only serves the basement and first floor. Routine maintenance will be required including proper car identification. Refer to the 2015 elevator report by Architectural Elevator Consulting, LLC.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D1012	D1011 Properly identify car #3 in machine room and car top	1.0 - EA	500.0	OP - Maintenance	Priority 2	2015	500

COST SUMMARY:

Type	Year	Total Expenditures
D10 Conveying Systems	2015	\$16,500
D10 Conveying Systems	2017	\$328,026

**D20 PLUMBING**

Item	Description
D2011 Water Closets	D2011 Commercial Grade Water Closet, 1.6 GPF Unit
Condition	Good
Qty / UOM	47 / EA
RUL (years)	25
Location	Throughout Facility
Low Flow Toilet	Yes
System Grade	Commercial Grade

OBSERVATIONS/COMMENTS:

The toilets are functional and have been fitted with automatic flush valves. No further action is required.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D2011	D2011 Install automatic flush valves on toilets	36.0 - EA	944.0	OP - Energy	Priority 2	2017	33,984

Item	Description
D2012 Urinals	D2012 Urinal
Condition	Good
Qty / UOM	15 / EA
RUL (years)	25
Location	Throughout Facility
Low Flow Toilet	Yes
System Grade	Commercial Grade

OBSERVATIONS/COMMENTS:

The urinals are functional and have been fitted with automatic flush valves. No further action is required.

Item	Description
D2013 Lavatories	D2013 Counter Top Sink and Faucet
Condition	Good
Qty / UOM	44 / EA
RUL (years)	25
Location	Restrooms

OBSERVATIONS/COMMENTS:

The sink faucets have been fitted with automatic sensors to conserve water. No further action is required.

Item	Description
D2023 Domestic Water Supply Equipment	D2023 Domestic Water Booster Pump Station
Condition	Good
Qty / UOM	1 / EA
RUL (years)	9
Location	Boiler Room

OBSERVATIONS/COMMENTS:

The domestic water booster pump is functioning adequately. Based on its estimated RUL, replacement is anticipated.

**COST RECOMMENDATIONS:**

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D2023	Replace D2023 Domestic Water Booster Pump Station	1.0 - EA	36699.6	IN - Beyond Rated Life	Priority 4	2024	36,700

**COST SUMMARY:**

Type	Year	Total Expenditures
D20 Plumbing	2017	\$33,984
D20 Plumbing	2024	\$36,700

**D30 HVAC**

Energy Supply	
Item	Description
Fuel Oil Type	N/A
Fuel Gas Type	N/A
Solid Fuel Type	N/A
District Heat Type	District Steam
District Cooling Type	District Chilled Water
Solar Thermal	No
Fuel Tank Type	N/A
Fuel Tank Size (gallons)	N/A
Fuel Tank Location	N/A
Gas Meter Location	N/A
Electrical Meter Location	Electric room
Water Meter Location	Vault at street

Item	Description
D3022.1 Circulating Pumps	D3022 HVAC Heated Water Circulation Pumps 50 HP
Condition	Good
Qty / UOM	2 / EA
RUL (years)	3
Location	Boiler Room

OBSERVATIONS/COMMENTS:

The 50-hp heated water distribution pumps and associated motors appear to be original and functional. No further action is required.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3022	Replace D3022 HVAC Heated Water Circulation Pumps 50 HP	2.0 - EA	44933.6	IN - Beyond Rated Life	Priority 2	2018	89,867

Item	Description
D3022.1 Circulating Pumps	D3022 HVAC Chilled Water Circulation Pumps 50 HP
Condition	Poor - Fair
Qty / UOM	2 / EA
RUL (years)	0
Location	Boiler Room

OBSERVATIONS/COMMENTS:

The circulating pumps have far exceeded their expected life and replacement is recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3022	Replace D3022 HVAC Chilled Water Circulation Pumps 50 HP	2.0 - EA	44933.6	IN - Beyond Rated Life	Priority 1	2015	89,867

Item	Description
D3023 Auxiliary Equipment	D3023 Condensate Return System
Condition	Fair - Good
Qty / UOM	1 / EA
RUL (years)	2
Location	Boiler Room

OBSERVATIONS/COMMENTS:

The condensate return system is reportedly functioning adequately and serves this building and the adjacent Annex.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3023	Replace D3023 Condensate Return System	1.0 - EA	16497.3	IN - Beyond Rated Life	Priority 2	2017	16,497

Item	Description
<b>D3041.1 Air Handling Units</b>	D3041 Air Handling Unit 6200-42000 CFM
Condition	Good
Qty / UOM	6 / EA
RUL (years)	10
Location	In utility areas and closets

OBSERVATIONS/COMMENTS:

The facility is heated and cooled by six interior air handling units which feed variable air volume (VAV) boxes located in each space. The air handling units (AHUs) are provided with chilled water from the central system. No further action is required.

Item	Description
<b>D3041.2 Terminal Units VAV</b>	D3041 VAV Boxes, 270-1200 CFM
Condition	Good
Qty / UOM	168 / EA
RUL (years)	10
Location	Throughout Facility

OBSERVATIONS/COMMENTS:

The facility is heated and cooled by variable air volume (VAV) terminals supplied with conditioned air from the central system air handlers. No further action is required.

Item	Description
<b>D3042 Exhaust Ventilation Systems</b>	D3042 Exhaust Fan
Condition	Good
Qty / UOM	3 / EA
RUL (years)	9
Location	Rooftop

OBSERVATIONS/COMMENTS:

Most of the miscellaneous rooftop exhaust fans were replaced in 2005 and appear to be in working condition.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3042	Replace D3042 Exhaust Fan	3.0 - EA	4619.0	IN - Beyond Rated Life	Priority 4	2024	13,857

Item	Description
<b>D3043 Steam Distribution Systems</b>	D3043 HVAC Heating Water Heat Exchanger
Condition	Good
Qty / UOM	2 / EA
RUL (years)	10
Location	Boiler Room

OBSERVATIONS/COMMENTS:

The steam-to-heat water heat exchanger was replaced in 2005. A seal is currently leaking and can be repaired as part of routine maintenance. No further action is required.

Item	Description
<b>D3043 Steam Distribution Systems</b>	D2022 Domestic Water Heat Exchanger
Condition	Good
Qty / UOM	2 / EA
RUL (years)	20
Location	Boiler Room

OBSERVATIONS/COMMENTS:

The steam-to-domestic water heat exchangers were replaced in 2005 and are functional. The exchangers are fitted with pneumatic controls and replacement with digital controls is recommended. The cost for this work is included with D3068 DDC Controls.

Item	Description
<b>D3052 Package Units</b>	D3052 Computer/Sever Room AC
Condition	Fair - Good
Qty / UOM	2 / EA
RUL (years)	10
Location	Rooftop

OBSERVATIONS/COMMENTS:

The main server room on the fourth floor has two dedicated air conditioning units. The units are supplied with chilled water from the central plant. The maintenance staff indicated they believe the units are undersized and cannot properly cool the room; however, since the room is not occupied by personnel, the approximate 80 degree temperature is deemed as adequate. This condition can be further evaluated at the next expected replacement.

**COST RECOMMENDATIONS:**

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3052	D3052 Add supplemental cooling, 20-ton DX package unit	1.0 - EA	51336.0	FN - Capacity	Priority 1	2015	51,336

Item	Description
<b>D3063 Heating/Cooling Air Handling Units</b>	D3063 Variable Frequency Drive
Condition	Good
Qty / UOM	30 / EA
RUL (years)	10
Location	Throughout Facility

OBSERVATIONS/COMMENTS:

Variable frequency drives (VFD's) should only require routine maintenance. No further action is required.

Item	Description
<b>D3068 Building Automation Systems</b>	D3068 DDC Controls
Condition	Good
Qty / UOM	127010 / SF
RUL (years)	10
Location	Throughout Facility

OBSERVATIONS/COMMENTS:

Direct digital controls (DDC) are functioning adequately. No further action is required.

Item	Description
<b>D3068 Building Automation Systems</b>	D3068 Pneumatic Controls
Condition	Fair - Good
Qty / UOM	1 / EA
RUL (years)	0
Location	Basement

OBSERVATIONS/COMMENTS:

Although the domestic hot water unit was upgraded in 2005, the control system is an antiquated pneumatic system relying on simple two-input controllers. A pneumatic removal and conversion over to a web-based electronic direct digital control (DDC) platform is highly recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3068	Replace D3068 Pneumatic Controls	1.0 - EA	4216.0	IN - Beyond Rated Life	Priority 1	2015	4,216

COST SUMMARY:

Type	Year	Total Expenditures
D30 HVAC	2015	\$145,419
D30 HVAC	2017	\$16,497
D30 HVAC	2018	\$89,867
D30 HVAC	2024	\$13,857

**D40 FIRE PROTECTION SYSTEMS**

<b>Fire and Life Safety System</b>	
<b>Item</b>	<b>Description</b>
<b>Fire Alarm System Components Present</b>	
Smoke detectors	Yes
Pull stations	Yes
Audible alarms	Yes
Strobe lights	No
Central fire alarm panel	Yes
Annunciator panel	No
Smoke Detectors Power Supply	Hardwired Electric
Carbon Monoxide Detectors	No
Heat Detector	No
Central Fire Alarm Panel Location	Security Desk
Annunciator Panel Location	N/A
Fire Extinguishers	Yes
Fire Extinguisher Inspection Date	N/A
Distance to Nearest Fire Hydrant (ft)	N/A
Illuminated Exit Signs	Yes
Kitchen Suppression Systems	N/A
Halon Gas Systems	N/A
Smoke Evacuation Systems	No
Fire-rated Stairwells	Yes
Fire-rated Stairwell Finish	Drywall
Stairwell Discharge	N/A
Stairwell Pressurized	No
Fire-Rated Doors Observed	Yes
Location of Fire-Rated Doors	Stairwells
Fire Alarm Service Company	N/A
Date of Last Fire Alarm Service	N/A
Are the individual office unit fire alarm systems monitored?	N/A
Are the common area fire alarm systems monitored?	N/A
Types of Common Areas Monitored	N/A
Fire Alarm Monitoring Company	N/A

Item	Description
<b>D4011 Sprinkler Water Supply</b>	D4011 Sprinkler Systeem
<b>Condition</b>	Good
<b>Qty / UOM</b>	127010 / SF
<b>RUL (years)</b>	15
<b>Location</b>	Throughout Facility

OBSERVATIONS/COMMENTS:

The sprinkler riser and heads are functioning adequately. No further action is required.

Item	Description
<b>D4012 Sprinkler Pumping Equipment</b>	D4012 Fire Pump Electric 20 HP
<b>Condition</b>	Fair - Good
<b>Qty / UOM</b>	2 / EA
<b>RUL (years)</b>	15
<b>Location</b>	Basement

OBSERVATIONS/COMMENTS:

The electric fire pump is located in the basement. Pump and controls were replaced in 2005. No further action is required.

**D50 ELECTRICAL SYSTEMS**

Item	Description
D5012 Low Tension Service & Dist.	D5012 Breaker Panel 225 Amps, 30 Circuits
Condition	Good
Qty / UOM	1 / EA
RUL (years)	30
Location	Utility areas and closets

OBSERVATIONS/COMMENTS:

The electrical panels were replaced 2005. No further action is required.

Item	Description
D5012 Low Tension Service & Dist.	D5010 Switchgear, Mainframe, 4000 Amps, 120v/208v, 3 phase, 4 wire
Condition	Poor
Qty / UOM	1 / EA
RUL (years)	2
Location	Main Electrical Room

OBSERVATIONS/COMMENTS:

The main switchgear is Zinsco equipment. The electrical service is reportedly adequate for the facility's needs. There is lack of redundancy and readily available replacement parts. A maintenance test was performed on 12/9/2014. Replacement is recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D5012	Replace D5010 Switchgear, Mainframe, 4000 Amps, 120v/208v, 3 phase, 4 wire	1.0 - EA	188800.0	IN - Beyond Rated Life	Priority 2	2017	188,800

Item	Description
D5012 Low Tension Service & Dist.	D5012 Breaker Panel 800 Amps, 42 Circuit
Condition	Good
Qty / UOM	6 / EA
RUL (years)	30
Location	Utility Areas/Closets

OBSERVATIONS/COMMENTS:

All panels were replaced in 2005. No further action is required.

Item	Description
D5012 Low Tension Service & Dist.	D5012 Breaker Panel 600 Amps
Condition	Good
Qty / UOM	17 / EA
RUL (years)	30
Location	Utility areas and closets

OBSERVATIONS/COMMENTS:

The electrical panels were replaced 2005. No further action is required.

Item	Description
D5037 Fire Alarm Systems	D5037 Fire Alarm Panel
Condition	Fair
Qty / UOM	1 / EA
RUL (years)	0
Location	Security Station

OBSERVATIONS/COMMENTS:

The fire alarm panel was replaced 2005 and is located in the lobby security station area. No strobes or horns were installed as part of the system. The capacity of the panel may need to be an increased capacity in conjunction with the recommended total system upgrade.

**COST RECOMMENDATIONS:**

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D5037	Replace D5037 Fire Alarm Panel	1.0 - EA	56640.0	CC - Life Safety	Priority 1	2015	56,640

Item	Description
<b>D5037 Fire Alarm Systems</b>	D5037 Fire Alarm System Strobe and Horns
<b>Condition</b>	Poor
<b>Qty / UOM</b>	127010 / SF
<b>RUL (years)</b>	0
<b>Location</b>	Throughout Facility

**OBSERVATIONS/COMMENTS:**

While the system was upgraded in 2005, the addition of strobes and horns was not part of that upgrade. It is recommend that strobes and horns be added throughout the structure as part of a total system upgrade.

**COST RECOMMENDATIONS:**

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D5037	Replace D5037 Fire Alarm System Strobe and Horns	127,010.0 - SF	3.5	CC - Life Safety	Priority 1	2015	449,615

**COST SUMMARY:**

Type	Year	Total Expenditures
D50 Electrical Systems	2015	\$506,255
D50 Electrical Systems	2017	\$188,800

# G Building Sitework Systems

## G20 SITE IMPROVEMENTS

Site Information	
Item	Description
Main Ingress and Egress	1220 "N" Street and there is ADA entrance on the east side of the building
Access from	E
Additional Entrances	N/A
Access from	N
Parking Count: Open lot	0
Parking Count: Sheltered by carports	0
Parking Count: Private garages	0
Parking Count: Subterranean garage	0
Parking Count: Freestanding parking structure	0
Number of ADA Compliant Spaces	0
Number of ADA Compliant Spaces for Vans	0
Method of obtaining parking count	Physical count
Property Identification Sign-Primary	Monument Sign
Property Identification Sign- Secondary	N/A
Illuminated Identification Signage	N/A
Building Identification Sign	Yes
Illuminated Sign	N/A
Location of Property ID Sign	Front elevation of building
Trees Present	Yes
Shrubs Present	No
Grasses Present	Yes
Flower beds Present	No
Decorative Rocks Present	No
Lava Rocks Present	No
Ponds Present	No
Fountains Present	No
Topography	Flat

Item	Description
G2031 Paving & Surfacing	G2030 Pedestrian Paving
Condition	Fair
Qty / UOM	450 / SF
RUL (years)	5
Location	Site

OBSERVATIONS/COMMENTS:

Replace worn and damaged concrete walkways throughout the site.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
G2031	Replace worn and damaged concrete pavement in various locations throughout the site	450.0 - SF	22.7	OP - Maintenance	Priority 4	2020	10,200

COST SUMMARY:

Type	Year	Total Expenditures
G20 Site Improvements	2020	\$10,200

The weather at the time of the assessment was:

Item	Description
Approximate Outdoor Temperature (degrees F)	54
Weather Conditions	Clear
Snow Covering Ground	No
Wind Conditions	Little to no wind

The documentation provided at the time of the assessment is as:

Item	Description
Site Plan Reviewed	Yes
Floor Plan Reviewed	Yes
Construction Drawings Reviewed	Yes
Termite Inspection Report Reviewed	No
Boiler Certificates Reviewed	No
Document Year Built Information Obtained From	

## **APPENDIX C: CERTIFICATION**

EMG has completed a FCA of the subject property listed on the cover page. The FCA was performed at the Client's request using methods and procedures consistent with good commercial and customary practice conforming with ASTM E2018-08, Standard Guide for Property Condition Assessments: Baseline Property Condition Assessment Process. Within this Property Condition Report (PCR), EMG's reference to the Client follows the ASTM guide's definition of User, that is, the party that retains EMG for the preparation of a baseline FCA of the subject property.

This report is exclusively for the use and benefit of the Client identified on the first page of this report. The purpose for which this report shall be used shall be limited to the use as stated in the contract between the client and EMG.

The opinions EMG expresses in this report were formed utilizing the degree of skill and care ordinarily exercised by any prudent architect or engineer in the same community under similar circumstances. EMG assumes no responsibility or liability for the accuracy of information contained within this report that has been obtained from the Client or the Client's representatives, from other interested parties, or from the public domain. The conclusions presented represent EMG's professional judgment based on information obtained during the course of this assignment. EMG's evaluations, analyses, and opinions are not representations regarding the building design, structural soundness, or actual value of the property. Factual information regarding operations, conditions, and test data provided by the Client or the Client's representative has been assumed to be correct and complete. The conclusions presented within this report are based on the data provided, observations made, and conditions that existed specifically on the date of the assessment. EMG certifies that EMG has no undisclosed interest in the subject property, that EMG's relationship with the Client is at arms-length, and that EMG's employment and compensation are not contingent upon the findings or estimated costs to remedy any noted deficiencies due to deferred maintenance and/or any noted component or system replacements.

EMG's FCA cannot wholly eliminate the uncertainty regarding the presence of physical deficiencies and/or the performance of a subject property's building systems. Preparation of a FCA in accordance with ASTM E2018-08 is intended to reduce, but not eliminate, the uncertainty regarding the potential for component or system failure and to reduce the potential that such component or system failure may not be initially observed. This FCA was prepared recognizing the inherent subjective nature of EMG's opinions as to such issues as workmanship, quality of original installation, and estimating the remaining useful life of any given component or system. It should be understood that EMG's suggested remedy may be determined under time constraints or may be formed without the aid of engineering calculations, testing, exploratory probing, the removal of materials, or design. Furthermore, there may be other alternate or more appropriate schemes or methods to remedy the noted physical deficiencies. EMG's opinions are generally formed without detailed knowledge from individuals familiar with the performance of noted components or systems.

Any questions regarding this report should be directed to the Program Manager.

**Prepared By:** Djahan Nabile, Field Observer

**Reviewed By:**   
Matthew Anderson, Program Manager

## **APPENDIX D: PHOTOS**



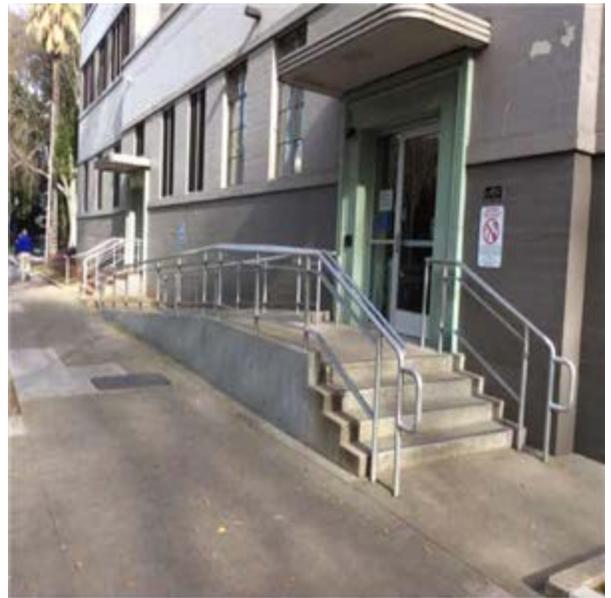
:- Westside



:- Southside



:- Eastside



:- Southside ADA entrance



B1012 Concrete Beams and Floor Slab



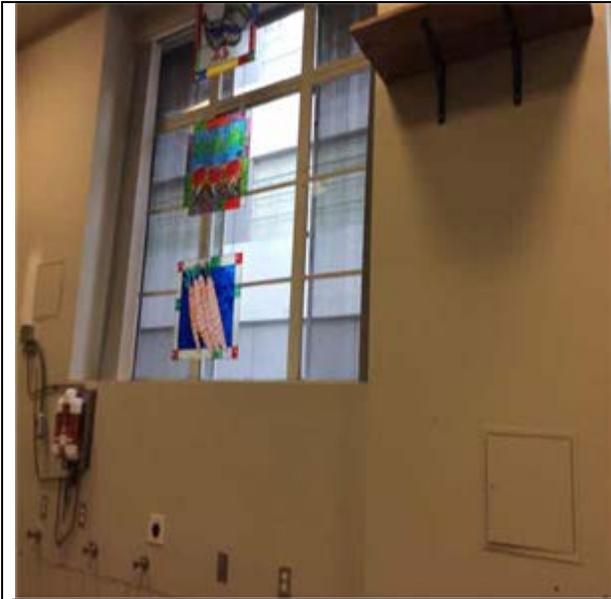
B1012 Concrete Beams and Floor Slab:- B1012 Deteriorated patch at old wall penetrations



B2011 Exterior Wall Painted Concrete Parging Finish



B2011 Exterior Wall Painted Concrete Parging Finish



B2021 Windows, single pane



B2021 Windows, single pane



B2021 Windows, single pane



B2031 Glazed Doors & Entrances



B2031 Entrance double doors to office area



B2031 Entrance double doors to office area



B3011 Single Ply Membrane Roof



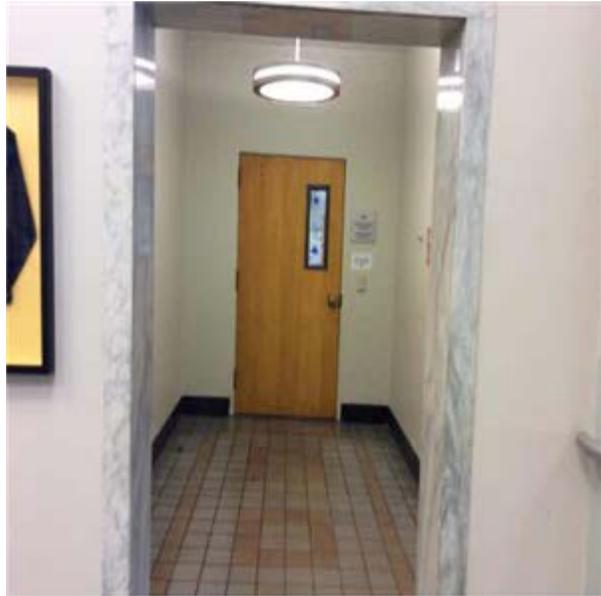
B3011 Single Ply Membrane Roof



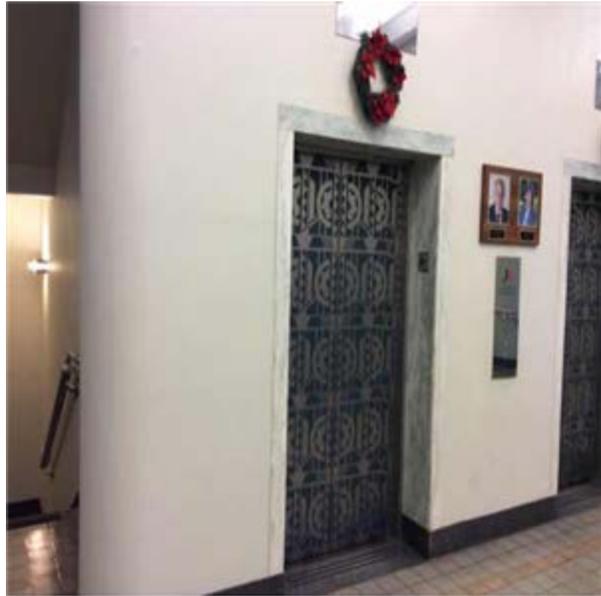
C1021 Interior Doors/Signage



C1021 Interior Doors



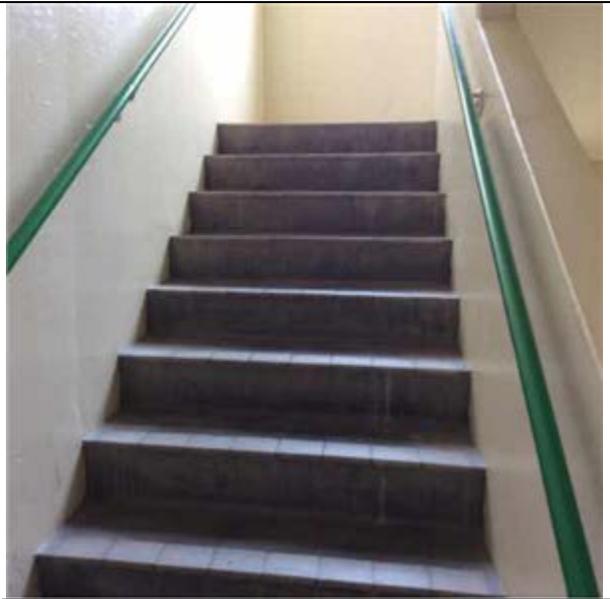
C1021 Interior Doors



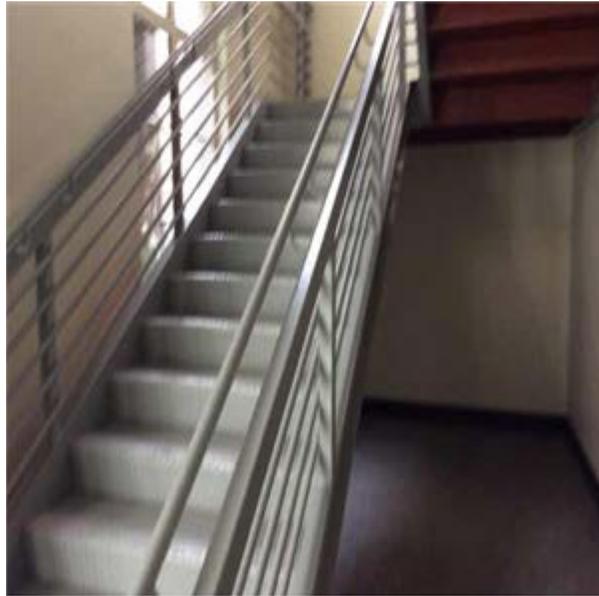
C1035 Directional Signage:- C1035 Lack of directional signage



C2011 Fire exit stairs



C2011 Fire exit stairs



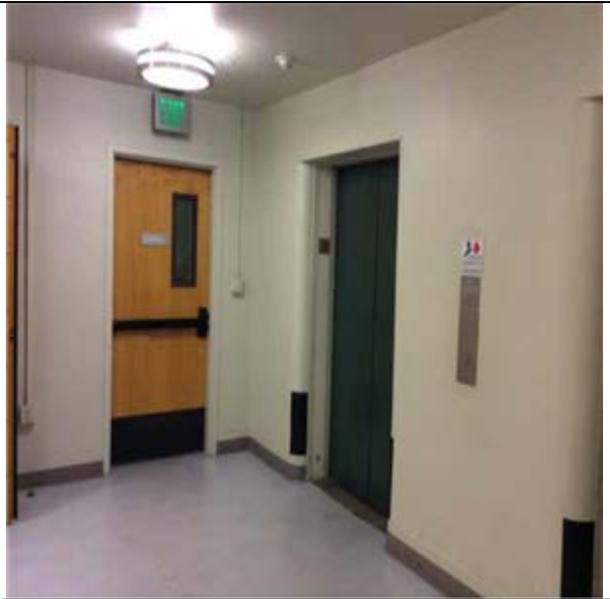
C2011 Fire exit stairs



C3012 Paint Interior Walls, Drywall:- C3012 Ceiling with damage



C3012 Paint Interior Walls, Drywall



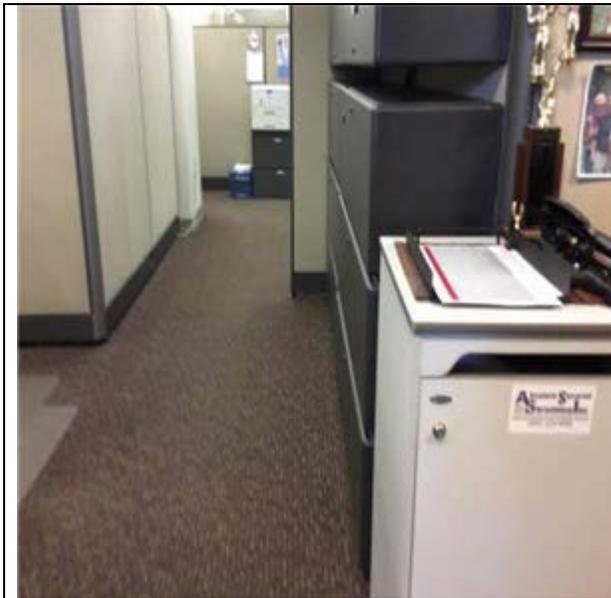
C3012 Elevator lobbies



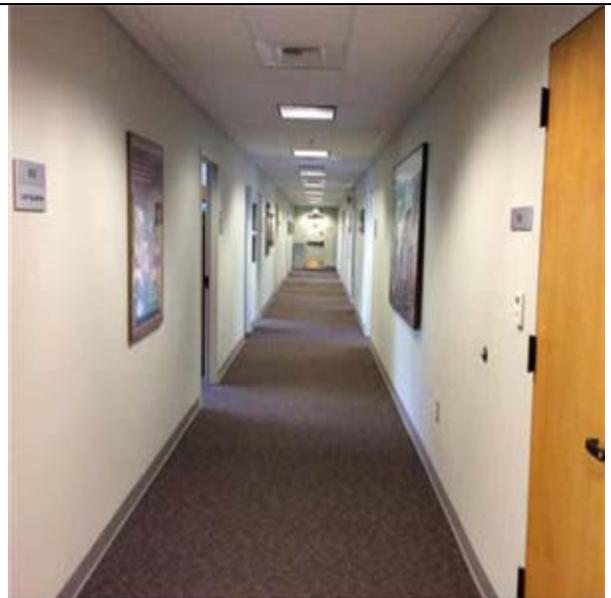
C3024 Vinyl Tile



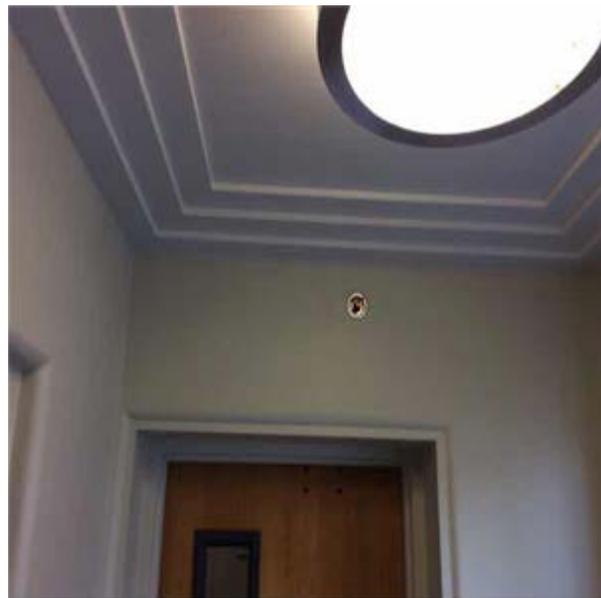
C3024 Vinyl Tile



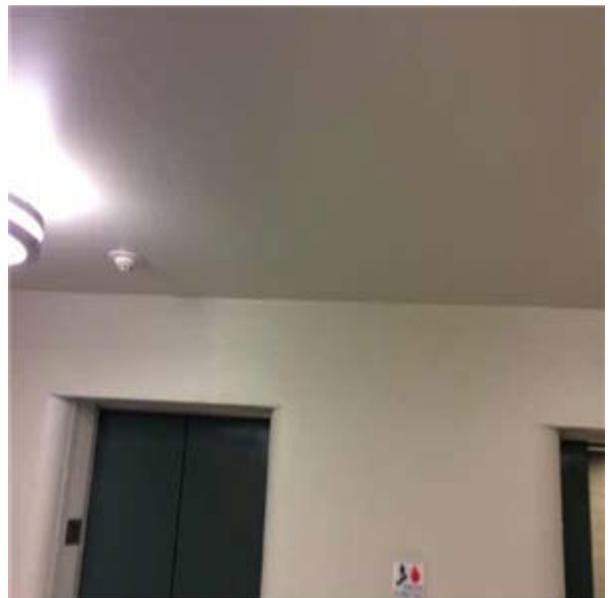
C3025 Carpet Tiles - Standard



C3025 Carpet Tiles - Standard



C3021 Drywall Ceilings



C3021 Drywall Ceilings



C3021 Drywall Ceilings



C3032 Acoustical Ceiling Tile



C3032 Acoustical Ceiling Tile



D1011 Traction Elevator Machinery and Controls



D1011 Hydraulic Elevators, 5000 LB :- Freight Elevator



D2011 Commercial Grade Water Closet, 1.6 GPF Unit



D2023 Domestic Water Booster Pump Station



D3022 HVAC Heated Water Circulation Pumps 50 HP



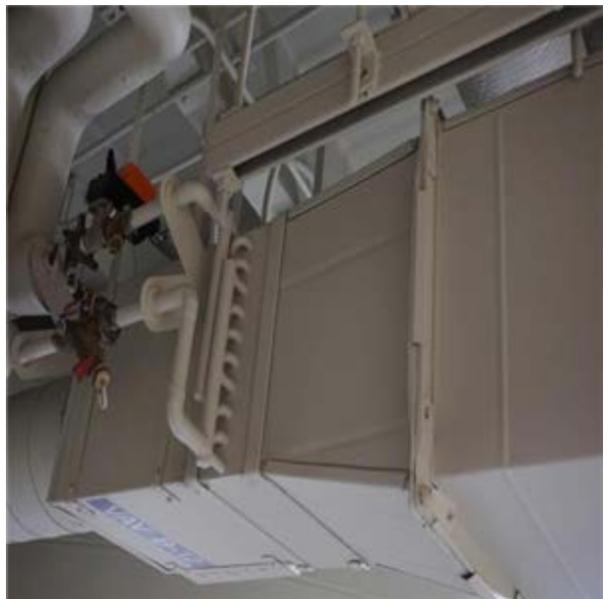
D3022 HVAC Chilled Water Circulation Pumps 50 HP



D3023 Condensate Return System:- Condensate Pumping System



D3041 Air Handling Unit 6200-4200 CFM



D3041 VAV Boxes, 270-1200 CFM



D3042 Exhaust Fan



D3043 HVAC Heating Water Heat Exchanger



D2022 Domestic Water Heat Exchanger



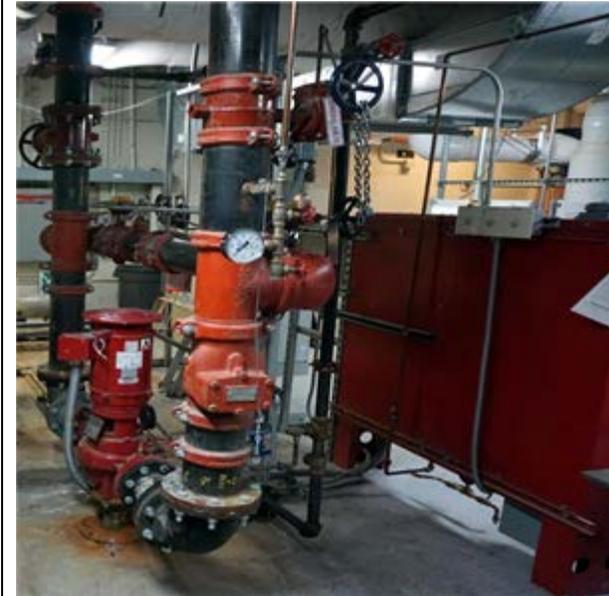
D3052 Computer/Server Room AC



D3063 Variable Frequency Drive



D4011 Sprinkler System



D4012 Fire Pump Electric 20 HP



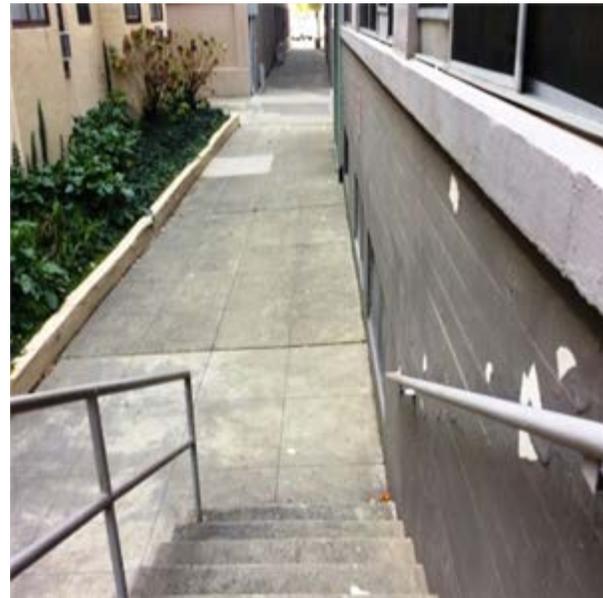
D5010 Switchgear, Mainframe, 4000 Amps, 120v/208v, 3 phase, 4 wire:- Main switchgear is on right hand side



D5012 Breaker Panel 800 Amps, 42 Circuit



D5037 Fire Alarm Panel



G2030 Pedestrian Paving



G2030 Pedestrian Paving

**APPENDIX E:      TERMINOLOGY AND ABBREVIATIONS**

<b>TERMINOLOGY and ABBREVIATIONS</b>	
Actual Knowledge	Information or observations known first hand by EMG.
ADA	The Americans with Disabilities Act
AHU	Air Handling Unit
Ancillary Structures	Structures that are not the primary improvements of the Property but which may have been constructed to provide support uses.
ASTM	American Society for Testing and Materials
Baseline	A minimum scope level of observation, inquiry, research, documentation review, and cost estimating for conducting a Property Condition Assessment as normally conducted by EMG.
BOMA	Building Owners & Managers Association
Building	Referring to the primary building or buildings on the Property, which are within the scope of the FCA.
Building Codes	A compilation of rules adopted by the municipal, county and/or state governments having jurisdiction over the Property that govern the property's design &/or construction of buildings.
Building Department Records	Information concerning the Property's compliance with applicable Building, Fire and Zoning Codes that is readily available for use by EMG within the time frame required for production of the Property Condition Assessment.
Building Systems	Interacting or interdependent components that comprise a building such as structural, roofing, side wall, plumbing, HVAC, water, sanitary sewer and electrical systems.
BUR	Built Up Roof
CBC	California Building Code
Component	A piece of equipment or element in its entirety that is part of a system.
CFM	Cubic Feet per Minute, usually referring to air flow in a heating or cooling system.
Dangerous or Adverse Conditions	Situations which may pose a threat or possible injury to the Project Manager, or those situations which may require the use of special protective clothing, safety equipment, access equipment, or any precautionary measures.
Deferred Maintenance	Deficiencies that result from postponed maintenance, or repairs that have been put off until a later time and that require repair or replacement to an acceptable condition relative to the age of the system or property.
DHW	Domestic Hot Water
DDC	Direct Digital Controls, for HVAC systems
Dismantle	To take apart; disassemble; tear down any component, device or piece of equipment that is bolted, screwed, secured, or fastened by other means.
DWV	Drainage Waste Ventilation
EPDM	Ethylene propylene diene terpolymer, a single ply roofing material, usually black
EIFS	Exterior Insulation and Finish System
EMS	Energy Management System
Engineering	Analysis or design work requiring extensive formal education, preparation and experience in the use of mathematics, chemistry, physics, and the engineering sciences as provided by a Professional Engineer licensed to practice engineering by any state of the 50 states.
Expected Useful Life (EUL)	The average amount of time in years that a system or component is estimated to function when installed new.

<b>TERMINOLOGY and ABBREVIATIONS</b>	
FEMA	Federal Emergency Management Agency
Fire Department Records	Information generated or acquired by the Fire Department having jurisdiction over the Property, and that is readily available to EMG within the time frame required for production of the FCA.
FIRM	Flood Insurance Rate Maps
FM	Factory Mutual
FRT	Fire Retardant Treated
Guide	A series of options or instructions that do not recommend a specific course of action.
HP	Horse Power, a unit of measure for pumps and motors.
HVAC	Heating, Ventilating & Air Conditioning
IAQ	Indoor Air Quality
Immediate Repairs	Physical deficiencies that require immediate action as a result of: (i) existing or potentially material unsafe conditions, (ii) significant negative conditions impacting tenancy/marketability, (iii) material building code violations, or (iv) poor or deteriorated condition of critical element or system, or (v) a condition that if left "as is", with an extensive delay in addressing same, has the potential to result in or contribute to critical element or system failure within one (1) year.
Interviews	Interrogatory with those knowledgeable about the Property.
kVA	Kilo Volt Amps, a measurement used for electrical devices where Amps is the plural of Amperage, a measure of electrical force.
kW	One thousand Watts, a measure of electrical output.
Material	Having significant importance or great consequence to the asset's intended use or physical condition.
MEP	Mechanical, Electrical, and Plumbing
NFPA	National Fire Protection Association
Observations	The results of the Project Manager's Walk-through Survey.
Observe	The act of conducting a visual, unaided survey of items, systems or conditions that are readily accessible and easily visible on a given day as a result of the Project Manager's walk-through.
Obvious	That which is plain or evident; a condition that is readily accessible and can be easily seen by the Project Manager as a result of his Walk-through without the removal of materials, moving of chattel, or the aid of any instrument, device, or equipment.
Owner	The entity holding the deed to the Property that is the subject of the FCA.
Physical Deficiency	Patent, conspicuous defects, or significant deferred maintenance of the Property's material systems, components, or equipment as observed during the Project Manager's Walk-through Survey. Material systems, components, or equipment that are approaching, have realized, or have exceeded their typical Expected Useful Life (EUL); or, that have exceeded their useful life result of abuse, excessive wear and tear, exposure to the elements, or lack of proper or adequate maintenance. This definition specifically excludes deficiencies that may be remedied with routine maintenance, miscellaneous repairs, normal operating maintenance, and conditions that do not present a material deficiency to the Property.
PVC	Poly Vinyl Chloride

<b>TERMINOLOGY and ABBREVIATIONS</b>	
Practically Reviewable	Information that is practically reviewable means that the information is provided by the source in a manner and form that, upon examination, yields information relevant to the property without the need for extraordinary analysis of irrelevant data.
Practice	A definitive procedure for performing one or more specific operations or functions that does not produce a test result.
Primary Improvements	The site and building improvements that are of fundamental importance with respect to the Property.
Project Manager	The individual Professional Engineer, Contractor, or Registered Architect having a general, well rounded knowledge of all pertinent site and building systems and components that conducts the on site visit and walk-through observation.
Property	The site and building improvements, which are specifically within the scope of the FCA to be prepared in accordance with the agreement between the Client and EMG.
Readily Accessible	Those areas of the Property that are promptly made available for observation by the Project Manager without the removal of materials or chattel, or the aid of any instrument, device, or equipment at the time of the Walk-through Survey.
Reasonably Ascertainable	Information that is publicly available, provided to EMG's offices from either its source or an information research/retrieval concern, practically reviewable, and available at a nominal cost for either retrieval, reproduction or forwarding.
Recreational Facilities	Spas, saunas, steam baths, swimming pools, tennis courts, playground equipment, and other exercise, entertainment, or athletic facilities.
Remaining Useful Life (RUL)	<p>The consultant's professional opinion of the number of years before a system or component will require replacement or reconditioning. The estimate is based upon observation, available maintenance records, and accepted EUL's for similar items or systems.</p> <p>Inclement weather, exposure to the elements, demand on the system, quality of installation, extent of use, and the degree and quality of preventive maintenance exercised are all factors that could impact the RUL of a system or component. As a result, a system or component may have an effective age greater or less than its actual age. The RUL may be greater or less than its Expected Useful Life (EUL) less actual age.</p>
Replacement Costs	Costs to replace the system or component "in kind" based on Invoices or Bid Documents provided by the current owner or the client, construction costs developed by construction resources such as <i>Means</i> and <i>Dodge</i> , EMG's experience with past costs for similar properties, or the current owner's historical incurred costs.
RTU	Rooftop Unit
Shut-Down	Equipment or systems that are not operating at the time of the Project Manager's Walk-through Survey. Equipment or systems may be considered shutdown if it is not in operation as a result of seasonal temperatures.
Significant	Important, material, and/or serious.
Site Visit	The visit to the property by EMG's Project Manager including walk-through visual observations of the Property, interviews of available project personnel and tenants (if appropriate), review of available documents and interviews of available municipal personnel at municipal offices, all in accordance with the agreement for the Property Condition Assessment.

<b>TERMINOLOGY and ABBREVIATIONS</b>	
Specialty Consultants	Practitioners in the fields of engineering, architecture; or, building system mechanics, specialized service personnel or other specialized individuals that have experience in the maintenance and repair of a particular building component, equipment, or system that have acquired detailed, specialized knowledge in the design, assessment, operation, repair, or installation of the particular component, equipment, or system.
Structural Component	A component of the building, which supports non-variable forces or weights (dead loads) and variable forces or weights (live loads).
Suggested Remedy	A preliminary opinion as to a course of action to remedy or repair a physical deficiency. There may be alternate methods that may be more commensurate with the Client's requirements. Further investigation might make other schemes more appropriate or the suggested remedy unworkable. The suggested remedy may be to conduct further research or testing, or to employ Specialty Consultants to gain a better understanding of the cause, extent of a deficiency (whether observed or highly probable), and the appropriate remedy.
Survey	Observations as the result of a walk-through scan or reconnaissance to obtain information by EMG of the Property's readily accessible and easily visible components or systems.
System	A combination of interacting or interdependent components assembled to carry out one or more functions.
Technically Exhaustive	The use of measurements, instruments, testing, calculations, exploratory probing or discover, and/or other means to discover and/or troubleshoot Physical Deficiencies, develop scientific or Engineering findings, conclusions, and recommendations.
Term	Reserve Term: The number of years that Capital Reserves are projected for as specified in the Expenditure Forecast.
TPO	Thermoplastic polyolefin, a white single ply roofing material, usually white
Timely Access	Entry provided to the Project Manager at the time of his site visit.
UST	Underground Storage Tank
Walk-through Survey	The Project Manager's site visit of the Property consisting of his visual reconnaissance and scan of readily accessible and easily visible components and systems. This definition connotes that such a survey should not be considered in depth, and is to be conducted without the aid of special protective clothing, exploratory probing, removal of materials, testing, or the use of special equipment such as ladders, scaffolding, binoculars, moisture meters, air flow meters, or metering/testing equipment or devices of any kind. It is literally the Project Manager's walk of the Property and observations.

**APPENDIX F: BUILDING FACT SHEET**

# AGRICULTURE BUILDING FACT SHEET

1220 N Street  
Sacramento  
Sacramento County

## Category 4 - Low Priority - Renovated in Last 10 Years, Special Repairs and Maintenance

### BUILDING INFORMATION

- **Age:** 78 years (originally built in 1936), Full renovation 9 years ago (in 2005)  
This is a registered historic structure.
- **Size:\*** 4-story  
127,010 GSF      91,995 NUSF      91,995 Assigned SF  
0.87 Acre Parcel  
No parking spaces  
Capacity - 299 occupants
- **Financial:** State Public Works Board  
Lease-Revenue Bond 2005 Series F, Matures April 2031  
Original Bond \$20,585,000 - Balance as of 6/30/13 \$16,655,000  
IRR Rate - \$2.99/month per SF, FY 2013-14 (DGS Price Book)  
                  \$2.98/month per SF, FY 2014-15 (Proposed DGS Price Book)  
Central Plant rate an additional \$0.60/month per SF
- **LEED Status:** LEED-EB Silver Certification is being pursued
- **Tenants:** The Department of Food and Agriculture is the sole tenant.



SPI Structure #: 2282  
Real Property #: 640  
BPM #: 006

### COMPLETED STUDIES AND SIGNIFICANT FINDINGS

#### A. 2010 American Disability Act Accessibility Compliance Survey

Many access compliance features were completed during the 2005 renovation. However, there exist several features that require compliance, the most significant being: handrail extensions, sizes, and heights; entrance, exit and restroom doors; exit route signage; and exterior walkways and passenger loading zones.

#### B. 2012 Access Compliance Conceptual Budget/Evaluation

In follow up to the 2010 American Disability Act Accessibility Compliance Survey, this report provides the Conceptual Cost and Path of Travel Plans. ADA upgrades have been proposed for this building as part of DGS's ten year ADA Compliance Upgrades and Deferred Special Repairs Program.

### ADDITIONAL BUILDING ISSUES

No known building issues.

### CURRENT UTILIZATION PROJECTS

No utilization projects.

### RECENTLY COMPLETED PROJECTS

TBD

Cost

### ACTIVE PROJECTS

TBD

Cost

### PLANNED SPECIAL REPAIRS BY FISCAL YEAR

TBD

Estimated Cost

**DGS STRATEGY:** Continue to operate/maintain the building as-is through the special repair/maintenance process; no capital outlay work required for this building at this time.

\* Source: Statewide Property Inventory

## **APPENDIX G: COST TABLES**

10 YEAR EXPENDITURE FORECAST



Agriculture Building  
1220 N Street  
Sacramento

Useful Life

Estimated Useful Life
Remaining Useful Life

Plan Type

OP: Operations	CC: Code Compliance
EN: Environmental	FN: Functionality
IN: Integrity	

Legend

Deferred
Scheduled

Element #	Component Description	Asset	Location	Action	EUL (Yrs)	RUL (Yrs)	Qty.	Unit of Meas.	Unit Cost	Plan Type	Priority	2015 Year 0	2016 Year 1	2017 Year 2	2018 Year 3	2019 Year 4	2020 Year 5	2021 Year 6	2022 Year 7	2023 Year 8	2024 Year 9	Total - Deferred	Total - Scheduled									
<b>A. SUBSTRUCTURE</b>																																
Substructure Subtotal												\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>B. SHELL</b>																																
<b>B10 SUPERSTRUCTURE</b>																																
B1012	Cast-in-place Concrete Beams and Floor Slab	B1012 Concrete Beams and Floor Slab	Basement	Patch and paint concrete walls in basement at old pipe penetrations and small holes	0	0	150.00	SF	\$11.70	IN - Appearance	Priority 2	\$1,755	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,755	\$0									
<b>B20 EXTERIOR ENCLOSURE</b>																																
B2011	B2011 Exterior Wall Construction	B2011 Exterior Wall Painted Concrete Parging Finish	Throughout exterior	Replace B2011 Exterior Wall Painted Concrete Parging Finish	20	0	38,700.00	SF	\$14.28	IN - Appearance	Priority 1	\$552,822	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$552,822	\$0									
B2021	Aluminum Window, 4-0 X 6-0, Upper Floor Floor	B2021 Windows, single pane	Throughout exterior	B2021 Repair and reseal exterior windows	10	0	1,976.00	LF	\$38.07	OP - Maintenance	Priority 2	\$75,226	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$75,226	\$0									
B2031	Aluminum 3'-0" X 7'-0"	B2031 Glazed Doors & Entrances	Building entrances	Install automatic door openers	15	0	7.00	EA	\$2,159.46	CC - Accessibility	Priority 1	\$15,116	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$15,116	\$0									
<b>B30 ROOFING</b>																																
B3011	Existing Membrane Roof with PVC Membrane Roofing	B3011 Single Ply Membrane Roof	Roof	Replace B3011 Single Ply Membrane Roof	20	9	322.00	SQ	\$1,800.70	OP - Maintenance	Priority 4	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$579,826	\$0									
Shell Subtotal												\$644,919	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$579,826	\$579,826
<b>C. INTERIORS</b>																																
<b>C10 INTERIOR CONSTRUCTION</b>																																
C1021	Fire Door, Wood, Flush, 60 Minute, Incl. Demo, with Hardware	C1021 Interior Doors/Signage	All Floor	Replace ADA signage on restroom doors	15	0	2.00	EA	\$136.40	CC - Accessibility	Priority 2	\$273	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$273	\$0									
C1035	Directional Signage	C1035 Directional Signage	Throughout building	Replace C1035 Directional Signage	15	2	8.00	EA	\$316.20	CC - Accessibility	Priority 2	\$0	\$0	\$2,530	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,530								
<b>C30 INTERIOR FINISHES</b>																																
C3012	Plaster - Painted Smooth Finish	C3012 Elevator lobbies	Throughout interior	C3012 Repaint elevator lobbies	10	2	14,750.00	SF	\$3.10	IN - Appearance	Priority 3	\$0	\$0	\$45,725	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$45,725								
C3012	Paint Interior Walls, Drywall	C3012 Paint Interior Walls, Drywall	Throughout building	Replace C3012 Paint Interior Walls, Drywall	10	0	72,480.00	SF	\$2.13	IN - Appearance	Priority 2	\$154,585	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$154,585	\$0									
C3024	Vinyl Tile	C3024 Vinyl Tile	Throughout the interior	Replace C3024 Vinyl Tile	18	8	355.00	SY	\$125.78	IN - Appearance	Priority 4	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$44,652	\$0	\$44,652								
C3025	Carpet Tiles - Standard	C3025 Carpet Tiles - Standard	Throughout the interior	C3025 Replace portions of carpet that have deteriorated	10	0	1,692.00	SY	\$96.61	IN - Appearance	Priority 3	\$163,464	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$163,464	\$0									
	Carpet Tiles - Standard	C3025 Carpet Tiles - Standard	Throughout the interior	Replace C3025 Carpet Tiles - Standard	10	3	8,460.00	SY	\$96.61	IN - Appearance	Priority 3	\$0	\$0	\$0	\$817,283	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$817,283								
C3031	Drywall - Painted Finished Ceilings	C3021 Drywall Ceilings	In various locations throughout the building	Replace C3021 Drywall Ceilings	20	0	11,800.00	SF	\$4.44	IN - Appearance	Priority 2	\$52,383	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$52,383	\$0									
Interiors Subtotal												\$370,705	\$0	\$48,255	\$817,283	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$44,652	\$0	\$370,705	\$910,190					
<b>D. SERVICES</b>																																
<b>D10 CONVEYING SYSTEMS</b>																																
D1011	Traction Elevator Machinery and Controls	D1011 Traction Elevator Machinery and Controls	Elevator Shaft	5-year load test	10	0	2.00	EA	\$3,000.00	CC - Building Code	Priority 1	\$6,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,000	\$0									
	Traction Elevator Machinery and Controls	D1011 Traction Elevator Machinery and Controls	Elevator Shaft	Adjust elevators to run at proper speed	10	0	2.00	EA	\$4,000.00	OP - Maintenance	Priority 2	\$8,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$8,000	\$0									
	Traction Elevator Machinery and Controls	D1011 Traction Elevator Machinery and Controls	Elevator Shaft	Clean oil leak in machine room and pit	10	0	1.00	EA	\$1,200.00	OP - Maintenance	Priority 2	\$1,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,200	\$0									
	Traction Elevator Machinery and Controls	D1011 Traction Elevator Machinery and Controls	Elevator Shaft	Replace D1011 Traction Elevator Machinery and Controls	30	2	2.00	EA	\$164,012.94	IN - Beyond Rated Life	Priority 2	\$0	\$0	\$328,026	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$328,026								
	Traction Elevator Machinery and Controls	D1011 Traction Elevator Machinery and Controls	Elevator Shaft	Reprogram emergency call system in elevator #2	10	0	2.00	EA	\$400.00	CC - Life Safety	Priority 1	\$800	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$800	\$0								
D1012	D1012 Freight Elevators	D1011 Hydraulic Elevators, 5000 LB	On first floor	D1011 Properly identify car #3 in machine room and car top	10	0	1.00	EA	\$500.00	OP - Maintenance	Priority 2	\$500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$500	\$0									
<b>D20 PLUMBING</b>																																
D2011	Commercial Grade Water Closet With 1.6 Gpf Unit	D2011 Commercial Grade Water Closet, 1.6 GPF Unit	Throughout Facility	D2011 Install automatic flush valves on toilets	15	2	36.00	EA	\$944.00	OP - Energy	Priority 2	\$0	\$0	\$33,984	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$33,984								
D2023	Booster Pumps	D2023 Domestic Water Booster Pump Station	Boiler Room	Replace D2023 Domestic Water Booster Pump Station	20	9	1.00	EA	\$36,699.60	IN - Beyond Rated Life	Priority 4	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$36,700	\$0	\$36,700								
<b>D30 HVAC</b>																																
D3022.1	Circulation Pump 60 HP	D3022 HVAC Chilled Water Circulation Pumps 50 HP	Boiler Room	Replace D3022 HVAC Chilled Water Circulation Pumps 50 HP	20	0	2.00	EA	\$44,933.62	IN - Beyond Rated Life	Priority 1	\$89,867	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$89,867	\$0									
D3022.1	Circulation Pump 60 HP	D3022 HVAC Heated Water Circulation Pumps 50 HP	Boiler Room	Replace D3022 HVAC Heated Water Circulation Pumps 50 HP	20	3	2.00	EA	\$44,933.62	IN - Beyond Rated Life	Priority 2	\$0	\$0	\$89,867	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$89,867								
D3023	Condensate return system (SIMPLEX PUMP, FLOAT SWITCH, 3/4 HP, 15 GPM)	D3023 Condensate Return System	Boiler Room	Replace D3023 Condensate Return System	20	2	1.00	EA	\$16,497.34	IN - Beyond Rated Life	Priority 2	\$0	\$0	\$16,497	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$16,497								
D3042	Exhaust Fan 2000 CFM	D3042 Exhaust Fan	Rooftop	Replace D3042 Exhaust Fan	20	9	3.00	EA	\$4,619.05	IN - Beyond Rated Life	Priority 4	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$13,857	\$0	\$13,857								
D3052	Computer Room A/C Units, Air Cooled 10-Ton	D3052 Computer/Sever Room AC	Rooftop	D3052 Add supplemental cooling, 20-ton DX package unit	20	0	1.00	EA	\$51,336.00	FN - Capacity	Priority 1	\$51,336	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$51,336	\$0									
D3068	Direct Digital Controls (DDC) Extensive	D3068 Pneumatic Controls	Basement	Replace D3068 Pneumatic Controls	20	0	1.00	EA	\$4,216.00	IN - Beyond Rated Life	Priority 1	\$4,216	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,216	\$0									
<b>D50 ELECTRICAL SYSTEMS</b>																																
D5012	Switchgear, Mainframe, 1600 Amps	D5010 Switchgear, Mainframe, 4000 Amps, 120v/208v, 3 phase, 4 wire	Main Electrical Room	Replace D5010 Switchgear, Mainframe, 4000 Amps, 120v/208v, 3 phase, 4 wire	40	2	1.00	EA	\$188,800.00	IN - Beyond Rated Life	Priority 2	\$0	\$0	\$188,800	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$188,800								
D5037	Fire Alarm Panel	D5037 Fire Alarm Panel	Security Station	Replace D5037 Fire Alarm Panel	15	0	1.00	EA	\$56,640.00	CC - Life Safety	Priority 1	\$56,640	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$56,640	\$0									
D5037	Strobe and Horn	D5037 Fire Alarm System Strobe and Horns	Throughout Facility	Replace D5037 Fire Alarm System Strobe and Horns	15	0	127,010.00	SF	\$3.54	CC - Life Safety	Priority 1	\$449,615	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$449,615	\$0									
Services Subtotal												\$668,175	\$0	\$567,307	\$89,867	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$50,557	\$668,175	\$707,731						
<b>E. EQUIPMENT &amp; FURNISHING</b>																																
Equipment & Furnishing Subtotal												\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0				
<b>F. SPECIAL CONSTRUCTION AND DEMOLITION</b>																																
Special Construction And Demolition Subtotal												\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0				
<b>G. BUILDING SITEWORK</b>																																
<b>G20 SITE IMPROVEMENTS</b>																																
G2031	Concrete Sidewalk	G2030 Pedestrian Paving	Site	Replace worn and damaged concrete pavement in various locations throughout the site	25	5	450.00	SF	\$22.67	OP - Maintenance	Priority 4	\$0	\$0	\$0	\$0	\$0	\$10,200	\$0	\$0	\$0	\$0	\$0	\$0	\$10,200								

Element #	Component Description	Asset	Location	Action	EUL (Yrs)	RUL (Yrs)	Qty.	Unit of Meas.	Unit Cost	Plan Type	Priority <sup>2</sup>	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Total - Deferred	Total - Scheduled	
												Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9			
Building Sitework Subtotal												\$0	\$0	\$0	\$0	\$0	\$10,200	\$0	\$0	\$0	\$0	\$0	\$0	\$10,200
<b>Z. GENERAL</b>																								
General Subtotal												\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Expenditure Totals per Year												\$1,683,799	\$0	\$615,562	\$907,151	\$0	\$10,200	\$0	\$0	\$44,652	\$630,383	\$1,683,799	\$2,207,948	
Total Cost (Inflated @ 5% per Yr.)												\$1,683,799	\$0	\$678,657	\$1,050,140	\$0	\$13,018	\$0	\$0	\$46,971	\$977,931	Total *	\$3,891,747	

\* - Present Value Currency

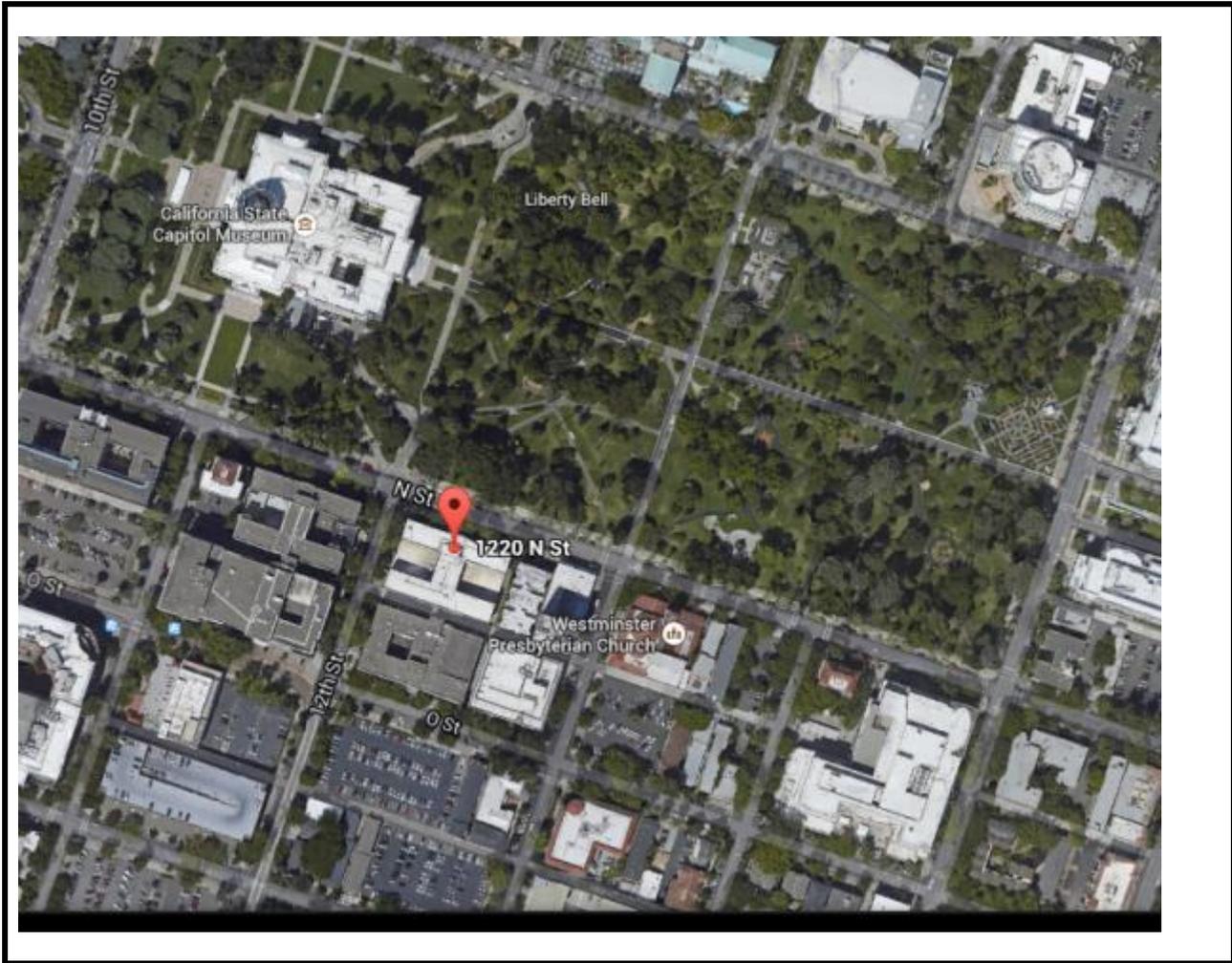
**Footnotes**

- 1 Detailed descriptions for Useful Life and Plan Type can be found in the Appendices of the Facility Condition
- 2 Detailed Descriptions of the Priorities can be found in the Appendices of the Facility Condition Assessment

Current Repl.Value \$45,563,410

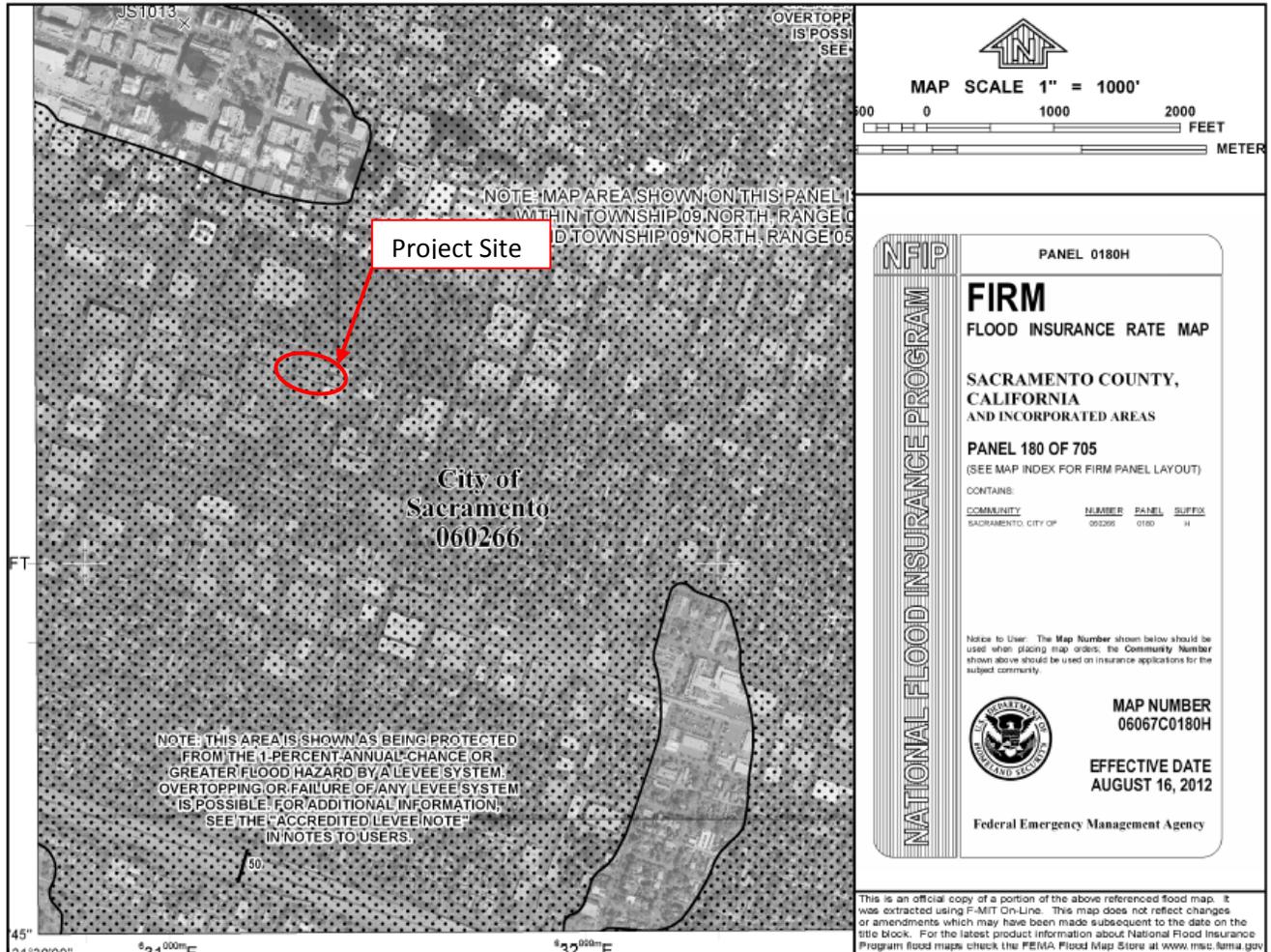


**APPENDIX H: SUPPORTING DOCUMENTATION**



	<p><b>Source:</b></p> <p>The north arrow indicator is an approximation of 0° North.</p>	<p><b>Project Number:</b></p> <p>111326.14R.011.305</p> <p><b>Project Name:</b></p> <p>Agriculture Building</p>
		

# Flood Map



	<b>SOURCE:</b> FEMA	<b>Project Number:</b> 111326.14R-011.305
		<b>Project Name:</b> Agriculture Building
Not drawn to scale. The north arrow indicator is an approximation of 0° North.		

## Estimate of Structures Cost Using Marshall Cost Systems

### Agriculture Building (006)

#### Site Calculation

#### Estimate of Unusual Land Improvements Cost (Estimators Data Cost Base):

Description	Cost	Estimated \$/ SF	Unusual Land Total
			\$0
<b>Total</b>			<b>\$0</b>

#### Estimate of Unusual Land Improvements Cost (Estimators Cost Data Base):

#### Estimate of Structure Cost :

Building Type	Cost per SF	Number of SF	Building Type Total
main building	\$286.99	127,010	\$36,450,728
	\$0.00	0	\$0
	\$0.00	0	\$0
	\$0.00	0	\$0
	\$0.00	0	\$0
<b>Total</b>		<b>127,010</b>	<b>\$36,450,728</b>

#### Estimate of Adjustments for Fees:

Description	% increase	
Soft Costs	25.00%	
	0.00%	
	0.00%	
<b>Total Fees/ Interest included in Marshall System</b>		<b>25.00%</b>

#### Total Structure Estimate:

Description	Unit	Fee Adjust	Adjusted Totals
main building	\$36,450,728	25.00%	\$45,563,410
	\$0	25.00%	\$0
	\$0	25.00%	\$0
	\$0	25.00%	\$0
	\$0	25.00%	\$0
<b>Cost Per SF</b>	<b>\$358.74</b>	<b>Total Estimate</b>	<b>\$45,563,410</b>

<b>Expected Useful Life (EUL) Table</b>	
<b>SITE SYSTEM ITEMS</b>	
<b>ROADWAYS/ PARKING/ WALKWAYS</b>	
Asphalt pavement	25
Asphalt seal coat	5
Concrete pavement	50
Curbing, asphalt	25
Curbing, concrete	50
Parking, stall striping	5
Parking, gravel surfaced	15
Security gate- rolling gate	10
Security gate- lift arm	10
Sidewalk, asphalt	25
Sidewalk, brick paver	30
Sidewalk, concrete	50
<b>STORM SEWER, DRAINAGE AND EROSION CONTROL</b>	
Catch basins, inlets, culverts	50
Earthwork, grading and erosion control	50
Storm drain lines	40
<b>LANDSCAPING, TOPOGRAPHY AND FENCING</b>	
Fencing, chain-link (4' height)	40
Fencing, dumpster enclosure (wood)	12
Fencing, Tennis Court (10' height)-Chain link	40
Fencing, wood privacy (6' height)	15
Fencing, wrought iron (4-6' height and decorative)	50
Fencing, concrete masonry unit (CMU)	30
Irrigation System	30
Retaining walls, 80 lb block type	50
Retaining walls, concrete masonry unit (CMU) with brick face	40
Fencing, PVC (6' height)	25
Retaining walls, timber (railroad tie)	25
<b>SITE SYSTEM ITEMS</b>	
<b>GENERAL SITE IMPROVEMENTS</b>	
Lighting (pole mounted)	25
Mail kiosk	10
Pool deck	15
Pool/ spa plaster liner	8
Signage, monument	20
Signage, roadway/ parking	10
Tennis court / basketball court surface (paint markings)	5

<b>GENERAL SITE IMPROVEMENTS</b>	
Tennis court Surface (acrylic emulsion)	10
Tot-lot (playground equipment)	10
<b>SITE SANITARY AND WATER</b>	
Domestic Hot Water (DHW) - supply / return	30
Lift station	50
Sanitary lines	50
Sanitary treatment	40
Water main	40
Water supply lines	50
Water tower	50
<b>SITE MECHANICAL / ELECTRICAL</b>	
Compactors	15
Dumpsters	10
Electrical distribution center	40
Electric main	40
Emergency Generator	25
Gas lines	40
Gas main	40
Heating supply/ return	40
Power distribution	40
Transformer	30
<b>BUILDING ARCHITECTURAL ITEMS</b>	
Wood Decks	20
Storage Sheds	30
Carports	40
Garages	50
Basement Stairs	50
Building mounted exterior lighting	10
Building mounted High Intensity Discharge (HID) lighting	10
Bulkhead	10
Canopy, concrete	50
Canopy, wood / metal	40
Ceilings, open or exterior	30
Chimney	40
Common area doors, interior (solid wood/ metal clad)	30
Common area floors, ceramic / quarry tile, terrazzo	50+
Common area floors, wood (strip or parquet)	30
Common area floors, resilient tile or sheet	15
Common area floors, carpet	8
Common area floors, concrete	50+

<b>BUILDING ARCHITECTURAL ITEMS</b>	
Common area railing	20
Common area ceiling, concrete	50+
Common area ceiling, acoustic tile (drop ceiling),	15
Common area countertop and sink	20
Common area dishwasher	15
Common area disposal	5
Common area kitchen cabinets, wood	15
Common area wall coverings	15
Caps, copings (aluminum/ terra-cotta) - Parapet	25
Exterior common door, aluminum and glass	30
Exterior common door, solid core wood or metal clad	25
Exterior stairs, wood	15
Exterior stairs, metal pan- concrete filled	30
Exterior stairs, concrete	50
Exterior unit door, solid wood/ metal clad	25
<b>EXTERIOR CLADDING</b>	
Aluminum Siding	40
Brick or block	40
Brownstone or stone veneer	40
Exterior Insulation Finishing Systems (EIFS)	20
Glass block	40
Granite block	40
Metal/ glass curtain wall	30
Precast concrete panel (tilt-up)	40
Vinyl siding	25
Wood shingle/ clapboard/ plywood, stucco, composite wood	20
Cement-board siding (Hardi-plank)/ non integral color	45
Fire Escapes	40
Foundations	50+
Roof hatch	30
Roof skylight	30
Insulation, wall	50+
Interior lighting	15
Interior railings	20
Mail facility, interior	20
Parapet wall,	50+
Penthouse	50
Railing, roof	25

<b>INTERIORS</b>	
Public bathroom accessories	7
Public bathroom fixtures	15
Refrigerator, common area	10
<b>BUILDING ARCHITECTURAL ITEMS</b>	
<b>ROOF COVERINGS</b>	
Built-up roof - Ethylene Propylene Diene Monomer (EPDM) / Thermoplastic Polyolefin (TPO)	20
Asphalt shingle (3-tab)	20
Wood shingles (cedar shake)	25
Slate, clay, concrete tile	40
Metal	40
Roof drainage exterior (gutter/ downspout)	10
Roof drainage interior (drain covers)	30
Roof structure	50+
Slab	50+
Service door	25
Soffits (wood/ stucco)	20
Soffits (aluminum or vinyl)	25
Stair structures	50+
Storm/ screen doors	7
Storm/ screen windows	10
Waterproofing (foundations)	50+
Windows (frames and glazing), vinyl or aluminum	30
Wood floor frame	50+
<b>BOILER ROOM EQUIPMENT</b>	
Blowdown and Water Treatment	25
Boiler Room Pipe Insulation	Included in boiler
Boiler Room Piping	Included in boiler
Boiler Room Valves	15
Boiler Temperature Controls	Included in boiler
Oil-fired, sectional	22
Gas/ dual fuel, sectional	25
Oil/ gas/ dual fired, low MBH	30
<b>BOILERS</b>	
Oil/ gas/ dual fired, high MBH	40
Gas fired atmospheric	25
Electric	20

<b>BUILDING HEATING WATER TEMPERATURE CONTROLS</b>	
Common area	15
Buzzer/Intercom, central panel	20
Central Unit Exhaust, roof mounted	15
Chilled Water Distribution	50+
Chilling Plant	15
Cooling Tower	25
Combustion Air, Duct with fixed louvers	30
Combustion Air, Motor louver and duct	25
<b>CONDENSATE, FEEDWATER, WATER</b>	
Feedwater only (hydronic)	10
Cooling Tower	25
DHW Circulating Pumps	by size
Tank only, dedicated fuel	10
Exchanger in storage tank	15
Exchanger in boiler	15
External tankless	15
Instantaneous (tankless type)	10
Domestic Hot Water Storage Tanks, Small (up to 150 gallons)	15
Domestic Hot Water Storage Tanks, Large (over 150 gallons)	15
Domestic Cold Water Pumps	15
<b>ELECTRICAL &amp; ELEVATOR</b>	
Electrical Switchgear	50+
Electrical Wiring	30
Elevator, Controller, dispatcher	15
Elevator, Cab	15
Elevator, Machinery	30
Elevator, Shaft-way Doors	20
Elevator, Shaft-way Hoist rails, cables, traveling	25
Elevator, Shaft-way Hydraulic piston and leveling	25
<b>EMERGENCY ALARM AND FIRE PROTECTION</b>	
Call station	10
Emergency Generator	25
Emergency Lights	8
Evaporative Cooler	15
Fire Extinguisher	10
Fire Pumps	20
Fire Suppression	50+
Flue Exhaust	w/boiler
Free Standing Chimney	50+
Fuel Oil Storage	25

<b>EMERGENCY ALARM AND FIRE PROTECTION</b>	
Fuel Transfer System	25
Gas Distribution	50+
Heat Sensors	15
Heat Exchanger	35
Heating Risers and Distribution	50+
<b>MECHANICAL – ELECTRIC – PLUMBING ITEMS</b>	
Heating Water Circulating Pumps	by size
Heating Water Controller	15
Hot and Cold Water Distribution	50
<b>HVAC</b>	
Pad/ roof condenser	20
A/C window unit or through wall	10
Fan coil unit, electric	20
Fan coil unit, hydronic	30
Furnace (electric heat with A/C)	20
Furnace (electric heat with A/C)	20
Furnace (gas heat with A/C)	20
Packaged terminal air conditioner ( PTAC)	15
Packaged HVAC (roof top units)	20
Heat pump condensing component	20
Heater, electric baseboard	25
Heater, wall mounted electric or gas	20
Hydronic heat/ electric A/C	20
Line Dryers	15
Master TV System	10
Motorized Valves	12
Outdoor Temperature Sensor	10
Pneumatic lines and Controls	30
<b>POWER VENTILATOR</b>	
Purchased Steam Supply Station	50+
Sanitary Waste and Vent System	50+
Sewage Ejectors	50
Smoke and Fire Detection System, central panel	15
Solar Hot Water	20
<b>SUMP PUMP</b>	
Commercial Sump Pump	15
Water Softening and Filtration	15
Water Tower	50+

## **PLAN TYPE DEFINITION**

Within the report text a Plan Type is assigned to the various cost categories. The following is a brief description of the Plan Types that may be used in the report.

### **Code Compliance (CC)**

- **Accessibility:** Conditions that are not in conformance with the American Disabilities Act Accessibility Guidelines
- **Building Code:** Conditions that are not in conformance with the Building codes
- **Life Safety:** Conditions that are not in conformance with the NFPA 101 Life Safety Code

### **Operations (OP)**

- **Energy:** Conditions that adversely affect energy use or will decrease water or energy usage
- **Maintenance:** Components or systems that can usually be accomplished by the current maintenance staff
- **Security:** Conditions that compromise the protection of the asset or its occupants

### **Environmental (EN)**

- **Air/ Water Quality:** Conditions that affect air or water quality
- **Asbestos:** Reported or suspected asbestos-containing material(ACM)
- **Lead:** Reported lead based paint
- **PCB:** Reported PCB containing equipment

### **Functionality (FN)**

- **Mission:** Components which do not meet the mission of the organization
- **Modernization:** Conditions that need to be upgraded in appearance or function
- **Plant Adaptation:** Components or systems that must change to fit a new or adapted use
- **Obsolescence:** Components or systems that are or are becoming obsolete
- **Capacity:** Components or system which cannot meet demand load

### **Integrity (IN)**

- **Appearance:** Problems with the material or system appearance that are not functional in nature
- **Reliability:** Components or systems which cannot be depended on to function as designed
- **Beyond Rated Life:** A component or system that has exceeded its rated life

### ADA Checklist

**Property Name:** Agriculture Building

**Date:** 01/5/2015

**Project Number:** 111326.14R-011.305

EMG Abbreviated Accessibility Checklist					
	Building History	Yes	No	N/A	Comments
1.	Has the management previously completed an ADA review?	✓			
2.	Have any ADA improvements been made to the property?	✓			
3.	Does a Barrier Removal Plan exist for the property?		✓		
4.	Has the Barrier Removal Plan been reviewed/approved by an arms-length third party such as an engineering firm, architectural firm, building department, other agencies, etc.?	✓			In follow up to the 2009 ADA accessibility Compliance Survey, ADA upgrades have been proposed as part of DGS ten year ADA Compliance with total of \$9,506,700. Construction is proposed for 2018/19
5.	Has building ownership or management received any ADA related complaints that have not been resolved?		✓		
6.	Is any litigation pending related to ADA issues?			✓	
	Parking	Yes	No	N/A	Comments
1.	Are there sufficient parking spaces with respect to the total number of reported spaces?		✓		
2.	Are there sufficient van-accessible parking spaces available (96" wide/ 96" aisle for van)?			✓	
3.	Are accessible spaces marked with the International Symbol of Accessibility? Are there signs reading "Van Accessible" at van spaces?			✓	
4.	Is there at least one accessible route provided within the boundary of the site from public transportation stops, accessible parking spaces, passenger loading zones, if provided, and public streets and sidewalks?			✓	
5.	Do curbs on the accessible route have depressed, ramped curb cuts at drives, paths, and drop-offs?			✓	

EMG Abbreviated Accessibility Checklist					
6.	Does signage exist directing you to accessible parking and an accessible building entrance?			✓	
<b>Ramps</b>		<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Comments</b>
1.	If there is a ramp from parking to an accessible building entrance, does it meet slope requirements? (1:12)			✓	
2.	Are ramps longer than 6 ft complete with railings on both sides?	✓			
3.	Is the width between railings at least 36 inches?	✓			
4.	Is there a level landing for every 30 ft horizontal length of ramp, at the top and at the bottom of ramps and switchbacks?	✓			
<b>Entrances/Exits</b>		<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Comments</b>
1.	Is the main accessible entrance doorway at least 32 inches wide?	✓			
2.	If the main entrance is inaccessible, are there alternate accessible entrances?	✓			There is an ADA ramp at westside
3.	Can the alternate accessible entrance be used independently?	✓			
4.	Is the door hardware easy to operate (lever/push type hardware, no twisting required, and not higher than 48 inches above the floor)?	✓			
5.	Are main entry doors other than revolving door available?		✓		
6.	If there are two main doors in series, is the minimum space between the doors 48 inches plus the width of any door swinging into the space?	✓			
<b>Paths of Travel</b>		<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Comments</b>
1.	Is the main path of travel free of obstruction and wide enough for a wheelchair (at least 36 inches wide)?	✓			
2.	Does a visual scan of the main path reveal any obstacles (phones, fountains, etc.) that protrude more than 4 inches into walkways or corridors?		✓		
3.	Are floor surfaces firm, stable, and slip resistant (carpets wheelchair friendly)?	✓			
4.	Is at least one wheelchair-accessible public telephone available?			✓	
5.	Are wheelchair-accessible facilities (toilet rooms, exits, etc.) identified with signage?	✓	✓		
6.	Is there a path of travel that does not require the use of stairs?		✓		

EMG Abbreviated Accessibility Checklist					
7.	If audible fire alarms are present, are visual alarms (strobe light alarms) also installed in all common areas?		✓		
Elevators		Yes	No	N/A	Comments
1.	Do the call buttons have visual signals to indicate when a call is registered and answered?	✓			
2.	Are there visual and audible signals inside cars indicating floor change?	✓			
3.	Are there standard raised and Braille marking on both jambs of each host way entrance?	✓			
4.	Do elevator doors have a reopening device that will stop and reopen a car door if an object or a person obstructs the door?	✓			
5.	Do elevator lobbies have visual and audible indicators of car arrival?		✓		
6.	Does the elevator interior provide sufficient wheelchair turning area (51" x 68")?	✓			
7.	Are elevator controls low enough to be reached from a wheelchair (48 inches front approach/54 inches side approach)?	✓			
8.	Are elevator control buttons designated by Braille and by raised standard alphabet characters (mounted to the left of the button)?	✓			
9.	If a two-way emergency communication system is provided within the elevator cab, is it usable without voice communication?	✓			
Restrooms		Yes	No	N/A	Comments
1.	Are common area public restrooms located on an accessible route?	✓			
2.	Are pull handles push/pull or lever type?	✓			
3.	Are there audible and visual fire alarm devices in the toilet rooms?		✓		
4.	Are corridor access doors wheelchair-accessible (at least 32 inches wide)?	✓			
5.	Are public restrooms large enough to accommodate a wheelchair turnaround (60" turning diameter)?	✓			
6.	In unisex toilet rooms, are there safety alarms with pull cords?		✓		
7.	Are stall doors wheelchair accessible (at least 32" wide)?	✓			
8.	Are grab bars provided in toilet stalls?	✓			

EMG Abbreviated Accessibility Checklist					
9.	Are sinks provided with clearance for a wheelchair to roll under (29" clearance)?	✓			
10.	Are sink handles operable with one hand without grasping, pinching or twisting?	✓			
11.	Are exposed pipes under sink sufficiently insulated against contact?	✓			
12.	Are soap dispensers, towel, etc. reachable (48" from floor for frontal approach, 54" for side approach)?	✓			
13.	Is the base of the mirror no more than 40" from the floor?	✓			

## **APPENDIX I: PRE-SURVEY QUESTIONNAIRE**

**PSQ NOT RETURNED**

**APPENDIX J: ELEVATOR REPORT**



Agriculture Building  
1220 N Street  
Sacramento, CA

Due Diligence  
Elevator Report

June 7, 2015

**Prepared for:**

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## **Section I: Executive Summary**

### **A. Introduction**

On February 12, 2015 James Young and Bob Nicholson of Architectural Elevator Consulting, LLC (AEC) surveyed all the vertical transportation systems at the Agriculture Building, 1220 N Street, Sacramento, CA. There are two (2) gearless traction passenger elevators, one (1) hydraulic freight elevator and one (1) platform lift. The passenger elevators provide vertical transportation to the office floors on levels 1-4 and also serve the basement. The freight elevator provides service from the alley to the basement. The purpose of the survey was to review the major components, to identify upgrades needed over the next ten years and check for compliance with various codes. In addition to reviewing the major components of the elevators we checked the performance parameters of the equipment and tested safety devices such as door restrictors, electric edges and emergency phones.

Both the traction elevators were manufactured and installed by Otis Elevator Company during the original building construction sometime in the 1950's. The elevators were fully modernized in 1990. The modernization of the traction elevators consisted of MCE controllers, new motor generator sets, GAL door operators, signal fixtures and carpet cab interiors. The freight elevator, Car 3, was installed by Dover when the passenger elevators were modernized in 1990. It has a twin in-ground jack system.

During our survey we noted that the elevators were being maintained in average condition by ThyssenKrupp Elevator with room for improvement. Neither of the passenger elevators operates at full speed design. Car 2 only gets up to 264 Feet per Minute (FPM) while Car 1 only gets up to 301 FPM. Both are designed for 400 FPM. Housekeeping in the machine room was below average due to parts not properly stored. The performance needs to be adjusted to achieve the designed times and speeds. None of the elevators have a test tag on the governor for an annual or a five year full load test. These may not have been performed since they were installed. Because they were installed under Group II they are exempt from having the tests performed, however, they should have been tested as a minimum when new governors were installed during the modernization.

### **B. Elevator Layout**

The building is served by two traction passenger elevators located near the front entrance that are side by side that work together as a duplex system. At the rear of the building there is a two stop hydraulic freight elevator with front and side openings. A platform lift was added in 2004 to provide accessibility to the lobby floor from the street. Both the passenger elevators have fast and efficient center opening doors. The number, speed and size of the elevators appear to be adequate to provide satisfactory service for the building.

<b>Elevator Summary</b>				
<b>Elevator Bank</b>	<b>Elevator Speed</b>	<b>Floors Served</b>	<b>Capacity</b>	<b>Door Type</b>
Cars 1-2	400 FPM	B, 1-4	3,500 lbs.	Center
Car 3	50 FPM	Alley to Basement	5,000 lbs	Vertical bi-parting
Platform lift	25 FPM	Street to lobby	750 lbs	Swing

Note: The hydraulic elevator is identified in this report as Car 3, but the machine and car do not identify it as such. We recommend the hydraulic elevator be identified as Car 3.

### C. Condition/Components

Most the major components of the elevators were found to be in good condition. The elevators have antiquated motor generator sets that were slightly above the acceptable noise level. The car and all signal fixtures are starting to show their age. The controller was installed in 1990 and is now 25 years old. The passenger elevators should be fully modernized in 4 to 6 years. The two stop freight elevator is in good condition and no work is needed at this time. In **Section II** of this report we provide an in-depth review of each of the major components of the elevators with photographs.

### D. Maintenance/Performance

The elevators are currently being maintained by ThyssenKrupp Elevator. The level of maintenance was noted to be average with room for improvement. The performance was observed to be well below the designed times and speeds. This needs to be remedied. The passenger cars are operating over 30% slower than designed. All three pits were found to be dirty. In **Appendix C** of this report we provide a summary of the performance times for each elevator followed by a maintenance deficiency list. We recommend this list be provided to the elevator service provider so they can correct these items.

### E. Code Review:

During our survey we reviewed the elevators for compliance to the following codes; Americans with Disabilities Act (ADA)/California T24, and compliance with the National Elevator Code for Existing Elevators, A17.3.

1. **Americans with Disability Act (ADA)/California T24:** In 1990 the federal government enacted ADA to make public spaces more accessible to disabled persons. California has a few specific accessibility requirements in addition to ADA. Both of the passenger elevators meet all ADA and California Title 24 requirements. The sizes of the passenger elevators meet ADA for and existing elevators, but do not meet size requirements for new elevators. Both the cars had proper car lanterns and gongs. **Appendix A** provides a complete listing of the ADA/T24 requirements. No work is needed for ADA compliance.
2. **Retro Active Codes for Existing Elevators:** We reviewed the elevators for compliance to A17.3 Code, the national safety code for existing elevators. This code requires all elevators, no matter age or installation date, to meet a minimum level of safety. A17.3 is not adopted in California, thus not required by the State, but highly recommended. A complete check list for this retro-active code is included in **Appendix B** of this report. The elevators have been retro-actively upgraded for all these items, thus no work is needed.
3. **Seismic:** The elevators were installed in the 1950's prior to adoption of seismic code. Seismic features were added when the elevators were modernized in 1990. Both the traction elevators have a single ring and string derailment and seismic retainers on the counterweights. The fishplates on the car and counterweight rails are non-seismic, but do not need to be updated unless meeting the most stringent code is desired.

**F. Recommendation:**

We recommend both the traction elevators have a five year full load test performed as soon as possible if recent test results cannot be found. None of the safeties appear to have been tested since the elevators were installed in the 1950's. They should have been tested when new governors were installed during the modernization in 1990. The State of California exempts older elevators from being tested, but we believe this is a major oversight by the State. The freight elevator is due for a five year full load test in March of this year, but is not currently overdue.

Both the traction elevators should be modernized in the next 4 to 6 years. We recommend new controllers with solid-state energy efficient drives, closed loop door operators and new signal fixtures. In the meantime both elevators should be adjusted for proper operation.

## **Section II : Component Review**

### **A. MACHINE ROOM:**

#### **Controllers:**

The controllers were manufactured by MCE and installed locally when the elevators were modernized in 1990. The controllers utilize antiquated motor generator sets. We recommend the elevators be modernized with new controllers.



#### **Gearless Machines:**

Both of the traction elevators have Otis gearless machines that were most likely installed in the 1950's when the elevators were new. These appeared to be in good condition and do not need any major work.



#### **Motor Generator Sets:**

Both of the traction elevators have inefficient motor generator sets that convert the incoming AC power to DC. We recommend these be replaced with solid state drives that are energy efficient.



## B. HOISTWAY:

### Hoistway Construction:

The hoistway (elevator shaft) is the main area where the elevators go up and down. The hoistways are mostly built of concrete and in good condition. No major work is needed in the hoistways.

### Car Guide Rails:

The car rails are in good condition but do not have seismic fish plates. Upgrading the guide rails to current seismic standards is voluntary.

### Pits:

The pits were found to be dry with minor dust. They should be cleaned.



## C. CAR TOP:

### Door Operator:

The operators were upgraded in 1990 with GAL door operators that are known to be of high quality. They have door restrictors and are in reasonable good condition. We recommend new closed loop operators when they are modernized.



### Car Roller/Slide Guides:

On both sides of the elevators and on the top and bottom roller guides keep the elevators riding up and down the steel guide rails. The existing ride quality was noted to be good on both passenger cars. High quality ELSCO rollers were installed when the elevators were modernized.

**D. SIGNAL FIXTURES:**

**Car Operating Panels:**

Both the passenger elevators have newer Car Operating Panels (COP's) that were installed during the elevator modernizations. The panels are in good condition and meet all ADA and T24 but are starting to look dated.



**Hall/Car Lanterns:**

Car lanterns inform persons waiting in the hall of which direction the elevator is about to travel in next. ADA requires that the hall or car lanterns illuminate and sound for the waiting passengers. The existing passenger elevators have car lanterns for each car. The lanterns have the proper gong for up and down.

**Hall Call Pushbuttons:**

At each floor hall call push buttons are located so that users can call the elevator. The hall call stations have raised operation buttons which meet ADA and California Title 24.



**E. CAB INTERIOR:**

**Wall Finish:**

The existing cab interiors were most likely updated when the elevators were modernized and now look dated. The back wall has the code required handrail. The railing heights are in compliance with Title 24 California code.



**Ceilings:**

The passenger elevators have down-light ceilings with incandescent light fixtures. The light fixtures could be updated with energy efficient LED's and/or the entire ceiling could be replaced.



**Platform Lift:**

A platform lift with semi-automatic doors was installed in 2004 to provide access to the main lobby from the street.



**F. HYDRAULIC FREIGHT:**

**Valve:**

The hydraulic freight elevator has a high quality Dover I2 valve that was noted to be in good condition.



**Controller:**

The hydraulic freight controller was made by Dover and is in good maintainable condition.



**Freight Cab:**

The hydraulic freight elevator has vertical bi-parting doors that are in good condition.



# Vertical Transportation

Agriculture Building - 1220 "N" Street

Item No.	Recommendation	Rating	Quantity	Unit	Unit Cost	Immediate Code Items	Immediate - Repair	Years 1-3	Years 4-6	Years 7-10	Totals
1	Modernize passenger elevators 1 and 2 with new controllers, SCR drives, closed loop door operators and new signal fixtures.	4	2	EA	\$250,000.00				\$500,000		\$500,000
2	Perform five year full load tests. Elevators are not required to have tests and it appears they have not since 1955 when installed.	1	2	EA	\$3,000.00	\$6,000					\$6,000
3	Adjust elevators 1 and 2 for full performance. Both cars are running substantially below contract speed.	2	2	EA	\$4,000.00		\$8,000				\$8,000
4	Reprogram emergency telephone on Car 2 so operator can tell location.	1	1	EA	\$400.00	\$400					\$400
5	Properly identify Car 3 with elevator numbers in machine room and car top.	1	1	EA	\$500.00	\$500					\$500
6	Clean oil leak in machine room and clean pit.	2	1	EA	\$1,200.00		\$1,200				\$1,200
7											\$0
8											\$0
9											\$0
10											\$0
11											
12											
	<b>Subtotal</b>					\$6,900	\$9,200	\$0	\$500,000	\$0	\$516,100
		1	\$6,900	<b>Code and Safety</b>							
		2	\$9,200	<b>Deferred Maintenance &amp; Repair</b>							
		3		<b>Capital Expenditure</b>							
		4	\$500,000	<b>Modernization / Improvements</b>							
		5	\$516,100	<b>Total</b>							

Rating:  
 1 - Code and Safety  
 2 - Repair and Maintenance  
 3 - Capital Expenditure  
 4 - Modernization / Improvements  
 5 - Total

Appendix A  
ADA/California T24 ELEVATOR CHECKLIST

ADA	Item	Complies Yes/No/N/A
		<b>Cars 1-2</b>
	<b>GENERAL</b>	
4.10.1	Elevator must comply with ASME A17.1-1990. Freight elevators are not acceptable unless only elevator provided, and is permitted to carry passengers, both public and employees.	Yes
	<b>AUTOMATIC OPERATION</b>	
4.10.2	Elevators must be Automatic.	Yes
4.10.2	Self-leveling to within 1/2 in.	Yes
	<b>HALL CALL BUTTONS</b>	
4.10.3	Buttons centered at 42 in. above the floor.	Yes
4.10.3	Buttons to illuminate when call is entered and extinguish when answered.	Yes
4.10.3	Buttons to be at least 3/4 in. in the smallest dimension.	Yes
4.10.3	Up button located above down button.	Yes
4.10.3	Buttons raised or flushed. <b>(T24 must be raised)</b>	Yes
4.10.3	Objects mounted beneath hall buttons not to project into the lobby more than 4 in.	Yes
	<b>HALL or CAR LANTERNS</b>	
4.10.4	Visible and audible signals at each hoistway entrance to indicate which car is responding to the call.	Yes – Car
4.10.4	Audible signals to sound once for up and twice for “down” or may verbal announcement stating “up” “down.”	Yes
4.10.4	Hall directional lantern centered 72 in. above floor.	Yes
4.10.4	Directional lantern visible elements minimum of 2-½ in. in the smallest dimension.	Yes
4.10.4	Directional lanterns must be visible from the vicinity of the hall call button.	Yes
4.10.4	In car lanterns, meeting the requirements above are acceptable in lieu of hall directional lanterns.	Yes
	<b>HOISTWAY ENTRANCES</b>	
4.10.5	Raised and Braille floor designations are required on both door jambs. Permanently applied plates are acceptable. <b>(T24 must be to the left)</b>	Yes
4.10.5	Centerline of floor designation characters 60 in. above floor.	Yes
4.30.4	Characters must be 2 in. high, raised 1/32 in. upper sans serif (block letters) or simple serif type.	Yes
4.30.4	Grade II Braille to accompany raised characters.	Yes
	<b>DOOR PROTECTIVE &amp; REOPENING DEVICES</b>	
4.10.6	Doors must open and close automatically.	Yes
4.10.6	Non-contact door reopening device at 5 in. and 29 in. above the floor.	Yes
4.1.6(3)(c)	If safety edges are provided on existing elevators, the non-contact door reopening devices may be omitted.	Yes
4.10.6	Reopening device to remain operational for at least 20 seconds.	Yes

Appendix A  
ADA/California T24 ELEVATOR CHECKLIST

ADA	Item	Complies Yes/No/N/A
		<b>Cars 1-2</b>
	<b>DOOR AND SIGNAL TIMING</b>	
4.10.7	Minimum acceptable door open time from notification car is answering a hall call until the car doors begin to close: $T=D/(1.5ft/s)$ , where $T$ is the total time in and $D$ is the distance from a point in the lobby or corridor 60 in. directly in front of the farthest button controlling that car to centerline of its hoistway door.	Yes
4.10.7	Minimum acceptable notification time 5.0 seconds.	Yes
	<b>DOOR DELAY FOR CAR CALLS</b>	
4.10.8	Doors to remain open for a minimum of 3.0 seconds in response to car calls.	Yes
	<b>FLOOR PLAN NEW ELEVATOR</b>	
4.10.9	At least 36" wide door. Side Open Door: Cab must be 5'-8" wide x 4'-3" deep Center Open Door: Cab must be 6'-8" wide by 4'-3" deep	<b>No</b>
	<b>FLOOR PLAN EXISTING ELEVATOR</b>	
4.1.6	Minimum of 48" x 48"	Yes
4.10.9	Clearance between car platform sill and edge of hoistway landing sill no greater than 1-1/4 in.	Yes
	Handrails Circular Square Dia. ____ Top of Handrail ____ Height Side Back (T24 must be 32")	Yes
	<b>FLOOR SURFACES</b>	
4.10.10	Surfaces to be stable, firm and slip resistant.	Yes
4.5.3	Carpeting if installed must have firm cushion, pad or backing, or no cushion or pad. Carpeting must have level loop, textured loop, level pile texture. Carpeting pile thickness not to exceed 1/2 in. Carpeting must have exposed edges fastened to the floor surface. Exposed edges of carpets must be trimmed.	Yes
	<b>ILLUMINATION LEVELS</b>	
4.10.11	Five foot-candles of illumination to be provided at car controls, platform and at sill.	Yes
	<b>CAR CONTROLS</b>	
4.10.12	Buttons to be at least 3/4 in. in their smallest dimension.	Yes
4.10.12	Buttons must be flush or raised. (T24 must be raised)	Yes
4.10.12	Buttons must be designated by raised characters and Braille or symbols complying with ASME A17.1 Rule 210.13.	Yes
4.10.12	Characters must be a minimum of 5/8 in. high, upper case sans (block letters) or simple serif type.	Yes
4.10.12	Grade II Braille to accompany raised character of symbol.	Yes
4.10.12	Raised designations must be to the immediate left of the button to which they apply.	Yes
4.10.12	Call button illuminates when call is entered and extinguish when answered.	Yes

Appendix A  
ADA/California T24 ELEVATOR CHECKLIST

ADA	Item	Complies Yes/No/N/A
		<b>Cars 1-2</b>
4.10.12	Floor buttons must be no higher than 48 in. when located in front return. Buttons must be no higher than 54 in. when a side approach provided.	Yes
4.10.12	Emergency controls, including emergency alarm and emergency stop (if provided) must be grouped at the bottom of the panel and have centerlines no less than 35 in. above the finished floor.	Yes
4.10.12	Controls must be on the front return wall with center-opening doors. They may be on the front return or strike jamb sidewall with side doors.	Yes
	<b>CAR POSITION INDICATORS</b>	
4.10.13	Visual car position indicator must be provided above control panel or over door.	Yes
4.10.13	Car position indicator numerals must be a minimum of 1/2 in. high.	Yes
4.10.13	Audible signal to sound as the car passes or stops at a floor and a corresponding floor designation must illuminate. Audible signal must be at least 20 dB with a frequency no higher than 1,500 Hz.	Yes
4.10.13	A button to activate audible signal only for desired trip may be provided.	N/A
4.10.13	An automatic verbal announcement the floor at which a car stops may be substituted for the audible signal.	N/A
	<b>EMERGENCY COMMUNICATIONS</b>	
4.10.14	If provided, emergency two-way communication systems between the elevator and a point outside the hoistway must comply with ASME A17.1-1990, Rule 211.1.	Yes
4.10.14	The highest operable part must be a maximum of 48 in. from the car floor.	Yes
4.10.14	Emergency communication identification must be provided and located adjacent to the device. Characters must be a minimum of 5/8 in. high raised 1/32 in., upper case serif (block letters) or simple serif type, and accompanied by Grade II Braille.	Yes
4.10.13	If a handset is provided the cord must be at least 29 in. long.	Yes
4.27.4	If located in a closed compartment, the door must be operable with one hand. It must not require tight grasping, pinching or twisting of the wrist. The force required to open the door must not exceed 5 lb/f.	Yes
4.10.13	The system must not require voice communication.	Yes

**Appendix “B”**  
A17.3 Code for Existing Traction Elevators

A17.3	Code Item	Cars: 1-2
<b>2.1</b>	<b>HOISTWAYS</b>	
2.1.1	Hoistway Construction (Enclosed & Fire rated per local code or ANSI/NFPA No. 101)	Yes
2.1.2	Windows in Hoistway Enclosures: (If provided are they guarded properly.)	Yes
2.1.3	Projections in Hoistway (Must be flush and level; Leveling zone +3”./ 60 to 75 deg bevel.)	Yes
2.1.4	Pipes Conveying Gases, Vapors, or Liquids. (If provided must be properly covered & securely fastened.)	Yes
2.1.5	Counterweight Guards (Start at 12” go to 84” above pit floor; not needed with comp rope/chain)	N/A
<b>2.2</b>	<b>MACHINE ROOMS AND MACHINERY SPACES</b>	
2.2.1	Enclosures – Designated Machine Room (No-non elevator equipment- existing can stay)	Yes
2.2.2	Access to Machine Rooms and Machinery Spaces (A permanent means to the machine room- locked door)	Yes
2.2.3	Lighting(Permanent lighting in all machine rooms)	Yes
2.2.4	Ventilation (Natural or mechanical to avoid overheating)	Yes
2.2.5	Pipes Conveying Gases, Vapors, or liquids (Existing pipes allowed if guarded to prevent discharge)	Yes
2.2.6	Protection From Weather	Yes
<b>2.3</b>	<b>PITS</b>	
2.3.1	Access to Pits (Means of access to all pits. If access door provide closer & keys onsite.)	Yes
2.3.2	Drains (Drains connected directly to the sewer are not permitted.)	Yes
2.3.3	Stop Switch (A stop switch shall be provided for every pit. Locate near access, color, etc.)	Yes
<b>2.4</b>	<b>CLEARANCES AND RUNBYS</b>	
2.4.1	Horizontal Car Clearances (Not more then 5” for horizontal doors; 7.5” for vertical doors)	Yes
2.4.2	Bottom Car Clearances (Car shall not strike any equipment when resting on fully compressed buffer.)	Yes
2.4.3	Bottom Car and Counterweight Runby (Shall not exceed 24” for cars; or 36” for cwt.)	Yes
2.4.4	Top Car Clearance (Car does not strike any overhead structure)	Yes
2.4.5	Landing Sill Clearance (At least ½” for side guides; at least ¾” for corner guides. Max cannot exceed 1 ½”.)	Yes
<b>2.5</b>	<b>PROTECTION OF SPACES BELOW HOISTWAYS</b>	
2.5	Counterweight safeties required	N/A
<b>2.6</b>	<b>HOISTWAY ENTRANCES</b>	
2.6.1	Doors or Gates Required (Passenger Elevators – full width/height – no hand latches.) (Freight Elevators – at least 6-0” gate)	Yes
2.6.2	Closing of Hoistway Doors (Door closers required on cars except swinging portion of horizontal door)	Yes
2.6.3	Hoistway Door Vision Panels (Required on manually operated or self closing doors, location, Size, and type of glass)	N/A
2.6.4	Door Hangers (Prevent jumping, and stops, 4 times load)	Yes
2.6.5	Non-Shearing Astragals (For vertical bi-parting doors only)	N/A
2.6.6	Pull Straps (Must not be more than 6’-6” from floor when open)	N/A
<b>2.7</b>	<b>HOISTWAY DOOR LOCKING DEVICES, PARKING, DEVICES, AND ACCESS</b>	
2.7.1	Hoistway Door or Gate Locking Devices (Mechanical and electrical interlocks required)	Yes
2.7.2	Elevator Parking Device (For cars operated from within car only)	N/A
2.7.3	Access to Hoistway (Hoistway door unlocking devices and access switches)	Yes
2.7.4	Restricted Opening of Hoistway Doors and/or Car Doors on Passenger Elevators (Cannot open more then 4” outside unlocking zone +-18” max.)	Yes
2.7.5	Hoistway Emergency Door Contacts (Positively opened)	Yes
<b>2.8</b>	<b>POWER OPERATION OF DOORS AND GATES</b>	

**Appendix “B”**  
A17.3 Code for Existing Traction Elevators

A17.3	Code Item	Cars: 1-2
2.8.1	Kinetic Energy and Force Limitations for Power-operated Horizontal Sliding Doors. (Shall not exceed 7ft/lbs. with re-opening device, without 2.5ft/lbs.; cannot exceed 30 ft/lbs)	Yes
2.8.2	Reopening Device for Power-Operated Car Doors or Gates (Can be rendered inoperative if less than 2.5ft/lb)	Yes
<b>Part III</b>		
3.1	Buffers And Bumpers (Car and counterweight buffers are required)	Yes
3.2	Counterweights (The weights shall be protected so that they cannot be dislodged. The rod nuts shall be protected)	Yes
<b>3.3</b>	<b>CAR FRAMES AND PLATFORMS</b>	
3.3.1	Car Platforms(Cover entire area)	Yes
3.3.2	Platform Guards (Aprons) (Vertical face at least 21”, 60-75deg, withstand 150#)	Yes-24”
3.3.3	Hinged Platform Sills(Must have contacts & prevent operation unless within 2”)	N/A
3.3.4	Floating (Movable) Platforms(Prohibited if car can move when door is not closed)	N/A
3.3.5	Protection of Platforms Against Fire (Must be covered with sheet metal or fire resistant material)	Yes
<b>3.4</b>	<b>CAR ENCLOSURES</b>	
3.4.1	Car Enclosures (Passenger – total enclosed; Frt maybe perforated, but not by the cwt.; Car top must withstand 300lbs on any 2sqft.)	Yes
3.4.2	Car Doors and Gates (Must have gate or door and electric contract)	Yes
3.4.3	Location of Car Doors and Gates (Hor, distance not more than 5 ½”, Swing door 4” max., space and site guard requirements.)	Yes
3.4.4	Emergency Exits (Cover hinged, single car blind shaft-every 36’, side allowed)	Yes
3.4.5	Car Illumination (At least two lights, 5ftc; frt=2.5ftc; emerg. .2ftc for 4 hrs.)	Yes
3.4.6	Protection of Light Bulbs and Tubes (Guarded or coated to prevent breaks)	Yes
<b>3.5</b>	<b>SAFTIES</b>	
3.5.1	Car Safeties (Every car must have a safety)	Yes
3.5.2	Counterweight Safeties (If occupied space below)	Yes
3.5.3	Safeties to Stop Ascending Cars or Counterweights Prohibited (Cannot be provided)	Yes
3.5.4	Application and Release of Safeties (Must be mechanical can only release if car goes up)	Yes
3.5.5	Max. Permissible Movement of Gov. Rope to Oper. Safety (For type “B” Safties-200ft or less 42in.; 201 to 375fpm – 36in.; Over 375 FPM 30in. Cwt. = 42in all speeds.)	Yes
3.5.6	Rail Lubricants and Lubrication Plate (Plate on cross head stating type of lubricant or none at all.)	Yes
3.5.7	Overall Length of Guide Rails (Extended to prevent disengaging)	Yes
<b>3.6</b>	<b>SPEED GOVERNORS</b>	
3.6.1	Speed Governor Overspeed and Car Safety Mechanism Switches. (A switch shall be provided when speed is over 150FPM. For static control switch shall be for all speeds & both direct.)	Yes
3.6.2	Governor Ropes (Shall be of iron, steel, monel metal, phosphor bronze, or ss. At least 3/8” in diameter Tiller rope not allowed.)	Yes
<b>3.7</b>	<b>CAPACITY AND LOADING</b>	
3.7.1	Minimum Rated Load for Passenger Elevators (per table 3.7.1)	Yes
3.7.2	Use of Partitions for Reducing Inside Net Platform Area (Partitions must be permanent and symmetrical)	N/A
3.7.3	Min. Rated Load for Freight Elevators (Class A = Not more than ¼ of total cap.; Class B = Motor Veh.; Class C = loading with industrial truck, etc.)	N/A
3.7.4	Capacity Plates (Every car must have one with rated load; Frt : one piece loads, loading and unloading; ¼” high for pass, 1” for frt.)	Yes
3.7.5	Signs on Freight Elevators (NOT A PASS ELEV...etc. ½” high letters)	N/A
<b>3.8</b>	<b>DRIVING MACHINES AND SHEAVES</b>	

**Appendix “B”**  
A17.3 Code for Existing Traction Elevators

A17.3	Code Item	Cars: 1-2
3.8.1	General Requirements (Must be cast iron or steel, fin. Grooves no set screws)	Yes
3.8.2	Winding Drum Machines (Must have slack rope switch; Chain, belt, or rope-driven mechanisms shall not be used.)	N/A
3.8.3	Indirect-Drive Machines (Must be at least 3 belts, safety factor of 10)	Yes
3.8.4	Brakes (Must be released electrically and have spring or gravity and friction)	Yes
<b>3.9</b>	<b>TERMINAL STOPPING DEVICES</b>	
3.9.1	Normal and Terminal Stopping Devices (Locate at upper and lower terminals. If in machine room provide broken rope, tape or chain switch)	Yes
3.9.2	Final Terminal Stopping Devices (Winding drum machines- on machines and in hoistway; Traction – in the hoistway operated by the car.)	Yes
<b>3.10</b>	<b>OPERATING DEVICES AND CONTROL EQUIPMENT</b>	
3.10.1	Types of Operating Devices (Rope or rod devices shall not be used.)	Yes
3.10.2	Car-Switch Operation Elevators (If provided must return to stop position if released by hand)	Yes
3.10.3	Top-of-Car Operating Devices (Continuous pressure <150FPM; between crosshead & door)	Yes
3.10.4	Electrical Provisions	
	(a) Slack Rope Switch	N/A
	(b) Motor-Generator Running Switch	N/A
	(c) Compensating Rope Sheave Switch	N/A
	(d) Broken rope, tape or chain	Yes
	(e) Stop Switch – Top of Car- marked “stop” & “run”	Yes
	(f) Car-Safety Mechanism Switch	Yes
	(g) Speed Gov. Overspeed Switch	Yes
	(h) Final Terminal Stopping Devices	Yes
	(i) Emergency Terminal Stopping Devices (reduced stroke)	Yes
	(j) Motor Generator Overspeed Protection	N/A
	(k) Motor Field Sensing Means (not required w/ static drive)	Yes
	(m) Buffer Switches for Oil Buffers (type c safety)	N/A
	(n) Hoistway Door Interlocks or Hoistway Door Contacts	Yes
	(p) Car Door or Gate Electric Contacts	Yes
	(q) Normal Terminal Stopping Devices	Yes
	(r) Car Side Emergency Exit Electric Contact	N/A
	(s) Electric Contacts for Hinged Car Platform Sills	N/A
	(t) In-Car Stop Switch (Must be keyed, if provided)	Yes
	(u) Emergency Stop Switch (Must be provided for freight cars)	Yes
	(v) Stop Switch in Pit	Yes
	(w) Buffer Switches for Gas Spring Return Oil Buffers	N/A
3.10.5	Power Supply Line Disconnecting Means (Provided w/ overcurrent protection, within site, and numbered)	Yes
3.10.6	Phase Reversal and Failure Protection (Means to prevent starting if out of phase)	Yes
3.10.7	Devices for Making Hoistway Door Interlocks or Electric Contacts, or Car Door or Gate Electric Contacts Inoperative (These devices are prohibited)	Yes
3.10.8	Release and Application of Driving Machine Brakes (If ungrounded or if stop switch is pulled shall release brake)	Yes
3.10.9	Control and Operating Circuit Requirements (The failure of any single magnetically operated switch)	Yes
3.10.10	Absorption of Regenerated Power (Provide means to absorb energy during overhauling)	Yes
<b>3.11</b>	<b>EMERGENCY OPERATION AND SIGNALING DEVICES</b>	
3.11.1	Car Emergency Signaling Devices (Audible signal, two-way communication, on emerg. power)	Yes
3.11.2	Operations of Elevators Under Standby (Emergency) Power (If provided must be able to absorb regenerative power)	Yes

**Appendix “B”**  
A17.3 Code for Existing Traction Elevators

A17.3	Code Item	Cars: 1-2
3.11.3	Firefighters’ Service (A17.1-1987 Rules 211.3 through 211.8- appendix C; phase I and II switches shall be the same in each bldg)	Yes
<b>3.12</b>	<b>SUSPENSION MEANS AND THEIR CONNECTIONS</b>	
3.12.1	Suspension Means (Must be wire rope made of iron or steel- Elevator ropes only)	Yes
3.12.2	Rope Data Tag	Yes
3.12.3	Factor of Safety ( $f = SxN/W$ or table 3.12.3)	Yes
3.12.4	Minimum Number and Diameter of Suspension Ropes (3 for traction; 2 for drum; minimum diameter = 3/8” )	Yes
3.12.5	Suspension Rope Equalizers (When provided shall be of the individual-compression spring type)	Yes
3.12.6	Securing of Suspension Wire Ropes to Winding Drums (rope must be secured by clamps or tapered babbitted sockets.)	N/A
3.12.7	Spare Turns on Winding Drums (Not less then one turn of the rope when car is on buffer)	N/A
3.12.8	Suspension Rope Fastenings (Spliced eyes by return loop may continue in service)	Yes
3.12.9	Auxiliary Rope Fastening Devices	N/A

## Appendix “C”

### Performance Review and Maintenance Deficiency List

#### Performance Review:

In this section we provide the results of randomly reviewing 50% or more of the performance of all elevators.

#### Part A: Definitions

A stopwatch, tachometer, and spring gauge are utilized to measure the performance of each elevator. Original equipment design, national and local codes and other factors govern these times. The following is an explanation of each item that was reviewed.

- Car Door Dwell Time: When an elevator is responding to a car call, the code requires the elevator doors to stay open a minimum of 3.0 seconds. This is to allow ample time for the passengers to exit.
- Hall Call Dwell Time: When an elevator is responding to a hall call, the code requires the elevator doors to stay open a minimum of 5.0 seconds. This is to allow ample time for the passengers to enter the elevator.
- Floor-To-Floor Time: This measures the time that it takes an elevator to go from one floor to the next floor. Door open and close times are calculated into this time to provide a meaningful measurement. The stopwatch is started when the doors start to close and is stopped when the elevator is level at the next floor with the doors  $\frac{3}{4}$  open for center opening doors, and  $\frac{1}{2}$  open for side opening doors.
- Door Open Time: The door open time is measured when the doors start to open until they are fully open.
- Door Close Time: The door close time is measured when the doors start to close until they are fully closed.
- Full Speed: Full speed of an elevator is measured in the machine room utilizing a tachometer or in the car using an accelerometer.
- Door Closing Pressure: The force required to prevent the doors from closing. This pressure is measured with a spring gauge.
- Ride Quality: Acceleration, deceleration, side-to-side sway and noise level are evaluated in this section.

On the following page the results of the elevators checked are provided.

**Appendix “C”**  
Performance Review and Maintenance Deficiency List

1220 N Street						
	PERFORMANCE TIMES	Design	Car 1	Car 2	Car 3	Car 3
7.1	Door Open Time	<b>1.6</b>	2.1	1.8	N/A	-
7.2	Door Close Time	<b>2.4</b>	2.7	2.9	N/A	-
7.3	Floor to Floor Up (2 to 3)	<b>8.7</b>	14.9	17.8	N/A	-
9.6	Floor to Floor Down (3 to 2)	<b>8.7</b>	15.5	19.3	N/A	-
7.5	Full Speed Up	<b>400 FPM</b>	297	264	<b>50 FPM</b>	43
7.6	Full Speed Down	<b>400 FPM</b>	301	263	<b>50 FPM</b>	34
7.7	Jerk Rate Up	<b>&lt; 7.0</b>	4.0	11.1	<b>&lt; 7.0</b>	3.5
7.8	Jerk Rate Down	<b>&lt;7.0</b>	8.2	8.2	<b>&lt;7.0</b>	5.7
7.9	Power Closing of Door (Pressure Gauge)	<b>&lt;30lbs</b>	30 lbs	28 lbs	N/A	-
7.10	Interrupted Ray	<b>.5sec</b>	3.7	6.0	N/A	-
7.11	Car Dwell Time	<b>3.0</b>	4.5	4.4	N/A	-
7.12	Hall Call Dwell Time	<b>5.0</b>	6.3	5.8	N/A	-
7.13	Hall/Car Lantern Time	<b>8.0</b>	6.3	5.8	N/A	-
	Nudging	<b>20.0</b>	>30	25	N/A	-
	Test Emergency Phone	<b>Yes</b>	Yes	Yes	Yes	Yes

Items in Red do not comply and should be adjusted.

Car #	GENERAL MAINTENANCE DEFICIENCIES
	<b>Car 1</b>
1.1	No machine room door sign.
1.2	Pit is dusty.
1.3	Controller is dusty.
1.4	Motor generator set is making a slightly above normal noise. Check brushes.
1.5	Button cover is missing on COP near keyed stop switch.
	<b>Car 2</b>
2.1	Controller is dusty on the inside.
2.2	Motor generator set is moderate to loud.
2.3	Jamb braille is missing on one side at 4 <sup>th</sup> floor.

## Appendix “C”

### Performance Review and Maintenance Deficiency List

2.4	4 <sup>th</sup> floor hoistway access is missing keyed label.
2.5	Pit is dusty and gas trash.
2.6	Phone operator could not tell location.
<b>Car 3</b>	
3.1	Oil is pooled in the drip tray under power unit.
3.2	Spare parts are stored in controller, could not tell if good or bad parts.
3.3	No equipment numbers in machine room.
3.4	Water on floor in machine room.
3.5	Pit is dirty with leaves and debris.



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