



Employment Development Department Annex (013)

751"N" Street, Sacramento, CA 95814

Facility Condition Assessment

June 2015

Prepared for the State of California Department of General Services



TABLE OF CONTENTS

EXECUTIVE SUMMARY	2
BACKGROUND	2
OBJECTIVE	2
SCOPE OF ASSESSMENT	3
SURVEY FINDINGS.....	3
INTRODUCTION.....	6
BUILDING BACKGROUND.....	6
BUILDING DESCRIPTION.....	6
FACILITY CONDITION ASSESSMENT.....	8
SCOPE OF ASSESSMENT	10
PRIORITY RANKING	11
CURRENT REPLACEMENT VALUE.....	16
FACILITY CONDITION INDEX.....	16
APPENDICES.....	18
APPENDIX A: ACCESSIBILITY ISSUES	18
APPENDIX B: GENERAL ASSESSMENT INFORMATION.....	20
APPENDIX C: CERTIFICATION.....	69
APPENDIX D: PHOTOS	72
APPENDIX E: TERMINOLOGY AND ABBREVIATIONS	94
APPENDIX F: BUILDING FACT SHEET	100
APPENDIX G: COST TABLES	102
APPENDIX H: SUPPORTING DOCUMENTATION	106
APPENDIX I: PRE-SURVEY QUESTIONNAIRE.....	120
APPENDIX J: ELEVATOR REPORT	124

THIS PAGE INTENTIONALLY BLANK

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 Employment Development Department Annex (013).

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 Employment Development Department Annex (013) 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 Employment Development Department Annex (013) on December 8 and 9, 2014. 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	\$94,747,144
Immediate Repair Costs (12 months)	\$15,634,721
1-5 Year Capital Needs	\$1,205,514
6-10 Year Capital Needs	\$1,355,214
Total 10-Year Capital Reserve Needs	\$18,195,449

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

Current Year FCI

$$\text{Current FCI} = \frac{\$15,634,721}{\$94,747,144}$$

Ten-Year FCI

$$\text{Ten-Year FCI} = \frac{\$18,195,449}{\$94,747,144}$$

Current Year FCI	Ten-Year FCI
16.50 %= <i>Poor Condition</i>	19.20 %= <i>Good / Fair / oor Condition</i>

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

- The roof membrane is old and there are areas with ponding water. Roof replacement is recommended.
- Interior finish replacements are recommended, including painting, new flooring, and acoustic ceiling tiles.
- Replacements for heating, ventilation, and air conditioning (HVAC), including air distribution ducting and HVAC controls, are required.
- Installation of a wet-pipe fire sprinkler system for life safety is recommended.

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

THIS PAGE INTENTIONALLY BLANK

INTRODUCTION

BUILDING BACKGROUND

The Employment Development Department Annex (Solar-Subterranean Building) (013) was designed by Benham-Blair and Associates. Construction was completed in 1983. The design team was selected via the juried California State Office Building Competition of 1977. The competition was a vehicle for Governor Jerry Brown's newly initiated building program, aimed at consolidating State offices into government-owned facilities within Sacramento's "capitol area" neighborhood.

In 1976, Governor Brown appointed Sim Van der Ryn to the position of State Architect and tasked him with the development of a new Capitol Area Plan. A primary objective of the plan was to reduce the apparent scale of the large office buildings and thereby create a more humane, user-oriented environment. The plan set out to create positive examples of State office buildings as models of energy efficiency and humane working environments. Four buildings, Employment Development Department Annex (013), Gregory Bateson (011), Paul Bonderson (016), and Energy Commission (008) were completed under the Brown administration Capitol Area Plan.

The Employment Development Department Annex consists of two connected structures, the six-story Solar Annex portion resides at 751 N Street, Sacramento and is connected to the Employment Development Department Headquarters (025) via sky bridges at the 3rd, 4th, 5th, and 6th floors. The single-story Subterranean Park Complex resides at 750 N Street, Sacramento and is connected to the Solar Annex via a walkway beneath N Street. The occupied spaces consist of open office space, private offices, computer rooms, storage rooms, and support spaces. The buildings feature several passive solar and active energy saving enhancements.

The gross building area is 272,546 SF with a net usable area of 183,154 SF. The ratio of net usable to gross building area is 84 percent. The occupant capacity is 1,115. There is no on-site parking.

BUILDING DESCRIPTION

The Solar Building structural system is steel framed on a concrete slab with spread footing and pile caps. The roof structure is flat with a built-up membrane. The Subterranean Building structural system is cast-in-place concrete with precast concrete tees on concrete columns and slabs with spread footing and pile caps. The roof structure is flat with a built-up membrane covered by the park landscaping.

The exterior walls of both buildings are finished with stucco.

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

The Solar Building is served by two traction passenger elevators.

Heating and cooling are provided by the DGS Central Utility Plant. The main boiler room contains an abandoned-in-place solar heater and four large chilled-water storage tanks ranging from 3,000 to 15,000 gallons each. The equipment had been used as a solar domestic water heating system and was taken out of service once the facility was connected to the Central Utility Plant.

A heat exchanger provides domestic hot water, and there is a hot water storage tank in the mechanical room.

Life safety systems include a fire alarms, fire extinguishers, and dry standpipes.

Landscaping around the building consists of trees, shrubs, and lawn areas. Flower beds and ponds are located throughout the site. Landscaped areas are irrigated by an in-ground overhead spray sprinkler system. An outdoor park is situated above the Subterranean Building.

The sidewalks throughout the property are constructed of cast-in-place concrete. Cast-in-place concrete steps with metal handrails are located at grade changes.

Project Statistics

Item	Description
Project Name	Employment Development Department Annex
Building ID	013
Property Type	Administration
Year Built	1983
Number of Stories	6
Occupied	Yes
Land Area (acres)	1.47
Gross Square Feet (GSF)	272,546

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 E2018-08¹ 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 Employment Development Department Annex (013) on December 8 and 9, 2014. 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.

¹ 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 I.

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 as 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.

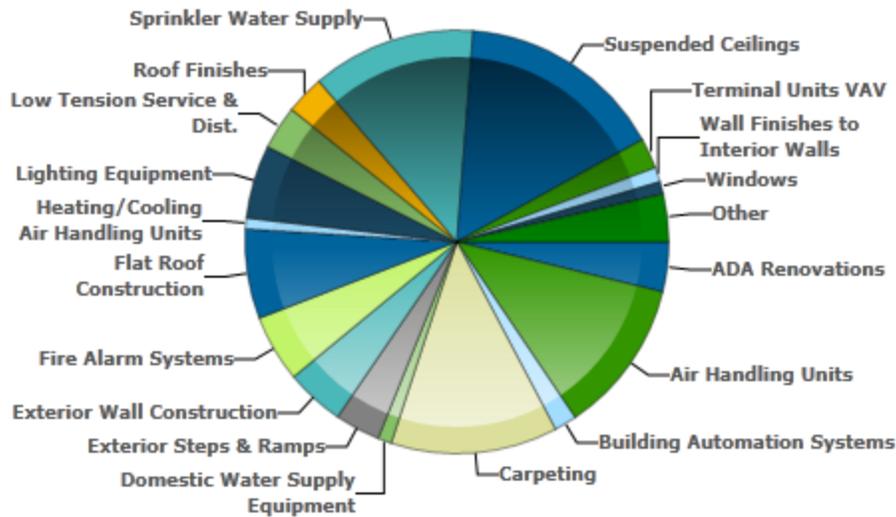
PRIORITY RATIO

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.

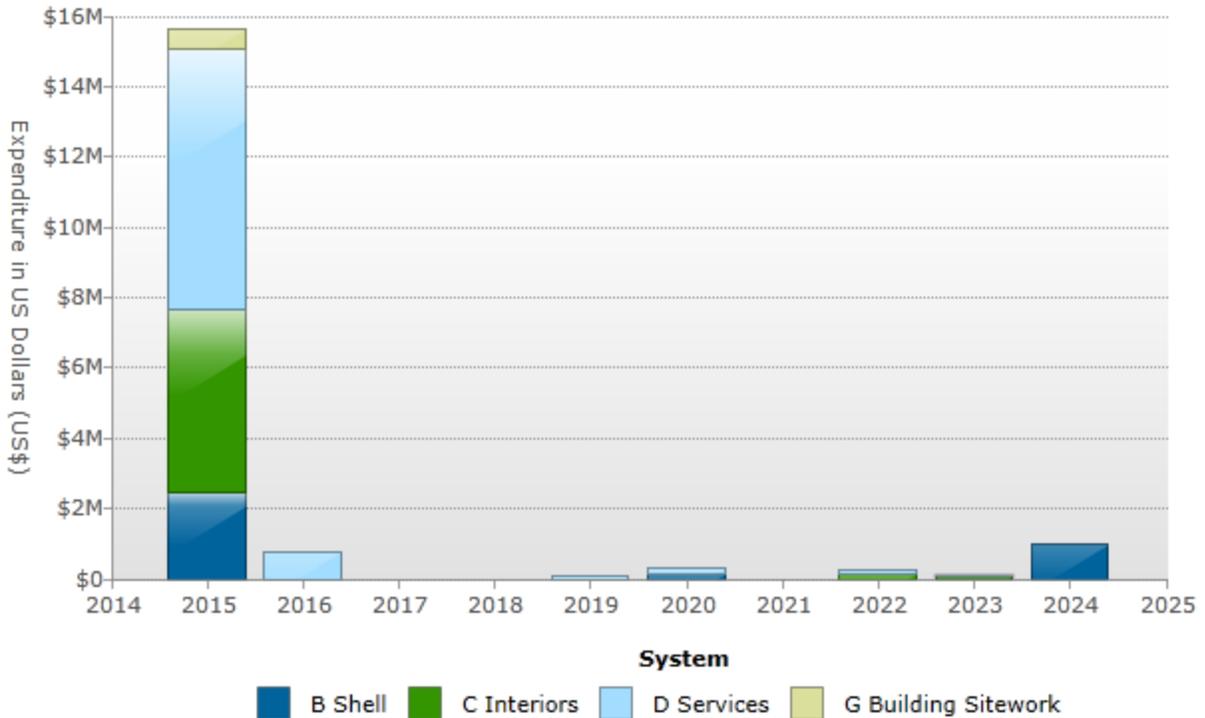
Distribution of Immediate Needs by Building System



Level	Building System	Estimated Cost
B1021	Flat Roof Construction	\$1,071,999
B2011	Exterior Wall Construction	\$701,015
B2021	Windows	\$149,493
B2031	Glazed Doors & Entrances	\$53,987
B3011	Roof Finishes	\$461,643
C1035	Identifying Devices	\$3,794
C3005	ADA Renovations	\$595,200
C3012	Wall Finishes to Interior Walls	\$173,636
C3025	Carpeting	\$1,988,530
C3032	Suspended Ceilings	\$2,465,601
D1011	Passenger Elevators	\$67,340
D2018	Drinking Fountains and Coolers	\$35,046
D2023	Domestic Water Supply Equipment	\$165,200
D2031	Waste Piping	\$23,191

Level	Building System	Estimated Cost
D3022	Circulating Pumps	\$83,800
D3041	Air Handling Units	\$1,839,379
D3041	Terminal Units VAV	\$362,024
D3042	Exhaust Ventilation Systems	\$116,468
D3043	Steam Distribution Systems	\$62,516
D3063	Heating/Cooling Air Handling Units	\$127,541
D3068	Building Automation Systems	\$270,259
D4011	Sprinkler Water Supply	\$1,954,585
D4012	Sprinkler Pumping Equipment	\$57,788
D5012	Low Tension Service & Dist.	\$520,843
D5022	Lighting Equipment	\$879,402
D5037	Fire Alarm Systems	\$802,227
D5092	Emergency Light & Power Systems	\$8,260
G2022	Paving & Surfacing	\$48,417
G2031	Paving & Surfacing	\$6,581
G2035	Exterior Steps & Ramps	\$538,959
	Total	\$15,634,721

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	\$2,438,137	\$5,226,761	\$7,375,867	\$0	\$0	\$593,957	\$15,634,721
2016	\$0	\$0	\$0	\$764,400	\$0	\$0	\$0	\$764,400
2019	\$0	\$0	\$0	\$111,104	\$0	\$0	\$0	\$111,104
2020	\$0	\$149,493	\$0	\$180,517	\$0	\$0	\$0	\$330,010
2022	\$0	\$0	\$144,843	\$134,549	\$0	\$0	\$0	\$279,393
2023	\$0	\$0	\$80,104	\$26,298	\$0	\$0	\$0	\$106,402
2024	\$0	\$969,419	\$0	\$0	\$0	\$0	\$0	\$969,419
Total	\$0	\$3,557,049	\$5,451,708	\$8,592,735	\$0	\$0	\$593,957	\$18,195,449

CURRENT REPLACEMENT VALUE

The Current Replacement Value has been determined as \$94,747,144 for the Employment Development Department Annex Building (013). 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
272,546 GSF	\$348	\$94,747,144

FACILITY CONDITION INDEX

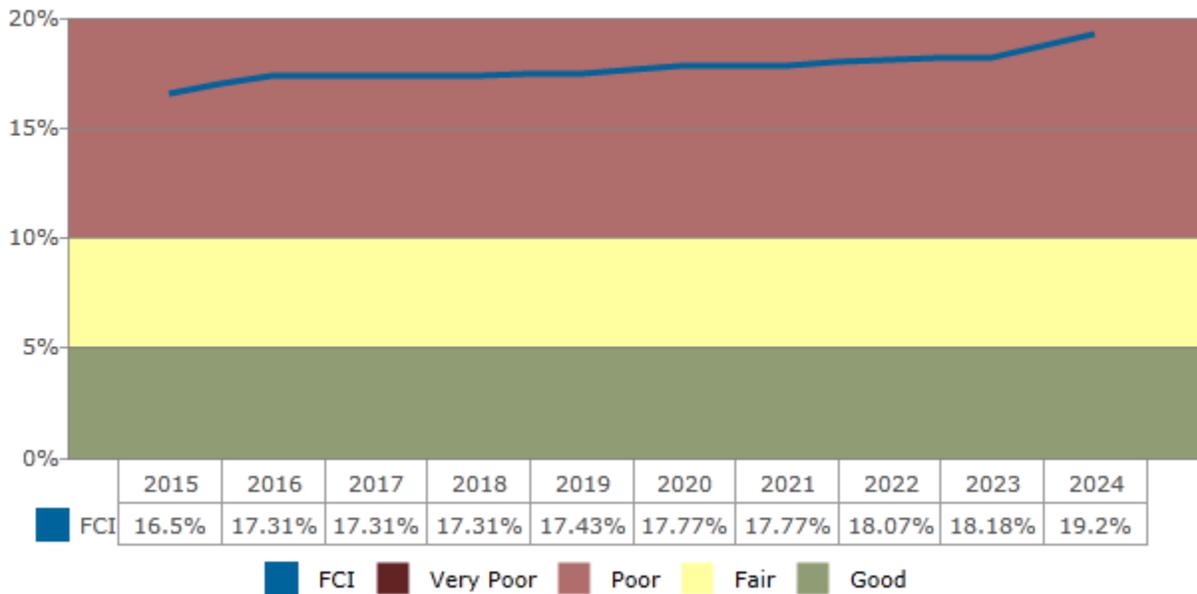
The FCI¹ is an indication of a building’s current and future overall condition. According to industry standards an FCI ratio of 65 percent, or the “rule of two-thirds,” is the threshold for identifying potential candidates for replacement or divestment.² Once the FCI ratio reaches 65 percent, or roughly 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%

² 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



APPENDICES

APPENDIX A: ACCESSIBILITY ISSUES

Item	Description
C1035 Identifying Devices	C1035 Directional Signage
Condition	Poor
Qty / UOM	12 / EA
RUL (years)	0
Location	All Floors

Item	Description
C3005 ADA Renovations	C3005 ADA Restroom Renovations
Condition	Fair - Good
Qty / UOM	20 / EA
RUL (years)	0
Location	All Floors

Item	Description
D2018 Drinking Fountains and Coolers	D2018 ADA Drinking Fountain
Condition	Poor
Qty / UOM	10 / EA
RUL (years)	0
Location	All Floors

Item	Description
G2035 Exterior Steps & Ramps	G2030 Pedestrian Paving
Condition	Fair

Item	Description
Qty / UOM	I / Lump Sum
RUL (years)	0
Location	Exterior entries

Recommendations:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
B2031	B2031 Install ADA automatic door openers	25.0 - EA	2159.5	CC - Accessibility	Priority I	2015	53,987
C1035	Replace C1035 Directional Signage	12.0 - EA	316.2	CC - Accessibility	Priority I	2015	3,794
C3005	ADA Restroom Renovation	20.0 - EA	29760.0	CC - Accessibility	Priority I	2015	595,200
D2018	Replace D2018 ADA Drinking Fountain	10.0 - EA	3504.6	CC - Accessibility	Priority I	2015	35,046
G2035	Replace G2030 Pedestrian Paving	1.0 - Lump Sum	500000.0	CC - Accessibility	Priority I	2015	500,000

Cost Summary:

Year	Total Expenditures
2015	\$1,188,027

APPENDIX B: GENERAL ASSESSMENT INFORMATION

B Shell Systems

B10 SUPERSTRUCTURE

Item	Description
B1021 Flat Roof Construction	B1020 Seal concrete at outdoor park
Condition	Poor
Qty / UOM	71250 / SF
RUL (years)	0
Location	Subterranean space
Roofing Type	Flat
Parapet Wall Edge Flashing	Concrete
Attic	No
Roof Access	None

OBSERVATIONS/COMMENTS:

Water is penetrating into the building through the roof membranes from the outdoor park over subterranean space and causing the moisture issues. It is recommended to repair the outdoor park surface with concrete sealant and epoxy injection at the cracks.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
B1021	Replace B1020 Seal concrete at outdoor park	71,250.0 - SF	11.5	IN - Beyond Rated Life	Priority I	2015	821,655

Item	Description
B1021 Flat Roof Construction	B1021 Batt Insulation, Fiberglass R38
Condition	Poor
Qty / UOM	71250 / SF
RUL (years)	0
Location	Subterranean
Roofing Type	Flat
Parapet Wall Edge Flashing	Concrete
Attic	No
Roof Access	None

OBSERVATIONS/COMMENTS:

An outdoor park is situated above the Subterranean Building. According to the maintenance staff, the heating and cooling systems are not conditioning effectively in the office area. Adding insulation above suspended ceilings is recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
B1021	Replace B1021 Batt Insulation, Fiberglass R38	71,250.0 - SF	3.5	OP - Energy	Priority I	2015	250,344

COST SUMMARY:

Type	Year	Total Expenditures
B10 Superstructure	2015	\$1,071,999

B20 EXTERIOR ENCLOSURE

Item	Description
B2011 Exterior Wall Construction	B2010 Stucco and Lath
Condition	Poor - Fair
Qty / UOM	38250 / SF
RUL (years)	0
Location	Exterior walls
Exterior Wall Construction	Stucco
Parapets	Yes
Balcony Walls and Handrails	Metal
Exterior Soffits	Concealed
Lintels and Sills	Metal

OBSERVATIONS/COMMENTS:

Based on age and condition, the exterior stucco finish requires crack repair and painting.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
B2011	B2011 Repair and Paint Exterior Walls	38,250.0 - SF	18.3	IN - Appearance	Priority I	2015	701,015

Item	Description
B2021 Windows	B2021 Windows
Condition	Fair
Qty / UOM	231 / EA
RUL (years)	9
Location	All Floors
Window Type	Fixed
Windows Material	Aluminum
Windows Glazing	Double Glazed
Window Operation	Manual

OBSERVATIONS/COMMENTS:

The Solar Building south side has historically had a leaking issue at windows where the solar awnings are attached. Replacement of caulking at the windows is recommended. Based on the estimated RUL, the windows will require eventual replacement.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
B2021	B2021 - Windows - Recaulking	3,927.0 - LF	38.1	OP - Maintenance	Priority 2	2015	149,493
B2021	B2021 - Windows - Recaulking	3,927.0 - LF	38.1	OP - Maintenance	Priority 2	2020	149,493
B2021	Replace B2021 Windows	231.0 - EA	3614.8	OP - Maintenance	Priority 4	2024	835,018

Item	Description
B2031 Glazed Doors & Entrances	B2031 Glazed Double Doors
Condition	Good
Qty / UOM	6 / EA
RUL (years)	9
Location	Subterranean Building
Door Hardware	Lever
Door Operation	Manual
Glass Type	Tempered Glass
Door Frame	Metal Framed
Door Use	Entrance

OBSERVATIONS/COMMENTS:

There are six double doors at subterranean office area and auditorium. Based on estimated remaining useful life, replacement is anticipated.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
B2031	Replace B2031 Glazed Double Doors	6.0 - EA	4335.5	IN - Beyond Rated Life	Priority 4	2024	26,013

Item	Description
B2031 Glazed Doors & Entrances	B2031 Alumium 1/4" Tempered Glass
Condition	Good
Qty / UOM	25 / EA
RUL (years)	9
Location	All Floors
Door Hardware	Lever
Door Operation	Manual
Glass Type	Standard Glass
Door Frame	Metal Framed
Door Use	Entrance

OBSERVATIONS/COMMENTS:

Based on estimated RUL, the storefront type aluminum framed doors will require replacement. Automatic door openers should be added at all floor entrances.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
B2031	B2031 Install ADA automatic door openers	25.0 - EA	2159.5	CC - Accessibility	Priority 1	2015	53,987
B2031	Replace B2031 Alumium 1/4" Tempered Glass	25.0 - EA	4335.5	IN - Beyond Rated Life	Priority 4	2024	108,388

COST SUMMARY:

Type	Year	Total Expenditures
B20 Exterior Enclosure	2015	\$904,495
B20 Exterior Enclosure	2020	\$149,493
B20 Exterior Enclosure	2024	\$969,419

B30 ROOFING

Item	Description
B301 I Roof Finishes	B301 I Built-up Roof
Condition	Poor
Qty / UOM	248 / SQ
RUL (years)	0
Location	Roof
Insulation	None
Flashings and Trim	Metal
Roof Eaves and Soffits	No
Roof Drainage	Metal Gutter And Down Spouts
Roof Warranty	No

OBSERVATIONS/COMMENTS:

The Solar Building roof is a built-up system. Based on the estimated RUL and condition, replacement is recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
B301 I	Replace B301 I Built-up Roof	248.0 - SQ	1861.5	IN - Beyond Rated Life	Priority I	2015	461,643

COST SUMMARY:

Type	Year	Total Expenditures
B30 Roofing	2015	\$461,643

C Interiors Systems

C10 INTERIOR CONSTRUCTION

Item	Description
C1021 Interior Doors	C1021 Interior Door
Condition	Good
Qty / UOM	34 / EA
RUL (years)	8
Location	All Floors

OBSERVATIONS/COMMENTS:

The interior doors are original in some locations and some were replaced in 1997. Based on estimated remaining useful life, replacement will be required.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
C1021	Replace C1021 Interior Door	34.0 - EA	2356.0	IN - Beyond Rated Life	Priority 4	2023	80,104

Item	Description
C1035 Identifying Devices	C1035 Directional Signage
Condition	Poor
Qty / UOM	12 / EA
RUL (years)	0
Location	All Floors

OBSERVATIONS/COMMENTS:

Existnig signage should be replaced with ADA compliant signage.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
C1035	Replace C1035 Directional Signage	12.0 - EA	316.2	CC - Accessibility	Priority I	2015	3,794

COST SUMMARY:

Type	Year	Total Expenditures
C10 Interior Construction	2015	\$3,794
C10 Interior Construction	2023	\$80,104

C20 STAIRS

Item	Description
C2012 Curved Stairs	C2010 Fire exit stairs
Condition	Good
Qty / UOM	13579 / SF
RUL (years)	18
Location	Solar Stairs
Stairs Frame	Steel
Stair Riser	Closed
Stair Treads	Concrete-Filled/Metal Pan
Stair Railings	Metal
Stair Soffit Finishes	Plaster
Stair Handrail Finishes	Painted

OBSERVATIONS/COMMENTS:

No further action is required.

C30 INTERIOR FINISHES

Item	Description
C3005 ADA Renovations	C3005 ADA Restroom Renovations
Condition	Fair - Good
Qty / UOM	20 / EA
RUL (years)	0
Location	All Floors

OBSERVATIONS/COMMENTS:

Renovate all restrooms to meet accessibility standards based on the 2009 ADA Accessibility Compliance Survey.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
C3005	ADA Restroom Renovation	20.0 - EA	29760.0	CC - Accessibility	Priority I	2015	595,200

Item	Description
C3012 Wall Finishes to Interior Walls	C3012 Mechanical Room
Condition	Fair
Qty / UOM	6000 / SF
RUL (years)	10
Location	All Floors

OBSERVATIONS/COMMENTS:

Mechanical rooms are located at each floor of the Solar Building with exposed ceilings.

Item	Description
C3012 Wall Finishes to Interior Walls	C3012 Drywall, Painted Walls
Condition	Good
Qty / UOM	75850 / SF
RUL (years)	18
Location	All Floors

OBSERVATIONS/COMMENTS:

Office area interior walls will require periodic painting.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
C3012	Paint interior drywall throughout building.	75,850.0 - SF	1.9	IN - Appearance	Priority 3	2015	144,843
C3012	Paint interior drywall throughout building.	75,850.0 - SF	1.9	IN - Appearance	Priority 3	2022	144,843

Item	Description
C3012 Wall Finishes to Interior Walls	C3012 Painted plaster walls
Condition	Fair
Qty / UOM	13500 / SF
RUL (years)	0
Location	Stairwells and elevator lobbies

OBSERVATIONS/COMMENTS:

The elevator towers and circular stair wall finishes will require periodic painting.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
C3012	C3012 Paint Interior Walls	13,500.0 - SF	2.1	IN - Appearance	Priority 2	2015	28,793

Item	Description
C3024 Flooring	C3024 Clay Tile
Condition	Good
Qty / UOM	2900 / SF
RUL (years)	31
Location	All Floors

OBSERVATIONS/COMMENTS:

The elevator towers and circular stair floor landings are finished with clay tiles. No further action is required.

Item	Description
C3025 Carpeting	C3025 Carpet flooring
Condition	Poor - Fair
Qty / UOM	20584 / SY
RUL (years)	0
Location	All Floors
Floor Toppings	Light Weight Concrete

OBSERVATIONS/COMMENTS:

All office areas floors are covered with carpet. Replacement is recommended due to excessive wear and stains.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
C3025	Replace C3025 Carpet flooring	20,584.0 - SY	96.6	IN - Appearance	Priority 2	2015	1,988,530

Item	Description
C3032 Suspended Ceilings	C3032 Suspended Ceilings
Condition	Fair
Qty / UOM	2052 / CSF
RUL (years)	0
Location	All Floors

OBSERVATIONS/COMMENTS:

Suspended acoustical tile ceilings are found in the Solar Building and Subterranean Building office areas. Replacement of ceiling system complete is required in support of recommended fire sprinkler system installation.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
C3032	Replace C3032 Suspended Ceilings	2,052.0 - CSF	1201.6	IN - Appearance	Priority 2	2015	2,465,601

COST SUMMARY:

Type	Year	Total Expenditures
C30 Interior Finishes	2015	\$5,222,967
C30 Interior Finishes	2022	\$144,843

D Services Systems

D10 CONVEYING SYSTEMS

Item	Description
D1011 Passenger Elevators	D1011 Overhead Traction Elevators, 2500 LB
Condition	Fair
Qty / UOM	2 / EA
RUL (years)	1
Location	All floors
Elevator Style	Passenger
Elevator Type	Traction
Machinery Location	Penthouse At The Top Of The Shaft
Elevator Doors	Mechanical Safety Stops
Certificate of Inspection Location	Elevator Cab

OBSERVATIONS/COMMENTS:

Full elevator modernization with new controllers, variable frequency drives (VFDs), closed loop door operators, and new signal fixtures is recommended in the short term. Refer to the elevator consultant's full report in the appendices.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D1011	D1011 Tune and adjust the elevators and correct all deferred maintenance items	2.0 - EA	4550.0	OP - Maintenance	Priority 2	2015	9,100
D1011	D1011 Provide new cab interiors with down light ceilings and LED light fixtures	2.0 - EA	13650.0	FN - Modernization	Priority 2	2015	27,300
D1011	D1011 Install door restrictors on both cars	2.0 - EA	6370.0	CC - Building Code	Priority 1	2015	12,740
D1011	D1011 Perform five year full load test	2.0 - EA	5460.0	CC - Building Code	Priority 1	2015	10,920
D1011	D1011 Install car aprons that are greater than 21" long	2.0 - EA	3640.0	CC - Building Code	Priority 1	2015	7,280

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D1011	Replace D1011 Overhead Traction Elevators, 2500 LB	2.0 - EA	382200.0	FN - Modernization	Priority 5	2016	764,400

COST SUMMARY:

Type	Year	Total Expenditures
D10 Conveying Systems	2015	\$67,340
D10 Conveying Systems	2016	\$764,400

D20 PLUMBING

Item	Description
D2011 Water Closets	D2011 Commercial Grade Water Closet, 1.6 GPF Unit
Condition	Good
Qty / UOM	58 / EA
RUL (years)	34
Location	Throughout Facility
Low Flow Toilet	Yes
System Grade	Commercial Grade

OBSERVATIONS/COMMENTS:

The toilets were recently replaced and fitted with automatic flush valves. No further action

Item	Description
D2012 Urinals	D2012 Urinal
Condition	Good
Qty / UOM	12 / EA
RUL (years)	34
Location	Throughout Facility
Low Flow Toilet	Yes
System Grade	Commercial Grade

OBSERVATIONS/COMMENTS:

The urinals were recently replaced and fitted with automatic flush valves. No further action.

Item	Description
D2013 Lavatories	D2013 Counter Top Sink and Faucet
Condition	Good
Qty / UOM	68 / EA
RUL (years)	34
Location	Throughout Facility

OBSERVATIONS/COMMENTS:

The lavatories were recently replaced and fitted with automatic faucets with motion sensors.

Item	Description
D2018 Drinking Fountains and Coolers	D2018 ADA Drinking Fountain
Condition	Poor
Qty / UOM	10 / EA
RUL (years)	0
Location	All Floors

OBSERVATIONS/COMMENTS:

According to the 2010 ADA survey report, dual level drinking fountains are required at each office area.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D2018	Replace D2018 ADA Drinking Fountain	10.0 - EA	3504.6	CC - Accessibility	Priority 1	2015	35,046

Item	Description
D2023 Domestic Water Supply Equipment	D2023 Domestic Water Storage Tank 425 Gallons
Condition	Fair
Qty / UOM	1 / EA
RUL (years)	5
Location	Pump Room

OBSERVATIONS/COMMENTS:

The domestic water storage tank appears to be original and will likely require replacement during the term.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D2023	Replace D2023 Domestic Water Storage Tank 425 Gallons	1.0 - EA	10517.1	IN - Beyond Rated Life	Priority 3	2020	10,517

Item	Description
D2023 Domestic Water Supply Equipment	D2023 Solar and Chiller Equipment (Abandoned)
Condition	Poor - Fair
Qty / UOM	1 / EA
RUL (years)	5
Location	Boiler Room

OBSERVATIONS/COMMENTS:

The main boiler room is filled with abandoned-in-place solar and chilled water equipment. This equipment was used prior to the solar domestic water heating system being disbanded and prior to the facility obtaining its chilled water from the DGS Central Heating and Cooling Plant. Major components include an absorption chiller, screw machine, ice builder, liquid chiller, and four large storage tanks ranging from 3,000 to 15,000 gallons each. Consideration should be given to utilizing the 28,000-gallons of tank storage space for an alternative purpose. Otherwise, EMG recommends demolition and removal of the equipment to create additional space and to keep the mechanical room free of unnecessary clutter.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D2023	Demolish and remove solar storage tanks, absorption chiller, other equip	1.0 - LS	165200.0	FN - Obsolescence	Priority I	2015	165,200

Item	Description
D2023 Domestic Water Supply Equipment	D2023 Domestic Water Booster Pump Station
Condition	Fair
Qty / UOM	1 / EA
RUL (years)	5
Location	Pump Room

OBSERVATIONS/COMMENTS:

The boiler room has a domestic water booster pump station original to the initial construction. The station consists of three pumps, two 3-HP and one 2-HP. The 2-HP pump motor was replaced fairly recently, but the remaining components appear original. Replacement of the entire station is recommended.

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	42642.9	IN - Beyond Rated Life	Priority 3	2020	42,643

Item	Description
D2031 Waste Piping	D2031 Restroom Floor Drains
Condition	Poor
Qty / UOM	70 / LF
RUL (years)	0
Location	Throughout Facility

OBSERVATIONS/COMMENTS:

The floor drains and associated cast iron piping in the restrooms have aged and deteriorated prematurely, as there have been reported failures in several locations. Additional replacements and sectional repairs are anticipated.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D2031	Replace D2031 Restroom Floor Drains	70.0 - LF	331.3	OP - Maintenance	Priority 2	2015	23,191

COST SUMMARY:

Type	Year	Total Expenditures
D20 Plumbing	2015	\$223,437
D20 Plumbing	2020	\$53,160

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	N/A
Fuel Tank Type	N/A
Fuel Tank Size (gallons)	N/A
Fuel Tank Location	N/A
Gas Meter Location	N/A
Electrical Meter Location	Electrical Room
Water Meter Location	Street Vault

Item	Description
D3022.1 Circulating Pumps	D3022 HVAC Chilled Water Pumps 15 HP
Condition	Poor - Fair
Qty / UOM	2 / EA
RUL (years)	0
Location	Boiler Room
Piping Type	Galvanized Steel
Piping Insulation	Fiberglass
Pump Manufacturer	Bell & Gossett
Pump HP	15

OBSERVATIONS/COMMENTS:

The 15-HP chilled water distribution pumps and associated motors appear to be dated circa the 1993 HVAC renovations and nearing the end of their expected life. The two pumps are equipped with VFDs. Replacements are recommended as part of a facility-wide HVAC renovation.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3022	Replace D3022 HVAC Chilled Water Pumps 15 HP	2.0 - EA	23022.5	FN - Capacity	Priority I	2015	46,045

Item	Description
D3022.1 Circulating Pumps	D3022 HVAC Heating Water Pumps 3-5 HP
Condition	Fair
Qty / UOM	2 / EA
RUL (years)	0
Location	Boiler Room
Piping Type	Galvanized Steel
Pump Manufacturer	Baldor (motors)
Pump HP	5

OBSERVATIONS/COMMENTS:

The 3-HP and 5-HP heating water distribution pumps appear to be original and nearing the end of their expected life. The pumps utilize VFDs. Replacement is recommended as part of a full HVAC renovation project.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3022	Replace D3022 HVAC Heating Water Pumps 3-5 HP	2.0 - EA	18877.3	FN - Capacity	Priority I	2015	37,755

Item	Description
D3023 Auxiliary Equipment	D3023 Condensate Return System
Condition	Fair
Qty / UOM	1 / EA
RUL (years)	5
Location	Boiler Room

OBSERVATIONS/COMMENTS:

The primary steam station is located within the boiler room and is either original to the building construction or was added during a 1993 change-over to district-provided steam. The low-pressure condensate return station is of similar age and reportedly functions adequately. The 2-HP pump motor was recently replaced and the remaining components are difficult to observe within the insulated encasement. The condensate return station will require replacement. Ideally the facility should undergo a complete HVAC renovation, with all infrastructure and major components replaced.

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 3	2020	16,497

Item	Description
D3041.1 Air Handling Units	D3041 Air Handler 18,000-20,000 CFM
Condition	Fair
Qty / UOM	2 / EA
RUL (years)	0
Location	Subterranean Building
Air Handling Unit Sub Type	Constant Volume Single-Zone
Air Handling Unit Cooling Type	Chilled Water Coil
Air Handling Unit Outdoor Air	Damper Controlled
Air Handling Unit Manufacturer	Carrier
Air Handling Unit Model	39ED26
Duct Supply Diffusers and Registers	In Conditioned Spaces On Walls And Ceilings

OBSERVATIONS/COMMENTS:

The two AHUs in the main wings of the Subterranean building are provided with chilled water from the DGS Central Plant. Fan motors are 7.5 HP on the return/exhaust side and 20 HP on the supply side. The AHUs are original to the initial construction. The cooling coils in these particular units produce an excessive amount of condensation and the pans are corrosion damaged. Motors, fan belts, and other components are typically replaced upon failure. The AHUs were retro-fitted with energy-saving VFDs at some point after construction, although the VFDs also appear aged. The primary problem is the air handlers have historically been undersized and reportedly fail to meet the cooling loads required for the facility. Larger units are recommended and some modification to the variable air volume (VAV) terminals and HVAC infrastructure will also be required as part of a comprehensive HVAC renovation.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3041	Replace D3041 Air Handler 18,000-20,000 CFM	2.0 - EA	35811.5	FN - Capacity	Priority I	2015	71,623
D3041	D3041 Replace/revise AHU condensate pans	2.0 - EA	18600.0	IN - Reliability	Priority I	2015	37,200

Item	Description
D3041.1 Air Handling Units	D3041 AHU Fan Motors, 20 HP
Condition	Fair
Qty / UOM	8 / EA
RUL (years)	4
Location	Utility Areas/Closets

OBSERVATIONS/COMMENTS:

The air handlers are undersized and are recommended for replacement or significant supplementation. At a minimum the fan motors are anticipated to fail and budgetary as-needed replacement costs are included.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3041	Replace D3041 AHU Fan Motors, 20 HP	8.0 - EA	8928.0	IN - Beyond Rated Life	Priority 3	2019	71,424

Item	Description
D3041.1 Air Handling Units	D3041 AHU Fan Motors, 7.5 HP
Condition	Fair
Qty / UOM	8 / EA
RUL (years)	4
Location	Utility Areas/Closets

OBSERVATIONS/COMMENTS:

The air handlers are undersized and recommended for replacement or significant supplementation. At a minimum, the fan motors are anticipated to require replacement.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3041	Replace D3041 AHU Fan Motors, 7.5 HP	8.0 - EA	4960.0	IN - Beyond Rated Life	Priority 3	2019	39,680

Item	Description
D3041.1 Air Handling Units	D3041 Air Handler 4,000 to 8,000 CFM
Condition	Fair
Qty / UOM	1 / EA
RUL (years)	0
Location	Subterranean Building (Auditorium)
Air Handling Unit Sub Type	Constant Volume Single-Zone
Air Handling Unit Heat Type	Hot Water
Air Handling Unit Cooling Type	Chilled Water Coil
Air Handling Unit Outdoor Air	Damper Controlled
Air Handling Unit Manufacturer	Carrier
Air Handling Unit Model	39ED26
Duct Supply Diffusers and Registers	In Conditioned Spaces On Walls And Ceilings

OBSERVATIONS/COMMENTS:

The AHU in the old auditorium portion of the Subterranean Building is provided with heated and chilled water from the DGS Central Heating and Cooling Plant. The AHU is original to the initial construction and is functional. Motors, fan belts, and other components are typically replaced upon failure. The AHU was retro-fitted with an energy saving VFD at some point after construction, although the VFD appears aged. The primary concern is that air handlers in the building have historically been undersized and reportedly fail to meet the cooling loads required for the facility. Larger units are recommended, and some modification to the VAV and HVAC infrastructure will also be required as part of a comprehensive HVAC renovation.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3041	Replace D3041 Air Handler 4,000 to 8,000 CFM	1.0 - EA	12091.5	FN - Capacity	Priority I	2015	12,091

Item	Description
D3041.1 Air Handling Units	D3041 Air Handler 10,000 to 13,000 CFM
Condition	Fair
Qty / UOM	6 / EA
RUL (years)	0
Location	Solar Building
Air Handling Unit Sub Type	Constant Volume Single-Zone
Air Handling Unit Cooling Type	Chilled Water Coil
Air Handling Unit Outdoor Air	Damper Controlled
Air Handling Unit Manufacturer	Carrier
Air Handling Unit Model	39ED26
Duct Supply Diffusers and Registers	In Conditioned Spaces On Walls And Ceilings

OBSERVATIONS/COMMENTS:

The six AHUs serving the Solar Building are provided with chilled water from the DGS Central Heating and Cooling Plant. Fan motors are 7.5 HP on the return/exhaust side and 20 HP on the supply side. The AHUs are original to the initial construction. Motors, fan belts, and other components are typically replaced upon failure. The AHUs were retro-fitted with energy-saving VFDs at some point after construction, although the VFDs also appear aged. The primary deficiency is the air handlers have historically been undersized and reportedly fail to meet the cooling loads required for the facility. Larger units are recommended, and some modification to the VAV terminals and HVAC infrastructure will also be required as part of a comprehensive HVAC renovation.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3041	Replace D3041 Air Handler 10,000 to 13,000 CFM	6.0 - EA	16151.5	FN - Capacity	Priority I	2015	96,909
D3041	D3041 Facility-wide HVAC upgrade to infrastructure	217,951.0 - SF	7.4	FN - Capacity	Priority I	2015	1,621,555

Item	Description
D3041.2 Terminal Units VAV	D3041 VAV Boxes
Condition	Fair
Qty / UOM	145 / EA
RUL (years)	0
Location	Throughout Facility
Terminal Units VAV Boxes	Hot Water Reheat
Terminal Units Control	Building System
Terminal Heating Medium	Hot Water

OBSERVATIONS/COMMENTS:

The facility is cooled by VAV terminal boxes supplied with conditioned air from the central system air handlers on each floor. The VAVs are cooling-only mixing boxes (no electric or hot water reheat) and were added throughout the facility in 1993. Due to the reported undersizing of the air handlers and system as a whole, replacements and HVAC infrastructure modifications are recommended as part of a comprehensive HVAC upgrade project.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3041	Replace D3041 VAV Boxes	145.0 - EA	2496.7	FN - Capacity	Priority I	2015	362,024

Item	Description
D3042 Exhaust Ventilation Systems	D3042 Smoke Evacuation System
Condition	Fair
Qty / UOM	3 / EA
RUL (years)	0
Location	Stairwells

OBSERVATIONS/COMMENTS:

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3042	Replace D3042 Smoke Evacuation System	3.0 - EA	33480.0	CC - Life Safety	Priority I	2015	100,440

Item	Description
D3042 Exhaust Ventilation Systems	D3042 Exhaust Fan 4500 CFM
Condition	Fair
Qty / UOM	4 / EA
RUL (years)	0
Location	Utility Areas/Closets
Ventilation System	Central Exhaust Duct Network

OBSERVATIONS/COMMENTS:

Most of the miscellaneous rooftop exhaust fans are original to the initial construction and appear to be in working condition. Based on estimated RUL, replacement is anticipated.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3042	Replace D3042 Exhaust Fan 4500 CFM	4.0 - EA	4006.9	IN - Beyond Rated Life	Priority I	2015	16,028

Item	Description
D3043 Steam Distribution Systems	D3043 HVAC Heating Water Heat Exchanger
Condition	Fair
Qty / UOM	2 / EA
RUL (years)	0
Location	Boiler Room
Heat Exchangers Purpose	Space Heating
Heat Exchanger Process	Steam To Liquid

OBSERVATIONS/COMMENTS:

The overhead shell and tube heat exchangers used for HVAC heating water are likely original to the building construction or may have been installed during the 1993 HVAC renovations. The heat exchangers are reportedly still functioning adequately but are difficult to observe overhead due to their insulation. The heat exchangers will require replacement.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3043	Replace D3043 HVAC Heating Water Heat Exchanger	2.0 - EA	31257.8	IN - Beyond Rated Life	Priority I	2015	62,516

Item	Description
D3043 Steam Distribution Systems	D3043 Domestic Hot Water Heat Exchanger
Condition	Fair
Qty / UOM	1 / EA
RUL (years)	8
Location	Boiler Room
Heat Exchangers Purpose	Domestic Hot Water Production
Heat Exchanger Process	Steam To Liquid

OBSERVATIONS/COMMENTS:

The overhead shell and tube heat exchanger used for domestic hot water is likely original to the building construction or may have been installed during the 1993 HVAC renovations. The heat exchanger is reportedly

still functioning adequately but is difficult to observe overhead due to the insulation. The heat exchanger will require replacement.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3043	Replace D3043 Domestic Hot Water Heat Exchanger	1.0 - EA	26297.8	IN - Beyond Rated Life	Priority 4	2023	26,298

Item	Description
D3052 Package Units	D3052 Computer Room A/C Unit, Chilled Water, 10-Ton
Condition	Fair
Qty / UOM	1 / EA
RUL (years)	5
Location	Computer/Server Room (Subterranean)
Package Unit Location	Mechanical Room/Closet
Package Unit Controls	Building System
Package Unit Manufacturer	Liebert

OBSERVATIONS/COMMENTS:

The computer room air conditioner is supplied with chilled water from the central system. Based on the estimated RUL, replacement is anticipated.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3052	Replace D3052 Computer Room A/C Unit, Chilled Water, 10-Ton	1.0 - EA	110859.7	IN - Beyond Rated Life	Priority 3	2020	110,860

Item	Description
D3063 Heating/Cooling Air Handling Units	D3063 Variable Frequency Drives
Condition	Fair
Qty / UOM	13 / EA
RUL (years)	0
Location	Throughout Facility

OBSERVATIONS/COMMENTS:

All air handlers, distribution pump motors, and other major components have been equipped with VFDs for improved performance. The VFDs have aged and replacements are recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3063	Replace D3063 Variable Frequency Drives	13.0 - EA	9810.9	FN - Modernization	Priority I	2015	127,541

Item	Description
D3068 Building Automation Systems	D3068 Direct Digital Controls (DDC)
Condition	Good
Qty / UOM	217951 / SF
RUL (years)	15
Location	Throughout Facility
HVAC Controls Manufacturer	Alerton
HVAC Controls Model	BACtalk 2.6

OBSERVATIONS/COMMENTS:

The mix of older digital and pneumatic controls were converted over to a full DDC Alerton BACtalk 2.6 in 2010. The central processing unit (CPU) software is installed on appears fairly new. The maintenance staff stated that the system works properly, although is not web-based, and requires local access. Periodic software upgrades are recommended. If and when the facility undergoes a widespread HVAC upgrade to account for the undersizing of the air handlers, the controls system will need to be correspondingly modified.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3068	D3068 Modify controls as part of facility-wide HVAC upgrade to infrastructure	217,951.0 - SF	1.2	FN - Capacity	Priority I	2015	270,259

COST SUMMARY:

Type	Year	Total Expenditures
D30 HVAC	2015	\$2,861,986
D30 HVAC	2019	\$111,104
D30 HVAC	2020	\$127,357
D30 HVAC	2023	\$26,298

D40 FIRE PROTECTION SYSTEMS

Fire and Life Safety System	
Item	Description
Fire Alarm System Components Present	
Smoke detectors	N/A
Pull stations	Yes
Audible alarms	Yes
Strobe lights	Yes
Central fire alarm panel	Yes
Annunciator panel	N/A
Smoke Detectors Power Supply	N/A
Carbon Monoxide Detectors	N/A
Heat Detector	N/A
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	N/A
Kitchen Suppression Systems	No
Halon Gas Systems	No
Smoke Evacuation Systems	Yes
Fire-rated Stairwells	Yes
Fire-rated Stairwell Finish	Masonry
Stairwell Discharge	Exterior of the building at Grade
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 and Life Safety System	
Item	Description
Fire Alarm Monitoring Company	N/A

Item	Description
D401 I Sprinkler Water Supply	D401 I Wet-Pipe Fire Suppression System
Condition	Poor
Qty / UOM	217951 / SF
RUL (years)	0
Location	Throughout Facility
Fire Sprinkler Type	Wet Sprinkler
Fire Sprinkler Pipe Material	Steel
Recalled Sprinkler Heads (Omega or Central brands)	No
Sprinkler Standpipes	Yes
Location of Sprinkler Standpipes	Stairwells

OBSERVATIONS/COMMENTS:

The vast majority of the building is not protected by a fire suppression system. Wet-pipe sprinkler heads are currently limited to mechanical areas only. Dry standpipes are located in the stairwells. The installation of a facility-wide fire suppression retrofit is recommended as a life safety improvement.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D401 I	Install facility-wide sprinkler system	217,951.0 - SF	9.0	CC - Life Safety	Priority I	2015	1,954,585

Item	Description
D4012 Sprinkler Pumping Equipment	D4012 Electric Fire Pump, 500 GPM
Condition	Fair
Qty / UOM	1 / EA
RUL (years)	0
Location	Pump Room
Fire Pump Delivery Rate (GPM)	500
Check Valve	Yes

OBSERVATIONS/COMMENTS:

Wet-pipe sprinkler heads are currently limited to the mechanical areas, and installation of a complete facility-wide suppression system is highly recommended. The current pump is only sized to handle the current limited areas, a larger pump will very likely be required to handle the new load.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D4012	Replace D4012 Electric Fire Pump, 500 GPM	1.0 - EA	57787.9	CC - Life Safety	Priority I	2015	57,788

COST SUMMARY:

Type	Year	Total Expenditures
D40 Fire Protection Systems	2015	\$2,012,372

D50 ELECTRICAL SYSTEMS

Item	Description
D5012 Low Tension Service & Dist.	D5012 Breaker Panel 225 Amps, 30 Circuits
Condition	Fair
Qty / UOM	36 / EA
RUL (years)	0
Location	Utility Areas/Closets

OBSERVATIONS/COMMENTS:

The vast majority of the electrical panels are original equipment. A very isolated number of panels are newer. Due to the age of the components, replacement of the panels is anticipated.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D5012	Replace D5012 Breaker Panel 225 Amps, 30 Circuits	36.0 - EA	7864.3	FN - Capacity	Priority I	2015	283,116

Item	Description
D5012 Low Tension Service & Dist.	D5010 Switchgear, Mainframe, 4000 Amps
Condition	Fair
Qty / UOM	1 / EA
RUL (years)	0
Location	Main Electrical Room
Service Size (Amperage)	4000
Service Voltage	277/480
Service Voltage Type	Three-Phase Four-Wire Alternating Current (Ac)
Step Down Transformers	Yes
Electrical Distribution Panel Type	Circuit Breakers
Main Electrical Distribution Lines	Underground
Site Electrical Transformer Location	Pad-Mounted
Electrical Wiring Material	Solid Copper
Electrical Wiring in Metal Conduit	Yes
Electrical Wiring in Non-Metal (NM) Conduit	No
Electrical Wiring in Non- Metal Sheathing (Romex)	No
Electrical Wiring in Metal Sheathing (BX)	No

OBSERVATIONS/COMMENTS:

The main switchgear is original equipment. The electrical service is reportedly nearing capacity for the facility's needs. A full infrared scan, cleaning, and tightening effort was performed in late 2014. Based on estimated RUL, replacement is anticipated.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D5012	Replace D5010 Switchgear, Mainframe, 4000 Amps	1.0 - EA	17847.0	FN - Capacity	Priority 1	2015	17,847

Item	Description
D5012 Low Tension Service & Dist.	D5012 Secondary Dry Transformer 75 kVA
Condition	Fair
Qty / UOM	8 / EA
RUL (years)	0
Location	Utility Areas/Closets

OBSERVATIONS/COMMENTS:

Most of the stepdown transformers are original equipment. The electrical service is reportedly nearing capacity for the building's needs. Due to the age of the transformers, replacements are recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D5012	Replace D5012 Secondary Dry Transformer 75 kVA	8.0 - EA	19199.4	FN - Capacity	Priority I	2015	153,595

Item	Description
D5012 Low Tension Service & Dist.	D5012 Secondary Dry Transformer 15 kVA
Condition	Fair
Qty / UOM	8 / EA
RUL (years)	0
Location	Utility Areas/Closets

OBSERVATIONS/COMMENTS:

Most of the stepdown transformers are original equipment. The electrical service is reportedly nearing capacity for the building's needs although the transformers appear to be in functional condition. Based on the estimated RUL and the noted condition, replacement is recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D5012	Replace D5012 Secondary Dry Transformer 15 kVA	8.0 - EA	8285.6	FN - Capacity	Priority I	2015	66,285

Item	Description
D5022 Lighting Equipment	D5022 Replace Lighting Fixtures
Condition	Fair - Good
Qty / UOM	2052 / Ea
RUL (years)	0
Location	Office and corridor areas

OBSERVATIONS/COMMENTS:

Replacement of lighting fixtures is required when the acoustical ceiling tiles are replaced.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D5022	Replace D5022 Replace Lighting Fixtures	2,052.0 - Ea	401.2	FN - Modernization	Priority I	2015	823,262

Item	Description
D5022 Lighting Equipment	D5022 Exterior Wall Mt Light, 100 Watt
Condition	Poor
Qty / UOM	52 / EA
RUL (years)	0
Location	Building Exterior

OBSERVATIONS/COMMENTS:

There are a variety of soffited lights along the rear of Solar Building, building-mounted HPS fixtures along the frontage of the Solar Building and various site lights on the grounds above the Subterranean Building. There are also several fixtures providing illumination within the tunnel connecting the two facilities, and several of these fixtures appeared to be broken. Overall, many of the fixtures appear aged, and various problems have been reported with the existing timers. A comprehensive exterior lighting upgrade project is recommended, including new fixtures and photocells.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D5022	Replace D5022 Exterior Wall Mt Light, 100 Watt	52.0 - EA	1079.6	OP - Maintenance	Priority 2	2015	56,139

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

OBSERVATIONS/COMMENTS:

The fire alarm panel appears to be in fair condition, although somewhat dated. Replacement is recommended in conjunction with a full fire alarm 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	30680.0	CC - Life Safety	Priority I	2015	30,680

Item	Description
D5037 Fire Alarm Systems	D5037 Fire Alarm System
Condition	Fair
Qty / UOM	217951 / SF
RUL (years)	0
Location	Throughout Facility

OBSERVATIONS/COMMENTS:

The fire alarm system appears original to the initial construction and somewhat outdated, with audible-only alarms and lacking strobes. A complete upgrade and modernization of the fire alarm system is recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D5037	Replace D5037 Fire Alarm System	217,951.0 - SF	3.5	CC - Life Safety	Priority I	2015	771,547

Item	Description
D5092 Emergency Light & Power Systems	D5092 Diesel Generator 125 kW
Condition	Fair
Qty / UOM	1 / EA
RUL (years)	7
Location	Utility Areas/Closets
Generator Fuel	Diesel
Generator Serves	Fire And Life Safety Systems

OBSERVATIONS/COMMENTS:

The emergency generator is original to the building construction and appears to be in functional condition, with relatively limited use over the years. Replacement is anticipated. Additionally, there is no secondary containment around the diesel fuel day tank.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D5092	Add secondary containment for day tank	1.0 - 1	8260.0	EN - Air/ Water Quality	Priority 1	2015	8,260
D5092	Replace D5092 Diesel Generator 125 kW	1.0 - EA	123936.4	CC - Life Safety	Priority 4	2022	123,936

Item	Description
D5092 Emergency Light & Power Systems	D5092 Emergency Transfer Switch
Condition	Fair
Qty / UOM	1 / EA
RUL (years)	7
Location	Utility Areas/Closets

OBSERVATIONS/COMMENTS:

The transfer switch associated with the emergency generator is reported to be functioning adequately. The transfer switch is original equipment and a conjunctive replacement is recommended when the generator is replaced.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D5092	Replace D5092 Emergency Transfer Switch	1.0 - EA	10613.1	CC - Life Safety	Priority 4	2022	10,613

COST SUMMARY:

Type	Year	Total Expenditures
D50 Electrical Systems	2015	\$2,210,731
D50 Electrical Systems	2022	\$134,549

G Building Sitework Systems

G20 SITE IMPROVEMENTS

Site Information	
Item	Description
Main Ingress and Egress	N Street
Access from	N
Additional Entrances	N/A
Access from	N/A
Parking Count: Open lot	0
Parking Count: Sheltered by carports	N/A
Parking Count: Private garages	N/A
Parking Count: Subterranean garage	0
Parking Count: Freestanding parking structure	N/A
Number of ADA Compliant Spaces	N/A
Number of ADA Compliant Spaces for Vans	N/A
Method of obtaining parking count	N/A
Property Identification Sign-Primary	N/A
Property Identification Sign- Secondary	N/A
Illuminated Identification Signage	No
Building Identification Sign	No
Illuminated Sign	No
Location of Property ID Sign	N/A
Trees Present	Yes
Shrubs Present	Yes
Grasses Present	Yes
Flower beds Present	Yes
Decorative Rocks Present	Yes
Lava Rocks Present	No
Ponds Present	Yes
Fountains Present	No
Topography	Gently sloping

Item	Description
G2022 Paving & Surfacing	G2022 Concrete Walks
Condition	Fair
Qty / UOM	350 / SF
RUL (years)	0
Location	Site

OBSERVATIONS/COMMENTS:

There are several cracks on sidewalks around the building and outdoor park area which could pose potential safety hazards as the cracks widen due to expansion, contraction, and load. Replacement is recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
G2022	Replace G2022 Concrete Walks	350.0 - SF	138.3	CC - Life Safety	Priority I	2015	48,417

Item	Description
G2031 Paving & Surfacing	G2031 Concrete Pavement
Condition	Poor - Fair
Qty / UOM	250 / SF
RUL (years)	0
Location	Subterranean

OBSERVATIONS/COMMENTS:

Concrete paving around the tower and underground walkway requires repair due to cracks.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
G2031	Replace G2031 Concrete Pavement	250.0 - SF	26.3	CC - Life Safety	Priority I	2015	6,581

Item	Description
G2035 Exterior Steps & Ramps	G2030 Pedestrian Paving
Condition	Fair
Qty / UOM	1 / Lump Sum
RUL (years)	0
Location	Exterior entries

OBSERVATIONS/COMMENTS:

The exterior accessible ramps require improvements and replacements.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
G2035	Replace G2030 Pedestrian Paving	1.0 - Lump Sum	500000.0	CC - Accessibility	Priority I	2015	500,000

Item	Description
G2035 Exterior Steps & Ramps	G2035 Concrete Stair & Ramps
Condition	Fair
Qty / UOM	2280 / SF
RUL (years)	0
Location	Subterranean

OBSERVATIONS/COMMENTS:

Several cracks are noted in ramps and steps at the Subterranean Building which pose potential safety hazards for pedestrians. Repair is recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
G2035	Replace G2035 Concrete Stair & Ramps	2,280.0 - SF	17.1	CC - Life Safety	Priority I	2015	38,959

COST SUMMARY:

Type	Year	Total Expenditures
G20 Site Improvements	2015	\$593,957

The weather at the time of the assessment was:

Item	Description
Approximate Outdoor Temperature (degrees F)	64
Weather Conditions	Cloudy
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	DGS

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.

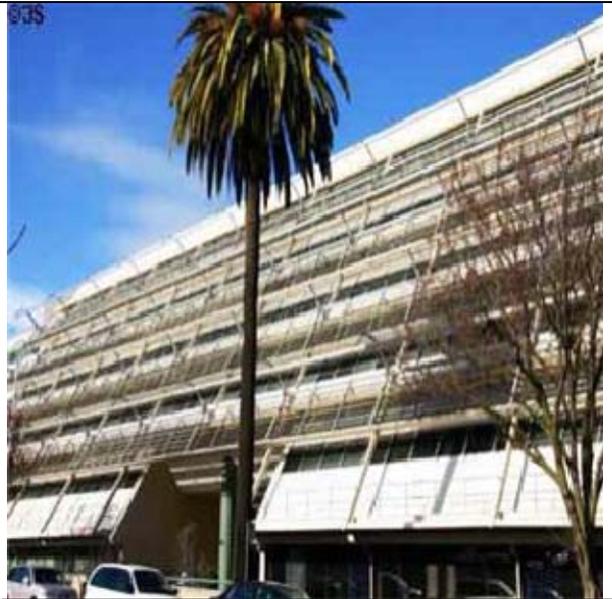
Prepared By: Djahan Nabili, Field Observer

Reviewed By: 
Matt Anderson, Program Manager

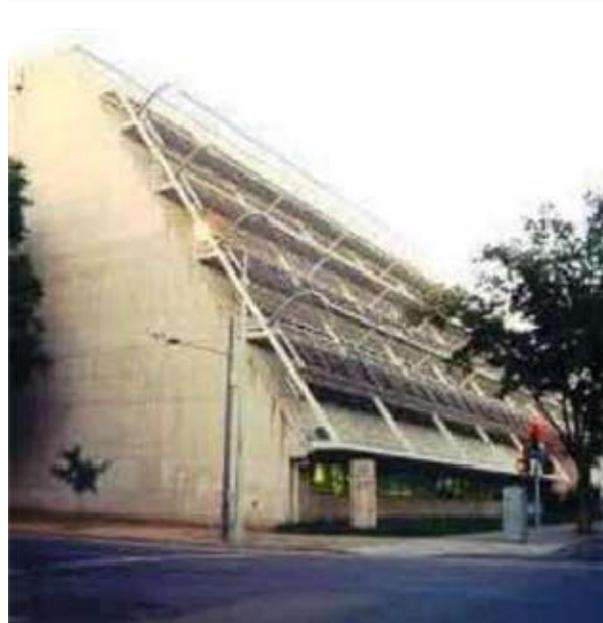
APPENDIX D: PHOTOS



:- Front elevation



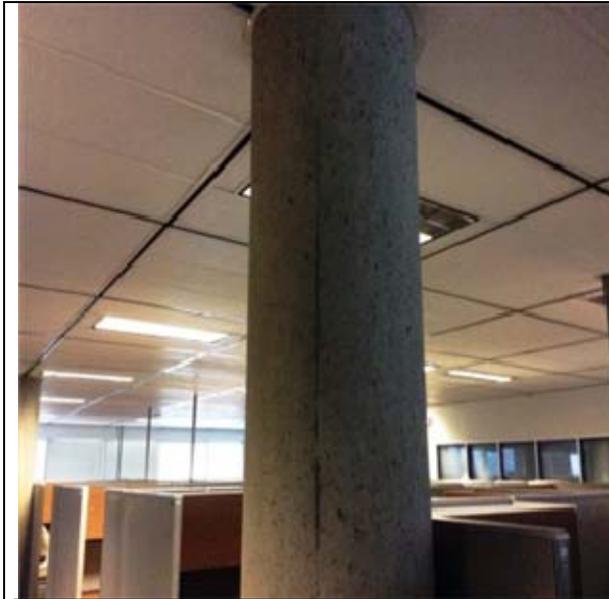
:- Solar Building



:- Southwest



:- South



B1021 Batt Insulation, Fiberglass R38



B1020 Seal concrete at outdoor park



B1020 Seal concrete at outdoor park



B1020 Seal concrete at outdoor park



B2010 Stucco and Lath



B2010 Stucco and Lath



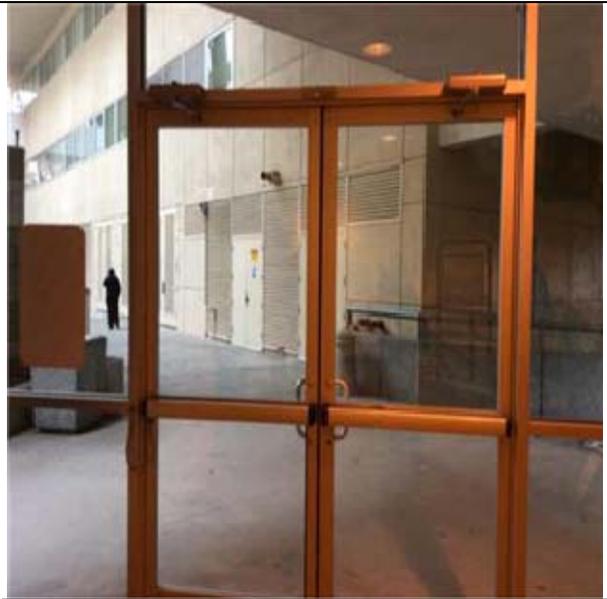
B2021 Windows



B2021 Windows



B2031 Alumium 1/4" Tempered Glass



B2031 Alumium 1/4" Tempered Glass



B2031 Glazed Double Doors



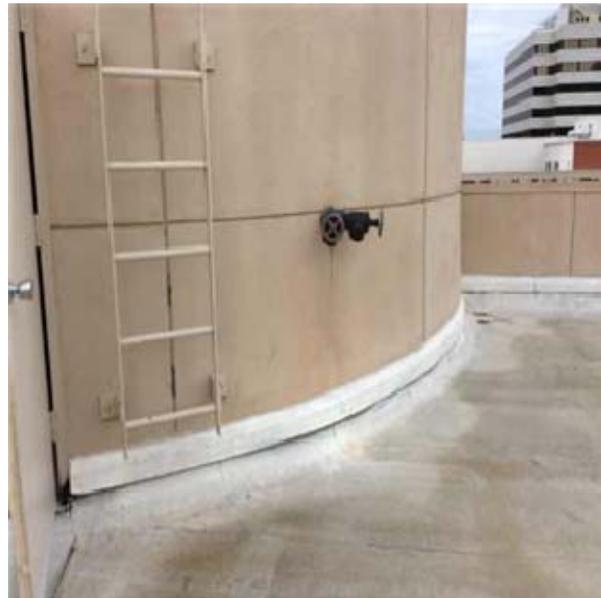
B2031 Glazed Double Doors



B301 | Built-up Roof :- Built-up roofing



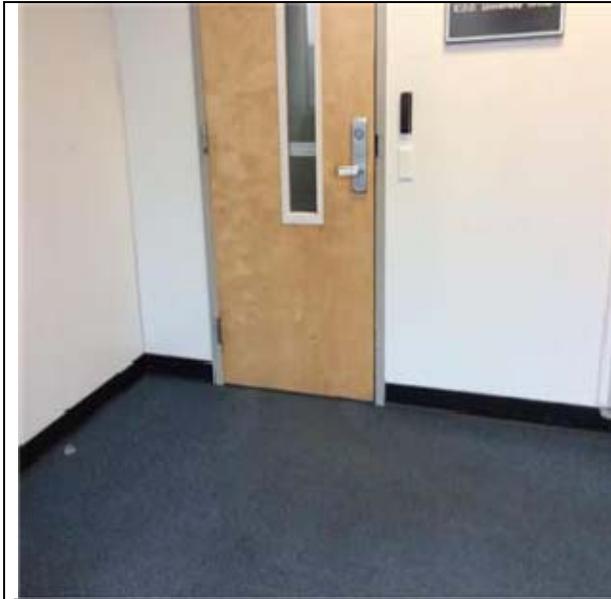
B301 | Built-up Roof:- Parapet wall



B301 | Built-up Roof :- Solar enclosure



CI021 Interior Door



CI021 Interior Door



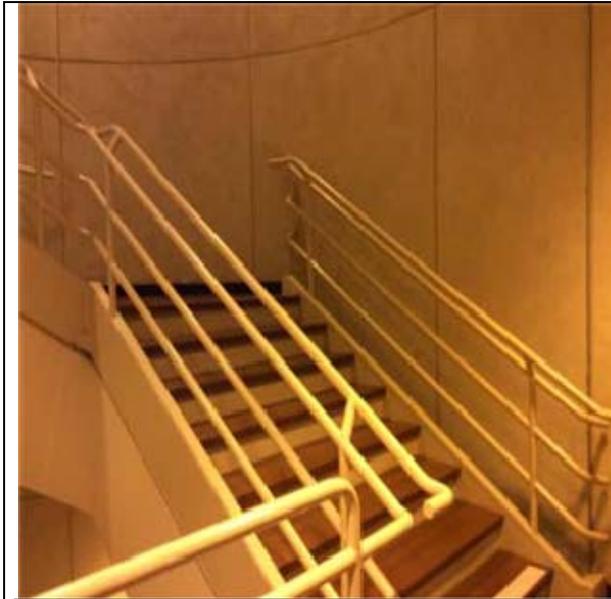
CI035 Directional Signage



CI035 Directional Signage



C2010 Fire exit stairs



C2010 Fire exit stairs



C3005 ADA Restroom Renovations



C3005 ADA Restroom Renovations



C3005 ADA Restroom Renovations



C3005 ADA Restroom Renovations



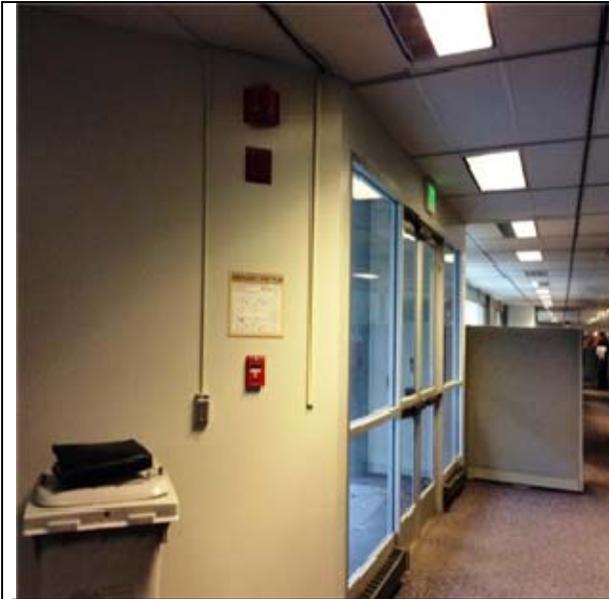
C3012 Mechanical Room



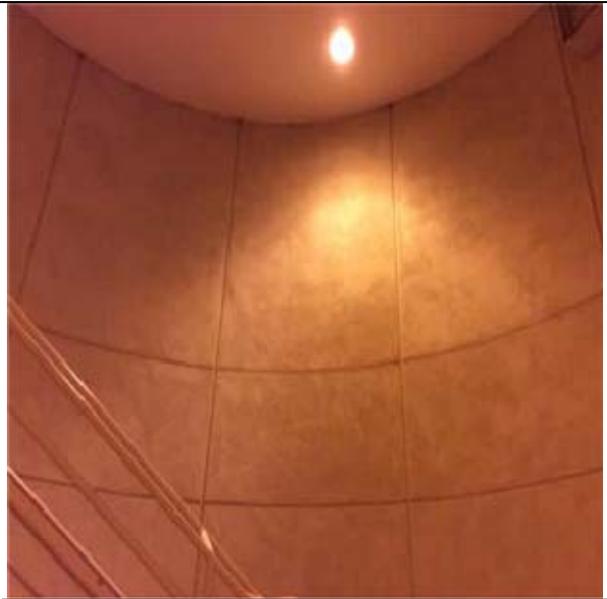
C3012 Mechanical Room



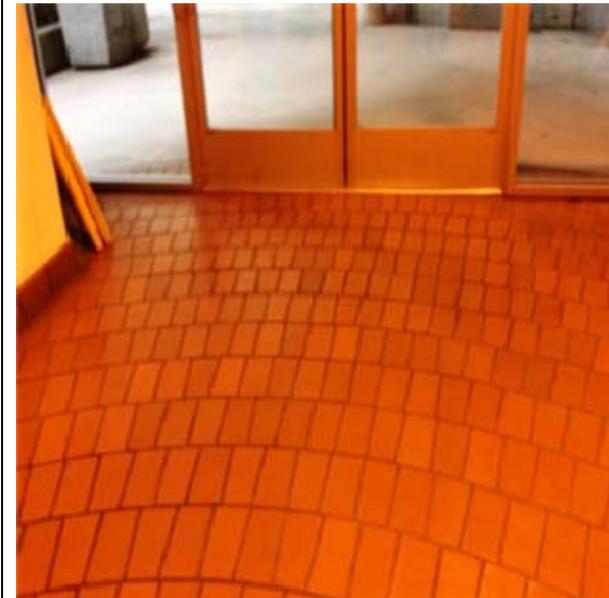
C3012 Drywall, Painted Walls



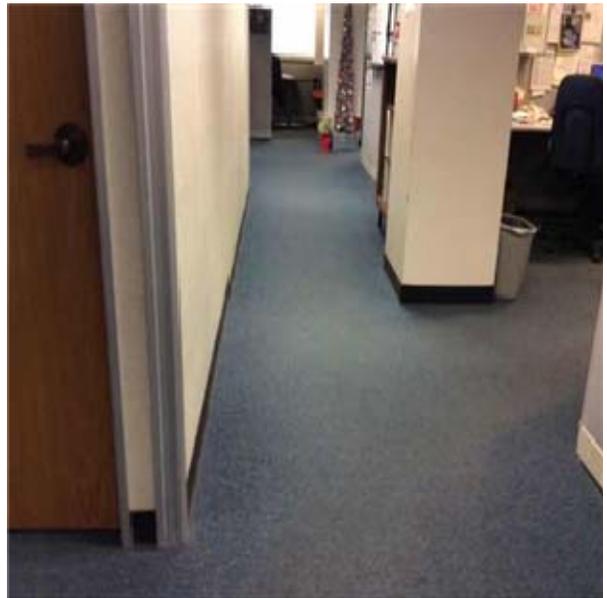
C3012 Drywall, Painted Walls



C3012 Painted plaster walls



C3024 Clay Tile



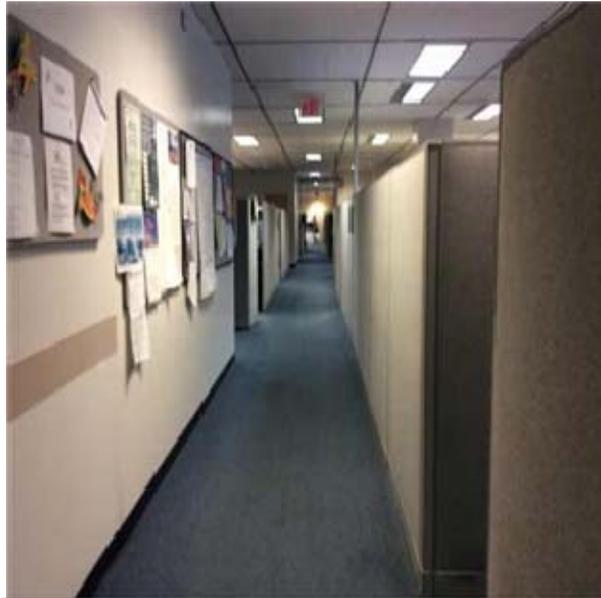
C3025 Carpet flooring



C3025 Carpet flooring



C3032 Suspended Ceilings



C3032 Suspended Ceilings



D1011 Overhead Traction Elevators, 2500 LB:- Elevator controls



D2011 Commercial Grade Water Closet, 1.6 GPF Unit



D2012 Urinal



D2013 Counter Top Sink and Faucet



D2018 ADA Drinking Fountain



D2018 ADA Drinking Fountain



D2023 Domestic Water Storage Tank 425 Gallons:-
Storage tank



D2023 Domestic Water Booster Pump Station :-
Domestic water booster pumps



D2023 Solar and Chiller Equipment (Abandoned):-
Abandoned solar and chiller plant equipment



D2023 Solar and Chiller Equipment (Abandoned) :-
Abandoned absorption chiller



D2031 Restroom Floor Drains:- Piping above restroom
ceiling



D3022 HVAC Chilled Water Pumps 15 HP :- Chilled
water pumps



D3022 HVAC Heating Water Pumps 3-5 HP:- Heating
water pumps



D3023 Condensate Return System :- Condensate return system



D3041 Air Handler 10,000 to 13,000 CFM:- AHU fan motor



D3041 Air Handler 18,000-20,000 CFM



D3041 VAV Boxes:- VAV box



D3042 Exhaust Fan 4500 CFM :- Exhaust fan



D3043 HVAC Heating Water Heat Exchanger:- Heat exchangers overhead



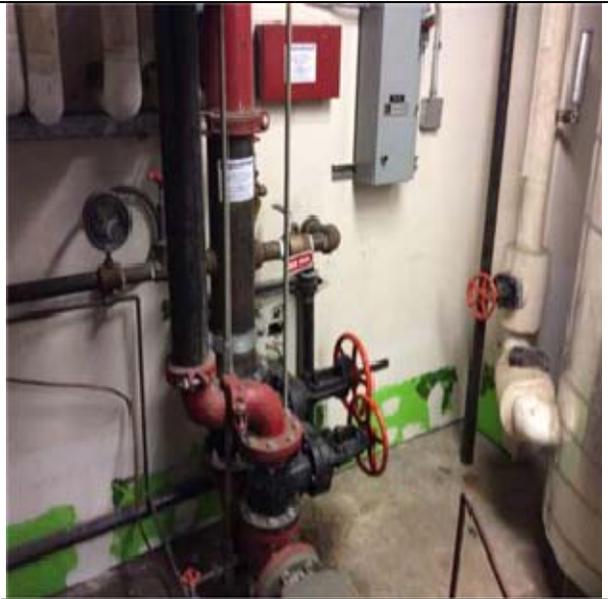
D3052 Computer Room A/C Unit, Chilled Water, 10-Ton :- Subterranean server room unit



D3063 Variable Frequency Drives:- Older VFD's



D3068 Direct Digital Controls (DDC) :- Desktop computer with HVAC controls software



D4011 Wet-Pipe Fire Suppression System:- Riser of mechanical room sprinklers



D4012 Electric Fire Pump, 500 GPM :- Fire pump



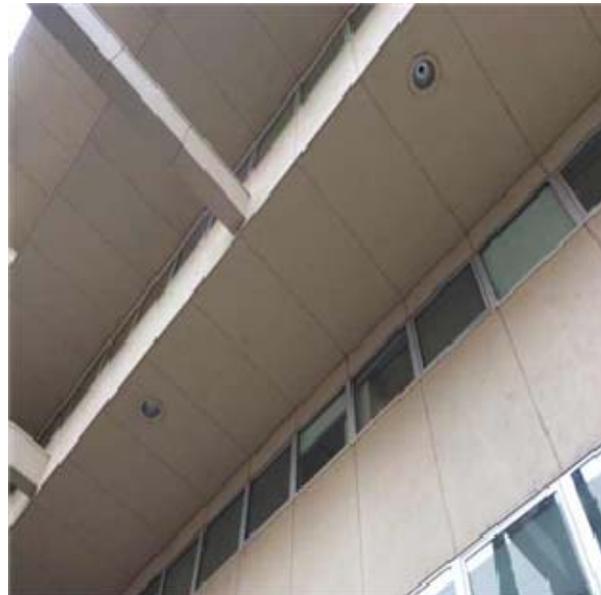
D5012 Secondary Dry Transformer 15 kVA:- Step-down transformers



D5010 Switchgear, Mainframe, 4000 Amps :- Main electrical switchgear



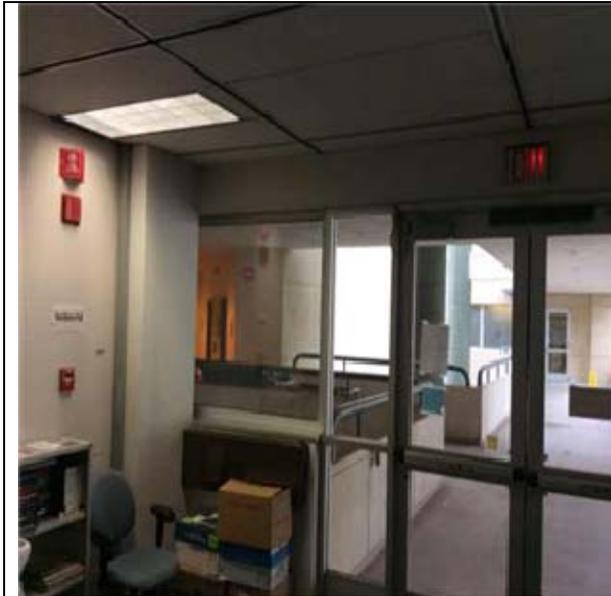
D5012 Breaker Panel 225 Amps, 30 Circuits:- Electrical panels



D5022 Exterior Wall Mt Light, 100 Watt :- Exterior lighting



D5037 Fire Alarm Panel:- Fire alarm panel



D5037 Fire Alarm System :- Fire alarm devices and exit sign



D5092 Diesel Generator 125 kW:- Emergency generator



D5092 Diesel Generator 125 kW :- Diesel day tank lacking secondary containment



D5092 Emergency Transfer Switch:- Transfer switch and adjacent panel



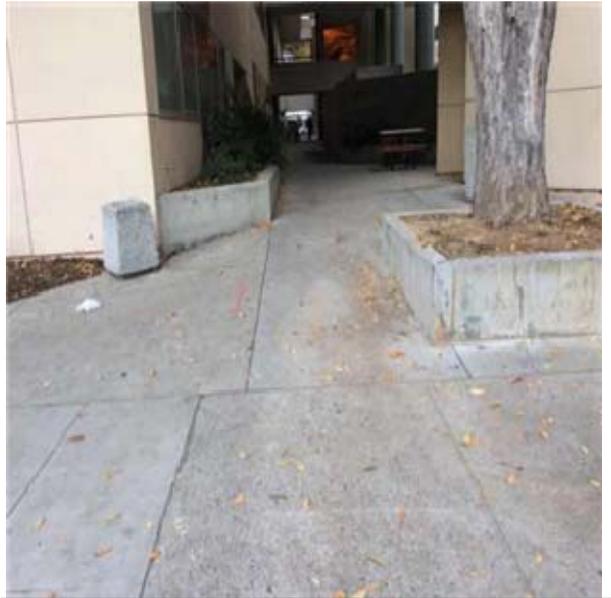
G2022 Concrete Walks :- Mechanical Room Floor



G2022 Concrete Walks:- Northeast side



G2022 Concrete Walks :- Subterranean



G2031 Concrete Pavement



G203I Concrete Pavement



G203I Concrete Pavement



G203I Concrete Pavement :- underground walkway



G2035 Concrete Stair & Ramps



G2035 Concrete Stair & Ramps

APPENDIX E: TERMINOLOGY AND ABBREVIATIONS

TERMINOLOGY and ABBREVIATIONS	
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.

TERMINOLOGY and ABBREVIATIONS	
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

TERMINOLOGY and ABBREVIATIONS	
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.

TERMINOLOGY and ABBREVIATIONS	
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

EDD ANNEX (SOLAR -SUBTERRANEAN BUILDING) FACT SHEET

750-751 N Street

Sacramento

Sacramento County

Category 2 - Medium Priority - Further Study Required

BUILDING INFORMATION

- Age: 31 years (completed in 1983)
- Size:* 6-story, two structures ("Solar Building" at 751 N and "Subterranean Building" at 750 N) connected via a walkway under N Street.
217,951 GSF 183,154 NUSF 183,154 Assigned SF
1.47 Acre Parcel
No Parking, Light Rail Access
Capacity -1,115 occupants
- Financial: No Encumbrances
BRA Rate - \$1.64/month per SF, FY 2013-14 (DGS Price Book)
 \$1.69/month per SF, FY 2014-15 (Proposed DGS Price Book)
Central Plant rate an additional \$0.60/month per SF
- LEED Status: Registered for LEED-EB Certification as part of DGS blanket registration in 2008
- Tenants: The Employment Development Department is the sole tenant



SPI Structure #: 2343
Real Property #: 691
BPM #: 013

COMPLETED STUDIES AND SIGNIFICANT FINDINGS

A. 2009 American Disability Act Accessibility Compliance Survey

The survey identified numerous areas of inaccessibility, some of which require major alterations. The more significant features are all drinking fountains, all toilet facilities, signage, exit/entrance/restroom doors, exit stair #5, and stair landings/handrails in stair towers 1 and 3.

B. 2012 Access Compliance Conceptual Budget/Evaluation

In follow up to the 2009 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 other than those identified by the ADA Survey.

CURRENT UTILIZATION PROJECTS

Relocated staff from leased space at 7000 Franklin Boulevard to Subterranean Building. Relocation completed 9/13.

RECENTLY COMPLETED PROJECTS

Cost

TBD

ACTIVE PROJECTS

Cost

TBD

PLANNED SPECIAL REPAIRS BY FISCAL YEAR

Estimated Cost

TBD

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

* Source: Statewide Property Inventory

APPENDIX G: COST TABLES

10 YEAR EXPENDITURE FORECAST

Employment Development Department Annex
750-751 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	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		

A. SUBSTRUCTURE																															
Substructure Subtotal												\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

B. SHELL																																	
B10 SUPERSTRUCTURE																																	
B1021	Precast Concrete Slab with Reinforced Concrete Topping	B1020 Seal concrete at outdoor park	Subterranean space	Replace B1020 Seal concrete at outdoor park	70	0	71,250.00	SF	\$11.53	IN - Beyond Rated Life	Priority 1	\$821,655	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$821,655	\$0										
B1021	Precast Concrete Slab with Reinforced Concrete Topping	B1021 Batt Insulation, Fiberglass R38	Subterranean	Replace B1021 Batt Insulation, Fiberglass R38	70	0	71,250.00	SF	\$3.51	OP - Energy	Priority 1	\$250,344	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$250,344	\$0										
B20 EXTERIOR ENCLOSURE																																	
B2011	Stucco and Lath	B2010 Stucco and Lath	Exterior walls	B2011 Repair and Paint Exterior Walls	30	0	38,250.00	SF	\$18.33	IN - Appearance	Priority 1	\$701,015	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$701,015	\$0										
B2021	Aluminum Window , 4-0 X 6-0, Upper Floor Floor	B2021 Windows	All Floors	B2021 - Windows - Recaulking	5	0	3,927.00	LF	\$38.07	OP - Maintenance	Priority 2	\$149,493	\$0	\$0	\$0	\$0	\$149,493	\$0	\$0	\$0	\$0	\$149,493	\$149,493										
	Aluminum Window , 4-0 X 6-0, Upper Floor Floor	B2021 Windows	All Floors	Replace B2021 Windows	25	9	231.00	EA	\$3,614.80	OP - Maintenance	Priority 4	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$835,018	\$0	\$835,018										
B2031	Aluminum 3'-0" X 7'-0"	B2031 Glazed Double Doors	Subterranean Building	Replace B2031 Glazed Double Doors	30	9	6.00	EA	\$4,335.51	IN - Beyond Rated Life	Priority 4	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$26,013	\$0	\$26,013										
B2031	Aluminum 3'-0" X 7'-0"	B2031 Aluminum 1/4" Tempered Glass	All Floors	B2031 Install ADA automatic door openers	15	0	25.00	EA	\$2,159.46	CC - Accessibility	Priority 1	\$53,987	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$53,987	\$0										
	Aluminum 3'-0" X 7'-0"	B2031 Alumium 1/4" Tempered Glass	All Floors	Replace B2031 Aluminum 1/4" Tempered Glass	30	9	25.00	EA	\$4,335.51	IN - Beyond Rated Life	Priority 4	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$108,388	\$0	\$108,388										
B30 ROOFING																																	
B3011	Built-Up Roofing, Total Roof	B3011 Built-up Roof	Roof	Replace B3011 Built-up Roof	20	0	248.00	SQ	\$1,861.46	IN - Beyond Rated Life	Priority 1	\$461,643	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$461,643	\$0										
Shell Subtotal												\$2,438,137	\$0	\$0	\$0	\$0	\$0	\$149,493	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$969,419	\$2,438,137	\$1,118,912

C. INTERIORS																							
C10 INTERIOR CONSTRUCTION																							
C1021	Fire Door, Wood, Flush, 60 Minute, Incl. Demo, with Hardware	C1021 Interior Door	All Floors	Replace C1021 Interior Door	25	8	34.00	EA	\$2,356.00	IN - Beyond Rated Life	Priority 4	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$80,104	\$0	\$80,104
C1035	Directional Signage	C1035 Directional Signage	All Floors	Replace C1035 Directional Signage	10	0	12.00	EA	\$316.20	CC - Accessibility	Priority 1	\$3,794	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,794	\$0
C30 INTERIOR FINISHES																							
C3005	C3005 ADA Renovations	C3005 ADA Restroom Renovations	All Floors	ADA Restroom Renovation	20	0	20.00	EA	\$29,760.00	CC - Accessibility	Priority 1	\$595,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$595,200	\$0
C3012	Plaster - Painted Smooth Finish	C3012 Painted plaster walls	Stairwells and elevator lobbies	C3012 Paint Interior Walls	10	0	13,500.00	SF	\$2.13	IN - Appearance	Priority 2	\$28,793	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$28,793	\$0
C3012	Drywall - Painted Finished Walls	C3012 Drywall, Painted Walls	All Floors	Paint interior drywall throughout building.	7	0	75,850.00	SF	\$1.91	IN - Appearance	Priority 3	\$144,843	\$0	\$0	\$0	\$0	\$0	\$0	\$144,843	\$0	\$0	\$144,843	\$144,843
C3025	Carpet, Standard Commercial, Medium Traffic	C3025 Carpet flooring	All Floors	Replace C3025 Carpet flooring	10	0	20,584.00	SY	\$96.61	IN - Appearance	Priority 2	\$1,988,530	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,988,530	\$0
C3032	Acoustical Tile With Exposed Grid System	C3032 Suspended Ceilings	All Floors	Replace C3032 Suspended Ceilings	20	0	2,052.00	CSF	\$1,201.56	IN - Appearance	Priority 2	\$2,465,601	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,465,601	\$0
Interiors Subtotal												\$5,226,761	\$0	\$0	\$0	\$0	\$0	\$144,843	\$80,104	\$0	\$5,226,761	\$224,947	

D. SERVICES																							
D10 CONVEYING SYSTEMS																							
D1011	Modernize Traction Elevator Controller and Signals	D1011 Overhead Traction Elevators, 2500 LB	All floors	D1011 Install car aprons that are greater than 21" long	15	0	2.00	EA	\$3,640.00	CC - Building Code	Priority 1	\$7,280	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$7,280	\$0
	Modernize Traction Elevator Controller and Signals	D1011 Overhead Traction Elevators, 2500 LB	All floors	D1011 Install door restrictors on both cars	15	0	2.00	EA	\$6,370.00	CC - Building Code	Priority 1	\$12,740	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$12,740	\$0
	Modernize Traction Elevator Controller and Signals	D1011 Overhead Traction Elevators, 2500 LB	All floors	D1011 Perform five year full load test	10	0	2.00	EA	\$5,460.00	CC - Building Code	Priority 1	\$10,920	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$10,920	\$0
	Modernize Traction Elevator Controller and Signals	D1011 Overhead Traction Elevators, 2500 LB	All floors	D1011 Provide new cab interiors with down light ceilings and LED light fixtures	20	0	2.00	EA	\$13,650.00	FN - Modernization	Priority 2	\$27,300	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$27,300	\$0
	Modernize Traction Elevator Controller and Signals	D1011 Overhead Traction Elevators, 2500 LB	All floors	D1011 Tune and adjust the elevators and correct all deferred maintenance items	15	0	2.00	EA	\$4,550.00	OP - Maintenance	Priority 2	\$9,100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$9,100	\$0
	Modernize Traction Elevator Controller and Signals	D1011 Overhead Traction Elevators, 2500 LB	All floors	Replace D1011 Overhead Traction Elevators, 2500 LB	30	1	2.00	EA	\$382,200.00	FN - Modernization	Priority 5	\$0	\$764,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$764,400
D20 PLUMBING																							
D2018	Drinking Fountain	D2018 ADA Drinking Fountain	All Floors	Replace D2018 ADA Drinking Fountain	10	0	10.00	EA	\$3,504.60	CC - Accessibility	Priority 1	\$35,046	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$35,046	\$0
D2023	Water Storage Tank 500 Gallon	D2023 Solar and Chiller Equipment (Abandoned)	Boiler Room	Demolish and remove solar storage tanks, absorption chiller, other equip	15	0	1.00	LS	\$165,200.00	FN - Obsolescence	Priority 1	\$165,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$165,200	\$0
D2023	Water Storage Tank 500 Gallon	D2023 Domestic Water Storage Tank 425 Gallons	Pump Room	Replace D2023 Domestic Water Storage Tank 425 Gallons	30	5	1.00	EA	\$10,517.06	IN - Beyond Rated Life	Priority 3	\$0	\$0	\$0	\$0	\$0	\$10,517	\$0	\$0	\$0	\$0	\$0	\$10,517
D2023	Hydronic Circulating Pump, 5 HP	D2023 Domestic Water Booster Pump Station	Pump Room	Replace D2023 Domestic Water Booster Pump Station	20	5	1.00	EA	\$42,642.94	IN - Beyond Rated Life	Priority 3	\$0	\$0	\$0	\$0	\$0	\$42,643	\$0	\$0	\$0	\$0	\$0	\$42,643
D2031	Cast Iron Pipe Up to 3"	D2031 Restroom Floor Drains	Throughout Facility	Replace D2031 Restroom Floor Drains	40	0	70.00	LF	\$331.30	OP - Maintenance	Priority 2	\$23,191	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$23,191	\$0
D30 HVAC																							
D3022.1	Circulation Pump, 7 to 10 HP	D3022 HVAC Heating Water Pumps 3-5 HP	Boiler Room	Replace D3022 HVAC Heating Water Pumps 3-5 HP	20	0	2.00	EA	\$18,877.33	FN - Capacity	Priority 1	\$37,755	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$37,755	\$0
D3022.1	Heating Water Distribution Pump 10 HP	D3022 HVAC Chilled Water Pumps 15 HP	Boiler Room	Replace D3022 HVAC Chilled Water Pumps 15 HP	20	0	2.00	EA	\$23,022.46	FN - Capacity	Priority 1	\$46,045	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$46,045	\$0
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	5	1.00	EA	\$16,497.34	IN - Beyond Rated Life	Priority 3	\$0	\$0	\$0	\$0	\$0	\$16,497	\$0	\$0	\$0	\$0	\$0	\$16,497
D3041.1	Central Ahu Fan Motor,	D3041 AHU Fan Motors, 7.5 HP	Utility Areas/Closets	Replace D3041 AHU Fan Motors, 7.5 HP	20	4	8.00	EA	\$4,960.00	IN - Beyond Rated Life	Priority 3	\$0	\$0	\$0	\$39,680	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$39,680
D3041.1	Central Ahu Fan Motor,	D3041 AHU Fan Motors, 20 HP	Utility Areas/Closets	Replace D3041 AHU Fan Motors, 20 HP	20	4	8.00	EA	\$8,928.00	IN - Beyond Rated Life	Priority 3	\$0	\$0	\$0	\$71,424	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$71,424
D3041.1	Air Handler 18,000-20,000 CFM	D3041 Air Handler 18,000-20,000 CFM	Subterranean Building	D3041 Replace/revise AHU condensate pans	15	0	2.00	EA	\$18,600.00	IN - Reliability	Priority 1	\$37,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$37,200	\$0
	Air Handler 18,000-20,000 CFM	D3041 Air Handler 18,000-20,000 CFM	Subterranean Building	Replace D3041 Air Handler 18,000-20,000 CFM	40	0	2.00	EA	\$35,811.55	FN - Capacity	Priority 1	\$71,623	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$71,623	\$0
D3041.1	Air Handler 4,000 to 8,000 CFM	D3041 Air Handler 4,000 to 8,000 CFM	Subterranean Building (Auditorium)	Replace D3041 Air Handler 4,000 to 8,000 CFM	40	0	1.00	EA	\$12,091.49	FN - Capacity	Priority 1	\$12,091	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$12,091	\$0
	Air Handler 8,000 to 12,000 CFM	D3041 Air Handler 10,000 to 13,000 CFM	Solar Building	D3041 Facility-wide HVAC upgrade to infrastructure	15	0	217,951.00	SF	\$7.44	FN - Capacity	Priority 1	\$1,621,555	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,621,555	\$0
D3041.1	Air Handler 8,000 to 12,000 CFM	D3041 Air Handler 10,000 to 13,000 CFM	Solar Building	Replace D3041 Air Handler 10,000 to 13,000 CFM	40	0	6.00	EA	\$16,151.50	FN - Capacity	Priority 1	\$96,909	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$96,909	\$0
	Vav Box , 270 to 600 CFM	D3041 VAV Boxes	Throughout Facility	Replace D3041 VAV Boxes	30	0	145.00	EA	\$2,496.72	FN - Capacity	Priority 1	\$362,024	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$362,024	\$0
D3042	Smoke evacuation fan (electrostatic,exhaust fan, smoke, exhaust 4.8 to 7.2 MCFM)	D3042 Smoke Evacuation System	Stairwells	Replace D3042 Smoke Evacuation System	15	0	3.00	EA	\$33,480.00	CC - Life Safety	Priority 1	\$100,440	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$100,440	\$0
D3042	Exhaust Fan 2000 CFM	D3042 Exhaust Fan 4500 CFM	Utility Areas/Closets	Replace D3042 Exhaust Fan 4500 CFM	20	0	4.00	EA	\$4,006.89	IN - Beyond Rated Life	Priority 1	\$16,028	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$16,028	\$0

10 YEAR EXPENDITURE FORECAST

Employment Development Department Annex
750-751 N Street
Sacramento

Useful Life¹

Estimated Useful Life
Remaining Useful Life

Plan Type²

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 ²	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			
D3043	Multi-pass shell and tube (Cast iron heads, 40 to 180 deg., steam 10 psi, 96 GPM)	D3043 Domestic Hot Water Heat Exchanger	Boiler Room	Replace D3043 Domestic Hot Water Heat Exchanger	20	8	1.00	EA	\$26,297.80	IN - Beyond Rated Life	Priority 4	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$26,298	\$0	\$26,298	
D3043	Multi-pass shell and tube (Cast iron heads, 40 to 180 deg., steam 10 psi, 96 GPM)	D3043 HVAC Heating Water Heat Exchanger	Boiler Room	Replace D3043 HVAC Heating Water Heat Exchanger	30	0	2.00	EA	\$31,257.80	IN - Beyond Rated Life	Priority 1	\$62,516	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$62,516	\$0
D3052	Computer Room A/C Units, Air Cooled 10-Ton	D3052 Computer Room A/C Unit, Chilled Water, 10-Ton	Computer/Server Room (Subterranean)	Replace D3052 Computer Room A/C Unit, Chilled Water, 10-Ton	20	5	1.00	EA	\$110,859.72	IN - Beyond Rated Life	Priority 3	\$0	\$0	\$0	\$0	\$0	\$110,860	\$0	\$0	\$0	\$0	\$0	\$0	\$110,860
D3063	Variable Frequency Drive, 20 HP Motor	D3063 Variable Frequency Drives	Throughout Facility	Replace D3063 Variable Frequency Drives	15	0	13.00	EA	\$9,810.88	FN - Modernization	Priority 1	\$127,541	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$127,541	\$0
D3068	Direct Digital Controls (DDC) Extensive	D3068 Direct Digital Controls (DDC)	Throughout Facility	D3068 Modify controls as part of facility-wide HVAC upgrade to infrastructure	20	0	217,951.00	SF	\$1.24	FN - Capacity	Priority 1	\$270,259	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$270,259	\$0
D40 FIRE PROTECTION SYSTEMS																								
D4011	Sprinkler Head	D4011 Wet-Pipe Fire Suppression System	Throughout Facility	Install facility-wide sprinkler system	25	0	217,951.00	SF	\$8.97	CC - Life Safety	Priority 1	\$1,954,585	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,954,585	\$0
D4012	Fire Pump Diesel 500 Gpm 27 HP	D4012 Electric Fire Pump, 500 GPM	Pump Room	Replace D4012 Electric Fire Pump, 500 GPM	25	0	1.00	EA	\$57,787.86	CC - Life Safety	Priority 1	\$57,788	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$57,788	\$0
D50 ELECTRICAL SYSTEMS																								
D5012	Switchgear, Mainframe, 1600 Amps	D5010 Switchgear, Mainframe, 4000 Amps	Main Electrical Room	Replace D5010 Switchgear, Mainframe, 4000 Amps	40	0	1.00	EA	\$17,846.98	FN - Capacity	Priority 1	\$17,847	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$17,847	\$0
D5012	Secondary Dry Transformer 75 kVA	D5012 Secondary Dry Transformer 75 kVA	Utility Areas/Closets	Replace D5012 Secondary Dry Transformer 75 kVA	40	0	8.00	EA	\$19,199.43	FN - Capacity	Priority 1	\$153,595	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$153,595	\$0
D5012	Secondary Dry Transformer 15 kVA	D5012 Secondary Dry Transformer 15 kVA	Utility Areas/Closets	Replace D5012 Secondary Dry Transformer 15 kVA	40	0	8.00	EA	\$8,285.58	FN - Capacity	Priority 1	\$66,285	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$66,285	\$0
D5012	Breaker Panel 225 Amps, 30 Circuits	D5012 Breaker Panel 225 Amps, 30 Circuits	Utility Areas/Closets	Replace D5012 Breaker Panel 225 Amps, 30 Circuits	40	0	36.00	EA	\$7,864.32	FN - Capacity	Priority 1	\$283,116	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$283,116	\$0
D5022	Exterior Wall Mt Light, 100 Watt	D5022 Exterior Wall Mt Light, 100 Watt	Building Exterior	Replace D5022 Exterior Wall Mt Light, 100 Watt	15	0	52.00	EA	\$1,079.61	OP - Maintenance	Priority 2	\$56,139	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$56,139	\$0
D5022	D5022 Lighting Equipment	D5022 Replace Lighting Fixtures	Office and corridor areas	Replace D5022 Replace Lighting Fixtures	25	0	2,052.00	Ea	\$401.20	FN - Modernization	Priority 1	\$823,262	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$823,262	\$0
D5037	Fire Alarm Panel	D5037 Fire Alarm Panel	Main Electrical Room	Replace D5037 Fire Alarm Panel	15	0	1.00	EA	\$30,680.00	CC - Life Safety	Priority 1	\$30,680	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$30,680	\$0
D5037	Fire Alarm System, Install New	D5037 Fire Alarm System	Throughout Facility	Replace D5037 Fire Alarm System	25	0	217,951.00	SF	\$3.54	CC - Life Safety	Priority 1	\$771,547	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$771,547	\$0
D5092	Transfer Switch	D5092 Emergency Transfer Switch	Utility Areas/Closets	Replace D5092 Emergency Transfer Switch	25	7	1.00	EA	\$10,613.06	CC - Life Safety	Priority 4	\$0	\$0	\$0	\$0	\$0	\$0	\$10,613	\$0	\$0	\$0	\$0	\$10,613	\$0
D5092	Diesel Generator 150 kW	D5092 Diesel Generator 125 kW	Utility Areas/Closets	Add secondary containment for day tank	15	0	1.00	I	\$8,260.00	EN - Air/ Water Quality	Priority 1	\$8,260	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$8,260	\$0
D5092	Diesel Generator 150 kW	D5092 Diesel Generator 125 kW	Utility Areas/Closets	Replace D5092 Diesel Generator 125 kW	25	7	1.00	EA	\$123,936.37	CC - Life Safety	Priority 4	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$123,936	\$0	\$0	\$0	\$123,936	\$0
Services Subtotal												\$7,375,867	\$764,400	\$0	\$0	\$111,104	\$180,517	\$0	\$134,549	\$26,298	\$0	\$7,375,867	\$1,216,868	

E. EQUIPMENT & FURNISHING																							
Equipment & Furnishing Subtotal												\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

F. SPECIAL CONSTRUCTION AND DEMOLITION																							
Special Construction And Demolition Subtotal												\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

G. BUILDING SITEWORK																								
G20 SITE IMPROVEMENTS																								
G2022	Seal Concrete Traffic Decks	G2022 Concrete Walks	Site	Replace G2022 Concrete Walks	10	0	350.00	SF	\$138.33	CC - Life Safety	Priority 1	\$48,417	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$48,417	\$0
G2031	Concrete Sidewalk	G2031 Concrete Pavement	Subterranean	Replace G2031 Concrete Pavement	25	0	250.00	SF	\$26.32	CC - Life Safety	Priority 1	\$6,581	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,581	\$0
G2035	G2035 Exterior Steps & Ramps	G2030 Pedestrian Paving	Exterior entries	Replace G2030 Pedestrian Paving	25	0	1.00	Lump Sum	\$500,000.00	CC - Accessibility	Priority 1	\$500,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$500,000	\$0
G2035	Cast-In-Place Concrete Stair	G2035 Concrete Stair & Ramps	Subterranean	Replace G2035 Concrete Stair & Ramps	40	0	2,280.00	SF	\$17.09	CC - Life Safety	Priority 1	\$38,959	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$38,959	\$0
Building Sitework Subtotal												\$593,957	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$593,957	\$0	

Z. GENERAL																							
General Subtotal												\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Expenditure Totals per Year	\$15,634,721	\$764,400	\$0	\$0	\$111,104	\$330,010	\$0	\$279,393	\$106,402	\$969,419	\$15,634,721	\$2,560,728
Total Cost (Inflated @ 5% per Yr.)	\$15,634,721	\$802,620	\$0	\$0	\$135,048	\$421,186	\$0	\$393,133	\$157,204	\$1,503,887	Total *	\$18,195,449

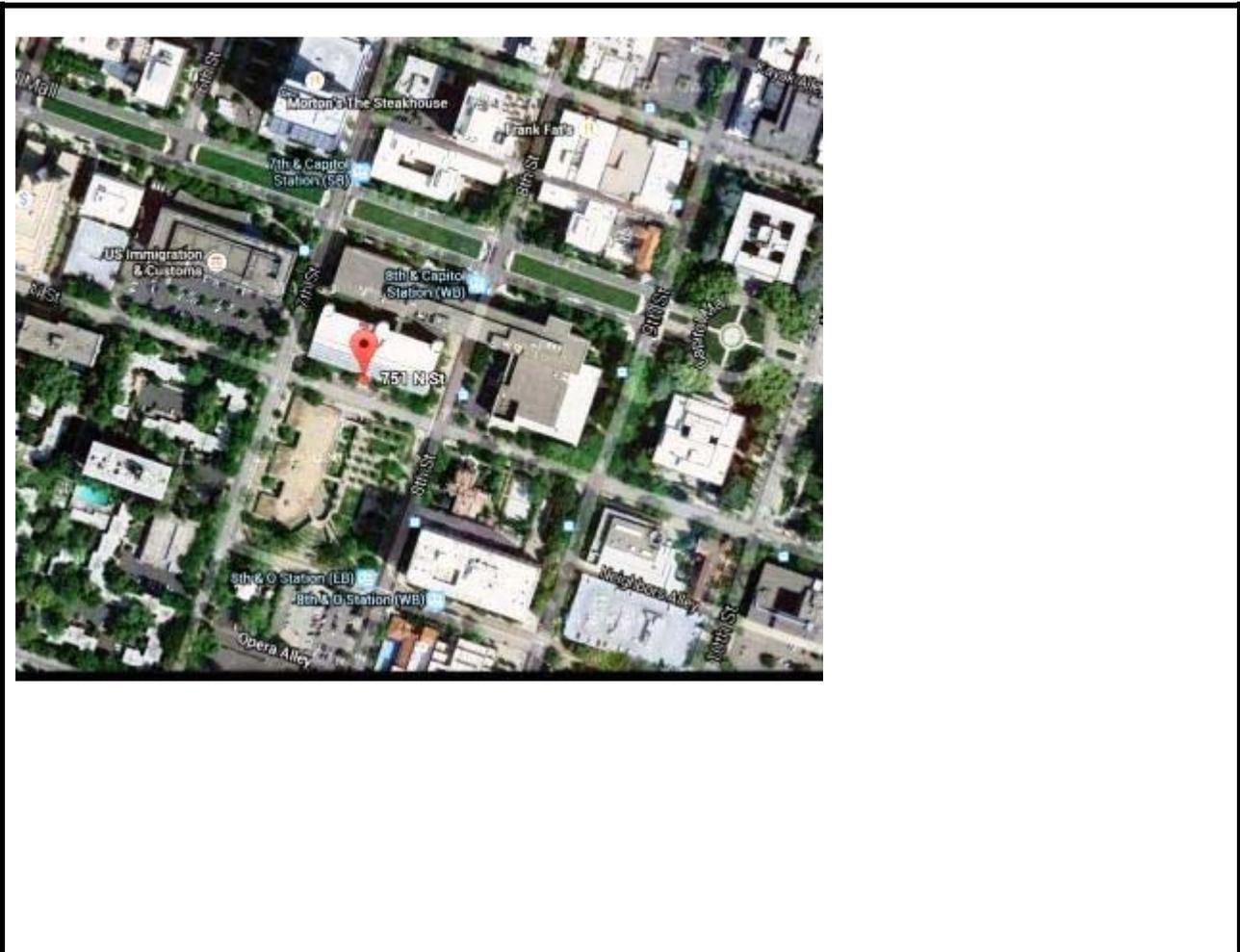
* - Present Value Currency

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 \$94,747,144

APPENDIX H: SUPPORTING DOCUMENTATION



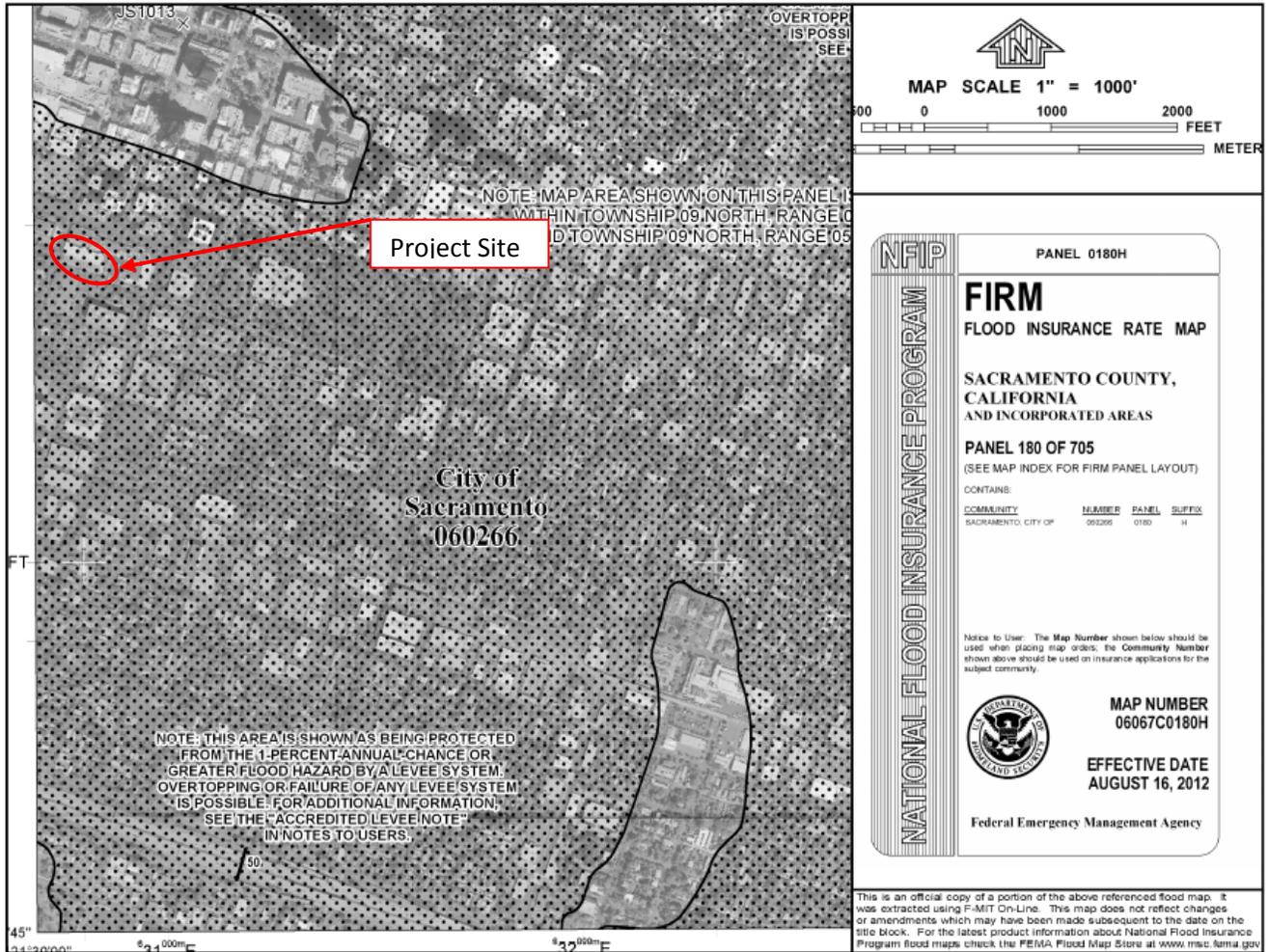
Source:
The north arrow indicator is an approximation of 0° North.

Project Number:
111326.14R.004.305
Project Name:
Employment Development Department Annex



On-Site Date:
December 8 and 9, 2014

Flood Map



	<p>SOURCE: FEMA</p>	<p>Project Number: 111326.14R-004.305</p>
		<p>Project Name: Employment Development Department Annex</p>
<p>Not drawn to scale. The north arrow indicator is an approximation of 0° North.</p>		

Estimate of Structures Cost Using Marshall Cost Systems			
East End Complex Block 225 (049)			
Site Calculation			
Estimate of Unusual Land Improvements Cost (Estimators Data Cost Base):			
Description	Cost	Estimated \$/ SF	Unusual Land Total
			\$0
Total			\$0
Estimate of Unusual Land Improvements Cost (Estimators Cost Data Base):			
Estimate of Structure Cost :			
Building Type	Cost per SF	Number of SF	Building TypeTotal
main building	\$318.23	502,419	\$159,886,684
	\$0.00	0	\$0
	\$0.00	0	\$0
	\$0.00	0	\$0
	\$0.00	0	\$0
	Total	502,419	\$159,886,684
Estimate of Adjustments for Fees:			
Description	% increase		
Soft Costs	25.00%		
	0.00%		
	0.00%		
Total Fees/ Interest included in Marshall System			25.00%
Total Structure Estimate:			
Description	Unit	Fee Adjust	Adjusted Totals
main building	\$159,886,684	25.00%	\$199,858,355
	\$0	25.00%	\$0
	\$0	25.00%	\$0
	\$0	25.00%	\$0
	\$0	25.00%	\$0
Cost Per SF	\$397.79	Total Estimate	\$199,858,355

Expected Useful Life (EUL) Table	
SITE SYSTEM ITEMS	
ROADWAYS/ PARKING/ WALKWAYS	
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
STORM SEWER, DRAINAGE AND EROSION CONTROL	
Catch basins, inlets, culverts	50
Earthwork, grading and erosion control	50
Storm drain lines	40
LANDSCAPING, TOPOGRAPHY AND FENCING	
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
SITE SYSTEM ITEMS	
GENERAL SITE IMPROVEMENTS	
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

GENERAL SITE IMPROVEMENTS	
Tennis court Surface (acrylic emulsion)	10
Tot-lot (playground equipment)	10
SITE SANITARY AND WATER	
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
SITE MECHANICAL / ELECTRICAL	
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
BUILDING ARCHITECTURAL ITEMS	
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+

BUILDING ARCHITECTURAL ITEMS	
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
EXTERIOR CLADDING	
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

INTERIORS	
Public bathroom accessories	7
Public bathroom fixtures	15
Refrigerator, common area	10
BUILDING ARCHTECTURAL ITEMS	
ROOF COVERINGS	
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+
BOILER ROOM EQUIPMENT	
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
BOILERS	
Oil/ gas/ dual fired, high MBH	40
Gas fired atmospheric	25
Electric	20

BUILDING HEATING WATER TEMPERATURE CONTROLS	
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
CONDENSATE, FEEDWATER, WATER	
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
ELECTRICAL & ELEVATOR	
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
EMERGENCY ALARM AND FIRE PROTECTION	
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

EMERGENCY ALARM AND FIRE PROTECTION	
Fuel Transfer System	25
Gas Distribution	50+
Heat Sensors	15
Heat Exchanger	35
Heating Risers and Distribution	50+
MECHANICAL – ELECTRIC – PLUMBING ITEMS	
Heating Water Circulating Pumps	by size
Heating Water Controller	15
Hot and Cold Water Distribution	50
HVAC	
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
POWER VENTILATOR	
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
SUMP PUMP	
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: Employment Development Department Annex

Date: 12/9/2014

Project Number: 111326.14R-004.305

EMG Abbreviated Accessibility Checklist					
	Building History	Yes	No	N/A	Comments
1.	Has the management previously completed an ADA review?	✓			2009
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?		✓		There is only two EDD executive parking spaces at loading dock area
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?			✓	
	Parking	Yes	No	N/A	Comments
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?			✓	
Ramps		Yes	No	N/A	Comments
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?	✓			
Entrances/Exits		Yes	No	N/A	Comments
1.	Is the main accessible entrance doorway at least 32 inches wide?	✓			EDD (013), Annex (Solar & Subterranean) use only by EDD employees, no Public Access. Public Access is only from EDD (025)
2.	If the main entrance is inaccessible, are there alternate accessible entrances?			✓	
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?	✓			
Paths of Travel		Yes	No	N/A	Comments
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)?	✓			

EMG Abbreviated Accessibility Checklist					
	Paths of Travel	Yes	No	N/A	Comments
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?		✓		
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)?	✓			

EMG Abbreviated Accessibility Checklist					
5.	Are public restrooms large enough to accommodate a wheelchair turnaround (60" turning diameter)?	✓			
	Restrooms	Yes	No	N/A	Comments
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?	✓			
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

Property Condition Assessment: Pre-Survey Questionnaire

This questionnaire should be completed by someone knowledgeable about the subject property. The completed form should be presented to EMG's Field Observer on the day of the site visit. If the form is not completed, EMG's Project Manager will require additional time during the on-site visit with such a knowledgeable person in order to complete the questionnaire. During the site visit, EMG's Field Observer may ask for details associated with selected questions. This questionnaire will be utilized as an exhibit in EMG's final Property Condition Report.

Name of person completing questionnaire: Kevin Mayugba

Building name: Employment Development Department Annex (013)

What is your association with this property? Property Manager

What is the length of your association with this property? 1 year and half

Phone number: 916-653-9964

Please provide information about inspections relating to the following items

Inspections	Date Last Inspected	List Name & Contact for Maintenance Contractor, if any.
1. Elevators	Feb 2015	Mark Sharp, ThyssenKrupp, 916-376-8700
2. HVAC, Mechanical, Electric, Plumbing	Feb 2015	
3. Life-Safety/Fire	Feb 2015	Sandra Louie, Battalion One, 510-725-5956.
4. Roofs	Feb 2015	

5. List any major capital improvements within the last three years.

136943 restroom fixture upgrade.

6. Are there any other major capital expenditures planned in the near term?

No

7. What is the age of the roof(s)?

15 years

8. What building systems (HVAC, roof, interior/exterior finishes, paving etc.) are the responsibilities of contractors to repair or replace?

No

Mark the column corresponding to the appropriate response. Please provide additional details in the Comments column, or backup documentation for any Yes responses. Note: N/A indicates "Not Applicable", Unk indicates "Unknown"

Question	Y	N	N/A	Unk	Comments
9. Are there any unresolved building, or fire code issues?		x			
10. Are there any "down" or unusable units?		x			
11. Are there any problems with erosion, storm-water drainage or areas of paving that do not drain?		x			

Question	Y	N	N/A	Unk	Comments
12. Is the property served by a private water well?		x			
13. Is the property served by a private septic system or other waste treatment systems?		x			
14. Are there any problems with foundations or structures?	x				South window wall floors 1-6 leaks.
15. Is there any water infiltration in basements or crawl spaces?		x			
16. Are there any wall, or window leaks?	x				South window wall, floors 1-6 leaks.
17. Are there any roof leaks?		x			
18. Is the roofing covered by a warranty or bond?		x			
19. Are there any poorly insulated areas?		x			
20. Is Fire Retardant Treated (FRT) plywood used?		x			
21. Is exterior insulation and finish system (EIFS) or a synthetic stucco finish used?		x			
22. Are there any problems with the utilities, such as inadequate capacities?		x			
23. Are there any problems with the landscape irrigation systems?		x			
24. Has a termite/wood boring insect inspection been performed within the last year?		x			
25. Do any of the HVAC systems use R-11, 12, or 22 refrigerants?		x			
26. Has any part of the property ever contained visible suspect mold growth?			x		
27. Is there a mold Operations and Maintenance Plan?			x		
28. Have there been indoor air quality or mold related complaints from tenants?			x		

Question	Y	N	N/A	Unk	Comments
29. Is polybutylene piping used?		x			
30. Are there any plumbing leaks or water pressure problems?	x				Some of the floor drains in the restrooms are compromised.
31. Are there any leaks or pressure problems with natural gas service?		x			
32. Does any part of the electrical system use aluminum wiring?		x			
33. Are there transformers inside the building?	x				
34. Do any Commercial units have less than 200-Amp service?				x	
35. Are there any recalled fire sprinkler heads (Star, GEM, Central, Omega)?		x			
36. Is there any pending litigation concerning the property?				x	
37. Has the State previously completed an ADA or 'Title 24 review?	x				
38. Have any ADA or Title 24 improvements been made to the property?		x			
39. Does a Barrier Removal Plan exist for the property?				x	
40. Has the Barrier Removal Plan been approved by a credentialed third party?				x	
41. Have there been any ADA or Title 24 related complaints?		x			
42. Have there been any complaints about the elevators or wait times?	x				
43. Are there any problems with exterior lighting?		x			
44. Are there any other significant issues/hazards with the property?		x			
45. Are there any unresolved construction defects at the property?		x			

APPENDIX J: ELEVATOR REPORT



EDD Annex
751 "N" Street
Sacramento, CA

Due Diligence
Elevator Report

December 14, 2014

Prepared for:

Ms. Karla Rodriquez
EMG Corporation
Hunt Valley, MD 21212

Prepared by:

Mr. James Young
Project Manager
Architectural Elevator Consulting, LLC
1326 5th Ave., Suite 630
Seattle, WA 98101



TABLE OF CONTENTS

<i>Section I - Executive Summary</i>	_____	
A. Introduction	_____	I.1
B. Elevator Layout	_____	I.1
C. Condition/Components	_____	I.1
D. Maintenance and Performance	_____	I.1
E. Code Review: ADA/Retro-active codes	_____	I.2
F. Recommendation	_____	I.2
<i>Section II Component Review</i>	_____	
A. Machine Room	_____	II.1
B. Hoistway	_____	II.2
C. Car top	_____	II.2
D. Signal Fixtures	_____	II.3
E. Cab Interiors	_____	II.4
<i>Section III – Budget Pricing</i>	_____	III
Appendix A - Americans with Disability Act (ADA) and California T24		
Appendix B - A17.3 Retro-active Code Requirements		
Appendix C – Maintenance and Performance		

Section I: Executive Summary

A. Introduction

On December 3, 2014 James Young of Architectural Elevator Consulting, LLC (AEC) surveyed all the vertical transportation systems at the EDD Annex, 751 “N” Street, Sacramento, CA. There are two (2) traction elevators. The elevators provide vertical transportation to the office floors on levels 1-6 and the S level. 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 for safety devices such as door restrictors, electric edges and emergency phones.

Both of the elevators were manufactured and installed by U.S. Elevator Company during the original building construction in 1981. The elevators have the original Hollister Whitney machines, U.S. Controllers and Governors. A majority of the equipment is original and in need of a modernization. The only upgrades over the years have been new signal fixtures in the car and hall and new electric edges.

During our survey we noted that the elevators were being maintained in below average condition by ThyssenKrupp Elevator Company. Housekeeping in the machine rooms and car tops needs to be improved. Car and door performance is below average and should be improved. The performance needs to be adjusted to achieve the designed times and speeds.

B. Elevator Layout

The office building has one set of elevators that are located side by side and work together as a duplex system. Both elevators have fast and efficient center opening doors and are rated for 2,500 lbs capacity. The speeds are 250 Feet per Minute (FPM). The number and size of elevators appear to be adequate but the speed is a little on the slow side.

Elevator Summary				
Elevator Bank	Elevator Speed	Floors Served	Capacity	Door Type
Passenger Cars	250 FPM	S, 1-6	2,500 lbs.	Center

C. Condition

Most the major components of the elevators were found to be in fair condition but showing their age. U.S. elevator equipment is known to be substandard when compared with other major brands. A full modernization is recommended in the next 1 to 3 years. 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 Company. The level of maintenance was noted to be fair to poor. Oil is leaking from the machines and the housekeeping for the machine room, car tops and pits needs to be improved. The performance was observed to be below the designed times and speeds. This needs to be remedied. 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:

There are several codes affecting existing elevators in the State of California. 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 elevators meet most ADA and California Title 24 requirements. The sizes of the passenger elevators meet ADA for existing elevators and are within a few inches of meeting 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. Both elevators are in full 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 most of these codes. The following is a list of items missing:
 - a. Install door restrictors. None exist.
 - b. Install car aprons that are at least 21” long. The current ones are only 12”
 - c. Reduce door closing pressure on Car 1 to below 30 lbs.
 - d. Provide rope data tag for Car 1.
3. **Seismic:** The elevators were installed per seismic code adopted at the time in the State of California. The elevators have a seismic switch in the machine room, ring and string derailment, and seismic retainers. The car and counterweight guide rails do not have seismic fish plates, but these are not required retroactively and considering the slow speed of the elevators they are a low priority. No seismic work is needed at this time.

F. Recommendation:

We recommend both elevators be fully modernized in the next 1 to 3 years. In the immediate future door restrictors and car aprons should be installed in compliance with A17.3. We also recommend five year full load tests. While tests are not required on Group II traction elevators, it is highly recommended that they be performed. The elevators should be adjusted for optimum performance.

Section II : Component Review

A. MACHINE ROOM:

Controllers:

The controllers were manufactured and installed U.S. Elevator when the elevators were installed. The controllers use a combination of relays and solid state boards that are now obsolete and have reached the end of their serviceable life. We recommend new solid state controllers with energy efficient Variable Frequency (VF) drives.



Hoist Machines:

The elevators have geared machines that were manufactured by Hollister Whitney. The machines are in fair condition and have D.C. hoist motors that should be upgraded to A.C. hoist motors when the elevators are modernized.



Motor Generator Set:

Both elevators have the original motor generator sets that convert the incoming AC power to DC. We recommend these be removed and new AC hoist motors installed with energy efficient VF drives.



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 drywall and some concrete.

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 for are poured concrete with sump areas and metal grating. The pits were found to be dry by fairly dirty.

C. CAR TOP:

Door Operator:

The door operators are GAL MOML which are known to be high quality but are over 30 years old and worn out. The door operation was noted to be fair with room for improvement. Neither of the elevators had door restrictors. We recommend new GAL MOVFR closed loop door operators on both cars with door restrictors.



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, but the U.S. rollers have very little adjustments and are not spring loaded. We recommend new spring loaded roller guides when the elevators are modernized.



D. SIGNAL FIXTURES:

Car Operating Panels:

Both the elevators have the newer Car Operating Panels (COP's) installed in the last 10 to 15 years. The panels are in good condition meet ADA and T24 and do not need any work at this time. When the elevators are modernized it will most likely be more cost effective to replace the panels with new.



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 car lanterns illuminate and sound for the waiting passengers. The existing 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. These were all noted to be in good condition and appear to have been updated 10 to 15 years ago.



E. CAB INTERIOR:

Wall Finish:

The existing cab interiors are likely original and look very dated. The side and back wall have code required handrails that are in compliance with Title 24 California code.



Ceilings:

The cabs have T frames with translucent panels. The light fixtures should be updated down light ceilings with energy efficient LED's to improve aesthetics and save energy.



Vertical Transportation

EDD Annex - 751 "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	Install door restrictors on both cars	1	2	EA	\$3,500.00	\$7,000					\$7,000
2	Install car aprons that are greates than 21" long.	1	2	EA	\$2,000.00	\$4,000					\$4,000
3	Fully modernize both elevators with new controllers, VF drives, new closed loop door operators and new signal fixtures.	4	2	EA	\$210,000.00			\$420,000			\$420,000
4	Provide new cab interiors with down light ceilings and energy effiicent LED light fixtures.	3	2	EA	\$7,500.00			\$15,000			\$15,000
5	Tune and adjust the elevators and correct all deferred maintenace items.	2	2	EA	\$2,500.00		\$5,000				\$5,000
6	Perform five year full load tests. They do not appear to have been tested since installed in 1981.	1	2	EA	\$3,000.00	\$6,000					\$6,000
7				EA							\$0
8				EA							\$0
9				EA							\$0
10				EA							\$0
11											
12											
Subtotal						\$17,000	\$5,000	\$435,000	\$0	\$0	\$457,000
		1	\$17,000	Code and Safety							
		2	\$5,000	Deferred Maintenance & Repair							
		3	\$15,000	Capital Expenditure							
		4	\$420,000	Modernization / Improvements							
		5	\$457,000	Total							

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
		Car 1 & 2
	GENERAL	
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
	AUTOMATIC OPERATION	
4.10.2	Elevators must be Automatic.	Yes
4.10.2	Self-leveling to within 1/2 in.	Yes
	HALL CALL BUTTONS	
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. (T24 must be raised)	Yes
4.10.3	Objects mounted beneath hall buttons not to project into the lobby more than 4 in.	Yes
	HALL or CAR LANTERNS	
4.10.4	Visible and audible signals at each hoistway entrance to indicate which car is responding to the call.	Yes has 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
	HOISTWAY ENTRANCES	
4.10.5	Raised and Braille floor designations are required on both door jambs. Permanently applied plates are acceptable. (T24 must be to the left)	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
	DOOR PROTECTIVE & REOPENING DEVICES	
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
		Car 1 & 2
	DOOR AND SIGNAL TIMING	
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
	DOOR DELAY FOR CAR CALLS	
4.10.8	Doors to remain open for a minimum of 3.0 seconds in response to car calls.	Yes
	FLOOR PLAN NEW ELEVATOR	
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	No, but only misses by a few inches.
	FLOOR PLAN EXISTING ELEVATOR	
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 34")	Yes
	FLOOR SURFACES	
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
	ILLUMINATION LEVELS	
4.10.11	Five foot-candles of illumination to be provided at car controls, platform and at sill.	Yes
	CAR CONTROLS	
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
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

Appendix A
ADA/California T24 ELEVATOR CHECKLIST

ADA	Item	Complies Yes/No/N/A
		Car 1 & 2
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
	CAR POSITION INDICATORS	
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
	EMERGENCY COMMUNICATIONS	
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.	N/A
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.	N/A
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
2.1	HOISTWAYS	
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)	Yes
2.2	MACHINE ROOMS AND MACHINERY SPACES	
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- exhaust
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
2.3	PITS	
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
2.4	CLEARANCES AND RUNBYS	
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
2.5	PROTECTION OF SPACES BELOW HOISTWAYS	
2.5	Counterweight safeties required	N/A
2.6	HOISTWAY ENTRANCES	
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)	Yes
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
2.7	HOISTWAY DOOR LOCKING DEVICES, PARKING, DEVICES, AND ACCESS	
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)	Yes
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.)	No-None
2.7.5	Hoistway Emergency Door Contacts (Positively opened)	Yes
2.8	POWER OPERATION OF DOORS AND GATES	
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)	No-1 Yes -2
2.8.2	Reopening Device for Power-Operated Car Doors or Gates (Can be rendered inoperative if less then 2.5ft/lb)	Yes

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

A17.3	Code Item	Cars: 1 & 2
	Part III	
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
3.3	CAR FRAMES AND PLATFORMS	
3.3.1	Car Platforms (Cover entire area)	Yes
3.3.2	Platform Guards (Aprons) (Vertical face at least 21”, 60-75deg, withstand 150#)	No-12”
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
3.4	CAR ENCLOSURES	
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 then 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
3.5	SAFTIES	
3.5.1	Car Safeties (Every car must have a safety)	Yes
3.5.2	Counterweight Safeties (If occupied space below)	N/A
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” Safeties-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
3.6	SPEED GOVERNORS	
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
3.7	CAPACITY AND LOADING	
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 then 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
3.8	DRIVING MACHINES AND SHEAVES	
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
3.9	TERMINAL STOPPING DEVICES	
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
3.10	OPERATING DEVICES AND CONTROL EQUIPMENT	

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

A17.3	Code Item	Cars: 1 & 2
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)	N/A
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	Yes
	(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	Yes
	(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-keyed
	(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
3.11	EMERGENCY OPERATION AND SIGNALING DEVICES	
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
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
3.12	SUSPENSION MEANS AND THEIR CONNECTIONS	
3.12.1	Suspension Means(Must be wire rope made of iron or steel- Elevator ropes only)	Yes
3.12.2	Rope Data Tag	No-1 Yes-2
3.12.3	Factor of Safety ($f = S \times N / W$ 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 than 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

	PERFORMANCE TIMES	Design	Car1	Car 2
7.1	Door Open Time	1.6	2.0	2.0
7.2	Door Close Time	2.4	2.8	3.3
7.3	Floor to Floor Up (18 to 19)	9.7	11.4	12.5
9.6	Floor to Floor Down (19 to 18)	9.7	11.5	12.2
7.5	Full Speed Up	250 FPM	242	215
7.6	Full Speed Down	250 FPM	229	215
7.7	Jerk Rate Up	< 7.0	10.7	10.8
7.8	Jerk Rate Down	< 7.0	11.8	14.1
7.9	Power Closing of Door (Pressure Gauge)	<30lbs	35 lbs.	27 lbs.
7.10	Interrupted Ray	.5sec	1.5	1.5
7.11	Car Dwell Time	3.0	5.9	6.1
7.12	Hall Call Dwell Time	5.0	6.3	5.3
7.13	Hall/Car Lantern Time	8.0	6.3	5.3
7.14	Nudging	20.0	>20 sec	>20 sec
7.15	Test Emergency Phone	Yes	DNC	DNC

	Car 1
1.1	No annual or five year testing tags
1.2	Controllers are dusty- clean
1.3	Car tops are dirty
1.4	Ride quality is poor- car shakes in the up and down directions
1.5	Abrupt acceleration and deceleration resulting in an excessive jerk rate- adjust to achieve smooth operation
1.6	Eliminate door pre-opening- door should not open prior to the elevator stopping
1.7	Car doors slam shut- adjust
1.8	Pit is very dirty : trash and debris
1.9	Door opening and closing times as slow- adjust to meet design times
1.10	Floor to floor times are slow- adjust to meet design times
1.11	Full speed up and down are slow- adjust to meet design speeds
1.12	Excessive door closing pressure-adjust to under 30lbs.



Prepared by

EMG
222 Schilling Circle, Suite 275
Hunt Valley, Maryland 21031
800.733.0660
410.785.6220 (fax)
www.emgcorp.com

EMG Contact

Matthew Anderson
Program Manager
800.799.0660

EMG Project No.

111326.14R.004.305



Your partner in real estate lifecycle planning and management.
800.733.0660 | emgcorp.com

