



Paul Bonderson Building (016)

901 "P" 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	21
APPENDIX C: CERTIFICATION.....	66
APPENDIX D: PHOTOS.....	68
APPENDIX E: TERMINOLOGY AND ABBREVIATIONS.....	88
APPENDIX F: BUILDING FACT SHEET	94
APPENDIX G: COST TABLES.....	98
APPENDIX H: SUPPORTING DOCUMENTATION.....	102
APPENDIX I: PRE-SURVEY QUESTIONNAIRE.....	112
APPENDIX J: ELEVATOR REPORT	115

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EXECUTIVE SUMMARY

BACKGROUND

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

The DGS portfolio comprises nearly 17 million gross square feet (GSF) of state-owned office facilities statewide, contained within 54 general-purpose state-owned office building sites. The FCA inventories and evaluates each of the DGS general purpose office buildings to benchmark current condition and establish a replacement value. This FCA assesses the infrastructure conditions for the Paul Bonderson Building (016).

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 Paul Bonderson Building (016) 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 Paul Bonderson Building (016) on November 19 and 20, 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	\$47,893,436
Immediate Repair Costs (12 months)	\$10,816,467
1-5 Year Capital Needs	\$378,119
6-10 Year Capital Needs	\$3,566,104
Total 10-Year Capital Reserve Needs	\$14,760,690

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

Current Year FCI

$$\text{Current FCI} = \frac{\$10,816,467}{\$47,893,436}$$

Ten-Year FCI

$$\text{Ten-Year FCI} = \frac{\$14,760,690}{\$47,893,436}$$

Current Year FCI	Ten-Year FCI
22.58 % = <i>Poor Condition</i>	30.82 % = <i>Poor Condition</i>

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

- The stucco and exterior wall materials are cracking, and need caulking and repairs.
- Interior finish replacements, including painting, new flooring, and acoustic ceiling tiles are recommended.
- Replacement of rooftop air handlers, and air distribution and control systems are recommended, due to their age and condition.
- Installation of wet-pipe fire sprinkler system is recommended for life safety.

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

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INTRODUCTION

BUILDING BACKGROUND

The Paul Bonderson Building (016) was designed by MBT Associates of San Francisco. Construction was completed in 1983. The building was a product of 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 also set out to create positive examples of State office buildings as models of energy efficiency and humane working environments. Four buildings, EDD Annex (Solar – Subterranean Building) (013), Gregory Bateson Building (011), Paul Bonderson Building (016), and Warren-Alquist State Energy Building (008), were completed under the Brown administration Capitol Area Plan.

The Paul Bonderson Building (016) consists of a narrow four-story "L" shaped structure at 901 P Street, Sacramento. The building wraps the south and west sides of a parking structure, with a 60-foot wide courtyard between the two. The building is steel framed with concrete filled floor decks with aluminum-framed single-glazed windows, and cement plaster wall finish. A five-foot recess on the street side exterior provides a zone for fixed shading devices. Natural lighting is the primary energy conservation feature of the building.

The gross building area is 131,486 SF with a net usable area of 112,535 SF. The ratio of net usable to gross building area is 85.5 percent. The occupant capacity is 518.

BUILDING DESCRIPTION

The building construction system is steel framed on concrete slab, with spread footings and pile caps. The roof structure is a combination of flat cast-in-place concrete with polyvinyl chloride single-ply roofing, and steep roofing with standing seam metal panels on the west side.

The exterior walls and soffits are stucco-plaster. The south and west façades have seamed metal cladding to enclose duct work. Windows are metal framed in ribbon configuration.

The building interior has painted drywall walls. The floor finishes consist of ceramic tile, commercial carpet tiles, and vinyl composition tiles. The ceilings are finished with acoustic tiles.

Steam and chilled water are provided by the DGS Central Utility Plant. The chilled and heated water are looped around the building to nine rooftop air handling units, and the conditioned air from the air handling units supplies variable air volume boxes within the office spaces. The interior variable air

volume boxes provide conditioned air and ventilation, only while the perimeter variable air volume boxes are additionally supplied with heating water for re-heat capability. The heating water also supplies some fan coil units and perimeter hydronic radiators adjacent to lobby storefront glazing.

Domestic hot water is provided from the steam loop, in which a separate heat exchanger is utilized.

Most of the electrical infrastructure within the building is original, including the emergency generator and transfer switch.

The building is not protected by fire suppression. Protection is currently limited to wet-pipe hose cabinets, dry standpipes, and alarm system.

The building covers nearly the entire site and the only landscaping is perimeter planters. Flower beds are located throughout the site. Landscaped areas are irrigated by drip irrigation system.

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

Project Statistics

Item	Description
Project Name	Paul Bonderson Building
Building ID	016
Property Type	Administration
Year Built	1983
Number of Stories	4
Occupied	Yes
Land Area (acres)	2.45
Gross Square Feet (GSF)	131,486

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 Paul Bonderson Building (016) on November 19 and 20, 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 1.

Asset Component Category

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

Functional Asset Categories

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

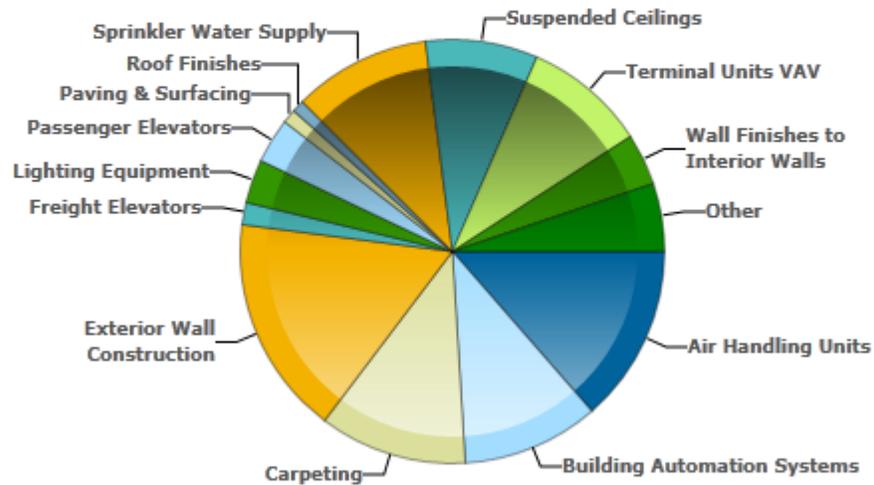
PRIORITY RATIO

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

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

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

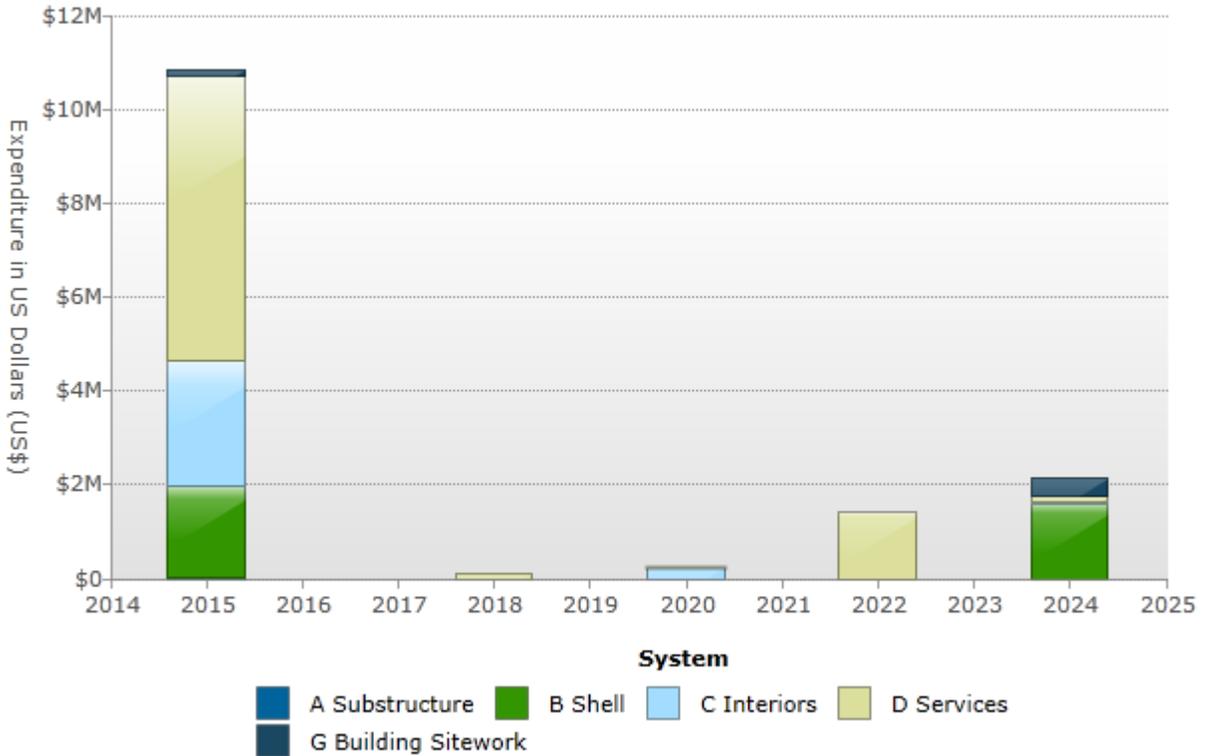
Distribution of Immediate Needs by Building System



Level	Building System	Estimated Cost
A1013	Perimeter Drainage & Insulation	\$7,362
B2011	Exterior Wall Construction	\$1,809,811
B2031	Glazed Doors & Entrances	\$15,047
B2032	Solid Exterior Doors	\$24,593
B3011	Roof Finishes	\$101,134
C2011	Regular Stairs	\$58,361
C3012	Wall Finishes to Interior Walls	\$426,560
C3024	Flooring	\$66,035
C3025	Carpeting	\$1,218,776
C3032	Suspended Ceilings	\$925,201
D1011	Passenger Elevators	\$370,188
D1012	Freight Elevators	\$183,456
D2011	Water Closets	\$21,744
D2012	Urinals	\$6,360

Level	Building System	Estimated Cost
D2013	Lavatories	\$39,648
D2023	Domestic Water Supply Equipment	\$59,882
D3022	Circulating Pumps	\$87,343
D3023	Auxiliary Equipment	\$16,497
D3041	Air Handling Units	\$1,468,740
D3041	Terminal Units VAV	\$1,010,464
D3042	Exhaust Ventilation Systems	\$72,918
D3043	Steam Distribution Systems	\$31,258
D3068	Building Automation Systems	\$1,130,449
D4011	Sprinkler Water Supply	\$1,134,073
D5022	Lighting Equipment	\$360,698
D5092	Emergency Light & Power Systems	\$53,830
G2031	Paving & Surfacing	\$116,039
	Total	\$10,816,467

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	\$7,362	\$1,950,585	\$2,694,933	\$6,047,548	\$0	\$0	\$116,039	\$10,816,467
2018	\$0	\$0	\$0	\$125,580	\$0	\$0	\$0	\$125,580
2020	\$0	\$0	\$243,213	\$9,327	\$0	\$0	\$0	\$252,539
2022	\$0	\$0	\$0	\$1,425,341	\$0	\$0	\$0	\$1,425,341
2024	\$0	\$1,580,248	\$59,193	\$113,278	\$0	\$0	\$388,044	\$2,140,764
Total	\$7,362	\$3,530,833	\$2,997,339	\$7,721,073	\$0	\$0	\$504,084	\$14,760,690

CURRENT REPLACEMENT VALUE

The Current Replacement Value has been determined as \$47,893,436 for the Paul Bonderson Building (016). 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
131,486 GSF	\$364	\$47,893,436

FACILITY CONDITION INDEX

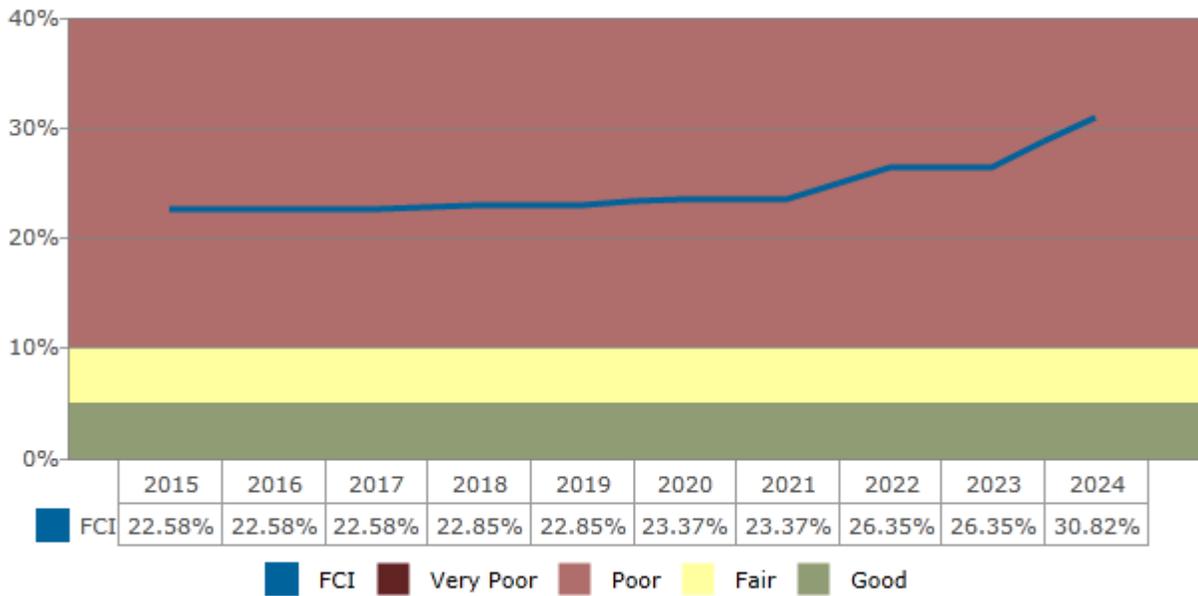
The FCI¹ is an indication of a building’s current and future overall condition. According to industry standards an FCI ratio of 65 percent, or the “rule of two-thirds,” is the threshold for identifying potential candidates for replacement or divestment.² Once the FCI ratio reaches 65 percent, or roughly 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
B2031 Glazed Doors & Entrances	B2031 ADA 12V DC Actuator Buttons
Condition	Poor
Qty / UOM	6 / EA
RUL (years)	0
Location	First Floor

Item	Description
C2011 Regular Stairs	C2011 Cane Rail Below Stair
Condition	Poor
Qty / UOM	320 / SF
RUL (years)	0
Location	First Floor
Stairs Frame	Steel
Stair Riser	Closed
Stair Soffit Finishes	Drywall
Stair Handrail Finishes	Polished Metal

Recommendations:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
B2031	Replace B2031 ADA 12V DC Actuator Buttons	6.0 - EA	2507.8	CC - Accessibility	Priority 1	2015	15,047
C2011	Adding Guard Rail	320.0 - SF	182.4	CC - Accessibility	Priority 1	2015	58,361

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D1011	Add floor passing chimes and repair hall lanterns, move handrails and change braille	2.0 - EA	3640.0	CC - Accessibility	Priority 1	2015	7,280
D1012	Add floor passing chimes and repair hall lanterns, move handrails and change braille	1.0 - EA	3640.0	CC - Accessibility	Priority 1	2015	3,640

Cost Summary:

Year	Total Expenditures
2015	\$84,328

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APPENDIX B: GENERAL ASSESSMENT INFORMATION

A Substructure Systems

A10 FOUNDATIONS

Item	Description
A1013 Perimeter Drainage & Insulation	A1027 Concrete Crack Repair
Condition	Poor
Qty / UOM	150 / LF
RUL (years)	0
Location	First Floor

OBSERVATIONS/COMMENTS:

There are several cracks on the perimeter exposed concrete base that require epoxy injection repair.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
A1013	Replace A1027 Concrete Crack Repair	150.0 - LF	49.1	IN - Beyond Rated Life	Priority 1	2015	7,362

COST SUMMARY:

Type	Year	Total Expenditures
A10 Foundations	2015	\$7,362

B Shell Systems

B20 EXTERIOR ENCLOSURE

Item	Description
B2011 Exterior Wall Construction	B2011 Stucco and Lath
Condition	Poor
Qty / UOM	98750 / SF
RUL (years)	0
Location	Exterior walls & soffit
Exterior Wall Construction	Stucco
Parapets	Yes
Balcony Walls and Handrails	Metal
Exterior Soffits	Concealed
Lintels and Sills	Metal

OBSERVATIONS/COMMENTS:

Excessive vertical and horizontal cracks in the stucco finish throughout the exterior walls and soffits require repairs.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
B2011	Replace B2011 Stucco and Lath	98,750.0 - SF	18.3	IN - Appearance	Priority 1	2015	1,809,811

Item	Description
B2021 Windows	B2021 Steel Frame Windows
Condition	Good
Qty / UOM	262 / EA
RUL (years)	9
Location	All Floor
Window Type	Fixed
Windows Material	Steel
Window Operation	Manual

OBSERVATIONS/COMMENTS:

Metal framed windows are located at all floors. The windows are approaching the end of their expected useful life and sealant dryness is noted. Replacement is anticipated within the term.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
B2021	Replace B2021 Steel Frame Windows	262.0 - EA	4410.4	IN - Beyond Rated Life	Priority 4	2024	1,155,514

Item	Description
B2031 Glazed Doors & Entrances	B2031 ADA 12V DC Actuator Buttons
Condition	Poor
Qty / UOM	6 / EA
RUL (years)	0
Location	First Floor

OBSERVATIONS/COMMENTS:

The main entrance requires ADA access push buttons at exterior and interior locations. The two employee entrances also require push button access, as they have ADA restrooms.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
B2031	Replace B2031 ADA 12V DC Actuator Buttons	6.0 - EA	2507.8	CC - Accessibility	Priority 1	2015	15,047

Item	Description
B2031 Glazed Doors & Entrances	B2031 Glazed Entrance Doors
Condition	Good
Qty / UOM	6 / EA
RUL (years)	14
Location	First Floor
Door Hardware	Lever
Door Operation	Manual
Glass Type	Standard Glass
Door Frame	Metal Framed
Door Use	Entrance

OBSERVATIONS/COMMENTS:

There are three sets of aluminum framed storefront entrances; one for the public and the other two for employees.

Item	Description
B2032 Solid Exterior Doors	B2032 Steel, Insulated Core, Ptd. Door
Condition	Poor
Qty / UOM	4 / EA
RUL (years)	0
Location	Roof

OBSERVATIONS/COMMENTS:

The four rooftop access doors and frames on the upper and lower roofs are rust damaged, and require replacement.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
B2032	Replace B2032 Steel, Insulated Core, Ptd. Door	4.0 - EA	6148.2	IN - Reliability	Priority 1	2015	24,593

COST SUMMARY:

Type	Year	Total Expenditures
B20 Exterior Enclosure	2015	\$1,849,450
B20 Exterior Enclosure	2024	\$1,155,514

B30 ROOFING

Item	Description
B3011 Roof Finishes	B3011 Single Ply PVC Membrane Roofing
Condition	Good
Qty / UOM	448 / SF
RUL (years)	17
Location	Roof
Insulation	Rigid
Flashings and Trim	Fully Adhered Roof Membrane
Roof Eaves and Soffits	No
Roof Drainage	Metal Gutter And Down Spouts
Roof Warranty	Unknown

OBSERVATIONS/COMMENTS:

The upper and lower flat roof sections are finished with a single-ply PVC membrane. The membranes were replaced in 2011. There are no parapets along the interior sides of the roof edge facing the courtyard, which is in close proximity to HVAC equipment. This is a safety concern for HVAC technicians, and the installation of metal handrails is recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
B3011	B3010 Install handrails around perimeter of interior side of roof	485.0 - LF	148.8	CC - Life Safety	Priority 1	2015	72,168

Item	Description
B3011 Roof Finishes	B3011 Metal Steep Roofing, Metal Panel
Condition	Fair
Qty / UOM	12800 / SF
RUL (years)	9
Location	Court Yard

OBSERVATIONS/COMMENTS:

The secondary roof is standing-seam metal panels, with factory paint finish along the first and second floors in the inner courtyard. Chronic leaking is reported primarily at head and eave flashings. Gutters and headers are undersized and not watertight. Closure strips are deteriorated and missing; an immediate cost is provided for repairs. The complete roof system is approaching the end of its expected useful life, and replacement is anticipated within the term.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
B3011	B3010 Flashing Repairs	3,200.0 - LF	9.1	OP - Maintenance	Priority 2	2015	28,966
B3011	Replace B3011 Metal Steep Roofing, Metal Panel	12,800.0 - SF	33.2	IN - Beyond Rated Life	Priority 4	2024	424,735

COST SUMMARY:

Type	Year	Total Expenditures
B30 Roofing	2015	\$101,134
B30 Roofing	2024	\$424,735

C Interiors Systems

C10 INTERIOR CONSTRUCTION

Item	Description
C1021 Interior Doors	C1021 Fire door, wood flush with hardware
Condition	Good
Qty / UOM	225 / EA
RUL (years)	15
Location	All Floor

OBSERVATIONS/COMMENTS:

The interior wood doors are performing adequately, and should require only routine maintenance.

Item	Description
C1021 Interior Doors	C1021 Automatic Accessible Door, Wood with Glass Panels
Condition	Good
Qty / UOM	6 / EA
RUL (years)	9
Location	All Floor

OBSERVATIONS/COMMENTS:

Based on expected useful life, automatic door openers will require replacement.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
C1021	Replace C1021 Automatic Accessible Door, Wood with Glass Panels	6.0 - EA	9865.4	IN - Beyond Rated Life	Priority 4	2024	59,193

COST SUMMARY:

Type	Year	Total Expenditures
C10 Interior Construction	2024	\$59,193

C20 STAIRS

Item	Description
C2011 Regular Stairs	C2011 Cane Rail Below Stair
Condition	Poor
Qty / UOM	320 / SF
RUL (years)	0
Location	First Floor
Stairs Frame	Steel
Stair Riser	Closed
Stair Soffit Finishes	Drywall
Stair Handrail Finishes	Polished Metal

OBSERVATIONS/COMMENTS:

There is one interior open stairway with carpet finished treads, from the first floor lobby to each floor. The landing at the first floor height does not meet the California Building Code (CBC) clearance height, and is considered a safety hazard for path of travel. Installation of a cane rail below the stair is recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
C2011	Adding Guard Rail	320.0 - SF	182.4	CC - Accessibility	Priority 1	2015	58,361

Item	Description
C2011 Regular Stairs	C2011 Fire exit stairs
Condition	Good
Qty / UOM	3188 / SF
RUL (years)	23
Location	All floors at north and southeast sides
Stairs Frame	Steel
Stair Riser	Closed
Stair Railings	Metal
Stair Soffit Finishes	Drywall

OBSERVATIONS/COMMENTS:

There are two fire exit stairs. The treads have carpet and traction nosing. Only routine maintenance is anticipated.

COST SUMMARY:

Type	Year	Total Expenditures
C20 Stairs	2015	\$58,361

C30 INTERIOR FINISHES

Item	Description
C3012 Wall Finishes to Interior Walls	C3012 Ceramic Tile Wall Finishes
Condition	Fair - Good
Qty / UOM	104 / SF
RUL (years)	5
Location	Restrooms

OBSERVATIONS/COMMENTS:

The men's and women's restrooms on each floor have ceramic tile wall finishes. The finishes are near the end of their RUL. Replacement is anticipated within the term.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
C3012	Replace C3012 Ceramic Tile Wall Finishes	104.0 - SF	303.6	IN - Appearance	Priority 4	2020	31,569

Item	Description
C3012 Wall Finishes to Interior Walls	C3012 Paint Interior Walls, Drywall
Condition	Fair
Qty / UOM	200000 / SF
RUL (years)	0
Location	All Floors

OBSERVATIONS/COMMENTS:

According to the maintenance staff, interior walls have not been painted for an extended period. Painting is anticipated within the term.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
C3012	Replace C3012 Paint Interior Walls, Drywall	200,000.0 - SF	2.1	IN - Appearance	Priority 2	2015	426,560

Item	Description
C3024 Flooring	C3024 Ceramic Tile Floor
Condition	Good
Qty / UOM	5130 / SF
RUL (years)	5
Location	Locker rooms

OBSERVATIONS/COMMENTS:

The men's and women's locker rooms on the first floor northwest have ceramic tile floor finishes similar to the restrooms. Tiles are near the end of their RUL. Replacement is anticipated within the term.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
C3024	Replace C3024 Ceramic Tile Floor	5,130.0 - SF	21.1	IN - Appearance	Priority 4	2020	108,140

Item	Description
C3024 Flooring	C3024 2X2 Ceramic Tile
Condition	Good
Qty / UOM	4910 / SF
RUL (years)	5
Location	Restrooms

OBSERVATIONS/COMMENTS:

The men's and women's restrooms on each floor have ceramic tile floor finishes. Based on expected useful life, the floor tiles will require replacement.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
C3024	Replace C3024 2X2 Ceramic Tile	4,910.0 - SF	21.1	IN - Appearance	Priority 4	2020	103,503

Item	Description
C3024 Flooring	C3024 Vinyl Tile
Condition	Poor - Fair
Qty / UOM	525 / SY
RUL (years)	0
Location	First Floor

OBSERVATIONS/COMMENTS:

The vinyl composition tile flooring at old cafeteria dining area and child care center is aged, scarred, and patched. Replacement is recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
C3024	Replace C3024 Vinyl Tile	525.0 - SY	125.8	IN - Beyond Rated Life	Priority 5	2015	66,035

Item	Description
C3025 Carpeting	C3025 Carpet, Standard Commercial, Medium Traffic
Condition	Fair
Qty / UOM	12616 / SY
RUL (years)	0
Location	All Floors
Floor Toppings	Light Weight Concrete

OBSERVATIONS/COMMENTS:

All interior floor finishes are carpet, except kitchen, dining, and restroom areas. Due to wear and some soiling, replacement is recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
C3025	Replace C3025 Carpet, Standard Commercial, Medium Traffic	12,616.0 - SY	96.6	IN - Appearance	Priority 2	2015	1,218,776

Item	Description
C3032 Suspended Ceilings	C3032 Acoustical Tile With Exposed Grid System
Condition	Poor
Qty / UOM	770 / CSF
RUL (years)	0
Location	2nd, 3rd, 4th floors

OBSERVATIONS/COMMENTS:

The acoustical ceiling tiles on the second, third, and fourth floors are stained, scar damaged, and age deteriorated. Replacement is required in support of recommended fire sprinkler system retrofit.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
C3032	Replace C3032 Acoustical Tile With Exposed Grid System	770.0 - CSF	1201.6	IN - Appearance	Priority 2	2015	925,201

COST SUMMARY:

Type	Year	Total Expenditures
C30 Interior Finishes	2015	\$2,636,572
C30 Interior Finishes	2020	\$243,213

D Services Systems

D10 CONVEYING SYSTEMS

Item	Description
D1011 Passenger Elevators	D1011 Elevator Hydraulic System, 2,500 Lb Capacity
Condition	Fair
Qty / UOM	2 / EA
RUL (years)	0
Location	Elevators 1 and 3
Elevator Style	Passenger
Elevator Type	Hydraulic
Machinery Location	Room Adjacent To The Shaft

OBSERVATIONS/COMMENTS:

Full modernization is in five-year plan. See elevator consultant report in appendices.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D1011	Replace D1011 Elevator Hydraulic System, 2,500 Lb Capacity	2.0 - EA	172900.0	FN - Modernization	Priority 1	2015	345,800
D1011	Reseal jack head to eliminate leaking	1.0 - EA	1456.0	OP - Maintenance	Priority 2	2015	1,456
D1011	Install car identification numbers on car tops	2.0 - EA	455.0	CC - Life Safety	Priority 1	2015	910
D1011	Replae in-car stop switches with keyed switches	2.0 - EA	546.0	CC - Life Safety	Priority 1	2015	1,092
D1011	Install door restrictors	2.0 - EA	4550.0	CC - Life Safety	Priority 1	2015	9,100
D1011	Repair hydraulic leaks on power unit piping	1.0 - EA	1820.0	OP - Maintenance	Priority 2	2015	1,820
D1011	Install guard on in car lighting	2.0 - EA	455.0	CC - Life Safety	Priority 1	2015	910

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D1011	Add floor passing chimes and repair hall lanterns, move handrails and change braille	2.0 - EA	3640.0	CC - Accessibility	Priority 1	2015	7,280
D1011	Adjust accel and decel for smooth operation	2.0 - EA	910.0	FN - Modernization	Priority 2	2015	1,820
D1011	New cab interiors during modernization	2.0 - EA	41860.0	FN - Modernization	Priority 3	2018	83,720

Item	Description
D1012 Freight Elevators	D1012 Freight Elevators 4,000 LBS
Condition	Fair
Qty / UOM	1 / EA
RUL (years)	0
Location	Elevator #2

OBSERVATIONS/COMMENTS:

Complete modernization, excluding jack replacement, is recommended. See elevator report in the appendices.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D1012	Replace D1012 Freight Elevators 4,000 LBS	1.0 - EA	172900.0	FN - Modernization	Priority 1	2015	172,900
D1012	Install door restrictors	1.0 - EA	4550.0	CC - Life Safety	Priority 1	2015	4,550
D1012	Install guard on car lighting	1.0 - EA	455.0	CC - Life Safety	Priority 1	2015	455
D1012	Adjust accel and decel for smooth operation	1.0 - EA	910.0	FN - Modernization	Priority 2	2015	910
D1012	Add floor passing chimes and repair hall lanterns, move handrails and change braille	1.0 - EA	3640.0	CC - Accessibility	Priority 1	2015	3,640

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D1012	Replace in-car switches with keyed switches	1.0 - EA	546.0	CC - Life Safety	Priority 1	2015	546
D1012	Install car identification numbers on car tops	1.0 - EA	455.0	CC - Life Safety	Priority 1	2015	455
D1012	New cab interiors during modernization	1.0 - EA	41860.0	FN - Modernization	Priority 3	2018	41,860

COST SUMMARY:

Type	Year	Total Expenditures
D10 Conveying Systems	2015	\$553,644
D10 Conveying Systems	2018	\$125,580

D20 PLUMBING

Item	Description
D2011 Water Closets	D2011 Commercial Grade Water Closet, 1.6 GPF Unit
Condition	Fair - Good
Qty / UOM	36 / EA
RUL (years)	15
Location	Throughout Facility
Low Flow Toilet	Yes
System Grade	Commercial Grade

OBSERVATIONS/COMMENTS:

Manual flush valves were observed on the vast majority of plumbing fixtures. Automatic flush valves are recommended to improve hygiene. Otherwise, plumbing fixtures are performing adequately.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D2011	D2013 Install automatic flush valves on toilets	36.0 - EA	604.0	OP - Energy	Priority 2	2015	21,744

Item	Description
D2012 Urinals	D2012 Urinal
Condition	Fair - Good
Qty / UOM	10 / EA
RUL (years)	15
Location	Throughout Facility
Low Flow Toilet	Yes
System Grade	Commercial Grade

OBSERVATIONS/COMMENTS:

Manual flush valves were observed on the vast majority of plumbing fixtures. Automatic flush valves are recommended to improve hygiene, and possibly to save water. Otherwise, urinals are performing adequately.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D2012	D2012 Install automatic flush valves on urinals	10.0 - EA	636.0	OP - Energy	Priority 2	2015	6,360

Item	Description
D2013 Lavatories	D2013 Counter Top Sink and Faucet
Condition	Fair - Good
Qty / UOM	42 / EA
RUL (years)	15
Location	Throughout Facility

OBSERVATIONS/COMMENTS:

Manual and automatic faucets were observed in the restrooms. Automatic faucets are recommended for all sinks to improve hygiene, as an accessibility improvement, and to save water. Otherwise, plumbing fixtures are performing adequately.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D2013	D2013 Install automatic faucets with motion sensors	42.0 - EA	944.0	OP - Energy	Priority 2	2015	39,648

Item	Description
D2023 Domestic Water Supply Equipment	D2023 Solar Water Storage Tanks 500 Gallon
Condition	Fair
Qty / UOM	2 / EA
RUL (years)	0
Location	Boiler Room

OBSERVATIONS/COMMENTS:

The two 500-gallon (estimated) storage tanks, original to the initial construction, store the thermal/solar heated domestic water. The solar system was abandoned not long after construction of the building, and the rooftop panels have been removed. EMG recommends demolition and removal of the tanks and the abandoned portions of the adjacent unused piping, to create additional space, and to keep the mechanical room free of clutter.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D2023	Replace D2023 Solar Water Storage Tanks 500 Gallon	2.0 - EA	13090.5	FN - Obsolescence	Priority 1	2015	26,181

Item	Description
D2023 Domestic Water Supply Equipment	D2023 Domestic Water Booster Pump Station
Condition	Poor
Qty / UOM	1 / EA
RUL (years)	0
Location	Boiler 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 7.5-hp and one 2-hp. The 2-hp pump was added fairly recently, but the remaining components appear original and have reportedly become unreliable, particularly the valves. Replacement 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	33700.8	IN - Reliability	Priority 1	2015	33,701

COST SUMMARY:

Type	Year	Total Expenditures
D20 Plumbing	2015	\$127,634

D30 HVAC

Energy Supply	
Item	Description
Fuel Oil Type	N/A
Fuel Gas Type	N/A
Solid Fuel Type	N/A
District Heat Type	District Steam
District Cooling Type	District Chilled Water
Solar Thermal	No
Fuel Tank Type	N/A
Fuel Tank Size (gallons)	N/A
Fuel Tank Location	N/A
Gas Meter Location	N/A
Electrical Meter Location	Main electrical room
Water Meter Location	Street vault

Item	Description
D3022.1 Circulating Pumps	D3022 HVAC Chilled Water Pumps 25 HP
Condition	Poor - Fair
Qty / UOM	2 / EA
RUL (years)	0
Location	Boiler Room
Piping Type	Galvanized Steel
Pump Manufacturer	Taco
Pump HP	25

OBSERVATIONS/COMMENTS:

The 25-hp chilled water distribution pumps and associated motors appear to be original and in functional condition, although nearing the end of their lifecycle. The two pumps share one VFD. Lifecycle replacements are recommended as part of a facility-wide HVAC renovation. Independent VFDs should be installed as part of the renovations.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3022	Replace D3022 HVAC Chilled Water Pumps 25 HP	2.0 - EA	24794.2	IN - Beyond Rated Life	Priority 1	2015	49,588

Item	Description
D3022.1 Circulating Pumps	D3022 HVAC Heating Water Pumps 7.5 HP
Condition	Fair
Qty / UOM	2 / EA
RUL (years)	0
Location	Boiler Room
Piping Type	Galvanized Steel
Pump Manufacturer	Paco
Pump HP	7.5

OBSERVATIONS/COMMENTS:

The 7.5-hp chilled water distribution pumps appear to be original and functional, nearing the end of their lifecycle. One of the motors was recently replaced with a reconditioned motor. The two pumps share one variable frequency drive (VFD). Lifecycle replacements are recommended as part of a facility-wide HVAC renovation. Independent VFDs should be installed as part of the renovations.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3022	Replace D3022 HVAC Heating Water Pumps 7.5 HP	2.0 - EA	18877.3	IN - Beyond Rated Life	Priority 1	2015	37,755

Item	Description
D3023 Auxiliary Equipment	D3023 Condensate Return System
Condition	Fair
Qty / UOM	1 / EA
RUL (years)	0
Location	Boiler Room

OBSERVATIONS/COMMENTS:

The primary steam station is located within the utility pit/tunnel, and is original to the building construction. The low-pressure condensate return station is also original, located within the grade-level boiler room. The steam station is reportedly problematic with old valves; the condensate return station is somewhat more reliable. 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 1	2015	16,497

Item	Description
D3041.1 Air Handling Units	D3041 Air Handler 18,000-20,000 CFM (Original)
Condition	Poor
Qty / UOM	8 / EA
RUL (years)	0
Location	Rooftop
Air Handling Unit Sub Type	Variable Volume Multi-Zone
Air Handling Unit Heat Type	Hot Water
Air Handling Unit Duct Heat Type	Hot Water
Air Handling Unit Cooling Type	Chilled Water Coil
Air Handling Unit Outdoor Air	Damper Controlled
Number of Return Air Fans	8
Return Air Fan Capacity Units	Cfm
Duct Supply Diffusers and Registers	In Conditioned Spaces On Walls And Ceilings
Duct Return Grilles	Conditioned Space

OBSERVATIONS/COMMENTS:

The facility is heated and cooled by nine rooftop packaged AHUs (eight original and one recent replacement), which feed VAV boxes located in each space. The AHUs are provided with heated and chilled water from the central system and range from 19,000 CFM to 23,000 CFM nominal capacity. The original design and construction of the air handlers were cooling only; however, the lack of adequate heating from the VAV boxes and perimeter hydronic radiators prompted the addition of heating coils a few years after construction. The original cooling valves were installed along the piping above the tenant space ceilings, not within the AHUs, resulting in difficult access and leaks through ceiling tiles and into office spaces. In addition to recent failure of one unit, eight of the AHUs are showing major signs of wear, weathering, and age. The metal encasements are fatiguing and cracking, and various air gaps are developing that can no longer be effectively patched. As such, the supply air pressure has to be dialed down, limiting the effectiveness of the equipment. Fan bearing failure has also become common due to excessive vibration. The insulation is severely deteriorated. The AHUs were retrofitted with energy-saving VFDs during a mid-1990s partial upgrade project, but the VFDs have been subjected to extreme summer temperatures and have also begun to fail. Due to the age of all this equipment and numerous associated problems, EMG recommends full replacement of the rooftop air handlers as the critical part of a comprehensive and full HVAC renovation. A second line item is included to capture the costs associated with a full HVAC renovation that are not included elsewhere, including demolition, access, piping and ductwork infrastructure. In addition to renewing the components, improvements need to be made to inadequate heating in the main lobby and perimeter areas.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3041	Replace D3041 Air Handler 18,000-20,000 CFM (Original)	8.0 - EA	41587.6	IN - Reliability	Priority 1	2015	332,701
D3041	Facility-wide HVAC upgrade to infrastructure	131,486.0 - SF	8.6	IN - Reliability	Priority 1	2015	1,136,039

Item	Description
D3041.1 Air Handling Units	D3041 Air Handler 18,000-20,000 CFM (New)
Condition	Good
Qty / UOM	1 / EA
RUL (years)	29
Location	Rooftop
Air Handling Unit Sub Type	Variable Volume Multi-Zone
Air Handling Unit Heat Type	Hot Water
Air Handling Unit Duct Heat Type	Hot Water
Air Handling Unit Cooling Type	Chilled Water Coil
Air Handling Unit Outdoor Air	Damper Controlled
Number of Return Air Fans	8
Return Air Fan Capacity Units	Cfm
Duct Supply Diffusers and Registers	In Conditioned Spaces On Walls And Ceilings
Duct Return Grilles	Conditioned Space

OBSERVATIONS/COMMENTS:

One of the rooftop AHUs was replaced in 2013. This unit is recommended for retrofitting with new controls as part of a comprehensive HVAC upgrade.

Item	Description
D3041.2 Terminal Units VAV	D3041 VAV Boxes
Condition	Fair
Qty / UOM	292 / 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 heated and cooled by variable air volume terminals (VAVs) supplied with conditioned air from the central system rooftop air handlers. The perimeter VAVs have hot water coils supplied by the central system; the interior VAVs do not. The mix of perimeter and interior units is approximately 67 percent / 33 percent. The maintenance staff reports that the vast majority of VAVs are most likely original to the early 1980s construction. Based on the age of the units and reliability of the HVAC systems, lifecycle replacements 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	292.0 - EA	3460.5	IN - Reliability	Priority 1	2015	1,010,464

Item	Description
D3042 Exhaust Ventilation Systems	D3042 Kitchen / Print Shop Make Up Air Unit 5000 CFM
Condition	Poor - Fair
Qty / UOM	1 / EA
RUL (years)	0
Location	Rooftop

OBSERVATIONS/COMMENTS:

The facility previously housed a kitchen and adjacent cafeteria that were closed approximately ten years ago. The series of original rooftop exhaust fans serving those areas have been out of service ever since. The maintenance staff also reported an inherent flaw with this system, in that the ductwork and system are configured such that some of the kitchen exhaust was used to supply make-up air to the two locker rooms. The kitchen/cafeteria space is being converted to a print shop, and the current plan is to restore the original kitchen exhaust fans, and use them for that converted space. As these fans are over 30 years old, have been idle for 10-years, were designed to serve a different use, and appear to have a flaw, EMG highly advises replacing these fans with new units, and consider utilizing a dedicated make-up air or air-handling unit in tandem.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3042	Replace D3042 Kitchen / Print Shop Make Up Air Unit 5000 CFM	1.0 - EA	47207.2	IN - Reliability	Priority 1	2015	47,207

Item	Description
D3042 Exhaust Ventilation Systems	D3042 Restroom Exhaust Fans 8500 CFM
Condition	Fair
Qty / UOM	2 / EA
RUL (years)	0
Location	Rooftop
Ventilation System	Central Exhaust Duct Network

OBSERVATIONS/COMMENTS:

The restroom rooftop exhaust fans are in working condition, although the fans are reportedly running all the time and one is quite loud, sounding near failure. Lifecycle replacements are recommended as part of a comprehensive HVAC upgrade project.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3042	Replace D3042 Restroom Exhaust Fans 8500 CFM	2.0 - EA	7679.9	IN - Beyond Rated Life	Priority 1	2015	15,360

Item	Description
D3042 Exhaust Ventilation Systems	D3042 Exhaust Fan 2000 CFM
Condition	Fair
Qty / UOM	3 / EA
RUL (years)	0
Location	Rooftop
Ventilation System	Central Exhaust Duct Network

OBSERVATIONS/COMMENTS:

Most of the rooftop exhaust fans are original to the initial construction, and appear to be in working condition, although the fans are reportedly running all the time. Lifecycle replacements are recommended as part of a comprehensive HVAC upgrade project.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3042	Replace D3042 Exhaust Fan 2000 CFM	3.0 - EA	3450.4	IN - Beyond Rated Life	Priority 1	2015	10,351

Item	Description
D3043 Steam Distribution Systems	D3043 HVAC Heating Water Heat Exchanger
Condition	Fair
Qty / UOM	1 / EA
RUL (years)	0
Location	Boiler Room
Heat Exchangers Purpose	Space Heating
Heat Exchanger Process	Steam To Liquid

OBSERVATIONS/COMMENTS:

The shell and tube heat exchanger used for HVAC heating water is original to the initial construction, although difficult to observe with its insulation. The unit is reportedly still functioning adequately, but in all probability is very close to the end of its lifecycle, with over 30 years of constant use, and the interior of the unit reportedly never serviced. Replacement is recommended as part of complete HVAC renovations.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3043	Replace D3043 HVAC Heating Water Heat Exchanger	1.0 - EA	31257.8	IN - Beyond Rated Life	Priority 1	2015	31,258

Item	Description
D3043 Steam Distribution Systems	D3043 Domestic Hot Water Heat Exchanger
Condition	Good
Qty / UOM	1 / EA
RUL (years)	29
Location	Boiler Room
Heat Exchangers Purpose	Domestic Hot Water Production
Heat Exchanger Process	Steam To Liquid
Heat Exchangers Manufacturer	Patterson Kelley

OBSERVATIONS/COMMENTS:

The heat exchanger used for domestic hot water was replaced within the past two years, and is reportedly functioning very well.

Item	Description
D3052 Package Units	D3052 Computer Room 2-Ton Split Ductless System, Cooling Only
Condition	Fair
Qty / UOM	1 / EA
RUL (years)	5
Location	Building Exterior

OBSERVATIONS/COMMENTS:

The split-system ductless air conditioner cooling the tenants' server room is dated 1997 and is likely nearing the end of its useful life. Replacement is recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3052	Replace D3052 Computer Room 2-Ton Split Ductless System, Cooling Only	1.0 - EA	9326.6	IN - Beyond Rated Life	Priority 3	2020	9,327

Item	Description
D3068 Building Automation Systems	D3068 Pneumatic HVAC Controls
Condition	Poor
Qty / UOM	137297 / SF
RUL (years)	0
Location	Throughout Facility
Pneumatic Controls Equipment	Compressor
HVAC Controls Manufacturer	Alerton
HVAC Controls Model	BACtalk 2.6

OBSERVATIONS/COMMENTS:

Although some minor control upgrades were reportedly preformed circa 1997, the facility HVAC is completely controlled using an antiquated pneumatic system, with simple two-input controllers. The software is UltiVist 1.22 by Siebe Environmental Controls with a 1999 update date, and the computer uses Pentium II chips. The on-site central processing unit (CPU) is more of a monitoring station than control center, with only three AHUs still controlled from the computer, and with the vast majority of HVAC components needing regular adjustment by the building engineer. As the HVAC system as a whole is outdated and unreliable, a full pneumatic gutting and conversion to a web-based direct digital control (DDC) platform is highly recommended, as part of a comprehensive HVAC redesign and upgrade.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3068	Replace D3068 Pneumatic HVAC Controls	137,297.0 - SF	8.2	FN - Obsolescence	Priority 1	2015	1,130,449

COST SUMMARY:

Type	Year	Total Expenditures
D30 HVAC	2015	\$3,817,669
D30 HVAC	2020	\$9,327

D40 FIRE PROTECTION SYSTEMS

Fire and Life Safety System	
Item	Description
Fire Alarm System Components Present	
Smoke detectors	Yes
Pull stations	Yes
Audible alarms	Yes
Strobe lights	Yes
Central fire alarm panel	Yes
Annunciator panel	Yes
Smoke Detectors Power Supply	Hardwired Electric
Carbon Monoxide Detectors	No
Heat Detector	Yes
Central Fire Alarm Panel Location	Electrical Room
Annunciator Panel Location	Lobby
Fire Extinguishers	Yes
Fire Extinguisher Inspection Date	February 1, 2014
Distance to Nearest Fire Hydrant (ft)	N/A
Illuminated Exit Signs	Yes
Kitchen Suppression Systems	No
Halon Gas Systems	No
Smoke Evacuation Systems	No
Fire-rated Stairwells	Yes
Fire-rated Stairwell Finish	Drywall
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 Alarm Monitoring Company	N/A

Item	Description
D4011 Sprinkler Water Supply	D4011 Wet Pipe Sprinkler System
Condition	Poor - Fair
Qty / UOM	137297 / SF
RUL (years)	0
Location	Throughout Facility

OBSERVATIONS/COMMENTS:

The entire facility lacks a fire sprinkler system. The current fire protection system is limited to antiquated hallway cabinets, pressurized by an electric fire pump and dry standpipes located in the stair towers. Major renovations require installation of a facility-wide fire suppression retrofit. EMG recommends installation as a life-safety improvement.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D4011	Install facility-wide sprinkler system	137,297.0 - SF	8.3	CC - Life Safety	Priority 1	2015	1,134,073

COST SUMMARY:

Type	Year	Total Expenditures
D40 Fire Protection Systems	2015	\$1,134,073

D50 ELECTRICAL SYSTEMS

Item	Description
D5012 Low Tension Service & Dist.	D5012 Breaker Panel 225 Amps, 30 Circuits
Condition	Fair
Qty / UOM	24 / EA
RUL (years)	15
Location	Utility Areas/Closets

OBSERVATIONS/COMMENTS:

The vast majority of the electrical panels are 1981 General Electric. The panels are functioning adequately.

Item	Description
D5012 Low Tension Service & Dist.	D5012 Switchgear, Mainframe, 2500 Amps
Condition	Fair
Qty / UOM	1 / EA
RUL (years)	15
Location	Main Electrical Room
Service Size (Amperage)	2500
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 1981 General Electric equipment. The electrical service is reportedly adequate for the facility's needs. A full infrared scan, cleaning, and tightening effort was performed on October 5, 2013.

Item	Description
D5012 Low Tension Service & Dist.	D5012 Secondary Dry Transformer 45 kVA
Condition	Fair
Qty / UOM	8 / EA
RUL (years)	9
Location	Utility Areas/Closets

OBSERVATIONS/COMMENTS:

Most of the step-down transformers are 1981 General Electric panels. The electrical service is reportedly adequate for the facility's needs and the transformers appear to be in working condition. Due to the age of the transformers, lifecycle replacements are recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D5012	Replace D5012 Secondary Dry Transformer 45 kVA	8.0 - EA	14159.8	IN - Beyond Rated Life	Priority 4	2024	113,278

Item	Description
D5012 Low Tension Service & Dist.	D5012 Secondary Dry Transformer 75 kVA
Condition	Fair
Qty / UOM	5 / EA
RUL (years)	15
Location	Utility Areas/Closets

OBSERVATIONS/COMMENTS:

Most of the step-down transformers are 1981 General Electric panels. One new transformer is scheduled to be added to accommodate the new print shop space. The electrical service is reportedly adequate for the facility's needs and the transformers appear to be in working condition.

Item	Description
D5022 Lighting Equipment	D5022 Lighting Fixtures
Condition	Fair
Qty / UOM	875 / EA
RUL (years)	0
Location	Office areas and corridors

OBSERVATIONS/COMMENTS:

Replacement of the lighting fixtures will be 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 Lighting Fixtures	875.0 - EA	401.2	FN - Modernization	Priority 1	2015	351,050

Item	Description
D5022 Lighting Equipment	D5022 Main Lobby Lighting
Condition	Fair
Qty / UOM	8 / EA
RUL (years)	0
Location	Main Lobby

OBSERVATIONS/COMMENTS:

Most of the main lobby has soffit lighting around the perimeter, limiting lighting. Some additional lighting is recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D5022	Add lighting to lobby	8.0 - EA	1206.0	FN - Mission	Priority 1	2015	9,648

Item	Description
D5037 Fire Alarm Systems	D5037 Fire Alarm Panel
Condition	Good
Qty / UOM	1 / EA
RUL (years)	14
Location	Main Electrical Room

OBSERVATIONS/COMMENTS:

The fire alarm panel was replaced within the past year, along with some minor upgrades to the alarm system. The panel appears to be functionally adequate.

Item	Description
D5092 Emergency Light & Power Systems	D5092 Diesel Generator 220 kW
Condition	Fair
Qty / UOM	1 / EA
RUL (years)	7
Location	Rooftop
Generator Fuel	Diesel
Generator Serves	Emergency Lighting

OBSERVATIONS/COMMENTS:

The emergency generator located on the roof within a weather-resistant encasement, is original to the building construction, and appears to be in working condition. A lifecycle replacement is recommended. EMG did not observe any dedicated secondary containment around the diesel fuel day tank. The secondary containment is likely considered to be the rooftop encasement itself, which does not appear to be liquid-tight along its base.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D5092	Add/improve secondary containment for day tank	1.0 - EA	53830.0	EN - Air/ Water Quality	Priority 1	2015	53,830
D5092	Replace D5092 Diesel Generator 220 kW	1.0 - EA	1414727.5	CC - Life Safety	Priority 4	2022	1,414,727

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

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 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	\$414,528
D50 Electrical Systems	2022	\$1,425,341
D50 Electrical Systems	2024	\$113,278

G Building Sitework Systems

G20 SITE IMPROVEMENTS

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

Item	Description
G2031 Paving & Surfacing	G2031 Brick Pavers, Sand Bed
Condition	Poor
Qty / UOM	200 / SF
RUL (years)	0
Location	First Floor

OBSERVATIONS/COMMENTS:

The ornamental brick paving at the north side entrance shows some displacement and deterioration, creating a potential safety hazard. The damaged pavers must be replaced, and shifting displacement corrected as an immediate repair.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
G2031	Replace G2031 Brick Pavers, Sand Bed	200.0 - SF	29.9	CC - Life Safety	Priority 1	2015	5,977

Item	Description
G2031 Paving & Surfacing	G2031 Concrete Pavement
Condition	Poor
Qty / UOM	750 / SF
RUL (years)	0
Location	Building perimeter walkways

OBSERVATIONS/COMMENTS:

There are several cracks on sidewalks around the building that could pose potential safety hazards as the cracks widen due to expansion, contraction, and load. Replacement of sidewalk is recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
G2031	Replace G2031 Concrete Pavement	750.0 - SF	22.7	CC - Life Safety	Priority 1	2015	17,000

Item	Description
G2031 Paving & Surfacing	G2031 Brick Pavers, Grouted
Condition	Poor
Qty / UOM	2500 / SF
RUL (years)	0
Location	Court Yard

OBSERVATIONS/COMMENTS:

The brick paving at courtyard is in poor condition due to cracked, misaligned, and missing pavers. Immediate repair/replacement is required to eliminate possible tripping hazard.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
G2031	Replace G2031 Brick Pavers, Grouted	2,500.0 - SF	37.2	CC - Life Safety	Priority 1	2015	93,062

Item	Description
G2035 Exterior Steps & Ramps	G2035 Cast-In-Place Concrete Stair
Condition	Good
Qty / UOM	8175 / SF
RUL (years)	9
Location	Site
Stair Material	Concrete
Stair Handrail	Metal

OBSERVATIONS/COMMENTS:

There are exterior steps at three entrances of building; one at south west, one at south east, and one north side.

There are also two steps at the loading dock area at west side. Replacement is anticipated within the term.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
G2035	Replace G2035 Cast-In-Place Concrete Stair	8,175.0 - SF	47.5	IN - Beyond Rated Life	Priority 4	2024	388,044

COST SUMMARY:

Type	Year	Total Expenditures
G20 Site Improvements	2015	\$116,039
G20 Site Improvements	2024	\$388,044

The weather at the time of the assessment was:

Item	Description
Approximate Outdoor Temperature (degrees F)	57
Weather Conditions	Rainy
Snow Covering Ground	No
Wind Conditions	Light Winds

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

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

APPENDIX C: CERTIFICATION

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

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

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

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

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

Prepared By: Djahan Nabili, Field Observer

Reviewed By: 
Matt Anderson, Program Manager

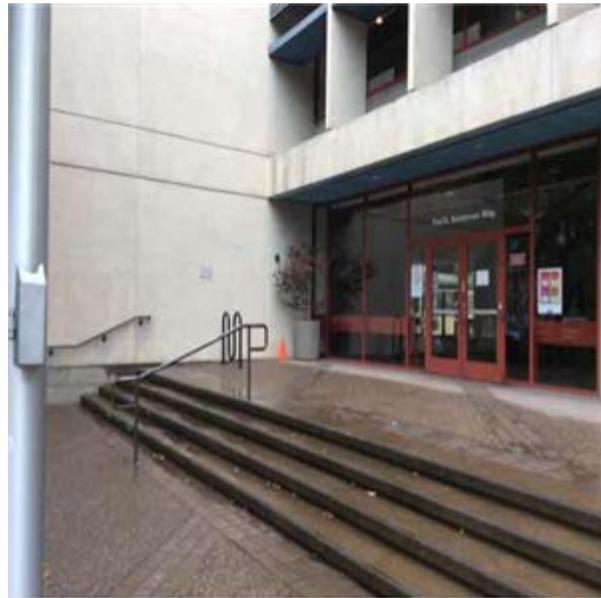
APPENDIX D: PHOTOS



:- South Elevation



:- Northwest



:- Southwest Main Entrance



:- North Elevation



A1027 Concrete Crack Repair



A1027 Concrete Crack Repair



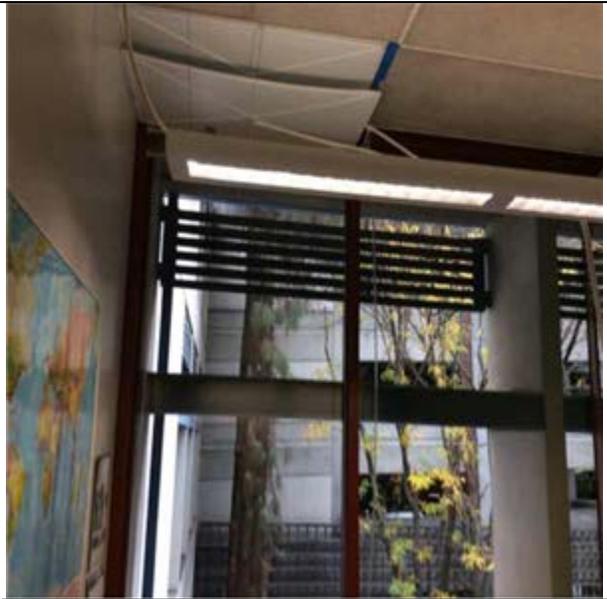
B2011 Stucco and Lath



B2011 Stucco and Lath



B2021 Steel Frame Windows



B2021 Steel Frame Windows



B2031 Glazed Entrance Doors :- Northwest entrance



B2031 Glazed Entrance Doors



B2032 Steel, Insulated Core, Ptd. Door :- Upper level roof access



B3011 Single Ply PVC Membrane Roofing:- lower roof



B3011 Single Ply PVC Membrane Roofing



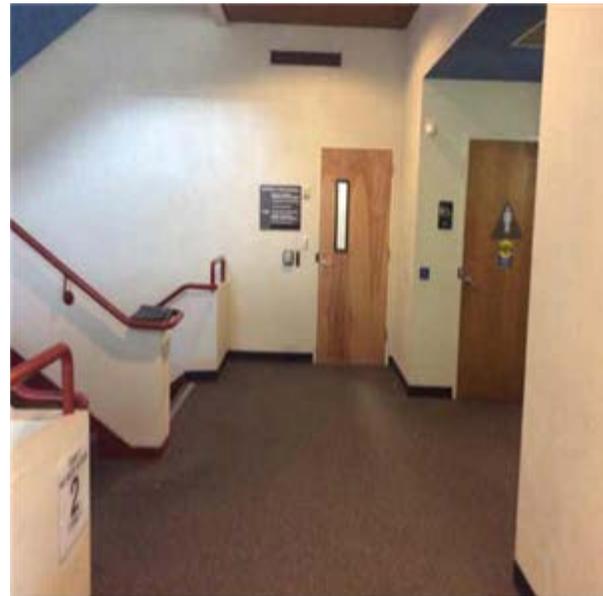
B3011 Single Ply PVC Membrane Roofing:- upper roof without parapet



B3011 Metal Steep Roofing, Metal Panel :- West side



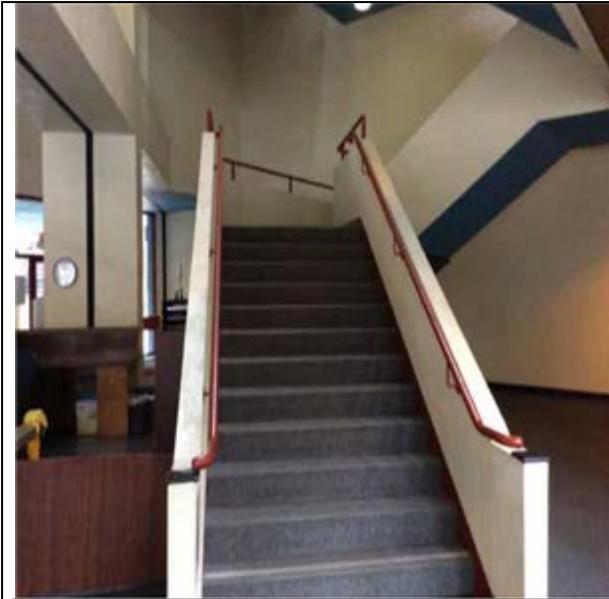
C1021 Fire door, wood flush with hardware



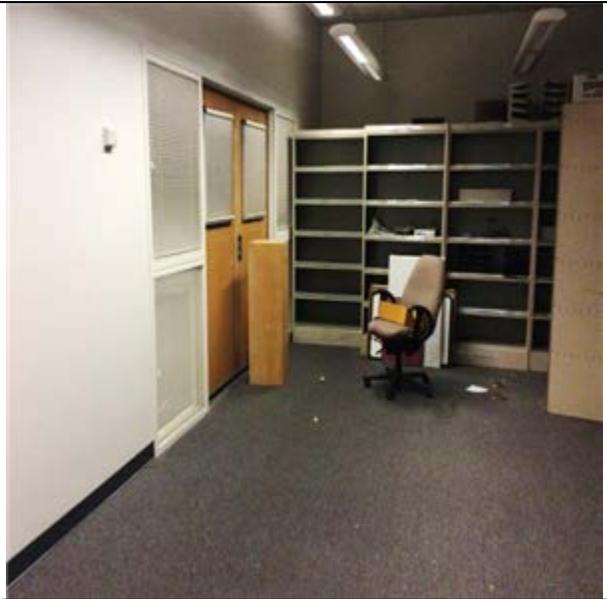
C1021 Automatic Accessible Door, Wood with Glass Panels :- 2nd floor



C2011 Fire exit stairs



C2011 Cane Rail Below Stair :- First floor interior Stair



C3012 Paint Interior Walls, Drywall:- Vacant Office



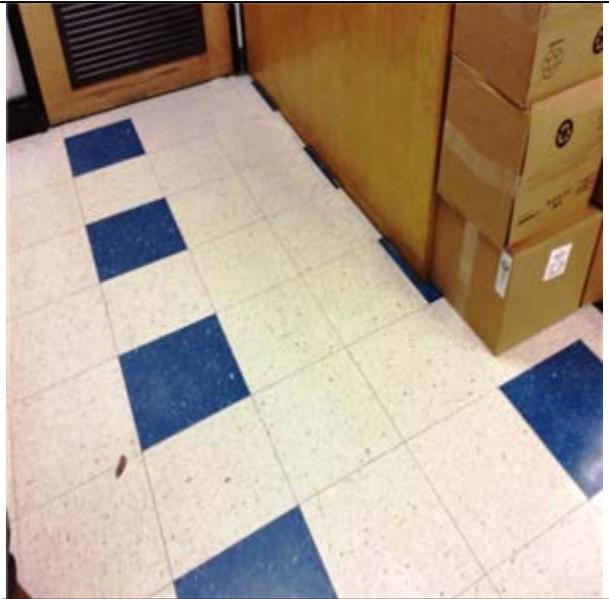
C3012 Paint Interior Walls, Drywall :- Vacant Area



C3024 2X2 Ceramic Tile



C3024 2X2 Ceramic Tile



C3024 Vinyl Tile:- First floor



C3024 Vinyl Tile :- Child Care Center



C3025 Carpet, Standard Commercial, Medium Traffic



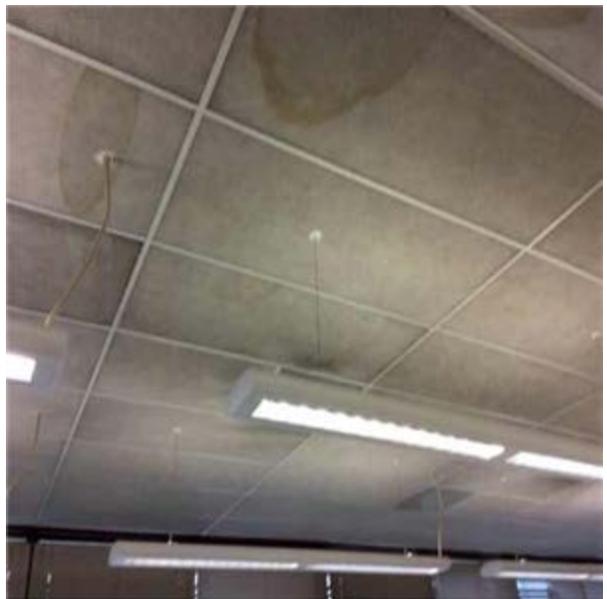
C3025 Carpet, Standard Commercial, Medium Traffic :-
Office area Carpet



C3032 Acoustical Tile With Exposed Grid System



C3032 Acoustical Tile With Exposed Grid System



C3032 Acoustical Tile With Exposed Grid System



D1011 Elevator Hydraulic System, 2,500 Lb Capacity



D2011 Commercial Grade Water Closet, 1.6 GPF Unit



D2012 Urinal



D2013 Counter Top Sink and Faucet



D2023 Domestic Water Booster Pump Station



D2023 Solar Water Storage Tanks 500 Gallon:-
Abandoned solar storage tanks



D3022 HVAC Heating Water Pumps 7.5 HP



D3022 HVAC Chilled Water Pumps 25 HP



D3023 Condensate Return System



D3041 Air Handler 18,000-20,000 CFM (Original)



D3041 Air Handler 18,000-20,000 CFM (Original) :-
Rusting condensate pan and deteriorated insulation



D3041 Air Handler 18,000-20,000 CFM (Original)



D3041 Air Handler 18,000-20,000 CFM (Original) :- Large air leak gap



D3041 VAV Boxes:- VAV box



D3042 Kitchen / Print Shop Make Up Air Unit 5000 CFM :- Kitchen area exhaust fan



D3042 Exhaust Fan 2000 CFM:- Exhaust fans



D3043 HVAC Heating Water Heat Exchanger



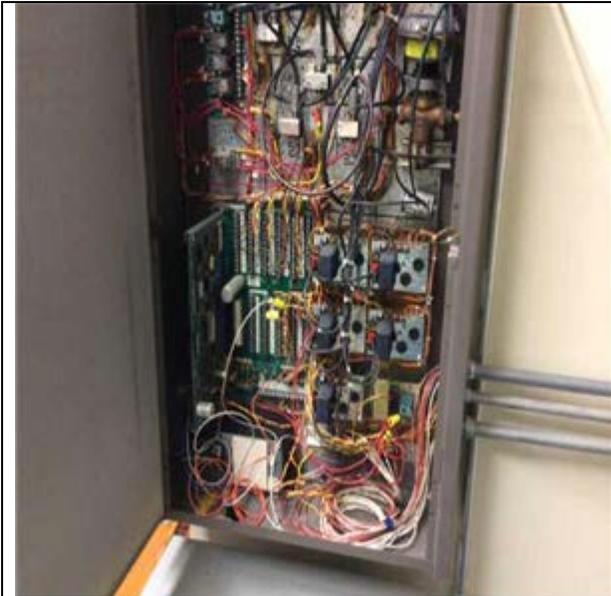
D3043 Domestic Hot Water Heat Exchanger:- New domestic water heat exchanger



D3052 Computer Room 2-Ton Split Ductless System, Cooling Only :- Split system heat pump for server room



D3068 Pneumatic HVAC Controls:- PC with HVAC control software



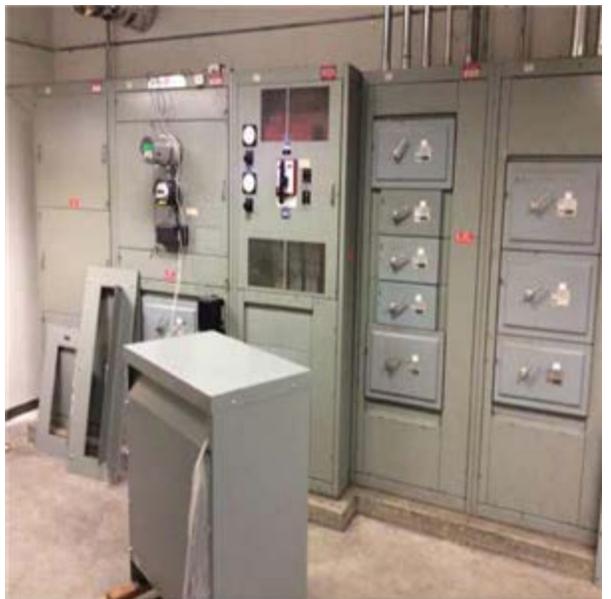
D3068 Pneumatic HVAC Controls :- Early/failed attempt at digital revision



D4011 Wet Pipe Sprinkler System:- Fire hose cabinet



D4011 Wet Pipe Sprinkler System :- Dry standpipe connection on roof



D5012 Switchgear, Mainframe, 2500 Amps



D5012 Breaker Panel 225 Amps, 30 Circuits



D5012 Secondary Dry Transformer 75 kVA



D5012 Secondary Dry Transformer 45 kVA



D5022 Main Lobby Lighting



D5037 Fire Alarm Panel



D5092 Diesel Generator 220 kW:- Emergency generator



D5092 Transfer Switch



G2031 Concrete Pavement



G2031 Concrete Pavement



G2031 Concrete Pavement



G2031 Concrete Pavement



G2031 Concrete Pavement



G2031 Brick Pavers, Sand Bed



G2031 Brick Pavers, Sand Bed



G2031 Brick Pavers, Grouted



G2035 Cast-In-Place Concrete Stair

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

PAUL BONDERSON BUILDING FACT SHEET

901 P Street
Sacramento
Sacramento County

Category 3 - Low Priority, Special Repairs and Maintenance

BUILDING INFORMATION

- Age: 31 years (completed in 1983)
- Size:* 4-story
131,486 GSF 112,535 NUSF 109,691 Assigned SF
1.43 Acre Parcel
No parking within the building, but 560 space garage is adjacent to the building on the same block.
Capacity - 518 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
Building includes day care (60 children)
- LEED Status: Registered for LEED-EB Certification
- Tenants: 3 Agencies, including the Department of Consumer Affairs' Board of Chiropractic Examiners (4,155 SF), High Speed Rail Authority (6,363 SF) and the Department of Water Resources (88,902 SF). The balance of the space is either assigned to the DGS for various purposes, or is currently unassigned.

SPI Structure #: 2350
Real Property #: 9563
BPM #: 016

COMPLETED STUDIES AND SIGNIFICANT FINDINGS

A. 1999 and 2001, Infrastructure Studies

A renovation project was funded in FY 2002-03 in response to the infrastructure studies, but was subsequently cancelled and authority returned. RESD Management at the time determined that the existing building underutilized the site, and the potential existed for demolishing the existing structure and developing a larger building in its place.

B. 2010 American Disability Act Accessibility Compliance Survey

This survey revealed areas of inaccessibility including restrooms (signage, doors, toilet facilities), elevators, drinking fountains, lack of tactile exit signs (door, stair, route, directional), stair handrail extensions, and lack of areas of refuge.

C. 2012 Access Compliance Conceptual Budget/Evaluation

In follow up to the 2010 American Disability Act Accessibility Compliance Survey this report provides 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

The building is maintained in reasonably good repair until the long-term disposition of the building is determined. Non-critical maintenance issues are delayed for the short term.

CURRENT UTILIZATION PROJECTS

Department of Consumer Affairs' Board of Chiropractic Examiners relocated from leased space to backfill Suite 142-A (4,155 SF) in the Bonderson Building. High Speed Rail Authority assigned 6,363 SF of office space on the 1st floor of Bonderson Building.

RECENTLY COMPLETED PROJECTS

Cost

TBD

ACTIVE PROJECTS

Cost

TBD

PLANNED SPECIAL REPAIRS BY FISCAL YEAR

Estimated Cost

TBD

* Source: Statewide Property Inventory

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.

APPENDIX G: COST TABLES

10 YEAR EXPENDITURE FORECAST



Paul Bonderson Building
901 P 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

A10 FOUNDATIONS																										
A1013	A1013 Perimeter Drainage & Insulation	A1027 Concrete Crack Repair	First Floor	Replace A1027 Concrete Crack Repair	25	0	150.00	LF	\$49.08	IN - Beyond Rated Life	Priority 1	\$7,362	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$7,362	\$0			
Substructure Subtotal												\$7,362	\$0	\$7,362	\$0											

B. SHELL

B20 EXTERIOR ENCLOSURE																									
B2011	Stucco and Lath	B2011 Stucco and Lath	Exterior walls & soffit	Replace B2011 Stucco and Lath	30	0	98,750.00	SF	\$18.33	IN - Appearance	Priority 1	\$1,809,811	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,809,811	\$0		
B2021	3'-9" X 5'-5" Steel Frame Window	B2021 Steel Frame Windows	All Floor	Replace B2021 Steel Frame Windows	30	9	262.00	EA	\$4,410.36	IN - Beyond Rated Life	Priority 4	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,155,514	\$0	\$1,155,514		
B2031	B2031 Glazed Doors & Entrances	B2031 ADA 12V DC Actuator Buttons	First Floor	Replace B2031 ADA 12V DC Actuator Buttons	15	0	6.00	EA	\$2,507.76	CC - Accessibility	Priority 1	\$15,047	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$15,047	\$0		
B2032	3'-0" X 7'-0" Steel, Insulated Core, Ptd. Door	B2032 Steel, Insulated Core, Ptd. Door	Roof	Replace B2032 Steel, Insulated Core, Ptd. Door	30	0	4.00	EA	\$6,148.19	IN - Reliability	Priority 1	\$24,593	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$24,593	\$0		
B30 ROOFING																									
B3011	Metal Steep Roofing, Total Metal Panel	B3011 Metal Steep Roofing, Metal Panel	Court Yard	B3010 Flashing Repairs	30	0	3,200.00	LF	\$9.05	OP - Maintenance	Priority 2	\$28,966	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$28,966	\$0		
B3011	Metal Steep Roofing, Total Metal Panel	B3011 Metal Steep Roofing, Metal Panel	Court Yard	Replace B3011 Metal Steep Roofing, Metal Panel	40	9	12,800.00	SF	\$33.18	IN - Beyond Rated Life	Priority 4	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$424,735	\$0	\$424,735		
B3011	Existing Membrane Roof with PVC Membrane Roofing	B3011 Single Ply PVC Membrane Roofing	Roof	B3010 Install handrails around perimeter of interior side of roof	20	0	485.00	LF	\$148.80	CC - Life Safety	Priority 1	\$72,168	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$72,168	\$0		
Shell Subtotal												\$1,950,585	\$0	\$0	\$1,580,248	\$1,950,585	\$1,580,248								

C. INTERIORS

C10 INTERIOR CONSTRUCTION																								
C1021	Fire Door, Steel, Flush, 90 Minute, Vision Lite, Including Demo, with Hardware	C1021 Automatic Accessible Door, Wood with Glass Panels	All Floor	Replace C1021 Automatic Accessible Door, Wood with Glass Panels	25	9	6.00	EA	\$9,865.44	IN - Beyond Rated Life	Priority 4	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$59,193	\$0	\$59,193
C20 STAIRS																								
C2011	C2011 Regular Stairs	C2011 Cane Rail Below Stair	First Floor	Adding Guard Rail	40	0	320.00	SF	\$182.38	CC - Accessibility	Priority 1	\$58,361	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$58,361	\$0	
C30 INTERIOR FINISHES																								
C3012	Paint Interior Walls, Drywall	C3012 Paint Interior Walls, Drywall	All Floors	Replace C3012 Paint Interior Walls, Drywall	10	0	200,000.00	SF	\$2.13	IN - Appearance	Priority 2	\$426,560	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$426,560	\$0	
C3012	C3012 Wall Finishes to Interior Walls	C3012 Ceramic Tile Wall Finishes	Restrooms	Replace C3012 Ceramic Tile Wall Finishes	30	5	104.00	SF	\$303.55	IN - Appearance	Priority 4	\$0	\$0	\$0	\$0	\$0	\$31,569	\$0	\$0	\$0	\$0	\$0	\$31,569	
C3024	2X2 Ceramic Tile	C3024 2X2 Ceramic Tile	Restrooms	Replace C3024 2X2 Ceramic Tile	30	5	4,910.00	SF	\$21.08	IN - Appearance	Priority 4	\$0	\$0	\$0	\$0	\$0	\$103,503	\$0	\$0	\$0	\$0	\$0	\$103,503	
C3024	Vinyl Tile	C3024 Vinyl Tile	First Floor	Replace C3024 Vinyl Tile	18	0	525.00	SY	\$125.78	IN - Beyond Rated Life	Priority 5	\$66,035	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$66,035	\$0	
C3024	2X2 Ceramic Tile	C3024 Ceramic Tile Floor	Locker rooms	Replace C3024 Ceramic Tile Floor	30	5	5,130.00	SF	\$21.08	IN - Appearance	Priority 4	\$0	\$0	\$0	\$0	\$0	\$108,140	\$0	\$0	\$0	\$0	\$0	\$108,140	
C3025	Carpet, Standard Commercial, Medium Traffic	C3025 Carpet, Standard Commercial, Medium Traffic	All Floors	Replace C3025 Carpet, Standard Commercial, Medium Traffic	10	0	12,616.00	SY	\$96.61	IN - Appearance	Priority 2	\$1,218,776	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,218,776	\$0	
C3032	Acoustical Tile With Exposed Grid System	C3032 Acoustical Tile With Exposed Grid System	2nd, 3rd, 4th floors	Replace C3032 Acoustical Tile With Exposed Grid System	20	0	770.00	CSF	\$1,201.56	IN - Appearance	Priority 2	\$925,201	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$925,201	\$0	
Interiors Subtotal												\$2,694,933	\$0	\$0	\$0	\$0	\$0	\$243,213	\$0	\$0	\$0	\$59,193	\$2,694,933	\$302,405

D. SERVICES

D10 CONVEYING SYSTEMS																								
D1011	Elevator Hydraulic System, 2,500 Lb Capacity	D1011 Elevator Hydraulic System, 2,500 Lb Capacity	Elevators 1 and 3	Add floor passing chimes and repair hall lanterns, move handrails and change braille	20	0	2.00	EA	\$3,640.00	CC - Accessibility	Priority 1	\$7,280	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$7,280	\$0	
	Elevator Hydraulic System, 2,500 Lb Capacity	D1011 Elevator Hydraulic System, 2,500 Lb Capacity	Elevators 1 and 3	Adjust accel and decel for smooth operation	20	0	2.00	EA	\$910.00	FN - Modernization	Priority 2	\$1,820	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,820	\$0	
	Elevator Hydraulic System, 2,500 Lb Capacity	D1011 Elevator Hydraulic System, 2,500 Lb Capacity	Elevators 1 and 3	Install car identification numbers on car tops	20	0	2.00	EA	\$455.00	CC - Life Safety	Priority 1	\$910	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$910	\$0	
	Elevator Hydraulic System, 2,500 Lb Capacity	D1011 Elevator Hydraulic System, 2,500 Lb Capacity	Elevators 1 and 3	Install door restrictors	20	0	2.00	EA	\$4,550.00	CC - Life Safety	Priority 1	\$9,100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$9,100	\$0	
	Elevator Hydraulic System, 2,500 Lb Capacity	D1011 Elevator Hydraulic System, 2,500 Lb Capacity	Elevators 1 and 3	Install guard on in car lighting	20	0	2.00	EA	\$455.00	CC - Life Safety	Priority 1	\$910	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$910	\$0	
	Elevator Hydraulic System, 2,500 Lb Capacity	D1011 Elevator Hydraulic System, 2,500 Lb Capacity	Elevators 1 and 3	New cab interiors during modernization	20	3	2.00	EA	\$41,860.00	FN - Modernization	Priority 3	\$0	\$0	\$83,720	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$83,720	\$0
	Elevator Hydraulic System, 2,500 Lb Capacity	D1011 Elevator Hydraulic System, 2,500 Lb Capacity	Elevators 1 and 3	Repair hydraulic leaks on power unit piping	20	0	1.00	EA	\$1,820.00	OP - Maintenance	Priority 2	\$1,820	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,820	\$0	
	Elevator Hydraulic System, 2,500 Lb Capacity	D1011 Elevator Hydraulic System, 2,500 Lb Capacity	Elevators 1 and 3	Replace D1011 Elevator Hydraulic System, 2,500 Lb Capacity	25	0	2.00	EA	\$172,900.00	FN - Modernization	Priority 1	\$345,800	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$345,800	\$0	
	Elevator Hydraulic System, 2,500 Lb Capacity	D1011 Elevator Hydraulic System, 2,500 Lb Capacity	Elevators 1 and 3	Replae in-car stop switches with keyed switches	20	0	2.00	EA	\$546.00	CC - Life Safety	Priority 1	\$1,092	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,092	\$0	
	Elevator Hydraulic System, 2,500 Lb Capacity	D1011 Elevator Hydraulic System, 2,500 Lb Capacity	Elevators 1 and 3	Reseal jack head to eliminate leaking	20	0	1.00	EA	\$1,456.00	OP - Maintenance	Priority 2	\$1,456	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,456	\$0	
D1012	D1012 Freight Elevators	D1012 Freight Elevators 4,000 LBS	Elevator #2	Add floor passing chimes and repair hall lanterns, move handrails and change braille	20	0	1.00	EA	\$3,640.00	CC - Accessibility	Priority 1	\$3,640	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,640	\$0	
	D1012 Freight Elevators	D1012 Freight Elevators 4,000 LBS	Elevator #2	Adjust accel and decel for smooth operation	20	0	1.00	EA	\$910.00	FN - Modernization	Priority 2	\$910	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$910	\$0	
	D1012 Freight Elevators	D1012 Freight Elevators 4,000 LBS	Elevator #2	Install car identification numbers on car tops	20	0	1.00	EA	\$455.00	CC - Life Safety	Priority 1	\$455	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$455	\$0	
	D1012 Freight Elevators	D1012 Freight Elevators 4,000 LBS	Elevator #2	Install door restrictors	20	0	1.00	EA	\$4,550.00	CC - Life Safety	Priority 1	\$4,550	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,550	\$0	
	D1012 Freight Elevators	D1012 Freight Elevators 4,000 LBS	Elevator #2	Install guard on car lighting	20	0	1.00	EA	\$455.00	CC - Life Safety	Priority 1	\$455	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$455	\$0	
	D1012 Freight Elevators	D1012 Freight Elevators 4,000 LBS	Elevator #2	New cab interiors during modernization	20	3	1.00	EA	\$41,860.00	FN - Modernization	Priority 3	\$0	\$0	\$41,860	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$41,860	\$0
	D1012 Freight Elevators	D1012 Freight Elevators 4,000 LBS	Elevator #2	Replace D1012 Freight Elevators 4,000 LBS	30	0	1.00	EA	\$172,900.00	FN - Modernization	Priority 1	\$172,900	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$172,900	\$0	
	D1012 Freight Elevators	D1012 Freight Elevators 4,000 LBS	Elevator #2	Replace in-car switches with keyed switches	20	0	1.00	EA	\$546.00	CC - Life Safety	Priority 1	\$546	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$546	\$0	
D20 PLUMBING																								
D2011	Commercial Grade Water Closet With 1.6 Gpf Unit	D2011 Commercial Grade Water Closet, 1.6 GPF Unit	Throughout Facility	D2013 Install automatic flush valves on toilets	15	0	36.00	EA	\$604.00	OP - Energy	Priority 2	\$21,744	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$21,744	\$0	
D2012	Urinal	D2012 Urinal	Throughout Facility	D2012 Install automatic flush valves on urinals	15	0	10.00	EA	\$636.00	OP - Energy	Priority 2	\$6,360	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,360	\$0	
D2013	Counter Top Sink and Faucet	D2013 Counter Top Sink and Faucet	Throughout Facility	D2013 Install automatic faucets with motion sensors	15	0	42.00	EA	\$944.00	OP - Energy	Priority 2	\$39,648	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$39,648	\$0	
D2023	Hydronic Circulating Pump, 5 HP	D2023 Domestic Water Booster Pump Station	Boiler Room	Replace D2023 Domestic Water Booster Pump Station	20	0	1.00	EA	\$33,700.80	IN - Reliability	Priority 1	\$33,701	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$33,701	\$0	
D2023	Water Storage Tank 500 Gallon	D2023 Solar Water Storage Tanks 500 Gallon	Boiler Room	Replace D2023 Solar Water Storage Tanks 500 Gallon	30	0	2.00	EA	\$13,090.52	FN - Obsolescence	Priority 1	\$26,181	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$26,181	\$0	
D30 HVAC																								
D3022.1	Circulation Pump, 7 to 10 HP	D3022 HVAC Heating Water Pumps 7.5 HP	Boiler Room	Replace D3022 HVAC Heating Water Pumps 7.5 HP	20	0	2.00	EA	\$18,877.33	IN - Beyond Rated Life	Priority 1	\$37,755	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$37,755	\$0	

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			
D3022.1	Circulation Pump 30 HP	D3022 HVAC Chilled Water Pumps 25 HP	Boiler Room	Replace D3022 HVAC Chilled Water Pumps 25 HP	20	0	2.00	EA	\$24,794.16	IN - Beyond Rated Life	Priority 1	\$49,588	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$49,588	\$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	0	1.00	EA	\$16,497.34	IN - Beyond Rated Life	Priority 1	\$16,497	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$16,497	\$0
D3041.1	Air Handler 18,000-20,000 CFM	D3041 Air Handler 18,000-20,000 CFM (Original)	Rooftop	Facility-wide HVAC upgrade to infrastructure	15	0	131,486.00	SF	\$8.64	IN - Reliability	Priority 1	\$1,136,039	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,136,039	\$0
	Air Handler 18,000-20,000 CFM	D3041 Air Handler 18,000-20,000 CFM (Original)	Rooftop	Replace D3041 Air Handler 18,000-20,000 CFM (Original)	40	0	8.00	EA	\$41,587.60	IN - Reliability	Priority 1	\$332,701	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$332,701	\$0
D3041.2	Vav Box, 270 to 600 CFM	D3041 VAV Boxes	Throughout Facility	Replace D3041 VAV Boxes	30	0	292.00	EA	\$3,460.49	IN - Reliability	Priority 1	\$1,010,464	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,010,464	\$0
D3042	Make Up Air Unit 5000 CFM	D3042 Kitchen / Print Shop Make Up Air Unit 5000 CFM	Rooftop	Replace D3042 Kitchen / Print Shop Make Up Air Unit 5000 CFM	20	0	1.00	EA	\$47,207.23	IN - Reliability	Priority 1	\$47,207	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$47,207	\$0
D3042	Exhaust Fan 2000 CFM	D3042 Exhaust Fan 2000 CFM	Rooftop	Replace D3042 Exhaust Fan 2000 CFM	20	0	3.00	EA	\$3,450.37	IN - Beyond Rated Life	Priority 1	\$10,351	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$10,351	\$0
D3042	Exhaust Fan 8500 CFM	D3042 Restroom Exhaust Fans 8500 CFM	Rooftop	Replace D3042 Restroom Exhaust Fans 8500 CFM	20	0	2.00	EA	\$7,679.87	IN - Beyond Rated Life	Priority 1	\$15,360	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$15,360	\$0
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	1.00	EA	\$31,257.80	IN - Beyond Rated Life	Priority 1	\$31,258	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$31,258	\$0
D3052	Computer Room 2-Ton Split Ductless System, Cooling Only	D3052 Computer Room 2-Ton Split Ductless System, Cooling Only	Building Exterior	Replace D3052 Computer Room 2-Ton Split Ductless System, Cooling Only	15	5	1.00	EA	\$9,326.64	IN - Beyond Rated Life	Priority 3	\$0	\$0	\$0	\$0	\$0	\$9,327	\$0	\$0	\$0	\$0	\$0	\$0	\$9,327
D3068	Direct Digital Controls (DDC) Extensive	D3068 Pneumatic HVAC Controls	Throughout Facility	Replace D3068 Pneumatic HVAC Controls	20	0	137,297.00	SF	\$8.23	FN - Obsolescence	Priority 1	\$1,130,449	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,130,449	\$0
D40 FIRE PROTECTION SYSTEMS																								
D4011	Sprinkler Head	D4011 Wet Pipe Sprinkler System	Throughout Facility	Install facility-wide sprinkler system	25	0	137,297.00	SF	\$8.26	CC - Life Safety	Priority 1	\$1,134,073	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,134,073	\$0
D50 ELECTRICAL SYSTEMS																								
D5012	Secondary Dry Transformer 45 kVA	D5012 Secondary Dry Transformer 45 kVA	Utility Areas/Closets	Replace D5012 Secondary Dry Transformer 45 kVA	40	9	8.00	EA	\$14,159.76	IN - Beyond Rated Life	Priority 4	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$113,278	\$0	\$113,278
D5022	Wall Pack 70 Watt High Pressure Sodium	D5022 Main Lobby Lighting	Main Lobby	Add lighting to lobby	15	0	8.00	EA	\$1,206.03	FN - Mission	Priority 1	\$9,648	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$9,648	\$0
D5022	D5022 Lighting Equipment	D5022 Lighting Fixtures	Office areas and corridors	Replace D5022 Lighting Fixtures	20	0	875.00	EA	\$401.20	FN - Modernization	Priority 1	\$351,050	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$351,050	\$0
D5092	Diesel Generator Over 205 Up to 250 kW	D5092 Diesel Generator 220 kW	Rooftop	Add/improve secondary containment for day tank	15	0	1.00	EA	\$53,830.00	EN - Air/ Water Quality	Priority 1	\$53,830	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$53,830	\$0
	Diesel Generator Over 205 Up to 250 kW	D5092 Diesel Generator 220 kW	Rooftop	Replace D5092 Diesel Generator 220 kW	25	7	1.00	EA	\$1,414,727.45	CC - Life Safety	Priority 4	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,414,727	\$0	\$0	\$0	\$0	\$1,414,727
D5092	Transfer Switch	D5092 Transfer Switch	Utility Areas/Closets	Replace D5092 Transfer Switch	25	7	1.00	EA	\$10,613.06	CC - Life Safety	Priority 4	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$10,613	\$0	\$0	\$0	\$0	\$10,613
Services Subtotal												\$6,047,548	\$0	\$0	\$125,580	\$0	\$9,327	\$0	\$1,425,341	\$0	\$113,278	\$6,047,548	\$1,673,525	
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																								
G2031	Brick Pavers, Sand Bed	G2031 Brick Pavers, Sand Bed	First Floor	Replace G2031 Brick Pavers, Sand Bed	20	0	200.00	SF	\$29.88	CC - Life Safety	Priority 1	\$5,977	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,977	\$0
G2031	Concrete Walk	G2031 Concrete Pavement	Building perimeter walkways	Replace G2031 Concrete Pavement	25	0	750.00	SF	\$22.67	CC - Life Safety	Priority 1	\$17,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$17,000	\$0
G2031	Brick Pavers, Grouted	G2031 Brick Pavers, Grouted	Court Yard	Replace G2031 Brick Pavers, Grouted	20	0	2,500.00	SF	\$37.22	CC - Life Safety	Priority 1	\$93,062	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$93,062	\$0
G2035	Cast-In-Place Concrete Stair	G2035 Cast-In-Place Concrete Stair	Site	Replace G2035 Cast-In-Place Concrete Stair	40	9	8,175.00	SF	\$47.47	IN - Beyond Rated Life	Priority 4	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$388,044	\$0	\$0	\$388,044	
Building Sitework Subtotal												\$116,039	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$388,044	\$116,039	\$388,044	
Z. GENERAL																								
General Subtotal												\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Expenditure Totals per Year												\$10,816,467	\$0	\$0	\$125,580	\$0	\$252,539	\$0	\$1,425,341	\$0	\$2,140,764	\$10,816,467	\$3,944,223	
Total Cost (Inflated @ 3% per Yr.)												\$10,816,467	\$0	\$0	\$145,375	\$0	\$322,311	\$0	\$2,005,597	\$0	\$3,321,027	Total *	\$14,760,690	

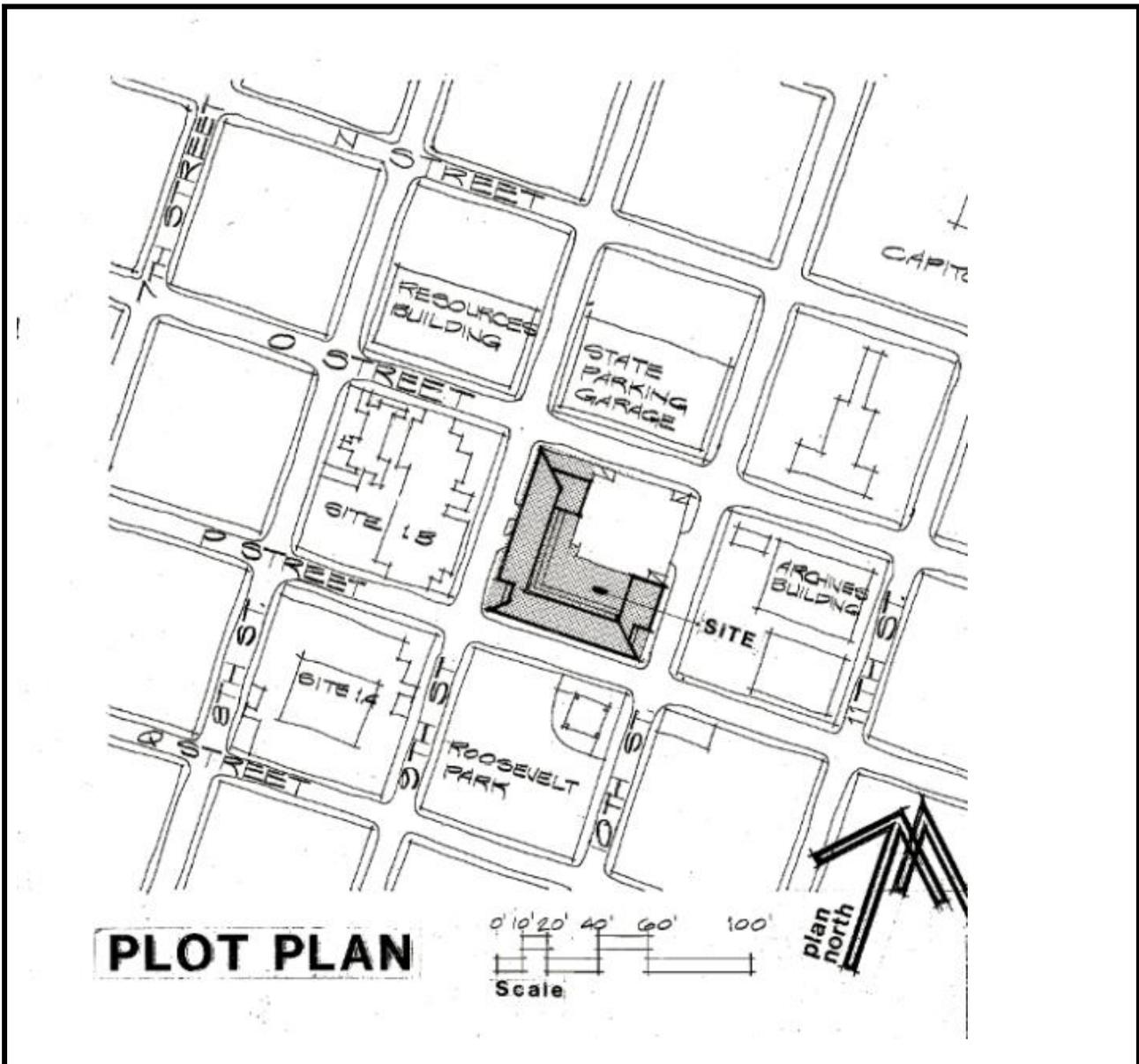
* - Present Value Currency

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

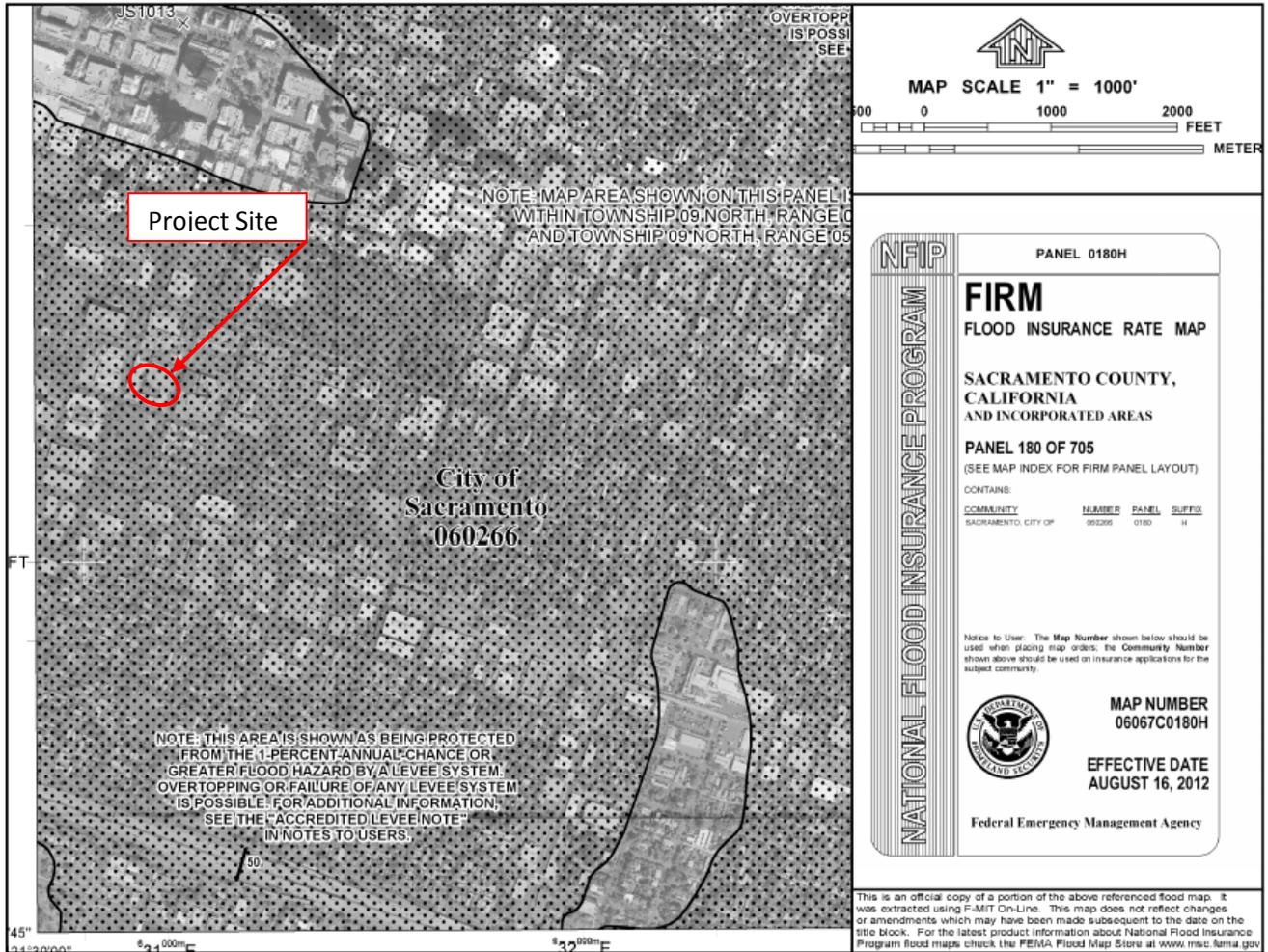
Current Repl.Value \$47,893,436

APPENDIX H: SUPPORTING DOCUMENTATION



	<p>Source:</p> <p>The north arrow indicator is an approximation of 0° North.</p>	<p>Project Number:</p> <p>111326.14R.006.305</p> <p>Project Name:</p> <p>Paul Bonderson Building</p>
		<p>On-Site Date:</p> <p>November 19 and 20, 2014</p>

Flood Map



	SOURCE: FEMA	Project Number: 111326.14R-006.305
		Project Name: Paul Bonderson
Not drawn to scale. The north arrow indicator is an approximation of 0° North.		

Estimate of Structures Cost Using Marshall Cost Systems

Paul Bonderson Building (016)

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 Type Total
main building	\$291.40	131,486	\$38,314,749
	\$0.00	0	\$0
	\$0.00	0	\$0
	\$0.00	0	\$0
	\$0.00	0	\$0
Total		131,486	\$38,314,749

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	\$38,314,749	25.00%	\$47,893,436
	\$0	25.00%	\$0
	\$0	25.00%	\$0
	\$0	25.00%	\$0
	\$0	25.00%	\$0
Cost Per SF	\$364.25	Total Estimate	\$47,893,436

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 ARCHITECTURAL 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

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: Shelby Green

Building name: Paul Bonderson Building (016)

What is your association with this property? Building Manager

What is the length of your association with this property? 2 weeks

Phone number: 916-825-3023

Please provide information about inspections relating to the following items

Inspections	Date Last Inspected	List Name & Contact for Maintenance Contractor, if any.
1. Elevators		
2. HVAC, Mechanical, Electric, Plumbing		
3. Life-Safety/Fire		
4. Roofs		

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

N/A

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

N/A

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

N/A

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

N/A

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			
15. Is there any water infiltration in basements or crawl spaces?		x			
16. Are there any wall, or window leaks?		x			
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			
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



Paul Bonderson Building
901 Pth Street
Sacramento, CA

Due Diligence
Elevator Report

December 8, 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.2
E. Code Review: ADA/Retro-active codes	_____	I.2
F. Recommendation	_____	I.3
<i>Section II Component Review</i>	_____	
A. Machine Room	_____	II.1
B. Hoistway	_____	II.2
C. Car top	_____	II.3
D. Signal Fixtures	_____	II.3
E. Cab Interiors	_____	II.4
<i>Section III – Budget Pricing</i>	_____	<i>III</i>
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 November 20th, 2014 James Young of Architectural Elevator Consulting, LLC (AEC) surveyed all the vertical transportation systems at 901 P Street, Sacramento, CA. There are three (3) hydraulic elevators. Cars 1 & 3 are passenger elevators and Car 2 is a service elevator. The purpose of the survey was to review the major components, to identify upgrades needed over the next ten years and check for compliance with various codes. In addition to reviewing the major components of the elevators we checked the performance parameters of the equipment and tested safety devices such as door restrictors, electric edges and emergency phones.

The elevators were manufactured and installed by Montgomery Elevator Company during the original building construction in 1982. The elevators have Montgomery power units, jacks, controllers, MAC door operators, and MAC door equipment. The power units are equipped with IMO pumps and Maxton valves which are known to be good quality. The signal fixtures in the cars were manufactured by MAC and appear to have been installed during the original installation.

During our survey we noted that the elevators were being well maintained by ThyssenKrupp Elevator Company with a few areas that need work. Housekeeping in the machine rooms and Car tops needs to be improved. Car and door performance is poor. The performance needs to be adjusted to achieve the designed times and speeds.

B. Elevator Layout

The office building has two sets of elevators. Cars 1 and 2 operate in duplex with a common machine room. Car 1 is a passenger only car but car 2 is for service and passenger use. Car 3 is a passenger car operating as a single car. All of the elevators serve all floors, levels 1-4. All of the cars are rated at 125 Feet per Minute (FPM) and are designed with fast and efficient center opening doors. The passenger elevators have 2,500 lbs. capacities and the service car has a 4,000lbs. The number, speed and size of elevators appear to be adequate for the building. The office building has no underground parking.

Elevator Summary				
Elevator Bank	Elevator Speed	Floors Served	Capacity	Door Type
Passenger (Cars 1 & 3)	125 FPM	1-4	2,500 lbs.	Center
Service (Car 2)	125 FPM	1-4	4,000 lbs.	Center

C. Condition

Most the major components of the office elevators, Cars 1-3 were found to be in fair condition. All the cab interiors were dated but in fair condition. Full modernization is recommended with new cab interiors. 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 good in most areas, but needed some attention in other areas. Oil is leaking some of the power units and the housekeeping for the machine rooms and car tops needs to be improved. The performance was observed to be well 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. All of the elevators meet most ADA and California Title 24 requirements. The sizes of the passenger elevators just misses the requirements for new elevators but meets ADA size requirements for existing elevators, thus no changes in the size are needed. All the cars had proper hall/car lanterns and gongs but only car 3 worked properly. None of cars had floor passing chimes. **Appendix A** provides a complete listing of the ADA/T24 requirements. The following is a list of which items need to be corrected to meet ADA:
 - a. Repair or replace inoperative directional gongs and lanterns.
 - b. Add floor passing chimes.
 - c. Replace or relocate in-car handrails to proper CAL T24 height.
 - d. Replace jamb braille with braille that meets CAL T24
 - e. Hall dwell times are too short- adjust to 5.0 seconds minimum

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 guards on all in car lights
 - b. All car need keyed in-car stop switches
 - c. Install door restrictors on all cars
 - d. Install capacity sign in car 2

3. **Seismic:** The elevators were installed under a less stringent seismic code from the 1980's. Seismic rupture valves, pit shut off valves, and Car retain brackets have been installed. There are a few upgrades that are recommended. Seismic fish plates could be installed on the car guide rails but are this is a low priority.

F. Recommendation:

We recommend the elevators be fully modernized in the next 3-5 years. Their performance is well below standard. In the meantime some immediate maintenance repairs should commence such as fixing all the oil leaks, cleaning the controllers, and car tops. If budget constraints do not allow modernization in the near future, we recommend adding all the A17.3 safety items we have identified. Installing door restrictor on all cars should be a priority.

Section II : Component Review

A. MACHINE ROOM:

Controllers:

The Miprom controllers for were manufactured and installed by Montgomery Elevator company during original building construction in 1982. The controllers utilize digital board technology that is known to be reliable but have reached the end of their useful lives. If properly maintained the controllers should last another 3 to 5 years with no major updates.



Hydraulic Power Units:

All the elevators have Montgomery power units equipped with Maxton valves and IMO pumps. The machines were installed in 1982 when the building was erected. The machines are in relatively good condition considering their age. Full modernization is recommended in 3 to 5 years



Pump and valve:

The power units are equipped with Maxton control valves, IMO pumps, and AC electric motors. None of the units have shut off valves in the machine rooms except Car 1 which is equipped with a suction line shut off valve.



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 beams. The vents at the top of the shafts are fixed open. These could be replaced with motorized vents that are normally closed to reduce energy loss.



Car Guide Rails:

The car rails are in good condition but do not have seismic fish plates. During the proposed modernization, these could be installed. This is recommended as an option but is rarely cost effective.



Pits:

The pits for are poured concrete with sump areas and metal grating. The pits were found to be clean and dry. Some of the jack seals need to be fixed. The pits are equipped with seismic rupture valves and manual shut off valves.



C. CAR TOP:

Door Operator:

The door operators are MAC made by Montgomery Elevator Company. The door operation was noted to be fair with room for improvement. None of the cars are equipped with door restrictors. Immediate installation is highly recommended, at a minimum during the proposed modernization.



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 fair to poor. These are likely the original equipment but are equipped with seismic retainer plates. The guide rollers or entire assemblies could be replaced during modernization to improve ride quality.



D. SIGNAL FIXTURES:

Car Operating Panels:

All the elevators have the original equipment Car Operating Panels (COP's). These would be replaced during the proposed modernization. The panels are in good condition; the buttons had proper braille and are at the proper height for ADA. The aesthetic is poor and the stop switch is not keyed as required by code.



Hall Lanterns:

Hall lanterns inform persons waiting in the hall of which direction the elevator is about to travel in next. ADA requires that the hall lanterns illuminate and sound for the waiting passengers. The existing elevators have hall and car lanterns for each car. The lanterns have the proper gong for up and down. Some of the gongs and lantern were inoperative during our survey. The cars were all equipped with in-car position indicators mounted above the door.



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 are ADA and T24 compliant. During a modernization the fixture and fire exit sign will be replaced.



E. CAB INTERIOR:

Wall Finish:

The existing cab interiors are likely original and looked are in fair condition. All sides have the code required handrails. The railing heights are not in compliance with Title 24 California code. The railings would either need to be replaced or relocated to proper height.



Ceilings:

The cabs interiors are dated. The drop ceiling are wood and the lighting is indirect fluorescent that is not aesthetically pleasing but in fair condition. A complete cab upgrade is recommended during the proposed modernization.



Vertical Transportation

Bonderson

Item No.	Recommendation	Rating	Quantity	Unit	Unit Cost	Immediate Code Items	Immediate - Repair	Yers 1-3	Years 4-6	Years 7-10	Totals
1	Install door restrictors for all elevators	1	3	EA	\$2,500.00	\$7,500					\$7,500
2	Replace in-car stop switches with keyed switches	1	3	EA	\$300.00	\$900					\$900
3	Add floor passing chimes and repair hall lanterns, move handrails, and change braille.	1	3	EA	\$2,000.00	\$6,000					\$900
4	Repair hydraulic leaks on power unit piping	2	1	EA	\$1,000		\$1,000				\$1,000
5	Reseal jack heads to eliminated leaking	2	1	EA	\$800		\$800				\$800
6	Install car identification numbers on car tops	1	3	EA	\$250	\$750					\$750
7	Adjust accel and decel for smooth operations	2	3	EA	\$500.00		\$1,500				\$1,500
8	Install guard on in car lighting	1	3	EA	\$250.00	\$750					\$750
9	New Cab interiors during modernization	4	3	EA	\$23,000.00				\$69,000		\$69,000
10	Complete Modernization(excluding jack replacement)	4	3	EA	\$95,000.00				\$285,000		\$285,000
Subtotal						\$15,900	\$3,300	\$0	\$354,000	\$0	\$368,100
		1	\$15,900	Code and Safety							
		2	\$3,300	Deffered Maintenance & Repair							
		3	\$0	Capital Expenditure							
		4	\$354,000	Modernization / Improvements							
		5	\$373,200	Total							

Rating:

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

Appendix A
ADA/California T24 ELEVATOR CHECKLIST

ADA	Item	Complies Yes/No/N/A		
		Cars 1	Car 2	Car 3
	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	Yes	Yes
	AUTOMATIC OPERATION			
4.10.2	Elevators must be Automatic.	Yes	Yes	Yes
4.10.2	Self-leveling to within 1/2 in.	Yes	Yes	Yes
	HALL CALL BUTTONS			
4.10.3	Buttons centered at 42 in. above the floor.	Yes	Yes	Yes
4.10.3	Buttons to illuminate when call is entered and extinguish when answered.	Yes	Yes	Yes
4.10.3	Buttons to be at least 3/4 in. in the smallest dimension.	Yes	Yes	Yes
4.10.3	Up button located above down button.	Yes	Yes	Yes
4.10.3	Buttons raised or flushed. (T24 must be raised)	Yes	Yes	Yes
4.10.3	Objects mounted beneath hall buttons not to project into the lobby more than 4 in.	Yes	Yes	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 – Car	Yes – Car	Yes – Car
4.10.4	Audible signals to sound once for up and twice for “down” or may verbal announcement stating “up” “down.”	Yes	Yes	No
4.10.4	Hall directional lantern centered 72 in. above floor.	Yes	Yes	Yes
4.10.4	Directional lantern visible elements minimum of 2-½ in. in the smallest dimension.	Yes	Yes	Yes
4.10.4	Directional lanterns must be visible from the vicinity of the hall call button.	Yes	Yes	Yes
4.10.4	In car lanterns, meeting the requirements above are acceptable in lieu of hall directional lanterns.	Yes	Yes	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	Yes	Yes
4.10.5	Centerline of floor designation characters 60 in. above floor.	Yes	Yes	Yes
4.30.4	Characters must be 2 in. high, raised 1/32 in. upper sans serif (block letters) or simple serif type.	Yes	Yes	Yes
4.30.4	Grade II Braille to accompany raised characters.	Yes	Yes	Yes
	DOOR PROTECTIVE & REOPENING DEVICES			
4.10.6	Doors must open and close automatically.	Yes	Yes	Yes

Appendix A
ADA/California T24 ELEVATOR CHECKLIST

ADA	Item	Complies Yes/No/N/A		
		Cars 1	Car 2	Car 3
4.10.6	Non-contact door reopening device at 5 in. and 29 in. above the floor.	Yes	Yes	Yes
4.1.6(3)(c)	If safety edges are provided on existing elevators, the non-contact door reopening devices may be omitted.	Yes	Yes	Yes
4.10.6	Reopening device to remain operational for at least 20 seconds.	Yes	Yes	Yes
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	Yes	Yes
4.10.7	Minimum acceptable notification time 5.0 seconds.	Yes	Yes	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	Yes	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	Yes	Yes	Yes
FLOOR PLAN EXISTING ELEVATOR				
4.1.6	Minimum of 48" x 48"	Yes	Yes	Yes
4.10.9	Clearance between car platform sill and edge of hoistway landing sill no greater than 1-1/4 in.	Yes	Yes	Yes
	Handrails Circular Square Dia.____Top of Handrail _____ Height Side Back (T24 must be 34")	Yes-30"	Yes-30"	Yes-30"
FLOOR SURFACES				
4.10.10	Surfaces to be stable, firm and slip resistant.	Yes	Yes	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	Yes	Yes
ILLUMINATION LEVELS				
4.10.11	Five foot-candles of illumination to be provided at car controls, platform and at sill.	Yes	Yes	Yes
CAR CONTROLS				
4.10.12	Buttons to be at least 3/4 in. in their smallest dimension.	Yes	Yes	Yes
4.10.12	Buttons must be flush or raised. (T24 Must be Raised)	Yes	Yes	Yes

Appendix A
ADA/California T24 ELEVATOR CHECKLIST

ADA	Item	Complies Yes/No/N/A		
		Cars 1	Car 2	Car 3
4.10.12	Buttons must be designated by raised characters and Braille or symbols complying with ASME A17.1 Rule 210.13.	Yes	Yes	Yes
4.10.12	Characters must be a minimum of 5/8 in. high, upper case sans (block letters) or simple serif type.	Yes	Yes	Yes
4.10.12	Grade II Braille to accompany raised character of symbol.	Yes	Yes	Yes
4.10.12	Raised designations must be to the immediate left of the button to which they apply.	Yes	Yes	Yes
4.10.12	Call button illuminates when call is entered and extinguish when answered.	Yes	Yes	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	Yes	Yes
4.10.12	Emergency controls, including emergency alarm and emergency stop (if provided) must be grouped at the bottom of the panel and have centerlines no less than 35 in. above the finished floor.	Yes	Yes	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	Yes	Yes
CAR POSITION INDICATORS				
4.10.13	Visual car position indicator must be provided above control panel or over door.	Yes	Yes	Yes
4.10.13	Car position indicator numerals must be a minimum of 1/2 in. high.	Yes	Yes	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.	No	No	No
4.10.13	A button to activate audible signal only for desired trip may be provided.	N/A	N/A	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	N/A	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	Yes	Yes
4.10.14	The highest operable part must be a maximum of 48 in. from the car floor.	Yes	Yes	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	Yes	Yes
4.10.13	If a handset is provided the cord must be at least 29 in. long.	Yes	Yes	Yes

Appendix A
 ADA/California T24 ELEVATOR CHECKLIST

ADA	Item	Complies Yes/No/N/A		
		Cars 1	Car 2	Car 3
4.27.4	If located in a closed compartment, the door must be operable with one hand. It must not require tight grasping, pinching or twisting of the wrist. The force required to open the door must not exceed 5 lb/f.	Yes	Yes	Yes
4.10.13	The system must not require voice communication.	Yes	Yes	Yes

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

A17.3		Complies Yes/No
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
2.2	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)	NO 1 & 2 Yes 3
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
	Single Bottom Jack: (If single bottom oil must be monitored and tracked)	Yes
2.4	CLEARANCES AND RUNBYS	
2.4.1	Horizontal Car Clearances (Not more than 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	If space below pit is accessible it must meet certain rules.	Yes
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)	N/A
2.6.4	Door Hangers (Prevent jumping, and stops, 4 times load)	Yes
2.6.5	Non-Shearing Astragals (For vertical bi-parting doors only)	N/A
2.6.6	Pull Straps (Must not be more than 6’-6” from floor when open)	N/A
2.6.7	Bottom Guides (gibs must be provided.)	Yes
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	Closed position of Hoistway Doors	Yes
2.7.3	Elevator Parking Device (For cars operated from within car only)	N/A
2.7.4	Access to Hoistway (Hoistway door unlocking devices and access switches)	Yes
2.7.5	Restricted Opening of Hoistway Doors and/or Car Doors on Passenger Elevators (Cannot open more than 4” outside unlocking zone +-18” max.)	No
2.7.6	Hoistway Emergency Door Contacts (Positively opened)	Yes
2.8	POWER OPERATION OF DOORS AND GATES	

Appendix “B”

A17.3

Code for Existing Hydraulic Elevators

A17.3		Complies Yes/No
2.8.1	Kinetic Energy and Force Limitations for Power-operated Horizontal Sliding Doors. (Shall not exceed 7ft/lbs. with re-opening device, without 2.5ft/lbs.; cannot exceed 30 ft/lbs)	Yes
2.8.2	Reopening Device for Power-Operated Car Doors or Gates (Can be rendered inoperative if less than 2.5ft/lb)	Yes
	Mechanical Equipment	
3.1	Buffers And Bumpers (Car and counterweight buffers are required)	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” A17.3, 60-75deg, withstand 150#)	Yes
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 metal or fire resistant mat)	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
	Cab Lining Materials (Must have class 1 rating, flame spread of 25 or less.	Yes
3.4.2	Car Doors and Gates (Must have gate or door and electric contract)	Yes
3.4.3	Location of Car Doors and Gates (Hor, distance not more than 5 ½”, Swing door 4” max., space and site guard requirements.)	Yes
3.4.4	Emergency Exits (Cover hinged, single car blind shaft-every 36’, side allowed)	Yes
3.4.5	Car Illumination (At least two lights, 5ftc; frt=2.5ftc; emerg. .2ftc for 4 hrs.)	Yes
3.4.6	Protection of Light Bulbs and Tubes (Guarded or coated to prevent breaks)	No- missing guarding
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)	Yes
3.7.3	Min. Rated Load for Freight Elevators (Class A = Not more than ¼ of total cap.; Class B = Motor Veh.; Class C = loading with industrial truck, etc.)	Yes
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 1&3 No 2
3.7.5	Signs on Freight Elevators (NOT A PASS ELEV...etc. ½” high letters)	Yes
3.8 (4.3)	DRIVING MACHINES AND SHEAVES	
4.3.1	Connection to Driving Machine (capable of withstanding, without damage, plunger stop)	Yes
4.3.2	Plunger Stop (If greater than 100FPM provide ETS)	Yes
4.3.3	Hydraulic Elevators (In-ground jacks- single vs. double bottom)	Yes
4.4	Valves, Supply Piping, and Fittings	
4.4.1	Pump Relief Valve (Between pump & check valve, preset to open at 125% of working pressure, sized to allow proper capacity, must be sealed)	Yes
4.4.2	Check Valve (Will hold the elevator with rated load when pump stops.)	Yes
4.4.3	Mechanically Controlled Operating Valves (These types of valves are prohibited.)	Yes
4.4.4	Supply Piping and Fittings (Must be in sound condition and secured in place.)	Yes
		Yes
	Tanks	
4.5.1	Tanks General Requirements (Must be of adequate size and have an indicator.)	Yes
4.5.2	Pressure Tanks (Tanks subject to collapsing shall be provided with vacuum relief valves., pressure gage, inspectors gage, liquid level detector, hand holes, and manholes.)	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
3.10	OPERATING DEVICES AND CONTROL EQUIP.	
3.10.1	Types of Operating Devices (Rope or rod devices shall not be used.)	Yes
3.10.2	Car-Switch Operation Elevators (If provided must return to stop position if released by hand)	Yes

Appendix “B”

A17.3

Code for Existing Hydraulic Elevators

A17.3		Complies Yes/No
3.10.3	Top-of-Car Operating Devices (Continuous pressure <150FPM; bet. Crosshead and door.) (not needed on hydro's if less than 15' of travel)	Yes
3.10.4	Electrical Provisions	
	(e) Stop Switch – Top of Car- marked “stop” & “run”	Yes
	(h) Final Terminal Stopping Devices	Yes
	(i) Emergency Terminal Stopping Devices (reduced stroke)	N/A
	(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)(WAC does not require it to be keyed)	No-not 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
3.10.9	Control and Operating Circuit Requirements (The failure of any single magnetically operated switch)	Yes
	Grounding and Overcurrent: Must comply with 620-61	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
4.7.3	Anticreep leveling devices	Yes
4.8	Additional Requirements for Counterweighted Hydraulics (Do not require buffers)	N/A
4.9	Additional Requirements for Roped Hydraulic Elevators.	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	Design	Car 3
7.1	Door Open Time	1.6	3.8	3.8	1.7	4.2
7.2	Door Close Time	2.4	4.5	3.7	2.7	4.1
7.3	Floor to Floor Up (18 to 19)	13.0	18.0	22.4	13.5	18.8
9.6	Floor to Floor Down (19 to 18)	13.0	17.7	19.1	13.5	24.2
7.5	Full Speed Up	125 FPM	129	146	125 FPM	123
7.6	Full Speed Down	125 FPM	114	97	125 FPM	89
7.7	Jerk Rate Up	< 7.0	10.4	18.1	< 7.0	5.1
7.8	Jerk Rate Down	< 7.0	7.1	12.9	< 7.0	12.5
7.9	Power Closing of Door (Pressure Gauge)	<30lbs	21 lbs.	23 lbs.	<30lbs	25 lbs.
7.10	Interrupted Ray	.5sec	2.7	1.5	.5sec	3.8
7.11	Car Dwell Time	3.0	4.1	3.9	3.0	4.1
7.12	Hall Call Dwell Time	5.0	4.0	2.8	5.0	4.0
7.13	Hall/Car Lantern Time	8.0	12.1	6.1	8.0	11.2
7.14	Nudging	20.0	>30 sec	>30 sec	20.0	>30 sec
7.15	Test Emergency Phone	Yes	DNC	DNC	Yes	DNC

Car 1	
1.1	Machine room door in not labeled “elevator equipment”
1.2	Machine room lights are unguarded-install guards
1.3	Controller cabinet is dirty and needs to be cleaned
1.4	Pit is dirty
1.5	Car top is dirty – remove spare part and replace door operator cover
1.6	Ride quality is poor- scraping sound during operation
1.7	Adjust car speed in the up and down direction to within 3% of design.
1.8	Floor to floor times are slow and need to be adjusted to meet design times
1.9	Door open and close time is slow –adjust to meet design time
1.10	Adjust car so to achieve smooth operation- acceleration and deceleration is abrupt (excessive jerk rate)
1.11	Hall call dwell time is too short adjust to 5.0 second minimum
1.12	The directional gong, Hall and car lantern are inoperative

Appendix “C”

Performance Review and Maintenance Deficiency List

1.13	Horizontal surfaces inside hoistway need to canted – install material to slope all ledges per code
1.14	Emergency phone operator states car 2 not 1- set recording to give proper information
	Car 2
2.1	Machine room door in not labeled “elevator equipment”
2.2	Machine room lights are unguarded-install guards
2.3	Controller cabinet is dirty and needs to be cleaned and all spare parts removed from inside
2.4	Pit is dirty
2.5	Car top is dirty
2.6	Adjust car speed to within 3% of design.
2.7	Oil has accumulated in the power unit drip pan- remove oil and clean drip tray
2.8	Floor to floor times are slow and need to be adjusted to meet design times
2.9	Door open and close time is slow –adjust to meet design time
2.10	Adjust car so to achieve smooth operation- acceleration and deceleration is abrupt (excessive jerk rate)
2.11	Hall call dwell time is too short adjust to 5.0 second minimum
2.12	The directional gong, Hall and car lantern are inoperative
2.13	Horizontal surfaces inside hoistway need to canted – install material to slope all ledges per code
	Car 3
3.1	Machine room door in not labeled “elevator equipment”
3.2	Machine room lights are unguarded-install guards
3.3	Controller cabinet is dirty and needs to be cleaned and all spare parts removed from inside
3.4	Pit is dirty
3.5	Car top is dirty
3.6	Adjust car speed to within 3% of design.
3.7	Fix leaks at power unit- piping is leaking below valve
3.8	Floor to floor times are slow and need to be adjusted to meet design times
3.9	Door open and close time is slow –adjust to meet design time
3.10	Adjust car so to achieve smooth operation- acceleration and deceleration is abrupt (excessive jerk rate)
3.11	Hall call dwell time is too short adjust to 5.0 second minimum
3.12	Horizontal surfaces inside hoistway need to canted – install material to slope all ledges per code
3.13	Emergency phone operator states car 2 not 3- set recording to give proper information
3.14	Hoistway door sill are dirty
3.15	



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.006.305



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