



Resources Building (018)

1416 Ninth Street, Sacramento, CA 95814

Facility Condition Assessment

June 2015

Prepared for the State of California Department of General Services



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EXECUTIVE SUMMARY

BACKGROUND

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

The DGS portfolio comprises nearly 17 million gross square feet (GSF) of state-owned office facilities statewide, contained within 54 general-purpose state-owned office building sites. The FCA inventories and evaluates each of the DGS general purpose office buildings to benchmark current condition and establish a replacement value. This FCA assesses the infrastructure conditions for the Resources Building (018).

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 Resources Building (018) 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 Resources Building (018) on November 21, 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	\$391,917,809
Immediate Repair Costs (12 months)	\$148,827,594
1-5 Year Capital Needs	\$1,865,091
6-10 Year Capital Needs	\$4,882,843
Total 10-Year Capital Reserve Needs	\$155,575,528

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

Current Year FCI

$$\text{Current FCI} = \frac{\$148,827,594}{\$391,917,809}$$

Ten-Year FCI

$$\text{Ten-Year FCI} = \frac{\$155,575,528}{\$391,917,809}$$

Current Year FCI	Ten-Year FCI
37.97 % = <i>Poor Condition</i>	39.70 % = <i>Poor Condition</i>

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

- Asbestos is found in the original floor tiles and mastic, in the fireproofing, in the ceiling tiles, and in the drywall compound.
- The window cleaning platform is not functional. The windows have not been cleaned in over ten years, and without an operable platform, the exterior tile joints cannot be maintained. The single glazed windows have reached the end of their useful life, and are beginning to leak.
- The roof has reached the end of its expected useful life. The roof has been coated within the last ten years, but the surface is spongy, and leakage can be expected.
- Fire and life safety systems are not up to current codes.
- Seismic bracing is required for both the structure and the precast concrete exterior wall panels.

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 Resources Building (018) was designed by the California Department of Public Works Division of Architecture and occupied in 1964. The building is a prominent feature on the Sacramento skyline and is valued for its size and location. The building is designed in an “International” architectural style. The building derives its character from the blue-green face of the precast concrete panels and signature “saw-tooth” shaped mechanical vents. Due to its age, the Resources Building (018) is considered a historic building, and renovations or alterations are subject to review by the State Historic Preservation Officer.

Originally named the Retirement Building, it was initially occupied by the State of California Department of Finance and has been continuously occupied for almost 50 years. The current name is derived from its use as the headquarters for the Resources Agency. The reporting departments of Fish and Wildlife, Water Resources, Parks and Recreation, and Forestry and Fire Protection are housed in the building.

The building represents a significant urban real estate asset. Its location at 1416 Ninth Street, Sacramento is in the center of the State of California’s capitol area properties. This location provides tenants easy access to the Governor, Legislature, and other downtown agencies. In addition to the general purpose office space, the long and narrow 17-story building (plus penthouse) serves as a critical hub for the California Public Safety Microwave System, which provides local emergency services agencies with access to emergency management communications throughout northern California. The Department of Water Resources maintains a state-wide network of fiber optic cabling, dedicated phone lines, microwave radio pathways, and other remote monitoring devices that feed the buildings’ seismic reporting unit.

The interior plan is primarily open office organized around a central corridor spine. Amenities include a cafeteria and a fixed-seat auditorium. The interior décor consists primarily of painted gypsum board partitions, dropped ceilings, and carpet with top set base. The flooring of the first floor lobby is terrazzo.

The gross area of the building is 658,544 SF with a net usable area of 520,126 SF. The ratio of net usable to gross building area is 73.3 percent. The occupant capacity is 2,327. The building does not have on-site parking.

BUILDING DESCRIPTION

The building foundation is steel reinforced concrete slab-on-grade. The building structural system is a steel superstructure with concrete topped metal floor decks. The roof structure is flat with a built-up membrane.

The exterior walls are finished with ceramic tile and granite, with aluminum-framed windows, and storefront type doors.

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

The facility is served by nine traction passenger elevators, and a single traction freight elevator.

The Resources Building was originally designed with multiple boilers and chillers to handle all the building HVAC needs. The HVAC system currently runs on the district steam and chilled water produced by a central plant. On each floor, the hot and chilled water is looped around the building to all air handling units. There is an energy management system.

Domestic hot water is provided from the steam loop, in which a separate heat exchanger and storage tank are utilized. There are five domestic hot water storage tanks in the building to supply the domestic hot water needs.

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

Fire protection systems are limited to sprinkler heads at first floor docking area, and the seventh floor information technology rooms.

The building covers nearly the entire site, and the landscaping consists of perimeter planters with some trees and shrubs. Landscaped areas are irrigated by an in-ground spray sprinkler.

The sidewalks throughout the property are constructed of cast-in-place concrete.

Project Statistics

Item	Description
Project Name	Resources Building
Building ID	018
Property Type	Administration
Year Built	1964
Number of Stories	17
Occupied	Yes
Land Area (acres)	1.48
Gross Square Feet (GSF)	658,544

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 Resources Building (018) on November 21, 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.

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.

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 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.

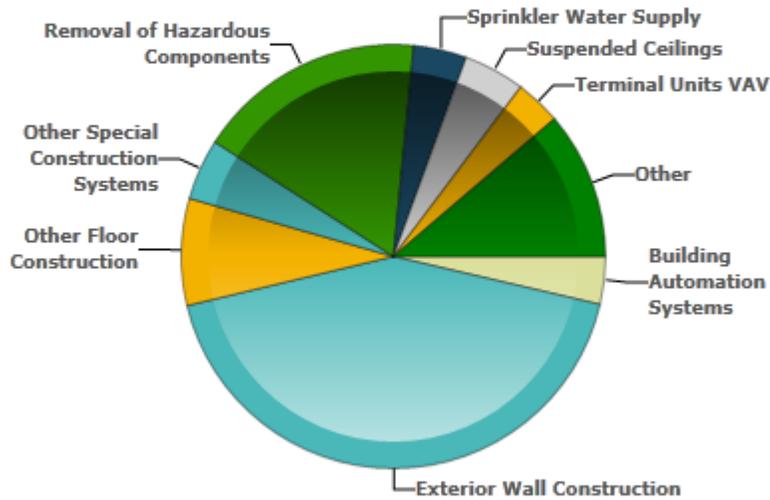
PRIORITY RATIO

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.

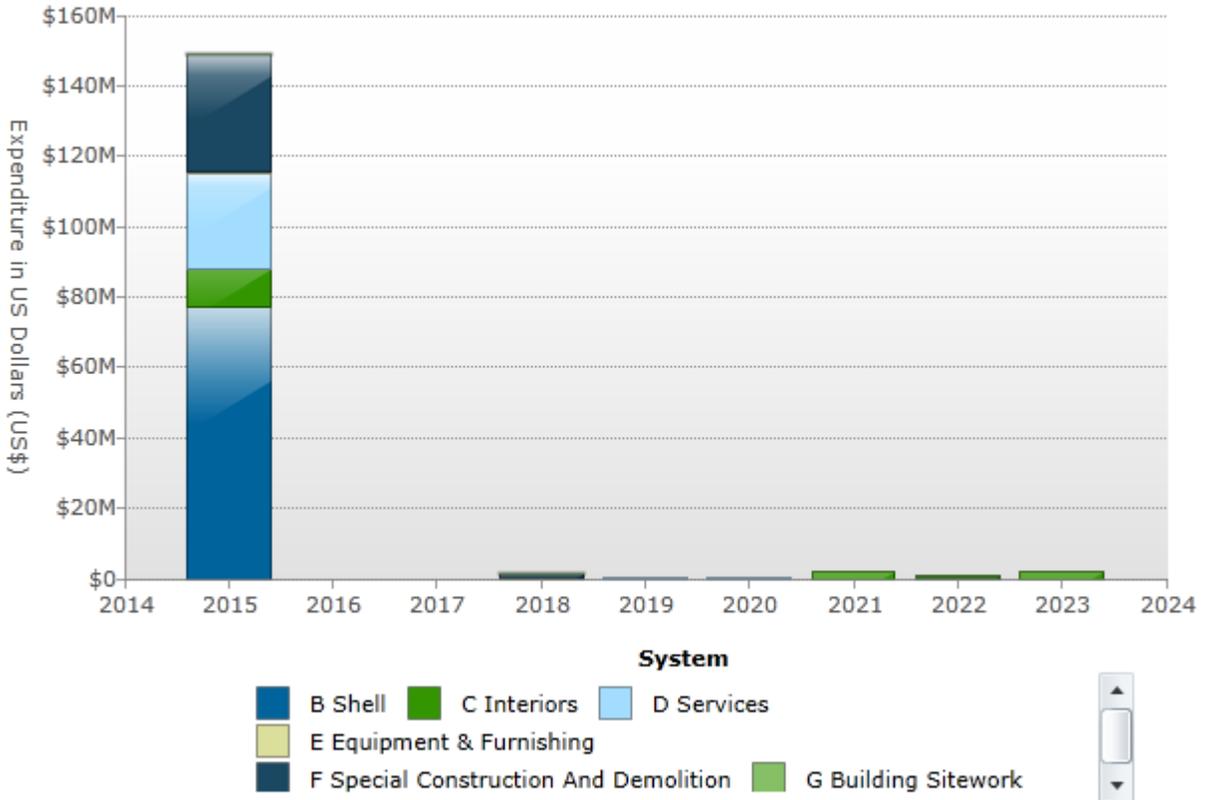
Distribution of Immediate Needs by Building System



Level	Building System	Estimated Cost
B1019	Other Floor Construction	\$12,117,883
B1029	Other Roof Systems	\$379,440
B2011	Exterior Wall Construction	\$63,466,055
B2031	Glazed Doors & Entrances	\$361,357
B3011	Roof Finishes	\$972,765
C2014	Stair Handrails and Balustrades	\$118,422
C3012	Wall Finishes to Interior Walls	\$436,800
C3024	Flooring	\$642,863
C3025	Carpeting	\$2,382,777
C3032	Suspended Ceilings	\$6,961,839
D1011	Passenger Elevators	\$111,566
D1012	Freight Elevators	\$9,464
D2011	Water Closets	\$5,900
D2013	Lavatories	\$5,664

Level	Building System	Estimated Cost
D2018	Drinking Fountains and Coolers	\$28,745
D2021	Cold Water Service	\$278,985
D2022	Hot Water Service	\$484,933
D2023	Domestic Water Supply Equipment	\$462,296
D2034	Sanitary Waste Equipment	\$61,105
D3022	Circulating Pumps	\$74,382
D3023	Auxiliary Equipment	\$16,497
D3041	Air Distribution Systems	\$204,525
D3041	Air Handling Units	\$15,401
D3041	Terminal Units VAV	\$5,190,739
D3042	Exhaust Ventilation Systems	\$2,281,689
D3068	Building Automation Systems	\$5,406,388
D4011	Sprinkler Water Supply	\$6,029,531
D4023	Standpipe Equipment	\$232,050
D5012	Low Tension Service & Dist.	\$287,356
D5022	Lighting Equipment	\$2,201,651
D5037	Fire Alarm Systems	\$2,324,453
D5039	Local Area Networks	\$1,258,478
E1097	Window Washing Equipment	\$1,083,494
F1039	Other Special Construction Systems	\$6,944,000
F2021	Removal of Hazardous Components	\$25,961,893
G3011	Potable Water Distribution and Storage	\$26,208
	Total	\$148,827,594

Total Capital Needs By System and Year



Year	Building System							Total
	A Sub-Structure	B Shell	C Interiors	D Services	E Equip. & Furnishings	F Spec. Const. & Demolition	G Bldg. Site Work	
2015	\$0	\$77,297,500	\$10,542,700	\$26,971,799	\$1,083,494	\$32,905,893	\$26,208	\$148,827,594
2018	\$0	\$0	\$128,775	\$0	\$0	\$1,173,536	\$12,037	\$1,314,348
2019	\$0	\$0	\$0	\$429,290	\$0	\$0	\$0	\$429,290
2020	\$0	\$0	\$0	\$121,452	\$0	\$0	\$0	\$121,452
2021	\$0	\$0	\$2,102,194	\$0	\$0	\$0	\$0	\$2,102,194
2022	\$0	\$192,845	\$555,222	\$0	\$0	\$0	\$0	\$748,067
2023	\$0	\$0	\$2,032,582	\$0	\$0	\$0	\$0	\$2,032,582
Total	\$0	\$77,490,345	\$15,361,474	\$27,522,541	\$1,083,494	\$34,079,429	\$38,245	\$155,575,528

CURRENT REPLACEMENT VALUE

The Current Replacement Value has been determined as \$391,917,809 for the Resources Building Building (018). 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
658,544 GSF	\$595	\$391,917,809

FACILITY CONDITION INDEX

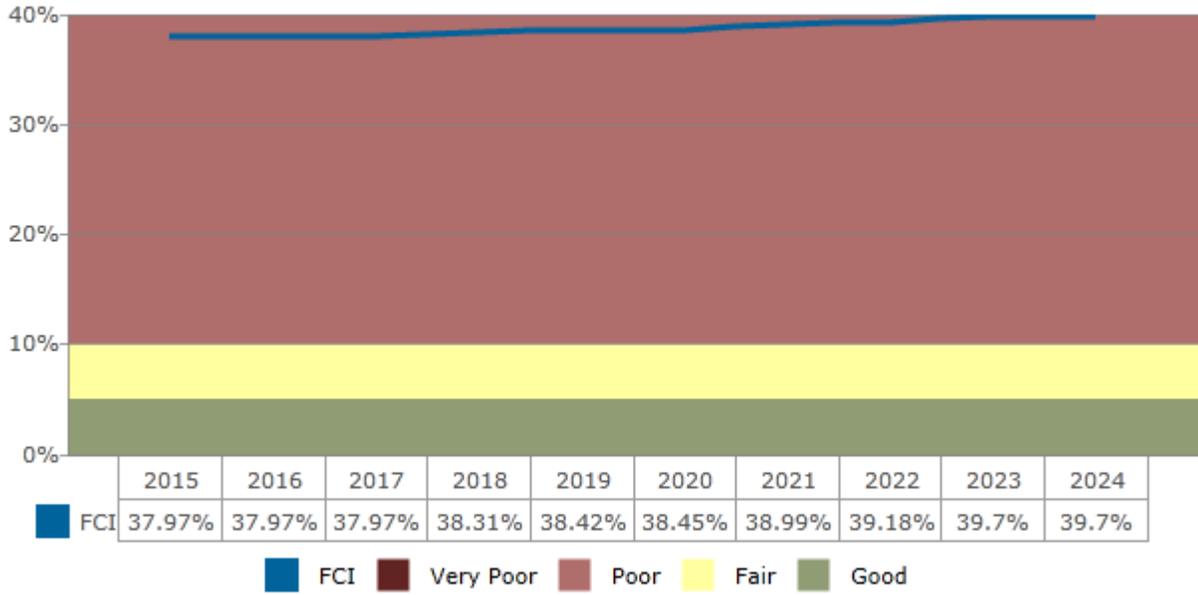
The FCI¹ is an indication of a building’s current and future overall condition. According to industry standards an FCI ratio of 65 percent, or the “rule of two-thirds,” is the threshold for identifying potential candidates for replacement or divestment.² Once the FCI ratio reaches 65 percent, or roughly 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
D2018 Drinking Fountains and Coolers	D2010 Drinking Fountains
Condition	Poor
Qty / UOM	10 / EA
RUL (years)	0
Location	Corridors

Recommendations:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D2011	Bring toilet seat heights in the accessible compartments into compliance with ADA	10.0 - EA	590.0	CC - Accessibility	Priority 1	2015	5,900
D2013	D2013 Wrap exposed drain lines at restroom lavatories	96.0 - EA	59.0	CC - Accessibility	Priority 1	2015	5,664
D2018	Replace D2010 Drinking Fountains	10.0 - EA	2874.5	CC - Accessibility	Priority 1	2015	28,745

Cost Summary:

Year	Total Expenditures
2015	\$40,309

APPENDIX B: GENERAL ASSESSMENT INFORMATION

A Substructure Systems

A10 FOUNDATIONS

Item	Description
A1011 Wall Foundations	A1011 Wall Foundations
Condition	Good
Qty / UOM	900 / LF
RUL (years)	49
Location	Perimeter of Building

OBSERVATIONS/COMMENTS:

No further action required.

Item	Description
A1032 Structural Slab on Grade	A1032 Reinforced Concrete Slab on Grade
Condition	Good
Qty / UOM	45000 / SF
RUL (years)	40
Location	Ground floor

OBSERVATIONS/COMMENTS:

In the snack shop, an area of the slab sounds hollow when tapped. No testing has been done, but maintenance staff felt that it may be related to the deterioration of the cast iron drain lines. Costs for replacement of the sanitary waste line and concrete repair are included in the plumbing section of this report; see D2031.

B Shell Systems

B10 SUPERSTRUCTURE

Item	Description
B1019 Other Floor Construction	B1019 Seismic Bracing
Condition	Poor - Fair
Qty / UOM	656625 / SF
RUL (years)	0
Location	Throughout Building

OBSERVATIONS/COMMENTS:

The State of California performed evaluations of the building assigning a Building Risk Level IV - Moderate Structural Damage/Moderate Risk to Life. The primary deficiencies are suspect welds on structural steel connections, and the exterior precast concrete panel attachments. The steel connections are covered by asbestos-containing fireproofing that will require abatement. In place of repairing the exterior precast panel attachments, replacement of the panels is included in the curtain wall replacement cost.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
B1019	Replace B1019 Seismic Bracing	656,625.0 - SF	18.5	CC - Life Safety	Priority 1	2015	12,117,883

Item	Description
B1029 Other Roof Systems	B1029 Guard rail at roof edge
Condition	Poor
Qty / UOM	900 / LF
RUL (years)	0
Location	Edge of roof

OBSERVATIONS/COMMENTS:

The roof edges have no guardrails. Installation is life safety issue.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
B1029	Replace B1029 Guard rail at roof edge	900.0 - LF	421.6	CC - Life Safety	Priority 1	2015	379,440

COST SUMMARY:

Type	Year	Total Expenditures
B10 Superstructure	2015	\$12,497,323

B20 EXTERIOR ENCLOSURE

Item	Description
B2011 Exterior Wall Construction	B2011 Curtain Wall with windows
Condition	Poor - Fair
Qty / UOM	198660 / SF
RUL (years)	0
Location	Exterior of building

OBSERVATIONS/COMMENTS:

The curtain wall exterior of the building has numerous problems. Caulked joints are failing, the attachment brackets do not meet current seismic standards, and the windows are in need of replacement. Based on the age of the building and the noted problems, replacement rather than repair is recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
B2011	Replace B2011 Curtain Wall with windows	198,660.0 - SF	318.5	IN - Beyond Rated Life	Priority 1	2015	63,273,210

Item	Description
B2011 Exterior Wall Construction	B2010 Paint Exterior Walls Roof Level
Condition	Poor - Fair
Qty / UOM	32400 / SF
RUL (years)	0
Location	Roof penthouses and recessed area

OBSERVATIONS/COMMENTS:

Prep and paint exterior CMU walls of roof penthouses, recessed area, perimeter of lower level and window cleaning rails.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
B2011	Replace B2010 Paint Exterior Walls Roof Level	32,400.0 - SF	6.0	IN - Appearance	Priority 1	2015	192,845
B2011	Replace B2010 Paint Exterior Walls Roof Level	32,400.0 - SF	6.0	IN - Appearance	Priority 1	2022	192,845

Item	Description
B2011 Exterior Wall Construction	B2010 Granite Veneer
Condition	Fair
Qty / UOM	9000 / SF
RUL (years)	0
Location	Exterior walls lower levels

OBSERVATIONS/COMMENTS:

Cleaning and repair of the exterior granite panels is recommended. The cost of this work is included in the curtain wall replacement.

Item	Description
B2031 Glazed Doors & Entrances	B2031 Glazed Storefront Systems

Item	Description
Condition	Fair
Qty / UOM	4900 / SF
RUL (years)	0
Location	Ground floor

OBSERVATIONS/COMMENTS:

The storefront systems require caulking, repairs and replacements.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
B2031	Replace B2031 Glazed Storefront Systems	4,900.0 - SF	73.7	IN - Beyond Rated Life	Priority 1	2015	361,357

Item	Description
B2031 Glazed Doors & Entrances	B2031 Entry doors
Condition	Good
Qty / UOM	2 / EA
RUL (years)	15
Location	Front entry

OBSERVATIONS/COMMENTS:

No further action is required.

COST SUMMARY:

Type	Year	Total Expenditures
B20 Exterior Enclosure	2015	\$63,827,412
B20 Exterior Enclosure	2022	\$192,845

B30 ROOFING

Item	Description
B3011 Roof Finishes	B3011 Built-Up Roofing, Total Roof
Condition	Poor - Fair
Qty / UOM	450 / SQ
RUL (years)	0
Location	all roofs

OBSERVATIONS/COMMENTS:

The built-up roof membrane has a white coating and is original, according to the maintenance staff. It requires total replacement due to excessive age, deterioration, and condition rating.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
B3011	Replace B3011 Built-Up Roofing, Total Roof	450.0 - SQ	2161.7	IN - Beyond Rated Life	Priority 1	2015	972,765

COST SUMMARY:

Type	Year	Total Expenditures
B30 Roofing	2015	\$972,765

C Interiors Systems

C10 INTERIOR CONSTRUCTION

Item	Description
C1021 Interior Doors	C1020 Interior Doors
Condition	Good
Qty / UOM	320 / EA
RUL (years)	26
Location	Throughout interior

OBSERVATIONS/COMMENTS:

No further action required.

Item	Description
C1031 Fabricated Toilet Partitions	C1011 Fixed Partitions
Condition	Fair
Qty / UOM	96 / EA
RUL (years)	6
Location	Throughout restrooms

OBSERVATIONS/COMMENTS:

The toilet partitions are functioning adequately. Replacement is recommended within the term.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
C1031	Replace C1011 Fixed Partitions	96.0 - EA	2331.2	IN - Appearance	Priority 4	2021	223,795

COST SUMMARY:

Type	Year	Total Expenditures
C10 Interior Construction	2021	\$223,795

C20 STAIRS

Item	Description
C2014 Stair Handrails and Balustrades	C2011 Interior stairs - railing and guardrail
Condition	Good
Qty / UOM	3 / EA
RUL (years)	20
Location	Each end and center of building

OBSERVATIONS/COMMENTS:

Steel and concrete stairs at each end of the building are in non-conditioned air spaces. Another set is located in conditioned air space. The handrails have required extensions. Paint maintenance is recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
C2014	C3010 Prep and paint steel stairway parts	30,600.0 - SF	3.9	IN - Appearance	Priority 2	2015	118,422
C2014	C3010 Prep and paint steel stairway parts	30,600.0 - SF	3.9	IN - Appearance	Priority 2	2022	118,422

COST SUMMARY:

Type	Year	Total Expenditures
C20 Stairs	2015	\$118,422
C20 Stairs	2022	\$118,422

C30 INTERIOR FINISHES

Item	Description
C3012 Wall Finishes to Interior Walls	C3012 Drywall - Painted Finished Walls
Condition	Fair
Qty / UOM	210000 / SF
RUL (years)	0
Location	Interior painted walls, 5 floors

OBSERVATIONS/COMMENTS:

Periodic finish replacement will be required.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
C3012	C3010 Paint interior walls, drywall	210,000.0 - SF	2.1	IN - Appearance	Priority 3	2015	436,800
C3012	C3010 Paint interior walls, drywall	210,000.0 - SF	2.1	IN - Appearance	Priority 3	2022	436,800

Item	Description
C3024 Flooring	C3024 2X2 Ceramic Tile
Condition	Fair - Good
Qty / UOM	16 / CSF
RUL (years)	16
Location	Restrooms

OBSERVATIONS/COMMENTS:

No further action required.

Item	Description
C3024 Flooring	C3024 Vinyl Tile
Condition	Fair
Qty / UOM	5111 / SY
RUL (years)	0
Location	Corridors

OBSERVATIONS/COMMENTS:

The existing tile on the first and eighth floors has asbestos in the mastic and some tile. Replacement is recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
C3024	Replace C3024 Vinyl Tile	5,111.0 - SY	125.8	IN - Appearance	Priority 2	2015	642,863

Item	Description
C3024 Flooring	C3024 Terrazzo
Condition	Good
Qty / UOM	1000 / SF
RUL (years)	25
Location	Lobby

OBSERVATIONS/COMMENTS:

No further action required.

Item	Description
C3025 Carpeting	C3025 Office Carpet Tiles - Standard
Condition	Fair
Qty / UOM	19444 / SY
RUL (years)	6
Location	Five floors of Offices

OBSERVATIONS/COMMENTS:

Periodic finish replacement will be required.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
C3025	Replace C3025 Office Carpet Tiles - Standard	19,444.0 - SY	96.6	IN - Appearance	Priority 4	2021	1,878,399

Item	Description
C3025 Carpeting	C3025 Corridor Carpet Tiles - Standard
Condition	Fair
Qty / UOM	1333 / SY
RUL (years)	3
Location	Five corridors

OBSERVATIONS/COMMENTS:

Periodic finish replacement will be required.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
C3025	Replace C3025 Corridor Carpet Tiles - Standard	1,333.0 - SY	96.6	IN - Appearance	Priority 3	2018	128,775

Item	Description
C3025 Carpeting	C3025 Corridor Carpet Tiles - Standard
Condition	Poor - Fair
Qty / UOM	1333 / SY
RUL (years)	0
Location	Five floors

OBSERVATIONS/COMMENTS:

Periodic finish replacement will be required.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
C3025	Replace C3025 Corridor Carpet Tiles - Standard	1,333.0 - SY	96.6	IN - Appearance	Priority 2	2015	128,775

Item	Description
C3025 Carpeting	C3025 Office Carpet Tiles - Standard
Condition	Good
Qty / UOM	19444 / SY
RUL (years)	8
Location	Five floors of Offices

OBSERVATIONS/COMMENTS:

Periodic finish replacement will be required.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
C3025	Replace C3025 Office Carpet Tiles - Standard	19,444.0 - SY	96.6	IN - Appearance	Priority 4	2023	1,878,399

Item	Description
C3025 Carpeting	C3025 Office Carpet Tiles - Standard
Condition	Poor - Fair
Qty / UOM	23332 / SY
RUL (years)	0
Location	Six floors of Offices

OBSERVATIONS/COMMENTS:

Periodic finish replacement will be required.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
C3025	Replace C3025 Office Carpet Tiles - Standard	23,332.0 - SY	96.6	IN - Appearance	Priority 2	2015	2,254,002

Item	Description
C3025 Carpeting	C3025 Corridor Carpet Tiles - Standard
Condition	Fair
Qty / UOM	1596 / SY
RUL (years)	8
Location	Six corridors

OBSERVATIONS/COMMENTS:

Periodic finish replacement will be required.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
C3025	Replace C3025 Corridor Carpet Tiles - Standard	1,596.0 - SY	96.6	IN - Appearance	Priority 4	2023	154,183

Item	Description
C3032 Suspended Ceilings	C3030 Ceiling Finishes
Condition	Fair
Qty / UOM	5794 / CSF
RUL (years)	0
Location	Throughout building

OBSERVATIONS/COMMENTS:

Ceiling tiles are stained and sagging. Replacement is recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
C3032	Replace C3030 Ceiling Finishes	5,794.0 - CSF	1201.6	IN - Appearance	Priority 2	2015	6,961,839

COST SUMMARY:

Type	Year	Total Expenditures
C30 Interior Finishes	2015	\$10,424,278
C30 Interior Finishes	2018	\$128,775
C30 Interior Finishes	2021	\$1,878,399
C30 Interior Finishes	2022	\$436,800
C30 Interior Finishes	2023	\$2,032,582

D Services Systems

D10 CONVEYING SYSTEMS

Item	Description
D1011 Passenger Elevators	D1011 Traction Geared Elevator - High Rise and Low rise
Condition	Good
Qty / UOM	9 / EACH
RUL (years)	29
Location	Roof
Elevator Style	Passenger
Elevator Type	Traction
Certificate of Inspection Expired	No

OBSERVATIONS/COMMENTS:

Five high rise elevators service the 7th through 16th floors; Four elevators service the 2nd through 8th floors. All elevators originate on the first floor, each with a capacity of 3500 lbs. and 72-hp motors. The elevators were renovated in 2009. For additional detail please see elevator report in the appendix.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D1011	Install car top handrail on Car 4	1.0 - EACH	4550.0	CC - Building Code	Priority 1	2015	4,550
D1011	Adjust Cars for proper operation and complete deferred maintenance	9.0 - EACH	1820.0	OP - Maintenance	Priority 2	2015	16,380
D1011	Perform five year full load tests.	9.0 - EACH	5460.0	CC - Life Safety	Priority 1	2015	49,140
D1011	Remove ash trays from hall call stations at the main lobby	4.0 - EACH	5460.0	CC - Building Code	Priority 1	2015	21,840
D1011	Bevel ledges in the hoistway that are over 2"	9.0 - EACH	2184.0	CC - Building Code	Priority 1	2015	19,656

Item	Description
D1012 Freight Elevators	D1012 Freight elevator
Condition	Fair - Good
Qty / UOM	1 / EACH
RUL (years)	29
Location	Roof
Elevator Style	Freight
Elevator Type	Traction
Machinery Location	Penthouse At The Top Of The Shaft
Elevator Cab Finishes	Vinyl-Tile
Elevator Doors	Electronic Safety Stops
Elevator Light Fixtures	Recessed Ceiling
Certificate of Inspection Location	Elevator Cab

OBSERVATIONS/COMMENTS:

Freight elevator has a capacity of 8000 lbs. The motor is 72.5-hp. Refer to consultant's full report for summary of elevator upgrade.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D1012	Perform five year full load test	1.0 - EACH	5460.0	CC - Life Safety	Priority 1	2015	5,460
D1012	Bevel ledges in hoistway that are over 2"	1.0 - EACH	2184.0	CC - Building Code	Priority 1	2015	2,184
D1012	Adjust car for proper operation and complete deferred maintenance items	1.0 - EACH	1820.0	IN - Beyond Rated Life	Priority 1	2015	1,820

COST SUMMARY:

Type	Year	Total Expenditures
D10 Conveying Systems	2015	\$121,030

D20 PLUMBING

Item	Description
D2011 Water Closets	D2011 Commercial Grade Water Closet With 1.6 Gpf Unit
Condition	Fair
Qty / UOM	96 / EA
RUL (years)	11
Location	Throughout facility

OBSERVATIONS/COMMENTS:

The toilets are functional and have been fitted with automatic flush valves. Modify to comply with ADA accessibility

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D2011	Bring toilet seat heights in the accessible compartments into compliance with ADA	10.0 - EA	590.0	CC - Accessibility	Priority 1	2015	5,900

Item	Description
D2012 Urinals	D2012 Urinals with sensors
Condition	Good
Qty / UOM	48 / EA
RUL (years)	11
Location	Throughout facility

OBSERVATIONS/COMMENTS:

The toilets are functional and have been fitted with automatic flush valves.

Item	Description
D2013 Lavatories	D2013 Restroom Sink and Faucet
Condition	Good
Qty / UOM	96 / EA
RUL (years)	21
Location	Throughout facility

OBSERVATIONS/COMMENTS:

Modify to comply with ADA Accessibility Guidelines.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D2013	D2013 Wrap exposed drain lines at restroom lavatories	96.0 - EA	59.0	CC - Accessibility	Priority 1	2015	5,664

Item	Description
D2018 Drinking Fountains and Coolers	D2010 Drinking Fountains
Condition	Poor
Qty / UOM	10 / EA
RUL (years)	0
Location	Corridors

OBSERVATIONS/COMMENTS:

Replace due to accessibility issues with height and type of drinking fountains.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D2018	Replace D2010 Drinking Fountains	10.0 - EA	2874.5	CC - Accessibility	Priority 1	2015	28,745

Item	Description
D2021 Cold Water Service	D2021 Domestic Water Distribution piping
Condition	Fair
Qty / UOM	6548 / LF
RUL (years)	0
Location	Throughout Building

OBSERVATIONS/COMMENTS:

Based on the age and current conditions, replacement of the water supply piping is recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D2021	Replace D2021 Domestic Water Distribution piping	6,548.0 - LF	42.6	IN - Beyond Rated Life	Priority 1	2015	278,985

Item	Description
D2022 Hot Water Service	D2020 Domestic Water Distribution Piping
Condition	Fair
Qty / UOM	6545 / LF
RUL (years)	0
Location	Throught the Building

OBSERVATIONS/COMMENTS:

Based on age and current conditions, replacement of the water supply piping is recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D2022	Replace D2020 Domestic Water Distribution Piping	6,545.0 - LF	74.1	FN - Modernization	Priority 1	2015	484,933

Item	Description
D2023 Domestic Water Supply Equipment	D2023 Water Storage Tank 1,000 Gallon
Condition	Fair
Qty / UOM	6 / EA
RUL (years)	0
Location	17th floor west

OBSERVATIONS/COMMENTS:

There are five domestic hot water storage tanks, which supply domestic hot water to the building. There is also one fire and sprinkler tank, which provides the water for the sprinkler system located on the first floor docking area and the seventh floor IT rooms. Each tank has a capacity of 1000 gal. All tanks are original to the building. Replacement is recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D2023	Replace D2023 Water Storage Tank 1,000 Gallon	6.0 - EA	60180.0	IN - Beyond Rated Life	Priority 1	2015	361,080

Item	Description
D2023 Domestic Water Supply Equipment	D2023 Booster Pumps (150 hp) for chilled water
Condition	Good
Qty / UOM	2 / EA
RUL (years)	0
Location	6th - 2nd floors

OBSERVATIONS/COMMENTS:

Chilled water booster pumps (150-hp each) that supply the chilled water to the air handlers are located on the second and third floor west exterior. They supply chilled 40F water to air handlers on top floors. Replacement of coordinated VFD is recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D2023	Replace D2023 Booster Pumps (150 hp) for chilled water	2.0 - EA	50607.8	IN - Beyond Rated Life	Priority 1	2015	101,216

Item	Description
D2031 Waste Piping	D2034 Sanitary Waste Piping
Condition	Poor - Fair
Qty / UOM	4020 / LF
RUL (years)	4
Location	Floor levels

OBSERVATIONS/COMMENTS:

The Infrastructure Report indicated that the sanitary waste piping throughout the building is deteriorating. The maintenance staff indicates that the lines are subject to clogging and leakage. Replacement is recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D2031	Replace D2034 Sanitary Waste Piping	4,020.0 - LF	62.6	IN - Beyond Rated Life	Priority 3	2019	251,757

Item	Description
D2031 Waste Piping	D2034 Sanitary Waste Piping - Primary
Condition	Poor - Fair
Qty / UOM	2150 / LF
RUL (years)	4
Location	Main waste lines

OBSERVATIONS/COMMENTS:

Replacement of the main waste lines is recommended, based on their age and condition. Maintenance staff reports leakage and clogging.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D2031	Replace D2034 Sanitary Waste Piping - Primary	2,150.0 - LF	82.6	IN - Beyond Rated Life	Priority 3	2019	177,533

Item	Description
D2034 Sanitary Waste Equipment	D2034 Trap Primers, install
Condition	Fair
Qty / UOM	51 / EA
RUL (years)	0
Location	Restroom and other floor drains

OBSERVATIONS/COMMENTS:

Prior infrastructure studies have identified the need for trap primers on the drain P-traps, due to changes in cleaning procedures and age of the systems.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D2034	Replace D2034 Trap Primers, install	51.0 - EA	680.7	FN - Modernization	Priority 1	2015	34,715

Item	Description
D2034 Sanitary Waste Equipment	D2034 Sanitary Waste Equipment
Condition	Poor - Fair
Qty / UOM	1 / EA
RUL (years)	0
Location	Exterior of building near cafeteria

OBSERVATIONS/COMMENTS:

Provide a kitchen grease interceptor at the exterior of the building to ease maintenance and access, compared to the current interceptor inside the building.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D2034	Relocate D2034 Sanitary Waste Equipment - Grease Trap	1.0 - EA	26390.0	FN - Modernization	Priority 1	2015	26,390

COST SUMMARY:

Type	Year	Total Expenditures
D20 Plumbing	2015	\$1,327,628
D20 Plumbing	2019	\$429,290

D30 HVAC

Energy Supply	
Item	Description
Fuel Oil Type	N/A
Fuel Gas Type	N/A
Solid Fuel Type	N/A
District Heat Type	District Steam
District Cooling Type	District Chilled Water
Solar Thermal	N/A
Fuel Tank Type	N/A
Fuel Tank Size (gallons)	N/A
Fuel Tank Location	N/A
Gas Meter Location	Not Applicable
Electrical Meter Location	Pump room on the 1st floor
Water Meter Location	Loading dock

Item	Description
D3022.1 Circulating Pumps	D3022.1 Pumps HW distribution with VFD (20 hp)
Condition	Good
Qty / UOM	3 / EA
RUL (years)	14
Location	17th floor west

OBSERVATIONS/COMMENTS:

There are three 20-hp hot water distribution pumps for the building. They circulate hot water to the AHUs in each floor for heating. All pumps have VFDs, and were installed in 2014.

Item	Description
D3022.1 Circulating Pumps	D3022.1 DHW and Fire pumps (20 HP)
Condition	Good
Qty / UOM	3 / EA
RUL (years)	0

Item	Description
Location	17th floor west

OBSERVATIONS/COMMENTS:

There are two 20-hp DHW pumps and one fire pump, for circulation of domestic hot water and fire sprinklers. The pumps are functioning adequately.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3022	Replace D3022.1 DHW and Fire pumps (20 HP)	3.0 - EA	24794.2	IN - Beyond Rated Life	Priority 1	2015	74,382

Item	Description
D3023 Auxiliary Equipment	D3023 Steam pressure reducer system
Condition	Fair - Good
Qty / UOM	1 / EA
RUL (years)	0
Location	17th floor west

OBSERVATIONS/COMMENTS:

Existing steam pressure reduction system is nearing the end of its life. Currently the steam reduction system drops the district steam from 250 psi to 15 psi. Full modernization, with digital controls and upgraded piping and valve system, is recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3023	Replace D3023 Steam pressure reducer system	1.0 - EA	16497.3	FN - Modernization	Priority 1	2015	16,497

Item	Description
D3041 Air Distribution Systems	D3041 Central AHU - VAV System east 7th
Condition	Fair
Qty / UOM	1 / EA
RUL (years)	0
Location	7th floor

OBSERVATIONS/COMMENTS:

The air handler for the east side of the seventh floor of the building supplies approximately 19,500 CFM to VAV diffusers. The motor is rated to be 40-hp and is controlled by a VFD. Additionally, the air handler is also equipped with small 1.5 to 2-hp recirculating pump on the hot and chilled water lines. The dampers for the air handler are controlled by pneumatic controls, which open and close based on the call from zonal thermostats.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3041	Motor replacement 40hp	1.0 - ea	11450.9	OP - Maintenance	Priority 2	2015	11,451

Item	Description
D3041 Air Distribution Systems	D3041 Air handler VAV System west auditorium air
Condition	Fair
Qty / UOM	1 / EA
RUL (years)	0
Location	First floor

OBSERVATIONS/COMMENTS:

The air handler for the west side of the first floor auditorium supplies 19,500 CFM to variable air volume (VAV) diffusers. The motor is rated to be 40-hp, and is controlled by a VFD. Additionally, the air handler is also equipped with small 1.5 to 2-hp recirculating pumps on the hot and chilled water lines. The dampers for the air handler are controlled by pneumatic controls, which open and close based on the call from zonal thermostats.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3041	Motor replacement 40 hp	1.0 - ea	9860.5	OP - Maintenance	Priority 2	2015	9,860

Item	Description
D3041 Air Distribution Systems	D3041 Central AHU - VAV System west
Condition	Fair
Qty / UOM	16 / EA
RUL (years)	0
Location	16th - 1st floors

OBSERVATIONS/COMMENTS:

The air handlers for the west side of the building supply approximately 19,500 CFM each, 312,000 CFM total to VAV diffusers. The motors are each rated to be 40-hp. Each is controlled by a VFD. Additionally, the air handlers are equipped with small 1.5 to 2-hp recirculating pumps on the hot and chilled water lines. The dampers are controlled by pneumatic controls, which open and close based on the call from zonal thermostats. Motor replacement is recommended. Motor replacement is recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3041	Motor replacement 40 hp	16.0 - ea	11450.9	OP - Maintenance	Priority 2	2015	183,214

Item	Description
D3041 Air Distribution Systems	D3041 Central AHU - VAV System east
Condition	Fair
Qty / UOM	16 / EA
RUL (years)	0
Location	16th - 1st floors

OBSERVATIONS/COMMENTS:

The air handlers on the east side of the building supply approximately 21,500 CFM each, 344,000 CFM total to VAV diffusers. The motors are rated to be 40-hp each. Each motor is controlled by a VFD. Additionally, the air handlers are equipped with small 1.5 to 2-hp recirculating pumps on the hot and chilled water lines. The dampers are controlled by pneumatic controls, which open and close based on the call from zonal thermostats. Motor replacement is recommended.

Item	Description
D3041.1 Air Handling Units	D3041.1 Freight room AHU unit
Condition	Fair - Good
Qty / UOM	1 / EA
RUL (years)	0
Location	Freight elevator room

OBSERVATIONS/COMMENTS:

A ceiling-mounted air handler feeds the freight elevator room. The air handler is provided with heated or chilled water from the central system. Motor replacement is recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3041	Replace 10 hp motor for air handler	1.0 - EA	3737.4	OP - Maintenance	Priority 2	2015	3,737

Item	Description
D3041.1 Air Handling Units	D3041.1 Roof air handler for 16th flr
Condition	Fair - Good
Qty / UOM	2 / EA
RUL (years)	0
Location	Roof

OBSERVATIONS/COMMENTS:

The air handler is located on the 16th floor and serves the floors below. It supplies 4500 cfm and has a 15-hp motor which is 20 yrs old. Motor is working beyond its lifetime and needs replacement.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3041	Motor replacement only	2.0 - ea	5832.0	OP - Maintenance	Priority 2	2015	11,664

Item	Description
D3041.1 Air Handling Units	D3041.1 UPS room AC unit with chilled water loop
Condition	Good
Qty / UOM	1 / EA
RUL (years)	18
Location	17th floor east

OBSERVATIONS/COMMENTS:

The air conditioning (AC) unit supplies chilled air to UPS backup room for the seventh floor IT rooms.

Item	Description
D3041.2 Terminal Units VAV	D3041.2 VAV Boxes- mixing
Condition	Fair
Qty / UOM	1500 / EA
RUL (years)	0
Location	Throughout facility

OBSERVATIONS/COMMENTS:

The facility is heated and cooled by VAV terminals supplied with conditioned air from the central system air handlers. Most are original to the building. Replacement is recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3041	Replace D3041.2 VAV Boxes- mixing	1,500.0 - EA	3460.5	IN - Beyond Rated Life	Priority 1	2015	5,190,739

Item	Description
D3042 Exhaust Ventilation Systems	D3042 Return Air Distribution System
Condition	Fair
Qty / UOM	658544 / Floor
RUL (years)	0
Location	Every Floor

OBSERVATIONS/COMMENTS:

At the time of the asbestos fire proofing abatement, installation of new return air ducting will be required.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3042	Replace D3042 Return Air Distribution System	658,544.0 - Floor	3.1	FN - Modernization	Priority 1	2015	2,037,535

Item	Description
D3042 Exhaust Ventilation Systems	D3042 IT and telecommunication rooms exhaust fans (15 hp)
Condition	Fair
Qty / UOM	4 / EA
RUL (years)	0
Location	17th floor west
Ventilation Fan Manufacturer	Aladdin

OBSERVATIONS/COMMENTS:

Exhaust fans for the seventh floor IT rooms provide hot air exhaust from the server rooms. Replacement is recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3042	Motor replacement 15 hp	4.0 - ea	5832.0	OP - Maintenance	Priority 2	2015	23,328

Item	Description
D3042 Exhaust Ventilation Systems	D3042 Exhaust fans central west
Condition	Fair - Good
Qty / UOM	4 / EA
RUL (years)	0
Location	17th floor east
Ventilation System	Central Exhaust Duct Network
Ventilation Fan Manufacturer	Aladdin

OBSERVATIONS/COMMENTS:

Synchronized replacement of four 15-hp motors, 67,000 CFM must be coordinated. Exhaust fans are recommended for the west section floors.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3042	Motor replacement 15 hp	4.0 - ea	25575.8	OP - Maintenance	Priority 2	2015	102,303

Item	Description
D3042 Exhaust Ventilation Systems	D3042 Exhaust fan restroom (15 hp)
Condition	Fair
Qty / UOM	1 / EA
RUL (years)	0
Location	17th floor west
Ventilation Fan Manufacturer	Aladdin

OBSERVATIONS/COMMENTS:

Exhaust fans with 15-hp motors are connected to all the restrooms in the building. The total capacity is 43,000 CFM. Motor replacement is recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3042	Motor replacement 15 hp	1.0 - ea	5832.0	OP - Maintenance	Priority 2	2015	5,832

Item	Description
D3042 Exhaust Ventilation Systems	D3042 Exhaust fan kitchen west (15 hp)
Condition	Fair - Good
Qty / UOM	1 / EA
RUL (years)	0
Location	17th floor west
Ventilation System	Central Exhaust Duct Network
Ventilation Fan Manufacturer	Aladdin

OBSERVATIONS/COMMENTS:

The existing motor for the exhaust fan for the kitchen is 5-hp, and exhausts 21,000 CFM. Motor replacement is recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3042	Motor replacement 15 hp	1.0 - ea	10388.3	OP - Maintenance	Priority 2	2015	10,388

Item	Description
D3042 Exhaust Ventilation Systems	D3042 Exhaust fans east central (15 hp)
Condition	Fair - Good
Qty / UOM	4 / EA
RUL (years)	0
Location	17th floor east

OBSERVATIONS/COMMENTS:

There are four 15-hp exhaust fans located on the east side on the 17th floor. These are the building exhaust for the east side floors. Motors on each exhaust fan are at the end of their life cycle.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3042	Motor replacement 15 hp	4.0 - ea	25575.8	OP - Maintenance	Priority 2	2015	102,303

Item	Description
D3043 Steam Distribution Systems	D3043 Heat Exchanger for DHW
Condition	Fair
Qty / UOM	1 / EA
RUL (years)	18
Location	17th floor west
Heat Exchangers Purpose	Domestic Hot Water Production
Heat Exchanger Process	Steam To Liquid

OBSERVATIONS/COMMENTS:

This is a shell-and-tube steam to hot water heat exchanger for domestic hot water to the building. There is a suspected presence of asbestos insulation. The unit is original to the building, though the coils were replaced in the past two years.

Item	Description
D3043 Steam Distribution Systems	D3043 Heat Exchanger for Heating
Condition	Fair
Qty / UOM	2 / EA
RUL (years)	18
Location	17th floor west
Heat Exchangers Purpose	Space Heating
Heat Exchanger Process	Steam To Liquid

OBSERVATIONS/COMMENTS:

There are shell-and-tube steam-to-hot water heat exchangers for hot water heating in the building. The presence of asbestos insulation is suspected. The overall unit is original to the building, though the coils were replaced in the past two years.

Item	Description
D3068 Building Automation Systems	D3068 Direct Digital Controls (DDC) Pneumatic System

Item	Description
Condition	Fair
Qty / UOM	656625 / SF
RUL (years)	0
Location	Throughout facility

OBSERVATIONS/COMMENTS:

The building controls, original to the building, are pneumatic. The current pneumatic controls work based on air pressure supplied by the district plant. All thermostats and dampers are controlled via pneumatics for the building. Pneumatic systems are prone to leakage issues, and must be maintained to keep all systems in the building up to date. Configuring variable speed controls to work with existing pneumatic system is a major concern. As the control system is antiquated, a full pneumatic gutting and conversion to a web-based electronic DDC platform is highly recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D3068	Replace D3068 Direct Digital Controls (DDC) Pneumatic System	656,625.0 - SF	8.2	FN - Modernization	Priority 1	2015	5,406,388

Item	Description
D3069 Other Controls & Instrumentation	D3069 Air compressor
Condition	Good
Qty / UOM	2 / EA
RUL (years)	11
Location	17th floor west

OBSERVATIONS/COMMENTS:

Small 1.5-hp air compressors for DHW tanks are located on the 17th floor. They are fairly new and functioning properly.

Item	Description
D3069 Other Controls & Instrumentation	D3069 Air compressor for all district air pneumatics
Condition	Good
Qty / UOM	1 / EA
RUL (years)	11
Location	17th floor east

OBSERVATIONS/COMMENTS:

The 10-hp air compressor is used for all the pneumatic controls in the building. It reduces 75-psi district air to 30 psi.

COST SUMMARY:

Type	Year	Total Expenditures
D30 HVAC	2015	\$13,189,623

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	No
Smoke Detectors Power Supply	Hardwired Electric
Carbon Monoxide Detectors	No
Heat Detector	N/A
Central Fire Alarm Panel Location	N/A
Annunciator Panel Location	N/A
Fire Extinguishers	Yes
Fire Extinguisher Inspection Date	N/A
Distance to Nearest Fire Hydrant (ft)	N/A
Illuminated Exit Signs	Yes
Kitchen Suppression Systems	No
Halon Gas Systems	No
Smoke Evacuation Systems	No
Fire-rated Stairwells	Yes
Fire-rated Stairwell Finish	N/A
Stairwell Discharge	N/A
Stairwell Pressurized	No
Fire-Rated Doors Observed	Yes
Location of Fire-Rated Doors	Stairwells
Fire Alarm Service Company	N/A
Date of Last Fire Alarm Service	N/A
Are the individual office unit fire alarm systems monitored?	No
Are the common area fire alarm systems monitored?	No
Types of Common Areas Monitored	N/A
Fire Alarm Monitoring Company	N/A

Item	Description
D4011 Sprinkler Water Supply	D4011 Sprinkler Water Supply
Condition	Poor - Fair
Qty / UOM	2 / EA
RUL (years)	0
Location	From adjacent streets

OBSERVATIONS/COMMENTS:

The water service for the proposed fire sprinklers and standpipes will require two water connections from separate municipal mains in the adjacent streets.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D4011	Replace D4011 Sprinkler Water Supply	2.0 - EA	109200.0	CC - Life Safety	Priority 1	2015	218,400

Item	Description
D4011 Sprinkler Water Supply	D4011 Wet- Pipe Sprinkler system installation
Condition	Poor
Qty / UOM	656625 / SF
RUL (years)	0
Location	Throughout facility

OBSERVATIONS/COMMENTS:

The entire facility lacks a fire suppression overhead sprinkler system. Only the seventh floor IT room and the first floor docking area have fire sprinkler systems. EMG recommends a facility-wide fire suppression retrofit as a life safety improvement. The cost for this work also includes a water tank that is required for high-rise fire sprinkler systems.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D4011	Replace D4011 Wet- Pipe Sprinkler system installation	656,625.0 - SF	8.9	CC - Life Safety	Priority 1	2015	5,811,131

Item	Description
D4012 Sprinkler Pumping Equipment	D4012 Fire Pump Electric 500 Gpm 27 HP
Condition	Good
Qty / UOM	2 / EA
RUL (years)	5
Location	First floor

OBSERVATIONS/COMMENTS:

There are currently two fire pumps for circulation of fire sprinklers on the first floor. The pumps are functioning adequately. Based on their EUL replacement is anticipated later in the term.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D4012	Replace D4012 Fire Pump Electric 500 Gpm 27 HP	2.0 - EA	60726.2	CC - Life Safety	Priority 3	2020	121,452

Item	Description
D4023 Standpipe Equipment	D4011 Sprinkler Water Supply
Condition	Poor - Fair
Qty / UOM	51 / Floor
RUL (years)	0
Location	Stairwells

OBSERVATIONS/COMMENTS:

Standpipes are required at each stairwell to meet current fire codes.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D4023	Replace D4011 Sprinkler Water Supply	51.0 - Floor	4550.0	CC - Life Safety	Priority 1	2015	232,050

Item	Description
D4024 Fire Hose Equipment	D4024 Fire hoses
Condition	Good
Qty / UOM	2000 / LF
RUL (years)	15
Location	Throughout facility

OBSERVATIONS/COMMENTS:

No further action is required.

COST SUMMARY:

Type	Year	Total Expenditures
D40 Fire Protection Systems	2015	\$6,261,581
D40 Fire Protection Systems	2020	\$121,452

D50 ELECTRICAL SYSTEMS

Item	Description
D5012 Low Tension Service & Dist.	D5012 Electrical Distribution Panel, 1200 Amp
Condition	Poor - Fair
Qty / UOM	1 / EA
RUL (years)	0
Location	First floor
Service Size (Amperage)	1200
Service Voltage	277/480
Service Voltage Type	Three-Phase Four-Wire Alternating Current (Ac)

OBSERVATIONS/COMMENTS:

The majority of breaker panels are Zinsco brand. These have a history of safety issues and have become obsolete. Recommendation is to replace all panels. Common area lighting on some floors is not compatible with panels and the energy management system; therefore, lighting doesn't turn off at night on some floors, as per schedule. Panel replacement may prove problematic, due to the presence of asbestos.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D5012	Replace D5012 Electrical Distribution Panel, 1200 Amp	1.0 - EA	20717.7	IN - Beyond Rated Life	Priority 1	2015	20,718

Item	Description
D5012 Low Tension Service & Dist.	D5010 Electrical Service and Distribution
Condition	Good
Qty / UOM	10 / EA
RUL (years)	26
Location	Various floors

OBSERVATIONS/COMMENTS:

The newer panels were installed in 2000.

Item	Description
D5012 Low Tension Service & Dist.	D5012 Freight elevator mechanical room breaker panel
Condition	Fair
Qty / UOM	1 / EA
RUL (years)	0
Location	Freight elevator room

OBSERVATIONS/COMMENTS:

The vast majority of breaker panels are Zinsco brand. Zinsco panels have had a history of failure due to arcing across the breaker to buss bar connection, resulting in excessive heating, and sometimes fire. Replacement is recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D5012	Replace D5012 Freight elevator mechanical room breaker panel	1.0 - EA	7864.3	IN - Beyond Rated Life	Priority 1	2015	7,864

Item	Description
D5012 Low Tension Service & Dist.	D5010 Electrical Service and Distribution
Condition	Poor
Qty / UOM	86 / EA
RUL (years)	0
Location	Various floors

OBSERVATIONS/COMMENTS:

The majority of breaker panels are Zinsco brand. These have a history of safety issues related and have become obsolete. Recommendation is to replace all panels. Common area lighting on some floors is not compatible with panels and the energy management system; therefore, lighting doesn't turn off at night on some floors, as per schedule. Panel replacement may prove problematic, due to the presence of asbestos.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D5012	Replace D5010 Electrical Service and Distribution	86.0 - EA	3009.0	IN - Beyond Rated Life	Priority 1	2015	258,774

Item	Description
D5022 Lighting Equipment	D5022 Lighting Fixtures
Condition	Fair - Good
Qty / UOM	7065 / EA
RUL (years)	0
Location	Ceiling Areas

OBSERVATIONS/COMMENTS:

Seismic bracing, asbestos abatement, and ceiling replacement work will require replacement of the existing light fixtures.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D5022	Replace D5022 Lighting Fixtures	7,065.0 - EA	309.4	FN - Modernization	Priority 1	2015	2,185,911

Item	Description
D5022 Lighting Equipment	D5022 Wall Pack 150 Watt High Pressure Sodium
Condition	Fair
Qty / UOM	12 / EA
RUL (years)	0
Location	Exterior

OBSERVATIONS/COMMENTS:

Photo sensor controlled. Replacement is recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D5022	Replace D5022 Wall Pack 150 Watt High Pressure Sodium	12.0 - EA	1311.6	IN - Beyond Rated Life	Priority 1	2015	15,740

Item	Description
D5037 Fire Alarm Systems	D5037 Fire Alarm System
Condition	Fair - Good
Qty / UOM	656625 / SF
RUL (years)	0
Location	First floor

OBSERVATIONS/COMMENTS:

The fire alarm system should be replaced with a new code-compliant system.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D5037	Replace D5037 Fire Alarm System	656,625.0 - SF	3.5	CC - Life Safety	Priority 1	2015	2,324,453

Item	Description
D5039 Local Area Networks	D5039 Telecommunications and Security Systems
Condition	Fair
Qty / UOM	658544 / SF
RUL (years)	0
Location	Throughout Building

OBSERVATIONS/COMMENTS:

Based on the mixture of old and newer systems, a renovation of the telecommunications and security system wiring is recommended.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
D5039	Replace D5039 Telecommunications and Security Systems	658,544.0 - SF	1.9	FN - Modernization	Priority 1	2015	1,258,478

Item	Description
D5092 Emergency Light & Power Systems	D3022.1 Circulation Pump 1.5 HP to Supply Emergency Generator Diesel Fuel
Condition	Fair
Qty / UOM	2 / EA
RUL (years)	0
Location	First floor

OBSERVATIONS/COMMENTS:

Diesel pumps supply the emergency generators with the required fuel. Replacement of the pumps is in progress, and costs are not included in this report.

Item	Description
D5092 Emergency Light & Power Systems	D5092 New Generators 4 x 180 kVA
Condition	Good
Qty / UOM	4 / EA
RUL (years)	20
Location	Roof

OBSERVATIONS/COMMENTS:

The generators provide power for basic lighting; each has a capacity of 180kva. They were installed beginning in June 2014.

Item	Description
D5092 Emergency Light & Power Systems	D5092 Current Generator- 250 kva
Condition	Good
Qty / UOM	1 / EA
RUL (years)	13
Location	Roof

OBSERVATIONS/COMMENTS:

The existing generator is located on the roof, and appears to be in working condition. It provides power for basic emergency lighting only for the building.

COST SUMMARY:

Type	Year	Total Expenditures
D50 Electrical Systems	2015	\$6,071,937

E Equipment & Furnishing Systems

E10 EQUIPMENT

Item	Description
E1097 Window Washing Equipment	E1097 Roof Carriage track
Condition	Poor
Qty / UOM	845 / LF
RUL (years)	0
Location	17th Floor Roof

OBSERVATIONS/COMMENTS:

According to the OPOS Report dated June 3, 2010, the existing roof carriage track is in repairable condition; this estimate is to repair the existing.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
E1097	Replace E1097 Roof Carriage track	845.0 - LF	559.5	IN - Beyond Rated Life	Priority 2	2015	472,794

Item	Description
E1097 Window Washing Equipment	E1097 Roof carriage with suspended scaffold
Condition	Poor
Qty / UOM	1 /
RUL (years)	0
Location	17th Floor Roof

OBSERVATIONS/COMMENTS:

The existing carriage scaffold has suffered structural failure, and is not repairable. It must be replaced.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
E1097	Replace E1097 Roof carriage with suspended scaffold	1.0 -	610700.0	IN - Beyond Rated Life	Priority 2	2015	610,700

COST SUMMARY:

Type	Year	Total Expenditures
E10 Equipment	2015	\$1,083,494

F Special Construction And Demolition Systems

F10 SPECIAL CONSTRUCTION

Flood Zone / Seismic Zone / Wind Zone	
Item	Description
Flood Zone	Zone X (shaded)
Secondary Flood Zone	N/A
Tertiary Flood Zone	N/A
Seismic Zone	3, defined as an area of moderate to high probability of damaging ground motion.
Wind Zone	Zone I (130 mph)
Subject in Special Wind Region?	No
Subject in Hurricane Susceptible Region?	No

Item	Description
F1039 Other Special Construction Systems	F1039 Fire rated wall/ceiling construction in corridors
Condition	Poor
Qty / UOM	28000 / LF
RUL (years)	0
Location	Corridors

OBSERVATIONS/COMMENTS:

According to maintenance staff, the Fire Marshal has requested that the construction of the central corridor be one-hour fire rated. The difficulty of the work is increased by the existence of asbestos in the flooring, ceiling, and insulation.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
F1039	Replace F1039 Fire rated wall/ceiling construction in corridors	28,000.0 - LF	248.0	CC - Building Code	Priority 1	2015	6,944,000

COST SUMMARY:

Type	Year	Total Expenditures
F10 Special Construction	2015	\$6,944,000

F20 SELECTIVE DEMOLITION

Item	Description
F2021 Removal of Hazardous Components	F2021 Removal of Asbestos From Structural members
Condition	Fair
Qty / UOM	65662 / SF
RUL (years)	0
Location	Strucural Steel

OBSERVATIONS/COMMENTS:

Structural members are encapsulated in asbestos. Extensive work proposed will involve structural members, resulting in aerosolization of asbestos; abatement is required.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
F2021	Replace F2021 Removal of Asbestos From Structural members	65,662.0 - SF	21.7	EN - Asbestos	Priority 2	2015	1,422,108

Item	Description
F2021 Removal of Hazardous Components	F2021 Abestos abatement of structures exposed by wall and ceiling modification
Condition	Poor
Qty / UOM	28000 / LF
RUL (years)	3
Location	Wall/ceiling construction

OBSERVATIONS/COMMENTS:

Due to the renovation of the walls and ceilings to provide for a one-hour rating, area will be exposed, requiring asbestos abatement.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
F2021	Replace F2021 Abestos abatement of structures exposed by wall and ceiling modification	28,000.0 - LF	41.9	EN - Asbestos	Priority 3	2018	1,173,536

Item	Description
F2021 Removal of Hazardous Components	F2021 Removal of mastic containing asbestos in VCT replacement
Condition	Poor
Qty / UOM	6111 / SY
RUL (years)	0
Location	First and eighth floors

OBSERVATIONS/COMMENTS:

Removal of the mastic is required with the replacement of the vinyl floor tile. The mastic is presumed to contain asbestos due to its age, and removal will result in aerosolization.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
F2021	Replace F2021 Removal of mastic containing asbestos in VCT replacement	6,111.0 - SY	41.9	EN - Asbestos	Priority 2	2015	255,973

Item	Description
F2021 Removal of Hazardous Components	F2021 Abatement of asbestos associated with ceiling tile replacement
Condition	Poor
Qty / UOM	579400 / LF
RUL (years)	0
Location	Throughout most floors of building, where stained and sagging ceiling tiles are replaced

OBSERVATIONS/COMMENTS:

Abatement is to be coordinated with the tile replacement, scheduled in the reserve term.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
F2021	Replace F2021 Abatement of asbestos associated with ceiling tile replacement	579,400.0 - LF	41.9	EN - Asbestos	Priority 2	2015	24,283,813

COST SUMMARY:

Type	Year	Total Expenditures
F20 Selective Demolition	2015	\$25,961,893
F20 Selective Demolition	2018	\$1,173,536

G Building Sitework Systems

G30 SITE CIVIL/MECHANICAL UTILITIES

Item	Description
G3011 Potable Water Distribution and Storage	G30 Site Civil/Mechanical Utilities
Condition	Fair
Qty / UOM	120 / LF
RUL (years)	0
Location	Site

OBSERVATIONS/COMMENTS:

A new water supply connection to the building is needed.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
G3011	Replace G30 Site Civil/Mechanical Utilities	120.0 - LF	218.4	FN - Modernization	Priority 2	2015	26,208

COST SUMMARY:

Type	Year	Total Expenditures
G30 Site Civil/Mechanical Utilities	2015	\$26,208

G40 SITE ELECTRICAL UTILITIES

Item	Description
G4021 Fixtures & Transformers	G4022 400 W HPS Fixtures
Condition	Good
Qty / UOM	10 / EA
RUL (years)	19
Location	Roof
Location of Site Lighting	Building Exterior Envelope

OBSERVATIONS/COMMENTS:

No further action required.

Item	Description
G4021 Fixtures & Transformers	G4021 Landscape Ground Mounted Uplight Fixture Only
Condition	Good
Qty / UOM	7 / EA
RUL (years)	3
Location	Exterior

OBSERVATIONS/COMMENTS:

The units are functioning adequately. Based on their estimated RUL, replacement is anticipated in a few years.

COST RECOMMENDATIONS:

Type	Component Description	Qty / UOM	Unit Cost (\$)	Plan Type	Priority	Year	Expenditures (\$)
G4021	Replace G4021 Landscape Ground Mounted Uplight Fixture Only	7.0 - EA	1719.5	IN - Beyond Rated Life	Priority 3	2018	12,037

COST SUMMARY:

Type	Year	Total Expenditures
G40 Site Electrical Utilities	2018	\$12,037

The weather at the time of the assessment was:

Item	Description
Approximate Outdoor Temperature (degrees F)	60
Weather Conditions	Cloudy
Snow Covering Ground	No
Wind Conditions	Little to no wind

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

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

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: Kay van der Have, Field Observer

Reviewed By: 
Matt Anderson, Program Manager

APPENDIX D: PHOTOS



:- Main Entrance



:- Front elevation



:- Side elevation





B1029 Guard rail at roof edge :- No railing



B1029 Guard rail at roof edge:- Should be brought up to code



B2011 Curtain Wall with windows



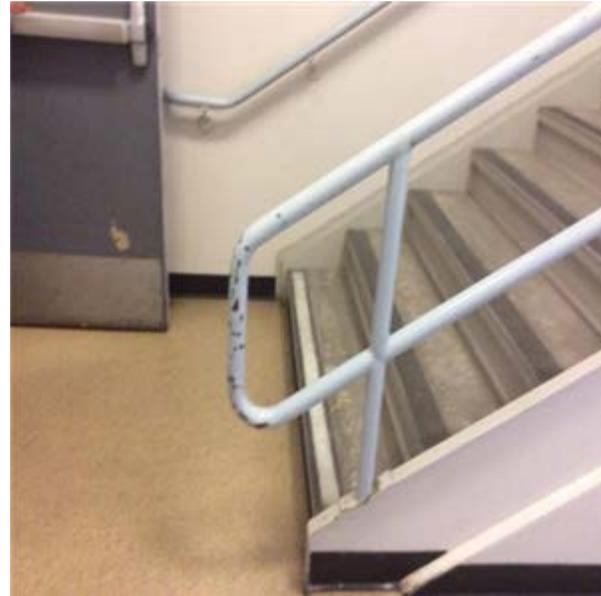
B2031 Entry doors:- Main entrance



B3011 Built-Up Roofing, Total Roof



B3011 Built-Up Roofing, Total Roof:- Detail



C2011 Interior stairs - railing and guardrail :- Handrail extensions



C3012 Drywall - Painted Finished Walls



C3024 Terrazzo :- Lobby



C3024 Vinyl Tile



C3025 Corridor Carpet Tiles - Standard



C3025 Office Carpet Tiles - Standard:- Office areas



D1011 Traction Geared Elevator - High Rise and Low rise :- Passenger elevator motors



D1011 Traction Geared Elevator - High Rise and Low rise:- Elevator lobby first floor



D1012 Freight elevator :- Motor



D1012 Freight elevator:- Interior finishes



D2011 Commercial Grade Water Closet With 1.6 Gpf Unit :- Pedal controlled flush



D2012 Urinals with sensors:- Sensor flush controller



D2013 Restroom Sink and Faucet



D2010 Drinking Fountains:- Not ADA accessible



D2023 Booster Pumps (150 hp) for chilled water :-
Chilled water booster pump



D2023 Water Storage Tank 1,000 Gallon:- Water
storage tank



D3022.1 Pumps HW distribution with VFD (20 hp) :-
Hot water distribution



D3022.1 DHW and Fire pumps (20 HP):- Hot water
distribution pump with backflow preventer



D3022.1 DHW and Fire pumps (20 HP) :- Hot water pump with low pressure engagement switch



D3023 Steam pressure reducer system:- Steam pressure reductive system



D3041 Air handler VAV System west auditorium air :- VAV - West auditorium air conditioning



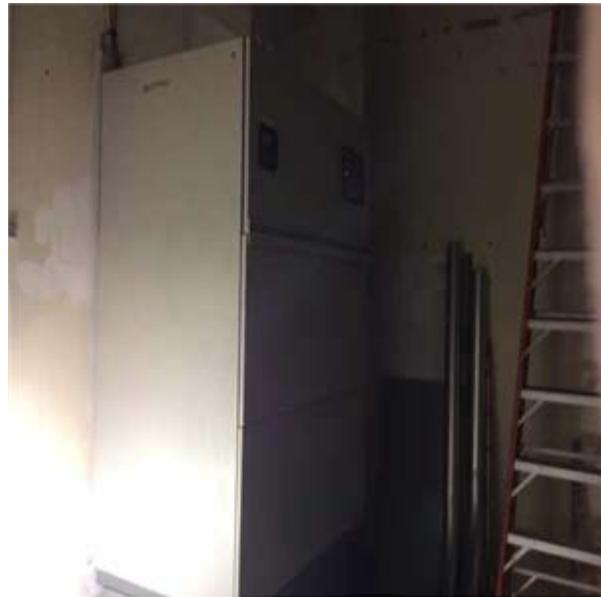
D3041 Central AHU - VAV System west:- Central air handling unit



D3041 Central AHU - VAV System east 7th :- VAV - 7th floor east section



D3041 Central AHU - VAV System east:- Central AHU - connection to VAV east side



D3041.1 UPS room AC unit with chilled water loop :- Dedicated air conditioner for UPS room



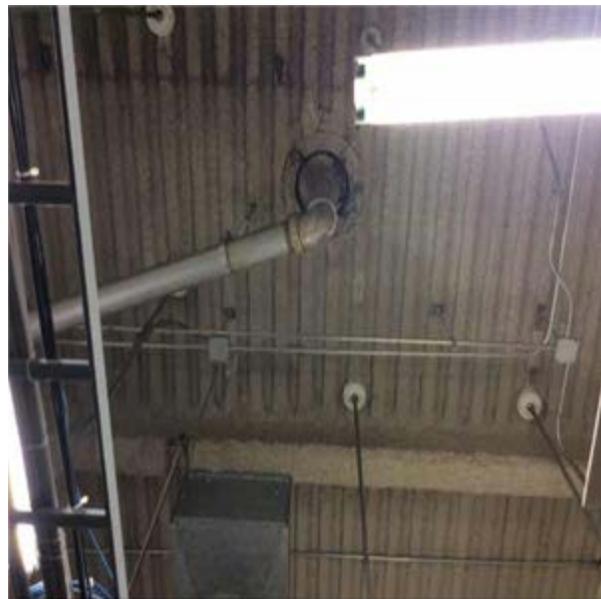
D3041.1 Freight room AHU unit:- Encapsulated HVAC piping to VAV



D3041.1 Roof air handler for 16th flr :- Roof air handler for 16th floor



D3042 IT and telecommunication rooms exhaust fans (15 hp):- Outside air mixing cabinet



D3042 IT and telecommunication rooms exhaust fans (15 hp) :- Roof drain - compromised flange resulting in leak



D3042 Exhaust fans central west:- West side exhaust fan



D3042 Exhaust fan restroom (15 hp) :- Central exhaust fan for bathrooms



D3042 Exhaust fan kitchen west (15 hp):- Kitchen exhaust fan - west side



D3042 Exhaust fans east central (15 hp) :- Central exhaust fan - east side



D3043 Heat Exchanger for DHW:- Hot water heat exchanger



D3043 Heat Exchanger for Heating :- Heat exchanger



D3068 Direct Digital Controls (DDC) Pneumatic System:- Direct digital controllers (DDC) for pneumatic system



D3068 Direct Digital Controls (DDC) Pneumatic System :- Pneumatic controller on VAV



D3069 Air compressor:- Auxiliary air compressors



D3069 Air compressor for all district air pneumatics :-
Air compressor for pneumatic controllers



D4012 Fire Pump Electric 500 Gpm 27 HP:- Pump with
stand pipe visible



D4024 Fire hoses



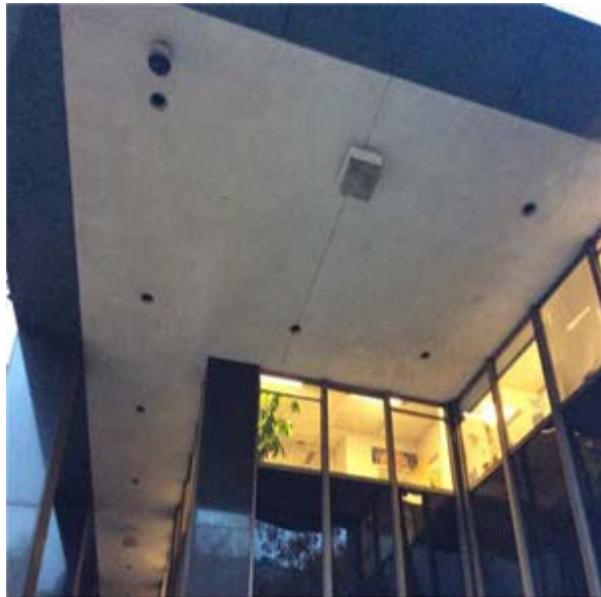
D5012 Freight elevator mechanical room breaker
panel:- Freight elevator motor



D5012 Freight elevator mechanical room breaker panel :- Freight elevator controller cabinet



D5012 Electrical Distribution Panel, 1200 Amp:- 1200 amp



D5022 Wall Pack 150 Watt High Pressure Sodium :- Canopy downlighting



D5037 Fire Alarm System:- Main fire control panel



D5092 Current Generator- 250 kva



D3022.1 Circulation Pump 1.5 HP to Supply Emergency Generator Diesel Fuel:- Diesel



D5092 New Generators 4 x 180 kVA



E1097 Roof Carriage track:- window washing track



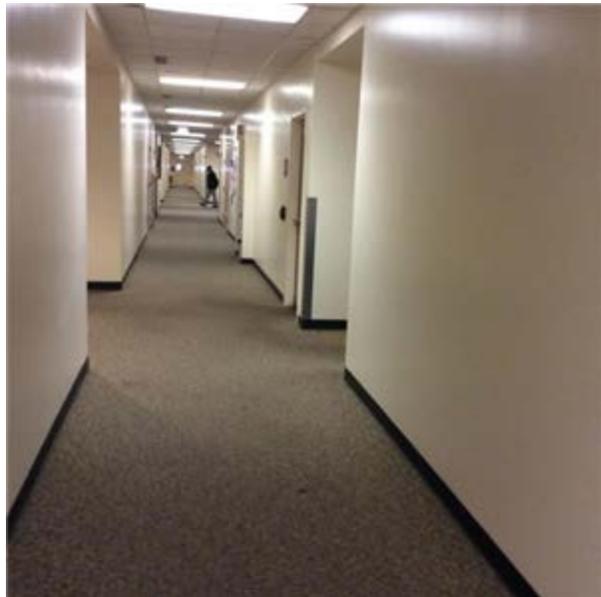
E1097 Roof Carriage track :- carriage track



E1097 Roof carriage with suspended scaffold:- broken winding



E1097 Roof carriage with suspended scaffold :- existing equipment



F1039 Fire rated wall/ceiling construction in corridors



G4021 Landscape Ground Mounted Uplight Fixture Only :- Ground mounted upward illumination fixture



G4022 400 W HPS Fixtures:- Wall mounted HPS fixture

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

RESOURCES BUILDING FACT SHEET

1416 Ninth Street
Sacramento
Sacramento County

Category 1 High Priority - Critical Infrastructure Improvements

BUILDING INFORMATION

- Age: 50 years (completed in 1964)
- Size:*
 - 17-story
 - 656,625 GSF 520,126 NUSF 520,126 Assigned SF
 - 1.48 Acre Parcel
 - No onsite parking
 - Capacity - 2,327 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 is an additional \$0.60/month per SF
- LEED Status: Registered for LEED-EB Certification as part of DGS blanket registration in 2008.
- Tenants: 5 Resource Agency Departments, including the Department of Fish and Wildlife (62,875 SF), the Department of Forestry and Fire Protection (41,701 SF), the Department of Parks and Recreation (101,979 SF), the Department of Water Resources (253,154 SF), and the Natural Resources Agency offices (7,070 SF). The balance of space is assigned to DGS for various purposes (auditorium, shop, etc.)



SPI Structure #: 2297
Real Property #: 688
BPM #: 018

COMPLETED STUDIES AND SIGNIFICANT FINDINGS

A. 2001 Resources Building Renovation Study

The study identified various issues in need of correction including; Seismic Retrofit Risk Level 4, lack of proper exiting in the event of a fire, inadequate smoke evacuation system, lack of fire sprinkler system throughout the building, the presence of asbestos-containing materials and lead-based paint throughout the building.

B. 2010 American Disability Act Accessibility Compliance Survey

Accessibility-related deficiencies per the ADA exist throughout the building, which will create path-of-travel issues for future tenant improvement projects.

C. 2012 Access Compliance Conceptual Budget/Evaluation

In follow up to the 2010 American Disability Act Accessibility Compliance Survey, this report provides the Conceptual Cost and Path of Travel Plans. Because a renovation is planned, this building is not included as part of DGS's ten year ADA Compliance Upgrades and Deferred Special Repairs Program.

ADDITIONAL BUILDING ISSUES

The California Technology Agency has designated the data center as a Tier III Data Center, but only to serve the departments under the Natural Resources Agency.

CURRENT UTILIZATION PROJECTS

No utilization projects planned.

RECENTLY COMPLETED PROJECTS

TBD

Cost

ACTIVE PROJECTS

TBD

Cost

PLANNED SPECIAL REPAIRS BY FISCAL YEAR

TBD

Estimated Cost

* Source: Statewide Property Inventory

Resources Building Fact Sheet

1416 Ninth Street
Sacramento

**Category 1 - High Priority
Critical Infrastructure Deficiencies**

DGS STRATEGY: A place holder/COCP has been submitted for a full renovation of the building starting in 2017-18. The 2001 Renovation Study was updated by PMB in 2013-14, and is the basis for the COCP. PMB's conceptual estimate for this option is \$385 M. A Tier III Data Center is nearing completion as authorized by the California Technology Agency for the exclusive use of Resources Agency Departments. A new/replacement building must be constructed before renovation of the Resources Building can occur.

APPENDIX G: COST TABLES

10 YEAR EXPENDITURE FORECAST



Resources Building
1416 Ninth Street
Sacramento

Useful Life

Estimated Useful Life
Remaining Useful Life

Plan Type

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

Legend

Deferred
Scheduled

Element #	Component Description	Asset	Location	Action	EUL (Yrs)	RUL (Yrs)	Qty.	Unit of Meas.	Unit Cost	Plan Type	Priority	2015 Year 0	2016 Year 1	2017 Year 2	2018 Year 3	2019 Year 4	2020 Year 5	2021 Year 6	2022 Year 7	2023 Year 8	2024 Year 9	Total - Deferred	Total - Scheduled										
A. SUBSTRUCTURE																																	
Substructure Subtotal												\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
B. SHELL																																	
B10 SUPERSTRUCTURE																																	
B1019	Other Floor Construction	B1019 Seismic Bracing	Throughout Building	Replace B1019 Seismic Bracing	50	0	656,625.00	SF	\$18.45	CC - Life Safety	Priority 1	\$12,117,883	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$12,117,883	\$0										
B1029	Other Roof Systems	B1029 Guard rail at roof edge	Edge of roof	Replace B1029 Guard rail at roof edge	25	0	900.00	LF	\$421.60	CC - Life Safety	Priority 1	\$379,440	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$379,440	\$0										
B20 EXTERIOR ENCLOSURE																																	
B2011	Exterior Wall Construction	B2011 Curtain Wall with windows	Exterior of building	Replace B2011 Curtain Wall with windows	50	0	198,660.00	SF	\$318.50	IN - Beyond Rated Life	Priority 1	\$63,273,210	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$63,273,210	\$0										
B2011	Exterior Wall Construction	B2010 Paint Exterior Walls Roof Level	Roof penthouses and recessed area	Replace B2010 Paint Exterior Walls Roof Level	7	0	32,400.00	SF	\$5.95	IN - Appearance	Priority 1	\$192,845	\$0	\$0	\$0	\$0	\$0	\$0	\$192,845	\$0	\$0	\$192,845	\$192,845										
B2031	Glazed Doors & Entrances	B2031 Glazed Storefront Systems	Ground floor	Replace B2031 Glazed Storefront Systems	25	0	4,900.00	SF	\$73.75	IN - Beyond Rated Life	Priority 1	\$361,357	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$361,357	\$0										
B30 ROOFING																																	
B3011	Built-Up Roofing, Total Roof	B3011 Built-Up Roofing, Total Roof	all roofs	Replace B3011 Built-Up Roofing, Total Roof	20	0	450.00	SQ	\$2,161.70	IN - Beyond Rated Life	Priority 1	\$972,765	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$972,765	\$0										
Shell Subtotal												\$77,297,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$192,845	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$77,297,500	\$192,845
C. INTERIORS																																	
C10 INTERIOR CONSTRUCTION																																	
C1031	Fabricated Toilet Partitions	C1011 Fixed Partitions	Throughout restrooms	Replace C1011 Fixed Partitions	20	6	96.00	EA	\$2,331.20	IN - Appearance	Priority 4	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$223,795	\$0	\$0	\$0	\$0	\$223,795									
C20 STAIRS																																	
C2014	Steel Construction	C2011 Interior stairs - railing and guardrail	Each end and center of building	C3010 Prep and paint steel stairway parts	7	0	30,600.00	SF	\$3.87	IN - Appearance	Priority 2	\$118,422	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$118,422	\$0	\$0	\$118,422	\$118,422									
C30 INTERIOR FINISHES																																	
C3012	Drywall - Painted Finished Walls	C3012 Drywall - Painted Finished Walls	Interior painted walls, 5 floors	C3010 Paint interior walls, drywall	7	0	210,000.00	SF	\$2.08	IN - Appearance	Priority 3	\$436,800	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$436,800	\$0	\$0	\$436,800	\$436,800									
C3024	Vinyl Tile	C3024 Vinyl Tile	Corridors	Replace C3024 Vinyl Tile	15	0	5,111.00	SY	\$125.78	IN - Appearance	Priority 2	\$642,863	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$642,863	\$0										
C3025	Carpet Tiles - Standard	C3025 Office Carpet Tiles - Standard	Five floors of Offices	Replace C3025 Office Carpet Tiles - Standard	10	6	19,444.00	SY	\$96.61	IN - Appearance	Priority 4	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,878,399	\$0	\$0	\$0	\$1,878,399										
C3025	Carpet Tiles - Standard	C3025 Corridor Carpet Tiles - Standard	Five floors	Replace C3025 Corridor Carpet Tiles - Standard	10	0	1,333.00	SY	\$96.61	IN - Appearance	Priority 2	\$128,775	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$128,775	\$0										
C3025	Carpet Tiles - Standard	C3025 Office Carpet Tiles - Standard	Six floors of Offices	Replace C3025 Office Carpet Tiles - Standard	10	0	23,332.00	SY	\$96.61	IN - Appearance	Priority 2	\$2,254,002	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,254,002	\$0										
C3025	Carpet Tiles - Standard	C3025 Office Carpet Tiles - Standard	Five floors of Offices	Replace C3025 Office Carpet Tiles - Standard	10	8	19,444.00	SY	\$96.61	IN - Appearance	Priority 4	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,878,399	\$0	\$1,878,399											
C3025	Carpet Tiles - Standard	C3025 Corridor Carpet Tiles - Standard	Five corridors	Replace C3025 Corridor Carpet Tiles - Standard	10	3	1,333.00	SY	\$96.61	IN - Appearance	Priority 3	\$0	\$0	\$0	\$128,775	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$128,775										
C3025	Carpet Tiles - Standard	C3025 Corridor Carpet Tiles - Standard	Six corridors	Replace C3025 Corridor Carpet Tiles - Standard	10	8	1,596.00	SY	\$96.61	IN - Appearance	Priority 4	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$154,183	\$0	\$154,183											
C3032	Suspended Ceilings	C3030 Ceiling Finishes	Throughout building	Replace C3030 Ceiling Finishes	10	0	5,794.00	CSF	\$1,201.56	IN - Appearance	Priority 2	\$6,961,839	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,961,839	\$0										
Interiors Subtotal												\$10,542,700	\$0	\$0	\$128,775	\$0	\$0	\$2,102,194	\$555,222	\$2,032,582	\$0	\$10,542,700	\$4,818,774										
D. SERVICES																																	
D10 CONVEYING SYSTEMS																																	
D1011	Traction Geared Elevator - High Rise	D1011 Traction Geared Elevator - High Rise and Low rise	Roof	Adjust Cars for proper operation and complete deferred maintenance	20	0	9.00	EACH	\$1,820.00	OP - Maintenance	Priority 2	\$16,380	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$16,380	\$0										
	Traction Geared Elevator - High Rise	D1011 Traction Geared Elevator - High Rise and Low rise	Roof	Bevel ledges in the hoistway that are over 2"	20	0	9.00	EACH	\$2,184.00	CC - Building Code	Priority 1	\$19,656	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$19,656	\$0										
	Traction Geared Elevator - High Rise	D1011 Traction Geared Elevator - High Rise and Low rise	Roof	Install car top handrail on Car 4	20	0	1.00	EACH	\$4,550.00	CC - Building Code	Priority 1	\$4,550	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,550	\$0										
	Traction Geared Elevator - High Rise	D1011 Traction Geared Elevator - High Rise and Low rise	Roof	Perform five year full load tests.	15	0	9.00	EACH	\$5,460.00	CC - Life Safety	Priority 1	\$49,140	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$49,140	\$0										
	Traction Geared Elevator - High Rise	D1011 Traction Geared Elevator - High Rise and Low rise	Roof	Remove ash trays from hall call stations at the main lobby	15	0	4.00	EACH	\$5,460.00	CC - Building Code	Priority 1	\$21,840	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$21,840	\$0										
D1012	Traction Geared Elevator - High Rise	D1012 Freight elevator	Roof	Adjust car for proper operation and complete deferred maintenance items	20	0	1.00	EACH	\$1,820.00	IN - Beyond Rated Life	Priority 1	\$1,820	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,820	\$0										
	Traction Geared Elevator - High Rise	D1012 Freight elevator	Roof	Bevel ledges in hoistway that are over 2"	15	0	1.00	EACH	\$2,184.00	CC - Building Code	Priority 1	\$2,184	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,184	\$0										
	Traction Geared Elevator - High Rise	D1012 Freight elevator	Roof	Perform five year full load test	15	0	1.00	EACH	\$5,460.00	CC - Life Safety	Priority 1	\$5,460	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,460	\$0										
D20 PLUMBING																																	
D2011	Commercial Grade Water Closet With 1.6 Gpf Unit	D2011 Commercial Grade Water Closet With 1.6 Gpf Unit	Throughout facility	Bring toilet seat heights in the accessible compartments into compliance with ADA	15	0	10.00	EA	\$590.00	CC - Accessibility	Priority 1	\$5,900	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,900	\$0										
D2013	Counter Top Sink and Faucet	D2013 Restroom Sink and Faucet	Throughout facility	D2013 Wrap exposed drain lines at restroom lavatories	15	0	96.00	EA	\$59.00	CC - Accessibility	Priority 1	\$5,664	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,664	\$0										
D2018	Drinking Fountain	D2010 Drinking Fountains	Corridors	Replace D2010 Drinking Fountains	10	0	10.00	EA	\$2,874.48	CC - Accessibility	Priority 1	\$28,745	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$28,745	\$0										
D2021	D2021 Cold Water Service	D2021 Domestic Water Distribution piping	Throughout Building	Replace D2021 Domestic Water Distribution piping	50	0	6,548.00	LF	\$42.61	IN - Beyond Rated Life	Priority 1	\$278,985	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$278,985	\$0										
D2022	D2022 Hot Water Service	D2020 Domestic Water Distribution Piping	Throught the Building	Replace D2020 Domestic Water Distribution Piping	50	0	6,545.00	LF	\$74.09	FN - Modernization	Priority 1	\$484,933	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$484,933	\$0										
D2023	Water Storage Tank 1,500 Gallon, and Piping	D2023 Water Storage Tank 1,000 Gallon	17th floor west	Replace D2023 Water Storage Tank 1,000 Gallon	25	0	6.00	EA	\$60,180.00	IN - Beyond Rated Life	Priority 1	\$361,080	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$361,080	\$0										
D2023	Booster Pumps	D2023 Booster Pumps (150 hp) for chilled water	6th - 2nd floors	Replace D2023 Booster Pumps (150 hp) for chilled water	10	0	2.00	EA	\$50,607.84	IN - Beyond Rated Life	Priority 1	\$101,216	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$101,216	\$0										
D2031	Cast Iron Pipe 6"	D2034 Sanitary Waste Piping - Primary	Main waste lines	Replace D2034 Sanitary Waste Piping - Primary	60	4	2,150.00	LF	\$82.57	IN - Beyond Rated Life	Priority 3	\$0	\$0	\$0	\$177,533	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$177,533										
D2031	D2031 Waste Piping	D2034 Sanitary Waste Piping	Floor levels	Replace D2034 Sanitary Waste Piping	60	4	4,020.00	LF	\$62.63	IN - Beyond Rated Life	Priority 3	\$0	\$0	\$0	\$251,757	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$251,757										
D2034	Grease Interceptor, Cast Iron, 7 Gpm, 14 Lb Fat Capacity	D2034 Sanitary Waste Equipment	Exterior of building near cafeteria	Relocate D2034 Sanitary Waste Equipment - Grease Trap	50	0	1.00	EA	\$26,390.00	FN - Modernization	Priority 1	\$26,390	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$26,390	\$0										
D2034	D2034 Sanitary Waste Equipment	D2034 Trap Primers, install	Restroom and other floor drains	Replace D2034 Trap Primers, install	50	0	51.00	EA	\$680.68	FN - Modernization	Priority 1	\$34,715	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$34,715	\$0										
D30 HVAC																																	
D3022.1	Circulation Pump 30 HP	D3022.1 DHW and Fire pumps (20 HP)	17th floor west	Replace D3022.1 DHW and Fire pumps (20 HP)	20	0	3.00	EA	\$24,794.16	IN - Beyond Rated Life	Priority 1	\$74,382	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$74,382	\$0										
D3023	Condensate return system (SIMPLEX PUMP, FLOAT SWITCH, 3/4 HR, 15 GPM)	D3023 Steam pressure reducer system	17th floor west	Replace D3023 Steam pressure reducer system	20	0	1.00	EA	\$16,497.34	FN - Modernization	Priority 1	\$16,497	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$16,497	\$0										
D3041	Central AHU - VAV System	D3041 Central AHU - VAV System east 7th	7th floor	Motor replacement 40hp	15	0	1.00	ea	\$11,450.88	OP - Maintenance	Priority 2	\$11,451	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$11,451	\$0										
D3041	Central AHU - VAV System	D3041 Air handler VAV System west auditorium air	First floor	Motor replacement 40 hp	15	0	1.00	ea	\$9,860.48	OP - Maintenance	Priority 2	\$9,860	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$9,860	\$0										
D3041	Central AHU - VAV System	D3041 Central AHU - VAV System west	16th - 1st floors	Motor replacement 40 hp	15	0	16.00	ea	\$11,450.88	OP - Maintenance	Priority 2	\$183,214	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$183,214	\$0										
D3041.1	Air Handler 4,000 to 8,000 CFM	D3041.1 Freight room AHU unit	Freight elevator room	Replace 10 hp motor for air handler	15	0	1.00	EA	\$3,737.36	OP - Maintenance	Priority 2	\$3,737	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,737	\$0										
D3041.1	Air Handler 4,000 to 8,000 CFM	D3041.1 Roof air handler for 16th flr	Roof	Motor replacement only	15	0	2.00	ea	\$5,832.00	OP - Maintenance	Priority 2	\$11,664	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$11,664	\$0										
D3041.2	Vav Box, 270 to 600 CFM	D3041.2 VAV Boxes- mixing	Throughout facility	Replace D3041.2 VAV Boxes- mixing	20	0	1,500.00	EA	\$3,460.49	IN - Beyond Rated Life	Priority 1	\$5,190,739	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,190,739	\$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			
D3042	Exhaust Fan 8500 CFM	D3042 Exhaust fan restroom (15 hp)	17th floor west	Motor replacement 15 hp	15	0	1.00	ea	\$5,832.00	OP - Maintenance	Priority 2	\$5,832	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,832	\$0
D3042	Exhaust Fan 8500 CFM	D3042 Exhaust fan kitchen west (15 hp)	17th floor west	Motor replacement 15 hp	15	0	1.00	ea	\$10,388.25	OP - Maintenance	Priority 2	\$10,388	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$10,388	\$0
D3042	D3042 Exhaust Ventilation Systems	D3042 Return Air Distribution System	Every Floor	Replace D3042 Return Air Distribution System	50	0	658,544.00	Floor	\$3.09	FN - Modernization	Priority 1	\$2,037,535	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,037,535	\$0
D3042	Exhaust Fan 8500 CFM	D3042 Exhaust fans central west	17th floor east	Motor replacement 15 hp	15	0	4.00	ea	\$25,575.75	OP - Maintenance	Priority 2	\$102,303	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$102,303	\$0
D3042	Exhaust Fan 8500 CFM	D3042 Exhaust fans east central (15 hp)	17th floor east	Motor replacement 15 hp	15	0	4.00	ea	\$25,575.75	OP - Maintenance	Priority 2	\$102,303	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$102,303	\$0
D3042	Exhaust Fan 8500 CFM	D3042 IT and telecommunication rooms exhaust fans (15 hp)	17th floor west	Motor replacement 15 hp	15	0	4.00	ea	\$5,832.00	OP - Maintenance	Priority 2	\$23,328	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$23,328	\$0
D3068	Direct Digital Controls (DDC) Pneumatic System	D3068 Direct Digital Controls (DDC) Pneumatic System	Throughout facility	Replace D3068 Direct Digital Controls (DDC) Pneumatic System	20	0	656,625.00	SF	\$8.23	FN - Modernization	Priority 1	\$5,406,388	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,406,388	\$0
D40 FIRE PROTECTION SYSTEMS																								
D4011	D4011 Sprinkler Water Supply	D4011 Wet- Pipe Sprinkler system installation	Throughout facility	Replace D4011 Wet- Pipe Sprinkler system installation	40	0	656,625.00	SF	\$8.85	CC - Life Safety	Priority 1	\$5,811,131	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,811,131	\$0
D4011	D4011 Sprinkler Water Supply	D4011 Sprinkler Water Supply	From adjacent streets	Replace D4011 Sprinkler Water Supply	50	0	2.00	EA	\$109,200.00	CC - Life Safety	Priority 1	\$218,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$218,400	\$0
D4012	Fire Pump Electric 500 Gpm 27 HP	D4012 Fire Pump Electric 500 Gpm 27 HP	First floor	Replace D4012 Fire Pump Electric 500 Gpm 27 HP	25	5	2.00	EA	\$60,726.22	CC - Life Safety	Priority 3	\$0	\$0	\$0	\$0	\$0	\$121,452	\$0	\$0	\$0	\$0	\$0	\$0	\$121,452
D4023	Wet Standpipe Riser	D4011 Sprinkler Water Supply	Stairwells	Replace D4011 Sprinkler Water Supply	40	0	51.00	Floor	\$4,550.00	CC - Life Safety	Priority 1	\$232,050	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$232,050	\$0
D50 ELECTRICAL SYSTEMS																								
D5012	Breaker Panel 125 Amps, 24 Circuits	D5010 Electrical Service and Distribution	Various floors	Replace D5010 Electrical Service and Distribution	40	0	86.00	EA	\$3,009.00	IN - Beyond Rated Life	Priority 1	\$258,774	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$258,774	\$0
D5012	Breaker Panel 225 Amps, 30 Circuits	D5012 Freight elevator mechanical room breaker panel	Freight elevator room	Replace D5012 Freight elevator mechanical room breaker panel	35	0	1.00	EA	\$7,864.32	IN - Beyond Rated Life	Priority 1	\$7,864	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$7,864	\$0
D5012	Switchgear, Mainframe, 1200 Amps	D5012 Electrical Distribution Panel, 1200 Amp	First floor	Replace D5012 Electrical Distribution Panel, 1200 Amp	30	0	1.00	EA	\$20,717.73	IN - Beyond Rated Life	Priority 1	\$20,718	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$20,718	\$0
D5022	D5022 Lighting Equipment	D5022 Lighting Fixtures	Ceiling Areas	Replace D5022 Lighting Fixtures	20	0	7,065.00	EA	\$309.40	FN - Modernization	Priority 1	\$2,185,911	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,185,911	\$0
D5022	Wall Pack 150 Watt High Pressure Sodium	D5022 Wall Pack 150 Watt High Pressure Sodium	Exterior	Replace D5022 Wall Pack 150 Watt High Pressure Sodium	20	0	12.00	EA	\$1,311.64	IN - Beyond Rated Life	Priority 1	\$15,740	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$15,740	\$0
D5037	Fire Alarm Panel	D5037 Fire Alarm System	First floor	Replace D5037 Fire Alarm System	15	0	656,625.00	SF	\$3.54	CC - Life Safety	Priority 1	\$2,324,453	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,324,453	\$0
D5039	D5039 Local Area Networks	D5039 Telecommunications and Security Systems	Throughout Building	Replace D5039 Telecommunications and Security Systems	25	0	658,544.00	SF	\$1.91	FN - Modernization	Priority 1	\$1,258,478	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,258,478	\$0
Services Subtotal												\$26,971,799	\$0	\$0	\$0	\$429,290	\$121,452	\$0	\$0	\$0	\$0	\$26,971,799	\$550,743	

E. EQUIPMENT & FURNISHING																								
E10 EQUIPMENT																								
E1097	E1097 Window Washing Equipment	E1097 Roof Carriage track	17th Floor Roof	Replace E1097 Roof Carriage track	20	0	845.00	LF	\$559.52	IN - Beyond Rated Life	Priority 2	\$472,794	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$472,794	\$0
E1097	E1097 Window Washing Equipment	E1097 Roof carriage with suspended scaffold	17th Floor Roof	Replace E1097 Roof carriage with suspended scaffold	20	0	1.00		\$610,700.00	IN - Beyond Rated Life	Priority 2	\$610,700	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$610,700	\$0
Equipment & Furnishing Subtotal												\$1,083,494	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,083,494	\$0	

F. SPECIAL CONSTRUCTION AND DEMOLITION																								
F10 SPECIAL CONSTRUCTION																								
F1039	F1039 Other Special Construction Systems	F1039 Fire rated wall/ceiling construction in corridors	Corridors	Replace F1039 Fire rated wall/ceiling construction in corridors	50	0	28,000.00	LF	\$248.00	CC - Building Code	Priority 1	\$6,944,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,944,000	\$0
F20 SELECTIVE DEMOLITION																								
F2021	F2021 Removal of Hazardous Components	F2021 Abatement of asbestos associated with ceiling tile replacement	Throughout most floors of building, where stained and sagging ceiling tiles are replaced	Replace F2021 Abatement of asbestos associated with ceiling tile replacement	50	0	579,400.00	LF	\$41.91	EN - Asbestos	Priority 2	\$24,283,813	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$24,283,813	\$0
F2021	F2021 Removal of Hazardous Components	F2021 Removal of Asbestos From Structural members	Structural Steel	Replace F2021 Removal of Asbestos From Structural members	50	0	65,662.00	SF	\$21.66	EN - Asbestos	Priority 2	\$1,422,108	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,422,108	\$0
F2021	F2021 Removal of Hazardous Components	F2021 Abestos abatement of structures exposed by wall and ceiling modification	Wall/ceiling construction	Replace F2021 Abestos abatement of structures exposed by wall and ceiling modification	50	3	28,000.00	LF	\$41.91	EN - Asbestos	Priority 3	\$0	\$0	\$0	\$1,173,536	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,173,536
F2021	F2021 Removal of Hazardous Components	F2021 Removal of mastic containing asbestos in VCT replacement	First and eighth floors	Replace F2021 Removal of mastic containing asbestos in VCT replacement	50	0	6,111.00	SY	\$41.89	EN - Asbestos	Priority 2	\$255,973	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$255,973	\$0
Special Construction And Demolition Subtotal												\$32,905,893	\$0	\$0	\$1,173,536	\$0	\$0	\$0	\$0	\$0	\$0	\$32,905,893	\$1,173,536	

G. BUILDING SITWORK																								
G30 SITE CIVIL/MECHANICAL UTILITIES																								
G3011	Water Supply Pipe, 6" PVC Sdr 26	G30 Site Civil/Mechanical Utilities	Site	Replace G30 Site Civil/Mechanical Utilities	50	0	120.00	LF	\$218.40	FN - Modernization	Priority 2	\$26,208	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$26,208	\$0
G40 SITE ELECTRICAL UTILITIES																								
G4021	Landscape Ground Mounted Uplight Fixture Only	G4021 Landscape Ground Mounted Uplight Fixture Only	Exterior	Replace G4021 Landscape Ground Mounted Uplight Fixture Only	15	3	7.00	EA	\$1,719.53	IN - Beyond Rated Life	Priority 3	\$0	\$0	\$0	\$12,037	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$12,037
Building Sitework Subtotal												\$26,208	\$0	\$0	\$12,037	\$0	\$0	\$0	\$0	\$0	\$0	\$26,208	\$12,037	

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

Expenditure Totals per Year	\$148,827,594	\$0	\$0	\$1,214,348	\$429,290	\$121,452	\$2,102,194	\$748,047	\$2,032,582	\$0	\$148,827,594	\$6,747,824
Total Cost (Inflated @ 5% per Yr.)	\$148,827,594	\$0	\$0	\$1,521,522	\$521,805	\$155,008	\$2,817,142	\$1,052,605	\$3,003,049	\$0	Total ¹	\$155,575,528

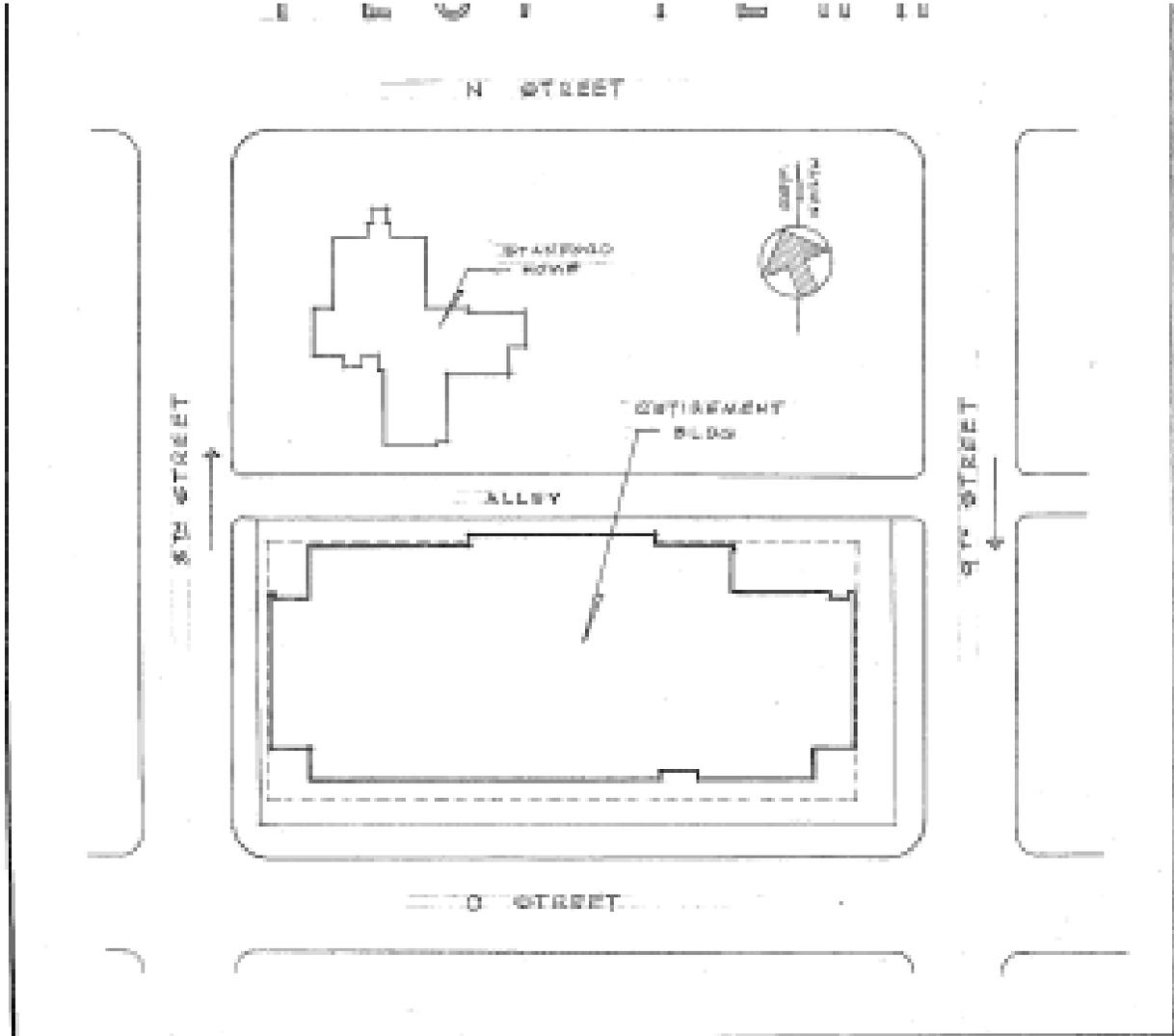
¹ - Present Value Currency

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 \$391,917,809

APPENDIX H: SUPPORTING DOCUMENTATION

Field Sketch



EMG



Not drawn to scale. The north arrow indicator is an approximation of 0° North.

Project Number:

111326.14R-003.305

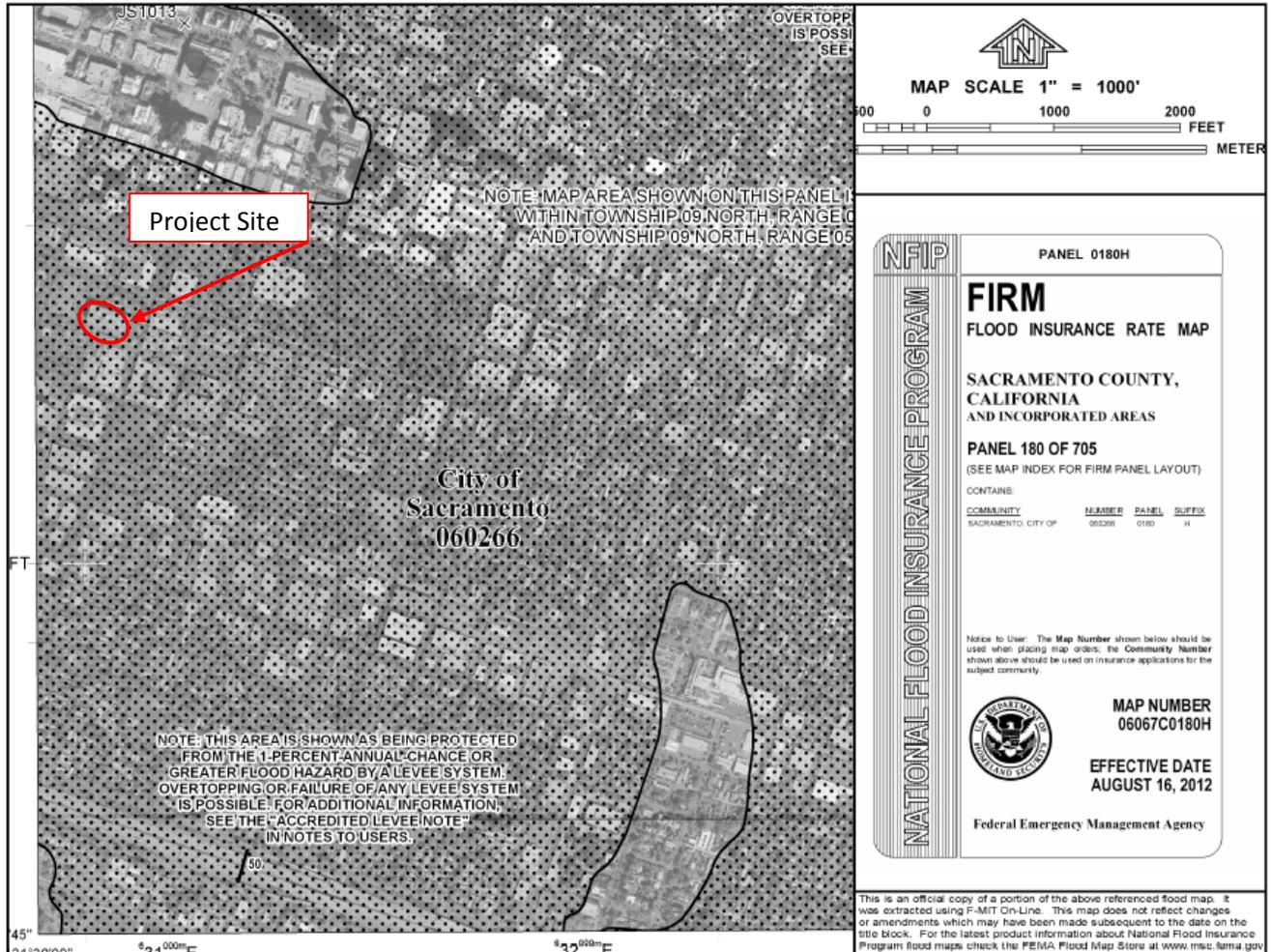
Project Name:

Resources Building

On-Site Date:

November 21, 2014

Flood Map



	SOURCE: FEMA	Project Number: 111326.14R-003.305
		Project Name: Resources Building
Not drawn to scale. The north arrow indicator is an approximation of 0° North.		

Estimate of Structures Cost Using Marshall Cost Systems

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	\$476.10	658,544	\$313,534,247
	\$0.00	0	\$0
	\$0.00	0	\$0
	\$0.00	0	\$0
	\$0.00	0	\$0
Total		658,544	\$313,534,247

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	\$313,534,247	25.00%	\$391,917,809
	\$0	25.00%	\$0
	\$0	25.00%	\$0
	\$0	25.00%	\$0
	\$0	25.00%	\$0
Cost Per SF	\$595.13	Total Estimate	\$391,917,809

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

ADA Checklist

Property Name: Resources Building

Date: November 21, 2014

Project Number: 111326.14R-003.305

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

EMG Abbreviated Accessibility Checklist					
	Ramps	Yes	No	N/A	Comments
1.	If there is a ramp from parking to an accessible building entrance, does it meet slope requirements? (1:12)			✓	No on-site parking
2.	Are ramps longer than 6 ft complete with railings on both sides?			✓	No ramps
3.	Is the width between railings at least 36 inches?			✓	No ramps
4.	Is there a level landing for every 30 ft horizontal length of ramp, at the top and at the bottom of ramps and switchbacks?			✓	No ramps
	Entrances/Exits	Yes	No	N/A	Comments
1.	Is the main accessible entrance doorway at least 32 inches wide?	✓			
2.	If the main entrance is inaccessible, are there alternate accessible entrances?			✓	Main entrance is accessible
3.	Can the alternate accessible entrance be used independently?			✓	Main entrance is accessible
4.	Is the door hardware easy to operate (lever/push type hardware, no twisting required, and not higher than 48 inches above the floor)?	✓			
5.	Are main entry doors other than revolving door available?	✓			
6.	If there are two main doors in series, is the minimum space between the doors 48 inches plus the width of any door swinging into the space?	✓			
	Paths of Travel	Yes	No	N/A	Comments
1.	Is the main path of travel free of obstruction and wide enough for a wheelchair (at least 36 inches wide)?	✓			
2.	Does a visual scan of the main path reveal any obstacles (phones, fountains, etc.) that protrude more than 4 inches into walkways or corridors?	✓			Water fountains in the corridors protrude from five to 17 inches.
3.	Are floor surfaces firm, stable, and slip resistant (carpets wheelchair friendly)?	✓			
4.	Is at least one wheelchair-accessible public telephone available?			✓	No public phones are available
5.	Are wheelchair-accessible facilities (toilet rooms, exits, etc.) identified with signage?	✓			
6.	Is there a path of travel that does not require the use of stairs?	✓			
7.	If audible fire alarms are present, are visual alarms (strobe light alarms) also installed in all common areas?	✓			

EMG Abbreviated Accessibility Checklist					
	Elevators	Yes	No	N/A	Comments
1.	Do the call buttons have visual signals to indicate when a call is registered and answered?				
2.	Are there visual and audible signals inside cars indicating floor change?				
3.	Are there standard raised and Braille marking on both jambs of each host way entrance?				
4.	Do elevator doors have a reopening device that will stop and reopen a car door if an object or a person obstructs the door?				
5.	Do elevator lobbies have visual and audible indicators of car arrival?				
6.	Does the elevator interior provide sufficient wheelchair turning area (51" x 68")?				
7.	Are elevator controls low enough to be reached from a wheelchair (48 inches front approach/54 inches side approach)?				
8.	Are elevator control buttons designated by Braille and by raised standard alphabet characters (mounted to the left of the button)?				
9.	If a two-way emergency communication system is provided within the elevator cab, is it usable without voice communication?				
	Restrooms	Yes	No	N/A	Comments
1.	Are common area public restrooms located on an accessible route?	✓			
2.	Are pull handles push/pull or lever type?	✓			
3.	Are there audible and visual fire alarm devices in the toilet rooms?	✓			
4.	Are corridor access doors wheelchair-accessible (at least 32 inches wide)?	✓			
5.	Are public restrooms large enough to accommodate a wheelchair turnaround (60" turning diameter)?	✓			
6.	In unisex toilet rooms, are there safety alarms with pull cords?			✓	No unisex toilet rooms
7.	Are stall doors wheelchair accessible (at least 32" wide)?	✓			
8.	Are grab bars provided in toilet stalls?	✓			
9.	Are sinks provided with clearance for a wheelchair to roll under (29" clearance)?	✓			
10.	Are sink handles operable with one hand without grasping, pinching or twisting?	✓			

EMG Abbreviated Accessibility Checklist					
11.	Are exposed pipes under sink sufficiently insulated against contact?	✓			At least one lavatory in each restroom has wrapped pipes
12.	Are soap dispensers, towel, etc. reachable (48" from floor for frontal approach, 54" for side approach)?	✓			
13.	Is the base of the mirror no more than 40" from the floor?	✓			

APPENDIX I: PRE-SURVEY QUESTIONNAIRE

Property Condition Assessment: Pre-Survey Questionnaire

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

Name of person completing questionnaire: George Lichty

Building name: Resources Building (018)

What is your association with this property? Building Manager

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

Phone number: 916-657-4380

Please provide information about inspections relating to the following items

Inspections	Date Last Inspected	List Name & Contact for Maintenance Contractor, if any.
1. Elevators	2/5/2015	Thyssenn Krupp
2. HVAC, Mechanical, Electric, Plumbing	2013	DGS, PMDB. For infrastructure study.
3. Life-Safety/Fire	2014	National Fire
4. Roofs	Do not know	Do not know

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

Upgrade of the heating water system in the building.

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

A major remodel is in the planning stages.

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

Do not know. Guessing approximately 10 years old.

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

Maintenance is done by DGS staff but major work is done by contractors.

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				No sprinklers. No fire rated corridors.
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				Single pane windows. Not sure of ant insulation.
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				Test are done by DGS Industrial Hygenists.

Question	Y	N	N/A	Unk	Comments
29. Is polybutylene piping used?				x	
30. Are there any plumbing leaks or water pressure problems?	x				Aging sewer pipes are in constant need of servicing. Default - 23) Are there any leaks or
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			A study is in progress to make improvements.
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	A study is in progress for future improvements
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				Complaints are addressed by the elevator company.
43. Are there any problems with exterior lighting?		x			
44. Are there any other significant issues/hazards with the property?	x				FLS. Asbestos. Building exterior cannot be inspected because of a failed window washing rig.
45. Are there any unresolved construction defects at the property?				x	

APPENDIX J: ELEVATOR REPORT



Water Resources
1416 9th Street
Sacramento, CA

Due Diligence
Elevator Report

December 15, 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



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Section I: Executive Summary

A. Introduction

On November 21, 2014 James Young of Architectural Elevator Consulting, LLC (AEC) surveyed all the vertical transportation systems at the Water Resources Building, 1416 9th Street, Sacramento, CA. There are ten (10) traction elevators. The elevators provide vertical transportation to the office floors on levels 1-16. 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.

All the traction elevators were manufactured and installed by Montgomery Elevator Company during the original building construction in 1964. The elevators were fully modernized from 1987 to 1994. The low-rise traction elevators have the original Montgomery machines. The high-rise elevators had new Schindler Haughton machines installed during the 1987 modernization. In 2009 the elevators were modernized with new non-proprietary Swift controllers, GAL door operators and all new signal fixtures.

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 was good, but the car tops and pits were dirty. Car and door performance is below average and should be improved. The performance needs to be adjusted to achieve the designed times and speeds.

B. Elevator Layout

The office building has a high and low-rise bank of elevators and one dedicated service car that serves all the landings and a mechanical floor at above the 16th floor. Low-rise elevators, Cars 6-9, provide service from floors 1-8, while the high-rise elevators, Cars 1-5 provide service from the 1st floor to 1, 7 to 16. The service elevator, Car 10, provides access to all office floors and one mechanical level. All the elevators have fast and efficient center opening doors. All nine passenger traction elevators are rated for 4,000 lbs capacity while the service elevator is rated for 8,000 lbs. The number, speed and size of the elevators appear to be adequate to provide satisfactory service for the building.

Elevator Summary				
Elevator Bank	Elevator Speed	Floors Served	Capacity	Door Type
Low-rise (Cars 6-9)	500 FPM	1-8	4,000 lbs.	Center
High-rise (Cars 1-5)	800 FPM	1, 7-16	4,000 lbs.	Center
Service (Car 10)	350 FPM	1-16, M	8,000 lbs.	Center

C. Condition/Components

Most the major components of the elevators were found to be in good condition. All the elevators were fully modernized in the last five years and have solid state controllers that are non-proprietary. No major work is anticipated over the next 10 years. In **Section II** of this report we provide an in-depth review of each of the major components of the elevators with photographs.

D. Maintenance/Performance

The elevators are currently being maintained by ThyssenKrupp Elevator Company. The level of maintenance was good in most areas, but needed some attention in other areas. The performance was observed to be below the designed times and speeds. This needs to be remedied. In *Appendix C* of this report we provide a summary of the performance times for each elevator followed by a maintenance deficiency list. We recommend this list be provided to the elevator service provider so they can correct these items.

E. Code Review:

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

1. **Americans with Disability Act (ADA)/California T24:** In 1990 the federal government enacted ADA to make public spaces more accessible to disabled persons. California has a few specific accessibility requirements in addition to ADA. All of the elevators meet most ADA and California Title 24 requirements. The sizes of the passenger elevators meet ADA for new and existing elevators. All the cars had proper hall lanterns and gongs. *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. Remove ashtrays at the first lobby that protrude into the lobby.
 - b. Increase the hall call dwell time.

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 that are not in compliance:
 - a. Bevel all ledges in the hoistway that are over 2”.

3. **Seismic:** The elevators were installed in 1964 prior to adoption of seismic code. Seismic features were added when the elevators were first modernized by Schindler Haughton in 1987 and more recently by TKE in 2009. All the elevators have a seismic switch in the machine room, ring and string derailment, and seismic retainers. The fishplates on the car and counterweight rails are non-seismic, but do not need to be updated unless meeting the most stringent code is desired.

F. Recommendation:

We recommend the ashtrays be removed at the first floor and the hall call dwell times increased. The ledges in the hoistway should be beveled. All the traction elevators should be adjusted for proper operation. The floor-to-floor times are too slow. The five year full load tests should be performed, while not required by California on Group II elevators this is highly recommended. No major capital expenses are needed over the next ten years.

Section II : Component Review

A. MACHINE ROOM:

Controllers:

The controllers were manufactured by CEC/Swift and installed locally by TKE when the elevators were modernized in 2009. The controllers have energy efficient SCR drives made by Magnetec, the world's leading supplier of SCR drives.



High-rise Machines:

All the high-rise elevators have Schindler Haughton gearless machines that were installed when the elevators were first modernized in 1987/88. The machines have D.C. hoist motors and appear to have been refurbished when modernized in 2009. All the machines were found to be in good condition.



Low-rise Machines:

All the low-rise elevators and the service car have the original Montgomery gearless machines from 1964. The machines have the original D.C. hoist motors. All the machines were refurbished during the 2009 modernization and found to be in good condition.



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. There are some ledges in the hoistway that are greater than 2" that should be beveled.



Car Guide Rails:

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



Pits:

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

C. CAR TOP:

Door Operator:

The door operators for the passenger elevators were made by GAL and are closed loop and known to be of high quality. The door operator for the service car was made by Elevator Solutions and designed to replace MAC door operators. The door operation was noted to be fair with room for improvement. All of the cars are equipped with door restrictors.



Car Roller/Slide Guides:

On both sides of the elevators and on the top and bottom roller guides keep the elevators riding up and down the steel guide rails. The existing ride quality was noted to be good. These are newer ELSCO rollers installed with seismic retainer plates. No work is anticipated on the roller guides.



D. SIGNAL FIXTURES:

Car Operating Panels:

All the elevators have newer Car Operating Panels (COP's) that were installed during the recent elevator modernizations. The panels are in good condition meet ADA and T24 and do not need any work at this time.



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 passenger elevators have hall lanterns for each car. The lanterns have the proper gong for up and down. The service car has a car riding lantern.

Hall Call Pushbuttons:

At each floor hall call push buttons are located so that users can call the elevator. The hall call stations have raised operation buttons which meet ADA and California Title 24. These were all noted to be in good condition. However at the main lobby there are ashtrays that protrude and are in the way. These should be removed.



E. CAB INTERIOR:

Wall Finish:

The existing cab interiors are likely original and are in fair condition. The back wall has the code required handrail. The railing heights are in compliance with Title 24 California code.



Ceilings:

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



Vertical Transportation

Water Resources - 1419 - 9th Street

Item No.	Recommendation	Rating	Quantity	Unit	Unit Cost	Immediate Code Items	Immediate - Repair	Years 1-3	Years 4-6	Years 7-10	Totals
1	Remove ash trays in front of hall call stations at the main lobby for Cars 1-9	1	4	EA	\$3,000.00	\$12,000					\$12,000
2	Perform five year full load tests. Elevators are not required to have tests and it appears they have not since 1964 when installed.	1	10	EA	\$3,000.00	\$30,000					\$30,000
3	Bevel ledges in the hoistway that are over 2"	1	10	EA	\$1,200.00	\$12,000					\$12,000
4	Adjust cars for proper operation and complete deferred maintenance items listed in Appendix C.	2	10	EA	\$1,000.00		\$10,000				\$10,000
5	Install car top handrail on Car 4.	1	1	EA	\$2,500.00	\$2,500					\$2,500
6				EA							\$0
7				EA							\$0
8				EA							\$0
9				EA							\$0
10				EA							\$0
11											
12											
Subtotal						\$56,500	\$10,000	\$0	\$0	\$0	\$66,500
		1	\$56,500	Code and Safety							
		2	\$10,000	Deferred Maintenance & Repair							
		3	\$0	Capital Expenditure							
		4		Modernization / Improvements							
		5	\$66,500	Total							

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

Appendix A
ADA/California T24 ELEVATOR CHECKLIST

ADA	Item	Complies Yes/No/N/A		
		Cars 1-5	Car 6-9	Car 10
	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.	No at Lobby	No at Lobby	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 – Hall	Yes – Hall	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	Yes
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.	N/A	N/A	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 1-5	Car 6-9	Car 10
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.	No	Yes-8 No-6,7,9	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 32")	Yes	Yes	Yes
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 1-5	Car 6-9	Car 10
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	No – 50”
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.	Yes	Yes	-
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	Yes
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.	N/A	N/A	N/A

Appendix A
 ADA/California T24 ELEVATOR CHECKLIST

ADA	Item	Complies Yes/No/N/A		
		Cars 1-5	Car 6-9	Car 10
4.27.4	If located in a closed compartment, the door must be operable with one hand. It must not require tight grasping, pinching or twisting of the wrist. The force required to open the door must not exceed 5 lb/f.	N/A	N/A	N/A
4.10.13	The system must not require voice communication.	Yes	Yes	Yes

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

A17.3	Code Item	Cars: 1-5	Cars: 6-9	Car: 10
2.1	HOISTWAYS			
2.1.1	Hoistway Construction (Enclosed & Fire rated per local code or ANSI/NFPA No. 101)	Yes	Yes	Yes
2.1.2	Windows in Hoistway Enclosures: (If provided are they guarded properly.)	Yes	Yes	Yes
2.1.3	Projections in Hoistway (Must be flush and level; Leveling zone +3”./ 60 to 75 deg bevel.)	No	No	No
2.1.4	Pipes Conveying Gases, Vapors, or Liquids. (If provided must be properly covered & securely fastened.)	Yes	Yes	Yes
2.1.5	Counterweight Guards (Start at 12” go to 84” above pit floor; not needed with comp rope/chain)	N/A	N/A	N/A
2.2	MACHINE ROOMS AND MACHINERY SPACES			
2.2.1	Enclosures – Designated Machine Room (No-non elevator equipment- existing can stay)	Yes	Yes	Yes
2.2.2	Access to Machine Rooms and Machinery Spaces (A permanent means to the machine room- locked door)	Yes	Yes	Yes
2.2.3	Lighting(Permanent lighting in all machine rooms)	Yes	Yes	Yes
2.2.4	Ventilation (Natural or mechanical to avoid overheating)	Yes	Yes	Yes
2.2.5	Pipes Conveying Gases, Vapors, or liquids (Existing pipes allowed if guarded to prevent discharge)	Yes	Yes	Yes
2.2.6	Protection From Weather	Yes	Yes	Yes
2.3	PITS			
2.3.1	Access to Pits (Means of access to all pits. If access door provide closer & keys onsite.)	Yes	Yes	Yes
2.3.2	Drains (Drains connected directly to the sewer are not permitted.)	Yes	Yes	Yes
2.3.3	Stop Switch (A stop switch shall be provided for every pit. Locate near access, color, etc.)	Yes	Yes	Yes
2.4	CLEARANCES AND RUNBYS			
2.4.1	Horizontal Car Clearances (Not more then 5” for horizontal doors; 7.5” for vertical doors)	Yes	Yes	Yes
2.4.2	Bottom Car Clearances (Car shall not strike any equipment when resting on fully compressed buffer.)	Yes	Yes	Yes
2.4.3	Bottom Car and Counterweight Runby (Shall not exceed 24” for cars; or 36” for cwt.)	Yes	Yes	Yes
2.4.4	Top Car Clearance (Car does not strike any overhead structure)	Yes	Yes	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	Yes	Yes
2.5	PROTECTION OF SPACES BELOW HOISTWAYS			
2.5	Counterweight safeties required	N/A	N/A	N/A
2.6	HOISTWAY ENTRANCES			
2.6.1	Doors or Gates Required (Passenger Elevators – full width/height – no hand latches.) (Freight Elevators – at least 6-0” gate)	Yes	Yes	Yes
2.6.2	Closing of Hoistway Doors (Door closers required on cars except swinging portion of horizontal door)	Yes	Yes	Yes
2.6.3	Hoistway Door Vision Panels (Required on manually operated or self closing doors, location, Size, and type of glass)	N/A	N/A	N/A
2.6.4	Door Hangers (Prevent jumping, and stops, 4 times load)	Yes	Yes	Yes
2.6.5	Non-Shearing Astragals (For vertical bi-parting doors only)	N/A	N/A	N/A
2.6.6	Pull Straps (Must not be more than 6’-6” from floor when open)	N/A	N/A	N/A
2.7	HOISTWAY DOOR LOCKING DEVICES, PARKING, DEVICES, AND ACCESS			
2.7.1	Hoistway Door or Gate Locking Devices (Mechanical and electrical interlocks required)	Yes	Yes	Yes
2.7.2	Elevator Parking Device (For cars operated from within car only)	N/A	N/A	N/A
2.7.3	Access to Hoistway (Hoistway door unlocking devices and access switches)	Yes	Yes	Yes

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

A17.3	Code Item	Cars: 1-5	Cars: 6-9	Car: 10
2.7.4	Restricted Opening of Hoistway Doors and/or Car Doors on Passenger Elevators (Cannot open more than 4” outside unlocking zone +-18” max.)	Yes	Yes	Yes
2.7.5	Hoistway Emergency Door Contacts (Positively opened)	Yes	Yes	Yes
2.8	POWER OPERATION OF DOORS AND GATES			
2.8.1	Kinetic Energy and Force Limitations for Power-operated Horizontal Sliding Doors. (Shall not exceed 7ft/lbs. with re-opening device, without 2.5ft/lbs.; cannot exceed 30 ft/lbs)	Yes	Yes	Yes
2.8.2	Reopening Device for Power-Operated Car Doors or Gates (Can be rendered inoperative if less than 2.5ft/lb)	Yes	Yes	Yes
	Part III			
3.1	Buffers And Bumpers (Car and counterweight buffers are required)	Yes	Yes	Yes
3.2	Counterweights (The weights shall be protected so that they cannot be dislodged. The rod nuts shall be protected)	Yes	Yes	Yes
3.3	CAR FRAMES AND PLATFORMS			
3.3.1	Car Platforms(Cover entire area)	Yes	Yes	Yes
3.3.2	Platform Guards (Aprons) (Vertical face at least 21”, 60-75deg, withstand 150#)	Yes	Yes	Yes
3.3.3	Hinged Platform Sills(Must have contacts & prevent operation unless within 2”)	N/A	N/A	N/A
3.3.4	Floating (Movable) Platforms (Prohibited if car can move when door is not closed)	N/A	N/A	N/A
3.3.5	Protection of Platforms Against Fire (Must be covered with sheet metal or fire resistant material)	Yes	Yes	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	Yes	Yes
3.4.2	Car Doors and Gates (Must have gate or door and electric contract)	Yes	Yes	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	Yes	Yes
3.4.4	Emergency Exits (Cover hinged, single car blind shaft-every 36’, side allowed)	Yes	Yes	Yes
3.4.5	Car Illumination (At least two lights, 5ftc; frt=2.5ftc; emerg. .2ftc for 4 hrs.)	Yes	Yes	Yes
3.4.6	Protection of Light Bulbs and Tubes (Guarded or coated to prevent breaks)	Yes	Yes	Yes
3.5	SAFTIES			
3.5.1	Car Safeties (Every car must have a safety)	Yes	Yes	Yes
3.5.2	Counterweight Safeties (If occupied space below)	Yes	Yes	Yes
3.5.3	Safeties to Stop Ascending Cars or Counterweights Prohibited (Cannot be provided)	Yes	Yes	Yes
3.5.4	Application and Release of Safeties (Must be mechanical can only release if car goes up)	Yes	Yes	Yes
3.5.5	Max. Permissible Movement of Gov. Rope to Oper. Safety (For type “B” Safties-200ft or less 42in.; 201 to 375fpm – 36in.; Over 375 FPM 30in. Cwt. = 42in all speeds.)	Yes	Yes	Yes
3.5.6	Rail Lubricants and Lubrication Plate (Plate on cross head stating type of lubricant or none at all.)	Yes	Yes	Yes
3.5.7	Overall Length of Guide Rails (Extended to prevent disengaging)	Yes	Yes	Yes
3.6	SPEED GOVERNORS			
3.6.1	Speed Governor Overspeed and Car Safety Mechanism Switches. (A switch shall be provided when speed is over 150FPM. For static control switch shall be for all speeds & both direct.)	Yes	Yes	Yes
3.6.2	Governor Ropes (Shall be of iron, steel, monel metal, phosphor bronze, or ss. At least 3/8” in diameter Tiller rope not allowed.)	Yes	Yes	Yes
3.7	CAPACITY AND LOADING			
3.7.1	Minimum Rated Load for Passenger Elevators (per table 3.7.1)	Yes	Yes	Yes
3.7.2	Use of Partitions for Reducing Inside Net Platform Area (Partitions must be permanent and symmetrical)	N/A	N/A	N/A
3.7.3	Min. Rated Load for Freight Elevators (Class A = Not more than ¼ of total cap.; Class B = Motor Veh.; Class C = loading	N/A	N/A	N/A

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

A17.3	Code Item	Cars: 1-5	Cars: 6-9	Car: 10
	with industrial truck, etc.)			
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	Yes	Yes
3.7.5	Signs on Freight Elevators (NOT A PASS ELEV...etc. ½” high letters)	N/A	N/A	N/A
3.8	DRIVING MACHINES AND SHEAVES			
3.8.1	General Requirements (Must be cast iron or steel, fin. Grooves no set screws)	Yes	Yes	Yes
3.8.2	Winding Drum Machines (Must have slack rope switch; Chain, belt, or rope-driven mechanisms shall not be used.)	N/A	N/A	N/A
3.8.3	Indirect-Drive Machines (Must be at least 3 belts, safety factor of 10)	Yes	Yes	Yes
3.8.4	Brakes (Must be released electrically and have spring or gravity and friction)	Yes	Yes	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	Yes	Yes
3.9.2	Final Terminal Stopping Devices (Winding drum machines- on machines and in hoistway; Traction – in the hoistway operated by the car.)	Yes	Yes	Yes
3.10	OPERATING DEVICES AND CONTROL EQUIPMENT			
3.10.1	Types of Operating Devices (Rope or rod devices shall not be used.)	Yes	Yes	Yes
3.10.2	Car-Switch Operation Elevators (If provided must return to stop position if released by hand)	Yes	Yes	Yes
3.10.3	Top-of-Car Operating Devices (Continuous pressure <150FPM; between crosshead & door)	Yes	Yes	Yes
3.10.4	Electrical Provisions			
	(a) Slack Rope Switch	N/A	N/A	N/A
	(b) Motor-Generator Running Switch	N/A	N/A	N/A
	(c) Compensating Rope Sheave Switch	N/A	Yes	Yes
	(d) Broken rope, tape or chain	Yes	Yes	Yes
	(e) Stop Switch – Top of Car- marked “stop” & “run”	Yes	Yes	Yes
	(f) Car-Safety Mechanism Switch	Yes	Yes	Yes
	(g) Speed Gov. Overspeed Switch	Yes	Yes	Yes
	(h) Final Terminal Stopping Devices	Yes	Yes	Yes
	(i) Emergency Terminal Stopping Devices (reduced stroke)	Yes	Yes	Yes
	(j) Motor Generator Overspeed Protection	N/A	N/A	N/A
	(k) Motor Field Sensing Means (not required w/ static drive)	Yes	Yes	Yes
	(m) Buffer Switches for Oil Buffers (type c safety)	N/A	N/A	N/A
	(n) Hoistway Door Interlocks or Hoistway Door Contacts	Yes	Yes	Yes
	(p) Car Door or Gate Electric Contacts	Yes	Yes	Yes
	(q) Normal Terminal Stopping Devices	Yes	Yes	Yes
	(r) Car Side Emergency Exit Electric Contact	N/A	N/A	N/A
	(s) Electric Contacts for Hinged Car Platform Sills	N/A	N/A	N/A
	(t) In-Car Stop Switch (Must be keyed, if provided)	Yes	Yes	Yes
	(u) Emergency Stop Switch (Must be provided for freight cars)	Yes	Yes	Yes
	(v) Stop Switch in Pit	Yes	Yes	Yes
	(w) Buffer Switches for Gas Spring Return Oil Buffers	N/A	N/A	N/A
3.10.5	Power Supply Line Disconnecting Means (Provided w/ overcurrent protection, within site, and numbered)	Yes	Yes	Yes
3.10.6	Phase Reversal and Failure Protection (Means to prevent starting if out of phase)	Yes	Yes	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	Yes	Yes
3.10.8	Release and Application of Driving Machine Brakes (If ungrounded or if stop switch is pulled shall release brake)	Yes	Yes	Yes

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

A17.3	Code Item	Cars: 1-5	Cars: 6-9	Car: 10
3.10.9	Control and Operating Circuit Requirements (The failure of any single magnetically operated switch)	Yes	Yes	Yes
3.10.10	Absorption of Regenerated Power (Provide means to absorb energy during overhauling)	Yes	Yes	Yes
3.11	EMERGENCY OPERATION AND SIGNALING DEVICES			
3.11.1	Car Emergency Signaling Devices (Audible signal, two-way communication, on emerg. power)	Yes	Yes	Yes
3.11.2	Operations of Elevators Under Standby (Emergency) Power (If provided must be able to absorb regenerative power)	Yes	Yes	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	Yes	Yes
3.12	SUSPENSION MEANS AND THEIR CONNECTIONS			
3.12.1	Suspension Means (Must be wire rope made of iron or steel- Elevator ropes only)	Yes	Yes	Yes
3.12.2	Rope Data Tag	Yes	Yes	Yes
3.12.3	Factor of Safety ($f = S \times N / W$ or table 3.12.3)	Yes	Yes	Yes
3.12.4	Minimum Number and Diameter of Suspension Ropes (3 for traction; 2 for drum; minimum diameter = 3/8")	Yes	Yes	Yes
3.12.5	Suspension Rope Equalizers (When provided shall be of the individual-compression spring type)	Yes	Yes	Yes
3.12.6	Securing of Suspension Wire Ropes to Winding Drums (rope must be secured by clamps or tapered babbitted sockets.)	N/A	N/A	N/A
3.12.7	Spare Turns on Winding Drums (Not less than one turn of the rope when car is on buffer)	N/A	N/A	N/A
3.12.8	Suspension Rope Fastenings (Spliced eyes by return loop may continue in service)	Yes	Yes	Yes
3.12.9	Auxiliary Rope Fastening Devices	N/A	N/A	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

High-rise Cars 1 -5							
	PERFORMANCE TIMES	Design 1-4	Car 1	Car 2	Car 3	Car 4	Car 5
7.1	Door Open Time	1.8	1.9	-	2.4	2.2	2.2
7.2	Door Close Time	2.7	3.4	-	3.6	3.6	3.4
7.3	Floor to Floor Up	8.7	12.3	-	12.3	14.6	12.0
9.6	Floor to Floor Down	8.7	11.9	-	12.4	14.9	11.9
7.5	Full Speed Up	800 FPM	803	-	804	799	798
7.6	Full Speed Down	800 FPM	803	-	805	801	799
7.7	Jerk Rate Up	< 7.0	11.6	-	10.7	14.2	11.7
7.8	Jerk Rate Down	<7.0	16.3	-	12.2	16.9	11.6
7.9	Power Closing of Door (Pressure Gauge)	<30lbs	17lbs.	-	17lbs	17lbs	13lbs
7.10	Interrupted Ray	.5sec	1.1	-	1.6	1.8	1.4
7.11	Car Dwell Time	3.0	3.9	-	4.5	4.1	4.5
7.12	Hall Call Dwell Time	5.0	3.9	-	4.5	4.1	4.3
7.13	Hall/Car Lantern Time	8.0	10.5	-	12.5	14.1	8.6
	Nudging	20.0	>30 sec	-	>30 sec	>30 sec	>30 sec
	Test Emergency Phone	Yes	Yes	-	Yes	Yes	Yes

Items in Red do not comply and should be adjusted.

Car #	GENERAL MAINTENANCE DEFICIENCIES
	Car 1
1.1	Multiple machine room light were not working
1.2	No annual or five year tags in the machine room
1.3	Door closing times is slow- adjust to meet design time
1.4	Floor to floor times up and down are slow- adjust to meet design times
1.5	Acceleration and deceleration is not smooth-resulting in excessive jerk rates- adjust to achieve smooth operation
1.6	Hall dwell time is too short- adjust to 5.0 second minimum
	Car 2
2.1	Out of service during the survey

Appendix “C”
Performance Review and Maintenance Deficiency List

	Car 3
3.1	Multiple machine room light were not working
3.2	No annual or five year tags in the machine room
3.3	Door opening and closing times are slow- adjust to meet design times
3.4	Floor to floor times up and down are slow- adjust to meet design times
3.5	Ride quality is poor-resulting in excessive jerk rates- adjust to achieve smooth operation
3.6	Hall dwell time is too short- adjust to 5.0 second minimum
3.7	Rope lubrication unit is not installed but lying on the floor near the hoist machine- install properly
	Car 4
4.1	Multiple machine room light were not working
4.2	No annual or five year tags in the machine room
4.3	Door opening and closing times are slow- adjust to meet design times
4.4	Roof is leaking- there is a bucket over the controller cabinet with water in it-fix leak
4.5	Floor to floor times up and down are slow- adjust to meet design times
4.5	Acceleration and deceleration is not smooth -resulting in excessive jerk rates- adjust to achieve smooth operation
4.6	Hall dwell time is too short- adjust to 5.0 second minimum
	Car 5
5.1	Multiple machine room light were not working
5.2	No annual or five year tags in the machine room
5.3	Door opening and closing times are slow- adjust to meet design times
5.4	Floor to floor times up and down are slow- adjust to meet design times
5.5	Acceleration and deceleration is not smooth -resulting in excessive jerk rates- adjust to achieve smooth operation
5.6	Hall dwell time is too short- adjust to 5.0 second minimum
5.7	Hoist machine is making a clicking noise- possibly brushes

Appendix “C”

Performance Review and Maintenance Deficiency List

Low-rise Cars 6-9 and Service 10								
	PERFORMANCE TIMES	Design	Car 6	Car 7	Car 8	Car 9	Design	Car 10
7.1	Door Open Time	1.8	2.4	2.8	2.3	2.3	2.0	4.6
7.2	Door Close Time	2.7	3.6	3.4	3.8	3.5	2.9	4.3
7.3	Floor to Floor Up (18 to 19)	8.6	12.4	13.0	13.3	13.4	9.5	15.0
9.6	Floor to Floor Down (19 to 18)	8.6	12.9	13.0	13.3	13.2	9.5	15.0
7.5	Full Speed Up	500 FPM	498	497	502	497	500 FPM	496
7.6	Full Speed Down	500 FPM	499	499	499	500	500 FPM	499
7.7	Jerk Rate Up	< 7.0	10.8	10.0	6.2	7.4	< 7.0	6.5
7.8	Jerk Rate Down	< 7.0	9.4	8.0	6.6	7.8	< 7.0	7.4
7.9	Power Closing of Door (Pressure Gauge)	<30lbs	16lbs.	17lbs.	19lbs.	19lbs.	<30lbs	>35lbs.
7.10	Interrupted Ray	.5sec	1.4	1.7	1.4	1.7	.5sec	2.5
7.11	Car Dwell Time	3.0	3.7	4.6	6.3	4.6	3.0	3.2
7.12	Hall Call Dwell Time	5.0	4.0	3.4	4.0	4.2	5.0	4.4
7.13	Hall/Car Lantern Time	8.0	8.4	10.7	9.2	6.0	8.0	5.0
7.14	Nudging	20.0	>30 sec	>30 sec	>30 sec	>30 sec	20.0	>30 sec
7.15	Test Emergency Phone	Yes	DNC	DNC	DNC	DNC	Yes	DNC

	Car 6
6.1	Machine room door is unlabeled- install code compliant signs
6.2	Machine room has unmarked step down-add safety color at step
6.3	Multiple lights are inoperative in the machine room
6.4	No annual or five year tags in the machine room
6.5	Door opening and closing times are slow- adjust to meet design times
6.6	Floor to floor times up and down are slow- adjust to meet design times
6.7	Acceleration and deceleration is not smooth -resulting in excessive jerk rates- adjust to achieve smooth operation
6.8	Hall dwell time is too short- adjust to 5.0 second minimum

Appendix “C”

Performance Review and Maintenance Deficiency List

6.9	Emergency phone operator is not able to hear recording to know car number or location
	Car 7
7.1	Machine room door is unlabeled- install code compliant signs
7.2	Machine room has unmarked step down-add safety color at step
7.3	Multiple lights are inoperative in the machine room
7.4	No annual or five year tags in the machine room
7.5	Door opening and closing times are slow- adjust to meet design times
7.6	Floor to floor times up and down are slow- adjust to meet design times
7.7	Acceleration and deceleration is not smooth -resulting in excessive jerk rates- adjust to achieve smooth operation
7.8	Hall dwell time is too short- adjust to 5.0 second minimum
7.9	Emergency phone operator is not able to hear recording to know car number or location
	Car 8
8.1	Machine room door is unlabeled- install code compliant signs
8.2	Machine room has unmarked step down-add safety color at step
8.3	Multiple lights are inoperative in the machine room
8.4	No annual or five year tags in the machine room
8.5	Door opening and closing times are slow- adjust to meet design times
8.6	Floor to floor times up and down are slow- adjust to meet design times
8.7	Acceleration and deceleration is not smooth -resulting in excessive jerk rates- adjust to achieve smooth operation
8.8	Hall dwell time is too short- adjust to 5.0 second minimum
8.9	Emergency phone operator is not able to hear recording to know car number or location
	Car 9
9.1	Machine room door is unlabeled- install code compliant signs
9.2	Machine room has unmarked step down-add safety color at step
9.3	Multiple lights are inoperative in the machine room
9.4	No annual or five year tags in the machine room
9.5	Door opening and closing times are slow- adjust to meet design times
9.6	Floor to floor times up and down are slow- adjust to meet design times
9.7	Acceleration and deceleration is not smooth -resulting in excessive jerk rates- adjust to achieve smooth operation
9.8	Hall dwell time is too short- adjust to 5.0 second minimum
9.9	Emergency phone operator is not able to hear recording to know car number or location
9.10	Hall lantern time is too short- adjust to 8 second minimum

Appendix “C”
Performance Review and Maintenance Deficiency List

	Car 10
10.1	Hoist motor makes a humming noise during operation- check to ensure proper operation
10.2	Machine room door is unlabeled- install code compliant signs
10.3	Machine room is dusty and has paperwork that needs to be properly stored
10.4	Multiple lights are inoperative in the machine room
10.5	No annual or five year tags in the machine room
10.6	Door opening and closing times are slow- adjust to meet design times
10.7	Floor to floor times up and down are slow- adjust to meet design times
10.8	Acceleration and deceleration is not smooth -resulting in excessive jerk rates- adjust to achieve smooth operation
10.9	Hall dwell time is too short- adjust to 5.0 second minimum
10.10	Excessive door closing pressure-adjust to less than 30lbs.
10.11	Hall lantern time is too short- adjust to 8 second minimum



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