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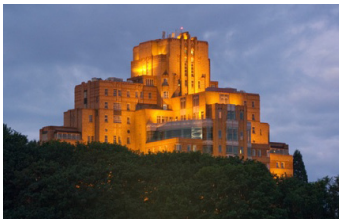

WASHINGTON STATE DEPARTMENT OF COMMERCE

PACIFIC TOWER
FACILITY CONDITION ASSESSMENT

PROJECT 2014-014

Report of Findings
29 October 2013

Schreiber Starling & Lane

ARCHITECTS

Schreiber Starling & Lane

ARCHITECTS

29 October 2013

Mr. Christopher Gizzi, Architect, LEED AP
Project Manager
Department of Enterprise Services
Engineering & Architectural Services
1500 Jefferson St. SE
Olympia, WA 98501

Subject: Project 2014-014, Pacific Tower Facility Condition Assessment

Dear Chris,

Schreiber Starling & Lane Architects is pleased to present the following Report of Findings of our assessment of the Pacific Tower. This submittal addresses the scope of services required per our agreement with the State.

General Scope:
It is important to note that our assignment and goal for this assessment, while thorough in its scope, is not a comprehensive or exhaustive investigation of all conditions and systems in this 260,000-sf building. Our team reviewed drawings and documents provided by the building leasing agency, interviewed maintenance and operations personnel, and conducted field surveys to develop a general understanding and assessment of the condition and serviceability of the buildings and its systems. Except where specifically identified, destructive investigation, detailed testing, and performance confirmation were not included in our assessment scope. This report represents the opinion, assessment, and recommendations of the members of our team based upon their observations and professional experience and judgment.

Limitations on Estimates:
The estimates provided in this report are intended to generally identify expected future costs for planning and budgetary purposes. They represent the evaluator's best judgment of the "direct" costs for that element or issue with allowances for indirect costs such as design/taxes, contract conditions. Additionally, if elements are packaged together, individual deficiency costs may be less, or more depending of scalability of the specific scope of any given project.

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Identification of possible costs prepared by the investigation team represents our best judgment as professionals familiar with the construction industry. They have not been generated from a specific design or proposal. The team cannot and does not warrant or represent that actual cost for the recommended improvement will not vary from our estimate.

Limitations on Code Compliance
The codes referenced in this report are subject to various and possibly contradictory interpretations by the authorities having jurisdiction on the building. The assessment team used reasonable professional efforts and judgment to interpret applicable requirements of the identified codes and other federal, state and local laws, rules, codes, ordinances and regulations as they apply to assessing code compliance and accessibility considerations. Schreiber Starling and Lane Architects and our consultants cannot and do not represent or guarantee that any project based on the findings of this report will comply with all interpretations of the referenced codes and/or the requirements of other federal, state and local laws, rules, codes, ordinances and regulations as they apply to the subsequent project.

Acknowledgements
The process of understanding of the development history of the site and buildings has been a challenging yet rewarding one for all the members of our team. We specifically would like to recognize the assistance of Mr. Kasey Krohn, the building engineer from JSH properties for his ready availability to get us in and around the building, and for his willingness to share the operational history of the systems and features of the Tower.

We are pleased and fortunate to have this opportunity to work on this unique and iconic building with you and Dan Aarthun on behalf of the Department of Commerce. If we can provide any detailed follow-up of the findings or any further assistance to the State as it structures this project, please do not hesitate to contact me.

Respectfully,

Keith J. Schreiber, AIA LEED AP
Principal

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PACIFIC TOWER ASSESSMENT

Executive Summary

Schreiber Starling & Lane

ARCHITECTS

EXECUTIVE SUMMARY

As a condition of their proposed lease for the Pacific Medical Tower, The Washington Department of Commerce commissioned Schreiber Starling & Lane Architects to conduct an assessment and prepare a report of the general building condition to include identification and evaluation of discovered building deficiencies.

Pacific Tower building totals 259,703 sq ft. configured over 16 levels. The area of the investigation includes 205,368-nsf which excludes the portion of the basement and ground floor levels which are currently leased to Pacific Medical Center. The adjacent West Garage was constructed in 2001. It is totals approximately 75,600-gsf and is currently configured for 268 vehicles on nine split, four overall levels.

Code Compliance

Existing buildings with a valid occupancy permit are considered to be in compliance with the codes under which they were developed and are not generally required to be modified or renovated simply to insure that they comply with more current codes. Alterations, including tenant improvements must be code complying inclusive of their scope; however, there is always consideration of existing conditions, historic implications, and feasibility of bringing existing features up to current code requirements which are addressed in the permitting process.

It is the opinion of the study team that it is unlikely that the Seattle Department of Planning and Development (DPD) will classify subsequent Tenant Improvements in Pacific Tower as being substantial enough to trigger compliance with the current Seattle Building Code (SBC) however; we have included recommendations to address some of these deficiencies in order to comply with the State Leased Space Requirements (LSR). It is important to obtain a determination from Seattle DPD of the need to bring Pacific Tower to current code compliance early in the process of any subsequent project/work.

Life Safety

Generally, the existing building appears to have adequate life safety features. The study has identified minor deficiencies related to fire separation and existing which are recommended to be corrected. As most of the noted deficiencies are in common areas, it is recommended that they be addressed prior to occupancy. Some noted deficiencies such as the exit width from the second floor, are not feasible to correct given the existing construction and dimensions. In these instances, it is recommended that further study to identify alternate means of compliance be undertaken as part of subsequent TI or other projects.

Fire Protection

The Pacific Tower is completely sprinkled throughout by an automatic wet pipe sprinkler system, in accordance with NFPA 13. All yearly and other major inspections appear to be up to date, as performed by Columbia Fire Protection and the system and equipment appear to be in good working condition.

Seismic
In general the buildings do contain relatively complete seismic force resisting systems. Some deficiencies were noted and the report outlines recommendations to reduce the potential seismic losses to the building which, while not required by code, should be considered when planning any subsequent TI improvements.

Hazardous Materials
Our survey identified a small amount of asbestos-containing materials (ACM) and some areas having lead-containing paint (LCP) and we have included tasks to remove these known elements. There is some possibility that ACM may be encountered in subsequent work (related to window replacement) but this is considered a low probability and would not be an issue if the windows are repairs as recommended.

Building Measurements
Our investigation team did field measuring of two floors to check the accuracy of the CAD drawings provided and the calculation of the building area. While our check calculations differ from the areas provided by the leasing agent, they were not significant enough to warrant a full physical re-measurement of building area at this time. It is also important to note that BOMA calculation methodologies have varied over time and small differences result from procedural differences and varied interpretations.

Site Accessibility
The site lacks an accessible route from existing accessible parking on the south side of the building to the main south entrance and from the north entrance to the accessible parking in the lower floor of the west garage. Both are recommended to be corrected in as an immediate priority

Parking
Parking designated for the Tower totals 279 spaces. This would appear to be adequate for planned occupancy. Additionally, it may be possible to restripe the garage to gain some compact spaces.

Utilities Serving The Site
The site has serving utilities that are adequate for the intended occupancy of the Tower. Scoping of the storm and sanitary sewers identified some restrictions but no interrupted lines and recommend clearing these prior to occupancy.

Interior Accessibility
The evaluation team assessed the accessibility (ADA) Standards and found that the interior of the building has good access with some minor deficiencies noted. These are recommended to be addressed prior to occupancy.

Building Exterior
The exterior masonry façade of the original 1933 Tower and its various additions appear

to be in good overall condition. Few signs of distress are apparent from the ground on the polychrome masonry, terra cotta, and sandstone façade. Areas of water intrusion are apparent at the terra cotta parapets, coping stone, and sandstone entry façade. Long-term concerns have been written in the masonry repair reports that noted a lack of cavity wall flashing at the steel angle lintels window heads and shelf angles. The study recommends some immediate masonry repairs and some further destructive investigation. Our team notes that the existing envelope should have a long expected life with regular cleaning and sealing.

Roofing

Most of the roofing was new in 2001 and appears to be serviceable. There are no reports of on-going or recent leaking. Our assessment is to replace the roof of the 1950 addition and over the third floor kitchen in the immediate term, do regular cleaning of drainage and membrane surfaces, and plan for replacement of other areas in the far-term as they reach the end of their 15-20 years expected service life.

Building Interior

The existing interior of the Tower is in good condition. The interior walls and partitions placed by Amazon are in good condition but it is assumed that they would be considered unusable for most tenants. The interior of the east wing of the first floor is original to the 1950's and is in fair to poor condition. Any planned TI in this area should assume upgrade of the exterior wall (insulation) in addition to new interior partitions.

Floor Construction/Loading

Floor construction in all areas is cast-in-place concrete slab or concrete on metal decking at the 1992 addition. There were no perceptive levelness issues noted by the investigation team. In general, the floor load capacities are less than required by LSR but do meet or exceed the current building code for basic office/classroom space.

Food Service Equipment

The second floor houses a food service facility which has not been in operation since 2010. The facility and equipment appears to be in good condition with major equipment items and systems in place for a functional kitchen and servery. A complete cleaning of all spaces and equipment items is recommended prior to any use and with some added equipment, the facility and equipment can be made operational.

Exterior Windows/Glazing

There is a mix of styles, sash types, materials, function, and installation dates to the existing windows. All but the 1980 and 1992 areas have single pane glass and are operable. The wood windows in the tower are in fair to poor condition but most deficiencies appear to be due to deferred maintenance and the basic components of the windows are in good condition.

The Seattle Landmarks Board must review and approve any repair or modification to the historic façade. In compliance with restoration standards and best-practices, and in recognition of the cost vs. benefit to full reconstruction or replacement, it is the

recommendation of the assessment team that they be repaired. The repair of the frames and sash should correct air-infiltration and heat-loss due to open pathways. The team recommends further study to assess the cost/benefit of installing interior energy sash and the option for full replacement as an alternative.

Interior Finishes

The majority of interior finishes in the tower were installed with the 1992 renovation/expansion and are in generally suitable condition but do show areas of wear in high-traffic spaces. The main entrance lobby has terrazzo flooring and plaster ceiling with an ornately carved/formed cove defining the entry space and the original elevator lobby. It is in very good condition.

Vertical Transportation

The vertical transportation system consists of six traction elevators and one hydraulic elevator. Most of the major components are in good to very good condition with the exception of the elevator serving the West Garage owing to its exterior location. .
Our study recommends some immediate operational repairs and adjustments prior to re-occupancy and comprehensive modernization to all the elevators in 15 to 20 years.

Plumbing

The domestic water piping in the tower was replaced with new copper in 1998 and there is no galvanized steel piping in the building. Restrooms in the tower (including locker rooms) appear of sufficient count to meet the code requirements for the anticipated occupancy. All components are in good to very good condition with the primary recommendation to replace flush meter valves at toilets and urinals and faucets at restroom sinks. A number of trap primers were found to be disconnected in various areas of the tower and are recommended to be replaced and re-connected.

Building Performance and Energy

We have calculated the Pacific Tower's 2009 electric energy use index (EUI) at 73.0 kBtu/sq.ft.-yr. based on a rentable area of 260,000 sq. ft. This EUI is average for regional office buildings. Based on the higher than normal base load identified in the observations with a change in space use to less computing requirements, the EUI benchmark should improve. This should be true even with the planned inclusion of classrooms and labs in the building which have an energy demand that is greater than typical office space.

In 2009 Pacific Tower's annual energy cost was $308,000 or about $1.18 per sq.ft. SCL rates have escalated by about 20% since 2009. Applying current utility rates to the 2009 energy use brings potential annual energy cost to $382,000.

The building Owner has provided nomination documents dated 23 November 2010 indicating that the Pacific Tower has a calculated EUI rating of 93 (Appendix G)

Heating, Ventilating And Air Conditioning (HVAC) Systems

All of the HVAC equipment was installed in 1999 during a remodel of the building. The overall condition of the heating, ventilating and air-conditioning (HVAC) equipment appears to be in fairly good working condition and well maintained. The basic system description is multiple variable air volume (VAV) air handling units (AHUs) on each floor with chilled water coils for cooling and electric resistance re-heat coils for heating. Chilled water is supplied by two 350 ton chillers. A full waterside economizer system is used for energy conservation.

VAV systems are energy efficient and provide good comfort conditions to occupants. Economizer cooling is used when outside air (OSA) temperature is low enough to supply the cooling requirements (usually 60°F or less). Each AHU does bring in a minimum amount of OSA for ventilation during heating and during mechanical cooling.

Energy Management System (E.M.S.)

The building's HVAC system is monitored and controlled by a Alerton Direct Digital Control (DDC) energy management and environmental controls system. This existing system has been in operation for many years, and can continue to operate for more, however, our recommendation is to plan to upgrade the controls to latest in industry-leading energy management systems.

Electrical Service

The overall condition of the electrical system is very good. In 1999 nearly all of the electrical system was demolished back to the switchgear. The two main switchgears were left and are still utilized today. The balance of the electrical was rebuilt from the switchgear out to the distribution. Given that this remodel was fairly recent, the system is in good condition. The maintenance crew has kept this system in good working condition.

Light Fixtures

The overall condition of the lighting equipment appears to be in very good working condition and well maintained. The basic system description is T-8 fluorescent lamps in pendant mounted fixtures for general overall lighting. Compact fluorescent (CFL) fixtures are used for accent and in some down-lighting areas. T-8s and CFLs are very energy efficient and maintain their light output levels very well.

Voice/Data Distribution

As the last primary building occupant was Amazon.com, the building has a robust telecom infrastructure. There are a minimum of 2 telecom/IDF closets per floor and a main data center on the 6th floor. All data rooms have separate cooling. Distribution pathway for data is by ladder-type cable trays that feed into conduit drops to wall data outlets. It is possible to re-use the existing equipment racks, server cabinets and cable tray that is already in place in the MPOE facility in the basement, the data center and in the MDF room located on the 6th floor.

If any future tenant network will only require up to "Gigabit" capabilities, a majority of the existing Category 5e cable can be re-used. We have included an estimate to upgrade to Category 6A cabling as an option.

Security Access/Surveillance Systems

There are building has a limited intrusion detection system. There is no access control system in the tower with the exception of specific rooms. There is a metered access control of the West Garage. Access is granted by either card reader or upon payment of parking fee.

There are building-mounted surveillance cameras on each of the primary elevations of the tower. There is also camera coverage of the loading dock area and the West Garage. Data is digitally collected and auto-erased if not accessed. They are not monitored. The system as installed appears to meet the exterior requirements of LSR A5.29.

Fire Protection Systems

The buildings fire detection and alarm systems were installed in 1998 are in good condition, with no problems reported. It has been regularly maintained by an outside vendor, Simplex. A full sprinkler system as also installed in 1998 and is in very good condition.

ADDITIONAL INVESTIGATION

The investigation team recommends additional investigation prior to design of any repair/improvements includes:

- Destructive testing (wall openings) on each of the faces of the 1931 tower to evaluate the condition of the steel shelf angles and steel window head lintels and the terra cotta fasteners. The investigative openings will provide information as to the severity and amount, if any, of steel corrosion.

- Test fire alarm is capable of meeting 15dba above ambient noise per SFC 1603.6

- Test to determine need for emergency responder radio system (Section J SFC)

- Remove typical double-hung sash to confirm scope for refurbishment and ability to replace sash weights with spring balances. Identify any concealed ACM.

- Remove typical double-hung sash to confirm scope for refurbishment and ability to replace sash weights with spring balances. Identify any concealed ACM.

- Explore alternate exit pathways from second floor cafeteria

- Explore cost/benefit if interior energy sash on historic windows and compare to cost/benefit of replacement vs. refurbishment.

RECOMMENDATIONS

The assessment team, in conjunction with State Engineering and Architectural Services has organized the identified recommendations to addresses deficiencies into a prioritized grouping as follows:

Immediate

These are recommendations for specific code and LER deficiencies and/or building-wide improvements that can be most effectively corrected prior to occupancy. They are estimated to cost $3,400,000 and include the following elements:

- Site and internal building accessibility improvements.
- Correction of Life Safety deficiencies.
- Abatement of known hazardous materials.
- Safety and operations improvements to elevators.
- Repair of steel angles above masonry openings.
- Repair of the windows throughout the tower and third floor of the 1953 addition.
- Replacement of roofing having current expected service life of less than 10-years
- Operational improvements to the plumbing and HVAC systems that facilitate occupancy.

Near-term

These are recommendations for deficiency corrections and/or improvements that can most effectively be incorporated into tenant improvements or with subsequent maintenance in the 5-15 year timeframe. They are estimated to cost $1,000,000 and include the following elements:

- Operational and finish upgrades for the vertical transportation system.
- Exterior joint repair at 1992 addition
- Various sprinkler head changes

Far-term

These are recommendations for deficiency corrections and/or improvements on elements or systems that have 15-20 years service life remaining but which should reasonably planned for major upgrade or replacement within a thirty-year period. They are estimated to cost $1,358,000 and include the following elements:

- Operational and finishes upgrades for the vertical transportation system
- Replacement of roofing having current expected service life of 15-20 years

Far-Term Equipment Repair/Replacement

The team made a complete analysis and assessment of the building systems and estimated the remaining service life for most of the equipment to be 15-20 years for the HVAC systems and 20-30+ for the electrical equipment.

Complete replacement of the major components would very expensive however it would be exceedingly rare that single unit would need to be completely replaced, rather it would be likely that a motor or similar component would be the issue and the service live could be extended by replacement of the component part itself. Based upon the existing condition and the general quality of the existing equipment and assuming regular preventative maintenance, the assessment team recommends a repair/select

replacement budget of 10-20% of the current replacement value be used for planning purposes.

The anticipated window for these issues is 15-20 years but is important to note that remaining life and repair/replacement costs indicated are based on a condition assessment only. Repair/replacement is contingent on an analysis of critical function; replace ability of parts, timing of needs (logistics) and disruption.

Over the life of the lease, it is recommended that an equipment repair/replacement budget totaling $3,845,000 be reserved. It would appear that the recommended equipment maintenance and repair budget of $2.20/sf /yr (IFMA Standard) would address this.

Options

In addition to the estimated cost to address noted deficiencies and planned system maintenance, the team identified some options that the state may desire as alternatives to or in addition to the prioritized recommendations. These include the following elements:

- Provided a separate interior window sash in addition to the refurbished wood widows to increase energy performance and occupant comfort.
- Provide complete window replacement in lieu of repair and refurbishment of the existing wood and metal windows.
- Remove the interior finish from the exterior wall; add additional insulation and thermal at metal studs for a potential increase in energy performance and occupant comfort.
- Replace all the 5e cabling and data racks with current 6 or 6A cables and patching equipment to increase data transmission rates throughout the building.
- Provide a distributed internal antenna system to rebroadcast emergency responder 800mz radio signals assuring full coverage within the tower.

Washington State Department of Commerce

Pacific Tower

Condition Assessment

RECOMMENDED REPAIR/UPGRADES

10/29/2013

IMMEDIATE PRIORITY (Prior to occupancy)

Deficiency Code #	Description	Notes	Direct Cost	Contractors OH&P	General Conditions	Project Costs	Subtotal Estimated Cost
Accessibility							
A-001a	Site improvements to create accessible route from West Garage to North Entrance		32,000	3,800	3,200	11,700	50,700
A-001b	Site improvements to create accessible route from West Garage to South Entrance		120,000	14,500	13,500	44,400	192,400
A-002	Remove semi-recessed trash/towel units in restrooms/ restore walls (24 Locations)	b.	66,000	7,900	7,400	2,400	83,700
A-003	Remove platform at cafeteria	b.	6,000	700	600	2,000	9,300
A-004	Provide accessible ramp at 8th floor platform	b.	2,000	300	200	700	3,200
A-005	Modify counters at lobby and cafeteria (if remaining) for access	b.	2,700	400	300	1,000	4,400
Life-Safety/Seismic							
C-001	Add fireproofing at new primary steel in tower (2001 seismic repair)	a.	5,000	600	500	1,800	7,900
C-002	Provide rated enclosure at rooms w/FM-200 fire suppression (if retained)	a b.	8,000	1,000	1,000	3,000	13,000
C-003	Fire caulking at floor sleeves, 11th floor	a.	1,200	200	100	500	2,000
C-004	Add compliant 2nd exit from 9th floor roof decks	a. b.	25,000	3,000	2,800	10,000	40,800
C-005	Separate air intake and exit pathway @ 12th floor	a.	10,000	1,200	1,100	4,000	16,300
C-006	Improve compliance of handrails, exit signage, obstruction removal	a.	20,000	2,400	2,200	7,400	32,000
C-007	Provide 2-way voice Alarm/Communication in tower	a.	60,000	7,200	3,300	21,000	91,500
S-001	Added drag struts, floor 4-10	a. b.	140,000	16,800	14,000	52,000	222,800
Hazardous Materials							
H-001	Encapsulate identified ACM plaster skim coat in east Fan Rooms		6,000	800	1,000	2,300	10,100
H-002	Abate/remove identified ACM paper packing at Vinyl Floor in Basement		8,500	1,000	1,000	3,000	13,500
Vertical Transport							
V-001	Correct elevator door restrictors		5,000	900	800	2,700	9,400
V-002	Service and adjust all elevator cars		56,000	6,700	5,500	20,500	88,700
Envelope							
E-001	Repair steel shelf angle above windows 1933 tower (15% of 809 units)	d.	30,000	3,600	3,400	11,000	48,000
E-002	Repair steel shelf angle above windows 1950 Addition (44 units)	d.	20,000	2,400	2,300	7,500	32,200
W-001 a	Repair wood windows in tower (513 units) *(see Options, page 2)*	a. c. d.	564,000	68,000	60,000	276,000	968,000
W-001 b	Cleaning and select repair at metal windows (296) at 1933 tower *(see Options, page 2)*	a. c. d.	62,000	7,500	1,200	21,000	91,700
W-002	Repair/refurbish windows @ third floor 1950 addition (44 units) *(see Options, page 2)*	a. c. d.	11,000	1,300	1,300	4,000	17,600
W-003	Cleaning and re-sealant at 1980 windows	d.	2,000	250	200	750	3,200
W-004	Cleaning and re-sealant at 1992 windows	d.	2,000	250	200	750	3,200
R-001	Reroof Level 4 (1950)	f.	144,000	17,000	16,000	53,000	230,000
R-004	Reroof Level 3 (kitchen & servery)	f.	80,000	9,600	9,000	30,000	128,600
HVAC-Plumbing- Equipment							
DC-01	Replace insulation @ cooling tower piping		1,000	200	100	400	1,700
DC-02	Replace MDF Glycol Pump (PSR 14-5)		1,250	150	140	460	2,000
DC-04-05	Replace IDF Glycol		1,500	180	170	550	2,400
DC-06	Replace MDF Glycol Pump (PSR 17-5)		1,250	150	140	460	2,000
DC-07	Replace MDF Glycol Pump (PSR 18-5)		1,250	150	140	460	2,000
DC-08 & 9	Start-up and test-run MDF cooling system 6th floor	b.	4,500	500	500	1,500	7,000
DDC-01	Upgrade DDC to current Allerton system		50,000	6,000	5,500	18,500	80,000
DDC-02	Inspect and Adjust VAV to achieve 30 degree rise across heating element		2,000	500	500	900	3,900
DDC-05	Retro Commissioning HVAC/DDC controls	e.	20,000	2,400	2,300	7,500	32,200
HVAC-01	Replace oil in chillers 1 & 2		3,000	400	300	1,200	4,900
HVAC -02	Clean and service kitchen boiler	b.	2,000	300	250	750	3,300
HVAC-03	Drain, clean, & repair Cooling Tower sump		3,500	500	400	1,400	5,800
HVAC-04	Add Variable Frequency Drives to the Chillers		168,000	20,000	18,800	65,000	271,800
P-002	Replace battery-operated sink fittings	b.	45,000	6,000	5,000	16,000	72,000
P-003	Replace pot sink spout	b.	600	100	100	200	1,000
P-004	Replace trap primer manifolds		8,000	1,000	900	3,000	12,900
P-005	Replace hot water heater for tower		7,500	900	850	2,750	12,000
Site Utilities							
U-001	Jet and clear sanitary sewer		18,000	2,200	2,000	6,700	28,900
						Estimating Contingency	440,000
						Total estimated cost for Immediate Priority Repairs	**3,400,000**

Note

a. May be required if project considered "substantial" upgrade by Seattle DPD

b. Could be executed as part of TI

c. Assumes removal of sash, repair and resealing of frames and sill in place, repair of sash and reinstallion from floor w/o lifts or exterior platform
See Options on Page 2 for other window options. Refurbishment avoids (low) potential for encountering ACM at window frame/masonry cavity

d. Assumes execution from interior and or window washing apparatus

e. Commissioning may identify some additional TAB work

f. Low potential for ACM at existing roof decking if encountered added 25k abatement costs

Washington State Department of Commerce

Pacific Tower

Condition Assessment

RECOMMENDED REPAIR/UPGRADES

Corrected 11/4/2013

NEAR-TERM PRIORITY (Execute in conjunction with T.I. Projects or in next 5-15 years)

Deficiency Code #	Description	Notes	Direct Cost	Contractors OH&P	General Conditions	Project Costs	Total Estimated Cost
P-002	Replace flushometers fittings		35,000	5,000	4,000	15,000	59,000
V-003	Change elevator door operators to closed-loop (Cars 1-6)		210,000	25,000	24,000	81,000	340,000
V-004	Replace gearless hoists (3 cars)		36,000	5,000	4,000	15,500	60,500
V-005	Elevator Cab Interior Upgrade (Cars 1-5)		125,000	15,000	14,000	54,000	208,000
E-004	Sealant joint repair replacement at 1992 addition	b.	20,000	2,500	22,000	15,500	60,000
K-001	Clean, repair and, replace kitchen equipment to enable re-opening	a.	55,000	7,000	6,000	24,000	92,000
FS2 -FS13	Various sprinkler head additions and revisions	a.	30,000	3,500	3,000	9,000	45,500
						Estimating Contingency	135,000
						Total estimated cost for Near-Term Priority Repairs	**1,000,000**

Note

a. Could be executed as part of TI

b. Assumes execution from interior and or window washing apparatus

c. See Options below for other possible near term scope

FAR-TERM PRIORITY (Execute 15-20 years)

Deficiency Code #	Description	Notes	Direct Cost	Contractors OH&P	General Conditions	Project Costs	Total Estimated Cost
V-006	Seismic Upgrade of 4 cars		240,000	30,000	26,000	100,000	396,000
R-002	Replacement roofing type-I floors 4-14		234,000	28,000	25,000	100,000	387,000
R-003	Replacement roofing type-III (pedestrian decking) floors 8-9		210,000	25,000	22,000	90,000	347,000
	Possible ACM abatement at roofing	a.	34,000	4,000	3,000	10,000	51,000
						Estimating Contingency	177,000
						Total estimated cost for Far-Term Priority Repairs	**1,358,000**

Note

a. Low potential for ACM at existing roof decking . Cost only if encountered

FAR TERM EQUIPMENT REPAIR/REPLACEMENT COSTS (Execute 15-20 years)

	Description	Current Cost/Full Replacement (a)	Recommended Repair/Select Replacement Budget (b)
VERTICAL TRANSPORTATION			
	Modernize (6 cars)		1,755,000
HVAC EQUIPMENT			
	Air Handling Units (33)	6,400,000	960,000
	Air Supply/Exhaust Fans (32)	310,000	60,000
	Cooling Tower	180,000	32,000
	Chillers (2)	560,000	100,000
	Boiler (1)	140,000	28,000
	Pumps (12)	140,000	28,000
	Air Conditioning Units (12)	230,000	46,000
FIRE PROTECTION			
	Fire detection and alarm system	180,000	36,000
ELECTRICAL EQUIPMENT			
	Generator and associated transfer switching and panels	875,000	140,000
	Motor Control Center and Switchgear	648,000	130,000
	Distribution Transformers	150,000	30,000
	Subtotal	9,813,000	3,345,000
			Estimating Contingency 500,000
			Recommend budget for Far-Term Equipment Repair/Replacement **3,845,000**

Note

a. The team made a complete analysis and assessment of the building systems and estimated the remaining service life for most of the equipment to be 15-20 years for the HVAC systems and 20-30+ for the electrical equipment. It is important to note that remaining life and repair/replacement costs indicated are based on a condition assessment only. Replacement should also be contingent on an analysis of critical function, availability of parts, timing of needs (logistics) and disruption. Complete replacement of the major components would very expensive however it would be exceedingly rare that single unit would need to be completely replaced. Rather it would be likely that a motor or similar component would be the issue and the service live could be extended by replacement of the component part itself. Based upon the existing condition and the general quality of the existing equipment and assuming regular preventative maintenance, the assessment team recommends a repair/select replacement budget of 10-20% of the NPV be used for planning purposes.

b. It is anticipated that replacement of component system parts and on-site assembly of full replacement components can be accomplished with the existing service elevator, precluding the need major vertical hoisting equipment. For example, if there is a failure on an element in the cooling tower (fan, pump, etc) only that element would need to be removed and replaced and each element could be moved on site via the elevator or with temporary boom and hoist from the roof.

OPTIONS

Deficiency Code #	Description	Notes	Direct Cost	Contractors OH&P	General Conditions	Project Costs	Total Estimated Cost
W-001d	Provide inner energy sash at all existing wood windows in tower (513 units)	a. b.	308,000	37,000	34,000	38,000	417,000
W-001e	Replacement windows at all locations in 1933 tower and 1950 addition. (20,000-sf)	a. b.	1,200,000	144,000	134,400	440,000	1,918,400
E-003	Increased insulation and continuous vapor barrier at interior face of 1933 & 19 50 exterior walls	a. b.	840,000	90,000	75,000	30,000	1,035,000
COM-1	Replace all 5e cabling and patch panels with Cat 6 or 6A	a. b.	800,000	86,000	70,000	26,000	982,000
C-008	Emergency Responder Radio Distributed Antenna System	a. c.	160,000	19,000	18,000	68,000	265,000
						Estimating Contingency	545,000
						Recommend Budget for Options	**5,162,400**

Note

a. May be required if project considered "substantial" upgrade by Seattle DPD

b. Could be executed as part of TI

c. Testing for reception should occur prior to this as it may indicate adequate reception w/o new system

Department of Commerce
Innovation is in our nature.

PACIFIC TOWER ASSESSMENT

REPORT OF FINDINGS

Schreiber Starling & Lane

ARCHITECTS

A1 PURPOSE AND GENERAL OVERVIEW

As a condition of their proposed lease for the Pacific Medical Tower, The Washington Department of Commerce commissioned Schreiber Starling & Lane Architects to conduct an assessment and prepare a report of the general building condition to include identification and evaluation of discovered building deficiencies.

The following report provides our observations and the result of our assessment that the building meets or can meet:

- Applicable building code as defined in Section A2.1 of the Leased Space Requirements. This effort will include an assessment of the structural systems of the building which will identify its capability to meet current structural/seismic codes. If this assessment indicates non-compliance with current codes, we will identify possible alternatives to increase performance and identify costs to implement.
- Each of the Basic Site Requirements as defined in Section A4 of the Leased Space Requirements
- Each of the Basic Building Requirements as defined in Section A5 of the Leased Space Requirements
- Each of the R.E.S. Accessibility Addendum Requirements as defined in the Leased Space Requirements.

Additionally, we have included:

- A confirmation of the net interior floor area based upon the BOMA *Standard Method of Floor Measurement for Office Buildings*
- A summary of deferred maintenance/system deficiencies observed and a budget cost for implementing the recommended correction.
- A list of all major systems, their expected remaining useful life, and their replacement costs.
- A summary of any other capital improvement costs anticipated over the next 30 years (Does not include interior tenant improvements)

<u>Investigation Team</u>

The range of systems and special conditions of the Pacific Tower require a level of professional knowledge that will require capabilities beyond traditional architectural services. For this assessment we enlisted the expertise and capabilities of the following consulting engineers and specialists:

1. McKinstry: Mechanical, Electrical, Plumbing Systems
2. Coughlin, Porter & Lundeen: Structural
3. Kolke Consulting Group: Life/Safety Code
4. Karen Braitmeyer, FAIA: Accessibility
5. Architectural Elevator Consulting, LLC: Vertical Transport
6. Clevenger Associates: Food Service/Kitchen
7. Environmental Health & Safety, Inc.: Hazardous Materials
8. Peter Meijer Architect: Historic Envelope

A2 GENERAL BUILDING INFORMATION

Address

1200 12th Avenue South Seattle, WA 98144

Legal Description

GOLF HEIGHTS ADD BLK 5 &BLK 8&VAC STS & ALLEY S LESS HWY HIST EX RCW 84.26

Site Area:

9.53 acres (415,245 square feet)

General Description

Pacific Tower building totals 259,703 sq ft. configured over 16 levels. The area of the investigation includes 205,368-nsf which excludes the portion of the basement and ground floor levels which are currently leased to Pacific Medical Center.

Located 350 ft above sea level at the northern edge of Beacon Hill, the tower is 239 ft tall with commanding views of downtown Seattle and Elliott Bay. The tower's prominent hilltop location and the deco styling which included woven brick, varied colors, precise line work and banding, and fluent rhythms make this one of the most colorful and iconic buildings on the Seattle skyline.

The adjacent West Garage was constructed in 2001. It is totals approximately 75,600-gsf and is currently configured for 268 vehicles on nine split, four overall levels.

History

The Seattle Marine Hospital was designed in 1929 in an Art Deco style by the Seattle Architectural firm of Bebb and Gould (assisted by the John Graham Company). Construction began in 1930 and was completed in 1933. The hospital site includes the principal tower and a group of two-story brick residential buildings that served as quarters for officers of the institution. Parking garages were added in 1992 and 2001.

The hospital originally served veterans, merchant seamen, the US Coast Guard, the US Light House Service, and poor and indigent people defined as "federal compensation cases". In 1951, it was re-designated as US Public Health Service facility along with all US marine hospitals.

The first expansion to the original tower was constructed in 1950 with a three story addition along the east portion of the site. In the 1980 a 2-story addition was made to infill the area between the tower and the 1950 addition and a new parking garage was constructed adjacent to South 14th.

The federal government ceased operation of the hospital in 1981. Control was shifted to Seattle as the city chartered the Pacific Hospital Preservation and Development Authority (PHPDA). A $9.3 million county bond paid for seismic improvements that took place between 1991 and 1994. A new tower addition was constructed on the north side of the building to create a buttress for the original structure and new stair towers were added at the inside of corner

where the end wings meet the main tower. The addition was designed by architects Zimmer Gunsul Frasca. The project created 70,000 sq ft of additional space. After the north addition, the building totals 259,703 sq ft. It was listed in the National Register of Historic Places in 1979 and in 1992 it received landmark status from the city. In 1998 Amazon.com occupied all but the basement and ground floor through 2010.

The exterior of the building suffered damage during the 2001 Nisqually earthquake. On the top three floors, 80 percent the perimeter walls were damaged. A brick parapet on the upper roof collapsed and fell through the 10th floor roof. An elevator shaft and five floors were flooded when a mechanical water line ruptured.

Earthquake repairs were executed in phases starting in 2001 and completed in 2002. The scope included repair of the building structure and exterior and interior construction. All exterior masonry above the twelfth floor was removed and reinstalled. This work included installation of in-wall flashing and drainage of the masonry wall. Structural repair consisted of adding reinforcing of weak or damaged elements including epoxy crack repair; installation of new concrete shear walls (8th floor to roof); new steel beam and column reinforcing; and floor/roof diaphragm reinforcing. At the roof levels, steel framing and bracing of the parapets was added. In the interior, non-bearing clay tile walls were removed and new metal stud framed walls were provided.

A2.1 CODE COMPLIANCE

General

This LSR Section A2.1 requires that all spaces leased to the State shall meet or exceed all applicable local governing codes. Generally, existing buildings with a valid occupancy permit are considered to be in compliance with the codes under which they were developed and are not required to be modified or renovated simply to insure that they comply with more current codes.

There are 39 specific codes that the City of Seattle enforces. While the scope of this investigation did not include a detailed and thorough evaluation of every element in these codes, the investigation team has reviewed the existing Pacific Tower for general compliance with the following:

Seattle Building Code (SBC)/Seattle Existing Building Code (SEBC)

Buildings in Seattle that undergo substantial alterations or repairs are subject to Seattle Building Code (SBC) Section 3404.9. It is important to note that SBC Section 3404.9 does not require a substantially altered building to comply with all of the current code rather it requires compliance only with specific sections. In general, alterations including tenant improvements must be code complying; however, there is always consideration of existing conditions, historic implications, and feasibility of bringing existing features up to current code requirements. Accessibility requirements fall under 3407 which treats alterations differently.

It is also important to note that other technical codes (Mechanical/Electrical/Plumbing) may treat alterations differently. For example, the Seattle Energy Code (SEC) requirements apply to the portion being altered, regardless of whether the SBC considers it a substantial alteration.

The intent of SBC Section 3404.9 is to provide improved structural and fire life safety to a building that undergoes a substantial alteration. The extent of the improvements required is based on the size and scope of work and the relative hazard that exists.

When a project has been defined as a substantial alteration, SBC Section 3404.9 requires that the project be made to conform with the requirements of Section 403 (high rise buildings, when applicable), special requirements for the Fire District found in Chapter 4, when applicable, Section 716 (protection of ducts and air-transfer openings), Chapter 8 (interior finishes), Section 903 (automatic sprinkler systems), Chapter 10 (means of egress) and Chapter 17 (special inspection). Fire alarms shall be provided as required by the *International Fire Code*. SBC Section 3404.9.2 requires evaluation and mitigation of seismic deficiencies.

The five definitions of substantial alterations as listed in SBC Section 3404.9.1 are:

1. Extensive structural repair.
2. Remodeling or additions which substantially extend the useful physical and/or economic life of the building or significant portion of the building, other than typical tenant remodeling.
3. A change of a significant portion of a building to an occupancy that is more hazardous than the existing occupancy, based on the combined life and fire risk as determined by the building official.
4. A change of tenant does not necessarily constitute a change of occupancy.
5. Re-occupancy of a building that has been substantially vacant for more than 24 months in occupancies other than Group R-3.
6. A significant increase in the occupant load of an unreinforced masonry building.

While our scope does not include making a determination of whether Seattle DPD would determine if any recommended repairs or corrections would be classified as a substantial alteration, it appears that correction of deficiencies classified as immediate would likely not be considered a substantial alteration. One definition that may govern is item 4 above which states that re-occupancy of substantially vacant buildings could trigger compliance with 30404.9. It is also important to note that Per SBC 3409.1 the provisions of the SBC relating to the construction, repair, alteration, addition, restoration and movement of structures and change of occupancy shall not be mandatory for landmarks where such buildings are judged by the building official.

Ideally, all items found to be deficient will be corrected. However, in many cases it is recognized that to remedy all deficiencies will impose severe hardships on the building owner. The building code provides DPD with significant flexibility to resolve specific hardship issues which we anticipate to be addressed in on a project-by-project basis.

The scope of this study includes identifying readily observable physical and condition deficiencies in the Pacific Tower. It does not anticipate what the scope or detail of any subsequent tenant improvements may include. The code deficiencies identified herein are based upon current code and are provided for information and planning purposes of any subsequent repair or TI project.

Life Safety

The purpose of this evaluation is to determine the applicable life-safety requirements in order to create a report of potential code deficiencies in order for the State to consider potential impacts on their leasing the building or on any sub-leases. We have limited our evaluation to the nonstructural life-safety aspects of the 2009 Seattle Building Code (SBC). Our review is limited to field observations that are readily viewable as constructed. No destruction of assemblies was conducted to verify code conformance. We have only reviewed the floor levels that are intended to be occupied by the State which include a small portion of the basement, none of the ground floor, and the complete floor areas of Floors 1 through 14.

Generally, the existing building appears to have adequate life safety features which were determined to be fully compliant where executed in 1992 and 2002, the last time significant alterations to the building were undertaken. While our study identifies deficiencies in current code compliance, it should not be construed to imply that it constitutes a list of items required to be changed.

Our review is limited to field observations that are readily viewable as constructed. No destruction of assemblies was conducted to verify code conformance. The detailed report (Appendix B) identifies readily visible components that appear out of code compliance.

Our observations have been generalized by evaluating the majority of components, not each individual component. For example, we checked most stair door ratings; however, some labels have been painted over. Judgment was used as to whether or not to find each assembly acceptable considering similar conditions in related portions of the structure. General observations of stairs, for example, were made visually. Where code compliance appeared questionable, some measurements were taken for confirmation.

Where it appears that a portion of the building is not complying with current code requirements or we are unable to verify compliance because it is out of the scope of our review or area of expertise, we have noted in our observations that additional measures can be pursued.

Our evaluation of the building only considers what appears to be the previous intended use of each space. For example, our evaluation assumes that office areas remain as office areas. More concentrated occupant load factors were applied at obvious assembly spaces only; otherwise, the generic occupant load factor for offices was used. The use is not inherently clear at all spaces; however, we used the room labels on the floor area plans we were provided to determine the occupant load factors to apply. Many rooms are not labeled, so they are grouped typically with the adjacent spaces. We also took a generalized approach to determine occupant loads knowing that our evaluation may not be based on exact areas or identified uses. We also roughly scaled the drawings to approximate areas of certain spaces. Generalized areas were used to determine occupant loads for our study.

Specific deficiencies which were identified as not practicable to address given the existing structure include:

Fire Resistance

- The bond strength of sprayed fire-resistant materials is likely non-compliant and it is infeasible to remove and apply new more adherent fireproofing

Exit Enclosures

- A number of (non-exit) doors open to existing stair enclosures.
- At a number of areas, the width of exit doors encroaches into the minimum exit width of the stair. The width of the door meets minimum but the stairs cannot be reconfigured to eliminate the encroachment.

Egress

- The 14th floor does not have minimum of 2 exit pathways and it is impracticable to provide one.
- Stair one discharges on to a loading dock
- Stair 4 exits through the PacMed lobby
- The egress width from the second floor does not meet current requirements and is limited by the existing concrete stair enclosure.
- There are 2 locations of the 9th floor, in some mechanical rooms, and in some stairways with non-compliant overhead obstructions. The geometry and structure of the existing building will not permit full alleviation of these obstructions.
- The raised thresholds on the 13th floor are not permitted by current code but are required to insure weather protection of the opening.
- There are non-compliant exit passageways: stairs 2-7 at the basement. The configuration and structure make elimination of these passageways impracticable.

Stairways

- The 12/13th floor stair does not meet minimum tread depth and it is impracticable to lengthen the opening and increase the run to extend to the minimum 11” depth.
- Six of the ten stairways (1, 4, 7, 8, 9, and 10) do not continue to roof penthouses. It is impracticable to provide penthouses at these locations.
- There are several locations where existing window openings in stairs have a non-rated wall within 180 degrees of the window. It is impracticable to rate the existing walls and the historic designation will not support enclosing the windows.
- Stair 8 is technically an exterior stair that would not be permitted and it does not have the required fire-ratings at the adjacent windows. It is considered impracticable to enclose the upper level of the stair or to rate the existing walls. The historic designation will not support enclosing the windows.

Elevator Access

- The 14th floor does not have elevator access. It is impracticable to extend the existing elevators to the 14th floor and this should be considered unoccupied.

Fire Protection

The Seattle Fire Code specifically states (102.6) that the provisions of the code relating to the construction, alteration, repair, enlargement, restoration, relocation or moving of buildings or structures shall not be mandatory for existing buildings or structures identified and classified by the state or local jurisdiction as historic building when such building or structures do not constitute a distinct hazard to life or property. The building generally complies with all the provisions of SBC Chapters 7 and 10 and improvement/upgrades are recommended except where impracticable due to existing structure or the negative impact on historic character. (See SBC narration above)

Significant to the reduction of hazard, the building is completely sprinkled throughout by an automatic wet pipe sprinkler system that was installed in 1998 and which complies with SBC Chapter 9 and NFPA 13. All yearly and other major inspections appear to be up to date.

Prior to occupancy as part of any subsequent TI in the kitchen, the commercial cooking hood systems on the second floor will require inspection and certification under the Seattle Fire Code Section 609

Seismic

The scope of our review was to conduct a seismic and live load evaluation of the Pacific Tower and provide conceptual level recommendations to mitigate the deficiencies found. This structural assessment deals primarily with the risk associated with earthquakes, although gravity and wind are also considered. Personal property and economic losses are not considered.

The scope of this review was limited to:

- Review of available existing building documents.
- Building walk-through to observe conditions and confirm the building appears to generally match drawings provided.
- Review of proposed uses as compared with floor live load design capacities based on the original drawings.
- Seismic assessment.

Our scope included both a Tier One and Tier Two seismic evaluation of the building using ASCE-31, *Seismic Evaluation of Existing Buildings,* and on the policies of Seattle DPD for this type of building Deficiencies were identified, and conceptual level recommendations were made to mitigate the deficiencies consistent with the City of Seattle requirements for substantial alteration (Appendix C). In some cases, more detailed evaluation/investigations are recommended to validate all of the deficiencies.

Based on the proposed use of office space and teaching space, it seems unlikely that the renovation will be classified as a Substantial Alteration by the City of Seattle and the city's current seismic upgrade standards will not be required to be met. However, DES needs to

understand how the seismic condition of the building compares with the current seismic standards enforced by the City of Seattle for Substantial Alteration projects.

In general the buildings do contain relatively complete seismic force resisting systems, and the upgrades completed in 1992 and 2001 did substantially improve the seismic performance of the original 1932 tower. However, deficiencies were noted that will influence the seismic performance of the building. The accompanying recommendations (Appendix C) are made to reduce the potential seismic losses to the building and they should be considered when planning any subsequent TI improvements.

It is important to note that even though there have been changes to seismicity levels due to the Seattle Fault, because of the 1992 upgrades and the 2001 repairs/upgrades there is a strong possibility the building would be "benchmarked" by DPD. Therefore, DPD would deem the building effectively meets the seismic requirements for Substantial Alteration.

Our recommendation for seismic improvement includes the addition of new drag struts as they are relatively easy to do prior to any TI work in the building. We recommend further study to determine the feasibility of adding fiber-reinforcing to the identified columns as noted in the structural appendix as it is likely infeasible to fully wrap the columns without substantially removing all of the exterior masonry facing them.

<u>Seattle Energy Code</u>
The Seattle Energy Code specifically states (C101.4.1) that except for new work, substantial alternation, or improvement where specifically required by the code; the new code shall not be used to require the removal, alternation, or abandonment, nor prevent the continued use and maintenance of an existing building or building system lawfully in existence at the time of adoption. Further, it states that for Landmark Buildings (C101.4.2), the Code Official may modify specific requirements of the code and require alternate requirements that the code official determines will not have an adverse effect on the historic features of the building and will result in a reasonable degree of energy efficiency.

It is also important to note that even when work in an existing building is determined to substantial, the alterations do not have to fully comply with the current energy code. Per Section C101.4.7.2.2, they only need to have an envelope performance within 20% of code and show energy performance for the total building within 15% of code.

Specific areas that have been noted to be deficient with the general requirements of the energy code related to the building envelope include:

Roof Insulation:
R30 required whereas the existing has assumed average of R20. The recommendations include increasing insulation to R-30 average in all subsequent reroofing.
Wall Insulation:
R-19 required whereas the existing has assumed average of R11. We have identified an option for adding additional insulation at the exterior walls however the cost for this retrofit may well exceed the potential energy savings.
Glass:

Note that glass-only replacement to existing window sash and frame are except from compliance with C101.4.7.

Seattle Electrical Code

Article 80.4 of the Seattle Electrical Code specifically states that additions, alternations and repairs to existing building systems can be made without making the entire electrical system comply with all the requirements of the current code. Section 80.4 (D) also allows the Code Official to modify specific requirements of the code in historic building if the modification will not have an adverse effect on the safety to the public and occupants of the building.

Elevator Code

All elevators in the City of Seattle are required to comply with retro-active sections of WAC 296-96 – Part D and City of Seattle Chapter 30. The current elevators are in compliance with this code and have been successful in obtaining annual certification by the City of Seattle. Records provided by the property manager indicate that the required maintenance under ASME A17.1 has been provided.

A2.2 HAZARDOUS MATERIALS

General

As part of the Pacific Tower Assessment, our investigation team conducted a Limited Hazardous Materials Screen Survey. The intent of this survey is to provide a “budget level” cost estimate of potential hazardous materials remediation that might be required for state agencies to occupy the building. The survey included identification and quantification of suspect asbestos-containing building materials (ACM), lead-containing paint (LCP), other lead-containing building materials (LCM), polychlorinated biphenyl (PCB)-containing light ballasts, and mercury (Hg)-containing light tubes.

Asbestos Containing Material (ACM)

The team inspected all accessible interior materials during this investigation. No destructive inspection was conducted to access, identify, quantify and sample concealed suspect materials. Some of the accessible suspect materials were sampled including, but not limited to: interior wall and ceiling systems, mechanical systems, windows, and floor coverings; however the extent of sampling does not meet Federal, State and local regulatory requirements for elimination of suspect materials as ACMs and was accomplished solely to evaluate "high value" materials for their likelihood to be ACM or LCP/LCM. Prior to any renovation, additional sampling will be required to meet these regulatory requirements.

Lab results indicated that little of the sampled material contained asbestos. Positive tests were identified in the following locations:

- Skim coat on plaster wall at Floors 5 through 11, east side fan rooms (on east side walls, only)
- Gray paper backing with mastic associated with non-ACM broken rock pattern sheet vinyl flooring on concrete at the Basement north corridor

The report in Appendix E identifies a number of building areas where ACM has been known to be used in other similar buildings of this vintage. These were areas where it was not possible to

sample without destructive means. Since the building has gone through significant renovations between 1991 and 2001, the identified "possible" materials have a low probability to be ACM.

The team recommends that prior to any future T.I. renovation/demolition activities that may impact possible ACM locations; these locations should be opened and should be sampled by a Certified Asbestos Building Inspector and tested by a NVLAP certified laboratory to confirm the materials are non-ACM.

Lead

Twenty (20) samples were analyzed for lead using the X-Ray fluorescence (XRF) analyzer. Results ranged from 16.7 milligrams of lead per square centimeter (mg Pb/cm2) to less than the Limit of Detection (LOD). Building materials and paint containing detectable levels of lead are considered regulated by DOSH. Additionally, twenty-three (23) lead metal vent pipes were found on the roofs of the Pacific Tower Building.

Based on the sample results, none of the lead-paint posses a hazard in its existing condition however, in any subsequent T.I. work there is a potential that lead exposures above the DOSH action level of 30 milligram per cubic meter could occur, particularly if demolishing any of the original 1933 or 1950 plaster.

Ecology requires testing using the "toxicity characteristic leaching procedure" (TCLP) and segregation of construction debris if it is potentially contaminated with dangerous waste (e.g., lead-containing paint/lead-containing materials). Washington State Department of Ecology (Ecology) has set a dangerous waste threshold for leachable lead at 5.0 milligrams per liter (mg/L).

Any subsequent TI work should require TCLP testing and based on the results of lead identified in the sample results, there is a potential that leachable lead concentrations above the Ecology threshold of 5 mg/L could occur, especially in waste streams including beige painted plaster.

Polychlorinated Biphenyls(PCB) Ballasts

The investigation team inspected a representative number of fluorescent fixtures expected to be disturbed by typical TI projects for PCB-containing ballasts. All of the fixtures inspected contained electronic ballasts which contain no dielectric fluid and may be disposed as construction debris. If during renovation activities, any fixtures are found to contain magnetic ballasts (e.g., not labeled as "electronic" ballasts), they must be disposed/recycled as Ecology Dangerous Waste. This includes magnetic ballasts that are labeled "No PCBs" as this indicates a PCB concentration in the ballast dielectric fluid of less than 50 parts per million (PPM). Ecology regulates materials with PCB concentrations down to 2 PPM. A

Mercury-Containing Fluorescent Light Tubes

All fluorescent light tubes quantified in Table 4 are assumed to contain Hg. Hg wastes are regulated as "universal wastes" under Ecology's regulation WAC 173-303. Hg-containing building materials must be recycled or disposed of as hazardous waste. Hg-containing fluorescent light tubes are quantified in the Appendix E.

A3 BUILDING MEASUREMENTS

Reported

The Leasing Agent has reported the area of the Pacific Tower as follows:

PACIFIC TOWER FLOOR AREA (rentable)	
Basement	30,492.00
Ground Flr.	41,094.13
1	30,976.80
2	24,766.60
3	19,556.39
4	19,583.18
5	19,577.66
6	19,558.76
7	19,561.90
8	15,838.39
9	11,906.95
10	7,220.00
11	7,832.63
12	3,364.35
13	2,679.62
	274,009.36

While our check calculations differ from the areas provided by the leasing agent, they were not significant enough to warrant a full physical re-measurement of building area at this time. While our check calculations differ from the areas provided by the leasing agent, they were not significant enough to warrant a full physical re-measurement of building area at this time. It is also important to note that BOMA calculation methodologies have varied over time and small differences result from procedural differences and varied interpretations.

Measured

Schreiber Starling & Lane (SSL) staff took field measurements at 2nd and 8th floors in order to do a check on CAD drawings supplied by the building management staff. The discrepancy in area calculated based on using our field measurements and calculated using the CAD drawings (as-is) was less than 0.5%. Gross Measured Area (measured to inside faces of exterior walls and windows, whichever is the dominant portion of wall areas) of Floor 8 was calculated as 16,192 SF per field measurements and 16,140 SF per the CAD file.

Based on this check, we can recommend using the supplied CAD drawings as a base for future area calculations.

It appears that the areas identified in the “1200 Ctrl Book B – 13” are not strictly per BOMA, and utilize a much-simplified (Modified) method of calculation as follows (with floor 8 areas used as an example):

Basic Usable (13,603.26 SF) + Corridor Extension (0.00 SF) = Total Usable (13,603.26 SF)
Total Usable + Floor Common (1,305.74 SF) = Basic Rentable (14,909 SF)
Basic Rentable + Building Common (929.39 SF) = Total Rentable (15,838.39 SF)

It's unclear from the table and accompanying drawing precisely how the Building Common Areas were arrived at, but it seems clear from a comparison of the various floors listed that the Owner's calculations use a standard markup factor of 5.87% onto the Basic Rentable figure on all floors except Ground and 1st (which include spaces occupied by Pacific Medical Center).

The BOMA 1996 and the BOMA 2010 Method A use a standard calculation method to arrive at load factors for Building Common areas using whole-building calculations in order to charge tenants for Building Common Area. It is important to note that BOMA calculation methodologies have varied over time and small differences result from procedural differences and varied interpretations. The following is the standard method (with 8th Floor numbers used for example as calculated by SSL):

Gross Measured
(16,140 SF) – Major Vertical Penetration (1,478 SF) = Floor Rentable (14,662 SF)
Sum of all Office Areas
(13,361 SF) + Building Common Area (215 SF) = Floor Usable Area (13,576 SF)
Floor Rentable
(14,662 SF) – Floor Usable (13,576 SF) = Floor Common Area (1,086 SF)
Floor Rentable
(14,662 SF)/ Floor Usable (13,576 SF) = Floor Rentable to Usable Ratio (1.08)
Office Area
(13,361 SF) x Floor R/U Ratio (1.08) = Basic Rentable Office Area (14,430 SF)
Sum all Office Areas, Store Areas and Building Common Areas for entire Building = Building Rentable Area
Building Rentable Area / (Building Rentable Area – Building Common Areas for Entire Building) = Building Rentable to Usable Ratio
Basic Rentable Office Area x Building Rentable to Usable Ratio = Total Rentable Office Area

Note that without doing an overall Building Common Calculation for the entire building, establishing the Building Rental to Usable Ration and therefore the Total Rentable Office Area is not possible. However, if we use the 5.87% markup that is used by the Owner, the Total Rentable Office area on 8th floor would be:

Basic Rentable Office Area (14,430 SF) x Building Rentable to Usable Ratio (1.0587) = Total Rentable Office Area (15,277 SF. This figure is the amount of Office Space that would be included in any Lease. The Owner's number for Total Rentable is 15,838.39 SF, which is a disparity in measurement and interpretation of BOMA method of 3.7%.

In our calculation, we included the Elevator Machine Room on 8th floor as a Building Common Space, but the Owner's calculation shows this as Floor Common. By putting it into Floor

Common, the Total Rentable Office Area would bump to 15,560 SF. At that point, the disparity between our calculation and the Owner's calculation is only 1.8%.

In a single tenant scenario, the toilet rooms and hallways are considered part of the tenant space. However, in a multi-tenant floor scenario, those spaces, as well as janitor closets and other spaces not attached to individual tenant spaces would be considered Floor Common Areas. A problem with using BOMA's standard method arises when the Floor Rental to Usable ratios for the building change due to changes in tenant mix on the individual floors. In order to avoid this issue, it's common practice to "modify" BOMA methods to apply a standard R/U factor to all spaces.

A4 SITE ELEMENTS

A4.0 SITE ACCESSABILITY

In accordance with the RES Accessibility Addendum, the evaluation team observed the subject site accessibility as it relates to guidelines of the Americans with Disabilities Act (ADA) Standards for Accessible Design as revised as of September 15, 2010 (2010 ADA) and the WA State Building Code (2012 IBC with ICC/ANSI A117.1 2009) (referred to herein collectively as the "Listed Codes"). Areas observed included the parking garage, the exterior pathway between the garage and tower building. A detailed assessment is included in Appendix D. General deficiencies in site accessibility and route of travel include:

1. The site lacks an accessible route from existing accessible parking on the south side of the building to the south entrance. There are sidewalks on this side of the building, but there are several steps at the entrance and the entrance lacks a ramp. In the 1992 upgrade and expansion, the design document indicate a new exterior ramp and interior ramps to provide accessibility at the south (main) entrance however this feature was not constructed.

2. The site lacks an accessible route between the parking garage and the north building entrance. While there is accessible parking in the garage, there is not a compliant route to the North entrance. The parking garage entrance has a vertical clearance of 9'-0", and an accessible van space is located near the entry. On the lower level of the garage there are six accessible parking spaces. The path to the south tower entrance from the parking garage currently involves walking in the road that runs between the parking lot and the building.

A4.1 PARKING, SIDEWALKS, CURBS, CURB CUTS, AND WHEELSTOPS

Paving

Vehicular access to, from, and on site is on asphalt or concrete paving. The condition of paving is good to fair with cracks, and some settlement noted in the asphalt at the northeast corner of the access road to the north parking garage entry. Between the garage and main entrance the designated pathway is contiguous with the street. At a

short portion the existing slope exceeds the maximum allowed slope and there are speed bumps in the pathway.

Parking Layout, Striping and Signage

Parking designated for the Tower includes 11 spaces along the south access drive. The majority of these are signed and stripped for accessible parking. Required parking is determined by the Seattle Land Use code and varies by type of use and occupant. As the Pacific Tower is an existing building and there are no plans for expanding the current building or changing the use, these will be no land-use review and all existing parking will be considered adequate by the City of Seattle.

There are 268 spaces stripped and identifies in the West Garage. One space is indentified as Van Accessible and six have accessible signage and striping although the striping is not in compliance with current code (Appendix D). Additionally, it may be possible to restripe the garage to gain some compact spaces

Delivery parking is identified at the loading dock along the northwest portion of the basement level.

Concrete Sidewalks

Concrete sidewalks are provided at the south entrance to the tower. Appropriate curb cuts are installed along accessible routes of travel.

Wheelstops

Car and van parking spaces shall have an adjacent access aisle complying with Section 502.4. Access aisles shall adjoin an accessible route, shall be 60 inches wide minimum, shall extend the full length of the parking space they serve (with no obstructions in that area) and shall be marked so as to discourage parking in them. Van Parking spaces that are angled shall have access aisles located on the passenger side of the parking space.

Bollards

Bollards are provided at the north entrance to the West Garage and at obstructions along the north access drive (fire hydrants, etc.) These appear to be adequate to protect vulnerable building and site elements.

A4.2 SITE ILLUMINATION AND SECURITY LIGHTING

Site illumination at the south entrance drive/walk is provided by pole luminaires. Site lighting along the West Garage also has pole luminaries on the east and building-mounted lighting along the south. The north façade of the building is also illuminated with HPS up-lights. The majority of site lighting is operational and appears to meet the requirements of LFS 16520.

A4.3 REFUSE RECEPTACLE

Site-use waste and recycle collection is provide by a container/compactor located in the service drive adjacent to the loading dock at the basement level of the tower. It is not

covered nor screen as required by the LSR however its location is not exposed to primary view.

A4.4 FLAGPOLES

There is a single aluminum flagpole located in the planting circle at the south (main) entrance

A4.5 LANDSCAPING

Plantings

The site has fully-developed and mature landscaping consisting of groundcover, lawn, trees, and feature planting/flowers. It is well cared-for and appropriate for the use/site.

Irrigation

Planting areas around the Tower and West Garage appears to have a functioning and functional irrigation system.

Fencing

Fencing that was original to the 1933 construction is provided along the site perimeter. Primarily decorative due the absence of gates, it consists of spaced stone/masonry piers bridged with steel pickets.

A4.6 UTILITIES SERVING THE SITE

Domestic Water

Domestic water is supplied by Seattle Public Utilities by 8" lines at 12th South and Golf Drive. These mains are connected by laterals in the north and south access drives. The loop configuration provides redundant water source. It appears adequate for the current and projected occupancy.

Fire Protection

Water for fire suppression is supplied from the 6"laterals in the north and south access drives. 10 hydrants are provided at distances needed to comply with fire codes. 5 Fire Department Connections to the sprinkler systems are provided; 2 at the north and south elevations of the tower and one at the north elevation of the West Garage.

Natural Gas

Natural gas is supplied by Puget Sound Energy by a 2" line in the north entry drive connecting to a main in Golf Drive. The meter and pressure regulator is in the landscaping on the north of the tower. The service is used for domestic water heating, the 2nd floor kitchen, and the HAVC at PacMed. It appears adequate for the current and projected occupancy.

Storm and Sanitary Sewer

The site is serviced by separate gravity storm sewers from mains located in both 12th South and Golf Drive. On-site scoping of the as-built condition has confirmed that there are no combined storm/sewers on or serving the site. On-site lateral lines are located

in the north and south access drives. Cast iron catch basins are located in paved and landscape areas and surface drainage appears to perform well with no areas of standing water on the site. There is no on-site stormwater detention or retention.

The site is serviced by a number of 8" gravity side sewers that flow into mains located in the adjacent streets. The 8" line in the south access drive is one of two primary lines serving the tower. It flows into the main in 12th Ave. S. A 6" line exits the tower on the north side in the area of the loading dock. It flows to the 8" lateral line in the north drive and exits the site to the west in 12th Ave. S. There is a 4" force main located in the north access drive that serves the 1980 Addition (PacMed).

The sanitary and storm sewers were investigated by camera and generally found to be in good to fair condition (see Appendix G). Specific recommendations include:

1. Catch basin by the south entrance to the clinic located in the landscape area needs to be camera and jetted.
2. Catch basin by the east garage entrance needs to be jetted upstream.
3. Catch basin #23 could not be inspected because it is full of roots. It needs to be cleared and jetted.
4. Sewer line located on the NE side of the building pass the loading dock area needs to be jetted to remove roots.

Power

Power is provided by Seattle City Light. The primary power is fed underground from overhead lines parallel to 12th Avenue S. and Golf Drive. There are underground transformer vaults in the north loading dock and in the planting area south west of the main south entrance. There is also a pad-mounted transformer in the landscaping between the West Garage and 12th Avenue South.

Telecommunications

There are underground communication vaults at the northwest and southwest of the site feeding both fiber optic and copper communications from 12th Avenue S. to the tower.

A-5 BUILDING ELEMENTS

A5.0 INTERIOR ACCESSIBILITY

In accordance with the RES Accessibility Addendum, the evaluation team observed the subject site accessibility as it relates to guidelines of the Americans with Disabilities Act (ADA) Standards for Accessible Design as revised as of September 15, 2010 (2010 ADA) and the WA State Building Code (2012 IBC with ICC/ANSI A117.1 2009) (referred to herein collectively as the "Listed Codes"). Areas observed included the parking garage, the basement locker rooms, restrooms on several floors, the cafeteria, an assembly room on the eight floor, and the ground floor lobbies at the north and south entrances. A detailed assessment is included in Appendix D. Typical deficiencies in interior accessibility include:

1. Many interior doors require an amount of force to operate that was greater than compliant. Door pressures should be checked and adjusted for compliance as part of any TI.
2. Signage for restrooms was often mounted on the door itself or on the hinge side of the door. Signage should be relocated to the wall on the latch side of the door to be compliant. Relocating signage is a recommended for immediate correction.
3. In the locker rooms, the facilities lacked an accessible dressing bench, accessible towel bars, and the transfer shower interior dimensions exceeded the maximum. This is recommended for immediate correction.
4. In many of the restrooms there was a narrowing of the accessible route near the exit doors where a recessed paper towel / trash unit protruded. These units could be relocated. Revising the tower dispenser and receptacle to provide needed width is a recommended for immediate correction.
5. Two raised platforms were observed in the building, one in the cafeteria and one in the eighth floor assembly room. Installation of ramps would allow these spaces to be accessible. These are recommended to be removed or ramped.

A5.1 BUILDING EXTERIOR

Exterior Walls

1933

In general, the exterior masonry façade of the original 1931, 15-story Pacific Tower appears to be in good overall condition. Few signs of distress are apparent from the ground on the polychrome masonry, terra cotta, and sandstone façade. Areas of water intrusion are apparent at the terra cotta parapets, coping stone, and sandstone entry façade. White film is present on the masonry surface resulting from ultraviolet degradation of masonry sealers. This film residue will cause no long term harm but is insoluble in water so will remain on the surface until chemically or physically removed. Additionally there is evidence of previous repairs performed at the upper levels of the building following the 2001 Nisqually earthquake including re-pointing of masonry cracks, remaining crack masonry, and sealant installed within cracks.

Long-term concerns have been written in the masonry repair reports that noted a lack of cavity wall flashing at the steel angle lintels window heads and shelf angles. The reports were written following the repair of dislodged terra cotta window head units resulting from corroded tie anchors on the southeast fifth floor. Construction means and methods are likely to be consistent for the entire structure.

At several levels and several facades, efflorescence is present directly beneath the terra cotta parapet coping stones and approximately sixteen inches below the coping at the through wall flashing course. It is likely that the efflorescence is due to water intrusion through the horizontal and vertical joints of the coping. The appearance above the through wall flashing is an indication that the flashing is effective.

Exfoliation of the sandstone entry façade is a direct result of water intrusion, water runoff, and water saturation from landscape sprinkler systems. Observations from the third floor with direct access to the top of the sandstone façade confirmed the original copper shingles remain in place below a rubberized roof membrane. Proper edge conditions and roof drain connections are missing.

1980

The exterior façade of the 1980 addition to the north-east appears to generally be in good condition. The masonry exterior and precast concrete details along the north elevation are typically in good repair with the exception of minor efflorescence along the parapet and at the head of the second story windows. The efflorescence at the parapet is likely the result of water infiltration through the concrete coping where there are open joints and biological growth. The efflorescence at the second story windows appears to be the result of water infiltration through the precast concrete window head units. Minor efflorescence is also present along the west return elevation. Typically the efflorescence is located underneath the precast concrete details. Insufficient flashing may by causing water infiltration.

1992

The 1990's addition to the north is a combination of curtain wall openings and masonry veneer with punched window openings. Stone tiles accent the north entrance. The overall condition of all components is typically very good. The masonry veneer is in good condition with appropriately located expansion joints and weeps. No apparent water infiltration is visible at window openings, and mortar joints appear to be in good condition. The curtain wall is typically in good condition; however, some biological growth is present on the horizontal surface of the aluminum mullions. The stone tiles appear to be in good condition. Also to note is an open shaft between the west elevation of the 1990's addition and the original 1930's structure.

Windows

See section A5.8

Roofing

Our field observations included a visual inspection of each of the 34 roof areas that total approximately 31,500-sf area. The roof of the 1980 Addition (1st floor level) was not evaluated as it is over space fully occupied by PacMed.

General Roofing

Generally, the roofs appear to be serviceable and the building engineer reported no on-going or recent leaking. The majority of roofs appears to have been installed as part of the 2001-2002 seismic repair as a major element of this work included installing new diagonal bracing of masonry parapets that in-turn required installation of a new membrane. Specific observations related to all roofing levels include:

Slope
In the majority of condition, tapered insulation has been used to provide positive scope to the drains. At metal roofs and at stair access houses, the structure itself slopes adequately to drain. Only minor evidence of ponding was noted, primarily at the upslope of mechanical equipment curbs.

Drains
All roof areas have primary and secondary (overflow) drains. Where overflows have not been provided; the roof has either a scupper or similar protection.

Perimeter Termination
At areas above the 7 floor, the inside face of parapets are faced with vertical corrugated metal siding in vertical orientation. The membrane curbs up a minimum of 8" under a stainless steel curb flashing that is set under the siding. At the masonry walls, a 2-piece stainless reglet and counterflashing is used. Below the 7 floor and at the west of the 10th floor, the membrane continues up the face of the parapet and terminates under counterflashing cut into the parapet capstone.

Penetrations
Most areas have Pipe and conduit penetrations have lead sleeves which extend 8" above the surface and terminate in clamp rings and sealant. The roof joint is sealed in cold asphalt and covered with mineral surfacing.

The majority of roof-mounted HVAC equipment has been placed on curbs of 8" minimum height and appears to be adequately flashed. The exception is at the 1st floor roof where the cooling equipment for PacMed imaging has a curb lower than 8".

Where the parapet bracing penetrates the roof plane, the horizontal transition is encased in concrete and coated with a rubberized membrane. A 2-piece reglet and counterflashing has been set into the cast concrete cap and the curb flashes per the perimeter terminations.

Fall Protection
Stainless steel fall protections rings on parapet walls and on vertical posts have been provided.

<u>Roofing Types</u>
Four distinct type of roofing have been used on the building

Type-I: Built-up Modified Bitumen
A core samples was taken reveal the membrane system to consist of 2-ply modified bitumen membrane with a mineral-surface over a 2" perlite coverboard over tapered expanded polystyrene insulation (average R-20). The system is adhered in

hot asphalt which is attached to the concrete deck in asphalt. No evidence of earlier roofing was found.

The core sample was sent for analysis and no asbestos-containing material (ACM) was identified. It should be noted that the sample may have not contained sufficient quantity of the original asphalt deck attachment which, given the age of the building may still contain some ACM.

Type-II: Single-Ply EPDM
Non-destructive observation and review of construction documents identify this system to be comprised of an 80-mil EPDM membrane over a 2" perlite coverboard over tapered expanded polystyrene insulation (average R-20). The system is adhered in adhesive to the concrete deck. At some of the smaller locations on the south side entrance the EPDM has been adhered directly to the concrete/stone substrate. At one level, the EPDM has been covered with concrete pavers.

Type-III: Concrete Pedestrian Decking
Non-destructive observation and review of construction documents identify this system to be comprised of a fluid-applied membrane over the concrete deck covered with insulation (assumed to be extruded polystyrene) covered by a cast-in-place concrete traffic slab. The R-value of the existing was not possible to estimate.

Type-IV: Metal
At the "eyebrow" roofing over the solarium areas, a standing seam 22-gauge copper roof panels over insulation has been installed over the structural panel decking. The R-value of the existing was not possible to estimate.

Roofing Condition
The roofing type and condition at each level of the building was observed to be in the following noted condition with expected remaining service life: (Levels are referred to by the adjacent floor level, i.e.: Level 13 is the roof over floor level 12.)

Level 15:
2,716-sf Type-I in good condition with 15 year expected service life. This area is recommended for far-term replacement.

Level 14:
208-sf Type-II (4 areas) with paver surfacing in good condition with 15 year expected service life. This area is recommended for far-term replacement.

Level 13:
676-sf (2-areas) of Type-I in good condition with 15 year expected service life. This area is recommended for far-term replacement.

Level 12:
4,046-sf (2-areas) of Type-I in good condition with 15 year expected service life. This area is recommended for far-term replacement.

Level 11:
1,109-sf of Type-I in good condition with 15 year expected service life. This area is recommended for far-term replacement.

Level 10:
1,657-sf (4-areas) of Type-I in good condition with 15 year expected service life.
1,163sf of Type-II in good condition with 15 year expected service life. These areas are recommended for far-term replacement.

Level 9:
951-sf (4-areas) of Type-I in good condition with 15 year expected service life.
1,766-sf (2-areas) of Type-III in good condition with 15 year expected service life.
506-sf (2-areas) of Type-IV in good condition with 20-30 year expected service life
These areas are recommended for far-term replacement.

Level 8:
951-sf (4-areas) of Type-I in good condition with 15 year expected service life.
1,766-sf (2-areas) of Type-III in good condition with 15 year expected service life.
506-sf (2-areas) of Type-IV in good condition with 20-30 year expected service life.
These areas are recommended for far-term replacement.

Level 7:
951-sf (4-areas) of Type-I in good condition with 15 year expected service life.
1,766-sf (2-areas) of Type-III in good condition with 15 year expected service life.
506-sf (2-areas) of Type-IV in good condition with 20-30 year expected service life.
These areas are recommended for far-term replacement.

Level 4:
360-sf of Type-I in fair condition with 5 year expected service life. Recommended for immediate correction/repair

Level 3:
4,427-sf (2 areas) of Type-I in good condition with 15 expected service life.
224-sf of Type-I in fair condition with 5 year expected service life. Recommended for immediate correction/repair

Level 2:
7,796-sf of Type-I in fair condition with 5 year expected service life. Recommended for immediate correction/repair

A5.2 BUILDING INTERIOR

The type of interior construction varies with the vintage of the building area. The basement, ground floor, the lower two floors of the 1950 addition and all of the 1984 addition is fully occupied by PacMed. These areas were not evaluated.

Tower

All of the interior walls are non-load bearing. Except at the main lobby, most of the original interior construction consisted of hollow-clay tile walls with lath and plaster finish. There are some limited areas where wood stud was used as the primary framing. The majority of the interior construction in the original 1933 tower was completely replaced with the 1992 remodel expansion. New interior walls were constructed of metal-studs with 5/8" Type C gypsum wallboard (GWB) finish. Where the code required fire-resistance rating, Type-X GWB was used. The walls are in good condition. The structural assessment indicated removal of the remaining hollow clay tile at stairways as a risk-mitigation measure but the investigation team noted the impracticality if this.

Our evaluation of the 3-story 1950 addition only included the upper floor of this addition as the lower 2 floors are fully occupied by PacMed. This area appears to have had minimal change since construction. All of the interior walls are non-load bearing. The majority of interior construction consists of stud walls or clay tile with lath and plaster finish. The interior walls are in fair to poor condition.

West Garage

The garage has only a limited area of interior construction, primarily at the elevator machine room, the elevator shaft, and in the generator enclosure. Walls are either concrete or concrete block painted. They are in good condition. There is an area on the lower level where a chain link partition has been used to enclose a grounds equipment storage area.

A5.3 FLOOR CONSTRUCTION

Tower

Floor construction in all areas built prior to the 1991 addition is cast-in-place concrete slab. The 1992 addition and stair infill areas are composite steel decking with concrete topping. The LSR identifies a maximum floor level variation of 1/8 inch in 8-ft horizontal. Spot checking indicates that this standard is not fully met (+/- 1/16"), however there was no perceptive levelness issues noted by the investigation team.

West Garage

The garage floors/decking is post-tensioned one-way concrete slab. It has been sloped to provide drainage. The floor decking appears in good condition.

A5.4 FLOOR LOADING

Tower

The LSR identifies a desired minimum floor live load of 85 pounds per square foot plus 20 pounds per square foot additional dead load for partitions. The 1932 structural

drawings did not list design live loads, so a brief live load evaluation was performed on the floor systems of the 1932 building. (See live load diagram in Appendix C for the approximate calculated floor live load capacities.) The 1992 drawings did list the live load and partition design requirements and those are listed on the live load diagram for reference.

In general, the capacities are less than required by LSR but do meet or exceed the current building code for basic office/classroom space.

West Garage

The garage loading is indicated to be 60-psf on the construction drawings.

A5.5 FOOD SERVICE EQUIPMENT

The second floor houses a food service facility which includes a servery (2,200sf), Kitchen (1,900sf), Dishwashing (300sf) and Dining space (3,000sf). Most of the equipment was apparently installed in 1998. The facility was shut down when the previous tenant moved out in 2010 and the space has been unused since.

Components

The subject facility contains the major necessary components to become an operational facility including:

Servery

- Counters with equipment required for Hot, Cold and Dry menu offerings.
- Cooking and refrigeration equipment
- Cashier stations
- Beverage counter ready to accept vendor provided beverage equipment.
- Hand Washing Sinks

Kitchen

- Walk-in Cooler/Freezer Assembly with remote refrigeration systems.
- Production cooking equipment
- Ice maker and bin
- Worktables and preparation sinks
- Pot washing sinks
- Hand Washing sinks

Dishwashing

- Conveyor dishwasher with booster heater
- Tray return accumulator
- Pre-Rinse sink with Disposer
- Soiled and Clean Dishtables
- Hand Washing Sink

Condition

The facility and equipment appears to be in good condition with major equipment items and systems in place for a functional kitchen and servery.

A complete cleaning of all spaces and equipment items is recommended prior to any use. A few pieces of cooking equipment have rust on the cooking surfaces which is to be expected being idle for this amount of time. The rust can be cleaned and the equipment made operational.
The gas fired stone hearth oven in the servery will require cleaning of the stone deck and may require filling of existing cracks in the stone deck. These cracks are normal and do develop over time with the use of the oven.

The refrigeration rack/system will require a factory authorized service technician to perform a systems check for refrigerant capacities and go through steps as required for system restart, and testing of temperatures. Much like a vehicle that has been idle for years certain steps have to be taken before re-starting.

The exhaust hoods, fire suppression systems within and fans serving them will also require a factory authorized service technician to perform a systems check before being started up and put into continuous operation. This will include confirming that exhaust and make-up air fans are in working order with new belts etc., operating at required CFM volumes, fire suppression systems are in proper working order, and duct work is clean.

The tray return accumulator assembly will need to have the tray racks re-assembled and installed to the accumulator.

A few utility drawers below worktables will need repair to operate smoothly.

All other individual equipment should be checked and started by a Foodservice Equipment Service agency to ensure proper working order.

Code Compliance
There are no obvious major code violations or deficiencies. While the codes have changed for the food shields (sneeze guards) on the servery counters, exhaust hoods and fire suppression systems they should be fine and accepted by the local code authority unless major renovations are made to the kitchen and servery, where they may be required to be updated.

Service Life
Typically a commercial kitchen with quality equipment and regular equipment and systems maintenance has a life expectancy of 25-30 years. This facility was first operational in 1998 and shut down in 2010 it has been operational for approximately 12 years. Given this we see no reason that with continued proper equipment service and maintenance this facility will have a life expectancy of an additional 13-18 years with minimal equipment replacement. Even after this time individual items of equipment can be replaced on an as needed basis. Cleaning and repair/replacement is recommended in the near-term and could be accomplished as part of a TI, or corrected by a future tenant would would leased the kitchen “as-is”

A5.6 CASEWORK

Interior casework in the tower is provided generally per the requirements of ASR A5.7. The required sink and instant hot water dispenser are not typically provided.

It is assumed that all existing casework would be replaced, modified, or relocated with subsequent T.I. work.

A5.7 DOORS AND HARDWARE

Tower

Exterior:

The main (south) entrance doors (exterior and vestibule) are original to the 1933 construction and are ornate bronze with bevel and fritted glass. On the exterior they are set in a copper-clad curtain wall. On the interior they are set in travertine/marble panels. These doors are in good condition and only require adjustment and/or addition of automatic operators.

The exterior entrance from the north is aluminum glazed swinging doors in aluminum storefront wall. Exterior doors to the two accessible roof decks are also glazed aluminum in storefront. They are provided with panic hardware where required and are in good condition.

Other exterior doors are service-type and are painted hollow-metal in good condition. Panic hardware is provided where required at all exits.

Interior:

Interior doors vary as to type of space, use, and location. Generally interior office doors are solid-core wood with wood frames (some with glass relites) with 3-hinges or with sliding (barn-door) hardware. At swinging doors, mortise locksets with level handles are provided. Some of the doors at the 1st floor lobby still have original brass knobs.

Service and stair exit doors are hollow-metal steel painted. Where required they are appropriately fire-rated with panic exit hardware and auto-closers.

West Garage

The doors to the elevator vestibule are aluminum glazed swinging doors in aluminum storefront wall. Hardware includes hinges, closers, and latching levers. They are in good condition. Service and stair exit doors are hollow-metal steel painted. Where required they are appropriately fire-rated with panic exit hardware and auto-closers.

A5.8 EXTERIOR WINDOWS/GLAZING

General

The building appears to provide the desired minimum of 6% of floor area glazing however the existing glazing does not meet current energy codes as required by 08900. Blinds or shades are not provided at all exterior windows. Moisture-resistant sills are not provided at all exterior windows.

1933

There is a mix of styles, sash types, materials, function, and installation dates to the existing windows comprising the 1931 portion of the Pacific Tower. The majority of windows (513) are original 3 over 3, double hung, wood sash style with single pane glass or 2 over 2 double-hung wood sash installed in the seven story additions on the south façade. The basic components of the wood windows are in fair condition and most of the sash remains operable. The windows have suffered from poor or deferred maintenance and exhibit failed paint, missing glazing putty, and some have deteriorated sills.

Metal windows (296) include corner windows of both the central projecting tower and east and west facades which are aluminum multi-pane replacements of the original steel windows with insulated double pane glazing. Original steel windows with single-pane glazing remain in the upper thirteenth and fourteenth floors of the central south façade tower. The metal windows are generally in good condition and with some corrosion on the original steel

Aluminum replacement double hung sash with insulated glass units and false mutins have been installed on the south façade at the west end of the seventh floor, the east end of the ninth floor, on the west elevation at the seventh floor, and in a few miscellaneous locations on the north elevation. Additionally many of the original 2 over 2 wood windows on the north elevation have been replaced with both single hung and fixed steel profile windows

1950

Most windows are 3 over 3, double hung wood sash with single-pane glazing that appear to be in good condition. The east façade, side walk level windows have been replaced with fixed single sash aluminum frame units. Window sills are cast stone. Painting and glazing putty repair and other general maintenance items are needed.

1980

There are 24 aluminum windows along the north elevation and none on either the west or east returns. The windows are fixed insulated glazing and appear to be in good repair.

1992

Windows are of two types; fixed aluminum windows in the masonry veneer wall and curtain wall openings. Fixed windows are either single openings or corner windows. The

curtain wall is composed of aluminum mullions, glazing, and metal spandrel panels. Biological growth is present on the horizontal surface of the mullions.

Options

The Department of the Interior (DOI) Standards for Rehabilitation of Historic Structures establishes guidelines and the accepted best practices which are used by the Seattle Landmarks and Preservation board in their review of any exterior work/improvements to the Pacific Tower. As the exterior windows of the 1933 tower and its 1950 addition contribute to the historic character of the building, any repair or replacement of exterior windows will be evaluated by the Seattle Landmarks and Preservation Board against these standards/guidelines. Specific to the existing windows:

Guideline 2:

> The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.

Guideline 5:

> Distinctive features, finishes, construction techniques or examples of craftsmanship that characterize an historic property shall be retained.

Guideline 6:

> Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities, and where possible, materials.

For the deteriorated wood windows, there are three possible options:

1. Remove the existing wood windows, reconstruct the sash to accept new insulated glazing, reconstruct the existing sash to remove gravity counter weights, insulating the cavity, reinstall the reconstructed sash (estimated average installed unit cost (: $9,000-$11,000)
2. Remove the existing sash and framing and replace the entire opening unit with new aluminum framed thermally broken, double-glazed, operable windows with muntins and dimensions to closely match the existing windows. (estimated average installed unit cost: $3,000-5,000)
3. Repair the existing historic wood windows to provide suitable service life and to improve their energy performance. (estimated average installed unit cost: $1,000-$1,500)

(Note unit costs provide above are direct costs only and do not include other project costs such as design, fees, permits, etc.)

With all options, replacement and repair could occur from the interior or from swing staging negating the need for exterior work platforms or lifts.

With the Repair option 3, the scope would include:

a. Remove the sashes by removing the interior stops and parting bead of the window frame.

b. Clean the frames and sashes of any flaking paint or other coatings that may impede the proper installation of gaskets and seals.
c. Repair all sash weights: Clean and lubricate pulleys, replace sash cords, balance the weights. As an alternative, install a new spring-loaded type balance, insulate and seal the abandoned weight pocket.
d. Caulk and seal the corners and joints in the window frame. This includes all joints between the sill and jambs as well as between the casings and frames.
e. Cut grooves into the sashes where new gaskets will be installed.
f. Prime and paint the window frames and sash.
g. Install new gaskets around the perimeter of the sash. V-groove type gaskets will likely work the best at the jambs and meeting rails, while bubble gaskets work well
h. Reinstall the sash, meeting rails, and interior stops.

It is the recommendation of the assessment team that Option 3, repair of the existing wood windows is preferred over replacement for the flowing reasons:

1. Repair of the existing windows will meet the historic guidelines and would be more readily approved by the Seattle Landmarks Board.
2. Historic windows were custom fit to their original openings and often have sizes and shapes not found today. Replacing them usually requires changing the size and/or shape of the opening. In this case, having to interior glaze requires the use of a compensating channel. So while standard-sized new windows might save on energy, they'll compromise the character and historic integrity with altered proportions, and trim that doesn't match the opening. Moreover, the need for a compensating channel will result in "tolerance" gaps to permit installation the new replacement windows.
3. The lower initial cost of repair is significantly less than the initial costs of replacement. Even factoring in for added periodic maintenance, it is likely the energy savings potential from replacement would not provide adequate pay-back over the life of the window.
4. Proper repair of the existing windows will significantly reduce air leakage, the primary source of energy loss and occupant discomfort. If greater energy performance or occupant comfort is needed, the use of interior window inserts, can achieve energy savings comparable to replacements at a much lower cost win to impact to the historic exterior.
5. Keeping existing windows retains the embodied energy of the original windows and saves the energy and resources needed to create new windows. Like any product, the production of replacement windows requires materials, and these materials generate CO2 and other environmental hazards from the extraction, manufacture, transport, and disposal processes. Retrofit measures also require materials, but are often less material-intensive and so impact the environment less than an entire replacement.
6. Repair avoids (low) potential for encountering ACM that may exist at the window frame/masonry cavity.

The investigation team recommends further investigation to confirm the refurbishment option against the life-cycle cost of the new windows option. Additionally, the possibility of energy incentives for the retrofit should be explored as a potential to reduce the cost of implementing the measure.

A5.9 WALLS

(See 5.1) The original construction of the exterior walls consisted of exterior brick and terra cotta on the exterior face with hollow clay tile and plaster as the interior face and finish. With the 1991 addition, the interior face of the exterior walls was upgraded to provide new metal stud furring and R-11 batt insulation. The exterior wall at the 1950 addition is original. It does not appear to have insulation.

The exterior wall assembly does not meet current proscriptive minimums for thermal resistance. As noted in the code section, there is no requirement mandating that the R value of the existing exterior wall be upgraded to R-19. Given the estimated cost to remove the interior wall finish to install new installation is approximately $10/sf and there is approximately 108,000-sf of exterior wall surface, it does not make economic sense to pursue this option.

A5.10 FLOOR COVERING

South Entrance Lobby:
The main entrance lobby is ornately patterned and polished terrazzo with marble/travertine base (integral to the wall paneling). It is in very good condition.

Corridors/Elevator Lobbies
The majority of corridors have carpet broadloom or tile finish with rubber base. It is in good to fair condition with wear at high-traffic areas.

General Offices
Generally the floor finishes are primarily carpet tile with rubber base. . The main assembly space on the 8th floor has a raised platform with cork finish. It is in good to fair condition with wear at high-traffic areas

Service Areas
A vinyl sheet flooring has been provided in areas that having support casework for admin work. The basement mail room as vinyl tile flooring. It is in good to fair condition.

Cafeteria
The cafeteria has a polished concrete floor finish with rubber base except one area on the second floor which has a raised platform with cork finish. These are in good condition.

Kitchen
The kitchen has a fluid-applied epoxy covering that forms an integral base with the walls. It is in fair to poor condition with wear in high-traffic areas and staining in the food prep areas. cracks and damage can be patched.

Toilet Rooms
Floor finishes at all tower restrooms and in the basement level locker rooms are octagonal ceramic tile with coved tile base. It is in good condition.

Stair and Utility areas
Floors at stairs and all utility-type spaces are typically bare concrete or epoxy-painted concrete

Special flooring
The existing main data room (6th floor) has a raised-access computer floor with a plastic-laminate finish. It is in good condition

A5.11 CEILINGS

South Entrance Lobby and Corridor:
The main entrance lobby has a plaster ceiling with an ornately carved/formed cove defining the entry space and the original elevator lobby. It is in very good condition. Other areas in the elevator lobby and corridor have GWB ceiling finish as do some area on the 8th floor assembly room lobby.

General Spaces
Generally there is no finish ceiling in the majority of spaces throughout the tower with the underside of the upper concrete floor painted and left exposed. The original 1933 glue-on acoustic tile ceiling has been removed however glue “dots” remain and were painted over prior to installation of new HVAC and power/telecom systems. These dots were tested for asbestos and were found to have no hazardous components (see Appendix E).

Some offices and the lobby in front of typical toilet entrances do have a traditional 2x4 lay-in acoustic ceiling tile. There are some special areas that have an acoustic foam tile adhered to the underside of the concrete floor/ceiling. There ceilings are in good condition. Ceilings in the upper floor of the 1951 addition also have acoustic lay-in tile which is in fair to poor condition.

Toilet Rooms
Painted GWB ceilings are provided in all tower restrooms and in the basement level locker rooms. Metal toilet partitions are installed and are in good condition.

Kitchen
The kitchen and dishwashing areas have a lay-in tile 2x2 ceiling with wide grid supports. It is in good to fair condition.

A5.12 SIGNS

As the tower was a single tenant, interior signage is minimal and consists primarily of regulatory signage.

A5.13 VERTICAL TRANSPORTATION

General

The vertical transportation system consists of six traction elevators and one hydraulic elevator. Elevator 7 and 8 were not surveyed as they are dedicated to the portion of the building not included in this assessment. Traction Elevators 1, 2, 5 and 6 were manufactured and installed by Otis and Montgomery. All were presumably installed as various portions of the building were constructed. Sometime in the 1970's or 1980's a few of the elevators were modernized by U.S. Elevator.

In 1998 a major modernization was performed by Fujitec Elevator on the existing gearless traction elevators. In addition Fujitec installed two completely new elevators to service the low-rise portion of the building, Elevators 3 and 4. The modernization performed by Fujitec was quite extensive and included new solid state controllers, signal fixtures, door operators and cab interiors.

It is our understanding that several of the elevators were damaged during the February 28, 2001 earthquake and shortly thereafter the counterweight rails on several of the traction cars were upgraded to current seismic. The car rails do not appear to have been updated. In 2001 Otis installed a new in-ground hydraulic type elevator for the west parking garage.

Most of the State of Washington retro-active codes required by WAC 296-96 are up-to-date. The elevators meet ADA size requirements for existing installations and have the proper gongs and floor passing chimes. The elevators are located in a seismic zone, but were installed prior to the State adopting A17.1 2004 seismic code. However, when they were modernized in 1998 seismic derailment devices were added to the counterweight rails.

Elevator Layout

Elevators 1 and 2 are rated for 4,000 lbs and provide service to the high-rise portion of the building. Elevators 3, 4 and 5 are set up to service the low-rise portion of the building. Elevator 6 is a service elevator and has stops at all floors including the basement and penthouse. Elevator 9 is a four stop hydraulic elevator with an in-ground jack that is located in the west parking garage.

Condition

Most of the major components are in good to very good condition. The controllers are state of the art and known to be reliable. Some of the older gearless machines for Cars 1, 2 and 5 and 6 are showing their age, but should last another 15 to 20 years with

proper maintenance. The newer geared Fujitec machines for Cars 3 and 4 are in good condition. Most the elevators have GAL door operators which are not closed loop but known to be high quality. However they are starting to show their age.

Maintenance

Fujitec has been providing maintenance on all the elevators on a very limited basis due to the fact that the building is virtually empty. According to the building management, Fujitec comes in once a month and runs the elevators to give them some use. Running the elevators intermittently as they are doing is recommended. We have listed specific maintenance deficiencies in Appendix F along with performance times. The performance times can and should be adjusted for optimal service. Some door times were very slow and all the floor-to-floor times were slow. The general maintenance of the elevators is satisfactory. However there are several safety features that were inoperative that should be corrected. The following is a summary of maintenance deficiencies that we noted:

1. Five of the elevators had inoperative door restrictors. Several cars had the door restrictors intentionally disabled. These should be repaired immediately.
2. Several of the elevators had the hoist rope retaining clips in the wrong location. Code specifies that the 2nd clip be no more than 4 or 5 times the diameter of the rope away from the 1st clip.
3. Some elevators have rough door operation.
4. The high-rise elevators, Cars 1 and 2, have floors 2-7 permanently blocked off but some of the stops are missing and/or loose. We recommend all of the doors be re-secured at the top and bottom so they cannot be opened.
5. The parking garage elevator, Car 9 has extensive rust in the hoistway on the rails, car top and pit. This is because it is exposed to the outside weather.

Americans with Disability ACT (ADA)

In 1990 the federal government enacted ADA to make public spaces more accessible to disabled persons. All passenger elevators meet the requirements of ADA. The sizes of the passenger elevators meet ADA size requirements for new and existing elevators. The call button fixtures in the car and hall are located at the proper height. A complete listing of the ADA requirements is in Appendix F.

Retro-active Code Requirements: WAC 296-96/A17.3

All elevators in the City of Seattle are required to comply with retro-active sections of WAC 296-96 – Part D and City of Seattle Chapter 30. In addition when they are modernized they are to comply with A17.3, the national retro-active safety code for existing elevators. A17.3 is published by the American Society of Mechanical Engineers and is enforced in most states but not adopted in the State of Washington or City of Seattle. A17.3 requires all elevators, no matter age or installation date, to meet a minimum level of safety.

Seismic Upgrades

We recommend insuring proper fit and installation of the seismic retainers for the car and counterweights. Additional upgrades to strengthen the car and counterweight guide rails could be performed voluntarily, but are not required.

Energy Savings

One of the small side benefits of modernizing the elevators is to achieve energy savings. Because of the low cost of energy in the Northwest any energy savings will be very small relative to the buildings overall energy consumption. However, the following energy savings options should be considered when modernizing this type of control system and they are as follows:

1. Upgrade with new MRL - AC Gearless Machines: Under this option the existing geared and gearless machines would be removed along with DC hoist motors, SCR drives and VF drives on Cars 3 and 4. New smaller gearless machines with a permanent magnet AC motor would be provided. The new machines would be much smaller than the existing and installed in the machine room. The new controllers would come with an AC variable frequency drive and for added cost could have regenerative capability. This option would provide the highest level of energy savings but also the highest cost. If the incremental cost of the machine is not to great this would be the best option. However, it is important to note that when the elevators were modernized in 1998 they had energy savings SCR drives added, thus the energy savings will only be in the 10% to 15% range.

Capital Upgrades/Major Components

In Appendix F of this report we analyze the major components of the elevator and provide accompanying photographs. The majority of the components are in good to very good condition. The cab interiors should be updated to suit a more conventional office environment. In the next 5-10 years, the completion of the seismic retro fitting in recommended. All the car and counterweight retainer plates need to be checked and adjusted to be meet current code and completing the upgrading of the rail fish plates. As noted earlier some of the counterweight rails were upgraded to seismic shortly following the Nisqually earthquake.

A comprehensive modernization is recommended on all the elevators in 15 to 20 years. This should include all new major components. The hoist machines, controllers, governors, etc. We recommend new solid-state controllers, selectors and AC hoist motors. The machines could be retained and refurbished, or replaced with new gearless machines.

A5.14 PLUMBING

The restrooms in the tower (including locker rooms) are of sufficient count to meet the code requirements for the anticipated occupancy. Shower facilities required by LSR A5.17 are provided in the basement level.

Domestic Water

The domestic water system and piping throughout the building was designed, and installed in 1999. The materials used vary based on the size required. Smaller piping is primarily copper with sweat joints on distribution lines 2" and smaller, then larger piping is Type "L" hard copper tube with lines sized 2" up to 6". There is limited amount of 6" schedule 40 steel with grooved joints and fittings mostly between the basement and the 1st floor. These are in very good condition and have appropriate dielectric unions where they connect to copper distribution.

Existing Sanitary Waste & Vent

The existing sanitary waste and vent, and roof drain piping is constructed of no-hub cast pipe and fittings. The industry standard life expectancy is 50 years. The system is in very good condition.

Existing Plumbing to Kitchen Equipment & Locker rooms

Kitchen equipment was added as a tenant TI during the Amazon occupancy. Equipment appears operational. Domestic Cold & Hot water provided was inspected and appears to be in good condition. The Domestic hot water storage tank will need to be replaced if kitchen and locker rooms are re-utilized since it has a limited useful remaining life. This is included under immediate priority recommendations.

Existing Fixtures and Faucets

Many of the existing restroom fixtures and faucets are showing their age and will need replacement. The Sloan sensor type faucets are battery powered and outdated. The lack of use is also detrimental to the internal solenoid valves. Recommend replacing with Solar powered “Sloan Basis” model. The flushometers are also vulnerable to similar problems due to inactivity, and as evidenced by staining, also water quality. There was noted staining and mineral deposits on all tenant area toilets and urinals. Replacement of flushometers and faucets is included under immediate priority recommendations

Trap Primers

A number of trap primers were disconnected in various areas of the tower. These are immediate priority recommendations to be replaced and re-connected to insure adequate drain operations.

A5.15 BUILDING PERFORMANCE AND ENERGY

Utility Overview

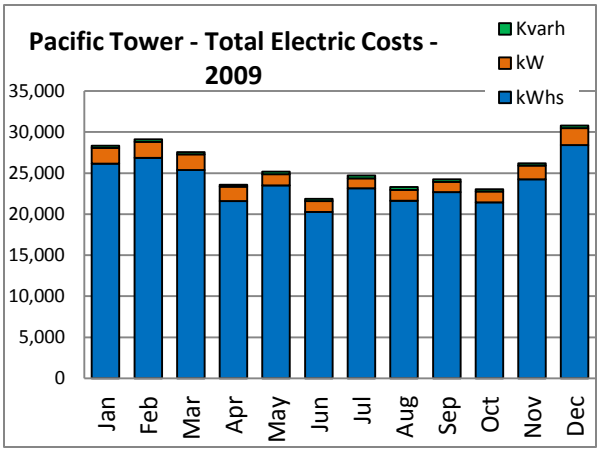
The following utility data analysis for the Pacific Tower building is based on the Seattle City Light (SCL) bills provided. The analysis period is for 2008-2009 and based on full occupancy of the property by Amazon during that period. SCL cost and usage data used in this analysis was forecasted for future rates to predict potential utility cost increases assuming baseline operations remain the same without any adjustments to weather or other operational parameters.

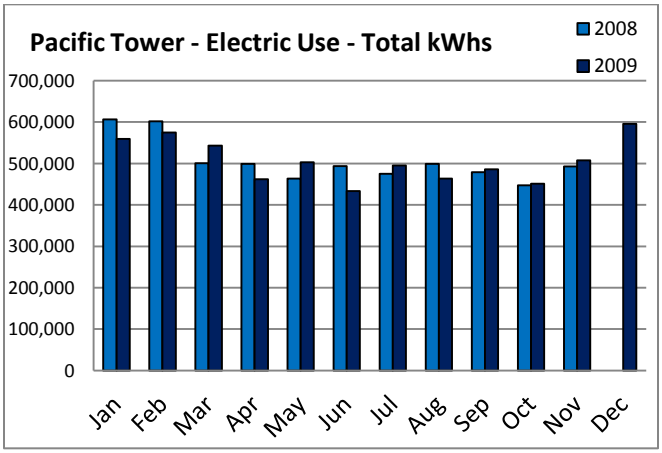
Observations

Based on the 2008-2009 utility data, Pacific Tower consumption shows that the building operated with a consistent and high "base load". The base load is the minimum average monthly consumption that remains constant throughout seasonal and operational variations. This type of performance is likely attributed to:

- The tenant (Amazon) operations resulted in high computer, data center and plug load use
- All electric building systems

Future performance of the building with the departure of Amazon is likely to result in a reduction in energy use due to lower base loads (less computing and data center loads). In addition with less than full occupancy, the energy use should be observed to decrease.





Energy Cost Analysis

Pacific Tower's 2009 electric energy use index (EUI) is 73.0 kBtu/sq.ft.-yr. based on a rentable area of 260,000 sq. ft. This EUI is average for regional office buildings. Based on the higher than normal base load identified in the observations with a change in space use to less computing requirements the EUI benchmark should improve. This is

anticipated to be true even with classroom uses that have a higher energy demand than typical office uses.

In 2009 Pacific Tower's annual energy cost was $308,000 or about $1.18 per sq.ft. SCL rates have escalated by about 20% since 2009. Applying current utility rates to the 2009 energy use brings potential annual energy cost to $382,000. SCL as a utility tends to have some of the lowest rates in the country. Current projections predict only a 3% annual average rate escalation. Using these projections the annual energy costs will be $497,000 in 10 years, $611,000 in 20 years and $726,000 in 30 years. We recommend that as the facility moves towards full occupancy, a more detailed review of the energy use profile, cost and rate applied to optimize the bottom line impacts.

Energy Star Rating

The State has indicated that it requires leased buildings to have energy performance that qualifies for a minimum Energy Star Rating of 75. The building Owner has provided nomination documents dated 23 November 2010 indicating that the Pacific Tower has a calculated rating of 93 (Appendix H)

A5.16 HEATING, VENTILATING AND AIR CONDITIONING (HVAC) SYSTEMS

General

All of the HVAC equipment was installed in 1999 during a remodel of the building. In 2010, the major tenant moved out and the building has been empty since then except for ½ of the basement area and the ground floor areas which are occupied by PacMed and are not included in this analysis.

Despite the age of many of the building systems reviewed, in general we found the facility to be well maintained. One of the key indicators in equipment condition is the cleanliness of the facilities, especially in the mechanical and electrical spaces. Although we do not know how these spaces appeared during the Amazon timeframe, these spaces are currently very clean and organized. The facilities staff has done a commendable job given the available manpower and support.

Service records were requested for the Amazon timeframe, but could not be located. These records tell a story about system and equipment , and should be an essential part of any evaluation of current conditions. In general, aside from one of the Leibert Server room units (where it appears new compressors have been partially installed), it appears most of the equipment is from the 1999 construction, which would indicate that any major equipment problems did not result in wholesale equipment replacement. Preventive maintenance records, like service records provide a glimpse of equipment operation. No records were found from the Amazon timeframe. CMMS records would also provide a history of the issues that were experienced during the Amazon timeframe. No records were located.

In reference to the remaining life and replacement costs indicated on the recommendations list, it is important to note that these estimates are based on a

condition assessment only. This is a good benchmark to start a long term capital plan. In forecasting the potential costs of repairs or replacements, there are many variables to consider. Obviously age and condition are key to starting an evaluation, but reliance on these parameters may not provide long term asset value. Preventive maintenance is the most important criteria in measuring operational longevity. Replacement should also be contingent on an analysis of critical function, replace ability of parts, timing of needs (logistics) and disruption.

One additional factor in evaluating the equipment for replacement is components. The floor by floor AHU's in the Pacific Tower are the perfect example. Replacement of any of these units would be expensive (greater than $100K). However, it would be very rare that a single unit would need to be completely replaced. Rather it is more typical that that a motor or similar component, would be the issue and the equipment could be provided an extended service life at 10-20% of the full replacement or less.

System Description

The basic system description is multiple variable air volume (VAV) air handling units (AHUs) on each floor with chilled water coils for cooling and electric resistance re-heat coils for heating. Chilled water is supplied by two 350 ton chillers. A full waterside economizer system is used for energy conservation.

Building relief is provided by fans located on the 12th floor roof areas (EFs). Relief air, core toilet exhaust air and electrical/telephone room exhaust travels via GWB rated shafts from each floor to the roof fans. Building outside air requirements are met by supply fans also located on the 12th floor roof areas (SFs). Outside air is delivered via lined sheet metal duct to the mechanical rooms on each floor.

A central 700 ton chilled water plant serves the floor by floor air handling units. Each chiller includes a factory mounted starter, flow switch and integral control functions. Centrifugal horizontal split case pumps serve the requirements for both the chilled water loop and the condenser water loop. Strainers and/or suction diffusers protect pumps from internal damage and A.S.M.E. expansion tanks eliminate entrained air from all closed loop systems.

VAV systems are energy efficient and provide good comfort conditions to occupants. Economizer cooling is used when outside air (OSA) temperature is low enough to supply the cooling requirements (usually 60°F or less). Each AHU does bring in a minimum amount of OSA for ventilation during heating and during mechanical cooling.

Due to the entire building (except ground floor and part of the basement) being unoccupied for the past 3 years, the Facility Manager cycles each floor's AHU for either 1/2 hour per day Mon, Wed or Fri, or running the entire floor for 8-10 hrs all day Mon thru Fri to keep fans and motors lubricated and in working condition. Also due to low occupancy, the Facility Manager runs a few floors as "occupied" during normal business hours in order to put enough of a cooling load on the building to have the chillers

produce enough chilled water for the cooling needs of the ½ of the basement that is occupied.

A complete retro-commissioning is included in our immediate priority recommendations to insure the operational capability of the full system.

Air Handling Units (AHUs)

There are three AHUs per floor for floors 1 thru 9, and two AHUs per floor for floors 10 & 11, and the 11th floor East unit also conditions the 12th floor, for a total of 30 AHUs, all manufactured by York. Capacity ranges from 12,250 CFM to 4,560 CFM.

Each AHU's supply fan has a soft start, adjustable speed drive (ASD) to control speed of motor, thus controlling primary air CFM being delivered to the VAV boxes serving each space. The interior VAV boxes would be cooling only terminals while the perimeter VAV boxes would be parallel fan-powered, equipped with electric resistance heating coils. Each unit could be activated for off-hour use for individual tenants without activating the entire building's HVAC system.

Supply fans and Exhaust fans (SF-2,3,4 & EF-2,3,4)

Outside air (OSA) and exhaust air are supplied to each AHU via 6 ventilation shafts that run the entire height of that portion of the building (3 for SFs and 3 for EFs) SFs supply the OSA and EFs exhaust out part of the air that gets returned to the AHUs. Both SFs and EFs are high efficiency type (90+% eff) Greenheck motors and each fan is controlled by a soft-start ASD.

There is one Trane SF and one Trane EF located on the 10th floor which serves all the AHUs with the "N" (North) designation on floors 1 thru 8. The other two Greenheck SFs and two EFs are located on the 12th floor roof and serve the AHUs with "E" (East) and "W" (West) designation, respectively on floors 1 thru 11. Their CFM volumes are controlled by an ASD which has input from the Alerton DDC system's needs for OSA. Their on/off is controlled by an Alerton DDC system's scheduling program. Whenever the building is in an "occupied" mode, the SFs are on. The motor drives the fan via fan belts. During inspection, all of the belts were well maintained and tight. All three of these SFs are located outside on the roofs and exposed to the elements.

CO2 and occupancy sensor based ventilation control of the air handling units and terminal units will significantly reduce heating and cooling loads associated with ventilation air. These improvements can be deployed as new tenants are brought online, which reduces upfront equipment and controls costs. Seattle City Light will likely provide an incentive for the retrofit which will reduce the cost of implementing the measure.

Exhaust Fans (EF-5 thru 19)

These 15 Greenheck manufactured exhaust fans serve the smaller spaces' ventilation needs (ie: kitchen range hood, bathrooms and locker rooms). They are controlled by the

Alerton's DDC systems' occupation schedule. When spaces are to be in the "occupied" mode, the exhaust fans are on. The motor drives the fans via direct drive. These units are located outside in the elements on the roofs.

Fan Coil Units (FC-1 & 2)

These Trane air-conditioning only units serve the elevator equipment rooms for elevators #3 & 4. The AHU section of these units have OSA louvers and can go into economizer cooling when OSA temperatures are below 65°F, otherwise the OSA louvers are closed. The units sit outside on the 10th floor roof

Boiler (B-1)

This 2,000 MBtuh Lochinvar gas-fired boiler serves the domestic hot water needs for the kitchen and locker rooms. It is located on the 2nd floor roof.

Chillers (CH-1 & 2)

The existing chillers are 350 ton Trane Centravac centrifugal chillers. Each of the chillers has low hours and appears to be in good working order. Each of the compressor motors was tested and they are good at more than 2000-meg ohms to ground at 500 vdc. It's impossible to determine correct charge at the 60% load but they appear to be close. The Purge canisters are over due to be changed out. This is not detrimental to the life of the machine, but it is more environmentally friendly if you change them on a regular basis as it will catch more of the refrigerant while in the purge pump out mode.

These chillers were installed in 1999 and based on recorded run hours have roughly 20 years of expected life left. These chillers are oversized for the near term projected cooling load. This will lead to excessive cycling of the chillers, reducing equipment life. Also, due to the lack of variable frequency drive (VFD) control of the compressors these units are inefficient at part load and low load conditions. A retrofit of the chillers to provide VFD speed control of the compressors is an immediate priority recommendation and will improve the part load efficiency of the chillers, reduce false loading at low-load conditions, and reduce cycling which will extend the expected equipment life. It should be investigated if Seattle City Light provides incentives for the retrofit which could reduce the cost of implementing this measure.

Cooling Tower (TC-1)

The condenser water requirements are served by a counterflow, centrifugal fan cooling tower complete with float and factory corrosion protection. Cooling tower fan staging and three-way valve control modulates the condenser water temperature as required. A complete chemical treatment system prevents system fouling. The tower is in above average condition for its age.

The existing cooling tower utilizes conventional chemical based water treatment to maintain water quality and minimize corrosion. This means of treatment requires significant maintenance costs and blow-down to maintain water quality. A chemical free means of water treatment will greatly reduce maintenance costs and water

consumption. It should be investigated if Seattle City Light provides incentives for the retrofit which could reduce the cost of implementing this measure.

Chilled Water Pumps (CHP-1 & 2)

The chilled water pumps are located in the 10th floor chiller mechanical room ceiling. Whenever the chillers are producing chilled water, CHP-1 & 2 are used to pump the water out to all of the AHUS on each floor. The return pumps in the basement (LP-1 & 2) are described below.

Chilled Water Circulation Return Pumps (LP-1 & 2)

The chilled water return (lift) pumps are located in the basement and used to pump the chilled water back up to the 10th floor where the main chillers are located after they have passed thru all of the AHUs' coils. LP-1 & 2 are on whenever the main chilled water supply pumps (CHP-1 & 2) are on.

Condenser Water Pumps (CDP1 & 2)

The condenser water pumps are located on the 10th floor roof outside in the elements. They are activated when the chillers are running and CDP-1 & 2 pump the returned chilled water thru the cooling tower first for air-source pre-cooling before being pumped thru the chillers.

Heat Exchanger and Pump (HX-1 & HXP-1)

The heat exchanger is used during the economizer cycle by running the chilled water return water through one side of the heat exchanger and the condenser water loop on the other side of the exchanger. This usually only reduces the return chilled water a few degrees.

Since the majority of building ventilation air is provided by central supply and return fans, the proximity of the supply fans to the return fans creates the opportunity for heat recovery. A runaround loop installed between the outside air supply and relief fans will reduce energy usage associated with heating and cooling ventilation air. Modification of the fan systems may be required to accommodate the additional pressure losses imposed by the heat recovery coils and pre-filters. It should be investigated if Seattle City Light provides incentives for the retrofit which could reduce the cost of implementing this measure.

Pressurization Fans (PFE1-5 & PFS1-5)

The pressurization fans are only used in case of emergency. They bring in 100% OSA to pressurize the elevator shafts (PFEs) and the stairwells (PFSs) when there is a fire. They are controlled by smoke detectors in the shafts themselves.

Chiller Room Purge & Ventilation Fans (PF-1 & VF-1)

The purge and ventilation fans are only used in case of emergency. There is a refrigerant charge sensor (HCFC-123) located in the Chiller mechanical room. When there is a leak

of HCFC-123, PF-1 brings in 100% OSA, while VF-1 exhausts the air to help clean out the air quicker.

Transfer Fans (TF-6A & B)

The transfer fan helps supply air-conditioned air from the MDF rooms into the UPS rooms since the UPS rooms do not have their own dedicated AC units. Only one fan works at a time and the other is for redundancy.

A5.17 ENERGY MANAGEMENT SYSTEM (E.M.S.)

The building's HVAC system is monitored and controlled by a Alerton Direct Digital Control (DDC) energy management and environmental controls system. Multiple scheduling and controls optimization opportunities are available that will reduce energy consumption, including improved control of morning warm-up, including shutdown of the main supply and return fans, optimization of supply air temperature and pressure control, optimization of air economizer control, verification of positive damper closure after hours, and other improvements.

The building currently has an Alerton Envision for IBEX controls system that was installed in 1999. Key IBEX controller components are becoming hard to procure for manufacturing and a result, Alerton is phasing out this proprietary controls line. The Alerton IBEX Global Controller, called an APEX, is no longer being manufactured and TUX unitary controllers will no longer be produced after 2013. As such, the majority of Alerton's technology investment has been focused towards its native BACnet platform, Envision for BACtalk (EBT).

This existing IBEX system has been in operation for many years, and can continue to operate for more, however, in order to mitigate IBEX component shortages and keep your facility using the latest in industry-leading energy management system; it is recommended as an immediate priority to a change from IBEX to Alerton's BACtalk system.

A5.18 ELECTRICAL SERVICE

The overall condition of the electrical system is very good. In 1999 nearly all of the electrical system was demolished back to the switchgear. The two main switchgears were left and are still utilized today. The balance of the electrical was rebuilt from the switchgear out to the distribution. Given that this remodel was fairly recent, the system is in good condition. The maintenance crew has kept this system in good working condition.

There was IR testing done in 2011 that covered most panels, breakers, and disconnects. There was also IR testing done twice in 2009. Between the 3 tests, all areas were covered. None of the IR reports were viewed or included in this report. It is questionable if the 2011 report can provide much value as the building loads were significantly less than what would be expected at full occupancy.

All major Distribution systems are covered individually in this report. Every (smaller) electrical room that was viewed seemed to be in good condition. These were all redone in the 1999 remodel. Building maintenance has done a good job keeping these rooms clean and free of storage. The panel schedules seem to be up to date.

The two existing switchgears are the oldest areas that need the most attention. One was built and installed in 1975 and other one in 1992, according to the Amazon construction drawings prepared by Sparling.

1. North Gear Engineering- This gear was installed in 1992. It is a 2000A 277/480V GE switchgear. The breakers are also GE. The Gear has a 2000A main that serves North Riser Bus and the rest of the gear. There is also a 1600A Sub Main that serves other distribution breakers. The distribution breakers are listed in the Equipment Inventory. The gear is ground fault protected and has proper arc flash labels. The overall condition of the gear is good.

2. Electrical Main Switchgear A- This gear was installed in 1975. It has a 4000A 277/480 service. There is no main disconnect. The gear is GTE Sylvania and has GE breakers. The gear serves a 1200A Bus Riser A, 1200A Bus Riser B, 1000A Sub Distribution SWBD, 300A MCC10, 500A PCB4, and 250 A Quarters 10 Main Switch Board. The gear is ground faulted protected but does not have proper arch flash labels. This gear should be cleaned during next shut down.

3. MCC 10-This MCC was installed in 1999 with the remodel of the rest of the building. MCC-10 is 300A 480V GE. It controls Exhaust Fans, Supply Fans, and Circulation Pumps. It is in good condition.

4. Generator SWBD- This is a 1600A 277/480V Square D gear with Square D breakers. It was installed in 1999. It is ground fault protected. The gear seems to be in good condition.

5. Generator- This is a 900KW Onan generator. Confidence tests have been done yearly. The last test was on 4-13-13. There are 225.4 run time hours on the generator. It seems to be in good condition.

The balance of the electrical gear in the building represents transformers and distribution panels. All of this equipment is in good condition, and with regular maintenance and cleanliness, should provide 30 years of remaining service to the facility. See the equipment list for any additional details.

A5.19 ELECTRICAL RECEPTACLES

The tower appears to provide the density of electrical outlets at the 1/75-sf ratio required by LSR A5.22.

A5.20 LIGHT FIXTURES

All of the lighting equipment was installed in 1999 during a remodel of the building. In 2010, the major tenant moved out and the building has been empty since then except for ½ of the basement area and the ground floor areas which are occupied by PacMed and are not included in this analysis.

The overall condition of the lighting equipment appears to be in very good working condition and well maintained. The basic system description is T-8 fluorescent lamps in pendant mounted fixtures for general overall lighting. Compact fluorescent (CFL) fixtures are used for accent and in some down-lighting areas. T-8s and CFLs are very energy efficient and maintain their light output levels very well.

With subsequent TI projects, replacement of lighting is recommended. The existing interior building lighting has higher energy consumption, shorter fixture life, and higher maintenance costs than those of LED fixtures. Seattle City Light offers incentives for lighting retrofit.

A5.21 VOICE/DATA DISTRIBUTION

As the last primary building occupant was Amazon.com, the building has a robust telecom infrastructure. There are a minimum of 2 telecom/IDF closed per floor and a main data center on the 6th floor. All data rooms have separate DX cooling however none of this separate equipment has been operated since Amazon moved out. Distribution pathway for data is by ladder-type cable trays that feed into conduit drops to wall data outlets.

Existing MPOE Facility, Data Center and MDF

After visiting the Pacific Tower building and observing the existing Data/Comm infrastructure, it is recommended to re-use the existing equipment racks, server cabinets and cable tray that is already in place in the MPOE facility in the basement, the data center and in the MDF room located on the 6th floor. There is existing data/comm "service entrance" cabling in the MPOE room for both telephone and internet services that can be re-used. It will be necessary to have the tenant contact the local service providers and set up new service "contracts/agreements" for telephone and internet services.

Existing Copper and Fiber Optic Backbone Cabling

The most cost effective solution is to utilize the existing copper and fiber optic backbone cabling infrastructure that is currently connected from the MDF to the IDF's on both the east and west sides of every other floor (2nd, 4th, 6th and 8th floors) and in the centrally located IDF on the 10th floor. The existing backbone cabling is sufficient for 10 Megabits/sec "Ethernet" to 1 Gigbit/sec "Gigabit Ethernet" applications.

Existing Horizontal Communications Cabling

If the tenant's network equipment will only require up to "Gigabit" Ethernet capabilities, a majority of the existing Category 5e cable can be re-used. It will be necessary to

review the proposed floor plan layouts to determine where the existing Category 5e cabling can be re-used and re-routed to the new data/comm outlet locations. In some circumstances it may be necessary to install new Cat 5e cabling to areas of the building where the existing data cabling cannot reach. It is recommended to terminate all of the new and re-routed cabling on new Cat 5e jacks at each workstation location. All of the existing Cat 5e patch panels located in the IDFs can be reused.

Please note: See recommendations for optional upgrades to Cat 6 cabling options. Category 6 cabling is utilized for Gigabit Ethernet and provides performance up to frequencies of 250 MHz. Category 6A cabling (or Augmented Cat 6) is designed for enhanced performance standards up to 500 MHz, or twice that of Cat 6.

A5.22 SECURITY ACCESS SYSTEMS

There are building has a limited intrusion detection system. There is no access control system in the tower with the exception of specific rooms.

There is a metered access control of the West Garage. Access is granted by either card reader or upon payment of parking fee.

A5.2 SECURITY SURVEILLANCE SYSTEMS

There are building-mounted surveillance cameras on each of the primary elevations of the tower. There is also camera coverage of the loading dock area and the West Garage. Data is digitally collected and auto-erased if not accessed. They are not monitored. The system as installed appears to meet the exterior requirements of LSR A5.29.

A5.24 FIRE PROTECTION SYSTEMS

Alarm And Monitoring

The buildings are monitored by two Simplex FA panels, The main panel monitors the manual pull stations, smoke detectors, sprinkler systems flows. The system is in good condition, no problems reported. It is maintained by an outside vendor, Simplex.

Sprinklers/Suppression

The Pacific Tower is completely sprinkled throughout by an automatic wet pipe sprinkler system, in accordance with NFPA 13. Seattle City water is supplied to the building through two (2) 6” fire water service feeds that enter from the north.

In addition to the main wet-pipe system, subs systems are also provided in the following areas:

Dry Systems:

- 2” system at the 12th Floor Mechanical Rooms
- 2” system in the 2nd floor Kitchen Hood/Duct
- 4” system at the West Garage
- Pre-Action Systems:

Pre-action Systems

- 2nd floor west IDF
- 6th floor Server Room

Hood System

- 2nd floor kitchen

All fire systems have backflow devices, fire hose connections in the stairwells, dry standpipes, and separated into different zones by floor. All yearly and other major inspections appear to be up to date, as performed by Columbia Fire Protection and the system and equipment appear to be in good working condition.

FM200 Systems

- 6th floor Server Room

Life Expectancy

Based on continued acceptable service and maintenance, system and equipment life expectancy is anywhere from 20-50 years, at which time it is likely that some wear on the system valves may start. This life span is generally dependent on the number of times the system is shut-down and restored for tenant improvements. These operations tend to work the system more often and the valves have a tendency wear out sooner.

B-0 COST ESTIMATES

B.1 Methodology

As the investigation team conducted review of the provided documents and toured the Tower, each participant made note of the existing condition of the subject system or building component. Based on their experience and expertise in their area of the investigation, they provided a listing of any readily observable element where maintenance had been deferred. They also made an assessment of what could be anticipated to be the expected remaining useful life of the component/system.

In organizing the results of our observations/component assessment and recommendations, each noted issue was classified as to one of the following priority classifications:

Immediate
These are deficiencies which the team recommends to be corrected prior to any regular occupancy of the tower. They are issues that are basic to occupancy, accessibility, system operations, and health/safety.

Near-Term
These are deficiencies relate to issues which would best be addressed as part of any subsequent TI or in systems/components that have an expected useful life of at least 5-years but not likely more than 15 years.

Far-Term
These are deficiencies relate to issues on systems/components that have an expected useful life of at least 15-years but not likely more than 30 years.

B.2 Limitations

The estimate figures given are intended to generally identify expected future costs for planning and budgetary purposes. They represent the evaluator's best judgment of the "direct" costs for that element or issue. Additionally, if elements are packaged together, individual element costs may be less or more depending of scalability of the specific scope of any given project.

Identification of possible costs prepared by the investigation team represents our best judgment as professionals familiar with the construction industry. They have not been generated from a specific design or proposal. The team cannot and does not warrant or represent that bids or negotiated prices for the recommended improvement will not vary from our estimate.

B.3 Costs for improvements/Replacement

As listed on the attached estimate summaries and in the Appendix A, the investigation indentified probable costs (rounded) for the following recommendation priorities:

Immediate

These are recommendations for specific code and LER deficiencies and/or building-wide improvements that can be most effectively corrected prior to occupancy. They are estimated to cost $3,400,000 and include the following elements:

- Site and internal building accessibility improvements.
- Correction of Life Safety deficiencies.
- Abatement of known hazardous materials.
- Safety and operations improvements to elevators.
- Repair of steel angles above masonry openings.
- Repair of the windows throughout the tower and third floor of the 1953 addition.
- Replacement of roofing having current expected service life of less than 10-years
- Operational improvements to the plumbing and HVAC systems that facilitate occupancy.

Near-term

These are recommendations for deficiency corrections and/or improvements that can most effectively be incorporated into tenant improvements or with subsequent maintenance in the 5-15 year timeframe. They are estimated to cost $1,000,000 and include the following elements:

- Operational and finish upgrades for the vertical transportation system.
- Exterior joint repair at 1992 addition
- Various sprinkler head changes

Far-term

These are recommendations for deficiency corrections and/or improvements on elements or systems that have 15-20 years service life remaining but which should reasonably planned for major upgrade or replacement within a thirty-year period. They are estimated to cost $1,358,000 and include the following elements:

- Operational and finishes upgrades for the vertical transportation system
- Replacement of roofing having current expected service life of 15-20 years

Far-Term Equipment Repair/Replacement

The team made a complete analysis and assessment of the building systems and estimated the remaining service life for most of the equipment to be 15-20 years for the HVAC systems and 20-30+ for the electrical equipment.

Complete replacement of the major components would very expensive however it would be exceedingly rare that single unit would need to be completely replaced, rather it would be likely that a motor or similar component would be the issue and the service live could be extended by replacement of the component part itself. Based upon the existing condition and the general quality of the existing equipment and assuming regular preventative maintenance, the assessment team recommends a repair/select replacement budget of 10-20% of the current replacement value be used for planning purposes.

The anticipated window for these issues is 15-20 years but is important to note that remaining life and repair/replacement costs indicated are based on a condition

assessment only. Repair/replacement is contingent on an analysis of critical function; replace ability of parts, timing of needs (logistics) and disruption.

Over the life of the lease, it is recommended that an equipment repair/replacement budget totaling $3,845,000 be reserved. It would appear that the recommended equipment maintenance and repair budget of $2.20/sf /yr (IFMA Standard) would address this.

Options

In addition to the estimated cost to address noted deficiencies and planned system maintenance, the team identified some options that the state may desire as alternatives to or in addition to the prioritized recommendations. These include the following elements:

- Provided a separate interior window sash in addition to the refurbished wood widows to increase energy performance and occupant comfort.
- Provide complete window replacement in lieu of repair and refurbishment of the existing wood and metal windows.
- Remove the interior finish from the exterior wall; add additional insulation and thermal at metal studs for a potential increase in energy performance and occupant comfort.
- Replace all the 5e cabling and data racks with current 6 or 6A cables and patching equipment to increase data transmission rates throughout the building.
- Provide a distributed internal antenna system to rebroadcast emergency responder 800mz radio signals assuring full coverage within the tower .

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PACIFIC TOWER ASSESSMENT

Appendix A
Field Condition Observation/Deficiency Reports

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PACIFIC TOWER ASSESSMENT

Immediate Recommendations

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	9-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Karen Braitmeyer		
SYSTEM:	**Site (Accessibility)**		
OBSERVATION NUMBER:	**A-001a**		
PRIORITY:	**Immediate**		*(Immediate/Near-Term/Far-Term)*

Location

Site

Findings

The site lacks an accessible route between the parking garage and the north building entrance. While there is accessible parking in the garage, there is not a compliant route to the North entrance. The parking garage entrance has a vertical clearance of 9'-0" and an accessible van space is located near the entry. On the lower level of the garage there are six accessible parking spaces. The path to the main entrance from the parking garage currently involves walking/travel in the road that runs between the parking lot and the building. Between the garage and north entrance there is a portion of the designated pathway which exceeds the maximum slope. There are also speed bumps in the pathway. Access aisles required to be 60" and are only 48" wide

The pay slot on top of the payment box in the north lobby cannot exceed 48" and it measures 61" AFF.

Estimated Service Life

30-years

Recommendation

1. Provide compliant sidewalk and curb from the north garage entrance to the accessible north entrance and restripe accessible spaces to provide required 60" aisles. Reconfigure access drive from northeast parking to northwest site exit to separate vehicles and accessible pathway. Lower the parking paybox.

Quantity (approximate)

160-lf

Estimated Repair/Replacement Cost (October 2013$) **$ 32,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	9-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Karen Braitmeyer		
SYSTEM:	**Site (Accessibility)**		
OBSERVATION NUMBER:	**A-001b**		
PRIORITY:	**Immediate**		*(Immediate/Near-Term/Far-Term)*

Location

Site

Findings

The site lacks an accessible route from existing accessible parking on the south side of the building to the south entrance. There are sidewalks on this side of the building, but there are several steps at the entrance and the entrance lacks a ramp.

Estimated Service Life

30-years

Recommendation

Construct accessible entrance ramp from the sidewalk to the main north entrance and construct internal access ramp from the entry lobby to the 1st floor corridor/elevator lobby as indicated in the 1991 expansion drawings (but never constructed). Provide automatic operators at the entrance doors.

Quantity (approximate)

160-lf

Estimated Repair/Replacement Cost (October 2013$) **$ 120,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	9-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Karen Braitmeyer		
SYSTEM:	**Interior Construction (Accessibility)**		
OBSERVATION NUMBER:	**A-002**		
PRIORITY:	**Immediate**		*(Immediate/Near-Term/Far-Term)*

Location

Men's and Women's Public Restrooms floors 1 thru 11.

Findings

Horizontal dimension between recessed paper towel / trash receptacle unit and the opposing wall measures 32 ". Horizontal dimension wall to wall in this area measures 35-3/4". Clear width of a walking surface that is part of an accessible route shall be 36" minimum.

Estimated Service Life

30-years

Recommendation

1. Remove semi-recessed towel/trash receptacle. Modify wall and counter and provide new toilet accessories that do not encroach on the minimum width of 36".

Quantity (approximate)

1,500 at 44 locations

Estimated Repair/Replacement Cost (October 2013$) **$ 66,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	9-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Karen Braitmeyer		
SYSTEM:	**Interior Construction (Accessibility)**		
OBSERVATION NUMBER:	**A-003**		
PRIORITY:	**Immediate**		*(Immediate/Near-Term/Far-Term)*

Location

Second Floor Cafeteria

Findings

Accessible routes shall consist of one or more of the following components: walking surfaces with a running slope not steeper than 1:20, doorways, ramps, curb ramps excluding the flared sides, elevators and platform lifts. The raised platform in the cafeteria lacks an accessible ramp.

Estimated Service Life

30-years

Recommendation

1. Remove existing raised platform and patch floor

Quantity (approximate)

484 sf

Estimated Repair/Replacement Cost (October 2013$) **$ 6,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	9-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Karen Braitmeyer		
SYSTEM:	**Interior Construction (Accessibility)**		
OBSERVATION NUMBER:	**A-004**		
PRIORITY:	**Immediate**		*(Immediate/Near-Term/Far-Term)*

Location

Eighth Floor Assembly Space

Findings

Accessible routes shall consist of one or more of the following components: walking surfaces with a running slope not steeper than 1:20, doorways, ramps, curb ramps excluding the flared sides, elevators and platform lifts. The raised platform in the assembly area lacks an accessible ramp.

Estimated Service Life

30-years

Recommendation

1. Provide an Accessible ramp to the platform level

Quantity (approximate)

I 8-ft ramp

Estimated Repair/Replacement Cost (October 2013$) **$ 2,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	9-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Karen Braitmeyer		
SYSTEM:	**Interior Construction (Accessibility)**		
OBSERVATION NUMBER:	**A-005**		
PRIORITY:	**Immediate**		*(Immediate/Near-Term/Far-Term)*

Location

First Floor Lobby, Second Floor Cafeteria

Findings

Sales and Service Counters shall provide either a forward or parallel approach with a counter 36" in length and 36" max above the floor. Where seating or standing space at fixed or built-in tables, counter or work surfaces is provided in accessible spaces, at least 5% of the seating or standing spaces, but not less than one, shall be accessible. Where dining surfaces are provided, at least 5% of the seating spaces and standing spaces shall comply with 902. Two service counter sat the first floor lobby measure 43-1/2" AFF. The lowered portion of the built-in eating counter measures 34-1/2" AFF. Additionally, there are elements of the cafeteria service counters that protrude more than 4" into accessible route below 27"

Estimated Service Life

30-years

Recommendation

1. If the counters and service counters are modified in subsequent TI's they should be modified to comply.

Quantity (approximate)

9-LF casework @ lobby and approx 20-lf at cafeteria.

Estimated Repair/Replacement Cost (October 2013$) **$ 2,700**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	10-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Kolke Consulting		
SYSTEM:	Life-Safety Code Compliance		
OBSERVATION NUMBER:	**C-001**		
PRIORITY:	Immediate		*(Immediate/Near-Term/Far-Term)*

Location

8th floor, 11 & 12th floors

Findings

Stair 1A has exposed steel structural members on the 8th floor that are not fireproofed which appear to fall under the category of secondary members requiring 2 hour protection. See Code Plans. (Deficiency)
Structural strengthening was added at several locations on the 11th and 12th floors of the main tower that appear to be considered part of the primary structural frame (there are definite connections to columns)

Estimated Service Life

NA

Recommendation

Provide fire-proofing of exposed structural steel as part of any TI in this area.

Quantity

NA

Estimated Repair/Replacement Cost (October 2013$) **$ 5,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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ARCHITECTS

FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	10-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Kolke Consulting		
SYSTEM:	Life-Safety Code Compliance		
OBSERVATION NUMBER:	**C-002**		
PRIORITY:	Immediate		*(Immediate/Near-Term/Far-Term)*

Location

6th Floor

Findings

Battery Storage Room and Server Room on 6th floor provided with FM200 system for fire suppression. Doors to rooms not rated and unable to verify rated construction around this room.

Estimated Service Life

NA

Recommendation

If the data center room is kept, change out doors and provide 1-hr enclosure

Quantity

NA

Estimated Repair/Replacement Cost (October 2013$) **$ 8,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	10-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Kolke Consulting		
SYSTEM:	Life-Safety Code Compliance		
OBSERVATION NUMBER:	**C-003**		
PRIORITY:	Immediate		*(Immediate/Near-Term/Far-Term)*

Location

11th Floor

Findings

Some cable sleeves are missing protection; see Code Plans

Estimated Service Life

NA

Recommendation

At all TI areas, insure floor penetrations and rated enclosures have fire caluking

Quantity

NA

Estimated Repair/Replacement Cost (October 2013$) **$ 500**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	10-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Kolke Consulting		
SYSTEM:	Life-Safety Code Compliance		
OBSERVATION NUMBER:	**C-004**		
PRIORITY:	Immediate		*(Immediate/Near-Term/Far-Term)*

Location

9th Floor

Findings

The decks on the 9th story have more than 50 occupants. Though two exits are required, they join by the elevators, thus providing only one means of egress. Also the 2nd exit off the decks on the 9th floor has a path of travel through a private office which is not appropriate. On the 9th floor there are obstructions with only 6' of clearance at the east/west hallways that are north of the elevator shafts. See Code Plans.

Estimated Service Life

NA

Recommendation

Revise storefront on south wall of deck area to provide second door. Revise interior pathway to provide second pathway to Stair 2 (west) and Stair 3 (East) and to remove 6-ft obstruction in cross exitpath.

Quantity

NA

Estimated Repair/Replacement Cost (October 2013$) **$ 25,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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ARCHITECTS

FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	10-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Kolke Consulting		
SYSTEM:	Life-Safety Code Compliance		
OBSERVATION NUMBER:	**C-005**		
PRIORITY:	Immediate		*(Immediate/Near-Term/Far-Term)*

Location

12th Floor

Findings

The 12th floor requires access to 2 exits; one is through a room (that is not permitted to be storage) that leads to the roof to the Stair 3 penthouse. The path of travel is through an air plenum that does not provide a truly viable means of egress; see Code Plans. The 2nd exit on the 12th floor leads through a room that leads to the roof to the Stair 3 penthouse. The room cannot be used for storage. Additionally this "room" has a large grille in the exterior wall to supply air to the pressurization equipment leaving the room an unacceptable environment for safe egress. The door to the roof deck would be difficult to open. See Door Opening Force

Estimated Service Life

NA

Recommendation

Install interior partiton to separate pressuraziation intake air from exit way., revise trheshold to comply and install exit lighing

Quantity

Estimated Repair/Replacement Cost (October 2013$)	**$**	**10,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	10-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Kolke Consulting		
SYSTEM:	Life-Safety Code Compliance		
OBSERVATION NUMBER:	**C-006**		
PRIORITY:	Immediate		*(Immediate/Near-Term/Far-Term)*

Location

Stairways

Findings

There are numerious locations in stairways where there is no penthouse to the roof. There are many locations where handrails are not provided adequately and where handrail extensions are not provided. For example, Stair 3 at the 8th floor can have the bottom extension provided. This would not be considered a deficiency where the extension would be hazardous considering plan configuration. At Stair 4, discharge identification (barrier gates) are not provided. There are several locations where stair enclosures have exterior windows exposed by less than 180 degrees of the other parts of the building. Luminious exitway path markings are not provided.

Estimated Service Life

NA

Recommendation

As it is infeasible to add penthouses or close the exisitng openings in a historic building so no recommendation to address these deficiencies is proposed. As specific TI's are executed, add handrails, and overhaead protection where possible; shift standpipe valves connectors where they protude into pathways, add exit signs where needed; provide luminoius marking at steps, handrails, doors per SBC 1024.

Quantity

NA

Estimated Repair/Replacement Cost (October 2013$) **$ 20,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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ARCHITECTS

FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	10-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Kolke Consulting		
SYSTEM:	Life-Safety Code Compliance		
OBSERVATION NUMBER:	**C-007**		
PRIORITY:	Immediate		*(Immediate/Near-Term/Far-Term)*

Location

General

Findings

An emergency voice/alarm communication system would be required required per SBC 907.5.2.2 per SBC 403.4.3. Additionally, Emergency responder radio coverageis required per SBC 510 of the Seattle Fire Code per SBC 403.4.4.

Estimated Service Life

NA

Recommendation

Consider installing a building-wide two-way voice/Alarm/Communication system Per SBC 1007.8 at the elevator landing on each accessible floor. Also consider testing the building for emergency responder radio coverage and provide a distributed antenna system if coverage is compromised.

Quantity

NA

Estimated Repair/Replacement Cost (October 2013$) **$ 30,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

Schreiber Starling & Lane

ARCHITECTS

FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	27-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	**Coughlin Porter Lundeen**		
SYSTEM:	Structural/Seismic		
OBSERVATION NUMBER:	**S-002**		
PRIORITY:	Immediate	*(Critical/Immediate/Near-Term/Far-Term)*	

Location

1932/1992 building seismic evaluation

Findings

At the connection between the 1932 building and the 1992 addition, the capacity of the north/south steel drag struts, which were added in 1992, is marginal at levels 4 through 10 and there is a lack of redundancy with only two main struts at each floor to connect these buildings. In addition, the drag strut connections were detailed such that they are susceptible to construction errors (the connections cannot be easily inspected as some of the key connection components are cast into the 1992 building shear walls). If the drag struts were to fail, the 1932 building and the addition would act independently, reducing the strength of the 1932 building and allowing the two buildings to pound against each other.

Estimated Service Life

Recommendation

A more redundant strut system could be added which would potentially improve the building's behavior increasing life-safety and decreasing potential potential seismic losses to the building.

Quantity

Assumes two 40-ft drag struts per floor from 1 thru 7. 14 each

Estimated Repair/Replacement Cost (October 2013) **$ 140,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	29-Aug-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	American Elevator		
SYSTEM:	Vertical Transportation		
OBSERVATION NUMBER:	**V-001**		
PRIORITY:	Immediate		*(Immediate/Near-Term/Far-Term)*

Location

Elevators

Findings

All elevators in the City of Seattle are required to comply with retro-active sections of WAC 296-96 – Part D and City of Seattle Chapter 30. In addition when they are modernized they are to comply with A17.3, the national retro-active safety code for existing elevators. A17.3 is published by the American Society of Mechanical Engineers and is enforced in most states but not adopted in the State of Washington or City of Seattle. A17.3 requires all elevators, no matter age or installation date, to meet a minimum level of safety. Five of the elevators had inoperative door restrictors. Several cars had the door restrictors intentionally disabled.

Estimated Service Life

NA

Recommendation

Install proper labeling on power disconnect for cars 3 & 4. (SBC 3011.14); Modify hand rails on top of cars. (Chapter 30); Adjust door restrictors to work properly

Quantity

NA

Estimated Repair/Replacement Cost (October 2013$) **$ 5,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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ARCHITECTS

FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	29-Aug-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	American Elevator		
SYSTEM:	Vertical Transportation		
OBSERVATION NUMBER:	**V-002**		
PRIORITY:	Immediate		*(Immediate/Near-Term/Far-Term)*

Location

Elevators

Findings

Some elevators have rough door operation.

Estimated Service Life

NA

Recommendation

Service and thoroughly adjust all cars prior to re-occupancy

Quantity

8 cars @ 5,000 each

Estimated Repair/Replacement Cost (October 2013$) **$ 56,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

Schreiber Starling & Lane

ARCHITECTS

FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	16-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	**ESHI**		
SYSTEM:	Abatement Hazardous Materials		
OBSERVATION NUMBER:	**H-001**		
PRIORITY:	Immediate		*(Immediate/Near-Term/Far-Term)*

Location

Floors 5-11

Findings

Skim coat on Plaster Walls on east side of Fan Rooms

Estimated Service Life

NA

Recommendation

Remove or cover(encapsulate) east wall plaster
.

Quantity

1200-sf

Estimated Repair/Replacement Cost (October 2013) **$ 6,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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ARCHITECTS

FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	16-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	**ESHI**		
SYSTEM:	Abatement Hazardous Materials		
OBSERVATION NUMBER:	**H-002**		
PRIORITY:	Immediate		*(Immediate/Near-Term/Far-Term)*

Location

Floors 3-11

Findings

Greay paper backing under sheet vinyl floors at exisitng coffee counters in offices

Estimated Service Life

NA

Recommendation

Remove with flooring in conjunction with new TI work

Quantity

2,000-sf

Estimated Repair/Replacement Cost (October 2013) **$ 8,500**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

PETER MEIJER ARCHITECT, PC

Schreiber Starling & Lane

ARCHITECTS

FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	12-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	**Peter Meijer Architect, PC**		
SYSTEM:	Exterior 1933 Building		
OBSERVATION NUMBER:	**E-001**		
PRIORITY:	Immediate		*(Immediate/Near-Term/Far-Term)*

Location

1933 Exterior Façade

Findings

In general, the exterior masonry façade of the original 1933, 15-story Pacific Tower appears to be in good overall condition. Few signs of distress are apparent from the ground on the polychrome masonry, terra cotta, and sandstone façade. Areas of water intrusion are apparent at the terra cotta parapets, coping stone, and sandstone entry façade. White film is present on the masonry surface resulting from ultraviolet degradation of masonry sealers. This film residue will cause no long term harm but is insoluble in water so will remain on the surface until chemically of physically removed. Additionally there is evidence of previous repairs performed at the upper levels of the building following the 2001 Nisqually earthquake Including re-pointing of masonry cracks , remaining crack masonry, and sealant installed within cracks.

Long-term concerns have been written in the masonry repair reports that noted a lack of cavity wall flashing at the steel angle lintels window heads and shelf angles. The reports were written following the repair of dislodged terra cotta window head units resulting from corroded tie anchors on the southeast fifth floor. Construction means and methods are likely to be consistent for the entire structure.

At several levels and several facades, efflorescence is present directly beneath the terra cotta parapet coping stones and approximately sixteen inches below the coping at the through wall flashing course. It is likely that the efflorescence is due to water intrusion through the horizontal and vertical joints of the coping. The appearance above the through wall flashing is an indication that the flashing is effective.

Exfoliation of the sandstone entry façade is a direct result of water intrusion, water runoff, and water saturation from landscape sprinkler systems. Observations from the third floor with direct access to the top of the sandstone façade confirmed the original copper shingles remain in place below a rubberized roof membrane. Proper edge conditions and roof drain connections are missing.

Estimated Service Life

30+ years w/maintenance. Inspection openings of steel lintels and shelf angles - immediate; Masonry and Terra Cotta repointing - immediate - 1 year at coping and open joints, 3 - 5 years for other areas; Sandstone - immediate - 3 years prior

Recommendation

Provide a limited selective deconstruction of the veneer wall in order to investigate the condition of the steel shelf angle and condition of the steel angle and terra cotta anchoring above windows. Repair steel angles as needed and install flashing. Replace steel anchors as required with new stainless steel dowels. Repoint masonry. Repair minor cracking. Cut in masonry expansion joints as needed.

Quantity

Estimated Repair/Replacement Cost (October 2013)	allowance	**$**	**30,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

PETER MEIJER ARCHITECT, PC

Schreiber Starling & Lane

ARCHITECTS

FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	12-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	**Peter Meijer Architect, PC**		
SYSTEM:	Exterior 1950 Addition		
OBSERVATION NUMBER:	**E-002**		
PRIORITY:	Immediate		*(Immediate/Near-Term/Far-Term)*

Location

1950 Exterior Façade

Findings

There is a mix of styles, sash types, materials, function, and installation dates to the existing windows comprising the 1931 portion of the Pacific Tower. The majority of windows are original 3 over 3, double hung, wood sash style. The seven story additions on the south façade installed 2 over 2, double hung, wood sash. Corner windows of both the central projecting tower and east and west facades are aluminum multi-pane replacements of the original steel windows. Original steel windows remain in the upper thirteenth and fourteenth floors of the central south façade tower. Aluminum replacement double hung sash with insulated glass units and false mutins have been installed on the south façade at the west end of the seventh floor, the east end of the ninth floor, on the west elevation at the seventh floor, and in a few miscellaneous locations on the north elevation. Additionally many of the original 2 over 2 wood windows on the north elevation have been replaced with both single hung and fixed steel profile windows

Estimated Service Life

30+ years w/maintenance: 0 years for the lintels; 3 years for repointing

Recommendation

Remove masonry and expose the steel lintels. Clean the lintels and / or replace as needed. Install through wall flashing above all shelf angles and window heads. Install through wall flashing below the parapet. Repoint parapet cap.

Quantity

800 lin ft

Estimated Repair/Replacement Cost (October 2013) **$ 20,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

PETER MEIJER ARCHITECT, PC

Schreiber Starling & Lane

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	12-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	**Peter Meijer Architect, PC**		
SYSTEM:	Exterior 1933 Building		
OBSERVATION NUMBER:	**E-003**		
PRIORITY:	Immediate		*(Immediate/Near-Term/Far-Term)*

Location

1980 Exterior Façade

Findings

The exterior façade of the 1980 addition to the north-east appears to generally be in good condition. The masonry exterior and precast concrete details along the north elevation are typically in good repair with the exception of minor efflorescence along the parapet and at the head of the second story windows. The efflorescence at the parapet is likely the result of water infiltration through the concrete coping where there are open joints and biological growth. The efflorescence at the second story windows appears to be the result of water infiltration through the precast concrete window head units. Minor efflorescence is also present along the west return elevation. Typically the efflorescence is located underneath the precast concrete details. Insufficient flashing may by causing water infiltration.

Estimated Service Life

3-5 years for repointing; 30+ years w/maintenance for masonry

Recommendation

Remove efflorescence and biological growth from façade. Repoint masonry. Long-term provide wall opening to observe conditions of wall cavity and verify the presence and condition of flashing.

Quantity

Estimated Repair/Replacement Cost (October 2013)	allowance	**$**	**10,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

PETER MEIJER ARCHITECT, PC

Schreiber Starling & Lane

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	12-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	**Peter Meijer Architect, PC**		
SYSTEM:	Windows 1933 Building		
OBSERVATION NUMBER:	**W-001a**		
PRIORITY:	Immediate		*(Immediate/Near-Term/Far-Term)*

Location

1933 Tower Windows

Findings

The majority of windows in the 1933 tower are original 3 over 3, double hung, wood sash style. The seven story additions on the south façade installed 2 over 2, double hung, wood sash.
As observed and reported by the masons in their past repair work, the wood windows appear to be in sound condition but suffer from lack of maintenance including re-painting and glazing putty replacement.

Estimated Service Life

30+ years w/regular maintenance

Recommendation

a. Remove the sashes by removing the interior stops and parting bead of the window frame.
b. Clean the frames and sashes of any flaking paint or other coatings that may impede the proper installation of gaskets and seals.
c. Repair all sash weights: Clean and lubricate pulleys, replace sash cords, balance the weights. As an alternative, install a new spring-loaded type balance, insulate and seal the abandoned weight pocket.
d. Caulk and seal the corners and joints in the window frame. This includes all joints between the sill and jambs as well as between the casings and frames.
e. Cut grooves into the sashes where new gaskets will be installed.
f. Prime and paint the window frames and sash.
g. Install new gaskets around the perimeter of the sash. V-groove type gaskets will likely work the best at the jambs and meeting rails, while bubble gaskets work well
h. Reinstall the sash, meeting rails, and interior stops.

Quantity

513 units of varing sizes

Estimated Repair/Replacement Cost (October 2013)	allowance	**$**	**564,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

PETER MEIJER ARCHITECT, PC

Schreiber Starling & Lane

ARCHITECTS

FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	12-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	**Peter Meijer Architect, PC**		
SYSTEM:	Windows 1933 Building		
OBSERVATION NUMBER:	**W-001b**		
PRIORITY:	Immediate		*(Immediate/Near-Term/Far-Term)*

Location

1933 Tower Windows

Findings

There is a mix of styles, sash types, materials, function, and installation dates to the existing windows comprising the 1933 portion of the Pacific Tower. Corner windows of both the central projecting tower and east and west facades are aluminum multi-pane replacements of the original steel windows. Original steel windows remain in the upper thirteenth and fourteenth floors of the central south façade tower. Aluminum replacement double hung sash with insulated glass units and false mutins have been installed on the south façade at the west end of the seventh floor and the east end of the ninth floor, on the west elevation at the seventh floor, and in a few miscellaneous locations on the north elevation. Additionally many of the original 2 over 2 wood windows on the north elevation have been replaced with both single hung and fixed steel profile windows.

At the corner windows, original steel corner vertical pipe supports and steel sills were retained when new aluminum sash units were installed. The steel components are corroding. In one location replacement sash is missing its exterior cover. Aluminum windows are in sound condition although close visual observation of perimeter sealant joints was not conducted.

Estimated Service Life

30+ years w/maintenance

Recommendation

Remove corrossion, prime, and paint all steel components. Replace any failed sealant at steel and aluminum windows interface to adjacenet construction.

Quantity

296 units of varying sizes

Estimated Repair/Replacement Cost (October 2013)	allowance	**$**	**62,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

PETER MEIJER ARCHITECT, PC

Schreiber Starling & Lane
ARCHITECTS

FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	12-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	**Peter Meijer Architect, PC**		
SYSTEM:	Windows 1950 Addition		
OBSERVATION NUMBER:	**W-002**		
PRIORITY:	Immediate		*(Immediate/Near-Term/Far-Term)*

Location

1950 Façade Windows

Findings

Most windows are 3 over 3, double hung wood sash that appear to be in good condition. The east façade, side walk level windows have been replaced with fixed single sash aluminum frame units. Window sills are cast stone. Painting and glazing putty repair and other general maintenance items are needed.

Estimated Service Life

30+ years w/maintenance - wood windows

Recommendation

a. Remove the sashes by removing the interior stops and parting bead of the window frame.
b. Clean the frames and sashes of any flaking paint or other coatings that may impede the proper installation of gaskets and seals.
c. Repair all sash weights: Clean and lubricate pulleys, replace sash cords, balance the weights. As an alternative, install a new spring-loaded type balance, insulate and seal the abandoned weight pocket.
d. Caulk and seal the corners and joints in the window frame. This includes all joints between the sill and jambs as well as between the casings and frames.
e. Cut grooves into the sashes where new gaskets will be installed.
f. Prime and paint the window frames and sash.
g. Install new gaskets around the perimeter of the sash. V-groove type gaskets will likely work the best at the jambs and meeting rails, while bubble gaskets work well
h. Reinstall the sash, meeting rails, and interior stops.

Quantity

44 wood windows

Estimated Repair/Replacement Cost (October 2013)	allowance	**$**	**11,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

PETER MEIJER ARCHITECT, PC

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commer	Observatio 12-Sep-13
BUILDING:	Pacific Tower	
OBSERVATION BY:	**Peter Meijer Architect, PC**	
SYSTEM:	Windows 1980 Addition	
OBSERVATION NUMBER:	**W-003**	
PRIORITY:	Immediate	*(Immediate/Near-Term/Far-Term)*

Location

1980 Façade Windows

Findings

There are 24 aluminum windows along the north elevation and none on either the west or east returns. The windows are fixed and appear to be in good repair.

Estimated Service Life

30+ years w/maintenance

Recommendation

Verify sealant condition at window to masonry interface, replace sealant as necessary.

Quantity

24

Estimated Repair/Replacement Cost (October 2013) **$ 2,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

PETER MEIJER ARCHITECT, PC

Schreiber Starling & Lane

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	12-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	**Peter Meijer Architect, PC**		
SYSTEM:	Windows 1992 Building		
OBSERVATION NUMBER:	**W-004**		
PRIORITY:	Immediate		*(Immediate/Near-Term/Far-Term)*

Location

1990 Façade Windows

Findings

Windows are of two types; fixed aluminum windows in the masonry veneer wall and curtain wall openings. Fixed windows are either single openings or corner windows. The curtain wall is composed of aluminum mullions, glazing, and metal spandrel panels. Biological growth is present on the horizontal surface of the mullions.

Estimated Service Life

30+ years w/maintenance

Recommendation

Investigate cause of biological growth on horizontal aluminum mullions and repair as needed. Verify sealant condition at window/curtain wall to masonry interfaces, replace as necessary.

Quantity

Estimated Repair/Replacement Cost (October 2013)	allowance	**$**	**2,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

Schreiber Starling & Lane

ARCHITECTS

FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	10-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Schreiber Starlling & Lane		
SYSTEM:	Roofing		
OBSERVATION NUMBER:	**R-001**		
PRIORITY:	Immediate		*(Immediate/Near-Term/Far-Term)*

Location

Level 4 Floor East Roof (1950 Addition)

Findings

Roof core samples indicate that the existing roof system consists of is 2 plys of modified asphalt bitumen membrane over a fiberglass basesheet atop 2" of perlite coverboard and 4-8" of tapered polystyrene insulation. The roof has evidence of multiple past repairs including spot repairs and on area in the northeast corner where it has been replaced/patched in with EPDM. While it does not have active leaking according to the Building Engineer, there is evidence of past leaking in the ceiling below and there are areas of blistering. There are three drains but no overflow protection. Metal flashing appears to be in fair to good condition. The seismic parapet bracing has been detailed inconsistently on the roof level with some relying on flashing caps over pitch pans. There is an existing HVAC unit in the northeast corner that serves the PacMed Imaging center with is on low curbing and has multiple piping penetrations. This units needs 24/7 operation making reroofing difficult, but still possible in this area.

Estimated Service Life

3-5 Years (existing)

Recommendation

Remove and replace existing roofing in this area to include: removal of existing roofing and insulation to the decking, new tapered polystyrene (R-30) adhered to the deck in adhesive, 1/4" water-resistant gypsum coverboard, and 80-mil membrane adhered to the coverboard. Include three new overflow scuppers thru existing parapet; new perimeter flashing; treatment of bracing penetrations; cleaning and tuckpointing of the parapet.

Quantity

7,796-sf Roof Area

Estimated Repair/Replacement Cost (October 2013$) **$ 144,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	10-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Schreiber Starlling & Lane		
SYSTEM:	Roofing		
OBSERVATION NUMBER:	**R-004**		
PRIORITY:	Immediate		*(Immediate/Near-Term/Far-Term)*

Location

Roof Decking, Level 3 (Over kitchen area)

Findings

Existing roof system consists of is 2 plys of modified asphalt bitumen membrane over a fiberglass basesheet atop 2" of perlite coverboard and 4-8" of tapered polystyrene insulation. The roof has evidence of multiple past repairs including spot repairs. While it does not have active leaking according to the Building Engineer, there is evidence of past leaking. Metal flashing appears to be in fair to good condition. There is an existing HVAC units serving the kitchen below and there is a lack of drainage crickets on the upslope of their curbs.

Estimated Service Life

5-10 Years (existing)

Recommendation

Remove and replace existing roofing in this area to include: removal of existing roofing and insulation to the decking, new tapered polystyrene (R-30)adhered to the deck in adhesive, 1/4" water-resistant gypsum coverboard, and 80-mil membrane adhered to the coverboard. Include three new overflow scuppers thru existing parapet; new perimeter flashing; treatment of bracing penetrations; cleaning and tuckpointing of the parapet.

Quantity

4,651-sf Roof Area

Estimated Repair/Replacement Cost (October 2013$) **$ 80,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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ARCHITECTS

FIELD CONDITION SURVEY - OBSERVATION REPORT

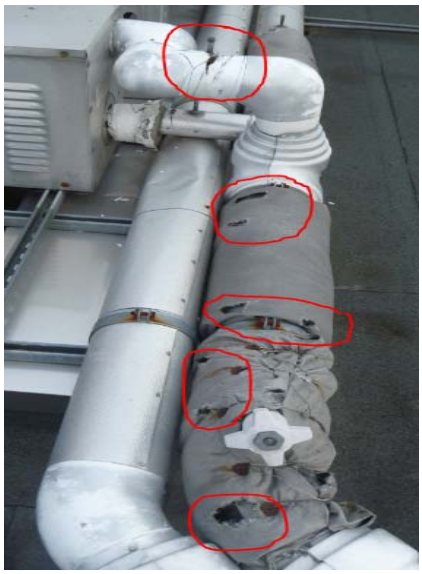
CLIENT:	State of Washington Department of Commerce	Observation Date:	26-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Scott Esher - McKinstry Co.		
SYSTEM:	MDF Dry Cooler (DC/P-6E2)		
OBSERVATION NUMBER:	**DC-02**		
PRIORITY:	Immediate		*(Immediate/Near-Term/Far-Term)*

Location

Level 8 Roof

Findings

Piping insulation has been compromised.



Estimated Service Life

20

Recommendation

Remove compromised insulation. Clean rust off piping and re-insulate piping.

Quantity

Estimated Repair/Replacement Cost (October 2013) **$ 1,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

Schreiber Starling & Lane

ARCHITECTS

FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	26-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Scott Esher - McKinstry Co.		
SYSTEM:	East MDF Glycol Loop		
OBSERVATION NUMBER:	**DC-02**		
PRIORITY:	Immediate		*(Immediate/Near-Term/Far-Term)*

Location

Level 8 Roof

Findings

The east MDF glycol pump (PSR #14-5) will not spin freely. The impeller may be rusted to the casing.

Estimated Service Life

Recommendation

Refurbish or replace the pump. Check the pump motors to ensure they are not failed.

Quantity

1

Estimated Repair/Replacement Cost (October 2013)	**$**	**1,250**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	26-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Scott Esher - McKinstry Co.		
SYSTEM:	East MDF Glycol Loop		
OBSERVATION NUMBER:	**DC-03**		
PRIORITY:	Immediate		*(Immediate/Near-Term/Far-Term)*

Location

Sample taken at the lowest level of the east loop

Findings

There was no indication that there was water at the highest point in the loop (dry coolers). A sample taken from the loop yielded the following results: bright green color, no sedimentation, pH = 7.0, propylene glycol (via refractometer) = <15% (value not readable with local device).

Estimated Service Life

In a well maintained loop propylene glycol will last 30 years.

Recommendation

Run a full analysis on a sample. If the chemistry is correct then verify that loop is properly charged. If the chemistry is not correct then either add the correct amount of glycol to reach the desired amount (20%) or consider flushing the loop and starting over.

Quantity

1

Estimated Repair/Replacement Cost (October 2013) **$ 500**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

Schreiber Starling & Lane

ARCHITECTS

FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	26-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Scott Esher - McKinstry Co.		
SYSTEM:	West MDF Glycol Loop		
OBSERVATION NUMBER:	**DC-04**		
PRIORITY:	Immediate		*(Immediate/Near-Term/Far-Term)*

Location

Sample taken at the lowest level of west MDF loop

Findings

There was no indication that there was water at the highest point in the loop (dry coolers). A sample taken from the loop yielded the following results: dark green color, dark red sedimentation, pH = 8.0, propylene glycol (via refractometer) = <15% (value not readable with local device).

Estimated Service Life

In a well maintained loop propylene glycol will last 30 years.

Recommendation

Run a full analysis on a sample. If the chemistry is correct then verify that loop is properly charged. If the chemistry is not correct then either add the correct amount of glycol to reach the desired amount (20%) or consider flushing the loop and starting over.

Quantity

1

Estimated Repair/Replacement Cost (October 2013) **$ 500**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

Schreiber Starling & Lane

ARCHITECTS

FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	26-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Scott Esher - McKinstry Co.		
SYSTEM:	East IDF Glycol Loop		
OBSERVATION NUMBER:	**DC-05**		
PRIORITY:	Immediate		*(Immediate/Near-Term/Far-Term)*

Location

Sample taken at the lowest level of the east loop

Findings

There was no indication that there was water at the highest point in the loop (dry coolers). A sample taken from the loop yielded the following results: bright yellow color, small amount of green sedimentation, pH = 7.5, propylene glycol (via refractometer) = 23%. (a sample of the east loop was taken but not analyzed – visually it was identical to the west loop).

Estimated Service Life

In a well maintained loop propylene glycol will last 30 years.

Recommendation

Run a full analysis on a sample. If the chemistry is correct then verify that loop is properly charged. If the chemistry is not correct then either add the correct amount of glycol to reach the desired amount (20%) or consider flushing the loop and starting over.

Quantity

1

Estimated Repair/Replacement Cost (October 2013)	**$**	**500**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	26-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Scott Esher - McKinstry Co.		
SYSTEM:	West MDF Glycol Loop		
OBSERVATION NUMBER:	**DC-06**		
PRIORITY:	Immediate		*(Immediate/Near-Term/Far-Term)*

Location

Level 8 Roof

Findings

The west MDF glycol pump (PSR #17-5) will not spin freely. The impeller maybe rusted to the casing.

Estimated Service Life

Recommendation

Refurbish or replace the pump. Check the pump motors to ensure they are not failed.

Quantity

1

Estimated Repair/Replacement Cost (October 2013) **$ 1,250**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	26-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Scott Esher - McKinstry Co.		
SYSTEM:	West IDF Glycol Loop		
OBSERVATION NUMBER:	**DC-07**		
PRIORITY:	Immediate		*(Immediate/Near-Term/Far-Term)*

Location

Level 8 Roof

Findings

The west IDF glycol pump (PSR #18-5) will not spin freely. The impeller may be rusted to the casing.

Estimated Service Life

10

Recommendation

Refurbish or replace the pump. Check the pump motors to ensure they are not failed.

Quantity

1

Estimated Repair/Replacement Cost (October 2013) **$ 1,250**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	26-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Scott Esher - McKinstry Co.		
SYSTEM:	Liebert Deluxe System 3 (AC-6CA and 6CB)		
OBSERVATION NUMBER:	**DC-08**		
PRIORITY:	Immediate		*(Immediate/Near-Term/Far-Term)*

Location

Level 6

Findings

Units have not been run in almost 3 years. Compressors appeared new but were not bolted down. There were notes from 2009 and 2010 concerning leaks and a failed compressor(s). Access screws stripped, glycol system valves in various positions

Estimated Service Life

10

Recommendation

Start-up CRAC's, including valve lineup for operation, special attention should be given to the compressor (and its charge), recharge glycol, replace stripped access screws

Quantity

4

Estimated Repair/Replacement Cost (October 2013) **$ 4250***

*Startup cost only NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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ARCHITECTS

FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	26-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Scott Esher - McKinstry Co.		
SYSTEM:	Liebert Deluxe System 3 (AC-6CA and 6CB)		
OBSERVATION NUMBER:	**DC-09**		
PRIORITY: Near-Term (with TI)			*(Immediate/Near-Term/Far-Term)*

Location

Level 6

Findings

Condensate pan had a residue line that indicated that the condensate may have regularly filled (or exceeded) the condensate pan.

Estimated Service Life

Recommendation

During start-up, verify that the condensate pan drains properly.

Quantity

2

Estimated Repair/Replacement Cost (October 2013) **$ 120**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	9/17/2013
BUILDING:	Pacific Tower		
OBSERVATION BY:	Lucy Gedney - ATS		
SYSTEM:	HVAC Controls		
OBSERVATION NUMBER:	**DDC-01**		
PRIORITY:	Immediate		*(Immediate/Near-Term/Far-Term)*

Location

Every floor

Findings

Facility Manager (FM) uses the Alerton DDC system to schedule all HVAC equipment from major AHUs to small exhaust fans. Since the entire building is empty except for 1/2 of the basement, the FM only cycles on most of the equipment a few hour a week. Because the chiller also serves the 1/2 of the basement that is occupied, the FM needs to run a few of the floors in "occupied" mode all day long in order put enough of a cooling load on the chillers that they will actually operate and send chilled water to the basement tenant. Holiday schedules have been put in and entire building goes into night mode (unoccupied) at night and during weekends. The Envision for BACtalk server can operate on a physical computer or in a virtual environment. Alarm e-mailing is compliant with SMTP servers, enabling the use of public e-mail servers like Google mail (Gmail) without employing a dedicated SMTP server on the site. Alerton's Envision for BACtalk software comes with a built-in Web access feature that can be enabled or disabled based on your operational requirements.

Estimated Service Life

10 years

Recommendation

Benefits to migrating to Envision for BACtalk: 1) The building can retain The majority of existing controls equipment. Only The global controllers (APEXs) and operator workstation need to be upgraded. 2) Field level controllers and sensors can remain in place, allowing for an incremental upgrade of the entire facility. 3) Parts leftover from incremental updates of zones can be used as backups for areas where IBEX components are currently in use. 4) Pro-active planning will mitigate the risk of building downtime due to issues with aging equipment and lack of available parts.

Quantity

1

Estimated Upgrade Cost (October 2013) **$ 50,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	30-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Scott Esher - McKinstry		
SYSTEM:	VAV		
OBSERVATION NUMBER:	**DDC-02**		
PRIORITY:	Immediate	*(Immediate/Near-Term/Far-Term)*	

Location

Multiple

Findings

Some VAVs are only indicating a 10 degree rise in discharge air temperature across the heating element. Design is 30 degree rise.

Estimated Service Life

Recommendation

Inspect the heating elements for the VAVs that are not achieving the designed

Quantity

Approximately 5% of the VAVs: use quant= 10

Estimated Repair/Replacement Cost (October 2013) **$ 2,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

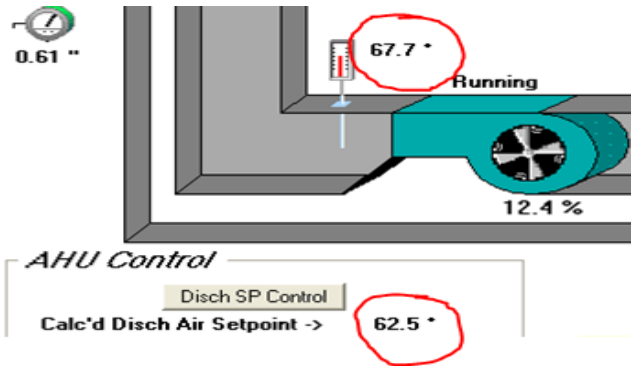
CLIENT:	State of Washington Department of Commerce	Observation Date:	30-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Scott Esher - McKinstry		
SYSTEM:	AHU		
OBSERVATION NUMBER:	**DDC-05**		
PRIORITY:	Immediate		*(Immediate/Near-Term/Far-Term)*

Location

Multiple

Findings

During the global heating test, the discharge air temperature on nearly all AHU exceeded its setpoint by 3-5 degrees.



Estimated Service Life

Recommendation

Verify the location and accuracy of the AHU DAT sensors. Along with Item #4 (HVAC system set points), we think these issues need investigation as part of a general Retro-Commissioning for the total building. Budget for this would be $20,000.

Quantity

Multiple

Estimated Repair/Replacement Cost (October 2013)	**$**	**20,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commer	Observatio 9/17/2013
BUILDING:	Pacific Tower	
OBSERVATION BY:	Joel Crabtree - McKinstry Co.	
SYSTEM:	Chillers - CH-1 & 2	
OBSERVATION NUMBER:	**HVAC-01**	
PRIORITY:	Near term	*(Immediate/Near-Term/Far-Term)*

Location

10th floor mechanical room

Findings

Both of the chillers are in the 7000 hour range for operating hours and Trane recommends teardowns at around the 24,000 hour range. Maintenance is performed on a 1/4ly basis.

Estimated Service Life

15 years

Recommendation

The oil is particularly dark and I might recommend an oil change sooner than later. The Purge canisters are over-due to be changed out. For yearly maintenance, it is recommended two separate inspections, summer and winter. For winter, change oil and purge filters along with condenser tube brushing. For summer, get 2 to 3 operating inspections to load machines and get accurate numbers on the refrigeration side. In summer, also pull oil samples so you can address any issues found in winter when units are typically shut down for season. Also, replace the rupture disk with a Trane Rupture Guard. This will be more environmentally friendly by maintaining a safe pressure without dumping the complete charge.

Quantity

2

Estimated Repair/Replacement Cost (October 2013) **$ 3,000**

Estimated repair and testing- $1500 each, Estimated maintenance costs is $3,300/yr./each. NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commer	Observation Date:	9/17/2013
BUILDING:	Pacific Tower		
OBSERVATION BY:	Ray Burton - McKinstry Co.		
SYSTEM:	Boiler - B-1		
OBSERVATION NUMBER:	**HVAC-02**		
PRIORITY:	Immediate	*(Immediate/Near-Term/Far-Term)*	

Location

2nd floor roof

Findings

These spaces that this units serves (kitchen and locker room) are no longer being used and the boiler has been shut down and gas turned off for the past three years.

Estimated Service Life

15 years

Recommendation

After tenants are found for these spaces, and before starting up, completely overhaul the heat exchanger and burners and have controls reviewed by manufacturer since these units have been out in the elements. Also check to make sure it is operating at it's peak efficiency (84% rated) by performing a gas-flue analysis. When unit needs replacement, install highest efficiency unit available at time. Check with PSE for any conservation incentive for high-efficiency replacement.

Quantity

1

Estimated Repair/Replacement Cost (October 2013) **$ 2,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commer	Observatio 9/17/2013
BUILDING:	Pacific Tower	
OBSERVATION BY:	Joel Crabtree - McKinstry Co.	
SYSTEM:	HVAC - Cooling Tower (CT-1)	
OBSERVATION NUMBER:	**HVAC-03**	
PRIORITY:	Immediate	*(Immediate/Near-Term/Far-Term)*

Location

10th floor roof

Findings

The cooling tower is in above average condition for its age. The sump level is too high and needs to be adjusted. The old style sump level control bends easily and the water level gets too high, allowing the makeup water to just run straight down the overflow drain wasting hundreds or thousands of gallons per year.

Estimated Service Life

20 years

Recommendation

Drain and clean sump. Replace old float style sump level control to new electronic style control (should pay for itself in less than a year in water savings.

Quantity

1

Estimated Repair/Replacement Cost (October 2013) **$ 3,500**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commer	Observatio	9/17/2013
BUILDING:	Pacific Tower		
OBSERVATION BY:	Joel Crabtree - McKinstry Co.		
SYSTEM:	Chillers - CH-1 & 2		
OBSERVATION NUMBER:	**HVAC-04**		
PRIORITY:	Immediate	*(Immediate/Near-Term/Far-Term)*	

Location

10th floor mechanical room

Findings

The existing chillers are 350 ton Trane Centravac centrifugal chillers. These chillers were installed in 1999 and based on recorded run hours have roughly 20 years of expected life left.

Estimated Service Life

20 years +

Recommendation

These chillers are oversized for the near term projected cooling load. This will lead to excessive cycling of the chillers, reducing equipment life. Also, due to the lack of variable frequency drive (VFD) control of the compressors these units are inefficient at part load and low load conditions. A retrofit of the chillers to provide VFD speed control of the compressors will improve the part load efficiency of the chillers, reduce false loading at low-load conditions, and reduce cycling which will extend the expected equipment life. Seattle City Light may offer an incentive for the retrofit which could reduce the cost of implementing the measure.

Quantity

2

Estimated Repair/Replacement Cost (October 2013) **$ 168,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

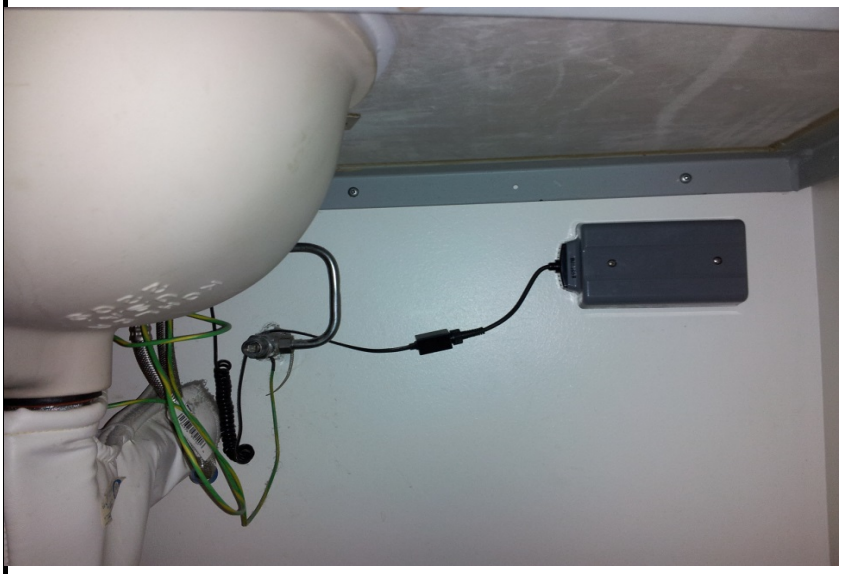
CLIENT:	State of Washington Department of Commerce	Observation Date:	18-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Curt Schnabel- McKinstry		
SYSTEM:	Plumbing		
OBSERVATION NUMBER:	**P-002**		
PRIORITY:	Immediate	*(Immediate/Near-Term/Far-Term)*	

Location

All restrooms

Findings

Existing sensor type facets (Sloan) are battery operated and outdated. Lack of use is detrimental to the function of internal solenoid valves. The battery power is high maintenance and environmentally unfriendly.



Typical battery box for sensor type lavatory faucets.

Typical lavatory SMK faucet (Sloan).

Estimated Service Life

N/A

Recommendation

Replace all (34) battery powered sensor type lavatory sink faucets with solar powered (Sloan - "Basis") faucets.
Model # EFX275

Quantity

34

Estimated Repair/Replacement Cost (October 2013) **$ 45,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	18-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Curt Schnabel- McKinstry		
SYSTEM:	Plumbing		
OBSERVATION NUMBER:	**P-003**		
PRIORITY:	Immediate		*(Immediate/Near-Term/Far-Term)*

Location

2nd floor - commercial kitchen - pot sink faucet

Findings

The spout of one of the "Chicago" faucets in the kitchen is bent.

Bent faucet spout in community kitchen requires replacement. T&S Brass, 12".

Estimated Service Life

None

Recommendation

Replace damaged spout - see photo above

Quantity

(1) Chicago 12" low rise spout

Estimated Repair/Replacement Cost (October 2013)	**$**	**600**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	18-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Curt Schnabel- McKinstry		
SYSTEM:	Plumbing		
OBSERVATION NUMBER:	**P-004**		
PRIORITY:	Immediate		*(Immediate/Near-Term/Far-Term)*

Location

Air handler rooms (4)

Findings

Trap primer manifolds are separated and misaligned. Probably due to some sort of shock or impact. Trap primers may be seized due to lack of use - valved off.

Typical trap primer manifold disconnected.

3rd Floor, East air handler room trap primer and manifold removed to accommodate hose bibb installation. Trap primer and manifold need to be reinstalled.

Estimated Service Life

Damaged

Recommendation

Replace (13) PPP# PR-500 trap primers in all air handler rooms, correct piping alignment for proper manifold attachment, and secure to adjacent concrete walls.

Quantity

13 - Reference quote from Keller

Estimated Repair/Replacement Cost (October 2013) **$ 8,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	18-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Curt Schnabel- McKinstry		
SYSTEM:	Plumbing		
OBSERVATION NUMBER:	**P-005**		
PRIORITY:	Immediate		*(Immediate/Near-Term/Far-Term)*

Location

Basement area

Findings

The existing water heater is nearing the end of its useful life. Replace with high efficient HWT.

HWT on DW Pump Skid

Estimated Service Life

20+ years following replacement

Recommendation

Replace with high efficient HWT.

Quantity

1

Estimated Repair/Replacement Cost (October 2013) **$ 7,500**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	24-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	**McKinstry-**		
SYSTEM:	Storm/Sewer		
OBSERVATION NUMBER:	**U-001**		
PRIORITY:	Immediate		*(Immediate/Near-Term/Far-Term)*

Location

Exterior to the tower

Findings

Storm and sanitary lines to the south and north of the existing tower were inspected via camera based on the locations provided by the onsite facility manager(Kasey Krohn). The following issues were noted during the inspection: 1. Catch basin by the south entrance to the clinic located in the landscape needs to be jetted. 2. Catch basin by the east garage entrance needs to be jetted upstream. 3. Catch basin #23 could not be inspected due to roots. 4. Sewer line located on NE side of tower, past the loading dock area needs jetting to remove roots.

Estimated Service Life

Recommendation

Provide jetting at the 4 listed areas and recamera to verify cleaning.

Quantity

Estimated Repair/Replacement Cost (October 2013)	**$**	**18,500**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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Department of Commerce
Innovation is in our nature.

PACIFIC TOWER ASSESSMENT

Near-Term Recommendations

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	18-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Curt Schnabel- McKinstry		
SYSTEM:	Plumbing		
OBSERVATION NUMBER:	**P-001**		
PRIORITY:	Near Term		*(Immediate/Near-Term/Far-Term)*

Location

All common area restrooms within confined tenant space

Findings

The existing sensor type flushometers are prone to solenoid valve and diaphragm failure due to lack of use resulting in corrosion, mineral deposits and rubber decay. Water/mineral stains are apparent on all toilets and urinals. These might be removable with pumice or muric acid.

Typical toilet with hard water stains.

Estimated Service Life

30 Years with replacement and maintenance

Recommendation

Replace all flushometer side mount activators (sensor units) and diaphragm assemblies in common area toilets and urinals within the tenant space.

Quantity

73 toilets, 23 urinals

Estimated Repair/Replacement Cost (October 2013) **$ 35,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	29-Aug-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	American Elevator		
SYSTEM:	Vertical Transportation		
OBSERVATION NUMBER:	**V-003**		
PRIORITY:	Near term		*(Immediate/Near-Term/Far-Term)*

Location

Elevators

Findings

Most the elevators (6) have GAL door operators which are not closed loop and are nearing end of useful life.

Estimated Service Life

NA

Recommendation

Install closed-loop operators on Cars 1-6

Quantity

6 cars @ 35,000 each

Estimated Repair/Replacement Cost (October 2013$) **$ 210,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	29-Aug-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	American Elevator		
SYSTEM:	Vertical Transportation		
OBSERVATION NUMBER:	**V-004**		
PRIORITY:	Near term		*(Immediate/Near-Term/Far-Term)*

Location

Elevators

Findings

Gearless Hoists will require upgrade/replacement in 5+ years

Estimated Service Life

NA

Recommendation

Repair/replace gearless hoist machines

Quantity

3 cars @ 12,000 each

Estimated Repair/Replacement Cost (October 2013$) **$ 36,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	29-Aug-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	American Elevator		
SYSTEM:	Vertical Transportation		
OBSERVATION NUMBER:	**V-005**		
PRIORITY:	Near Term		*(Immediate/Near-Term/Far-Term)*

Location

Elevators

Findings

Cab interiors in the older elevators have 10+ years of wear and should be planned to be upgraded in 10-15 years

Estimated Service Life

NA

Recommendation

Upgrade Interiors in cars 1-5

Quantity

5 cars @ 25,000 each

Estimated Repair/Replacement Cost (October 2013$) **$ 125,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

PETER MEIJER ARCHITECT. PC

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	12-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	**Peter Meijer Architect, PC**		
SYSTEM:	Exterior 1992 Addition		
OBSERVATION NUMBER:	**E-004**		
PRIORITY:	Far-Term	*(Critical/Immediate/Near-Term/Far-Term)*	

Location

1992 Exterior Façade

Findings

The 1992 addition to the north is a combination of curtain wall openings and masonry veneer with punched window openings. Stone tiles accent the north entrance. The overall condition of all components is typically very good. The masonry veneer is in good condition with appropriately located expansion joints and weeps. No apparent water infiltration is visible at window openings, and mortar joints appear to be in good condition. The curtain wall is typically in good condition, however, some biological growth is present on the horizontal surface of the aluminum mullions. The stone tiles appear to be in good condition. Also to note is an open shaft between the west elevation of the 1992 addition and the original 1933 structure.

Estimated Service Life

3 - 5 years.

Recommendation

Maintain sealant joints. Repair and replace any failed joints

Quantity

Estimated Repair/Replacement Cost (October 2013)	allowance	**$**	**20,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	16-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	**Clevenger Associates**		
SYSTEM:	Food Service/Kitchen Equipment		
OBSERVATION NUMBER:	**K-001**		
PRIORITY:	Near-Term (with TI in kitchen/servery)	*(Critical/Immediate/Near-Term/Far-Term)*	

Location

2nd Floor Dining Facility

Findings

The facility and equipment appears to be in good condition with major equipment item's and systems in place for a functional kitchen and servery. There are no obvious major code violations or deficiencies. While the codes have changed for the foodshields (sneeze guards) on the servery counters, exhaust hoods and fire suppression systems they should be fine and accepted by the local code authority unless major renovations are made to the kitchen and servery, where they may be required to be updated.

Estimated Service Life

13-18 years

Recommendation

A complete cleaning of all spaces and equipment items will need to be done. A few pieces of cooking equipment have rust on the cooking surfaces which is to be expected being idle for this amount of time. The rust can be cleaned and the equipment made operational.
The gas fired stone hearth oven in the servery will require cleaning of the stone deck and may require filling of existing cracks in the stone deck. These cracks are normal and do develop over time with the use of the oven.
The refrigeration rack/system will require a factory authorized service technician to perform a systems check for refrigerant capacities and go through steps as required for system restart, and testing of temperatures.
The exhaust hoods, fire suppression systems within and fans serving them will also require a factory authorized service technician to perform a systems check before being started up and put into continuous operation. This will include confirming that exhaust and make-up air fans are in working order with new belts etc. and operating at required CFM volumes, fire suppression systems are in proper working order, and duct work is clean.
The tray return accumulator assembly will need to have the tray racks re-assembled and installed to the accumulator.
A few utility drawers below worktables will need repair to operate smoothly.
All other individual equipment should be checked and started by a Foodservice Equipment Service agency to ensure proper working order. New Equipment will be needed for the dining facility to become operational. The list of needed equipment can be found in the attached narrative.

Quantity

7,400 sf Dining Facility

Estimated Repair/Replacement Cost (October 2013) **$ 55,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	24-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Duke Erickson- McKinstry		
SYSTEM:	Fire Sprinkler		
OBSERVATION NUMBER:	**FS1**		
PRIORITY: Near term		*(Critical/Immediate/Near-Term/Far-Term)*	

Location

All Floors

Findings

The electrical riser closets, 2 per floor, do not have Sprinkler coverage. This may be an exemption by the Fire Marshall's office but these closets are large enough to be utilized as storage so this could be a future issue.

Estimated Service Life

40

Recommendation

Budget installation for 14 floors

Quantity

28

Estimated Repair/Replacement Cost (October 2013) **$ 7,500**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	24-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Duke Erickson- McKinstry		
SYSTEM:	Fire Sprinklers		
OBSERVATION NUMBER:	**FS2**		
PRIORITY: Near term		*(Critical/Immediate/Near-Term/Far-Term)*	

Location

12th floor elevator pressurization fan room

Findings

(1) 200 degree sprinkler head is mixed in with (2) 165 degree heads. All heads in this area should be 165 degree.

Estimated Service Life

Recommendation

Budget for this work

Quantity

1

Estimated Repair/Replacement Cost (October 2013) **$ 400**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	24-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Duke Erickson- McKinstry		
SYSTEM:	Fire Sprinklers		
OBSERVATION NUMBER:	**FS3**		
PRIORITY: Near term		*(Critical/Immediate/Near-Term/Far-Term)*	

Location

12th Floor room 12210

Findings

Same (2) 200 degree sprinkler heads are mixed in with (2) 165 degree heads. All heads in this area should be 165 degrees

Estimated Service Life

40

Recommendation

Budget for this work

Quantity

2

Estimated Repair/Replacement Cost (October 2013) **$ 400**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	24-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Duke Erickson- McKinstry		
SYSTEM:	Fire Sprinklers		
OBSERVATION NUMBER:	**FS4**		
PRIORITY: Near term		*(Critical/Immediate/Near-Term/Far-Term)*	

Location

9th floor entry to north expansion

Findings

(2) sprinkler heads are 30 feet apart. (1) head needs to be added to meet minimum requirements for coverage.

Estimated Service Life

40

Recommendation

Add a new head

Quantity

1

Estimated Repair/Replacement Cost (October 2013) **$ 550**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	24-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Duke Erickson- McKinstry		
SYSTEM:	Fire sprinklers		
OBSERVATION NUMBER:	**FS5**		
PRIORITY: Near term		*(Critical/Immediate/Near-Term/Far-Term)*	

Location

8th Floor outside closet #8206

Findings

An upright sprinkler head is 8'6" from the entry wall. This head needs to be relocated to meet minimum requirements for coverage.

Estimated Service Life

40

Recommendation

Budget for this work

Quantity

1

Estimated Repair/Replacement Cost (October 2013) **$ 480**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	
BUILDING:	Pacific Tower		
OBSERVATION BY:	Duke Erickson- McKinstry		
SYSTEM:	Fire Sprinklers		
OBSERVATION NUMBER:	**FS6**		
PRIORITY: Near term			*(Critical/Immediate/Near-Term/Far-Term)*

Location

6th Floor SE corner office by stair #6

Findings

An upright sprinkler head is 8'6" from one wall and also blocked by a VAV box. This head needs to be relocated and changed to a pendant head.

Estimated Service Life

40

Recommendation

Budget for this work

Quantity

1

Estimated Repair/Replacement Cost (October 2013) **$ 480**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	24-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Duke Erickson- McKinstry		
SYSTEM:	Fire Sprinklers		
OBSERVATION NUMBER:	**FS7**		
PRIORITY: Near term		*(Critical/Immediate/Near-Term/Far-Term)*	

Location

6th Floor #6305

Findings

(1) 200 degree upright sprinkler head is mixed in with 165 degree sprinkler heads. All heads in this area should be 165 degree.

Estimated Service Life

40

Recommendation

Budget to replace

Quantity

1

Estimated Repair/Replacement Cost (October 2013) **$ 400**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	24-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Duke Erickson- McKinstry		
SYSTEM:	Fire Sprinklers		
OBSERVATION NUMBER:	**FS8**		
PRIORITY: Near term		*(Critical/Immediate/Near-Term/Far-Term)*	

Location

4th Floor SE corner of the '92 addition

Findings

(1) sprinkler head is 9'4" from the entryway. An upright sprinkler head needs to be added in this location to meet minimum requirements for coverage.

Estimated Service Life

40

Recommendation

Budget for this work

Quantity

1

Estimated Repair/Replacement Cost (October 2013) **$ 400**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	24-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Duke Erickson- McKinstry		
SYSTEM:	Fire Sprinklers		
OBSERVATION NUMBER:	**FS9**		
PRIORITY: Near term		*(Critical/Immediate/Near-Term/Far-Term)*	

Location

2nd floor kitchen throughout

Findings

Approximately (38) 200 degree pendant sprinkler heads are corroded and/or loaded with greasy residue. These sprinklers need to be replaced.

Estimated Service Life

40

Recommendation

Budget for replacement

Quantity

38

Estimated Repair/Replacement Cost (October 2013) **$ 2,500**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	24-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Duke Erickson- McKinstry		
SYSTEM:	Fire Sprinklers		
OBSERVATION NUMBER:	**FS10**		
PRIORITY: Near term		*(Critical/Immediate/Near-Term/Far-Term)*	

Location

East annex rooms #1946 and 1947

Findings

These is no sprinkler heads in either of these rooms. (3) sprinkler heads need to be added to meet minimum requirements for coverage.

Estimated Service Life

40

Recommendation

Budget for this work.

Quantity

3

Estimated Repair/Replacement Cost (October 2013) **$ 1,100**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	24-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Duke Erickson- McKinstry		
SYSTEM:	Fire Sprinklers		
OBSERVATION NUMBER:	**FS11**		
PRIORITY: Near term		*(Critical/Immediate/Near-Term/Far-Term)*	

Location

Fire pump room

Findings

There are no quick response sprinkler heads in the spare head box. These needs to be at least (6) spare quick response 165 degree heads and (3) quick response 200 degree heads available in the head box.

Estimated Service Life

40

Recommendation

Budget for this work

Quantity

6 and 3

Estimated Repair/Replacement Cost (October 2013) **$ 350**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	24-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Duke Erickson- McKinstry		
SYSTEM:	Fire Sprinklers		
OBSERVATION NUMBER:	**FS12**		
PRIORITY: Near term		*(Critical/Immediate/Near-Term/Far-Term)*	

Location

Basement women's locker room boiler closet

Findings

A pendant sprinkler head from a former suspended ceiling still remians but the ceiling has been removed. This head needs to be changed to an upgright sprinkler head.

Estimated Service Life

40

Recommendation

Budget for this work

Quantity

1

Estimated Repair/Replacement Cost (October 2013) **$ 400**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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PACIFIC TOWER ASSESSMENT

Far-Term Recommendations

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	29-Aug-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	American Elevator		
SYSTEM:	Vertical Transportation		
OBSERVATION NUMBER:	**V-006**		
PRIORITY:	Far-term		*(Immediate/Near-Term/Far-Term)*

Location

Elevators

Findings

5 of nine cars were seismically upgraded in 2001 while 4 have had no upgrades

Estimated Service Life

NA

Recommendation

Provide upgrading counterweight guide rails with seismic plates and brackets at cars that were not upgrades in 2001

Quantity

4 cars @ 60,000 each

Estimated Repair/Replacement Cost (October 2013$) **$ 240,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	10-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Schreiber Starlling & Lane		
SYSTEM:	Roofing		
OBSERVATION NUMBER:	**R-002**		
PRIORITY:	Far Term		*(Immediate/Near-Term/Far-Term)*

Location

Upper Roof Levels 10-15 and areas of built-up roofing from 4-9

Findings

These roof systems consist of is 2 plys of modified asphalt bitumen membrane over a fiberglass basesheet atop 2" of perlite coverboard and 4-8" of tapered polystyrene insulation. They drain well and are in good condition

Estimated Service Life

10-15 Years

Recommendation

Plan to replace existing roofing in this area at end of service life. removal of existing roofing and insulation to the decking, new tapered polystyrene adhered to the deck in adhesive, 1/4" water-resistant gypsum coverboard, and 80-mil membrane adhered to the coverboard.

Quantity

12,674-sf Roof Area

Estimated Repair/Replacement Cost (October 2013$) **$ 234,000**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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FIELD CONDITION SURVEY - OBSERVATION REPORT

CLIENT:	State of Washington Department of Commerce	Observation Date:	10-Sep-13
BUILDING:	Pacific Tower		
OBSERVATION BY:	Schreiber Starlling & Lane		
SYSTEM:	Roofing		
OBSERVATION NUMBER:	**R-003**		
PRIORITY:	Far Term		*(Immediate/Near-Term/Far-Term)*

Location

Roof Decking, 8th and 9th floors

Findings

These roof systems consist of a fluid-applied membrane over the concrete deck covered with insulation (assumed to be extruded polystyrene) covered by a cast-in-place concrete traffic slab. They drain well and are in good condition

Estimated Service Life

10-15 Years

Recommendation

Plan to replace existing roofing in this area at end of service life. &removal of existing roofing and insulation to the decking, new fluid-applied membrane, protection sheet, high-density extruded polystyrene insulation and concrete toping

Quantity

3,500-sf Roof Area

Estimated Repair/Replacement Cost (October 2013$) **$ 210**

NOTE: Estimate is DIRECT costs only and does not include Contractor's OH+P, General Conditions, and other costs such as design, permits, taxes, contingencies, ETC.

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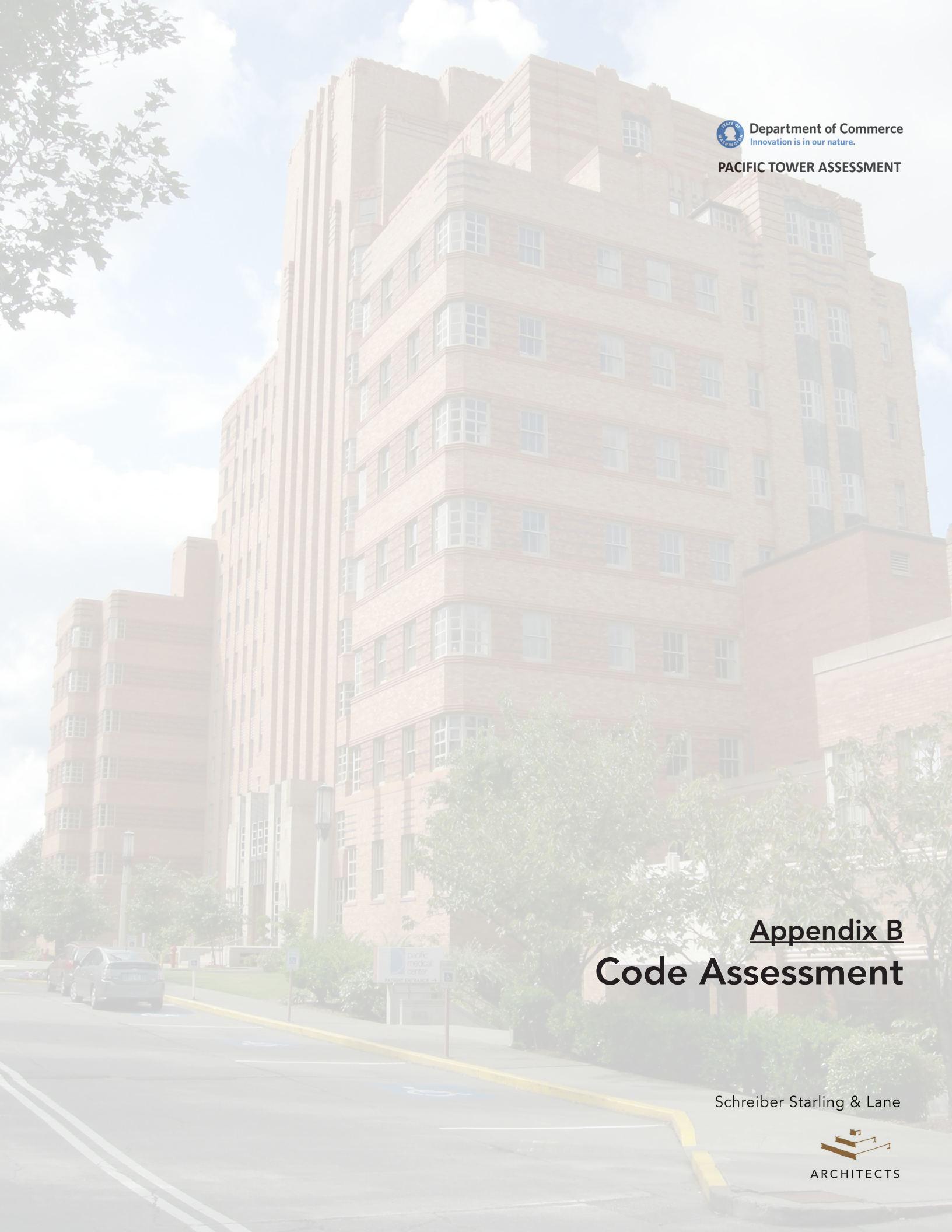

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PACIFIC TOWER ASSESSMENT

Appendix B
Code Assessment

Schreiber Starling & Lane

ARCHITECTS

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September 28, 2013

Keith Schreiber
Schreiber Starling & Lane Architects
185 University St.
Seattle, WA 98101

Subject: Pacific Tower Building at 1200 12th Ave S
Code Evaluation to Consider Life-Safety Code Deficiencies

Description

The Pacific Tower Building is currently occupied on the basement and ground floor levels by PacMed. The State of Washington General Administration intends to lease a portion of the basement as well as the 1st through 14th floors of this existing historical building. The building underwent an extensive modernization and addition in 2001. In order for the State to finalize their due diligence study of the building, they need to have a list of code deficiencies. The scope of this analysis considers a visual walkthrough of the structure, review of the limited building plans on file, and a log of existing conditions to determine deficiencies.

Scope

We are providing a code evaluation after performing a limited field survey on 9/19/13 and 9/27/13 and reviewing the drawings of Pacific Tower provided to us by your office. We were assisted by Thomas Johanson, AIA of your office in performing the initial field study. The purpose of the field study was to get a general understanding of the layout of the building and spaces and take general measurements to verify code compliance. The purpose of this evaluation is to determine the applicable life-safety requirements in order to create a report of potential code deficiencies in order for your client to consider potential concerns before leasing the building. We have only reviewed the floor levels that are intended to be occupied by the tenant, which include a small portion of the basement, none of the ground floor, and the complete floor areas of Floors 1 through 14. We have not reviewed any parking areas. It is our understanding that you will provide your clients separate evaluations for fire, accessibility, energy, elevator, mechanical, plumbing and electrical code requirements as well as historic requirements for the city that are unrelated and not included in our evaluation.

Limitations

We have limited our evaluation to the nonstructural life-safety aspects of the 2009 Seattle Building Code (SBC). Our review is limited to field observations that are readily viewable as constructed. No destruction of assemblies was conducted to verify code conformance. An example of this is clearly demonstrated in evaluating fire-resistive assemblies. Clearly we cannot open up existing walls to

verify that a stair enclosure is constructed with 2-hour construction; however, we did verify that stair enclosure doors were protected with 1-1/2-hour assemblies with closing devices typically, which is appropriate for required hourly rating. Our report of deficiencies will address any readily visible components that appear out of code compliance. Our report reflects our limited budget for such work; therefore, we prioritized key life-safety issues to focus on. Our observations have been generalized by evaluating the majority of components, not each individual component. For example, we checked most stair door ratings; however, some labels have been painted over. Judgment was used as to whether or not to find each assembly acceptable considering similar conditions in related portions of the structure. General observations of stairs, for example, were made visually. Where code compliance appeared questionable, some measurements were taken for confirmation.

Where it appears that a portion of the building is not complying with current code requirements or we are unable to verify compliance because it is out of the scope of our review or area of expertise, we have noted in our observations that additional measures can be pursued. For example, we may refer to the Mechanical Engineer to evaluate compliance of a mechanical system or the Seattle Fire Department to verify compliance of a fire-safety provision being met for this building. In addition, we have consulted with the Building Engineer, Kasey Krohn, of JSH Properties to verify certain code issues. Our observations note this where we are relying on confirmation from the Building Engineer.

Applicability to Existing Buildings

Our report of deficiencies should not be construed to imply that it constitutes a list of items required to be changed. SBC Chapter 34 addresses requirements for existing buildings. In general, alterations including tenant improvements must be code complying; however, there is always consideration of existing conditions, historic implications, and feasibility of bringing existing features up to current code requirements. This should be understood by the client and considered in determining any specific immediate needs for the structure. Refer to the Alterations portion of our evaluation.

Use of Spaces

Our evaluation of the building only considers what appears to be the previous intended use of each space. For example, our evaluation assumes that office areas remain as office areas. More concentrated occupant load factors were applied at obvious assembly spaces only; otherwise, the generic occupant load factor for offices was used. The use is not inherently clear at all spaces; however, we used the room labels on the floor area plans we were provided to determine the occupant load factors to apply. Many rooms are not labeled, so they are grouped typically with the adjacent spaces. We also took a generalized approach to determine occupant loads knowing that our evaluation may not be based on exact areas or identified uses. We also roughly scaled the drawings to approximate areas of certain spaces. Generalized areas were used to determine occupant loads for our study.

Use

Our report is for the use of Schreiber Starling & Lane Architects to use as a tool for evaluating the structure to meet the contractual obligations with their client. No other use of this evaluation or report is intended.

If you have any questions or require additional clarification on any of the items contained in this letter, please contact me directly at 425-255-3099.

Sincerely,
KOLKE CONSULTING GROUP, INC.

Crystal Kolke, CBO
Senior Code Specialist
Enclosures (Pacific Tower Code Evaluation and Observations, Pacific Tower Code Plans with Annotations)

cc: Keith Schreiber, Schreiber Starling & Lane Architects, schreiber@sslarchitects.com
Tom Johanson, Schreiber Starling & Lane Architects, johanson@sslarchitects.com

CATEGORY	CURRENT CODE REQUIREMENT	OBSERVATIONS AND DEFICIENCIES
General		
Applicable Code	2009 Seattle Building Code (SBC)	Current applicable code.
Sprinklers	NFPA-13 per SBC 903.3.1.1 with secondary water supply per SBC 903.3.5.2 as required by SBC 403.3.	Confirmed existing sprinkler system with building engineer. Building Engineer has indicated that secondary water supply is not provided; however, the 1992 drawings indicate that existing water supply meet the requirements for an alternates source.
Type of Construction	IA	Type of construction confirmed by city records.
Occupancies and Allowable Areas		
Occupancies	**A-2** Portions of the building for assembly uses intended for food and/or drink consumption; SBC 303.1. **A-3** Portions of the building for assembly uses with 50 or more occupants; SBC 303.1. **B** Portions of buildings for office uses; SBC 304.1.	
Stories and Basements	To determine stories above grade plane, grade plane must be determined. Grade plane is a reference plane representing the average of finished ground level adjoining the building at exterior walls per SBC 202. Building height is the vertical distance from grade plane to the average height of the highest roof surface.	14 stories with two basement levels assumed. It is unclear how many stories are above grade plane and how many stories are considered basements. This information is not needed for our evaluation.
Building Area	274,009 s.f.	
Table 503, IA Tabular Values	Height Unlimited Area Unlimited	
Mixed Occupancies	This building contains nonseparated occupancies per SBC 508.3.	
Incidental Uses	Furnace rooms where any piece of equipment is over 400,000 Btu per hour input and rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower are considered incidental uses and are required by SBC 508.2.5.2 to be separated from the remainder of the building by construction capable or resisting the passage of smoke, doors to be self-closing, and doors to be without air transfer openings.	Though we are unable to verify equipment specifications to determine if the additional level of fire protection is required, we did verify on site that mechanical rooms typically have 1-1/2 hour doors that appear to exceed the minimum code requirements.

Fire Resistance		
Fire-Resistance Ratings of Building Elements	Per IBC Table 601, building elements are noncombustible and all building elements must carry the following ratings: Primary structural frame 3 hours* Exterior bearing walls 3 hours Interior bearing walls 3 hours* Nonbearing exterior partitions per Table 602 Nonbearing interior partitions 0 hours Floor construction 2 hours^ Roof construction 2 hours^ *Rating can be reduced one hour when supporting the roof only ^includes associated secondary members	In general, we are unable to confirm construction with visual observations; however, construction does appear to be in general conformance with these requirements except where specifically noted below.
Associated Secondary Members	SBC 202 provides an interpretation I202S which states the following: A secondary member (component or subsystem) is a structurally significant portion of the building that is supported by the primary structure, but which does not contribute to the strength or stability of the primary structure. Secondary members have internal structural integrity to perform their function and have their interactions with and its attachments to, the primary structure analyzed and designed to assure its proper integration within the total structure.	Stair 1A has exposed steel structural members on the 8th floor that are not fireproofed which appear to fall under the category of secondary members requiring 2 hour protection. See Code Plans. (Deficiency) Structural strengthening was added at several locations on the 11th and 12th floors of the main tower that appear to be considered part of the primary structural frame (there are definite connections to columns) as well as associated connections and bracing. See Code Plans. These members may be protected with intumescent paint; however, we are unable to determine this visually. (Deficiency) The following locations are probably not considered associated secondary members to the floors or roof, but more associated to the exterior wall or openings in the exterior wall. Protection at these locations should be evaluated by a structural engineer to determine if a fire-resistive rating would be appropriate: 1) The north W-shaped window on the 9th floor has exposed steel that supports the exterior wall. See Code Plans. 2) The exterior glass wall has exposed bracing at the 8th floor conference room. See Code Plans.

Sprayed Fire-Resistant Materials (SFRM)	The bond strength of SFRM installed throughout the building must have a minimum bond strength of 430 psf per SBC 403.2.4.	The bond strength of SFRM for standard buildings is 150 pcf. This change to the code was a result of the investigation of the World Trade Center Report and it is likely that the SFRM materials currently in the building do not meet this requirement. (Deficiency) Please note SBC 3401.4.1 permits existing materials already in use in a building in compliance with the requirements or approvals in effect at the time of their erection to remain in use unless determined by the building official to be dangerous to life, health or safety.
Fire Separation Distances	The distance measured from each building face to an interior lot line; the centerline of a street, alley, or public way; or an imaginary line between two buildings on the property. Per SBC Table 602, where there is at least 30 feet, exterior walls are not required to be rated due to fire separation distance and no protected openings are required.	A minimum of 30' appears to be provided around the building thus not requiring additional ratings due to fire separation distance.
Fire Detection System	In lieu of automatic sprinklers, a fire detection system in accordance with SBC 907.2 and 1-hour fire barriers are required at batteries and standby power areas per SBC 403.3.	Battery Storage Room and Server Room on 6th floor provided with FM200 system for fire suppression. Doors to rooms not rated and unable to verify rated construction around this room. (Deficiency).
Fire Barriers	Fire barriers per SBC 708.4 for shafts (2-hour), SBC 1022.1 for exit enclosures, and SBC 508.2.5 & 3020.4 at elevator machine rooms. Per SBC 707.5, fire barriers shall extend from the top of the floor/ceiling assembly below to the underside of the floor or roof sheathing, slab or deck above and shall be securely attached thereto. Fire barriers must be continuous though concealed spaces and supporting construction must be protected to afford the required fire-resistance rating of the fire barrier supported per SBC 707.5.1.	Wall ratings and concealed construction not part of our visual observations; however, construction appears adequate and all doors observed had appropriate hourly ratings and closing devices unless noted on Code Plans.
Shafts	Shaft enclosures shall have a fire-resistance rating of not less than 2 hours where connecting more than 4 stories per SBC 708.4. Openings shall be protected by 1-1/2-hour doors that are self- or automatic-closing by smoke detection per SBC 708.7 and 715.8.3.	Wall ratings and concealed construction not part of our visual observations; however, construction appears adequate and all doors observed had appropriate hourly ratings and closing devices unless noted on Code Plans.

Exit Enclosures	Per SBC 1022.1 exit enclosures are required to be provided with fire barriers that carry a 2-hour fire-resistance rating where connecting more than 4 stories. Fire doors are required to carry a 1-1/2-hour rating per SBC Table 715.4.	Wall ratings and concealed construction not part of our visual observations; however, construction appears adequate and all doors observed had appropriate hourly ratings and closing devices unless noted on Code Plans.
Openings and Penetrations in Exit Enclosures	SBC 1022.3 states that openings in exit enclosures other than unprotected exterior openings shall be limited to those necessary for exit access to the enclosure from normally occupied spaces and for egress from the structure.	Stair 2 opens to the mechanical room on the 14th floor. See Code Plans. (Deficiency) Stair 7 opens to the storage closet in the Kitchen on the 2nd floor and the mechanical room below from the basement floor. See Code Plans. (Deficiency)
Smoke Control in Exit Enclosures and Elevator Hoistways	Required exit stairways serving floors >75' above the lowest level of fire department vehicle access must comply with SBC 909.20 & 1022.9. Elevator hoistways shall comply with SBC 3020.	Building Engineer confirmed that all stairways and elevator hoistways are pressurized.
Horizontal Assemblies	SBC 712. Penetrations to be protected per SBC 713. Joints to be protected per SBC 714 and the void created at the intersection of a floor/ceiling assembly and an exterior curtain wall to be protected per SBC 714.4.	Floor ratings and concealed construction not part of our visual observations; however, construction appears adequate. Fire caulk confirmed typically at penetrations. On the 11th floor, some cable sleeves are missing protection; see Code Plans (Deficiency). No un-caulked curtain wall spaces observed.
Elevator Hoistways	Per SBC 3016.7 no more than four cars are permitted within a common hoistway.	Hoistways adequate.
Elevator Lobbies	Elevator lobbies are required per SBC 708.14.1; however, SBC 708.14.2 permits pressurization in lieu of enclosed elevator lobbies. Pressurization system must meet the requirements of SBC 708.14.2.1. Supply air must be provided per SBC 708.14.2.1.1.	Pressurized elevators confirmed by Building Engineer; details of the system to be confirmed by Mechanical Engineer.
Elevator Hoistway Pressurization	Elevator hoistway pressurization is to maintain a minimum positive pressure of 0.10" of water and a maximum positive pressure of 0.25" of water with respect to adjacent occupied space on all floors per SBC 708.14.2.1	The drawings for the 1992 addition indicate pressurization of Stair 1, 2, & 3 at a different pressurization standard (minimum of .15" of water column). Mechanical Engineer should evaluate if this would be a deficiency or not.

Opening Protectives	Fire doors must be self- or automatic closing in accordance with SBC 715.4.8. Smoke-activated doors must meet SBC 715.4.8.3. Ducts and air transfer openings in fire barriers are required to have fire dampers per SBC 716.5.2. Ducts and air transfer openings are not permitted to penetrate exit enclosures. Fire dampers not required per exceptions (meets ASTM E 119 or UL 263, part of a smoke control system, 1-hour HVAC).	What openings we observed such as air transfer openings at fire barriers were provided with fire dampers at all observed locations.
Ducts and Air Transfer Openings	Fire dampers to comply with UL 555 and smoke dampers to comply with UL 555S per SBC 716.3.1. A 1.5 hour rating is required at assemblies that are rated less than 3 hours per SBC Table 716.3.2.1. Fire dampers are required at ducts and air transfer opening through fire barriers per SBC 716.5.2.	Fire dampers we observed appear to meet these requirements.
Egress – General		
Occupant Load Factors	Accessory storage areas, mechanical – 300 gross Assembly, standing space – 5 net Assembly, unconcentrated (tables and chairs) – 15 net Business areas with sprinkler protection – 130 gross Kitchen, commercial – 200 gross Locker rooms – 50 gross	See Code Plans for evaluation of occupant loads.
Egress Requirements	**Two exits** are required per SBC Table 1015.1 where the occupant load exceeds: 49 occupants A, B **Three exits** are required where the occupant load is 501-1000. **Arrangement**. Per SBC 1015.2.1, Exception 2, exit access doorways must be placed a distance apart equal to not less than 1/3 the length of the maximum overall diagonal dimension of the building or area to be served measured in a straight line between exit doors or exit access doors.	The decks on the 9th story have more than 50 occupants. Though two exits are required, they join by the elevators, thus providing only one means of egress. (Deficiency)

Exits from Stories	Per SBC 1021.1 all spaces within each story shall have access to the minimum number of exits as specified in Table 1021.1 based on the occupant load of that story. For the purposes of this chapter, occupied roofs shall be provided with exits as required for stories. Except: SBC Table 1021.2 allows one exit from B Occupancies with 49 occupants and 75' travel distance from the first story or basement and 29 occupants and 75'of travel distance from the 2nd story. SBC 1021.2.1 allows a single exit at occupied roofs of ten or less.	The 14th floor requires 2 exits. This floor is actually an elevator machine room but it does not qualify as a mechanical penthouse per definition or area; therefore, it is a story. See Code Plan. (Deficiency) The 12th floor requires access to 2 exits; one is through a room (that is not permitted to be storage) that leads to the roof to the Stair 3 penthouse. The path of travel is through an air plenum that does not provide a truly viable means of egress; see Code Plans. (Deficiency)
Travel Distance Limitations	SBC 1016.1, Exception 3, allows a maximum of 50 percent of exits to be measured from the most remote point within a building to an exit using unenclosed exit access stairways when connecting a maximum of two stories. The two connected stories must be provided with at least two means of egress and interconnected stories cannot be open to other stories.	The 13th floor can utilize this provision for egress; however, access to the 2nd exit from the 12th story is problematic; see Code Plans.
Egress Through Intervening Spaces	Per SBC 1014.2, egress from a room or space shall not pass through adjoining or intervening rooms or areas, except where such adjoining rooms or areas and the area served are accessory to one or the other, are not a Group H occupancy and provide a discernible path of egress travel to an exit. Exception: Means of egress are not prohibited through adjoining or intervening rooms or spaces in a Group H, S or F occupancy when the adjoining or intervening rooms or spaces are the same or a lesser hazard occupancy group. Egress shall not pass through kitchens, storage rooms, closets or spaces used for similar purposes.	The 2nd exit on the 12th floor leads through a room that leads to the roof to the Stair 3 penthouse. The room cannot be used for storage. Additionally this "room" has a large grille in the exterior wall to supply air to the pressurization equipment leaving the room an unacceptable environment for safe egress. The door to the roof deck would be difficult to open. See Door Opening Force. (Deficiency) The 2nd exit off the decks on the 9th floor has a path of travel through a private office which is not appropriate. (Deficiency) Stair 1 discharges at a loading dock. (Deficiency) See Code Plans.
Exit Discharge	Exits shall discharge directly to the exterior of the building per SBC 1027.1. The exit discharge shall not reenter a building except into an exit or as otherwise approved by the building official.	Stair 3 discharges to an exit passageway then through Stair 7 at the basement floor per the provisions in SBC 1027.1.

Exit Discharge Through Level of Discharge	Per SBC 1027.1, Exception 1, 50% of the number and capacity of the exit enclosures is permitted to egress through areas on the level of discharge provided egress to a free and unobstructed path to an exterior exit door is provided and such exit is readily visible and identifiable from the point of termination of the exit enclosure.	Stair 4 exits through the Pac Med lobby on the ground floor. Not only is exiting through an adjacent tenant space undesirable, but the exterior exit door is not readily visible and identifiable from the point of termination of the exit enclosure. See Code Plans. (Deficiency)
Door Opening Force	Per SBC 1008.1.3, the force for pushing or pulling open interior swinging egress doors, other than fire doors, shall not exceed 5 pounds. For other swinging doors, as well as sliding and folding doors, the door latch shall release when subjected to a 15-pound force. The door shall be set in motion when subjected to a 30-pound force. The door shall swing to a full-open position when subjected to a 15-pound force.	It does not appear that the door from the mechanical pressurization room to the roof deck on the 12th story would quality with this opening force requirement. (Deficiency)
Egress Width	Per SBC 1005.1, Exception 2, the occupant load served by the means of egress must be multiplied by 0.2 for stairways and by 0.15 for other egress components when the building is sprinklered. The width at any point in the path of egress travel shall not be less than the width required for doors in SBC 1008, which is to provide a clear width of 32”.	The highest occupant load occurs at Stair 2 on the 2nd floor using the occupant load at the Cafeteria per the approved certificate of occupancy. The tributary occupant load of 246 requires exit widths from this level to the exit discharge that are not meeting current code requirements since this was an original stair. See Code Plans. (Deficiency)
Ceiling Height	The means of egress shall have a ceiling height of not less than 7’-6” (90”) per SBC 1003.2 except that obstructions are allowed at protruding objects provided a minimum of 80” is provided for not more than 50 percent of the ceiling area per SBC 1003.3.1. Where the vertical clearance is less than 80”, a barrier shall be provided located 27” maximum above the floor.	On the 9th floor there are obstructions with only 6’ of clearance at the east/west hallways that are north of the elevator shafts. See Code Plans. (Deficiency) Some mechanical rooms do not appear to have a clear exit path without ceiling height reductions as well as horizontal projections per SBC 1003.3.3. See Code Plans (Deficiency) Several stairs require guards underneath due to headroom clearance. See Code Plans. (Deficiency)
Corridor Width	Corridors shall be not less than 44” in width except 36” with a required occupant capacity of less than 50 and 24” for access to and utilization of mechanical/electrical equipment per SBC 1018.2.	No corridor width deficiencies found.

Dead Ends	Where more than one exit or exit access doorway is required, the exit access shall be arranged such that there are no dead ends in corridors more than 50 feet in length serving B Occupancies or 25' serving A Occupancies per SBC 1018.4. A dead-end corridor shall not be limited in length where the length of the dead-end corridor is less than 2.5 times the least width. Dead ends are permitted to be 75' in length in B Occupancies in Type IA buildings where the cumulative occupant load does not exceed 50 for all areas for which the dead end services as the only means of egress.	No dead end limitation violations found.
Door Encroachment	Per SBC 1005.2, doors, when fully opened, and handrails shall not reduce the required means of egress width by more than 7". Doors in any position shall not reduce the required width by more than 1/2.	There are several deficiencies noted on the Code Plans. (Deficiency)
Common Path of Egress Travel	The common path of egress travel shall not exceed the following per SBC 1014.3: 100' B 75' A	The common path of egress travel is exceeded from the most remote mechanical space on the 10th floor. See Code Plans. (Deficiency)
Travel Distance	Exit access travel distance is measured from the most remote point within a story along the natural and unobstructed path of horizontal and vertical egress travel to an entrance to an exit per SBC 1016.2. 250' A 300' B	No travel distance limitation violations found.
Egress – Stairways		
Stairways	SBC 1009.4. Stair riser heights shall be 7" maximum and 4" minimum. The minimum tread depth is 11".	Stairs at stair enclosures typically appear to comply. Metal stair between the 12th and 13th floors has a 7-1/2" riser and 9-1/2" tread. See Code Plans. (Deficiency)
Remoteness of Exit Stairway Enclosures	SBC 403.5.1 requires stairway enclosures to be separated by not less than 30' or less than 1/4th the length of the overall diagonal served, whichever is less. In buildings with 3 or more exit stairway enclosures, at least 2 of the exit enclosures shall comply with this section.	No stair separation deficiencies found.

Stairway Door Operation	Per SBC 403.5.3, stairway doors that are locked from the stairway side shall be capable of being unlocked simultaneously without unlatching upon signal from the fire command center and shall be capable of being unlocked simultaneously and automatically upon a signal from a fire alarm originating anywhere in the building.	Electronic locks have been installed at stairway doors typically. Building Engineer has confirmed that doors do unlock when building under fire alarm.
Stairway Communication System	SBC 403.5.1 requires a telephone or other two-way communications system connected to an approved constantly attended station to be provided at not less than every 5th floor in each stairway.	A stairway communication system is provided.
Stairway Penthouses	SBC 403.5.3.2 requires all required exit stairways to terminate at the roof in a penthouse.	See Code Plans. Stair 1 stops at 8th floor, no penthouse (Deficiency) Stair 2 continues up to building roof with penthouse Stair 3 continues to roof of 12th floor in penthouse Stair 4 continues to 1st floor, no penthouse (Deficiency) Stair 5 continues to 7th floor with penthouse Stair 6 continues to 7th floor with penthouse Stair 7 continues to 2nd floor, no penthouse (Deficiency) Stair 8 from 1st floor continues down, no penthouse (Def.) Stair 9 continues to 1st floor, no penthouse (Deficiency) Stair 10 continues to 2nd floor, no penthouse (Deficiency)
Stairway Width	The width of stairways shall be determined as specified in SBC 1005.1, but such width shall not be less than 44” except stairways serving an occupant load of less than 50 shall have a width of not less than 36 inches	The only stair that appears to be out of compliance is Stair 2 at the 2nd floor and below to the exit discharge due to the occupant load of the Cafeteria and concentrated distribution to Stair 2. See Code Plans. (Deficiency)
Landings at Doors at Stairways	Landings shall have a width of not less than the width of the stairway or the door, whichever is greater per SBC 1008.1.6. When a landing serves an occupant load of 50 or more, doors in any position shall not reduce the landing to less than 1/2 its required width. When doors open over landings, doors in any position shall not reduce the landing length to less than 12”. Landings shall have a length measured in the direction of travel equal to the width of the stairway. Such dimension need not exceed 48” where the stairway has a straight run.	For the most part landings are adequate except at Stair 2 as noted above. (Deficiency) There are also locations where there are standpipes that could be considered an obstruction of the landing or chases. Exhaustive measurements were not taken.

Handrails	Per SBC 1009.12 & 1010.8, handrails must be provided on each side of stairs and ramps. Handrails are required to be mounted 34”-38” above stair tread nosings, have a circular cross section 1-1/4”-2”, be continuous, and return to the wall per SBC 1012.	An overall survey shows that handrails generally meet these requirements. However, there are several locations where handrails are not provided adequately. (Deficiency) See Code Plans for a sampling of these locations.
Handrail Extensions	Handrails shall extend horizontally at least 12” beyond the top riser and continue to slope for a depth of one tread beyond the bottom riser. Extensions shall be in the same direction of the stair flights per SBC 1012.6.	There are many locations where handrail extensions are not provided. For example, Stair 3 at the 8th floor can have the bottom extension provided. (Deficiency). This would not be considered a deficiency where the extension would be hazardous considering plan configuration. See Alterations. See Code Plans for several examples.
Floor Identification Signs	Per SBC 1022.8 signs are required at each floor landing in exit enclosures connecting more than 3 stories.	Floor identification signs provided.
Discharge Identification	Per SBC 1022.7, a stairway in an exit enclosure shall not continue below its level of exit discharge unless an approved barrier is provided at the level of exit discharge to prevent persons from unintentionally continuing into levels below. Directional exit signs shall be provided.	Discharge identification (barrier gates) are not provided at all required locations. See Code Plans. (Deficiency)
Exit Enclosure Exterior Walls	Where nonrated walls or unprotected openings enclose the exterior of the stairway and the walls or openings are exposed by other parts of the building at an angle of less than 180 degrees, the building exterior walls within 10 feet horizontally of a nonrated wall or unprotected opening shall have a fire-resistance rating of not less than 1 hour. Openings within such exterior walls shall be protected by opening protectives having a fire protection rating of not less than 3/4 hour. This construction shall extend vertically from the ground to a point 10 feet above the topmost landing of the stairway or to the roof line, whichever is lower.	There are several locations where stair enclosures have exterior windows exposed by less than 180 degrees of the other parts of the building. See Code Plans. (Deficiency)
Exterior Stairways	Per SBC 1026.2 exterior exit ramps and stairways shall be permitted as an element of a required means of egress for buildings not exceeding six stories above grade plane or having occupied floors more than 75 feet above the lowest level of fire department vehicle access.	Stair 8 serves as an exit at the 1st floor. See Code Plans. (Deficiency)

Exterior Ramps and Stairway Protection	Per SBC 1026.6 exterior exit ramps and stairways shall be separated from the interior of the building as required in SBC 1022.1. Openings shall be limited to those necessary for egress from normally occupied spaces.	Stair 8 on the 1st floor is technically an exterior stair; the window opening adjacent to it would not be permitted and protection is required based on the number of stories connected, which is 3. 1-hour protection would be required per SBC 1022.1. See Code Plans. (Deficiency)
Egress –Components		
Corridor Construction	Corridors only serve the B Occupancy. Rated corridors are not required since a sprinkler system is provided per SBC Table 1018.1.	No corridor construction violations found.
Guards	Guards shall be located along open-sided walking surfaces, including mezzanines, equipment platforms, stairs, ramps and landings that are located more than 30" measured vertically to the floor or grade below at any point within 36 inches horizontally to the edge of the open side per SBC 1013.1. Guards shall be 42" minimum in height and shall not have openings which allow passage of a sphere 4" in diameter per SBC 1013.3. The triangular opening at open sides of stairs can be sized to not allow a sphere 6" in diameter pass. At mechanical equipment guards shall not allow passage of a sphere 21" in diameter.	There are several locations where guards are provided to protect glazing that would be required to be safety glazing or at openings that do not meet current code requirements. See Code Plans for locations. (Deficiency) Guard on 2nd floor around stair opening needs to be modified/adjusted. (Deficiency) Inadequate guard at stair between the 12th and 13th floors. See Code Plans. (Deficiency)
Landings at Doors	Per SBC 1008.1.5 There shall be a floor or landing on each side of a door. Such floor or landing shall be at the same elevation on each side of the door. Per SBC 1008.1.7 thresholds at doorways shall not exceed 1/2 inch.	There are some locations with raised thresholds such as the exit door on the 12th floor to the exit at Stair 3. See Code Plans. (Deficiency)
Exit Signs	Where two exits are required, exit signs shall be provided per SBC 1011.1 except at the main exterior exit doors that are obviously and clearly identifiable as exits.	See Code Plans. For example, refer to 2nd floor at open stair, the 8th floor at the lobby serving the conference room, and the 12th floor at the route to the Stair 3 penthouse. (Deficiency)
Posting of Occupant Load	SBC 1004.3 requires every room or space that is an assembly occupancy to have the occupant load of the room or space posted in a conspicuous plate, near the main exit.	Assembly occupancies do not have occupant loads posted. Refer to Code Plans at 2nd & 8th floors. (Deficiency)

Main Exits	Per SBC 1028.2, assembly occupancies with an occupant load greater than 300 must be provided with a main exit of sufficient width to accommodate not less than 1/2 of the occupant load, but such width shall not be less than the total required width of all means of egress leading to the exit. In addition to the main exit, each level must be provided with additional means of egress that shall provide an egress capacity for at least 1/2 of the total occupant load served by that level and comply with SBC 1015.2.	See Code Plans.
Panic Hardware	Per SBC 1008.1.10, doors serving an occupant load of 50 or more in A Occupancies shall not be provided with a latch or lock unless it is panic hardware or fire exit hardware.	Refer to the Code Plans for locations where panic hardware should be provided. For example, refer to the basement. (Deficiency)
Exit Passageways	Per SBC 1023 the width shall not be less than 44" in width, 2-hour construction is required with 1-1/2 opening protectives, and exit passageways shall terminate at an exit discharge or public way. Openings in exit passageways other than exterior openings shall be limited to those necessary for exit access to the exit passageway from normally occupied spaces and for egress from the exit passageway. Per Interpretation I1023.5 Accessory rooms, such as restrooms, storage closets, laundry rooms electrical, communication closets and similar spaces shall not open into exit passageways.	An exit passageway is provided from Stair 2 to the exterior on the basement floor and from Stair 3 through Stair 7 to the exterior on the basement floor. See Code Plans for items out of compliance. (Deficiency)
Luminous Egress Path Markings	Luminous egress path markings are required per SBC 403.5.5. Egress path markings shall be provided in exit enclosures to define steps, landings, handrails, the perimeter, and doors per the detailed requirements of SBC 1024.	Luminous egress path markings are not provided. (Deficiency)
Boiler and Furnace Rooms	Two exit access doorways are required in boiler, incinerator and furnace rooms over 500 s.f. and any fuel-fired equipment exceeds 400,000 Btu input capacity. One doorway is permitted to be a fixed ladder. Refer to SBC 1015.3.	Building Engineer has indicated that only rooftop boilers are provided, so they are not in rooms. No fuel-fired equipment rooms since heating supplied with VAV boxes.
Elevators		
Elevators	Per SBC 403.6 in buildings with stories that are located more than 160' above the lowest point of fire department access, access to each floor shall be provided by not less than 2 elevators served by separate machine rooms.	The 14th floor is not served by an elevator. (Deficiency) All other stories are served by at least two elevators and the Building Engineer has confirmed the elevators are served by separate machine rooms.

Fire Service Access Elevator	In buildings with an occupied floor more than 120' above the lowest level of fire department vehicle access, a minimum of one fire service access elevator shall be provided per SBC 403.6.1	Fire engineer should verify if this is provided to City of Seattle Fire Department requirements. See SBC 403.6.1.1 – 403.6.1.8 for extensive requirements.
Two-way Communication	Per SBC 1007.8, a two-way communication system shall be provided at the elevator landing on each accessible floor that is one or more stories above or below the story of exit discharge complying with SBC 1007.8.1 and 1007.8.2	Though this is could be considered part of the accessibility review, which is not in our scope of work, a two-way communication system is not provided. (Deficiency)
General Life-Safety		
Safety Glazing	Safety glazing is required at hazardous locations such as adjacent to doors, stairs, and landings per SBC 2406.4. Where glazing occurs adjacent to a stairway, safety glazing is not required where 1) the glass is greater than 18" from a railing, or 2) a protective guard is provided in accordance with SBC 1013. SBC 1013 requires the height to be 42" above the floor and intermediate rails so that a sphere 4" in diameter cannot pass through.	There are numerous locations where safety glazing is not provided adjacent to a stair, for example, and guards were installed to provide the needed protection. While the guards may have been code-complying when installed, they have openings that are too large (typically roughly 6"). (Deficiency) Wire glass is not permitted to be used in a hazardous location. Wire glass adjacent to doors is used at many locations. For example, refer to 8th floor Code Plans. (Deficiency)
Alterations	Per SBC 3404.1, alterations to any building shall comply with the code for new construction with the following exceptions: 1) Subject to the approval of the building official, existing stairways shall not be required to comply with the requirements of SBC 1009.2 (stair headroom) and 1009.4.2 (riser height & tread depth) where the existing space and construction does not allow a reduction in pitch or slope. 2) Handrails required to comply with SBC 1009.12 shall not be required to provide full extensions where such extensions would be hazardous due to plan configuration.	When proposing alterations, the noted exceptions should be considered where applicable. It should also be noted that there are compliance alternatives outlined in SBC 3412.
Historic Buildings – Landmarks	Per SBC 3409.1 the provisions of the SBC relating to the construction, repair, alteration, addition, restoration and movement of structures and change of occupancy shall not be mandatory for landmarks where such buildings are judged by the building official.	While we are not providing any evaluations related historic considerations, this code section should be noted.

Systems		
Smoke Detection	Smoke detection is required per SBC 907.2.13.1 per SBC 403.4.2.	The details of the smoke detection system provided needs to be evaluated by Mechanical Engineer.
Emergency Voice/Alarm Communication System	Emergency voice/alarm communication System required per SBC 907.5.2.2 per SBC 403.4.3.	Not provided as confirmed by Building Engineer; however, conflicting information on the 1992 permit drawings indicate a voice alarm system is provided.
Emergency Responder Radio Coverage	Emergency responder radio coverage required per SBC 510 of the Seattle Fire Code per SBC 403.4.4.	Not likely provided. Verify with Seattle Fire Department.
Fire Command Center	Fire command center required per SBC 911 and SBC 403.4.5.	Confirmed location on site. Details of fire command center to be verified by Seattle Fire Department.
Emergency Power Systems	An emergency power system complying with SBC Ch. 27 and 403.4.8 is required for emergency power loads for exit signs, elevator car lighting, emergency voice/alarm communication systems, automatic fire detection systems, electrically powered fire pumps, power and lighting for mechanical equipment rooms and the fire command center, electrically powered fire pumps, ventilation and automatic fire detection equipment for pressurized stairways, smoke control system, and a selected elevator in each bank.	Emergency power by generator confirmed on site. Details to be confirmed by Mechanical Engineer.
Emergency Generator	Where emergency power is provided with a generator set in a building, it must be located in a separate room enclosed with 2-hour fire-resistance rated construction per SBC 403.4.8.2.	Generator room confirmed on site. Rated doors and room appear adequate.

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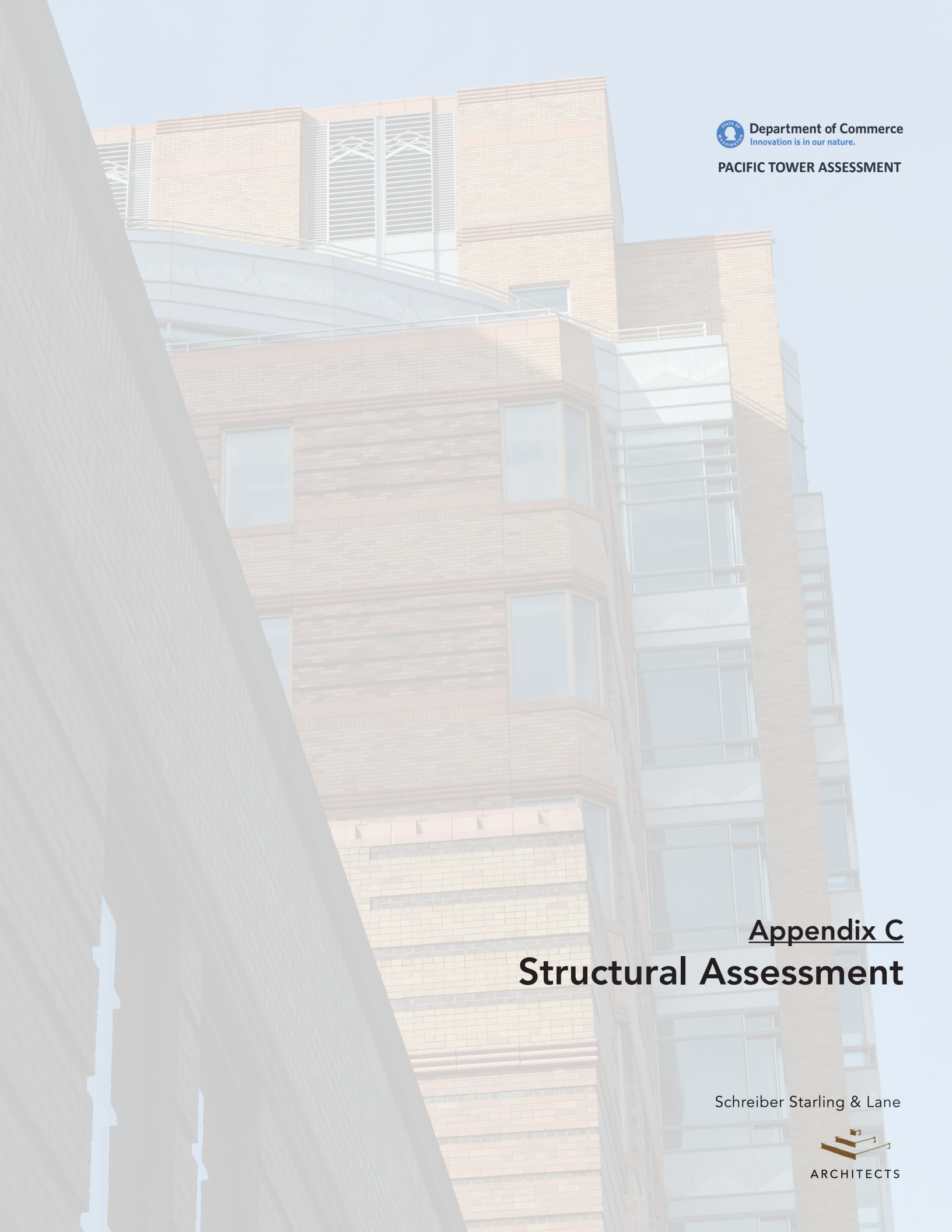


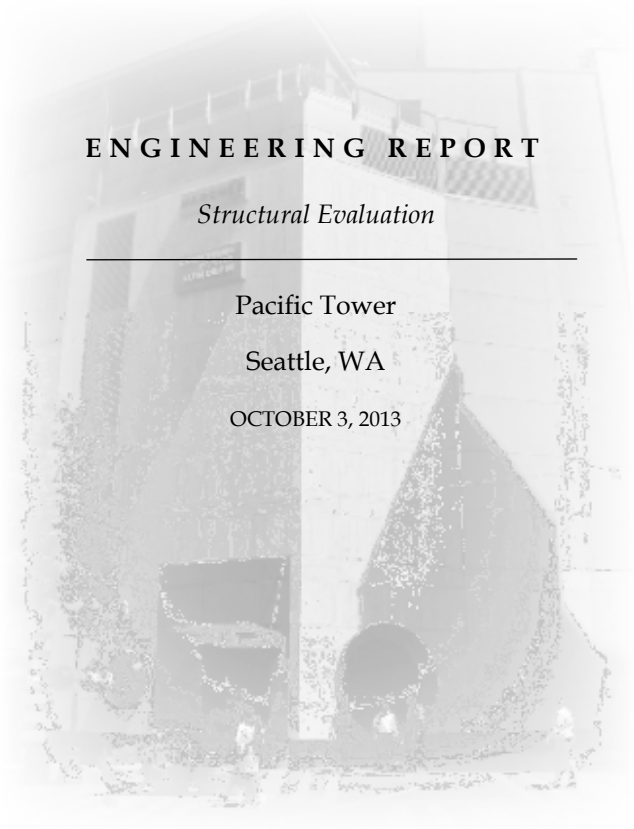
Department of Commerce
Innovation is in our nature.

PACIFIC TOWER ASSESSMENT

Appendix C
Structural Assessment

Schreiber Starling & Lane

ARCHITECTS



ENGINEERING REPORT

Structural Evaluation

Pacific Tower

Seattle, WA

OCTOBER 3, 2013

PREPARED FOR:
Department of Enterprise Services
Olympia, WA

PREPARED THROUGH:
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INTRODUCTION

The purpose of this review is to conduct a seismic and live load evaluation of the Pacific Tower located at 1200 12th Avenue South in Seattle, Washington and provide conceptual level recommendations to mitigate the deficiencies found. This structural assessment deals primarily with the risk associated with earthquakes, although gravity and wind are also considered. Personal property and economic losses are not considered.

The scope of this review is limited to:

- Review of available existing building documents.
- Building walk-through to observe conditions and confirm the building appears to generally match drawings provided.
- Review of proposed uses as compared with floor live load design capacities based on the original drawings.
- Seismic assessment: Based on the proposed use of office space and teaching space, it seems unlikely that the renovation will be classified as a Substantial Alteration by the City of Seattle and the city's current seismic upgrade standards will not be required to be met. However, DES needs to understand how the seismic condition of the building compares with the current seismic standards enforced by the City of Seattle for Substantial Alteration projects. Our scope will include both a Tier One and Tier 2 seismic evaluation of the building using ASCE-31, *Seismic Evaluation of Existing Buildings,* and on the policies of Seattle DPD for this type of building.
- Preparation of this report stating our findings, with accompanying recommendations for further study or mitigation actions to consider.
- Meet with Client as needed to discuss findings.

CRITERIA AND METHODOLOGY

Seismic Evaluation Overview

Evaluating existing buildings for potential damage from an earthquake requires balancing structural engineering concerns with the current public policy of upgrading these buildings to reduce seismic risk. In general, public codes exist as a benchmark for a seismic evaluation. Consequently, priorities must be developed regarding loss of life and/or building damage in the event of an earthquake. Priorities are established based on the level of risk to life and property and the level of risk to structural elements of the building.

Building Code Requirements

The Seattle Building Code (SBC) requires that a seismic upgrade be performed if its substantial alteration provisions are triggered. If a renovation is deemed a substantial alteration, the seismic provisions of the current building code, or an approved standard, are enforced. Currently, the Seattle Department of Planning and Development (DPD) accepts ASCE 31-03, *Seismic Evaluation of Existing Buildings* as an approved standard. For a building with these uses, DPD requires a seismic performance objective of life-safety with a 10% in 50-year hazard level. This evaluation and mitigation schemes were developed to be consistent with current DPD guidelines.

Performance Based Evaluation

The basis of this evaluation is the American Society of Civil Engineers document *Seismic Evaluation of Existing Buildings* (ASCE 31-03) which uses a performance based methodology. The purpose of the methodology is to provide guidance in the review of a building's response to earthquakes based on a "level of performance" philosophy. The analysis methodology of ASCE 31-03 employs a three tier methodology - the quick check methodology (Tier 1 analysis), a more rigorous and calculation intensive Tier 2 analysis, and a very detailed component evaluation (Tier 3 analysis)

involving advanced computational methods including non-linear analysis. This evaluation used a limited Tier 2 analysis.

BUILDING DESCRIPTION

The Pacific Tower is a 14-story, T-shaped heavy concrete building designed and built in several phases. The building sits on a site that slopes down slightly to the north so the basement level of the building is partially exposed.

The main building consists of the original 14-story1932 building with an 11-story addition to the north constructed in 1992 (labeled as "Main Tower" for purposes of this report). A two-story1951 building with a one-story 1980 addition (labeled as "Lowrise East Wing" for purposes of this report) is seismically isolated from the main building.

Vertical-Load-Resisting System

Main Tower
The original building is of concrete construction. The roof and floors generally consist of concrete slabs spanning between concrete beams. Concrete columns support the floor and roof framing. Spread footings beneath the columns support the original building. The 1992 addition is connected structurally to the original building. The addition roof and floors generally consist of concrete slab over metal deck spanning between steel beams. Steel columns support the floor and roof framing. Spread footings and drilled caissons support columns.

Lowrise East Wing
The one-to-two story lowrise wing to the east of the main tower, of 1951 and 1980 construction, is structurally separate from the original building and the 1992 addition. The roof and floors in the 1951 building generally consist of a concrete pan joists spanning to concrete beams. Concrete columns typically support the joist and beam framing at these levels. Spread footings support the columns in the 1951 building. The 1980 addition is connected structurally to the 1951 building and the floor framing consists of concrete pan joists spanning to concrete spandrel beams or concrete bearing walls. These spandrel beams frame into concrete columns, which then bear on concrete pile caps with augercast piles. The concrete walls bear on concrete grade beams which then span to the concrete pile caps with augercast piles.

Lateral-Force-Resisting System

Main Tower
The lateral-force-resisting system of the original 1932 tower building with 1992 addition/seismic upgrade consists of a large concrete shear wall box that occurs at the perimeter of the 1992 building, along with interior shear walls around the original stairs and elevators. Additional shear walls were added at Levels 11 through 14 as a result of damage suffered during the 2001 Nisqually earthquake (the 1992 addition/seismic upgrade stopped at level 10). The concrete floors and roof act as the diaphragm to transfer forces to these elements. There are also two stories of steel moment frames at Levels 9 and 10 at the north side of the 1992 addition.

The lateral system upgrade in 1992 used the 1988 Uniform Building Code as the design basis and assumed a typical code level event of the time (approximately a 500-year earthquake). Since that time, additional information has developed regarding shallow earthquakes in the Puget Sound, including identifying the Seattle Fault. The Seattle Fault runs along the I-90 corridor and is capable of a magnitude 7+/- earthquake with recurrence intervals on the order of 1000 years. Information on the Seattle Fault was incorporated into the building codes around 2001, which increased the design earthquake forces for buildings in its vicinity.

It is important to note that even though there have been changes to seismicity levels due to the Seattle Fault as described above, because of the 1992 upgrades and the 2001 repairs/upgrades there is a strong possibility the building would be "benchmarked" by DPD. Therefore, DPD would deem the building effectively meets the seismic requirements for Substantial Alteration if triggered by the rest of the non-structural tenant improvement work. It has been our experience that DPD does not require all the "i's" to be dotted and "t's" to be crossed for buildings that have already been seismically upgraded under a previous Substantial Alteration. This would need to be confirmed with a proposal to DPD if the project is deemed a Substantial Alteration.

Lowrise East Wing

The lateral-force-resisting system of the lowrise 1950/1982 building consists of a concrete shear wall in the north/south direction and one in the east/west direction towards the center of the building. Additional smaller concrete shear walls occur around the two stair cores. The concrete floors and roof act as the diaphragms to transfer forces to these elements.

SEISMIC EVALUATION RESULTS AND RECOMMENDATIONS

In general the buildings do contain relatively complete seismic force resisting systems, and the upgrades completed in 1992 and 2001 did substantially improve the seismic performance of the Main Tower. However, the following concerns were noted that could influence the seismic performance of the building. The accompanying recommendations are to reduce the potential seismic losses to the building. Proper design of seismic upgrades would address both risk to life-safety and mitigate, but not eliminate, damage to the building.

1. In the 1932 portion of the Main Tower, one concern is with the ability of some of the concrete gravity frame columns to accommodate the expected building drifts during a significant seismic event. In modern buildings, concrete gravity columns in high seismic regions are now designed with closely spaced ties throughout their height so that they can accommodate seismic drifts in a ductile manner. Concrete columns in older buildings like the 1932 tower are typically much more lightly reinforced and are often more susceptible to earthquake damage. The columns highlighted on Figure 2 are the ones of highest concern. These columns do have the capacity to resist the shear demands due to the low expected seismic drifts; however, the tie detailing is far below current standards. In addition, these columns have insufficient moment (bending) capacity to resist the expected moment demands due to their very light vertical reinforcing. This condition may lead to larger deflections and cracking of the columns. This system on average is more sensitive to damage, especially given the building's proximity to the Seattle Fault. Due to the poor tie reinforcing of the columns, under a Seattle Fault scenario earthquake, this condition may lead to partial loss of gravity load capacity.

   Recommendation: Further review of the noted columns is recommended to better determine the capacities and failure mechanisms based on the substandard detailing. A risk mitigation option would be adding fiber reinforcing (or similar confinement measures) to the highlighted columns to enhance their ductility.

2. At the connection between the 1932 building and the 1992 addition in the Main Tower, the capacity of the north/south steel drag struts, which were added in 1992, is marginal at levels 4 through 10 and there is a lack of redundancy with only two main struts at each floor to connect these buildings. In addition, the drag strut connections were detailed such that they are susceptible to construction errors (the connections cannot be easily inspected as some of the key connection components are cast into the 1992 building shear walls). If the drag

struts were to fail, the 1932 building and the addition would act independently, reducing the strength of the 1932 building and allowing the two buildings to pound against each other.

Recommendation: A more redundant strut system could be added which should improve the building's resistance to damage in a large seismic event as schematically shown on Figure 2.

3. In the 1932 portion of the Main Tower, the masonry veneer and hollow clay tile backing at the exterior and hollow clay tile at selected interior walls do not appear to be anchored/strongbacked and present a potential falling hazard.

   Recommendation: We recommend the extent of previous reinforcing of the hollow clay tile be investigated. At the exterior walls anchor clips could be added at the interior metal stud furring walls – of particular concern would be locations, if any, where such conditions occur over building exits. At interior walls we recommend strongbacking clay tile walls which occur at egress pathways and stairwells. This work would likely be required by DPD at egress pathways if the project is deemed a Substantial Alteration.

4. In the 1992 addition, the steel moment frames which provide lateral stability for a portion of levels 9 and 10 are not detailed to meet current moment frame standards. However, the seismic demands on these connections are low, with demand-to-capacity ratios (DCR; a DCR of less than 1.0 is considered adequate) of 0.34.

   Recommendation: As the demands on the moment connections are low and the frame extents are limited, we do not consider them to be a significant life-safety concern.

5. In the 1950/1982 Lowrise East Wing, the shear walls are located eccentrically causing twist or torsion, which amplifies the forces in the concrete gravity frame columns due to the expected building drifts during a significant seismic event. While the expected seismic drifts in this building are low, we were unable to check the existing columns in the 1950 building because the column tie reinforcing and spacing is not shown in the available structural drawings. Failure of the columns due to inadequate tie reinforcing can lead to partial collapse.

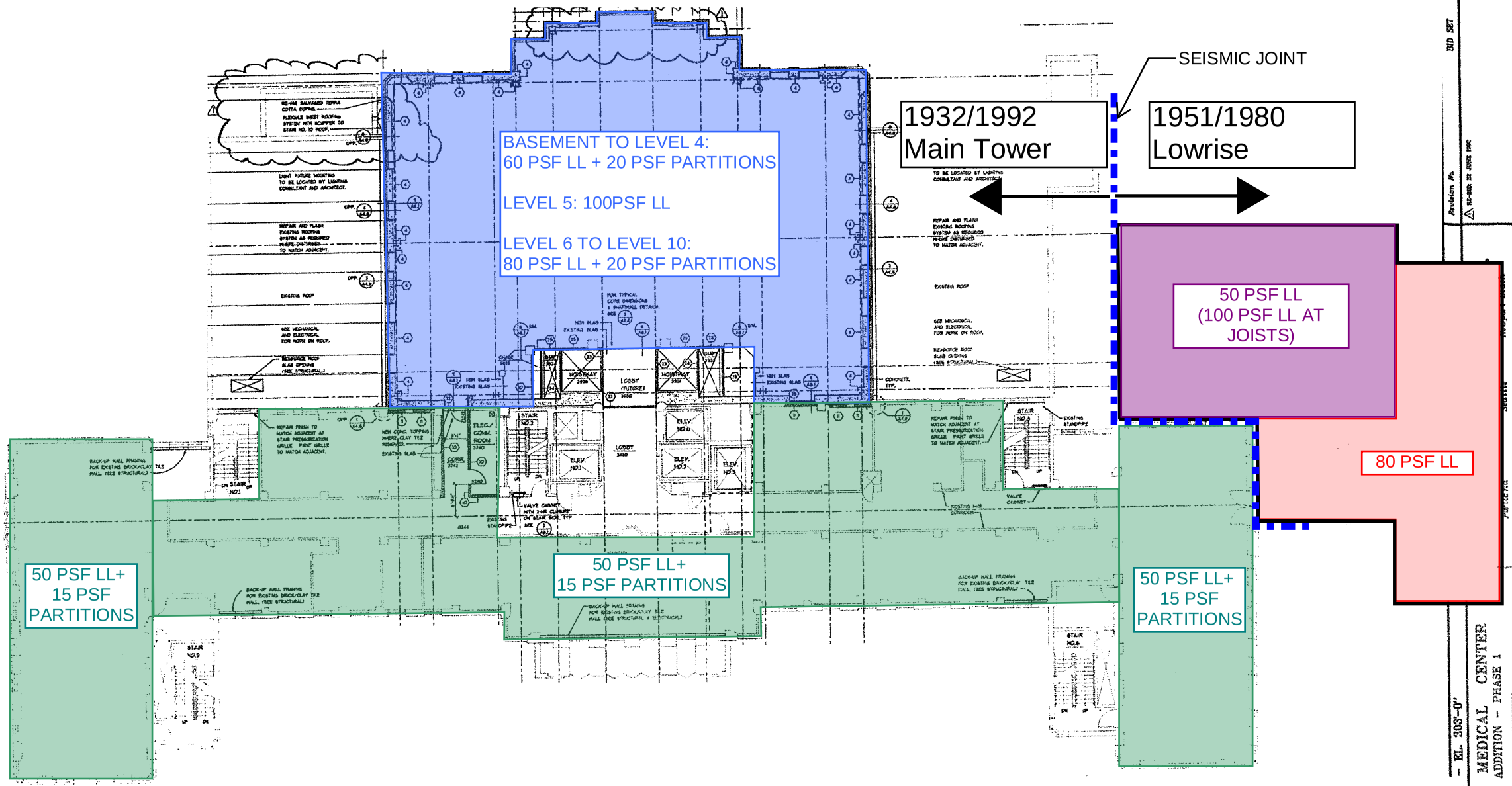
   Recommendation: In the 1950 building, we recommend field investigations at selected columns to determine the tie reinforcing and spacing (pachometer scanning). The column ties would then be evaluated to determine their adequacy during a seismic event.

LIVE LOAD EVALUATION

Current Department of Enterprise (DES) lease space requirements, per Section A5.5, require a minimum floor live load of 85 pounds per square foot plus 20 pounds per square foot additional dead load for partitions. The 1932 structural drawings did not list design live loads, so a brief live load evaluation was performed on the floor systems of the 1932 building. See the attached live load diagram shown on Figure 1 for the approximate calculated floor live load capacities. The 1951, 1980, and 1992 drawings did list the live load and partition design requirements, and those are listed on the attached live load diagram for reference. In general, the capacities are less than required by DES, but do meet or exceed the current building code for basic office/classroom space. If DES is concerned that the loads do not meet their requirements, they could post maximum loading signs at the floors.

SUMMARY

The Pacific Tower building is a heavy concrete structure with several unique structural/seismic issues. The building was evaluated using ASCE 31-03, *Seismic Evaluation of Existing Buildings*, deficiencies were identified, and conceptual level recommendations were made to mitigate the deficiencies consistent with the City of Seattle current requirements for major renovations. In some cases, more detailed evaluation/investigations are recommended to validate the issues.



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Typical Floor Plan

COUGHLIN PORTER LUNDEEN
A CONSULTING STRUCTURAL AND CIVIL ENGINEERING CORPORATION
413 PINE STREET - SUITE 300
SEATTLE, WA 98101
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Figure 1: Approximate Live Load Diagram
Pacific Tower-DES Due Dilligence

Date 27 APRIL 1992
BID SET
Revision No.
1 RE-BID: 22 JUNE 1992
EL. 303'-0"
PACIFIC MEDICAL CENTER
NORTH ADDITION - PHASE 1
SEATTLE, WASHINGTON
Job No. SJ141.03
A2.7
of Sheets

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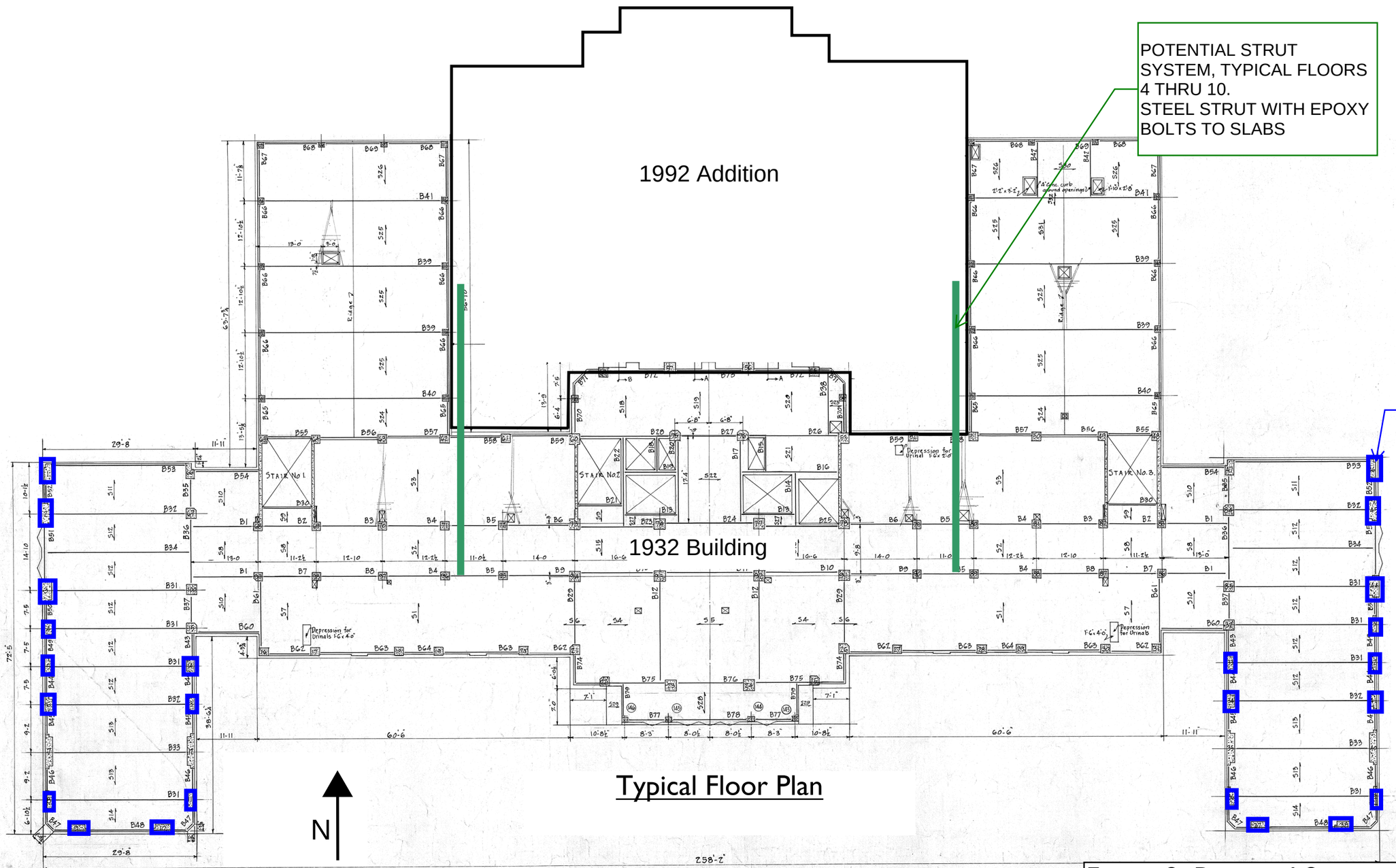

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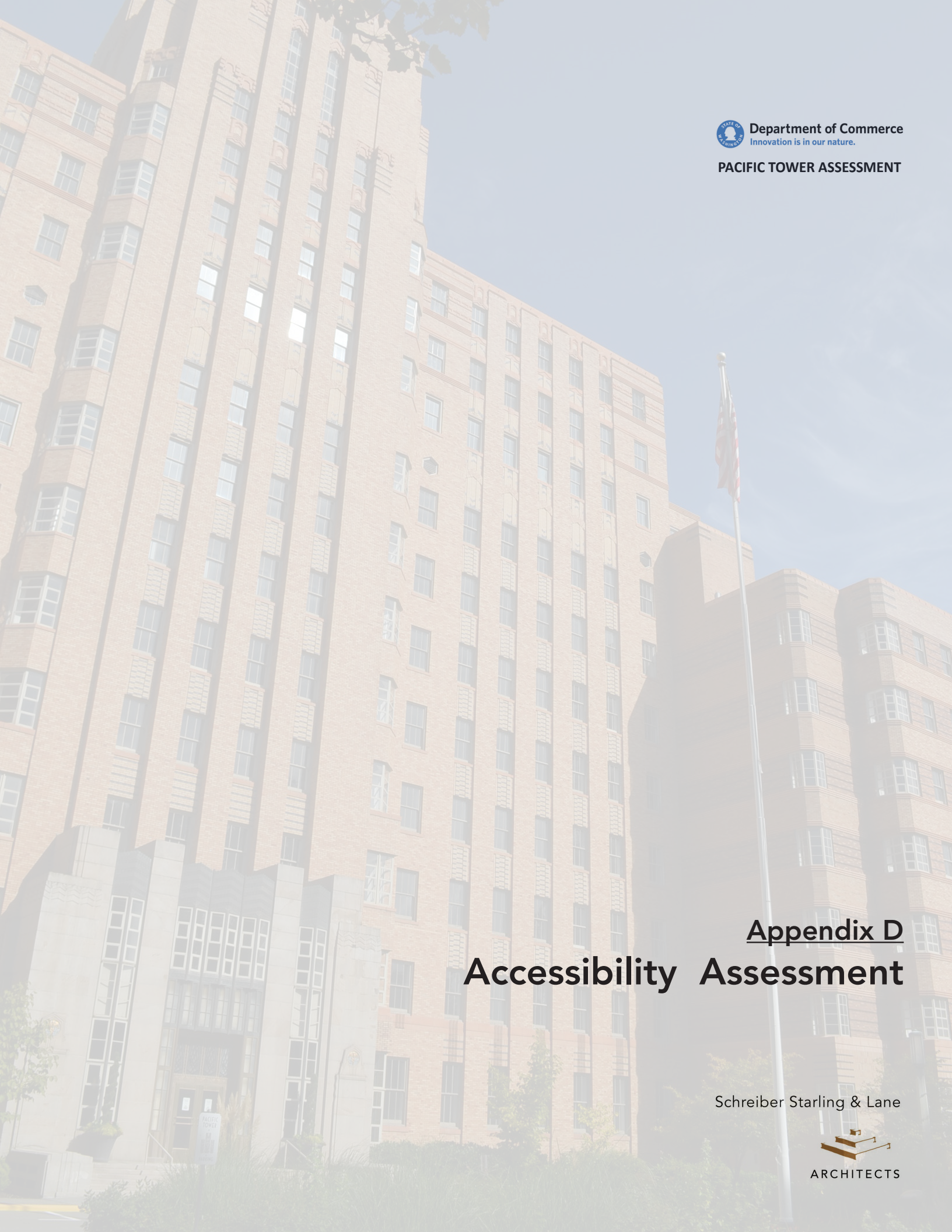
Figure 2: Potential Seismic Strengthening
Pacific Tower-DES Due Dilligence



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PACIFIC TOWER ASSESSMENT

Appendix D
Accessibility Assessment

Schreiber Starling & Lane

ARCHITECTS

KAREN BRAITMAYER

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September 17, 2013

Keith Schreiber, AIA, LEED AP
Schreiber Starling & Lane Architects
185 University Street
Seattle, WA 98101

Re: Accessibility Survey for Pacific Tower Due Diligence Study

Dear Keith,

Karen Braitmayer FAIA is pleased to have visited the Pacific Tower on August 28 to observe existing conditions and possible barriers to access. This information was used to generate the accessibility survey to be included in the Due Diligence Study.

Karen Braitmayer FAIA relied upon the construction guidelines of the Americans with Disabilities Act (ADA) Standards for Accessible Design as revised as of September 15, 2010 (2010 ADA) and the WA State Building Code (2012 IBC with ICC/ANSI A117.1 2009) (referred to herein collectively as the "Listed Codes") for purposes of its review and recommendations.

Areas observed included the parking garage, the exterior area between the garage and main building, the basement locker rooms, restrooms on several floors, the cafeteria, an assembly room on the eight floor, and the ground floor lobbies at the north and south entrances. Typical issues observed throughout the project are noted, as well as higher priority accessibility issues. Please see the Pacific Tower accessibility survey spreadsheet for specific issues observed. Please note this visit was not a comprehensive survey for the purposes of determining every barrier that may exist under the ADA.

Priorities for Barrier Removal
While the requirements for a Title II (state or local government entity) are to provide program and service access, removal of physical barriers to access in facilities may need to be accomplished to provide full access. In determining which barriers to remove first, the Department of Justice (DOJ) provides the following language to illustrate their priorities for barrier removal. An entity is free to exercise discretion in removal of barriers in a method that provides the most access to the program or service.

The *first priority* is enabling individuals with disabilities to enter the facility. This priority on "getting through the door" recognizes that providing physical access to a facility from public sidewalks, public transportation, or parking is generally preferable to any alternative arrangements in terms of both business efficiency and the dignity of individuals with disabilities.

The *second priority* is providing access to those areas where goods and services are made available to the public. For example, in a hardware store these areas would include the front desk and the retail display areas of the store.

The *third priority* is providing access to restrooms (if restrooms are provided for use by customers or clients).

The *fourth priority* is removing any remaining barriers, for example, lowering paper towel dispensers.

Priority Issues
Karen Braitmayer FAIA has identified the following as priority issues that impact circulation and accessibility within the site.

The site lacks an accessible route between the parking garage and the north building entrance. While there is accessible parking in the garage, there is not a compliant route to the North entrance. The parking garage entrance has a vertical clearance of 9'-0", and an accessible van space is located near the entry. On the lower level of the garage there are six accessible parking spaces. The path to the main entrance from the parking garage currently involves walking in the road that runs between the parking lot and the building.

The site lacks an accessible route from existing accessible parking on the south side of the building to the south entrance. There are sidewalks on this side of the building, but there are several steps at the entrance and the entrance lacks a ramp.

Typical Issues
The following is an overview of typical issues found throughout the facility. It was noted that many interior doors required an amount of force to operate that was greater than compliant. Door pressures should be checked and adjusted for compliance. Signage for restrooms was often mounted on the door itself or on the hinge side of the door. Signage should be relocated to the wall on the latch side of the door to be compliant. In the locker rooms, the facilities lacked an accessible dressing bench, accessible towel bars, and the transfer shower interior dimensions exceeded the maximum. In many of the restrooms there was a narrowing of the accessible route near the exit doors where a recessed paper towel / trash unit protruded. These units could be relocated. Two raised platforms were observed in the building, one in the cafeteria and one in the eighth floor assembly room. Installation of ramps would allow these spaces to be accessible.

To align with the overall reporting by the Due Diligence team, we have endeavored to apply the DOJ priorities to the Priorities listed in the itemized chart (critical/immediate/near-term/far-term). It is at the Owner's discretion that those items may be remediated in a different order to meet the needs of the staff and public that are served.

Disclaimer
The Client understands that the Listed Codes are subject to various and possibly contradictory interpretations. Karen Braitmayer FAIA will use reasonable professional efforts and judgment to interpret applicable requirements of the Listed Codes and other federal, state and local laws, rules, codes, ordinances and regulations as they apply to accessibility considerations for the Project. Karen Braitmayer FAIA, however, cannot and does not represent or guarantee that the Project will comply with all interpretations of the Listed Codes and /or the requirements of other federal, state and local laws, rules, codes, ordinances and regulations as they apply to the Project.

KAREN BRAITMAYER

The above recommendations are intended to address accessibility in areas of primary function. Addressing other accessibility issues, such as in the restrooms, may be less difficult to implement at this time.

Please feel free to call and discuss any questions you may have.

Sincerely,
Karen Braitmayer FAIA

Karen L. Braitmayer, FAIA, President

Building	Room or Area	Barrier Type / Regulation	Section	Issue	Comments
Pacific Tower Garage	Entrance Level	Parking - Access Aisle	ADA (2010) 502.3 and ANSI 502.4	Car and van parking spaces shall have an adjacent access aisle complying with Section 502.4. Access aisles shall adjoin an accessible route, shall be 60 inches wide minimum, shall extend the full length of the parking space they serve (with no obstructions in that area) and shall be marked so as to discourage parking in them. Van Parking spaces that are angled shall have access aisles located on the passenger side of the parking space.	Access aisles measure 4 feet wide, and the accessible parking spaces, including the aisle, range from 12 to 13 feet wide.
Pacific Tower	Street - North side of building	Accessible Route - Within a Site	ADA (2010) 206.2.2 and 2009 IBC 1104.2	At least one accessible route shall connect accessible buildings, accessible facilities, accessible elements and accessible spaces that are on the same site.	The connection between the parking garage and the main building lacks an accessible route. The designated pathway between the garage and main building is in the street.
Pacific Tower	Street - North side of building	Accessible Route - Slope	ADA (2010) 403.3 and ANSI 403.3	The running slope of a walking surface shall not be steeper than 1:20. The cross slope of a walking surface shall not be steeper than 1:48.	Between the garage and main entrance there is a portion of the designated pathway which exceeds the maximum slope. There are also speed bumps in the pathway.

Building	Room or Area	Barrier Type / Regulation	Section	Issue	Comments
Pacific Tower	South Entrance	Accessible Route - Within a Site	ADA (2010) 206.2.2 and 2009 IBC 1104.2	At least one accessible route shall connect accessible buildings, accessible facilities, accessible elements and accessible spaces that are on the same site.	The south entrance lacks an accessible route from available accessible parking into the building.
Pacific Tower	Typical	Door, Interior - Opening Force	ADA (2010) 404.2.9 and ANSI 404.2.8	The force for pushing or pulling open an interior hinged, sliding or folding door or gate other than fire doors shall be 5 pounds maximum.	Operating force for interior doors varied up to 18 pounds of pressure. Recommend that all doors in the building be checked and calibrated.
Pacific Tower	Typical at Restrooms	Signage	ADAAG (1991) 4.30.6, ADA (2010) 703.4.2 and ANSI 703.3.11	Where a tactile sign is provided at a door, the sign shall be alongside the door at the latch side. Where a tactile sign is provided at double doors with two active leafs, the sign shall be located to the right of the right hand door. Where there is no wall space at the latch side of a single door or at the right side of double doors, signs shall be located on the nearest adjacent wall. Signs containing tactile letters shall be located so that a clear floor space of 18x18" min, centered on the tactile characters, is provided beyond the arc of the door swing between the closed position and 45 degree open position.	Signage for restrooms varied as to location and height.

Building	Room or Area	Barrier Type / Regulation	Section	Issue	Comments
Pacific Tower	Typical in Many Restrooms	Toilet Room - Accessories	ADAAG (1991) 4.22.7, ADA (2010) 606.1 and ANSI 606.7	Operable parts on towel dispensers, hand dryers and other toilet accessories shall comply with Table 606.7 (and in WA State, with IBC amendment 1101.2.7 for maximum height of accessories to be 40" AFF.)	The recessed paper towel dispenser / trash receptacle unit located on the side wall near the exit exceeds 40" AFF.
Pacific Tower	Basement Level - Women's Locker Room	Toilet Room - Lavatory Pipes	ADAAG (1991) 4.19.4, ADA (2010) 606.6 and ANSI 606.6	Water supply and drain pipes under lavatories and sinks shall be insulated or otherwise configured to protect against contact. There shall be no sharp or abrasive surfaces under lavatories and sinks.	One of the lavatories is missing piping and pipe wrap.
Pacific Tower	Basement Level - Women's Locker Room	Shower Compart-ments	ADA (2010) 608 and ANSI 608	Shower compartments in public bathing rooms must comply with 608. Shower compartments may be transfer-type, standard roll-in or alternate roll-in. Transfer-type shower compartments shall have a clear inside dimension of 36 inches in width and 36 inches in depth, measured at the center point of opposing sides.	The transfer-type shower compartment measured 43" deep.
Pacific Tower	Basement Level - Women's Locker Room	Benches - Dressing / Locker Room	ADA (2010) 803.4, 903.2 & 903.4 and ANSI 903 & 803.4	A bench complying with 903 shall be provided within the room. (Accessible dressing benches are required to have clear floor or ground space complying with 305 positioned at the end of the bench seat and parallel to the short axis of the bench, and back support or be affixed to the wall).	The women's locker room lacks an accessible bench.
Pacific Tower	Basement Level - Women's Locker Room	Operable Parts	ADA (2010) 308 & 309 and ANSI 308 & 309	Operable parts required to be accessible shall comply with section 309 (reach range, clear floor space and usability). Operable parts shall be placed within one or more of the reach ranges specified in 308. Maximum unobstructed high forward or side reach for adults (anyone over 12) is 48".	Towel bars are mounted higher than 48" AFF.
Pacific Tower	Basement Level - Women's Locker Room	Toilet Room - Accessories	ADAAG (1991) 4.22.7, ADA (2010) 606.1 and ANSI 606.7	Operable parts on towel dispensers, hand dryers and other toilet accessories shall comply with Table 606.7 (and in WA State, with IBC amendment 1101.2.7 for maximum height of accessories to be 40" AFF.)	Paper towel and soap dispensers are mounted higher than 40" AFF.
Pacific Tower	Basement Level - Men's Locker Room	Water Closet	ADA (2010) 604.2 and ANSI 604.2	The water closet shall be positioned with a wall or partition to the rear and to one side. The centerline of the water closet shall be 16" minimum to 18" maximum from the side wall or partition.	In the wheelchair accessible toilet compartment, the horizontal dimension from the centerline of the water closet to the side wall measured 18-1/2".

Building	Room or Area	Barrier Type / Regulation	Section	Issue	Comments
Pacific Tower	Basement Level - Men's Locker Room	Shower Compart-ments	ADA (2010) 608 and ANSI 608	Shower compartments in public bathing rooms must comply with 608. Shower compartments may be transfer-type, standard roll-in or alternate roll-in. Transfer-type shower compartments shall have a clear inside dimension of 36 inches in width and 36 inches in depth, measured at the center point of opposing sides.	The transfer-type shower compartment measured 43" deep.
Pacific Tower	Basement Level - Men's Locker Room	Benches - Dressing / Locker Room	ADA (2010) 803.4, 903.2 & 903.4 and ANSI 903 & 803.4	A bench complying with 903 shall be provided within the room. (Accessible dressing benches are required to have clear floor or ground space complying with 305 positioned at the end of the bench seat and parallel to the short axis of the bench, and back support or be affixed to the wall).	The men's locker room lacks an accessible bench.
Pacific Tower	Basement Hallway - Parking Pay Box	Operable Parts	ADA (2010) 308 & 309 and ANSI 308 & 309	Operable parts required to be accessible shall comply with section 309 (reach range, clear floor space and usability). Operable parts shall be placed within one or more of the reach ranges specified in 308. Maximum unobstructed high forward or side reach for adults (anyone over 12) is 48".	The pay slot on top of the box measures 61" AFF.
Pacific Tower	Basement Hallway - Parking Pay Box	Protruding Objects into Accessible Routes	ADAAG (1991) 4.4.2, ADA (2010) 307.4 and ANSI 307.4	Areas with reduced vertical clearance (less than 80" vertical) shall be provided with a cane-detectable barrier.	The parking pay box protrudes 8" into the accessible route.
Pacific Tower	First Floor Lobby	Sales and Service Counters	ADAAG (1991) 7.2 (1), ADA (2010) 904.4 and ANSI 904.3	Sales and Service Counters shall provide either a forward or parallel approach with a counter 36" in length and 36" max above the floor.	Two service counters measure 43-1/2" AFF.
Pacific Tower	First Floor Men's Rest-room	Accessible Route - Clear Width	ADA (2010) 403.5.1 and ANSI 403.5	Clear width of a walking surface that is part of an accessible route shall be 36" minimum.	Horizontal dimension between recessed paper towel / trash receptacle unit and the opposing wall measures 32 ". Horizontal dimension wall to wall in this area measures 35-3/4".
Pacific Tower	First Floor Women's Rest- room	Accessible Route - Clear Width	ADA (2010) 403.5.1 and ANSI 403.5	Clear width of a walking surface that is part of an accessible route shall be 36" minimum.	Horizontal dimension between recessed paper towel / trash receptacle unit and the opposing wall measures 31-3/4 ". Horizontal dimension wall to wall in this area measures 35-3/4".
Pacific Tower	Second Floor Cafeteria	Built-in Counters, Seating - Dining Surfaces	ADA (2010) 226.1, 2009 IBC 1109.10 and 2003 ANSI A117.1 902	Where seating or standing space at fixed or built-in tables, counter or work surfaces is provided in accessible spaces, at least 5% of the seating or standing spaces, but not less than one, shall be accessible. Where dining surfaces are provided, at least 5% of the seating spaces and and standing spaces shall comply with 902.	The lowered portion of the built-in eating counter measures 34-1/2" AFF.

Building	Room or Area	Barrier Type / Regulation	Section	Issue	Comments
Pacific Tower	Second Floor Cafeteria	Protruding Objects into Accessible Routes	ADAAG (1991) 4.4, ADA (2010) 307 and ANSI 307	The limit for the distance that objects may project into the accessible route is 4". Objects that are less than 27" (within the allowable zone for cane detection) and more than 80" above finished floor may protrude greater than 4".	The built-in eating counters lack detectable material below 27".
Pacific Tower	Second Floor Cafeteria	Accessible Route - Components	ADA (2010) 402.2 and ANSI 402.2	Accessible routes shall consist of one or more of the following components: walking surfaces with a running slope not steeper than 1:20, doorways, ramps, curb ramps excluding the flared sides, elevators and platform lifts.	The raised platform in the cafeteria lacks an accessible ramp.
Pacific Tower	Eighth Floor Men's Rest-room	Water Closet	ADA (2010) 604.2 and ANSI 604.2	The water closet shall be positioned with a wall or partition to the rear and to one side. The centerline of the water closet shall be 16" minimum to 18" maximum from the side wall or partition.	In the wheelchair accessible toilet compartment, the horizontal dimension from the centerline of the water closet to the side wall measured 18-1/4".
Pacific Tower	Eighth Floor Men's Rest-room	Accessible Route - Clear Width	ADA (2010) 403.5.1 and ANSI 403.5	Clear width of a walking surface that is part of an accessible route shall be 36" minimum.	Horizontal dimension between recessed paper towel / trash receptacle unit and the opposing wall measures 34-1/2".
Pacific Tower	Eighth Floor Women's Rest- room	Accessible Route - Clear Width	ADA (2010) 403.5.1 and ANSI 403.5	Clear width of a walking surface that is part of an accessible route shall be 36" minimum.	Horizontal dimension between recessed paper towel / trash receptacle unit and the opposing wall measures 34".
Pacific Tower	Eighth Floor Assembly Roon	Accessible Route - Components	ADA (2010) 402.2 and ANSI 402.2	Accessible routes shall consist of one or more of the following components: walking surfaces with a running slope not steeper than 1:20, doorways, ramps, curb ramps excluding the flared sides, elevators and platform lifts.	The raised platform in the room lacks an accessible ramp.
Pacific Tower	Tenth Floor Men's Rest-room				No additional issues were observed beyond signage placement, door operating force, and the height of the paper towel / trash unit.
Pacific Tower	Tenth Floor Women's Rest- room	Water Closet	ADA (2010) 604.2 and ANSI 604.2	The water closet shall be positioned with a wall or partition to the rear and to one side. The centerline of the water closet shall be 16" minimum to 18" maximum from the side wall or partition.	In the wheelchair accessible toilet compartment, the horizontal dimension from the centerline of the water closet to the side wall measured 18-1/2".
Pacific Tower	Eleventh Floor Men's Restroom	Accessible Route - Clear Width	ADA (2010) 403.5.1 and ANSI 403.5	Clear width of a walking surface that is part of an accessible route shall be 36" minimum.	Horizontal dimension between recessed paper towel / trash receptacle unit and the opposing wall measures 35-1/2".
Pacific Tower	Eleventh Floor Women's Restroom	Accessible Route - Clear Width	ADA (2010) 403.5.1 and ANSI 403.5	Clear width of a walking surface that is part of an accessible route shall be 36" minimum.	Horizontal dimension between recessed paper towel / trash receptacle unit and the opposing wall measures 35-3/4".
Pacific Tower	Eleventh Floor Women's Restroom	Water Closet	ADA (2010) 604.2 and ANSI 604.2	The water closet shall be positioned with a wall or partition to the rear and to one side. The centerline of the water closet shall be 16" minimum to 18" maximum from the side wall or partition.	In the wheelchair accessible toilet compartment, the horizontal dimension from the centerline of the water closet to the side wall measured 19".

Building	Room or Area	Barrier Type / Regulation	Section	Issue	Comments
Pacific Tower	Eleventh Floor Women's Restroom	Toilet Room - Lavatory Pipes	ADAAG (1991) 4.19.4, ADA (2010) 606.6 and ANSI 606.6	Water supply and drain pipes under lavatories and sinks shall be insulated or otherwise configured to protect against contact. There shall be no sharp or abrasive surfaces under lavatories and sinks.	Pipe wrapping is missing from one lavatory.
Pacific Tower	Twelfth Floor Single-user Restrooms				No additional issues were observed beyond signage placement and door operating force.

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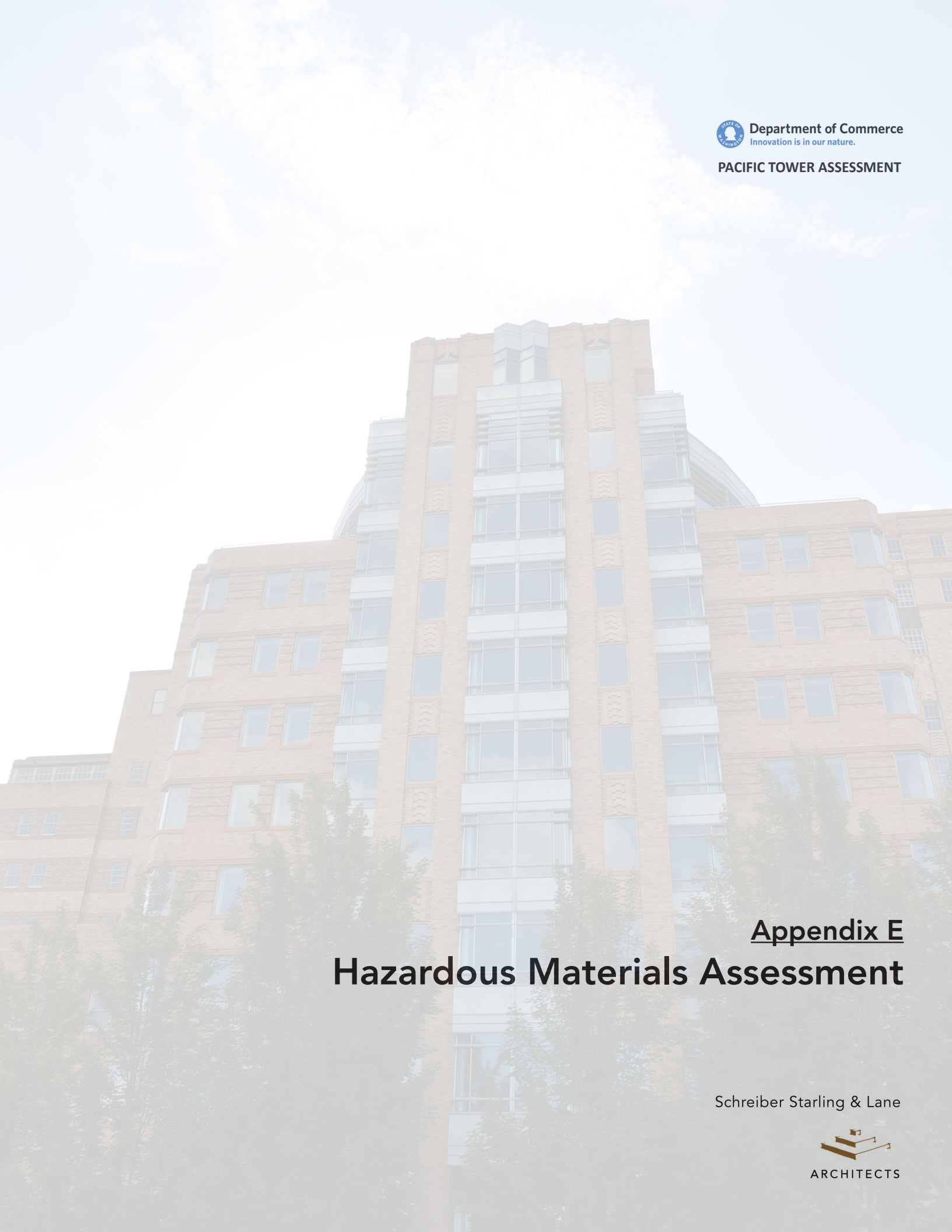
PACIFIC TOWER ASSESSMENT



Appendix E
Hazardous Materials Assessment

Schreiber Starling & Lane

ARCHITECTS

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LIMITED HAZARDOUS MATERIALS SCREEN SURVEY REPORT

PACIFIC TOWER BUILDING

1200 12th Avenue South
Seattle, Washington

Original Issue Date:September 23, 2013
Revised: September 26, 2013

Prepared For:

Keith Schreiber
Schreiber Starling Lane Architects
185 University Street
Seattle, WA 98101

- Environmental Engineering
- Earth Sciences and Mapping
- Industrial Hygiene Services
- Construction Management

EHS–International, Inc.

Limited Hazardous Materials Screen Survey Report

Pacific Tower Building
1200 12th Avenue South
Seattle, Washington

EHSI Project Nos.: #10563

The material and data in this report were prepared under the supervision and direction of the undersigned.

Report Approved By:

Herb Brod
EHSI Hazardous Materials Services Manager

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A ..... Asbestos Analytical Laboratory Report and Field Data Forms
B ..... Certified AHERA Building Inspector Certificates
C ..... Laboratory Certifications for Asbestos

ACRONYM LIST

ACM .....Asbestos-Containing Material
ACT .....Acoustic Ceiling Tiles
AHERA .....Asbestos Hazard Emergency Response Act
AHU .....Air Handling Unit
AIHA .....American Industrial Hygiene Association
CAB.....Cement Asbestos Board
CB.....Cove Base
CFR .....Code of Federal Regulations
DOSH .....Washington State Department of Labor and Industries, Division of Occupational Safety and Health
EA.....Each
Ecology .....Washington State Department of Ecology
EIFS .....Exterior Insulation Finishing System
EHSI.....EHS-International, Inc.
ELLAP .....Environmental Lead Laboratory Accreditation Program
GWB.....Gypsum Wall Board
JC .....Joint Compound
LCM.....Lead-Containing Material
LCP .....Lead-Containing Paint
mg/L .....Milligrams Per Liter
mg/m^3 .....Milligrams Per Cubic Meter
N/A .....Not Applicable
ND .....None Detected
NVL.....NVL Laboratories, Inc.
NVLAP .....National Voluntary Laboratory Accreditation Program
Pb .....Lead
PLM.....Polarized Light Microscopy
ppm .....Parts per Million
PSCAA .....Puget Sound Clean Air Agency
QA .....Quality Assurance
RCW.....Revised Code of Washington
SACT .....Suspended Acoustical Ceiling Tiles
SAT .....Seattle Asbestos Test, LLC
SF .....Square Feet
TCLP.....Toxic Characteristic Leachate Procedure
TSI.....Thermal System Insulation
USEPA .....United States Environmental Protection Agency
VAT .....Vinyl Asbestos Tile
VCT .....Vinyl Composite Tile
WAC.....Washington Administrative Code
WT .....Weight
w/ .....With

1.0 EXECUTIVE SUMMARY

1.1 BACKGROUND

Schreiber Starling Lane Architects (SSLA) was contracted by Washington State to evaluate the Pacific Tower Building (Pacific Tower), located at 1200 12th Avenue South in Seattle, Washington for use by state agencies. In conjunction with that evaluation, SSLA contracted EHS-International, Inc. (EHSI), a hazardous materials consulting firm, to conduct a Limited Hazardous Materials Screen Survey of the Pacific Tower. The intent of this survey is to provide the Client with a "budget level" cost estimate of potential hazardous materials remediation that might be required for state agencies to occupy the building. The survey included identification and quantification of suspect asbestos-containing building materials (ACM), lead-containing paint (LCP), other lead-containing building materials (LCM), polychlorinated biphenyl (PCB)-containing light ballasts, and mercury (Hg)-containing light tubes.

1.2 EXTENT OF CURRENT SURVEY

EHSI inspected all accessible interior materials during this investigation. No destructive inspection was conducted to access, identify, quantify and sample concealed suspect materials. Some of the accessible suspect materials were sampled including, but not limited to: interior wall and ceiling systems, mechanical systems, windows, and floor coverings; however the extent of sampling does not meet Federal, State and local regulatory requirements for elimination of suspect materials as ACMs and was accomplished solely to evaluate "high value" materials for their likelihood to be ACM or LCP/LCM. Prior to any renovation, additional sampling will be required to meet these regulatory requirements.

1.3 MATERIALS FOUND

Pacific Tower Building:

ACM: Lab results indicate that the following materials in Pacific Tower Building are ACM:

SUMMARY OF ASBESTOS-CONTAINING MATERIALS FOR PACIFIC TOWER BUILDING	
ASBESTOS MATERIAL DESCRIPTION	**LOCATION**
Skim coat on plaster wall	Floors 5 through 11, east side fan rooms (on east side walls, only)
Gray paper backing with mastic associated with non-ACM broken rock pattern sheet vinyl flooring on concrete	Basement north corridor

Possible ACMs: The limited scope of this project precluded sampling of the following suspect materials that are possible ACMs:

SUMMARY OF UNSAMPLED POSSIBLE ASBESTOS-CONTAINING MATERIALS FOR PACIFIC TOWER BUILDING	
ASBESTOS MATERIAL DESCRIPTION	**LOCATION**
Possible ACM internals in electrical panels	Throughout the building
Possible ACM mastic associated with marble wall paneling	1st Floor entrance/ elevator lobby
*Possible ACM grout and mastic associated with 5" ceramic wall tile	Restrooms throughout the building
*Possible ACM grout and mortar associated with 1" round ceramic floor tile	Restrooms throughout the building
Possible ACM internals in boilers (5'Hx7'Lx3'W)	Roof top
Possible ACM vibration ducts (4'x5')	Throughout
Possible ACM roofing	Roofing (roof excluding 1st and 14th floor)
Possible ACM internals in kitchen exhaust hood	Kitchen/Cafeteria
Possible ACM window frame caulking concealed between frame and window opening (4'x6' wood framed windows)	Throughout the building exterior (Basement through 11th floor only)
Possible ACM window frame caulking concealed between frame and window opening (4'x12' metal framed window)	Exterior, south side main entrance
Possible ACM TSI on small bore pipe runs and elbows concealed in plumbing walls and ceilings	Throughout the building
Possible ACM TSI on small bore pipe fittings concealed in plumbing walls and ceilings	Throughout the building
Possible ACM elevator brake pads	Elevator mechanical rooms

* Since the building has gone through significant renovations between 1991 and 2001, the identified materials have a low probability to be ACM. However prior to any future renovation/demolition activities, these materials should be sampled by a Certified Asbestos Building Inspector and tested by a NVLAP certified laboratory to confirm the materials are non-ACM.

1.4 OPINIONS AND RECOMMENDATIONS

EHSI recommends that all impacted ACMs and possible ACMs identified in paragraph 1.3 be removed and disposed prior to any future renovations by a certified asbestos contractor. For possible ACMs, sampling by a Certified Asbestos Building Inspector is recommended prior to renovation to potentially determine the materials to be non-ACM.

Any suspect materials not identified as having been surveyed in this report must be treated as an ACM until determined otherwise by a Certified Asbestos Building Inspector and NVLAP certified laboratory.

Note: No abatement is required of ACM or possible ACM that will not be impacted by the planned scope of work.

DOSH requires employers to conduct a hazard assessment and take appropriate worker protection precautions whenever building materials are disturbed that have detectable quantities of lead. Since the type of work planned (e.g., general renovation) will disturb the LCP/LCM the contractor should perform an initial exposure assessment to determine if personal protective measures and work practices are required. Based on the concentrations of lead in the paint (especially beige painted plaster) and the known scope of work (e.g., select demolition), there is a potential that exposure monitoring results will exceed the DOSH action level of 30 milligram per cubic meter (mg/m3) for lead.

EHSI inspected a representative number of each type of fluorescent fixture for PCB-containing ballasts. All fixtures were found to contain electronic ballasts, which contain no dielectric fluid and may be disposed as construction debris. All fluorescent light tubes contain mercury and any tubes disturbed by future renovations should either be re-used or disposed/recycled as Washington State Department of Ecology (Ecology) Universal Waste. A Summary of ballasts and Hg-containing light tubes is provided in Table 4.

1.5 LIMITATIONS/DISCLAIMER

EHSI'S Limited Hazardous Materials Screening Survey was limited to the Pacific Tower Building. This report does **not** represent a comprehensive hazardous materials investigation for the subject property. This investigation has been conducted by EHSI under a specific scope of work authorized by SSLA for a property hazardous materials screening purpose. The extent of sampling accomplished for this Screening Survey does not meet Federal, State and local regulatory requirements for elimination of suspect materials as ACMs and was accomplished solely to evaluate "high value" materials for their likelihood to be ACM or LCP/LCM. Prior to any renovation, additional sampling will be required to meet these regulatory requirements. This report and accompanying appendices include the supporting information for this executive summary.

2.0 LIMITED HAZARDOUS MATERIALS SURVEY REPORT

2.1 BACKGROUND

EHSI was tasked to provide a written hazardous materials screening survey report including: identification of all accessible suspect materials; a determination of whether suspect materials were ACM, possible ACM (if not sampled), LCP, LCM, PCB or Hg-containing; and analytical reports indicating the presence and quantity of the hazardous materials.

This Limited Hazardous Materials Screen Survey Report **does not** meet the Washington State "Good Faith Survey" requirements as cited in Revised Code of Washington (RCW) 49.26.016 and implemented by DOSH regulation, Washington Administrative Code (WAC) 296-62-07721, or Regulation III, Article 4 of the Puget Sound Clean Air Agency (PSCAA).

On August 28 and 29, 2013, EHSI conducted a Limited Hazardous Materials Screen Survey (ACM, LCP, LCM, PCB and Hg) of the Pacific Tower Building.

2.2 BUILDING DESCRIPTION

The Pacific Tower, formerly known as Pacific Medical Center is a 16-Story brick building located at 1200 12th Avenue South in Seattle, Washington. The construction of the Pacific Tower Building was reportedly completed in 1932. It was reportedly significantly renovated between 1991 and 2001, when extensive hazardous materials removal and disposal was accomplished. It has flat asphaltic built up roofing (BUR) on multi-level concrete roof decking. Interior finishes include: painted gypsum wall board (GWB) walls with bare concrete and painted plaster ceilings with hanging fluorescent and high intensity discharge (HID) light fixtures. Majority of the concrete floors are covered with a multi-colored carpets with vinyl cove base and bathrooms have ceramic floor and wall tiles. Building has both metal and wood framed operable window. Two roof top electric boilers provide hot water to the building and electric forced air HVAC units located on the roofs provide heat and air conditioning throughout the building.

2.3 SAMPLING METHODOLOGY

2.3.1 Asbestos-Containing Materials

The EHSI field inspectors are asbestos Building Inspectors, certified under the requirements of the United States Environmental Protection Agency (USEPA) AHERA regulation 40 Code of Federal Regulations (CFR) 763, Subpart E. Copies of their certificates are provided in Appendix C. The number of bulk samples collected and their locations are based on the limited scope of the screening survey and were for the purpose of confirming "high value" suspect materials as ACM. The sampling **does not** comply with the AHERA regulation and the guidelines provided by the USEPA Document 560/5-85-030a, October 1985, *Asbestos in Buildings: Simplified Sampling Scheme for Friable Surfacing Materials*.

EHSI collected samples and obtained analytical data for suspect ACM identified in the facility. Once collected, each bulk sample was sealed in an unadulterated plastic bag to eliminate the possibility of cross-contamination. "Chain-of-Custody" tracking was followed to maintain sample integrity during handling and data reporting at EHSI and the analytical laboratory. As specified in 40 CFR Chapter 1 (1-1-87 edition) Part 763, Subpart F, and Appendix A, each sample was analyzed using polarized light microscopy (PLM) / dispersion staining techniques, in accordance with USEPA Method 600/R-93/116. Samples were analyzed for asbestos content by Seattle Asbestos Test, LLC (SAT) located in Bellevue, Washington. SAT participates in the NVLAP. Only materials containing more than 1% total asbestos were classified as "asbestos-containing" based on USEPA, state, and local regulations.

2.3.2 *Lead-Containing Paint/Lead-Containing Materials*

EHSI used a Niton Model XLp x-ray fluorescence (XRF) Spectrum Analyzer to measure lead content on interior and exterior paint coatings and other suspect LCM. Measurements were representative of all layers of paint and/or LCM.

2.4 SAMPLING RESULTS

2.4.1 *Asbestos-Containing Materials*

Thirty-one (31) bulk samples of suspect ACM were collected as part of the screening survey. Copies of the asbestos analytical laboratory results are included in Appendix A. Asbestos sampling information including: sample number, material description, sample location, and analytical results are summarized in Table 1. The ACM and unsampled "possible" ACM identified during this survey, including the quantity and location, are summarized in Table 2.

TABLE 1
SUMMARY OF ASBESTOS BULK SAMPLING AND ANALYTICAL RESULTS FOR PACIFIC TOWER BUILDING

SAMPLE NUMBER	SAMPLE LOCATION	MATERIAL DESCRIPTION	ASBESTOS %	TYPE OF ASBESTOS
10563-01	13th Floor, South Side Open Area	JC with paint (corner-wall)	ND	N/A
10563-02	13th Floor, North Side Open Area	GWB with paint (mid-wall)	ND	N/A
10563-03	13th Floor, South Side Open Area	Layer 1: White window frame caulking Layer 2: Yellow foam (on 4'x12' metal framed window)	L1: ND L2: ND	N/A N/A
10563-04	13th Floor, South Side Open Area	Layer 1: Multi-color carpet Layer 2: Tan mastic Layer 3: Blue mastic Layer 4: Concrete debris	L1: ND L2: ND L3: ND L4: ND	N/A N/A N/A N/A

TABLE 1 SUMMARY OF ASBESTOS BULK SAMPLING AND ANALYTICAL RESULTS FOR PACIFIC TOWER BUILDING				
SAMPLE NUMBER	**SAMPLE LOCATION**	**MATERIAL DESCRIPTION**	**ASBESTOS %**	**TYPE OF ASBESTOS**
10563-05	13th Floor, South Side Open Area	Layer 1: 4" Black cove base Layer 2: Off-white mastic	L1: ND L2: ND	N/A N/A
10563-06	12th Floor, South Side Open Area	Gray interior window glazing (on 4'x6' wood framed window)	ND	N/A
10563-07	12th Floor, S Side Open Area	Gray sprayed on fire proofing with paint (on horizontal mental beam)	ND	N/A
10563-08	12th Floor, S Side Open Area	Gray sprayed on fire proofing with paint (over spray on concrete ceiling)	ND	N/A
10563-09	12th Floor, Stairwell 2	Layer 1: 1'x1' White ACT Layer 2: Brown glue dot	L1: ND L2: ND	N/A N/A
10563-10	11th Floor, Central Corridor	Gray/beige duct seam sealant (on round metal air duct, 1'1/2" Diameter)	ND	N/A
10563-11	11th Floor, East Side Fan Room	Layer 1: White skim coat Layer 2: Gray plaster wall	L1: ND L2: ND	N/A N/A
10563-12	11th Floor, East Side Fan Room	Layer 1: White skim coat Layer 2: Gray plaster wall	L1: ND L2: ND	N/A N/A
10563-13	**10th Floor, East Side Fan Room (on east walls, only)**	**Layer 1: White/tan skim coat**	**L1: 2%**	**Chrysotile**
10563-14	Basement, North Corridor	2'x4' White SACT (with pin-hole and worm track patter, in 2'x2' pattern)	ND	N/A
10563-15	10th Floor, Mechanical Room	Gray sprayed on fire proofing (on vertical beam)	ND	N/A
10563-16	9th Floor, Central Corridor	Layer 1: Remnant 1'x1' ACT Layer 2: Brown glue dot	L1: ND L2: ND	N/A N/A
10563-17	9th Floor, Coffee Break Area	Layer 1: 12"x12" Black floor tile Layer 2: Yellow mastic	L1: ND L2: ND	N/A N/A
10563-18	8th Floor, Central Corridor	Layer 1: JC with paint Layer 2: GWB with paper (corner-wall)	L1: ND L2: ND	N/A N/A
10563-19	8th Floor, Central Corridor	GWB with paint (mid-wall0	ND	N/A

TABLE 1 SUMMARY OF ASBESTOS BULK SAMPLING AND ANALYTICAL RESULTS FOR PACIFIC TOWER BUILDING				
SAMPLE NUMBER	**SAMPLE LOCATION**	**MATERIAL DESCRIPTION**	**ASBESTOS %**	**TYPE OF ASBESTOS**
10563-20	9th Floor, Central Corridor	Layer1: White skim coat with paint Layer 2: Gray plaster wall	L1: ND L2: ND	N/A N/A
10563-21	7th Floor, Central Corridor	Layer1: White skim coat with paint Layer 2: Gray plaster wall	L1: ND L2: ND	N/A N/A
10563-22	7th Floor, North Wing	Gray sprayed on fire proofing (on metal decking)	ND	N/A
10563-23	3rd Floor, Corridor	Layer 1: JC with paint Layer 2: GWB with paper (corner-wall)	L1: ND L2: ND	N/A N/A
10563-24	3rd Floor, Corridor	GWB with paint (mid-wall)	ND	N/A
10563-25	2nd Floor, Elevator Lobby	Layer 1: Brown 12”x 36” cork floor tile Layer 2: Clear mastic	L1: ND L2: ND	N/A N/A
10563-26	2nd Floor, Cafeteria	Layer 1: Gray floor texturing Layer 2: Red mastic	L1: ND L2: ND	N/A N/A
10563-27	2nd Floor, Cafeteria	Black Chemstone™ cafeteria counter top	ND	N/A
10563-28	Exterior South, At Main Entrance	Gray/red brick mortar	ND	N/A
10563-29	Exterior South, At Main Entrance	Gray/brown window glazing putty (on 4’x12’ metal framed window	ND	N/A
10563-30	**Basement, N Corridor**	Layer 1: Beige broken rock pattern sheet vinyl flooring **Layer 2: Gray backing** **Layer 3: Tan mastic** Layer 4: Concrete debris	L1: ND **L2: 51%** **L3: 2%** L4: ND	N/A **Chrysotile** **Chrysotile** N/A
10563-31	Basement, Central Main Corridor	Layer 1: Gray hard flooring Layer 2: Tan mastic Layer 3: Brown woven fibrous material	L1: ND L2: ND L3: ND	N/A N/A N/A

Key: **CMU** – Concrete Masonry Units, **JC** = Joint Compound, **ND**=No Asbestos Detected, **N/A** = Not Applicable **w/** = with

Table 2 summarizes materials identified by EHSI as containing greater than 1% asbestos fibers during its survey, and un-sampled materials possible to be ACM. **The Table 2**

Summary of Asbestos Containing Materials is for engineering cost estimating purposes and is not intended for bid quantifications.

TABLE 2 SUMMARY OF ASBESTOS-CONTAINING MATERIALS FOR PACIFIC TOWER BUILDING		
ASBESTOS MATERIAL DESCRIPTION	**LOCATION**	**QUANTITY EXPECTED TO BE IMPACTED**
Skim coat on plaster wall	Floors 5 through 11, east side fan rooms (on only east side walls)	1200 SF
Gray paper backing with mastic associated with non-ACM broken rock pattern sheet vinyl flooring on concrete	Basement north corridor	2000 SF
Possible ACM internals in electrical panels	Throughout the building	37 EA
Possible ACM mastic associated with marble wall paneling	1st Floor entrance/ elevator lobby	4000 SF
Possible ACM grout and mastic associated with 5" ceramic wall tile	Restrooms throughout the building	31,200 SF
Possible ACM grout and mortar associated with 1" round ceramic floor tile	Restrooms throughout the building	14,400 SF
Possible ACM internals in boilers (5'Hx7'Lx3'W)	Roof top	2 EA
Possible ACM vibration ducts (4'x5')	Throughout	13 EA
Possible ACM roofing	Roofing (roofing excluding 1st and 14th floor)	21000 SF
Possible ACM internals in kitchen exhaust hood	Kitchen/Cafeteria	4 EA
Possible ACM window frame caulking concealed between frame and window opening (4'x6' wood framed windows)	Throughout the building exterior (Basement through 11th floor only)	899 EA
Possible ACM window frame caulking concealed between frame and window opening (4'x12' metal framed window)	Exterior, south side main entrance	6 EA
Possible ACM TSI on small bore pipe runs and elbows concealed in plumbing walls and ceilings	Throughout the building	3500 LF
Possible ACM TSI on small bore pipe fittings concealed in plumbing walls and ceilings	Throughout the building	500 EA
Possible ACM elevator brake pads	Elevator mechanical rooms	8 EA

Key: **EA** = Each, **SF** = Square Feet, **LF** = Linear Feet

ACM and "possible" ACM identified in this survey should not be disturbed unless handled by personnel who are properly trained and certified in asbestos work. Demolition activities by contractors may expose concealed suspect ACM. Contractors should be aware of the potential for concealed suspect ACM and have preplanned contingencies for the handling of suspect ACM discovered during renovation work. Any concealed suspect ACM material that was not sampled or was assumed to be possible ACM and included in this report, must be treated as ACM until proven otherwise by a Certified AHERA Building Inspector and a certified laboratory. Contingency plans should include stopping work on identification of concealed suspect ACM, evacuation of the area, and sampling by a Certified AHERA Building Inspector. Concealed suspect material may include, but is not limited to: non-fiberglass pipe or roof drain insulation; spray-applied coatings; cementitious board; asphalt or paper vapor barriers; vinyl floorings and mastics.

Note: No abatement is required of ACM or possible ACM that will not be impacted by the planned scope of work.

2.4.2 Lead-Containing Paint and Building Materials

Twenty (20) samples were analyzed for lead using the X-Ray fluorescence (XRF) analyzer. Results ranged from 16.7 milligrams of lead per square centimeter (mg Pb/cm^2) to less than the Limit of Detection (LOD). Results marked with the "<" symbol are less than the detectable level. Building materials and paint containing detectable levels of lead are considered regulated by DOSH.

Copies of the XRF tables are included in Appendix B of this report. Table 3 summarizes lead samples, including sample number, material description, substrate, color, location, and analytical results.

TABLE 3
XRF SAMPLING
SUMMARY OF PAINTED COMPONENTS AND MATERIALS FOR PACIFIC TOWER BUILDING

Read. #	Units	Component	Substrate	Color	Room	Lead Conc. (mg/cm^2)
1	**mg/cm^2**	**SHUTTER CALIBRATION**	**N/A**	**N/A**	**N/A**	**2.19**
2	**mg/cm^2**	**CALIBRATION**	**N/A**	**RED**	**N/A**	**1**
3	**mg/cm^2**	**CALIBRATION**	**N/A**	**RED**	**N/A**	0.9
4	**mg/cm^2**	**CALIBRATION**	**N/A**	**RED**	**N/A**	**1**
5	mg/cm^2	WALL	GWB	WHITE	CENTRAL CORRIDOR	< LOD
6	mg/cm^2	WALL	GWB	YELLOW	CENTRAL CORRIDOR	< LOD
7	**mg/cm^2**	**CEILING**	**PLASTER**	**BEIGE**	**CENTRAL CORRIDOR**	**15.9**
8	**mg/cm^2**	**WALL**	**PLASTER**	**BEIGE**	**8507**	**16.7**

TABLE 3 XRF SAMPLING SUMMARY OF PAINTED COMPONENTS AND MATERIALS FOR PACIFIC TOWER BUILDING						
Read. #	**Units**	**Component**	**Substrate**	**Color**	**Room**	**Lead Conc. (mg/cm^2)**
9	mg/cm^2	ELECTRICAL PANEL	METAL	GRAY	8507	< LOD
10	**mg/cm^2**	**WINDOW FRAME**	**WOOD**	**WHITE**	**SOUTH OPEN AREA**	**5**
11	**mg/cm^2**	**WINDOW SASH**	**WOOD**	**WHITE**	**SOUTH OPEN AREA**	**4.3**
12	mg/cm^2	WINDOW SILL	WOOD	WHITE	SOUTH OPEN AREA	< LOD
13	mg/cm^2	CEILING	GWB	BEIGE	SOUTH OPEN AREA	< LOD
14	mg/cm^2	WALL	CERAMIC	WHITE	MEN RESTROOM	0.11
15	mg/cm^2	FLOOR	CERAMIC	WHITE	MEN RESTROOM	< LOD
16	**mg/cm^2**	**WINDOW FRAME**	**METAL**	**WHITE**	**OFFICE**	**4.6**
17	**mg/cm^2**	**WINDOW**	**METAL**	**WHITE**	**OFFICE**	**4.2**
18	**mg/cm^2**	**WINDOW**	**METAL**	**WHITE**	**OFFICE**	**4**
19	mg/cm^2	DOOR FRAME	METAL	WHITE	CENTRAL CORRIDOR	< LOD
20	mg/cm^2	DOOR FRAME	METAL	WHITE	CENTRAL CORRIDOR	< LOD
21	**mg/cm^2**	**FLOOR**	**CONCRETE**	**BROWN**	**STAIRWELL 3**	**6**
22	**mg/cm^2**	**STAIR RAILING**	**METAL**	**GREEN**	**STAIRWELL 3**	**4.3**
23	**mg/cm^2**	**STAIRS**	**CONCRETE**	**BROWN**	**STAIRWELL 3**	**3.6**
24	**mg/cm^2**	WALL	CONCRETE	WHITE	STAIRWELL 3	< LOD
25	**mg/cm^2**	**CALIBRATION**	**N/A**	**RED**	**N/A**	**1.3**
26	**mg/cm^2**	**CALIBRATION**	**N/A**	**RED**	**N/A**	**1.3**
27	**mg/cm^2**	**CALIBRATION**	**N/A**	**RED**	**N/A**	**1.4**

Key: GWB=Gypsum Wallboard, LOD = Limit of Detection, QA=Quality Assurance Bulk Sample submitted for analysis, N/A=Not Applicable, mg/cm^2=milligrams per square centimeter

DOSH requires employers to conduct a hazard assessment and take appropriate worker protection precautions whenever paint is disturbed that has detectable quantities of lead. Since the type of work planned (e.g., general renovation) will disturb the lead-containing paint, the contractor should perform an initial exposure assessment to determine if personal protective measures and work practices are required. Based on the sample results, there is a potential that lead exposures above the DOSH action level of 30 milligram per cubic meter

(mg/m^3) could occur, especially in the disturbance of beige painted plaster. Twenty-three (23) lead metal vent pipes were found on the roofs of the Pacific Tower Building.

2.4.3 Toxicity Characteristic Leachate Procedure Sampling

Ecology requires testing using the "toxicity characteristic leaching procedure" (TCLP) and segregation of construction debris if it is potentially contaminated with dangerous waste (e.g., lead-containing paint/lead-containing materials). Washington State Department of Ecology (Ecology) has set a dangerous waste threshold for leachable lead at 5.0 milligrams per liter (mg/L).

TCLP testing was not within the scope of this limited hazardous materials screening survey, and based on the results of lead identified in the sample results, there is a potential that leachable lead concentrations above the Ecology threshold of 5 mg/L could occur, especially in waste streams including beige painted plaster.

2.4.4 Polychlorinated Biphenyls

Ballasts

EHSI inspected a representative number of fluorescent fixtures expected to be disturbed by the planned work for PCB-containing ballasts. All of the fixtures inspected contained electronic ballasts which contain no dielectric fluid and may be disposed as construction debris. If during renovation activities, any fixtures are found to contain magnetic ballasts (e.g., not labeled as "electronic" ballasts), they must be disposed/recycled as Ecology Dangerous Waste. This includes magnetic ballasts that are labeled "No PCBs" as this indicates a PCB concentration in the ballast dielectric fluid of less than 50 parts per million (PPM). Ecology regulates materials with PCB concentrations down to 2 PPM. A Summary of ballasts and Hg-containing light tubes is provided in Table 4.

2.4.5 Mercury-Containing Fluorescent Light Tubes

All fluorescent light tubes quantified in Table 4 are assumed to contain Hg. Hg wastes are regulated as "universal wastes" under Ecology's regulation WAC 173-303. Hg-containing building materials must be recycled or disposed of as hazardous waste. Hg-containing fluorescent light tubes are quantified in Table 4.

TABLE 4
SUMMARY OF LIGHT FIXTURE INSPECTION RESULTS FOR PACIFIC TOWER BUILDING

LIGHT TYPE	NUMBER OF FIXTURES	NUMBER OF TUBES	APPROXIMATE NUMBER OF MAGNETIC BALLASTS
2'x4' Recessed light fixtures with 4 bulbs and 2 ballasts	120	480	0
1'x8' Hanging light fixates with 4 bulbs and 2 ballasts	560	1440	0
High Intensity Discharged (HID)	520	520	0

TABLE 4 SUMMARY OF LIGHT FIXTURE INSPECTION RESULTS FOR PACIFIC TOWER BUILDING			
LIGHT TYPE	**NUMBER OF FIXTURES**	**NUMBER OF TUBES**	**APPROXIMATE NUMBER OF MAGNETIC BALLASTS**
Total	**730**	**2440**	**0**

3.0 LIMITATIONS

This screening survey was limited to those materials accessible using standard survey methods in the Pacific Tower Building.

This survey was limited to the chemicals and materials identified herein. No effort was made to identify hazardous materials in soil, water, or air, other than those listed herein. Any survey regardless of how extensive can miss concealed materials. Contractors should be aware of the potential that demolition activities may expose concealed suspect ACM and should have preplanned contingencies for handling these materials when discovered during demolition work. Any concealed, suspect ACM material that was not sampled or that was assumed to be possible ACM by this survey report when encountered must be treated as ACM until sampled by a Certified AHERA Building Inspector and analyzed by a certified laboratory. The extent of sampling accomplished for this Screening Survey does not meet Federal, State and local regulatory requirements for elimination of suspect materials as ACMs and was accomplished solely to evaluate "high value" materials for their likelihood to be ACM or LCP/LCM. Prior to any renovation, additional sampling will be required to meet these regulatory requirements.

4.0 STANDARD OF CARE

The recommendations and conclusions contained in this report represent the professional opinions of EHSI. These opinions are derived in accordance with federal, state, and local environmental and health and safety laws and regulations; however, this survey was not accomplished in accordance with applicable federal, state, and local regulations and industry standards in effect at the time and was for "budget level" cost estimating purposes, only. Other than this, no other warranty is implied or intended.

5.0 CERTIFIED AHERA BUILDING INSPECTORS

The Certified AHERA Building Inspectors listed below accomplished the Limited Hazardous Materials Screening Survey of the Pacific Tower Building on August 27th and 28th, 2013 in accordance with the proposal provided by EHSI to SSLA.

Nadir Khan
Certified AHERA Building Inspector
Certificate Number: 10484-02-04
Expiration Date: January 02, 2014

Dan Schwert
Certified AHERA Building Inspector
Certificate Number 104-02-06
Expiration Date: January 02,2014

APPENDIX A

Asbestos Analytical Laboratory Report and Field Data Forms

SEATTLE ASBESTOS TEST

Lynnwood Laboratory: 19701 Scriber Lake Road, Suite 103, Lynnwood, WA 98036, Tel: 425.673.9850, Fax: 425.673.9810

Bellevue Laboratory: 12727 Northup Way, Suite 1, Bellevue, WA 98005, Tel: 425.861.1111, Fax: 425.861.1118

Seattle Laboratory: 4500 9th Ave. NE, Suite 300, Seattle, WA 98105, Tel: 206.633.1111, Fax: 206.633.4747

NVLAP Accreditation Lab Codes: Bellevue-200876, Lynnwood-200768

ANALYTICAL LABORATORY REPORT

PLM by Method EPA/600/R-93/116

Attn.: Mr. Herb Brod/ Ms. Derica Escamilla/ Mr. Nadir Khan

Client: EHS International, Inc.

Address: 13228 NE 20th St # 100, Bellevue, WA 98005

Job#: 10563-01

Batch#: 201313839

Date Received: 8/30/2013

Samples Rec'd: 31

Date Analyzed: 9/4/2013

Samples Analyzed: 31

Project Loc.: Pacific Tower Building

Analyzed by: Yui Yang/Liz Dutton

Reviewed by: Steve (Fanyao) Zhang, President

Lab ID	Client Sample ID	Layer	Description	%	Asbestos Fibers	Non-fibrous Components	%	Non-asbestos Fibers
1	10563-01	1	White powdery material with trace woven fibrous material and paint		**None detected**	Binder/filler, Paint	30	Cellulose
2	10563-02	1	White chalky material with paint and paper		**None detected**	Binder/filler, Gypsum/binder, Paint	36	Cellulose, Glass fibers
3	10563-03	1	White soft/elastic material		**None detected**	Binder, Filler	4	Cellulose
		2	Trace yellow foamy material		**None detected**	Synthetic foam		None detected
4	10563-04	1	Multi-colored woven fibrous material		**None detected**	Filler, Binder	85	Synthetic fibers
		2	Tan mastic		**None detected**	Mastic/binder	3	Cellulose
		3	Blue mastic		**None detected**	Mastic/binder	2	Cellulose
		4	Gray brittle material		None detected	Filler, Binder	3	Cellulose
5	10563-05	1	Black rubbery material		**None detected**	Rubber/binder	2	Cellulose
		2	Off-white mastic		**None detected**	Mastic/binder	2	Cellulose
6	10563-06	1	Gray brittle material with paint		**None detected**	Filler, Binder, Paint	2	Cellulose
7	10563-07	1	Gray fibrous material with paint		**None detected**	Filler, Glass beads, Paint	90	Glass fibers
8	10563-08	1	Gray fibrous material with paint		**None detected**	Filler, Glass beads, Paint	93	Glass fibers
9	10563-09	1	Gray fibrous material with white paint		**None detected**	Paint, Filler	64	Cellulose, Glass fibers
		2	Brown mastic		**None detected**	Mastic/binder	3	Cellulose
10	10563-10	1	Gray/beige soft material		**None detected**	Filler, Binder	4	Cellulose, Synthetic fibers
11	10563-11	1	White brittle material		**None detected**	Filler, Binder	2	Cellulose
		2	Gray sandy/brittle material		**None detected**	Sand, Filler, Binder	3	Cellulose
12	10563-12	1	White brittle material		**None detected**	Filler, Binder	2	Cellulose
		2	Gray sandy/brittle material		**None detected**	Sand, Filler, Binder	2	Cellulose
13	10563-13	1	White/tan brittle material	**2**	**Chrysotile**	Filler, Binder	3	Cellulose

SEATTLE ASBESTOS TEST

Lynnwood Laboratory: 19701 Scriber Lake Road, Suite 103, Lynnwood, WA 98036, Tel: 425.673.9850, Fax: 425.673.9810

Bellevue Laboratory: 12727 Northup Way, Suite 1, Bellevue, WA 98005, Tel: 425.861.1111, Fax: 425.861.1118

Seattle Laboratory: 4500 9th Ave. NE, Suite 300, Seattle, WA 98105, Tel: 206.633.1111, Fax: 206.633.4747

NVLAP Accreditation Lab Codes: Bellevue-200876, Lynnwood-200768

ANALYTICAL LABORATORY REPORT

PLM by Method EPA/600/R-93/116

Attn.: Mr. Herb Brod/ Ms. Derica Escamilla/ Mr. Nadir Khan

Client: EHS International, Inc.

Address: 13228 NE 20th St # 100, Bellevue, WA 98005

Job#: 10563-01

Batch#: 201313839

Date Received: 8/30/2013

Samples Rec'd: 31

Date Analyzed: 9/4/2013

Samples Analyzed: 31

Project Loc.: Pacific Tower Building

Analyzed by: Yui Yang/Liz Dutton

Reviewed by: Steve (Fanyao) Zhang, President

Lab ID	Client Sample ID	Layer	Description	%	Asbestos Fibers	Non-fibrous Components	%	Non-asbestos Fibers
14	10563-14	1	Gray fibrous material with white paint		None detected	Paint, Filler, Perlite	67	Cellulose
15	10563-15	1	Gray fibrous material		None detected	Filler, Fine particles	85	Cellulose
16	10563-16	1	Brown fibrous material with paint		None detected	Filler, Paint	94	Cellulose
		2	Brown mastic		None detected	Mastic/binder	2	Cellulose
17	10563-17	1	Black tile		None detected	Vinyl/binder, Mineral grains	2	Cellulose
		2	Yellow mastic		None detected	Mastic/binder	4	Cellulose
18	10563-18	1	Trace white powdery material with paint		None detected	Binder/filler, Paint	2	Cellulose
		2	White chalky material with paper		None detected	Binder/filler, Gypsum/binder	21	Cellulose, Glass fibers
19	10563-19	1	White chalky material with paint and paper		None detected	Binder/filler, Gypsum/binder, Paint	35	Cellulose, Glass fibers
20	10563-20	1	White brittle/sandy material with paint		None detected	Filler, Binder, Paint	2	Cellulose
		2	Gray sandy/brittle material		None detected	Sand, Filler, Binder	3	Cellulose
21	10563-21	1	White brittle material with paint		None detected	Filler, Binder, Paint	2	Cellulose
		2	Gray sandy/brittle material		None detected	Sand, Filler, Binder	2	Cellulose
22	10563-22	1	Gray fibrous material		None detected	Filler, Fine particles	81	Cellulose
23	10563-23	1	White powdery material with paint		None detected	Binder/filler, Paint	4	Cellulose
		2	White chalky material with paper		None detected	Binder/filler, Gypsum/binder	25	Cellulose, Glass fibers
24	10563-24	1	White chalky material with paint and paper		None detected	Binder/filler, Gypsum/binder, Paint	30	Cellulose, Glass fibers
25	10563-25	1	Brown cork		None detected	Cork		None detected
		2	Trace clear mastic		None detected	Mastic/binder	2	Cellulose
26	10563-26	1	Gray brittle material with sand		None detected	Filler, Binder, Sand		None detected
		2	Red mastic		None detected	Mastic/binder	3	Cellulose
27	10563-27	1	Black hard brittle material		None detected	Filler/binder	20	Cellulose

SEATTLE ASBESTOS TEST

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Bellevue Laboratory: 12727 Northup Way, Suite 1, Bellevue, WA 98005, Tel: 425.861.1111, Fax: 425.861.1118

Seattle Laboratory: 4500 9th Ave. NE, Suite 300, Seattle, WA 98105, Tel: 206.633.1111, Fax: 206.633.4747

NVLAP Accreditation Lab Codes: Bellevue-200876, Lynnwood-200768

ANALYTICAL LABORATORY REPORT

PLM by Method EPA/600/R-93/116

Attn.: Mr. Herb Brod/ Ms. Derica Escamilla/ Mr. Nadir Khan

Client: EHS International, Inc.

Address: 13228 NE 20th St # 100, Bellevue, WA 98005

Job#: 10563-01

Batch#: 201313839

Date Received: 8/30/2013

Samples Rec'd: 31

Date Analyzed: 9/4/2013

Samples Analyzed: 31

Project Loc.: Pacific Tower Building

Analyzed by: Yui Yang/Liz Dutton

Reviewed by: Steve (Fanyao) Zhang, President

Lab ID	Client Sample ID	Layer	Description	%	Asbestos Fibers	Non-fibrous Components	%	Non-asbestos Fibers
28	10563-28	1	Gray/red sandy/brittle material		None detected	Sand, Filler, Binder	3	Cellulose
29	10563-29	1	Gray/brown soft/elastic material with paint		None detected	Binder, Filler, Paint	4	Cellulose
30	10563-30	1	Beige sheet vinyl		None detected	Vinyl/binder, Mineral grains		None detected
		2	Gray fibrous material	51	Chrysotile	Binder/filler	37	Cellulose
		3	Tan mastic	2	Chrysotile	Mastic/binder	3	Cellulose
		4	Gray brittle material		None detected	Filler, Binder	2	Cellulose
31	10563-31	1	Gray hard material		None detected	Filler, Binder	2	Cellulose
		2	Tan mastic		None detected	Mastic/binder	2	Cellulose
		3	Brown woven fibrous material		None detected	Filler, Binder	5	Cellulose

Space Surv (Asbestos) v5.1

Project Number: 10563-01

Project Name: SSLA - Pacific Tower

Project Manager: Herb Brod

Inspector: Nadix · K & Dan · S

ERNATIONAL, INC.
15228 NE 20TH STREET, SUITE 100
BELLEVUE, WA 98005
(425) 455-2959 Fax: (425) 646-7247

Date 8/28/13

Page 1 of 2

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Sample No.	SPACE: Space Code	SPACE: Space Name	Surv., TSI, or Misc. (# of #)	MATERIAL: Material Description (color, size, use, substrate & layers)	Space Specific Material Comments (Where sample was taken, damage)	Quantity	Assessment (Friable - Y or N)
10563-01		13TH FLOOR S side open Area		JC/GWB with paint (corner-wall)			
10563-02		" " " N side open Area		GWB with paint (mid-wall)			
10563-03		" " " S side open Area		white window frame caulking on yellow foam	(on 4'x12' metal framed window)	6 total	
10563-04		↓		Multi-color carpet with tan mastic & blue mastic	(on concrete)		
10563-05		↓		4" Black CB with off-white mastic		Throughout	
10563-06		12TH FLOOR S side open Area		Gray interior window glazing	(on 4'x6' wood framed window, glazing present interior & exterior)	20 total	
10563-07		" " " S side open Area		Gray sprayed on fire-proofing (on horizontal metal beams)		(~300 SF throughout the bldg 5 beams 5'x20')	
10563-08		" " " S side open Area		↓	(over spray on ceiling)		
10563-09		12TH FLOOR Stairwell #2		1'x1' white ACT on brown glue dot (on concrete)		(Throughout the stairwell, 5'x17'x12')	x2
10563-10		11TH FLOOR Central corridor		Gray/beige duct seam sealant	(on metal air ducts)	(1½" Diameter Round Throughout Bldg)	
10563-11		11TH FLOOR East side fan Room		white skim coat on plaster wall	(East wall only)	(~150SF)	
10563-12		↓		↓			
10563-13		10TH FLOOR East side fan Room		↓	(East wall only)		
10563-14		Basement N Corridor		2'x4' white SACT with pin-hole and worm track pattern (in 2'x2' pattern)		(Throughout G & basement)	
10563-15		10TH FLOOR Mechanical Room		Gray sprayed on fire-proofing (on vertical beam)		(See HM field drawing)	
10563-16		9TH FLOOR Central corridor		Remnant 1'x1' ACT on brown glue dot (NO 1'x1' present; only exposed glue dots)	(only in Hallways)	(9'x180' + 10'x30' x other floors)	
10563-17		9TH FLOOR Coffee Area		12"x12" black FT on yellow mastic	(on concrete)	(6'x10')	

Space Surv (Asbestos) v5.1

Project Number: 10563-01

Project Name: SSLA - Pacific Tower

Project Manager: Herb Brod

Inspector: Nadir K & Dan S

ERNATIONAL, INC.
15228 NE 20TH STREET, SUITE 100
BELLEVUE, WA 98005
(425) 455-2959 Fax: (425) 646-7247

Date 8/28/13

20131839

Sample No.	Space Code	Space Name	Surf., TSI, or Misc. (# of #)	Material Description (color, size, use, substrate & layers)	Space Specific Material Comments (Where sample was taken, damage)	Quantity	Assessment (Friable - Y or N)
10563-18		8TH FLOOR Central corridor		JC/GWB with paint (corner-wall)			
10563-19		↓		GWB with paint (mid-wall)			
10563-20		9TH FLOOR Central corridor		white skim coat on plaster ceiling.			
10563-21		7TH FLOOR Central Corridor		↓			
10563-22		7TH FLOOR N wing		Gray sprayed on fire-proofing (on metal decking)			
10563-23		3rd Floor corridor		JC/GWB with paint (corner-wall)			
10563-24		↓		GWB with paint (mid-wall)			
10563-25		2nd floor Elevator Lobby		Brown 12"x36" cork floor tile with clear mastic (on concrete)		1800 SF	
10563-26		" " " Cafeteria		Gray floor texturing on red mastic (on concrete)		4000 SF	
10563-27		↓		Black Chemstone cafeteria counters.		5'x120'	
10563-28		Exterior South at Main Entrance		Gray brick mortar Exterior			
10563-29		↓		Gray/brown window glazing putty (on 4'x1' metal framed window)		6 Total	
10563-30		Basement N corridor		Beige broken Rock pattern SVF with Gray backing on tan mastic (on con)		2000 SF	
10563-31		Basement, Central corridor		Gray hard flooring on tan mastic (on concrete)		(Throughout corridor ~6000 SF)	

20131383 9

SEATTLE ASBESTOS TEST, LLC

Analyzing Quality

Lynnwood Lab: 19711 Scriber Lake Road, Suite D, WA 98036, Tel:425.673.9850, Fax:425.673.9810
Bellevue Lab: 12727 Northup Way, Suite 1, Bellevue, WA 98005, Tel:425.861.1111, Fax:425.861.1118
Email: admin@seattleasbestostest.com, Website: www.seattleasbestostest.com

CHAIN OF CUSTODY

- [x] Bulk Asbestos
- [ ] Point Count 400
- [ ] Point Count 1000
- [ ] Point Count Gravimetric
- [ ] Other (Specify) _____
- [ ] 1 Hour
- [ ] 2 Hours
- [ ] Same day (4 to 6 Hrs.)
- [ ] 1 Day
- [ ] ....5.... Days

EHS International, Inc.

13228 NE 20th St # 100, Bellevue, WA 98005 Tel: 800.666.2959 Fax: 425.646.7247

Number of Samples ..31.... PO# ..10563-01.... Project Location ...Pacific Tower Building.....

Project Manager (Check one or more):

- [ ] Clinton Holzhauer 425.766.5697 clintonh@ehsintl.com
- [x] Herb Brod 425.766.1546 herbb@ehsintl.com
- [ ] Randall Peterson 425.444.1293 randyp@ehsintl.com
- [x] Derica Escamilla 425.638.3757 dericae@ehsintl.com
- [ ] Miguel Ortega 206.390.3825 miguelo@ehsintl.com
- [x] Nadir Khan.

SEQ#	CLIENT SAMPLE #	SAMPLE DESCRIPTION	LOCATION	NOTES
1	10563-01			
2				
3				
4				
5				
6		see data sheet		
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20	10563-31			

	Print Name	Signature	Company	Date	Time
Sampled:	NADIR KHAN	Nadir G. Khan	EHS International, Inc.	8/28/13	7:30 AM
Relinquished:	↓	↓	EHS International, Inc.	8/30/13	8:10 AM
Delivered:	↓	↓	EHS International, Inc.	↓	1:30 PM
Received:	Elizabeth Dutton		Seattle Asbestos Test	8/30/13	1330
Analyzed:	Yui Yang	Yui Yang	Seattle Asbestos Test	9/4/13	1705
Reported:			Seattle Asbestos Test		

Seattle Asbestos Test warrants the test results to be of a precision normal for the type and methodology employed for each sample submitted and disclaims any other warrants, expressed or implied, including warranty of fitness for a particular purpose and warranty of merchantability. Seattle Asbestos Test accepts no legal responsibility for the purpose for which the client uses the test results. By signing on this form, the clients agree to relieve Seattle Asbestos Test of any liability that may arise from the test results. It is the client's responsibility to make sure the samples are appropriately taken according to federal and local regulations. Invoices paid late may be charged of interest, and invoices go to collection may be charged 17% to 25% of collection fee. NSF checks will be charged of $50.

Results reporting method: [ ] Phone [ ] Fax [x] Email [ ] Pick-up

[ ] Composite all wallboard samples [ ] Text result to phone [ ] Point count ..... % or less asbestos

Page ( ) of ( )

APPENDIX B

Certified AHERA Building Inspector Certificates

Certificate of Training

EHS - International, Inc. certifies that

NADIR KHAN

has successfully completed the

4-Hour AHERA Building Inspector Refresher Training

in accordance with

40 CFR 763, Subpart E, Appendix C

on this 3rd day of January in Bellevue, WA

Expires January 2, 2014

Training Administrator Herb Brod

January 3, 2013
Class Date

10484-02-04
Student Number

EHS–International, Inc.

13228 NE 20th Street, Suite 100▪ Bellevue, Washington 98005
(206) 455-2959 Phone ▪ (206) 646-7247 Fax

Certificate of Training

EHS - International, Inc. certifies that

DANIEL SCHWERT

has successfully completed the

4-Hour AHERA Building Inspector Refresher Training

in accordance with

40 CFR 763, Subpart E, Appendix C

on this 3rd day of January in Bellevue, WA

Expires January 2, 2014

Training Administrator Herb Brod

January 3, 2013
Class Date

10484-02-06
Student Number

EHS–International, Inc.

13228 NE 20th Street, Suite 100▪ Bellevue, Washington 98005
(206) 455-2959 Phone ▪ (206) 646-7247 Fax

APPENDIX C

Laboratory Certifications for Asbestos

United States Department of Commerce
National Institute of Standards and Technology

Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 200876-0

Seattle Asbestos Test Bellevue

Bellevue, WA

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

BULK ASBESTOS FIBER ANALYSIS

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).

2013-07-01 through 2014-06-30

Effective dates

For the National Institute of Standards and Technology

NVL LABS
INDUSTRIAL HYGIENE SERVICES
Laboratory | Management | Training

September 16, 2013

Keith Scheiber
Schreiber Starling & Lane
1221 East Pike St. Suite Number 200
Seattle, WA 98122

RE: Bulk Asbestos Fiber Analysis, NVL Batch # 1315315.00

Dear Mr. Scheiber,

Enclosed please find test results for the bulk samples submitted to our laboratory for analysis. Examination of these samples was conducted for the presence of identifiable asbestos fibers using polarized light microscopy (PLM) with dispersion staining in accordance with both U.S. EPA 600/M4-82-020, Interim Method for Determination of Asbestos in Bulk Insulation Samples, as found in 40 CFR, Part 763, Subpart E, Appendix E (formerly Subpart F, Appendix A), and U.S. EPA 600/R-93/116 (July 1993) Test Methods.

For samples containing more than one separable layer of materials, the report will include findings for each layer (labeled Layer 1 and Layer 2, etc. for each individual layer). The asbestos concentration in the sample is determined by visual estimation.

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (NESHAPS, 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos. If you would like us to further refine the concentration estimates of asbestos in these samples using point counting, please let me know.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. Please do not hesitate to call if there is anything further we can assist you with.

Sincerely,

Nick Ly, Technical Director

Enc.: Sample Results

NVLAP
Lab Code: 102063-0

1.888.NVL.LABS
1.888.(685.5227)
www.nvllabs.com

NVL Laboratories, Inc.
4708 Aurora Ave N, Seattle, WA 98103
p 206.547.0100 | f 206.634.1936

NVL Laboratories, Inc
4708 Aurora Ave. N., Seattle, WA 98103
Tel: 206.547.0100, Fax: 206.634.1936
www.nvllabs.com

For the scope of accreditation under NVLAP Lab Code 102063-0

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: Schreiber Starling & Lane
Address: 1221 East Pike St. Suite Number 200
Seattle, WA 98122

Attention: Mr. Keith Scheiber
Project Location: Pacific Tower Evaluation

Batch #: 1315315.00
Client Project #: 13006-06
Date Received: 9/16/2013
Samples Received: 2
Samples Analyzed: 2
Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Lab ID: 13112266 **Client Sample #: Sample 1 Level 14 Roof**

Location: Pacific Tower Evaluation

Comments: Unsure of correct layer sequence

Layer 1 of 4 **Description:** Black asphaltic material with sand and fibrous material

Non-Fibrous Materials:	Other Fibrous Materials:%	**Asbestos Type: %**
Asphalt/Binder, Sand, Binder/Filler	Cellulose 27%	**None Detected ND**

Layer 2 of 4 **Description:** Black asphaltic material with fibrous material

Non-Fibrous Materials:	Other Fibrous Materials:%	**Asbestos Type: %**
Asphalt/Binder, Binder/Filler	Glass fibers 15%	**None Detected ND**
	Cellulose 6%	

Layer 3 of 4 **Description:** Gray brittle material

Non-Fibrous Materials:	Other Fibrous Materials:%	**Asbestos Type: %**
Calcareous binder, Mineral grains, Binder/Filler	Wollastonite 7%	**None Detected ND**

Layer 4 of 4 **Description:** White soft foamy material

Non-Fibrous Materials:	Other Fibrous Materials:%	**Asbestos Type: %**
Styrofoam, Fine particles	None Detected ND	**None Detected ND**

Lab ID: 13112267 **Client Sample #: Sample 2 Level 2 East**

Location: Pacific Tower Evaluation

Comments: Unsure of correct layer sequence

Layer 1 of 5 **Description:** Black asphaltic material with sand and fibrous material

Non-Fibrous Materials:	Other Fibrous Materials:%	**Asbestos Type: %**
Asphalt/Binder, Sand, Binder/Filler	Cellulose 29%	**None Detected ND**

Layer 2 of 5 **Description:** Black asphaltic material with fibrous material

Non-Fibrous Materials:	Other Fibrous Materials:%	**Asbestos Type: %**
Asphalt/Binder, Binder/Filler	Cellulose 19%	**None Detected ND**

Sampled by: Client
Analyzed by: Angele Zamarron **Date:** 09/16/2013
Reviewed by: Nick Ly **Date:** 09/16/2013 Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

NVL Laboratories, Inc
4708 Aurora Ave. N., Seattle, WA 98103
Tel: 206.547.0100, Fax: 206.634.1936
www.nvllabs.com

For the scope of accreditation under NVLAP Lab Code 102063-0

Bulk Asbestos Fibers Analysis

By Polarized Light Microscopy

Client: Schreiber Starling & Lane
Address: 1221 East Pike St. Suite Number 200
Seattle, WA 98122

Attention: Mr. Keith Scheiber
Project Location: Pacific Tower Evaluation

Batch #: 1315315.00
Client Project #: 13006-06
Date Received: 9/16/2013
Samples Received: 2
Samples Analyzed: 2
Method: EPA/600/R-93/116
& EPA/600/M4-82-020

Layer 3 of 5	**Description:** Black asphaltic fibrous felt with asphaltic material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		**Asbestos Type: %**
	Binder/Filler, Asphalt/Binder	Glass fibers	67%	**None Detected ND**
		Cellulose	3%	
Layer 4 of 5	**Description:** Brown fibrous material with black asphaltic material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		**Asbestos Type: %**
	Binder/Filler, Perlite, Asphalt/Binder	Cellulose	58%	**None Detected ND**
		Glass fibers	7%	
Layer 5 of 5	**Description:** White soft foamy material			
	Non-Fibrous Materials:	Other Fibrous Materials:%		**Asbestos Type: %**
	Styrofoam, Fine particles	None Detected	ND	**None Detected ND**

Sampled by: Client
Analyzed by: Angele Zamarron **Date:** 09/16/2013
Reviewed by: Nick Ly **Date:** 09/16/2013 Nick Ly, Technical Director

Note: If samples are not homogeneous, then subsamples of the components were analyzed separately. All bulk samples are analyzed using both EPA 600/R-93/116 and 600/M4-82-020 Methods with the following measurement uncertainties for the reported % Asbestos (1%=0-3%, 5%=1-9%, 10%=5-15%, 20%=10-30%, 50%=40-60%). This report relates only to the items tested. If sample was not collected by NVL personnel, then the accuracy of the results is limited by the methodology and acuity of the sample collector. This report shall not be reproduced except in full, without written approval of NVL Laboratories, Inc. It shall not be used to claim product endorsement by NVLAP or any other agency of the US Government

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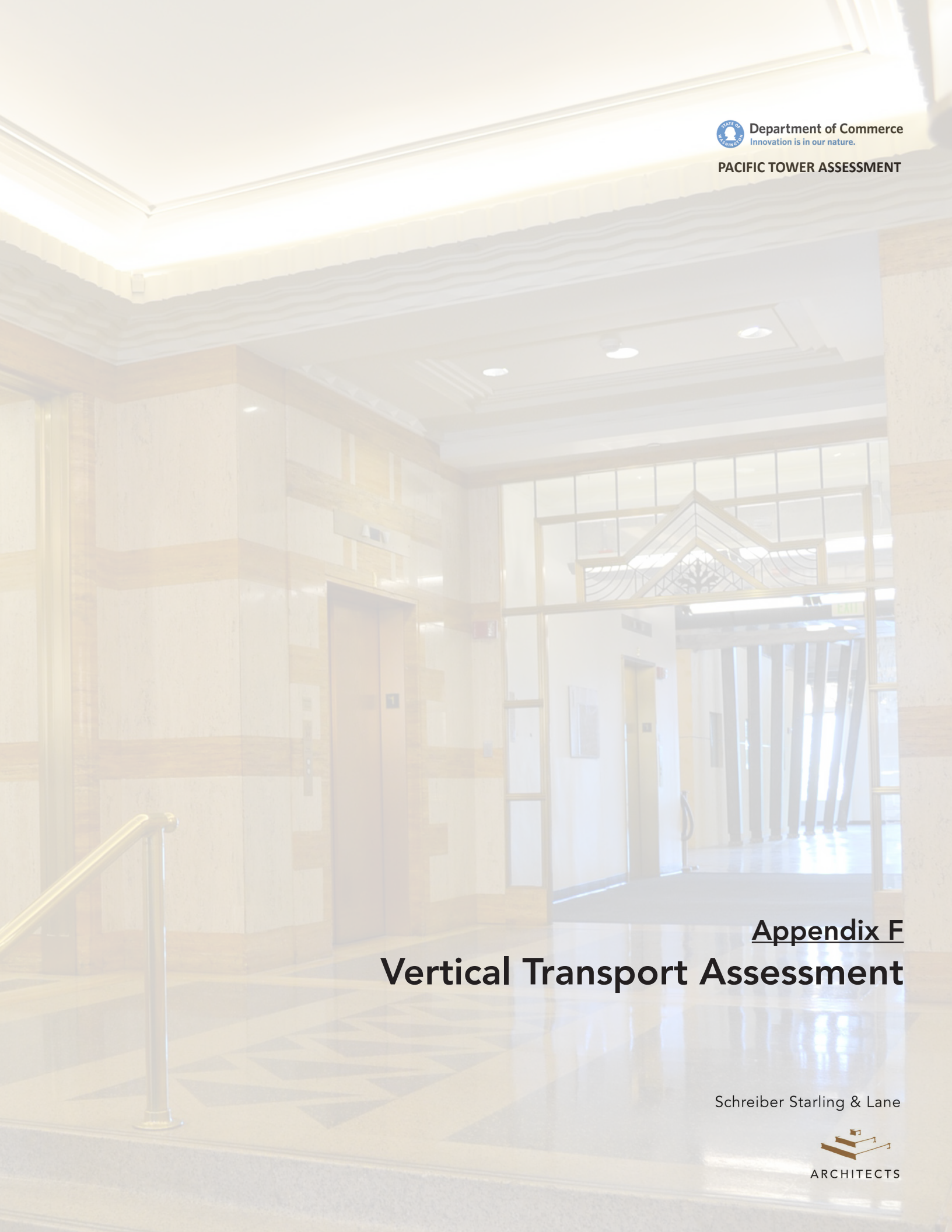
Department of Commerce
Innovation is in our nature.

PACIFIC TOWER ASSESSMENT



Appendix F
Vertical Transport Assessment

Schreiber Starling & Lane

ARCHITECTS

Pacific Tower

1200 12th Ave South
Seattle, WA

Elevator Report

October 2, 2013

Prepared for:

Keith Schreiber
Schreiber Starling & Lane Architects
185 University Street
Seattle, WA 98101

Prepared by:

Mr. Bob Nicholson
President
Architectural Elevator Consulting, LLC
1326 5th Ave., Suite 630
Seattle, WA 98101

ARCHITECTURAL ELEVATOR CONSULTING, LLC

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E. Cab Interiors _____ II.9

Section III – Budget Pricing **_____III.1**

Appendix A - Americans with Disability ACT (ADA)

Appendix B – Retro-active Code Requirements: City of Seattle/WAC 296-96/A17.3

Appendix C – Performance Review and Maintenance Deficincies

Executive Summary

A. Overview

On August 29, 2013, James Young of Architectural Elevator Consulting, LLC (AEC) performed a site visit at The Pacific Tower, Seattle, WA. The purpose of the visit was to evaluate maintenance, site condition, and longevity of the major components of the elevator and develop a 30 year capital investment plan. Our firm initially surveyed the elevators in April 2013. Thus this report is an update to our earlier findings.

The vertical transportation system that we reviewed consists of six traction elevators and one hydraulic elevator. Elevator 7 and 8 were not surveyed as they were in a different part of the building and not part of this review. Traction Elevators 1, 2, 5 and 6 were manufactured and installed by Otis and Montgomery. All were presumably installed as various portions of the building were constructed. Sometime in the 1970's or 1980's a few of the elevators were modernized by U.S. Elevator. In 1998 a major modernization was performed by Fujitec Elevator on the existing gearless traction elevators. In addition Fujitec installed two completely new elevators to service the low-rise portion of the building, Elevators 3 and 4. The modernization performed by Fujitec was quite extensive and included new solid state controllers, signal fixtures, door operators and cab interiors. It is our understanding that several of the elevators were damaged during the February 28, 2001 earthquake and shortly thereafter the counterweight rails on several of the traction cars were upgraded to current seismic. The car rails do not appear to have been updated. In 2001 Otis installed a new in-ground hydraulic type elevator for the west parking garage.

Most of the State of Washington retro-active codes required by WAC 296-96 are up-to-date. The elevators meet ADA size requirements for existing installations and have the proper gongs and floor passing chimes. The elevators are located in a seismic zone, but were installed prior to the State adopting A17.1 2004 seismic code. However, when they were modernized in 1998 seismic derailment devices were added to the counterweight rails.

B. Elevator Layout

In preparation for one single tenant, Amazon, a decision appears to have been made to have separate low and high-rise elevators. Elevators 1 and 2 are rated for 4,000 lbs and provide service to the high-rise portion of the building. Elevators 3, 4 and 5 are set up to service the low-rise portion of the building. Elevator 6 is a service elevator and has stops at all floors including the basement and penthouse. Elevator 9 is a four stop hydraulic elevator with an in-ground jack that is located in the west parking garage.

	Pacific Tower				
Manufacture	Montgomery	Mont. Fujitec		Otis	Otis
Bank	High-rise Cars 1-2	Low-rise Cars 3 & 4	Low rise Car 5	Service Car 6	Parking Car 9
Type	Gearless	Geared	Gearless	Gearless	In-ground Hydraulic
Capacity (LBS)	4,000	3,500	4,000	4,000	2,500
Speed (FPM)	600	350	500	500	150
Floors Served	B, G, 1, 8-12	B,G, 1-8	B,G, 1-7	B,G, 1-13	P2, P4, P6, P8
Operation	Duplex	Group	Group	Simplex	Simplex
Door Type	Side Opening	Center Opening	2 Speed Side Opening	2 Speed Side Opening	Center Opening
Quantity	Two	Two	One	One	One
Modernized	Yes	Yes	Yes	Yes	No

C. Capital Upgrades/Major Components:

In ***Section II*** of this report we analyze the major components of the elevator and provide accompanying photographs. The majority of the components are in good to very good condition. The cab interiors should be updated to suit a more conventional office environment. In the next five years, the completion of the seismic retro fitting would be advised. All the car and counterweight retainer plates need to be checked and adjusted to be meet current code and completing the upgrading of the rail fish plates. As noted earlier some of the counterweight rails were upgraded to seismic shortly following the Nisqually earthquake.

A comprehensive modernization is recommended on all the elevators in 10 to 15 years. This will include all new major components. The hoist machines, controllers, governors, just to name a few. We recommend new solid-state controllers, selectors and AC hoist motors. The machines could be retained and refurbished, or replaced with new gearless machines.

Condition: Most of the major components are in good to very good condition. The controllers are state of the art and known to be reliable. Some of the older gearless machines for Cars 1, 2 and 5 and 6 are showing their age, but should last another 15 to 20 years with proper maintenance. The newer geared Fujitec machines for Cars 3 and 4 are in good condition. Most the elevators have GAL door operators which are not closed loop but known to be high quality. However they are starting to show their age.

Maintenance: Fujitec is providing maintenance on all the elevators on a very limited basis due to the fact that the building is virtually empty. It makes sense to have limited maintenance due to the low use. According to the building management, Fujitec comes in once a month and runs the elevators to give them some use. Running the elevators intermittently as they are doing is recommended. We have listed specific maintenance deficiencies in *Appendix C* along with performance times. The performance times can and should be adjusted for optimal service. Some door times were very slow and all the floor-to-floor times were slow. The general maintenance of the elevators is satisfactory. However there are several safety features that were inoperative that should be corrected. The following is a summary of maintenance deficiencies that we noted:

1. Five of the elevators had inoperative door restrictors. Several cars had the door restrictors intentionally disabled. These should be repaired immediately.
2. Several of the elevators had the hoist rope retaining clips in the wrong location. Code specifies that the 2nd clip be no more than 4 or 5 times the diameter of the rope away from the 1st clip.
3. Some elevators have rough door operation.
4. The high-rise elevators, Cars 1 and 2, have floors 2-7 permanently blocked off but some of the stops are missing and/or loose. We recommend all of the doors be

re-secured at the top and bottom so they cannot be opened.

5. The parking garage elevator, Car 9 has extensive rust in the hoistway on the rails, car top and pit. This is because it is exposed to the outside weather.

In ***Section III*** of our report we have provided budget pricing for a base modernization with pricing for optional items.

D. Americans with Disability ACT (ADA):

In 1990 the federal government enacted ADA to make public spaces more accessible to disabled persons. All passenger elevators meet the requirements of ADA. The sizes of the passenger elevators meet ADA size requirements for new and existing elevators. The call button fixtures in the car and hall are located at the proper height. ***Appendix A*** provides a complete listing of the ADA requirements.

E. Retro-active Code Requirements: WAC 296-96/A17.3

All elevators in the City of Seattle are required to comply with retro-active sections of WAC 296-96 – Part D and City of Seattle Chapter 30. In addition when they are modernized they are to comply with A17.3, the national retro-active safety code for existing elevators. A17.3 is published by the American Society of Mechanical Engineers and is enforced in most states but not adopted in the State of Washington or City of Seattle. A17.3 requires all elevators, no matter age or installation date, to meet a minimum level of safety. There are several items that do not meet A17.3 and they are listed below. In ***Appendix B*** there is a complete listing of City of Seattle, WAC 296-96 and A17.3 items. Below is a summary of the major items that do not comply:

Retro Active Safety Code Requirements				
No.	**Item**	**Unit Cost**	**Number of Units**	**Total**
1	Install proper labeling on power disconnect for cars 3 & 4. (SBC 3011.14)*	$200	2	$400
2	Modify hand rails on top of cars. (Chapter 30)*	$1,000	2	$2,000
3	Adjust door restrictors to work properly.*	$1,000	5	$5,000
			Total	**$7,400.00**

*Note: These items should be included in current maintenance contract at no cost.

F. Seismic Upgrades:

We recommend insuring proper fit and installation of the seismic retainers for the car and counterweights. Additional upgrades to strengthen the car and counterweight guide rails could be performed voluntarily, but are not required. We have provided budget pricing for voluntary upgrades for seismic compliance.

G. Energy Savings:

One of the small side benefits of modernizing the elevators is to achieve energy savings. Because of the low cost of energy in the Northwest any energy savings will be very small relative to the buildings overall energy consumption. However, the following energy savings options should be considered when modernizing this type of control system and they are as follows:

1. **Upgrade with new MRL - AC Gearless Machines:** Under this option the existing geared and gearless machines would be removed along with DC hoist motors, SCR drives and VF drives on Cars 3 and 4. New smaller gearless machines with a permanent magnet AC motor would be provided. The new machines would be much smaller than the existing and installed in the machine room. The new controllers would come with an AC variable frequency drive and for added cost could have regenerative capability. This option would provide the highest level of energy savings but also the highest cost. If the incremental cost of the machine is not to great this would be the best option. However, it is important to note that when the elevators were modernized in 1998 they had energy savings SCR drives added, thus the energy savings will only be in the 10% to 15% range.

H. Summary

The elevators are in need of minor repairs and maintenance. These are mostly likely due to the vacancy of the building. These items should be covered by the full maintenance contract. All deficiencies need to be remedied prior to the building being occupied. The car interiors are dated and need to be renovated to suit an office atmosphere. The capital expenses in the first five years are projected to be limited to cab interior upgrades and new closed loop door operators. In the long term, 10 to 15 years, a comprehensive modernization of all the elevator equipment is recommended.

Section II: Component Review

Traction:

A. MACHINE ROOM:

Controllers:
In 1998 a major modernization was performed by Fujitec Elevator on all the traction elevators. The modernization was quite extensive and included new solid-state controllers. The controllers are state of the art and known to be reliable.

Hoist Machine:
Elevators 1, 2, 5 and 6 have gearless machines. Elevators 3 and 4 have newer geared machines. If properly maintained all the machines could last another 15-20 years. New smaller energy efficient gearless machines are now being utilized for new construction and should be considered for the long term plan for modernization. These smaller machines would be more reliable and provide energy savings.

Governors:
The governors were manufactured by Fujitec and Otis and appear to be in good condition.

Selectors:
The selector informs the hoist motor and controller of the location of the elevator in the hoistway. The Selectors were upgraded in the 1998 modernization.

Electrical Disconnects:
The existing mainline disconnects are in good condition. They were recently updated with Shunt trip operation and have manual shunt trip in the machine room and fire control room. Separate disconnects for cab lighting were also added. All outlets in the machine room and pit should be converted to GFCI. A few of the outlets in the machine room have already been converted to GFCI.

B. HOISTWAY:

Hoistway Construction:
The hoistway (elevator shaft) is the main area where the elevators go up and down. The existing hoistways are concrete and dry wall and in good condition. Elevators 1, 3, 4 & 9 are each in a single hoistway. Elevators 2, 5, & 6 are in a common hoistway.

Car and Counterweight Rails:
Most of the car rails have not been updated for seismic. A few of the counterweight rails were updated for seismic following the earthquake in 2001. The rails do not meet current seismic code requirements. A modernization will not trigger the rails to be upgraded, but this upgrade should be considered. Upgrading the rails would require new fishplates and at this time is voluntary during modernizations in the City of Seattle.

Traveling Cables:
The traveling cables provide all the electrical communication between the elevator car and the machine room. The cables were replaced in 1998 but would be replaced in the next modernization in 10 to 15 years. When these cables are replaced, new traveling cables are equipped with shielded pairs for telephone communication and other spares for future use.

Hoistway Wiring:
The hoistway wiring provides all the electrical communication between the hoistway door equipment, terminal switches and other miscellaneous equipment. The wiring was updated in 1998 and is in good condition. In the next modernization, all the wiring will need to be replaced but the hoistway conduit and duct could be retained.

Hoist & Governor Ropes:
Each elevator has a set of hoist ropes that suspend the elevator. The governor rope is connected to the car and actuates the safety in the event of an overspeed. The hoist ropes for most of the elevators had dates of 1998 or newer, most likely the date they were installed. Car 2 hoist ropes did not have any install date. They all appear to be in good condition. We recommend they be replaced as needed under the maintenance contract.

Safeties:
The platforms have a safety located on the bottom of the elevators designed to stop the elevator in the event the over speed governors are tripped. The safeties are in good condition and can be cleaned, tested and retained during the next modernization.

Limit Switches:
At the top and bottom of each elevator shaft there are several limits switches as required by code. These switches are mechanical and are thus subject to wear. We recommend all the necessary slowdown, and final limit switches be replaced with new as part of the new control system anytime there is a modernization.

Counterweights:
The existing counterweights use steel filler weights and are in good condition. The counterweights should have seismic retainer plates added to help keep them in the guide rails during a seismic event. Not all of the counterweight have the recommended retainer plates.

Hoistway Doors & Frames:
All the Hoistway doors and frames are in good condition and can be reused. The doors were manufactured by MAC and have a 1 ½ hour fire rating. The doors may have asbestos in them. The doors could be removed, but since the door panels are sealed, the likelihood of asbestos getting out is remote. We recommend retaining the doors.

Hoistway Door Tracks & Hangers:
To hold the elevator doors in place each set of hoistway doors has tracks and hanger rollers that allow the doors to slide open and close. The tracks and hanger assemblies are in good condition. The rollers and door locks can be covered under the maintenance contract.

Hoistway Pick Up Rollers & Door Locks:
Each set of hoistway doors has pick up rollers that allow the power car door to engage and open the door when the elevator stops at each landing. The door locks and pick up rollers are from the 1998 modernization and appear to be in good condition.

Hoistway Door Closers:
The hoistway door closers ensure that each hoistway door stays closed when the elevator is away from the floor. The majority of the elevators have spirator type door closers that are in good condition. Cars 5 and 6 has sill mounted closers that appear to be original and in fair condition.

C. CAR TOP:

Door Operator:
The existing GAL door operators are MOHL Type and fair to good condition. In a future modernization we would recommend new closed loop door operators for all cars. The closed-loop feature will allow the elevator service company to easily adjust the door speed to optimum condition. Door restrictors are installed on all of the cars they prohibit passengers whom maybe stuck inside the car from opening the door while the car is between floors. We have provided budget pricing to add closed loop door operators in 5-7 years.

Electric Safety Edge:
The existing electric safety edges were part of the 1998 modernization and are in good condition.

Car Top Inspection Station:
The car top inspection station allows the elevator mechanic or inspector to safely operate the elevator from the top of the car. The car top inspection station installed in 1998 have most of the proper safety features including a safety button and GFCI outlet installed as a part of that modernization.

Car Roller/Slide Guides:
On both sides of the elevators and on the top and bottom roller guides keep the elevators riding up and down the steel guide rails. The existing ride quality is good and the Elsco rollers provide good ride quality, especially for the speed of the elevators.

Seismic Retainer Plates:
Seismic retainer plates help keep the elevator from coming out of its rail tracks in the event of an earthquake. It is recommended that both the car and counterweights be equipped. Some are already in place but many new retainer plates still need to be installed.

Emergency Escape Hatch:
The emergency escape hatch allows passengers to be rescued in the event the elevator becomes stuck between floors. Code requires that the hatch be set up so that passengers cannot open the hatch from within the car. The existing hatches were found to be properly sized and in good condition. When the elevators were modernized an electrical contact was installed to prevent the car from moving if the hatch door is open.

D. PIT

Buffers:
The elevator and counterweight each has a buffer to lower the impact in the event the elevator goes into the pit at a high speed. The elevators have oil buffers that are in good condition.

Pit Ladder:
Access to elevator pits can be made through a pit access door or through the lowest hoistway door opening. When access is made through the lowest landing pit ladders are required. All elevators have pit ladders that meet current code and should be retained.

Pit Lighting:
The pit lighting is not very bright as there is only one bulb in each pit. The future modernization will trigger that new lighting be installed in the pits. We recommend two new fluorescent fixtures per elevator pit.

Counterweight Guards:
For each counterweight a guard is to be installed around the bottom of the counterweight rails to prevent persons from getting hit by the counterweight when working in the elevator pit. The guards are in good condition and should be retained.

E. SIGNAL FIXTURES:

Car Operating Panels:
Car operating panels (COP's) are located in the front or sidewall of the elevator and are equipped with all the necessary buttons to operate the elevator. The buttons on the existing car operating panels are sized properly and at the proper height for ADA. When the elevators are modernized we will recommend new panels that have the newest fire service features. The new panels will include all the up-to-date fire service key switches that are installed behind a locked service cabinet door.

Emergency Telephone:
The emergency telephone is required to allow trapped passengers to call for help in the event the elevator gets stuck. The existing elevators have newer style phones in boxes not a button of the COP. With the future modernization new car operating panels will be installed with then a new phone as an integrated part of the new COP.

Car Position Indicator:
The car position indicator is located in the elevator and allows the passengers to see what floor the elevator is going to next. The existing car position indicators are in the upper portion of the COP and are acceptable but do not have floor passing chimes. We recommend new digital position indicators. They can be located in the same location in the new COP's.

Hall or Car Riding 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. In lieu of hall lanterns ADA allows the lanterns to be located in the car. The existing elevators have hall lanterns at each floor. For the future modernization we would they be updated with LED type lanterns.

Hall Call Pushbuttons:
At each floor hall call push buttons are located so that users can call the elevator. Each terminal landing has an up or down button, while intermediate floors have both up and down buttons. There are two button risers on each floor. The hall call buttons are in good condition and are located at proper ADA height. We would recommend they be replaced during the future modernization.

F. CAB INTERIOR:

Wall Finish:
The existing cab interiors have been updated in the 1998 modernization. The cabs interiors have dry erase boards as the upper wall panels. The floor and lower panels are in fairly good condition. We recommend the car interiors be updated. We have provided budget pricing for the new panel finishes.

Ceiling:
A partial drop ceiling exists with diffused fluorescent lighting. This could be retained as they look to be in good condition. Upgrading the ceiling panels and the lights to energy efficient LED down lighting is recommended.

Section II: Component Review:

Hydraulic:

A. MACHINE ROOM:

Controller:

The controller was manufactured by Otis Elevator and installed when the garage was erected. The controller utilizes a combination of solid-state boards and is in good condition. The starter is across-the-line. The controller was found to be clean and in good condition. We do not recommend an upgraded for 15 years.

Power Unit:

The elevator has a power unit that includes a pump, control valve, AC motor and oil tank reservoir. The power unit moves the elevator up and down the hoistway by controlling oil in and out of the hydraulic cylinder. The power unit has a submersible pump and AC motor, both of which appear working fine.

B. HOISTWAY:

Hydraulic Jack:

The existing hydraulic jack (cylinder) appear to have been installed 2001 with the original installation. The jack is in the ground and completely buried. We do not recommend any work on the jack until the elevator is modernized in 15 years.

C. CAR TOP:

Door Operator:

The door operator provides power to the car door and opens and closes the car doors. When the elevator is at a hoistway door opening the door operator clutch engages the hoistway pick-up rollers and both the car doors and hoistway doors open and close together. The existing Otis door operator is in fairly good condition and known to be reliable.

D. SIGNAL FIXTURES:

Car Operating Panel:

A car operating panel is located on the front wall of the elevator and is equipped with all the necessary buttons to operate the elevator. The existing Car Operating Panel is in good condition and has another 10 years of good remaining life.

Car Position Indicator:

The car position indicator is located in the elevator above the car operating panels and allows users to see what floor the elevator is on. The existing car position indicator meets code and looks good. We recommend new digital car position indicators with floor passing chimes to be installed when the elevator is modernized.

Hall Call Push Buttons:

At each floor hall call push buttons are located so that users can call the elevator. Each terminal landing has an up or down button. The hall buttons are original and at the proper ADA height but the buttons are slightly recessed. ADA requires the buttons to be flush or raised. We recommend these be replaced when the elevator is modernized.

E. ELEVATOR CABS:

Cab Interior:

The existing cab interior appears to be original but in fairly good condition. The cab has handrails on the side and back walls that are flat bar type. We recommend new handrails that have a 1 ½" diameter, that are easy to grab, be installed on all three sides. Upgrading the cab walls for aesthetic reasons may be considered, but is not necessary.

Cab Lighting:

The elevator has fluorescent light fixtures mounted above removable egg crate ceilings. They could be updated for energy savings and for aesthetic purposes, but the existing lighting is fairly good and low maintenance, thus we recommend the lights be retained.

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ARCHITECTS

Elevators	Quantity	Unit Cost	Critical	Near Term	Short Term	Mid Term	Far Term
FIELD CONDITION SURVEY			Immediate/ Life Safety	Years 1-5	Years 6-10	Years 11-20	Years 21 to 30
Findings							
Modernize Existing Passenger Gearless elevators	3	275,000.00				825,000.00	
Modernize Existing Service Gearless Elevator 6	1	320,000.00				320,000.00	
Modernize Existing Geared Fujitec Cars 3 and 4	2	245,000.00				490,000.00	
Replace cab interiors on Passenger Cars 1,2,3,4, 5	5	25,000.00		125,000.00			150,000.00
Modernize Garage Car 9	1	125,000.00				125,000.00	
Repair in-operative door restrictors	5	1,000.00	5,000.00				
Upgrade all counterweight guide rails with seismic fish plates and brackets. (Some elevators have already been updated)	4	60,000.00			240,000.00		
Install new closed loop door operators on Cars 1-6	6	35,000.00		210,000.00			
Adjust all cars for re-opening of building.	8	7,000.00	56,000.00				
Repair gearless hoist machines	3	12,000.00		36,000.00			
Total Projected Capital Costs			**61,000.00**	**371,000.00**	**240,000.00**	**1,760,000.00**	**150,000.00**

Annual Operational Costs							
Annual Maintenance Costs ($60K per Year)				300,000.00	330,000.00	726,000.00	1,742,000.00

Appendix "A"

ADA Checklist for Elevators

		Complies (Yes/No)	
ADA	**Item**	**Cars 1 & 2**	**Cars 3-5**
	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
	AUTOMATIC OPERATION		
4.10.2	Elevators must be Automatic.	Yes	Yes
4.10.2	Self-leveling to within 1/2 in.	Yes	Yes
	HALL CALL BUTTONS		
4.10.3	Buttons centered at 36-48 in. above the floor.	Yes – 42"	Yes – 42"
4.10.3	Buttons to illuminate when call is entered and extinguish when answered.	Yes	Yes
4.10.3	Buttons to be at least 3/4 in. in the smallest dimension.	Yes-1"	Yes – 1"
4.10.3	Up button located above down button.	Yes	Yes
4.10.3	Buttons raised or flushed.	Yes – raise	Yes – raised
4.10.3	Objects mounted beneath hall buttons not to project into the lobby more than 4 in.	None	None
	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
4.10.4	Audible signals to sound once for up and twice for "down" or may verbal announcement stating "up" "down."	Yes	Yes
4.10.4	Hall directional lantern centered 72 in. above floor.	Yes	Yes
4.10.4	Directional lantern visible elements minimum of 2-½ in. in the smallest dimension.	Yes - 2½"	Yes - 2½"-3"
4.10.4	Directional lanterns must be visible from the vicinity of the hall call button.	Yes	Yes
4.10.4	In car lanterns, meeting the requirements above are acceptable in lieu of hall directional lanterns.	N/A	N/A
	HOISTWAY ENTRANCES		
4.10.5	Raised and Braille floor designations are required on both door jambs. Permanently applied plates are acceptable.	Yes	Yes
4.10.5	Centerline of floor designation characters 60 in. above floor.	Yes – 60"	Yes – 60"
4.30.4	Characters must be 2 in. high, raised 1/32 in. upper sans serif (block letters) or simple serif type.	Yes 2"	Yes 2"
4.30.4	Grade II Braille to accompany raised characters.	Yes	Yes
	DOOR PROTECTIVE & REOPENING DEVICES		
4.10.6	Doors must open and close automatically.	Yes	Yes

		Complies (Yes/No)	
ADA	**Item**	**Cars 1 & 2**	**Cars 3-5**
4.1.6(3)(c)	If safety edges are provided on existing elevators, the non-contact door reopening devices may be omitted.	Yes	Yes
4.10.6	Reopening device to remain operational for at least 20 seconds.	Yes	Yes
	DOOR AND SIGNAL TIMING		
4.10.7	Minimum acceptable door open time from notification car is answering a hall call until the car doors begin to close: *T=D/(1.5ft/s*, where *T* is the total time in and *D* is the distance from a point in the lobby or corridor 60 in. directly in front of the farthest button controlling that car to centerline of its hoistway door.	Yes	Yes
4.10.7	Minimum acceptable notification time 5.0 seconds.	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
	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
	FLOOR PLAN EXISTING ELEVATOR		
4.1.6	Minimum of 48" x 48"	Yes	Yes
4.10.9	Clearance between car platform sill and edge of hoistway landing sill no greater than 1-¼ in.	Yes	Yes – 1"
	Handrails Circular Square Dia.____Top of Handrail _____ Height Side Back	Yes – 34"	Yes –32½
	FLOOR SURFACES		
4.10.10	Surfaces to be stable, firm and slip resistant.	Yes - Tile	Yes - Carpet
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	N/A
	ILLUMINATION LEVELS		
4.10.11	Five foot-candles of illumination to be provided at car controls, platform and at sill.	Yes	Yes
	CAR CONTROLS		
4.10.12	Buttons to be at least 3/4 in. in their smallest dimension.	Yes – 1"	Yes – 1"
4.10.12	Buttons must be flush or raised.	Yes - raised	Yes - raised
4.10.12	Buttons must be designated by raised characters and Braille or symbols complying with ASME A17.1 Rule 210.13.	Yes	Yes

		Complies (Yes/No)	
ADA	**Item**	**Cars 1 & 2**	**Cars 3-5**
4.10.12	Characters must be a minimum of 5/8 in. high, upper case sans (block letters) or simple serif type.	Yes	Yes
4.10.12	Grade II Braille to accompany raised character of symbol.	Yes	Yes
4.10.12	Raised designations must be to the immediate left of the button to which they apply.	Yes	Yes
4.10.12	Call button illuminates when call is entered and extinguish when answered.	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 – 48"	Yes –48"
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 – 35"	Yes – 35"
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 - Front	Yes - Front
	CAR POSITION INDICATORS		
4.10.13	Visual car position indicator must be provided above control panel or over door.	Yes	Yes
4.10.13	Car position indicator numerals must be a minimum of 1/2 in. high.	Yes – 2"	Yes –2 1/4"
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
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
	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
4.10.14	The highest operable part must be a maximum of 48 in. from the car floor.	Yes – 21"	Yes – 21"
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
4.10.13	If a handset is provided the cord must be at least 29 in. long.	N/A	N/A
4.27.4	If located in a closed compartment, the door must be operable with one hand. It must not require tight grasping, pinching or twisting of the wrist. The force required to open the door must not exceed 5 lb/f.	Yes	N/A
4.10.13	The system must not require voice communication.	Yes	Yes

Appendix "A"

ADA Checklist for Elevators

		Complies (Yes/No)	
ADA	**Item**	**Cars 6**	**Cars 9**
	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
	AUTOMATIC OPERATION		
4.10.2	Elevators must be Automatic.	Yes	Yes
4.10.2	Self-leveling to within 1/2 in.	Yes	Yes
	HALL CALL BUTTONS		
4.10.3	Buttons centered at 36-48 in. above the floor.	Yes – 42"	Yes – 42"
4.10.3	Buttons to illuminate when call is entered and extinguish when answered.	Yes	Yes
4.10.3	Buttons to be at least 3/4 in. in the smallest dimension.	Yes-1"	Yes – 1"
4.10.3	Up button located above down button.	Yes	Yes
4.10.3	Buttons raised or flushed.	Yes – raise	Yes – raised
4.10.3	Objects mounted beneath hall buttons not to project into the lobby more than 4 in.	None	None
	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 – Car & Hall
4.10.4	Audible signals to sound once for up and twice for "down" or may verbal announcement stating "up" "down."	Yes	Yes
4.10.4	Hall directional lantern centered 72 in. above floor.	Yes	Yes
4.10.4	Directional lantern visible elements minimum of 2-½ in. in the smallest dimension.	Yes - 2½"	Yes - 2½"
4.10.4	Directional lanterns must be visible from the vicinity of the hall call button.	Yes	Yes
4.10.4	In car lanterns, meeting the requirements above are acceptable in lieu of hall directional lanterns.	N/A	N/A
	HOISTWAY ENTRANCES		
4.10.5	Raised and Braille floor designations are required on both door jambs. Permanently applied plates are acceptable.	Yes	Yes
4.10.5	Centerline of floor designation characters 60 in. above floor.	Yes – 60"	Yes – 60"
4.30.4	Characters must be 2 in. high, raised 1/32 in. upper sans serif (block letters) or simple serif type.	Yes 2"	Yes 2"
4.30.4	Grade II Braille to accompany raised characters.	Yes	Yes
	DOOR PROTECTIVE & REOPENING DEVICES		
4.10.6	Doors must open and close automatically.	Yes	Yes

		Complies (Yes/No)	
ADA	**Item**	**Cars 6**	**Cars 9**
4.10.6	Non-contact door reopening device at 5 in. and 29 in. above the floor.	Yes,– Electric Edge	Yes,– Electric Edge
4.1.6(3)(c)	If safety edges are provided on existing elevators, the non-contact door reopening devices may be omitted.	Yes	Yes
4.10.6	Reopening device to remain operational for at least 20 seconds.	Yes	Yes
	DOOR AND SIGNAL TIMING		
4.10.7	Minimum acceptable door open time from notification car is answering a hall call until the car doors begin to close: $T=D/(1.5ft/s$, where T is the total time in and D is the distance from a point in the lobby or corridor 60 in. directly in front of the farthest button controlling that car to centerline of its hoistway door.	Yes	Yes
4.10.7	Minimum acceptable notification time 5.0 seconds.	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
	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
	FLOOR PLAN EXISTING ELEVATOR		
4.1.6	Minimum of 48" x 48"	Yes	Yes
4.10.9	Clearance between car platform sill and edge of hoistway landing sill no greater than 1-¼ in.	Yes	Yes – 1"
	Handrails Circular Square Dia.____Top of Handrail _____ Height Side Back	Yes – 32"	Yes –33
	FLOOR SURFACES		
4.10.10	Surfaces to be stable, firm and slip resistant.	Yes - Tile	Yes - Vinyl
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	N/A
	ILLUMINATION LEVELS		
4.10.11	Five foot-candles of illumination to be provided at car controls, platform and at sill.	Yes	Yes
	CAR CONTROLS		
4.10.12	Buttons to be at least 3/4 in. in their smallest dimension.	Yes – 1"	Yes – 1"
4.10.12	Buttons must be flush or raised.	Yes - raised	Yes - raised

		Complies (Yes/No)	
ADA	**Item**	**Cars 6**	**Cars 9**
4.10.12	Buttons must be designated by raised characters and Braille or symbols complying with ASME A17.1 Rule 210.13.	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
4.10.12	Grade II Braille to accompany raised character of symbol.	Yes	Yes
4.10.12	Raised designations must be to the immediate left of the button to which they apply.	Yes	Yes
4.10.12	Call button illuminates when call is entered and extinguish when answered.	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 – 48"	Yes –48"
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 – 35"	Yes – 35"
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 - Front	Yes - Front
	CAR POSITION INDICATORS		
4.10.13	Visual car position indicator must be provided above control panel or over door.	Yes	Yes
4.10.13	Car position indicator numerals must be a minimum of 1/2 in. high.	Yes – 2"	Yes –1 ½"
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
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
	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
4.10.14	The highest operable part must be a maximum of 48 in. from the car floor.	Yes – 21"	Yes – 20"
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
4.10.13	If a handset is provided the cord must be at least 29 in. long.	N/A	N/A
4.27.4	If located in a closed compartment, the door must be operable with one hand. It must not require tight grasping, pinching or twisting of the wrist. The force required to open the door must not exceed 5 lb/f.	Yes	N/A
4.10.13	The system must not require voice communication.	Yes	Yes

Appendix "B"

A17.3, WAC 296-96, & SBC 3011

Code for Existing Traction /Hydraulic Elevators

A17.3	WAC 296-96		Complies Yes/No
			Cars 1-6
N/A	**23100**	**Key Box:** Must have machine room keys and all other keys in a lock box labeled "elevator".	Yes
2.1		**HOISTWAYS**	
2.1.1	23110	Hoistway Construction (Enclosed & Fire rated per local code or ANSI/NFPA No. 101)	Yes
2.1.2	23111	Windows in Hoistway Enclosures: (If provided are they guarded properly.)	Yes
2.1.3	N/A	Projections in Hoistway (Must be flush and level; Leveling zone +3"./ 60 to 75 deg bevel.)	Yes
2.1.4	23113	Pipes Conveying Gases, Vapors, or Liquids. (If provided must be properly covered & securely fastened.)	Yes-**except car 5**
N/A	23115	Safety requirements for inspecting overhead sheaves (proper decks and guard rails are required)	Yes
N/A	23116	Car Numbers: (If more than one elevator must have numbers in lobby, in car, machine, disconnect, etc.)	Yes
N/A	23117	Top of Car Railings: Required if over 12" space	Yes
N/A	23119	Signs required for Low Overhead Clearance: Must provide sign if low overhead.	N/A
N/A	23158	Hoistway Floor Numbers: (Inside shaft each hoistway door must have floor numbers 4" tall and within 4" of door opening.)	Yes
2.2		**MACHINE ROOMS AND MACHINERY SPACES**	
2.2.1	n/a	Enclosures – Designated Machine Room (No-non elevator equipment- existing can stay)	Yes
2.2.2	23121	Access to Machine Rooms and Machinery Spaces (A permanent means to the machine room- locked door)	Yes
2.2.3	23122	Lighting (Permanent lighting in all machine rooms) (WAC requires at least 10 FTC if installed before 2004)	Yes
	23123	Service Outlets: Must be grounded	Yes
2.2.4	n/a	Ventilation (Natural or mechanical to avoid overheating)	Yes-**except car 5**
2.2.5	23124	Pipes Conveying Gases, Vapors, or liquids (Existing pipes allowed if guarded to prevent discharge)	Yes
2.2.6	23125	Protection From Weather	Yes
	23126	Protective measures: Guarding sheaves and holes into top of hoistway.	Yes
2.3		**PITS**	
2.3.1	23130	Access to Pits (Means of access to all pits. If access door provide closer & keys onsite. Ladders required if over 3' pit)	Yes
2.3.2	23131	Drains (Drains connected directly to the sewer are not permitted.)	Yes
	23132	Pit Lighting (Installations prior to 2004 require at least 5FTC. Also permanent grounded outlet.	Yes
2.3.3		Stop Switch (A stop switch shall be provided for every pit. Locate near access, color, etc.)	Yes
2.1.5	23133	Counterweight Guards (Start at 12" go to 84" above pit floor; not needed with comp rope/chain)	Yes
2.4		**CLEARANCES AND RUNBYS**	
2.4.1		Horizontal Car Clearances (Not more then 5" for horizontal doors; 7.5" for vertical doors)	Yes
2.4.2		Bottom Car Clearances (Car shall not strike any equipment when resting on fully compressed buffer.)	Yes
2.4.3		Bottom Car and Counterweight Runby (Shall not exceed 24" for cars; or 36" for cwt.)	DNC
2.4.4		Top Car Clearance (Car does not strike any overhead structure)	Yes
2.4.5	23156	Landing Sill Clearance (At least ½" for side guides; at least ¾" for corner guides. Max cannot exceed 1 ½".)	Yes
		PROTECTION OF SPACES BELOW HOISTWAYS	
2.5	23140	Counterweight safeties required	Yes
2.6		**HOISTWAY ENTRANCES**	
2.6.1	23150	Doors or Gates Required (Passenger Elevators – full width/height – no hand latches.) (Freight Elevators – at least 6-0" gate)	Yes

A17.3	WAC 296-96		Complies Yes/No
			Cars 1-6
2.6.2	23151	Closing of Hoistway Doors (Door closers required on cars except swinging portion of horizontal door)	Yes
2.6.3	23152	Hoistway Door Vision Panels (Required on manually operated or self closing doors, location, Size, and type of glass)	N/A
2.6.4	23153	Door Hangers (Prevent jumping, and stops, 4 times load)	Yes
2.6.5	23154	Non-Shearing Astragals (For vertical bi-parting doors only)	N/A
2.6.6	23155	Pull Straps (Must not be more than 6'-6" from floor when open)	N/A
	23158	4" floor numbers must be installed on hoistway doors.	Yes
2.7		**HOISTWAY DOOR LOCKING DEVICES, PARKING, DEVICES, AND ACCESS**	
2.7.1	23160	Hoistway Door or Gate Locking Devices (Mechanical and electrical interlocks required)	Yes
2.7.2	23161	Elevator Parking Device (For cars operated from within car only)	N/A
2.7.3	23162	Access to Hoistway (Hoistway door unlocking devices and access switches)(WAC says must be cylinder key)	Yes
2.7.4		Restricted Opening of Hoistway Doors and/or Car Doors on Passenger Elevators (Cannot open more then 4" outside unlocking zone +-18" max.)	**No**-All cars except 3
2.7.5		Hoistway Emergency Door Contacts (Positively opened)	N/A
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
2.8.2	23165	Reopening Device for Power-Operated Car Doors or Gates (Can be rendered inoperative if less then 2.5ft/lb)	Yes
	23166	Photo Eyes/Electric Edges: (Must time out after 20 seconds and close the door.)	Yes
		Part III	
3.1	23203	Buffers And Bumpers (Car and counterweight buffers are required)	Yes
3.2	23205	Counterweights (The weights shall be protected so that they cannot be dislodged. The rod nuts shall be protected)	Yes
3.3		**CAR FRAMES AND PLATFORMS**	
3.3.1	23206	Car Platforms (Cover entire area)	Yes
3.3.2	23207	Platform Guards (Aprons) (Vertical face at least 21" A17.3, 60-75deg, withstand 150#)	Yes – **except car 5 @12"**
3.3.3	23208	Hinged Platform Sills (Must have contacts & prevent operation unless within 2")	N/A
3.3.4	23209	Floating (Movable) Platforms (Prohibited if car can move when door is not closed)	N/A
3.3.5	n/a	Protection of Platforms Against Fire (Must be covered with sheet metal or fire resistant material)	Yes-steel
3.4		**CAR ENCLOSURES**	
3.4.1	23215	Car Enclosures (Passenger – total enclosed; Frt maybe perforated, but not by the cwt.; Car top must withstand 300lbs on any 2sqft.)	Yes
	23216	Cab Lining Materials (Must have class 1 rating, flame spread of 25 or less.	Yes
3.4.2	23220	Car Doors and Gates (Must have gate or door and electric contract)	Yes
3.4.3	23221	Location of Car Doors and Gates (Hor, distance not more then 5 ½"., Swing door 4" max., space and site guard requirements.)	Yes
3.4.4	23225	Emergency Exits (Cover hinged, single car blind shaft-every 36', side allowed)	Yes
3.4.5	23226	Car Illumination (At least two lights, 5ftc; frt=2.5ftc; emerg. .2ftc for 4 hrs.)	Yes
3.4.6		Protection of Light Bulbs and Tubes (Guarded or coated to prevent breaks)	Yes
3.5		**SAFTIES**	

Appendix "B"

A17.3, WAC 296-96, & SBC 3011

Code for Existing Traction /Hydraulic Elevators

A17.3	WAC 296-96		Complies Yes/No
			Cars 1-6
3.5.1	23227	Car Safeties (Every car must have a safety)	Yes
3.5.2		Counterweight Safeties (If occupied space below)	Yes
3.5.3		Safeties to Stop Ascending Cars or Counterweights Prohibited (Cannot be provided)	N/A
3.5.4		Application and Release of Safeties (Must be mechanical can only release if car goes up)	Yes
3.5.5	23228	Max. Permissible Movement of Gov. Rope to Oper. Safety (For type "B" Safties-200ft or less 42in.; 201 to 375fpm – 36in.; Over 375 FPM 30in. Cwt. = 42in all speeds.)	Yes
3.5.6	23229	Rail Lubricants and Lubrication Plate (Plate on cross head stating type of lubricant or none at all.)	Yes
3.5.7		Overall Length of Guide Rails (Extended to prevent disengaging)	Yes
3.6		**SPEED GOVERNORS**	
3.6.1	23235 / 23236	Speed Governor Overspeed and Car Safety Mechanism Switches. (A switch shall be provided when speed is over 150FPM. For static control switch shall be for all speeds & both direct.)	Yes
3.6.2		Governor Ropes (Shall be of iron, steel, monel metal, phosphor bronze, or ss. At least 3/8" in diameter Tiller rope not allowed.)	Yes
3.7		**CAPACITY AND LOADING**	
3.7.1	23240	Minimum Rated Load for Passenger Elevators (per table 3.7.1)	Yes
3.7.2	23241	Use of Partitions for Reducing Inside Net Platform Area (Partitions must be permanent and symmetrical)	N/A
3.7.3	23243	Min. Rated Load for Freight Elevators (Class A = Not more then ¼ of total cap.; Class B = Motor Veh.; Class C = loading with industrial truck, etc.)	N/A
3.7.4	23244	Capacity Plates (Every car must have one with rated load; Frt : one piece loads, loading and unloading; ¼" high for pass, 1" for frt.)	Yes
3.7.5	23245	Signs on Freight Elevators (NOT A PASS ELEV…etc. ½" high letters)	N/A
3.8		**DRIVING MACHINES AND SHEAVES**	
3.8.1	23250	General Requirements (Must be cast iron or steel, fin. Grooves no set screws)	Yes
3.8.2	23255	Winding Drum Machines (Must have slack rope switch; Chain, belt, or rope-driven mechanisms shall not be used.)	N/A
3.8.3	23256	Indirect-Drive Machines(Must be at least 3 belts, safety factor of 10)	N/A
3.8.4	23260	Brakes (Must be released electrically and have spring or gravity and friction)	Yes
3.9		**TERMINAL STOPPING DEVICES**	
3.9.1	23262	Normal and Terminal Stopping Devices (Locate at upper and lower terminals. If in machine room provide broken rope, tape or chain switch)	Yes
3.9.2	23264	Final Terminal Stopping Devices (Winding drum machines- on machines and in hoistway; Traction – in the hoistway operated by the car.)	Yes
3.10		**OPERATING DEVICES AND CONTROL EQUIP.**	
3.10.1	23266	Types of Operating Devices (Rope or rod devices shall not be used.)	Yes
3.10.2	23268	Car-Switch Operation Elevators (If provided must return to stop position if released by hand)	N/A
3.10.3	23270	Top-of-Car Operating Devices (Continuous pressure <150FPM; bet. Crosshead/door.	Yes
3.10.4	23272	Electrical Provisions	
		(a) Slack Rope Switch	N/A
		(b) Motor-Generator Running Switch	Yes
		(c) Compensating Rope Sheave Switch	N/A
		(d) Broken rope, tape or chain	Yes
		(e) Stop Switch – Top of Car- marked "stop" & "run"	Yes
		(f) Car-Safety Mechanism Switch	Yes

A17.3	WAC 296-96		Complies Yes/No
			Cars 1-6
		(g) Speed Gov. Overspeed Switch	Yes
		(h) Final Terminal Stopping Devices	Yes
		(i) Emergency Terminal Stopping Devices (reduced stroke)	N/A
		(j) Motor Generator Overspeed Protection	Yes
		(k) Motor Field Sensing Means (not required w/ static drive)	Yes
		(m) Buffer Switches for Oil Buffers (type c safety)	N/A
		(n) Hoistway Door Interlocks or Hoistway Door Contacts	Yes
		(p) Car Door or Gate Electric Contacts	Yes
		(q) Normal Terminal Stopping Devices	Yes
		(r) Car Side Emergency Exit Electric Contact	N/A
		(s) Electric Contacts for Hinged Car Platform Sills	N/A
	23269	(t) In-Car Stop Switch (Must be keyed, if provided)(WAC does not require)	Yes-Keyed
		(u) Emergency Stop Switch (Must be provided for freight cars)	N/A
		(v) Stop Switch in Pit	Yes
		(w) Buffer Switches for Gas Spring Return Oil Buffers	N/A
3.10.5	23274	Power Supply Line Disconnecting Means (Provided w/ overcurrent protection, within site, and numbered)	Yes
3.10.6	23276	Phase Reversal and Failure Protection (Means to prevent starting if out of phase)	Yes
3.10.7		Devices for Making Hoistway Door Interlocks or Electric Contacts, or Car Door or Gate Electric Contacts Inoperative (These devices are prohibited)	Yes
3.10.8		Release and Application of Driving Machine Brakes (If ungrounded or if stop switch is pulled shall release brake)	Yes
3.10.9	23222	Control and Operating Circuit Requirements (The failure of any single magnetically operated switch)	Yes
	23277	Grounding and Overcurrent: Must comply with 620-61	Yes
3.10.10	23278	Absorption of Regenerated Power (Provide means to absorb energy during overhauling)	N/A
3.11		**EMERGENCY OPERATION AND SIGNALING DEVICES**	
3.11.1	23280	Car Emergency Signaling Devices (Audible signal, two-way communication, on emerg. power)	Yes
3.11.2		Operations of Elevators Under Standby (Emergency) Power (If provided must be able to absorb regenerative power)	N/A
3.11.3		Firefighters' Service(A17.1-1987 Rules 211.3 through 211.8- appendix C; phase I and II switches shall be the same in each bldg)	Yes
3.12		**SUSPENSION MEANS/CONNECTIONS**	
3.12.1	23282	Suspension Means (Must be wire rope made of iron or steel- Elevator ropes only)	Yes
3.12.2	23283	Rope Data Tag (Diameter, rated breaking strength, the grade of material, the month/year, preformed or non, construction classification, name of person or firm, name of rope manufacture, no. of ropes, the date resocketed, height of letters shall be 1/16".	Yes- **No car 2**
3.12.3	23284	Factor of Safety(f = SxN/W or table 3.12.3)	Yes
3.12.4	23285	Minimum Number and Diameter of Suspension Ropes (3 for traction; 2 for drum; minimum diameter = 3/8")	Yes
3.12.5	23287	Suspension Rope Equalizers (When provided shall be of the individual-compression spring type)	Yes
3.12.6	23288	Securing of Suspension Wire Ropes to Winding Drums (rope must be secured by clamps or tapered babbitted sockets.)	N/A
3.12.7	23289	Spare Turns on Winding Drums	N/A
3.12.8	23290	Suspension Rope Fastenings(Spliced eyes by return loop)	Yes
3.12.9	23291	Auxiliary Rope Fastening Devices	N/A

Appendix "B"

A17.3, WAC 296-96, & SBC 3011

Code for Existing Traction /Hydraulic Elevators

A17.3	WAC 296-96		Complies Yes/No
			Car 9
N/A	**23100**	**Key Box:** Must have machine room keys and all other keys in a lock box labeled "elevator".	Yes
2.1		**HOISTWAYS**	
2.1.1	23110	Hoistway Construction (Enclosed & Fire rated per local code or ANSI/NFPA No. 101)	Yes
2.1.2	23111	Windows in Hoistway Enclosures: (If provided are they guarded properly.)	Yes
2.1.3	N/A	Projections in Hoistway (Must be flush and level; Leveling zone +3"./ 60 to 75 deg bevel.)	Yes
2.1.4	23113	Pipes Conveying Gases, Vapors, or Liquids. (If provided must be properly covered & securely fastened.)	Yes
n/a	23116	Car Numbers: (If more than one elevator must have #'s in lobby, top of car disconnect, etc.)	Yes
n/a	23119	Signs required for Low Overhead Clearance: Must provide sign if low overhead.	Yes
n/a	23158	Hoistway Floor Numbers: (Inside shaft each hoistway door must have floor numbers 4" tall and within 4" of door opening.)	Yes
2.2		**MACHINE ROOMS AND MACHINERY SPACES**	
2.2.1	n/a	Enclosures – Designated Machine Room (No-non elevator equipment- existing can stay)	Yes
2.2.2	23121	Access to Machine Rooms and Machinery Spaces (A permanent means to the machine room- locked door)	Yes
2.2.3	23122	Lighting (Permanent lighting in all machine rooms) (WAC requires at least 10 FTC if installed before 2004)	Yes
	23123	Service Outlets: Must be grounded	Yes
2.2.4	n/a	Ventilation (Natural or mechanical to avoid overheating)	Yes-A/C
2.2.5	23124	Pipes Conveying Gases, Vapors, or liquids (Existing pipes allowed if guarded to prevent discharge)	Yes
2.2.6	23125	Protection From Weather	Yes
2.3		**PITS**	
2.3.1	23130	Access to Pits (Means of access to all pits. If access door provide closer & keys onsite. Ladders required if over 3' pit)	Yes
2.3.2	23131	Drains (Drains connected directly to the sewer are not permitted.)	Yes
	23132	Pit Lighting (Installations prior to 2004 require at least 5FTC. Also permanent grounded outlet.)	Yes
2.3.3	n/a	Stop Switch (A stop switch shall be provided for every pit. Locate near access, color, etc.)	Yes
	23303	Single Bottom Jack: (If single bottom oil must be monitored and tracked)	Yes –Double bottom
2.4		**CLEARANCES AND RUNBYS**	
2.4.1		Horizontal Car Clearances (Not more than 5" for horizontal doors; 7.5" for vertical doors)	Yes
2.4.2		Bottom Car Clearances (Car shall not strike any equipment when resting on fully compressed buffer.)	Yes
2.4.3		Bottom Car and Counterweight Runby (Shall not exceed 24" for cars; or 36" for cwt.)	Yes
2.4.4		Top Car Clearance (Car does not strike any overhead structure)	Yes
2.4.5	23156	Landing Sill Clearance (At least ½" for side guides; at least ¾" for corner guides. Max cannot exceed 1 ½".)	Yes
2.6		**HOISTWAY ENTRANCES**	
2.6.1	23150	Doors or Gates Required (Passenger Elevators – full width/height – no hand latches.) (Freight Elevators – at least 6-0" gate)	Yes
2.6.2	23151	Closing of Hoistway Doors (Door closers required on cars except swinging portion of horizontal door)	Yes
2.6.3	23152	Hoistway Door Vision Panels (Required on manually operated or self-closing doors, location, Size, and type of glass)	N/A
2.6.4	23153	Door Hangers (Prevent jumping, and stops, 4 times load)	Yes
2.6.5	23154	Non-Shearing Astragals (For vertical bi-parting doors only)	N/A
2.6.6	23155	Pull Straps (Must not be more than 6'-6" from floor when open)	N/A
2.7		**HOISTWAY DOOR LOCKING DEVICES, PARKING, DEVICES,**	

Appendix "B"

A17.3, WAC 296-96, & SBC 3011

Code for Existing Traction /Hydraulic Elevators

A17.3	WAC 296-96		Complies Yes/No
			Car 9
		AND ACCESS	
2.7.1	23160	Hoistway Door or Gate Locking Devices (Mechanical and electrical interlocks required)	Yes
2.7.2	23161	Elevator Parking Device (For cars operated from within car only)	N/A
2.7.3	23162	Access to Hoistway (Hoistway door unlocking devices and access switches)(WAC says must be cylinder key)	Yes
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
2.7.5		Hoistway Emergency Door Contacts (Positively opened)	Yes
2.8		**POWER OPERATION OF DOORS AND GATES**	
2.8.1		Kinetic Energy and Force Limitations for Power-operated Horizontal Sliding Doors. (Shall not exceed 7ft/lbs. with re-opening device, without 2.5ft/lbs.; cannot exceed 30 ft/lbs)	Yes
2.8.2	23165	Reopening Device for Power-Operated Car Doors or Gates (Can be rendered inoperative if less than 2.5ft/lb)	Yes
	23166	Photo Eyes/Electric Edges: (Must time out after 20 seconds and close the door.)	Yes
		Mechanical Equipment	
3.1	23203	Buffers And Bumpers (Car and counterweight buffers are required)	Yes
3.3		**CAR FRAMES AND PLATFORMS**	
3.3.1	23206	Car Platforms (Cover entire area)	Yes
3.3.2	23207	Platform Guards (Aprons) (Vertical face at least 21" A17.3, 60-75deg, withstand 150#)	Yes – 21"
3.3.3	23208	Hinged Platform Sills (Must have contacts & prevent operation unless within 2")	N/A
3.3.4	23209	Floating (Movable) Platforms (Prohibited if car can move when door is not closed)	N/A
3.3.5	n/a	Protection of Platforms Against Fire (Must be covered with metal or fire resistant mat)	Yes
3.4		**CAR ENCLOSURES**	
3.4.1	23215	Car Enclosures (Passenger – total enclosed; Frt maybe perforated, but not by the cwt.; Car top must withstand 300lbs on any 2sqft.)	Yes
	23216	Cab Lining Materials (Must have class 1 rating, flame spread of 25 or less.	Yes
3.4.2	23220	Car Doors and Gates (Must have gate or door and electric contract)	Yes
3.4.3	23221	Location of Car Doors and Gates (Hor, distance not more then 5 ½"., Swing door 4" max., space and site guard requirements.)	Yes
3.4.4	23225	Emergency Exits (Cover hinged, single car blind shaft-every 36', side allowed)	Yes
3.4.5	23226	Car Illumination (At least two lights, 5ftc; frt=2.5ftc; emerg. .2ftc for 4 hrs.)	Yes
3.4.6		Protection of Light Bulbs and Tubes (Guarded or coated to prevent breaks)	Yes
3.7		**CAPACITY AND LOADING**	
3.7.1	23240	Minimum Rated Load for Passenger Elevators (per table 3.7.1)	Yes
3.7.2	23241	Use of Partitions for Reducing Inside Net Platform Area (Partitions must be permanent and symmetrical)	N/A
3.7.3	23243	Min. Rated Load for Freight Elevators (Class A = Not more than ¼ of total cap.; Class B = Motor Veh.; Class C = loading with industrial truck, etc.)	Yes
3.7.4	23244	Capacity Plates (Every car must have one with rated load; Frt : one piece loads, loading and unloading; ¼" high for pass, 1" for frt.)	Yes
3.7.5	23245	Signs on Freight Elevators (NOT A PASS ELEV…etc. ½" high letters)	Yes
3.8 (4.3)		**DRIVING MACHINES AND SHEAVES**	
4.3.1	23313	Connection to Driving Machine (capable of withstanding, without damage, plunger stop)	-
4.3.2	23316	Plunger Stop (If greater than 100FPM provide ETS)	Yes
4.4		Valves, Supply Piping, and Fittings	Yes
		Valves, Supply Piping, and Fittings	
4.4.1	23318	Pump Relief Valve (Between pump & check valve, preset to open at 125% of working pressure, sized to allow proper capacity, must be sealed)	Yes
4.4.2	23321	Check Valve (Will hold the elevator with rated load when pump stops.)	Yes
4.4.3		Mechanically Controlled Operating Valves (These types of valves are prohibited.)	Yes

Appendix "B"

A17.3, WAC 296-96, & SBC 3011

Code for Existing Traction /Hydraulic Elevators

A17.3	WAC 296-96		Complies Yes/No
			Car 9
4.4.4	23322	Supply Piping and Fittings (Must be in sound condition and secured in place.)	Yes
	23323	Flexible Hydraulic Connections: (When replaced must meet A17.1. If passing through a wall must be converted to steel when replaced.)	Yes
		TANKS	
4.51	23324	Tanks General Requirements (Must be of adequate size and have an indicator.)	Yes
4.52	23325	Pressure Tanks (Tanks subject to collapsing shall be provided with vacuum relief valves, pressure gage, inspectors gage, liquid level detector, hand holes, and manholes.)	Yes
3.9		**TERMINAL STOPPING DEVICES**	
3.9.1	23262	Normal and Terminal Stopping Devices (Locate at upper and lower terminals. If in machine room provide broken rope, tape or chain switch)	Yes
3.10		**OPERATING DEVICES AND CONTROL EQUIP.**	
3.10.1	23266	Types of Operating Devices (Rope or rod devices shall not be used.)	Yes
3.10.2	23268	Car-Switch Operation Elevators (If provided must return to stop position if released by hand)	Yes
3.10.3	23270	Top-of-Car Operating Devices (Continuous pressure <150FPM; bet. Crosshead and door.	Yes
3.10.4	23272	Electrical Provisions	
		(e) Stop Switch – Top of Car- marked "stop" & "run"	Yes
		(h) Final Terminal Stopping Devices	Yes
		(i) Emergency Terminal Stopping Devices (reduced stroke)	Yes
		(m) Buffer Switches for Oil Buffers (type c safety)	N/A
		(n) Hoistway Door Interlocks or Hoistway Door Contacts	Yes
		(p) Car Door or Gate Electric Contacts	Yes
		(q) Normal Terminal Stopping Devices	Yes
		(r) Car Side Emergency Exit Electric Contact	N/A
		(s) Electric Contacts for Hinged Car Platform Sills	N/A
	23269	(t) In-Car Stop Switch (Must be keyed, if provided)(WAC does not require it to be keyed)	Yes - Keyed
		(u) Emergency Stop Switch (Must be provided for freight cars)	Yes
		(v) Stop Switch in Pit	Yes
		(w) Buffer Switches for Gas Spring Return Oil Buffers	Yes
3.10.5	23274	Power Supply Line Disconnecting Means (Provided w/ overcurrent protection, within site, and numbered)	Yes
3.10.6	23276	Phase Reversal and Failure Protection (Means to prevent starting if out of phase)	Yes
3.10.7		Devices for Making Hoistway Door Interlocks or Electric Contacts, or Car Door or Gate Electric Contacts Inoperative (These devices are prohibited)	Yes
3.10.9	23222	Control and Operating Circuit Requirements (The failure of any single magnetically operated switch)	Yes
	23277	Grounding and Overcurrent: Must comply with 620-61	Yes
3.11		**EMERGENCY OPERATION AND SIGNALING DEVICES**	
3.11.1	23280	Car Emergency Signaling Devices (Audible signal, two-way communication, on emerg. power)	Yes
3.11.2		Operations of Elevators Under Standby (Emergency) Power (If provided must be able to absorb regenerative power)	Yes
3.11.3		Firefighters' Service(A17.1-1987 Rules 211.3 through 211.8- appendix C; phase I and II switches shall be the same in each bldg)	Yes
4.8		Additional Requirements for Counterweighted Hydraulics (Do not require buffers)	N/A
4.9		Additional Requirements for Roped Hydraulic Elevators.	N/A

3011	Seattle Building Code Chapter 30:Retroactive Requirements for Existing Installations	Complies/Comments
3011.1	General: Shall comply with WAC 296-95	Yes
3011.2	Doors to Elevator and Dumbwaiter Machine Rooms. Must be self-closing and self-locking.	Yes
3011.3	Key Retainer Box. A key retainer box locked keyed to the standard City access key for elevator access and keys shall be provided and meet the following:	Yes
	1) 8" high x 6" wide x 1" deep.	Yes
	2) Material – 16 gauge steel welded.	Yes
	3) Color – red (unless located in the main lobby above the hall call button, six feet nominal above the floor)	Yes
	4) Labeling – "FOR FIRE DEPARTMENT USE"	Yes
	5) Lock – Ace one-inch cylinder cam lock key #39504	Yes
	6) The box shall be located adjacent to the phase I key, and 6'-0" above the floor, or other location if approved by SBC.	Yes
3011.4	Elevator Access Keys: The following keys shall be retained in the above mentioned key box:	Yes
	1) Machine room door	Yes
	2) Secondary level door	Yes
	3) Pit door	Yes
	4) Roof door	Yes
	5) Independent, hospital emergency and/or attendant operation	Yes
	6) Hoistway Access	Yes
	7) Mechanical Hoistway Access devices (broken are, lunar key, etc.)	Yes
	8) Miscellaneous keys	Yes
	9) Fire alarm panel room	Yes
	10) Sprinkler valve control room	Yes
	11) Phase I and phase II key switches, one for each type)	Yes
3011.5	Dumbwaiter Machinery Access. Must have electric contacts and sign on door saying " DANGER – DUMWAITER MACHINE". 1" letters.	N/A
3011.6	Machine space lighting. Lighting of the machine rooms shall comply with ASME A17.1, Rule 101.5a as amended below: 101.5a Lighting: Permanent electric lighting shall be provided in all machine rooms and machinery spaces. The illumination shall be not less than 10ftc (108lux) at the floor level. The lighting control switch shall be located within easy reach of the access to such rooms or spaces. Where practicable, the light control switch shall be located on the lock jamb side of the access door. Where practical, elevator; its and machine rooms shall be provided with an electrical outlet.	Yes
3011.7	Access to Terminal Landings. Mechanical access to terminal landings of elevator hoistways shall be provided in accordance with ASME A17.1, Rule 111.9(e) or WAC 296-95-162(1).	Yes
3011.8	Wall Covering Material for Passenger Cars. Wall covering material for passenger cars shall comply with the following: 1. ASME A17.1, Rule 204.2a, as amended by the following: 1.1 SBC regulations concerning flame spread ratings for wall coverings and use of plastics (see chapters 7 &8) 1.2 WAC 296-95-216 except that interior finish materials, need not be firmly bonded flat to the enclosure and may be padded.	Yes
3011	Retroactive Requirements for Existing Installations	Complies/Comments

3011.9	Control and Operating Circuits and Overcurrent Protection. Control and operating circuit requirements shall comply with ASME A17.1 Rules 209.3c, 210.9 and 306.9. Overcurrent protection shall be maintained in accordance with Article 620-61, Electrical Code.	Yes
3011.9.1.2	Hydraulic Elevators	Yes
3011.10	Roped Hydraulic Elevators. Roped horizontal hydraulic elevators may continue in service but once taken out of service may not be reactivated.	N/A
3011.11	Pit Access and Equipment. Access ladders shall be installed in elevator pits deeper than 3 feet. Pits shall be illuminated in compliance with ASME A17.1, Rule 106.1e, items 1 and 2. Pit light control switches shall be located inside the hoistway of every elevator approximately 48 inches above the threshold, and either within 18 inches of the access door or within reach from the access floor and adjacent to the pit ladder. Access shall be provided for safe maintenance and inspection of all equipment located in the pit.	Yes
3011.12	Floor Numbers. Elevator hoistways shall have floor numbers, not less then 2 inches in height, placed on the walls and/or doors of hoistways at intervals such that a person in a stalled elevator upon opening the car door could determine the floor position.	Yes
3011.13	Car To Work Light. A permanently wired work light and outlet shall be installed on top for freight and passenger elevators to provide adequate illumination for inspection and work in the hoistway. The light shall be provided with a non-keyed switch in or adjacent to the fixture. The fixture shall be protected from accidental breakage.	Yes
3011.14	Labeling. All equipment (disconnect switches, machines and controllers) operating on a voltage in access of 250 volts shall be labeled for the voltage used in letters ¾" high.	**NO-voltage label missing on disconnects 3 &4**
3011.15	Interior Alterations. Alterations or modifications of elevator car interiors shall comply with ASME A17.1, Rule 1202.4b (increase in dead weight of car), Building Code requirements concerning flame spread ratings for wall coverings [see chapter 8], and lighting requirements of ASME A17.1.	Yes
3011.16	Illumination. Illumination in the elevator car shall be maintained unless it is turned off manually by the switch in the car. A readily-accessible and labeled toggle-type test switch shall be provided on the top of the car to cut lighting power manually and test the emergency lighting.	Yes
3011.17	Conveyance Number Designation. In any building with more than one elevator, escalator or other type of conveyance a designating number (not less than two inches in height) shall be located at the door of the main entrance lobby, inside the car, on the machine, on the disconnect switch or stop switch, and on escalator upper and lower front plates.	Yes
3011.18	Escalator Starting Switches. "Up" and "Down" positions shall be clearly indicated on all starting switches.	N/A
3011.19	Anchorage for Elevator Equipment. All elevator equipment, hydraulic or cable type shall be anchored.	Yes
3011.20	Restricted Opening of Doors. All existing passenger elevators in Group R, Division 1 hotels and dormitory buildings shall comply with the requirements of ASME A17.1, Rule 111.12.	Yes
3011.21		

Appendix C

Performance Review and Maintenance Deficiency List

	PERFORMANCE TIMES	*Design cars 1 & 2*	Car 1	Car 2	*Design Car 3 & 4*	Car 3	Car 4
7.1	Door Open Time	**2.5**	2.5	2.2	**1.6**	**2.5**	1.7
7.2	Door Close Time	**4.4**	**3.3**	**3.4**	**2.4**	**4.0**	2.5
7.3	Floor to Floor Up	**10.8**	**12.0**	**11.5**	**9.1**	**10.5**	8.8
7.4	Floor to Floor Down	**10.8**	**12.6**	**11.6**	**9.1**	**10.5**	9.0
7.5	Full Speed Up (FPM)	**600**	**493**	**494**	**350**	344	340
7.6	Full Speed Down (FPM)	**600**	**485**	**495**	**350**	342	340
7.7	Jerk Rate Up	**4.5**	4.2	3.7	**4.5**	3.4	3.5
7.8	Jerk Rate Down	**5.6**	4.0	3.2	**5.6**	3.8	4.1
7.9	Power Closing of Door (Pressure Gauge)	**<25 lbs**	21lbs	20lbs	**<25 lbs**	25lbs	25lbs
7.10	Interrupted Ray	**.5sec**	3.6	4.0	**.5sec**	4.0	3.5
7.11	Car Dwell Time	**3.0**	4.3	4.7	**3.0**	4.3	4.2
7.12	Hall Call Dwell Time	**5.0**	6.8	7.2	**5.0**	6.7	6.9
7.13	Hall Lantern Time	**7.0**	13.6	12.8	**7.0**	11.2	11.1
7.14	Nudging	**20.0**	24.5	25.1	**20.0**	**16.0**	20.0
7.15	Test Phone (Works)	**Y/N**	Yes	Yes	**Y/N**	Yes	Yes
7.16	Test Emergency Light (Works)	**Y/N**	DNC	DNC	**Y/N**	DNC	DNC

Items in Red do not comply and should be adjusted. DNT = Did Not Test.

Car #	GENERAL MAINTENANCE DEFICIENCIES	COMPLETED	DATE CHECKED
Car 1			
1.1	Car doors make clunking sound		
1.2	Door are scratched		
1.3	Car is not level at the 8th floor		
1.4	Door restrictor has been intentionally disabled- this needs to be fixed immediately		
1.5	Correct car top data plate: there are 8- ½" ropes not 6-5/8" ropes.		
1.6	Car door closing speed is too fast adjust to meet design and kinetic energy speed.		
1.7	Floor to floor times up and down are too slow adjust to meet design times.		
1.8	Full speed up and down are too slow. Adjust to meet design speed.		
Car 2			
2.1	CPI is faded and barely readable- repair or replace		
2.2	Car door makes clunking sounds		
2.3	Correct car top data plate: there are 8- ½" ropes not 6-5/8" ropes.		

Appendix C

Performance Review and Maintenance Deficiency List

Car #	GENERAL MAINTENANCE DEFICIENCIES	COMPLETED	DATE CHECKED
2.4	Retainer clips on hoist ropes are too far apart. Adjust and replace missing rope data tag		
2.5	Seismic retainers on the counter weight do no cover the rail. Replace		
2.6	Door restrictor is inoperative. Fix		
2.7	4th floor door lock is missing. Replace		
2.8	Car door closing speed is too fast adjust to meet design and kinetic energy speed.		
2.9	Floor to floor times up and down are too slow adjust to meet design times.		
2.10	Full speed up and down are too slow. Adjust to meet design speed.		
Car 3			
3.1	Mainline disconnect is labeled showing volts and amps		
3.2	Car door opening and closing speed is too slow adjust to meet design times.		
3.3	Floor to floor times up and down are too slow adjust to meet design times.		
3.4	Nudging time needs to be minimum 20 seconds to meet ADA. Adjust.		
Car 4			
4.1	Mainline disconnect is labeled showing volts and amps		
4.2	Door restrictor is inoperative. Replace engagement arm.. It has been cut off.		
4.3	Hoist way smoke detector has a paint cover still installed. Remove to allow operation.		
4.4	Clean grease from the car top.		

Appendix C

Performance Review and Maintenance Deficiency List

	PERFORMANCE TIMES	*Design Car 5*	Car 5	*Design Car 6*	Car 6	*Design Car 9*	Car 9
7.1	Door Open Time	2.3	3.5	2.3	2.4	1.6	2.1
7.2	Door Close Time	4.0	4.6	4.0	4.3	2.4	3.5
7.3	Floor to Floor Up (6-7)	10.0	13.9	10.0	10.9	14.5	15.0
7.4	Floor to Floor Down (7-6)	10.0	14.8	10.0	11.1	14.5	14.9
7.5	Full Speed Up (FPM)	500	345	500	496	150	161
7.6	Full Speed Down (FPM)	500	349	500	492	150	135
7.7	Jerk Rate Up	4.5	3.8	4.5	-	4.5	-
7.8	Jerk Rate Down	5.6	3.4	5.6	-	5.6	-
7.9	Power Closing of Door (Pressure Gauge)	<25 lbs	20lbs	<25 lbs	19lbs	<25 lbs	23lbs
7.10	Interrupted Ray	.5sec	3.7	.5sec	3.8	.5sec	1.7
7.11	Car Dwell Time	3.0	4.9	3.0	4.4	3.0	4.5
7.12	Hall Call Dwell Time	5.0	7.4	5.0	7.1	5.0	7.7
7.13	Hall Lantern Time (Car in #11)	7.0	16.8	7.0	9.2	7.0	11.3
7.14	Nudging	20.0	30.0	20.0	-	20.0	20.0
7.15	Test Phone (Works)	Y/N	Yes	Y/N	No	Y/N	Yes
7.16	Test Emergency Light (Works)	Y/N	DNC	Y/N	DNC	Y/N	DNC
7.17	Intercom	Y/N	DNC	Y/N	DNC	Y/N	DNC

Items in Red do not comply and should be adjusted. DNT = Did Not Test.

Car #	GENERAL MAINTENANCE DEFICIENCIES	COMPLETED	DATE CHECKED
Car 5			
5.1	Mainline disconnect is labeled showing volts and amps		
5.2	Door restrictor is inoperative. Replace missing parts.		
5.3	Car apron is too short @ 12" replace with 21" minimum		
5.4	Pipe running through the pit that is not elevator related. Remove or cover.		
5.5	Car door opening and closing speed is too slow adjust to meet design times.		
5.6	Floor to floor times up and down are too slow adjust to meet design times.		
5.7	Full speed up and down are too slow. Adjust to meet design speed.		
Car 6			
6.1	Emergency phone is inoperative-no dial tone		
6.2	Door restrictor is inoperative. Adjust		
6.3	Car top handrail is 27" high. Extend to 42" provided there is adequate overhead.		

6.4	Extended car top section is loose. Fasten securely.		
6.5	Pit is dirty as needs to be cleaned.		
6.6			
Car 9			
9.1	Door closing and opening speeds are too slow. Adjust to meet design times.		
9.2	Remove loose parts in control cabinet.		
9.3	Jack is leaking- clean pit floor. Oil absorbent materials need to be swept up.		
9.4	Car top is dirty. Clean.		
9.5	Remove spare parts for car top.		
9.6	Car door squeaks. Eliminate noise.		
9.7	Water is getting in to the hoistway. There is a fair amount of rust on the car rails, mounting brackets, electrical conduit, and hoist way entrance @ P8		
9.8	Car top railing is at 24” extend to 42” provided there is clear overhead space.		
9..9	Clean car interior. Remove dirty and leaves.		
9.10	Car door opening and closing speeds are too slow. Adjust to meet design times.		
9.11	Upper door restrictor bracket is missing on the top floor hoist way door. Replace.		

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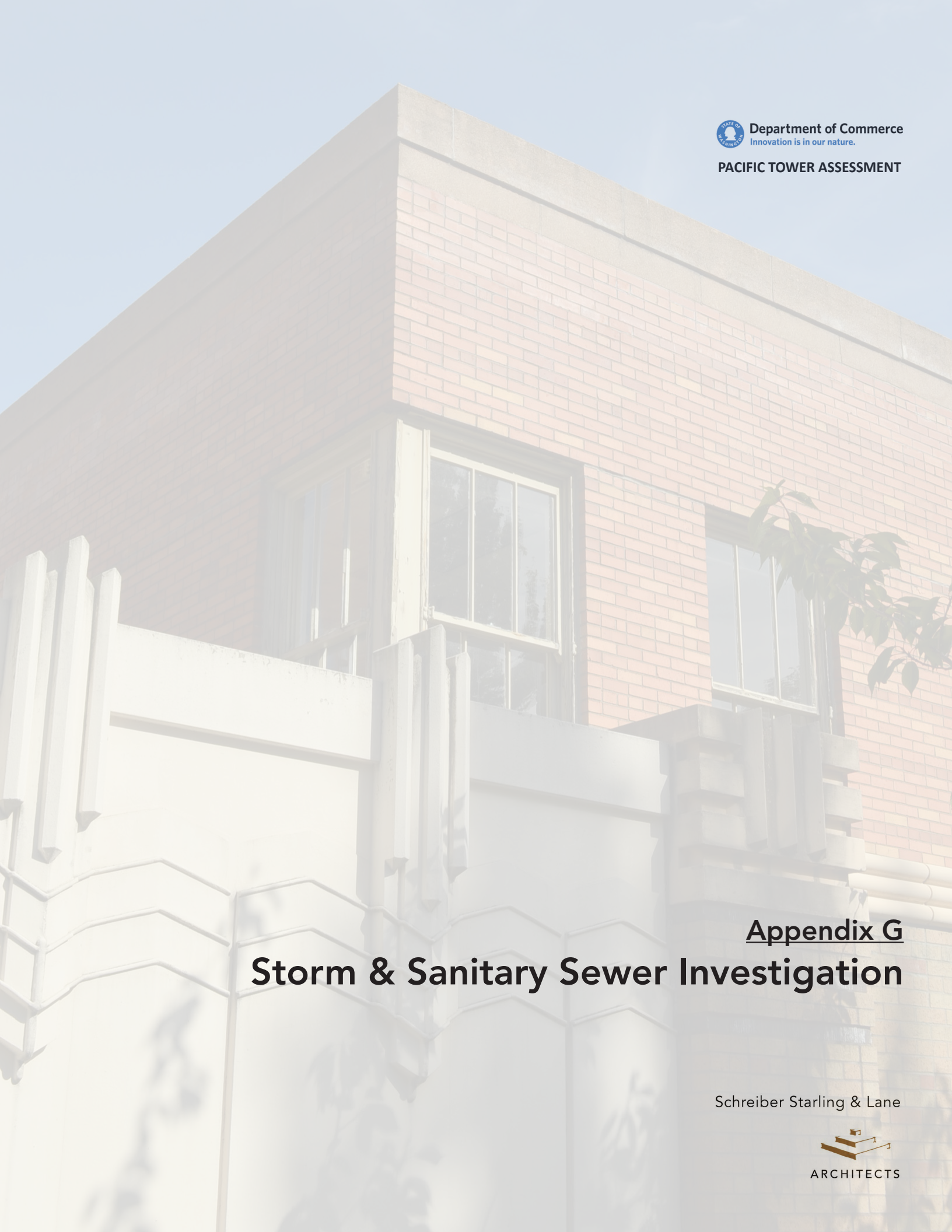
PACIFIC TOWER ASSESSMENT



Appendix G
Storm & Sanitary Sewer Investigation

Schreiber Starling & Lane

ARCHITECTS

Pacific Tower-Exterior Storm & Sewer

Assessment of outside storm and sewer lines from the Pacific Tower facility.

Procedure and findings:

Started inspection on the southwest side of the building: Inspected all catch basins and manholes and holding storm water tanks.

Continued work on the west side exit. Used camera from manholes downstream and upstream. Found two separate systems on that side of the building. From upper buildings the sewer line comes into the existing sewer manhole on the west exit of the building. Found separate storm lines on that side of the building going into the separate system to the city main line. Blueprints have been corrected with this information.

Camera catch basins are located by 14th avenue south sidewalk. Found catch basins to be located on the right side of the curb by the west entrance to the building. It drops about 27 feet into the large 36 inch covert storm line.

Surveyed and found another catch basin with 36 inch covert pipe which is servicing a collection storm water manhole. Also found that according to the blueprints there is a water main line with manhole access and manhole with storm water access. These have been abandoned and not any longer used. This is located 20 feet from the west building entrance.
Where there used to be a compactor, found catch basin on the loading dock. It drops into the manhole located by the entrance to the ramp. That manhole by the ramp ties into the existing sewer line.

Started camera from the sewer manhole all the way up to the next cleanout and from that one to the second cleanout. From the second cleanout found where the PVC line transitions into clay pipe there is a heavy roots growth. Attempted to run downstream 60 feet and was not able to pass through, possibly due to the heavy root growth of blockage. Camera was going under water and was not able to see the picture.

Camera sewer line located on the west exit of the building to the city sewer line and found it to be in good condition.

Recommendations:

1. Catch basin by the south entrance to the clinic located in the landscape area needs to be camera and jetted.
2. Catch basin by the east garage entrance needs to be jetted upstream.
3. Catch basin #23 could not be inspected because it is full of roots.
4. Sewer line located on the NE side of the building pass the loading dock area needs to be jetted to remove roots.

An as built drawing and camera video will be included under separate transmittal.

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NOTES
PLUMBING
All valve pits, meter pits & meters, hydrants, sewer manholes, sewer lines, gas lines, water lines, and vehicle connections for same, shall be furnished and installed under plumbing. The drain water service for automatic sprinklers will be furnished under sprinkler work.
All catch basins and dumps in driveway and sidewalks are not included in plumbing but drains from drain inlets shall be installed under plumbing.
Iron cesspools shall be used for drainage from steam manholes, new work and tank pits. See fig. 1 sht.
Minimum depth for all Water Lines shall be 30".
ELECTRICAL
All outside wiring and conduit for electric fenders, fire alarm, radio, street lighting and connections, shall be furnished.
The furnishing and installing of light standard consisting of base, posts, cap-hole and luminaire, is not included under the electrical work.
All connections for current supply and all wiring shall be furnished complete.
Stream Manhole
Sewer Manhole
Valve Pit
Meter Pit
Drive Way Catch Basin
Intercepting Gutter in Drive Way not in plumbing work
Sub Soil Drainage Catch Basin
Light Standards, Type A
Small Light Standards, Type B
Fire Hydrant
DETAIL OF VALVE PIT
TYPICAL DRIVE WAY CATCH BASIN DISCHARGE CONNECTION
TYPICAL OUTFLOW CONNECTION FOR SUMPS INSIDE BUILDINGS
TYPICAL SECTION OF STEAM & RETURN DUCT
GOLF DRIVE
8" C.I.P. Water Main - In Place
8" Vitrified Sewer Pipe - In Place
4" Gas Main - In Place
HOSPITAL
BASEMENT FLOOR ELEV. 252.0
GROUND FLOOR ELEV. 268.0
FIRST FLOOR ELEV. 278.0
LOADING PLATFORM
SERVICE COURT
GARAGE
PARKING
ATTENDANTS BUILDING
TYPE 'B' JUNIOR OFFICERS' QUARTERS
JUNIOR OFFICERS' QUARTERS TYPE 'B'
RESIDENCE OF OFFICER
#1
#2
#3
#4
HEATING, PLUMBING & ELECTRICAL
PLOT PLAN
U.S. MARINE HOSPITAL
SEATTLE WASHINGTON
DRAWING NO. X-4
SCALE 1" = 20'-0"
BEBB & GOULD
JOHN GRAHAM
ARCHITECTS
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PACIFIC TOWER ASSESSMENT

Appendix H
MEP Equipment Listing

Schreiber Starling & Lane

ARCHITECTS

Equipment ID	System	Subsystem	Category	Manufacturer	Description	Model Number	Serial Number	Location	Install Date	Ops Risk factor	Remain Life (yrs)	Replacement Cost	Notes
AHU-1 anx	Mechanical	HVAC	Air Handlers	York	VAV AHU w/ ASD	AP250	CBHM0380OC	1st Floor East	1999	2	15	$291,550	Due to Soft Start & ASDs, replacements will most likely only involve components such as motors/VFD's
AHU-1E	Mechanical	HVAC	Air Handlers	York	VAV AHU w/ ASD	AP215	CAHM03358C	1st Floor East	1999	2	1	$257,873	RUL=1 to build "rainy day fund"
AHU-1W	Mechanical	HVAC	Air Handlers	York	VAV AHU w/ ASD	AD215	CAHM03360C	1st Floor West	1999	2	15	$257,873	
AHU-1N	Mechanical	HVAC	Air Handlers	York	VAV AHU w/ ASD	AP215	CAHM03359C	1st Floor North	1999	2	15	$226,100	
AHU-2E	Mechanical	HVAC	Air Handlers	York	VAV AHU w/ ASD	AP250	CAHMO3361C	2nd Floor East	1999	2	15	$273,319	
AHU-2W	Mechanical	HVAC	Air Handlers	York	VAV AHU w/ ASD	AP250	CAHMO3362C	2nd Floor West	1999	2	15	$273,319	
AHU-2N	Mechanical	HVAC	Air Handlers	York	VAV AHU w/ ASD	AP120	CAHM03602C	2nd Floor North	1999	2	15	$148,750	
AHU-3E	Mechanical	HVAC	Air Handlers	York	VAV AHU w/ ASD	AP170	CAHM03363C	3rd Floor East	1999	2	15	$206,227	
AHU-3W	Mechanical	HVAC	Air Handlers	York	VAV AHU w/ ASD	AP170	CAHM03365C	3rd Floor West	1999	2	15	$206,227	
AHU-3N	Mechanical	HVAC	Air Handlers	York	VAV AHU w/ ASD	AP150	CAHM03364C	3rd Floor North	1999	2	15	$175,287	
AHU-4E	Mechanical	HVAC	Air Handlers	York	VAV AHU w/ ASD	AP170	CAHM03366C	4th Floor East	1999	2	15	$200,515	
AHU-4W	Mechanical	HVAC	Air Handlers	York	VAV AHU w/ ASD	AP170	CAHM03369C	4th Floor West	1999	2	15	$200,515	
AHU-4N	Mechanical	HVAC	Air Handlers	York	VAV AHU w/ ASD	AP150	CAHM03368C	4th Floor North	1999	2	15	$176,620	
AHU-5E	Mechanical	HVAC	Air Handlers	York	VAV AHU w/ ASD	AP170	CAHM03367C	5th Floor East	1999	2	4	$200,515	RUL=4 to build "rainy day fund"
AHU-5W	Mechanical	HVAC	Air Handlers	York	VAV AHU w/ ASD	AP170	CAHM03370C	5th Floor West	1999	2	15	$200,515	
AHU-5N	Mechanical	HVAC	Air Handlers	York	VAV AHU w/ ASD	AP150	CAHM03371C	5th Floor North	1999	2	15	$182,308	
AHU-6E	Mechanical	HVAC	Air Handlers	York	VAV AHU w/ ASD	AP170	CAHM03374C	6th Floor East	1999	2	15	$208,845	
AHU-6W	Mechanical	HVAC	Air Handlers	York	VAV AHU w/ ASD	AP150	CAHM03375C	6th Floor West	1999	2	15	$177,691	
AHU-6N	Mechanical	HVAC	Air Handlers	York	VAV AHU w/ ASD	AP150	CAHM03376C	6th Floor North	1999	2	15	$181,832	
AHU-7E	Mechanical	HVAC	Air Handlers	York	VAV AHU w/ ASD	AP215	CAHM03346C	7th Floor East	1999	2	7	$218,508	RUL=7 to build "rainy day fund"
AHU-7N	Mechanical	HVAC	Air Handlers	York	VAV AHU w/ ASD	AP150		7th Floor North	1999	2	15	$181,832	
AHU-7W	Mechanical	HVAC	Air Handlers	York	VAV AHU w/ ASD	AP215	CAHM03347C	7th Floor West	1999	2	15	$218,508	
AHU-8E	Mechanical	HVAC	Air Handlers	York	VAV AHU w/ ASD	AP150	CAHM03348C	8th Floor East	1999	2	15	$174,716	
AHU-8W	Mechanical	HVAC	Air Handlers	York	VAV AHU w/ ASD	AP150	CAHM03349C	8th Floor West	1999	2	15	$174,716	
AHU-8N	Mechanical	HVAC	Air Handlers	York	VAV AHU w/ ASD	AP250	CAHM03350C	8th Floor North	1999	2	15	$279,412	
AHU-9E	Mechanical	HVAC	Air Handlers	York	VAV AHU w/ ASD	AP120	CAHM03351C	9th Floor East	1999	2	10	$129,781	RUL=10 to build "rainy day fund"
AHU-9W	Mechanical	HVAC	Air Handlers	York	VAV AHU w/ ASD	AP120	CAHM03352C	9th Floor West	1999	2	15	$129,781	
AHU-9N	Mechanical	HVAC	Air Handlers	York	VAV AHU w/ ASD	AP105	CAHM03353C	9th Floor North	1999	2	15	$108,528	
AHU-10E	Mechanical	HVAC	Air Handlers	York	VAV AHU w/ ASD	AP105	CAHM03354C	10th Floor East	1999	2	15	$123,522	
AHU-10W	Mechanical	HVAC	Air Handlers	York	VAV AHU w/ ASD	AP105	CAHM03355C	10th Floor West	1999	2	15	$123,522	
AHU-11E	Mechanical	HVAC	Air Handlers	York	VAV AHU w/ ASD	AP170	CAHM03356C	11th Floor East	1999	2	15	$211,820	
AHU-11W	Mechanical	HVAC	Air Handlers	York	VAV AHU w/ ASD	AP215	CAHM03357C	11th Floor West	1999	2	15	$222,816	
MAU-01	Mechanical	HVAC	Air Handlers	Gaylord	Make-up air unit	CSU-10K-H-12	985170205-MAU-1	3rd Floor Roof	1999	3	5	$47,600	Has not operated in over 2 years
FC-1	Mechanical	HVAC	Air Handlers	ETI	Fan coil unit	CDV08A-C4BL-000L	N/A	10th Floor	1999	2	15	$2,083	Cooling only
FC-2	Mechanical	HVAC	Air Handlers	ETI	Fan coil unit	CDV08A-C4BL-0000L	N/A	10th Floor	1999	2	15	$2,083	Cooling only
EF-2	Mechanical	HVAC	Exhaust Fans	Greenheck	Exhaust fan	N/A	K93H52384	10th Floor	1999	2	10	$29,410	controlled w/ soft start ASD - on DDC schedule
EF-3	Mechanical	HVAC	Exhaust Fans	Greenheck	Exhaust fan	40-BISW-21	99A14483	12th Floor	1999	2	10	$17,000	controlled w/ soft start ASD - on DDC schedule
EF-4	Mechanical	HVAC	Exhaust Fans	Greenheck	Exhaust fan	40-BISW-21	99A14484	12th Floor	1999	2	10	$17,000	controlled w/ soft start ASD - on DDC schedule
EF-5	Mechanical	HVAC	Exhaust Fans	Greenheck	Exhaust fan	GB-80-4-X	99A08549	12th Floor	1999	2	10	$1,530	on/off with DDC occupancy schedule
EF-6	Mechanical	HVAC	Exhaust Fans	Greenheck	Exhaust fan	BSQ-160-4-X	99B16092	Basement	1999	2	10	$3,485	
EF-7	Mechanical	HVAC	Exhaust Fans	Greenheck	Exhaust fan	GB-80-4X-QD-R4	99B15677	3rd Floor roof	1999	2	10	$1,530	on/off with DDC occupancy schedule
EF-8	Mechanical	HVAC	Exhaust Fans	Greenheck	Exhaust fan	SWB-22-30	99B17195	3rd Floor roof	1999	2	10	$4,080	on/off with DDC occupancy schedule
EF-9	Mechanical	HVAC	Exhaust Fans	Greenheck	Exhaust fan	SWB-22-30	99B17196	3rd Floor roof	1999	2	10	$5,440	on/off with DDC occupancy schedule
EF-10	Mechanical	HVAC	Exhaust Fans	Greenheck	Exhaust fan	CUBE-180HP-15	99B18641	3rd Floor roof	1999	2	10	$5,440	on/off with DDC occupancy schedule
EF-11	Mechanical	HVAC	Exhaust Fans	Greenheck	Exhaust fan	CUBE-140-5	99B17015	3rd Floor roof	1999	2	10	$476	on/off with DDC occupancy schedule
EF-12	Mechanical	HVAC	Exhaust Fans	Greenheck	Exhaust fan	GB-80-4X-QD	99A02521	2nd fl roof	1999	2	10	$1,530	on/off with DDC occupancy schedule
EF-13	Mechanical	HVAC	Exhaust Fans	Greenheck	Exhaust fan	G-90-DGFX-QD	99A10903	2nd fl roof	1999	2	10	$1,530	on/off with DDC occupancy schedule
EF-14	Mechanical	HVAC	Exhaust Fans	Greenheck	Exhaust fan	GB-80-4X-QD	99A02522	2nd fl roof	1999	2	10	$1,000	on/off with DDC occupancy schedule
EF-15	Mechanical	HVAC	Exhaust Fans	Greenheck	Exhaust fan	GB-80-4X-QD-R4	99D04166	1st Floor	1999	2	10	$1,530	on/off with DDC occupancy schedule
EF-16	Mechanical	HVAC	Exhaust Fans	Greenheck	Exhaust fan	GB-160-5X-QD	99C18944	1st Floor	1999	2	10	$4,080	on/off with DDC occupancy schedule
EF-17	Mechanical	HVAC	Exhaust Fans	Greenheck	Exhaust fan	BSQ-90-4X-QD	98J23300	1st Floor	1999	2	10	$2,040	on/off with DDC occupancy schedule
EF-18	Mechanical	HVAC	Exhaust Fans	Dayton	Exhaust fan	7C553		Basement	1999	2	10	$1,445	
SF-3	Mechanical	HVAC	Supply Fans	Greenheck	OSA supply fan	40-BISW-21	99A14481	12th Floor	1999	3	10	$17,510	with ASD
SF-4	Mechanical	HVAC	Supply Fans	Greenheck	OSA supply fan	40-BISW-21	99A14482	12th Floor	1999	3	10	$17,510	with ASD
PF-1	Mechanical	HVAC	Exhaust Fans	Greenheck	Chiller purge fan	SBE-2H20-5	99A10049	10th Floor	1999	3	20	$5,440	Only comes on in case of emergency
VF-1	Mechanical	HVAC	Exhaust Fans	Greenheck	Chiller vent fan	SE1-16-436-B4-X	99A11280	10th Floor	1999	3	20	$3,060	Only comes on in case of emergency
PFE-1	Mechanical	HVAC	Supply Fans	Greenheck	Pressurization fan	TAB-36-612-75A	93013957	14th Floor	1992	3	12	$17,510	Only comes on in case of emergency - tested 1/4ly

Equipment ID	System	Subsystem	Category	Manufacturer	Description	Model Number	Serial Number	Location	Install Date	Ops Risk factor	Remain Life (yrs)	Replacement Cost	Notes
PFE-2	Mechanical	HVAC	Supply Fans	Greenheck	Pressurization fan	VBN-42H17-15A	93C14729	12th Floor	1992	3	12	$20,910	Only comes on in case of emergency - tested 1/4ly
PFE-3	Mechanical	HVAC	Supply Fans	Greenheck	Pressurization fan	TAB-36-612-75A	93C13958	12th Floor	1992	3	12	$17,510	Only comes on in case of emergency - tested 1/4ly
PFE-4	Mechanical	HVAC	Supply Fans	Greenheck	Pressurization fan	BSO-300-5X	93C13393	10th Floor	1992	3	12	$17,510	Only comes on in case of emergency - tested 1/4ly
PFE-5	Mechanical	HVAC	Supply Fans	Greenheck	Pressurization fan	BSO-300-5X	93C13393	10th Floor	1992	3	12	$17,510	Only comes on in case of emergency - tested 1/4ly
PFS-1	Mechanical	HVAC	Supply Fans	Greenheck	Pressurization fan	TAB-36-612-50AX	93C13956	3rd Floor NW wing	1992	3	12	$16,150	Only comes on in case of emergency - tested 1/4ly
PFS-2	Mechanical	HVAC	Supply Fans	Greenheck	Pressurization fan	TAB-36-612-75A	93C13959	14th Floor	1992	3	12	$17,510	Only comes on in case of emergency - tested 1/4ly
PFS-3	Mechanical	HVAC	Supply Fans	Greenheck	Pressurization fan	TAB-36-612-75A	93C13958	12th Floor	1992	3	12	$17,510	Only comes on in case of emergency - tested 1/4ly
PFS-4	Mechanical	HVAC	Supply Fans	Greenheck	Pressurization fan	RSFP-200-50X	99A11440	8th Floor	1999	3	20	$10,200	Only comes on in case of emergency - tested 1/4ly
PFS-5	Mechanical	HVAC	Supply Fans	Greenheck	Pressurization fan	RSFP-200-50-X	99A11441	8th Floor	1999	3	20	$10,200	Only comes on in case of emergency - tested 1/4ly
TF-6A	Mechanical	HVAC	Supply Fans	Greenheck	Transfer fan	BSQ-160-7-X	99B16093	6th Floor	1999	2	20	$2,890	Helps supply MDF rm w/ AC from UPS room
TF-6B	Mechanical	HVAC	Supply Fans	Greenheck	Transfer fan	BSQ-160-7X	99B16094	6th Floor	1999	2	20	$2,890	
CT-1	Mechanical	HVAC	Cooling Tower	Evapco	Cooling Tower	LSTA10245	988675	10th Floor	1999	4	10	$179,350	2 CT motors have ASDs each
CH-1	Mechanical	HVAC	Chiller	Trane	Chiller	CVHE CenTraVac		10th Floor	1999	4	5	$281,350	
CH-2	Mechanical	HVAC	Chiller	Trane	Chiller	CVHE CenTraVac		10th Floor	1999	4	5	$281,350	
B-1	Mechanical	HVAC	Boiler	Lochinvar	Boiler	CNH2070	J989619	2nd fl roof	1999	3	2	$136,000	
HXP-1	Mechanical	HVAC	Pumps	PACO	CW circ pump	6095-7	98A02014	10th Floor	1999	3	12	$11,050	runs when in economizer mode
CDP-1	Mechanical	HVAC	Pumps	PACO	Cond. wtr pump	8095-1	98A01989B	10th Floor	1999	4	5	$12,750	Located outside in elements
CDP-2	Mechanical	HVAC	Pumps	PACO	Cond. wtr pump	8095-1	98A01989A	10th Floor	1999	4	5	$12,750	Located outside in elements
CHP-1	Mechanical	HVAC	Pumps	PACO	Chilled wtr pump	5095-7	98A02013A	10th Floor	1999	4	12	$11,050	
CHP-2	Mechanical	HVAC	Pumps	PACO	Chilled wtr pump	5095-7	98A02013B	10th Floor	1999	4	12	$11,050	
DWBP-1	Mechanical	HVAC	Pumps	PACO	Wtr booster pump	ES9212R	S198A0200801	Sub Basement	1999	4	8	$21,250	from main City supply - runs 24x7
HWCP-1	Mechanical	HVAC	Pumps	TACO	HW circ pump	1615B3B1	N/A	Sub Basement	1999	4	8	$6,120	runs 24x7 - supplies floors 9-12
HWCP-2	Mechanical	HVAC	Pumps	TACO	HW circ pump	1615C3N1	N/A	Sub Basement	1999	3	8	$6,120	runs 24x7 - supplies floors B-8
HWCP-3	Mechanical	HVAC	Pumps	TACO	HW circ pump	1615B3E2	N/A	Sub Basement	1999	3	8	$6,120	runs 24x7 - supplies floors B-8
HP-1	Mechanical	HVAC	Pumps	Trane	Heat pump			13th floor ceiling	2001	2	12	$5,100	Controlled on DDC
LP-1	Mechanical	HVAC	Pumps	PACO	CW circ pump	5095-7	98A0200601A	Sub Basement	1999	4	12	$16,150	return pumps for CHP-1 & 2 controlled w/ ASD
LP-2	Mechanical	HVAC	Pumps	PACO	CW circ pump	5095-7	98A0200601B	Sub Basement	1999	4	12	$16,150	return pumps for CHP-1 & 2 controlled w/ ASD
AC-1	Mechanical	HVAC	AC Units	Trane	Roof top AC	TSC036A3		12th fl roof	1999	3	5	$34,000	
AC-2	Mechanical	HVAC	AC Units	Trane	Roof top AC	TSC060A3		12th fl roof	1999	3	5	$20,400	
AC-2W & 2E	Mechanical	HVAC	AC Units	Leibert	Air cond units	MME020WG	750 FCM	2nd fl IDF room	1999	4	2	$5,780	Has not operated in over 2 years
AC-4W & 4E	Mechanical	HVAC	AC Units	Leibert	Air cond units	MME020WG	750 FCM	4th fl IDF room	1999	4	2	$5,780	Has not operated in over 2 years
AC-6W & 6E	Mechanical	HVAC	AC Units	Leibert	Air cond units	MME020WG	750 FCM	6th fl IDF room	1999	4	2	$5,780	Has not operated in over 2 years
AC-8W & 8E	Mechanical	HVAC	AC Units	Leibert	Air cond units	MME020WG	750 FCM	8th fl IDF room	1999	4	2	$5,780	Has not operated in over 2 years
AC-10C	Mechanical	HVAC	AC Units	Leibert	Air cond units	MME020WG	750 FCM	10th fl IDF room	1999	4	2	$5,780	Has not operated in over 2 years
AC-6CA	Mechanical	HVAC	AC Units	Leibert	Comp rm AC	FH 363G	15,000 CFM	6th fl comp room	1999	4	4	$39,100	Has not operated in over 2 years
AC-6CB	Mechanical	HVAC	AC Units	Leibert	Comp rm AC	FH 363G	15,000 CFM	6th fl comp room	1999	4	4	$39,100	Has not operated in over 2 years
P-6W1	Mechanical	HVAC	Dry Coolers	Leibert/Ingersol Dresser	Dry cooler	DD0-109A8	99020416	7th Floor roof	1999	4	2	$13,940	Has not operated in over 2 years
P-6W2	Mechanical	HVAC	Dry Coolers	Leibert/Ingersol Dresser	Dry cooler	DS0-466A	99020474	7th Floor roof	1999	4	2	$20,740	Has not operated in over 2 years
P-6E1	Mechanical	HVAC	Dry Coolers	Leibert/Ingersol Dresser	Dry cooler	DD013948	99020416	7th Floor roof	1999	4	2	$13,940	Has not operated in over 2 years
P-6E2	Mechanical	HVAC	Dry Coolers	Leibert/Ingersol Dresser	Dry cooler	DS0466A	99020473	7th Floor roof	1999	4	2	$20,740	Has not operated in over 2 years
DDC	Mechanical	HVAC	Controls	Alerton	DDC	Ibex			1999	4	10	$50,000	upgrade cost only

Equipment ID	System	Subsystem	Category	Manufacturer	Description	Model Number	Serial Number	Location	Install Date	Ops Risk factor	Remain Life (yrs)	Replacement Cost	Notes
BFD-1	Mechanical	Fire Protection	Backflow	Ames	6" BFD	3000ss		Fire Pump Room	1999	4	30	$8,840	
BFD-2	Mechanical	Fire Protection	Backflow	Ames	6" BFD	3000ss		Fire Pump Room	1999	4	30	$8,840	
BFD-Gar	Mechanical	Fire Protection	Backflow	Ames	6" BFD	2000ss		West dry vlv room	1999	3	30	$7,480	
FP-P-1	Mechanical	Fire Protection	Pump	F-M	4" Fairbanks pump	1823 CF		Fire Pump Room	1999	4	30	$25,500	
FP-P-2	Mechanical	Fire Protection	Pump	F-M	4" Fairbanks pump	1823 CF		Fire Pump Room	1999	4	30	$25,500	
FPC-1	Mechanical	Fire Protection	Controller & ATS	Metron	Controller	M420-125-460s		Fire Pump Room	1999	4	30	$71,400	
FPC-2	Mechanical	Fire Protection	Controller & ATS	Metron	Controller	M420-125-460s		Fire Pump Room	1999	4	30	$71,400	
FP-DRY-12	Mechanical	Fire Protection	Dry sys	Reliable		A-2"		12th flr mech	1999	3	30	$4,760	
FP-DRY-Hood	Mechanical	Fire Protection	Dry sys	Tyco		DPV1-2"		3rd floor duct	1999	3	30	$7,140	
FP-Dry-Gar	Mechanical	Fire Protection	Dry sys	Central		D-4"		West garage	1999	3	30	$8,160	
FP-PreAct-IDF	Mechanical	Fire Protection	Pre-Action					2nd floor west	1999	4	30	$13,090	
FP-PreAct-6th	Mechanical	Fire Protection	Pre-Action					6th floor server	1999	4	30	$13,090	
FP-FM200	Mechanical	Fire Protection	FM-200					6th floor server	1999	4	15	$52,700	
FP-Hood	Mechanical	Fire Protection	Kitchen hood	Quencher				2nd floor kitchen	1999	3	30	$7,140	
FP-PRV-2	Mechanical	Fire Protection	Press Red Vlv					stair #2	1999	4	30	$2,074	
FP-PRV-3	Mechanical	Fire Protection	Press Red Vlv					stair #3	1999	4	30	$2,074	
FP-PRV-5	Mechanical	Fire Protection	Press Red Vlv					stair #5	1999	4	30	$2,074	
FP-PRV-6	Mechanical	Fire Protection	Press Red Vlv					stair #6	1999	4	30	$2,074	
FP-FA	Mechanical	Fire Protection	Fire Alarm	Simplex	Fire Alarm & Monitoring				1999	4	15	$150,000	newer systems provide greater capabilities
DW sys	Mechanical	Plumbing	Dom Wtr sys		Domestic Water				1999	2	30	$127,500	
Sanit sys	Mechanical	Plumbing	Waste & Vent		Sanitary				1999	2	40	$127,500	
RR Fixtures	Mechanical	Plumbing	Dom Wtr sys		Restrooms			Restrooms	1999	3	10	$42,500	see deficiency form
RR Faucets	Mechanical	Plumbing	Dom Wtr sys		Restrooms			Restrooms	1999	3	10	$42,500	see deficiency form
Elect SWBD # 1	Electrical	Main Distr	Switchboards	GTE Sylvania	GE breakers	203 FB		Bsmt center	1975	3	15	$425,000	Seattle City light Transformer seving this switchboard replaced 4/23/10, Has Ground Fault Protection, Does not have Arc Flash Labels. No Main Breaker. Needs to be cleaned.
Elect SWBD # 2	Electrical	Main Distr	Switchboards	GE	GE breakers	203 FB		Bsmt N	1992	4	30	$221,000	Seattle City light Transformer seving this switchboard replaced 8/14/08, Has Ground Fault Protection, Has Arc Flash Labels.
MCC #10	Electrical	MCC	MCC	GE	GE motor contr			floor 10 mech	1999	4	30	$2,074	GE motor controllers
Genset	Electrical	Emerg Gen sys	Genset	Onan	900KW			N lot dumpster	1999	3	30	$229,500	225.4 Running hours, Confidence tests yearly with last one 4/13/13
Genset SWBD	Electrical	Emerg Gen sys	Swbd	Square D	1600A			N lot dumpster	1999	3	30	$68,000	
			Transfer switch	Cat	800A				1999	5	25	$127,500	Press fans & lighting
			Transfer switch	Onan	150				1999	5	25	$59,500	w garage
			Transfer switch	ASCO	230				1999	5	25	$59,500	pac med
			Transfer switch	ASCO	230				1999	5	25	$59,500	elev 7
Genset ATS #1	Electrical	Emerg Gen sys	Transfer switch	Onan	225				1999	5	25	$59,500	IDF/MDF
			Transfer switch	Onan	225				1999	5	25	$59,500	6flr MDF/UPS rm
			Transfer switch	Zenith	80				1999	5	25	$59,500	elev 3,4,5, PF 4,5
			Transfer switch	ASCO	400				1999	5	25	$93,500	elev 1,2,6
Tower Lighting #1	Electrical	Lighting	4' fluor		all existing tower lighting				1999	3	10	$625,000	LED-may qualify for 25% incentive(not incl)
Tower Lighting #2	Electrical	Lighting	compact fluor		all existing tower lighting				1999	2	10	$20,000	LED-may qualify for 25% incentive(not incl)
Ground flr Xmfr	Electrical	Distribution	Transformer	Slyvania					1999	3	25	$14,450	
Ground flr Xmfr	Electrical	Distribution	Transformer	Tierney					1999	3	25	$11,050	
Panel 4GA	Electrical	Distribution	Panel	GE					1999	3	30	$10,200	
Panel 4GB	Electrical	Distribution	Panel	GE					1999	3	30	$10,200	
Panel 2GA	Electrical	Distribution	Panel	GE					1999	3	30	$5,950	
Panel E2G	Electrical	Emergency	Panel	GE					1999	4	30	$5,950	
Panel E4G	Electrical	Emergency	Panel	GE					1999	4	30	$10,200	
First flr Xmfr	Electrical	Distribution	Transformer	GE		9T23Q3475G03			1999	3	25	$11,050	
Panel 1L41	Electrical	Lighting	Panel	GE	lighting				1999	3	30	$10,200	
Panel 1D21	Electrical	Distribution	Panel	GE	power				1999	3	30	$10,200	
Panel 1P21	Electrical	Distribution	Panel	GE	equipment				1999	2	30	$5,950	
Panel 1P22	Electrical	Distribution	Panel	GE	equipment				1999	2	30	$5,950	
Panel 1P23	Electrical	Distribution	Panel	GE	equipment				1999	2	30	$5,950	
Second flr Xmfr	Electrical	Distribution	Transformer	GE		9T23Q3475G03			1999	3	25	$11,050	
Panel 2L41	Electrical	Lighting	Panel	GE	lighting				1999	3	30	$10,200	
Panel 2D21	Electrical	Distribution	Panel	GE	power				1999	3	30	$10,200	
Panel 2P21	Electrical	Distribution	Panel	GE	equipment				1999	2	30	$5,950	

Equipment ID	System	Subsystem	Category	Manufacturer	Description	Model Number	Serial Number	Location	Install Date	Ops Risk factor	Remain Life (yrs)	Replacement Cost	Notes
Panel 2P22	Electrical	Distribution	Panel	GE	equipment				1999	2	30	$5,950	
Panel 2P23	Electrical	Distribution	Panel	GE	equipment				1999	2	30	$5,950	
Third flr Xmfr	Electrical	Distribution	Transformer	GE		9T23Q3475G03			1999	3	25	$11,050	
Panel 3L41	Electrical	Lighting	Panel	GE	lighting				1999	3	30	$10,200	
Panel 3D21	Electrical	Distribution	Panel	GE	power				1999	3	30	$10,200	
Panel 3P21	Electrical	Distribution	Panel	GE	equipment				1999	2	30	$5,950	
Panel 3P22	Electrical	Distribution	Panel	GE	equipment				1999	2	30	$5,950	
Panel 3P23	Electrical	Distribution	Panel	GE	equipment				1999	2	30	$5,950	
Fourth flr Xmfr	Electrical	Distribution	Transformer	GE		9T23Q3475G03			1999	3	25	$11,050	
Panel 4L41	Electrical	Lighting	Panel	GE	lighting				1999	3	30	$10,200	
Panel 4D21	Electrical	Distribution	Panel	GE	power				1999	3	30	$10,200	
Panel 4P21	Electrical	Distribution	Panel	GE	equipment				1999	2	30	$5,950	
Panel 4P22	Electrical	Distribution	Panel	GE	equipment				1999	2	30	$5,950	
Panel 4P23	Electrical	Distribution	Panel	GE	equipment				1999	2	30	$5,950	
Fifth flr Xmfr	Electrical	Distribution	Transformer	GE					1999	3	25	$14,450	verify numbering
Panel 4F5A	Electrical	Distribution	Panel	GE					1999	3	30	$5,950	
Panel 4F5B	Electrical	Distribution	Panel	GE					1999	3	30	$5,950	
Panel 2F5A	Electrical	Distribution	Panel	GE					1999	2	30	$10,200	
Panel 5P21	Electrical	Distribution	Panel	GE					1999	2	30	$10,200	
Panel 5P22	Electrical	Distribution	Panel	GE					1999	2	30	$5,950	
Panel E25	Electrical	Emergency		GE					1999	4	30	$5,950	verify in place
Panel E45	Electrical	Emergency		GE					1999	4	30	$10,200	verify in place
Sixth flr Xmfr	Electrical	Distribution	Transformer	GE		9T23Q3475G03			1999	3	25	$11,050	
Panel 6L41	Electrical	Lighting	Panel	GE	lighting				1999	3	30	$10,200	
Panel 6D21	Electrical	Distribution	Panel	GE	power				1999	3	30	$10,200	
Panel 6P21	Electrical	Distribution	Panel	GE	equipment				1999	2	30	$5,950	
Panel 6P22	Electrical	Distribution	Panel	GE	equipment				1999	2	30	$5,950	
Panel 6P23	Electrical	Distribution	Panel	GE	equipment				1999	2	30	$5,950	
Seventh flr Xmfr	Electrical	Distribution	Transformer	GE		9T23Q3475G03			1999	3	25	$11,050	
Panel 7L41	Electrical	Lighting	Panel	GE	lighting				1999	3	30	$10,200	
Panel 7D21	Electrical	Distribution	Panel	GE	power				1999	3	30	$10,200	
Panel 7P21	Electrical	Distribution	Panel	GE	equipment				1999	2	30	$5,950	
Panel 7P22	Electrical	Distribution	Panel	GE	equipment				1999	2	30	$5,950	
Panel 7P23	Electrical	Distribution	Panel	GE	equipment				1999	2	30	$5,950	
Eighth flr Xmfr	Electrical	Distribution	Transformer	GE		9T23Q3475G03			1999	3	25	$11,050	
Panel	Electrical	Lighting	Panel	GE	lighting				1999	3	30	$10,200	
Panel	Electrical	Distribution	Panel	GE	power				1999	3	30	$10,200	
Panel	Electrical	Distribution	Panel	GE	equipment				1999	2	30	$5,950	
Panel	Electrical	Distribution	Panel	GE	equipment				1999	2	30	$5,950	
Panel	Electrical	Distribution	Panel	GE	equipment				1999	2	30	$5,950	
Ninth flr Xmfr	Electrical	Distribution	Transformer	GE		9T23Q3475G03			1999	3	25	$11,050	
Panel	Electrical	Lighting	Panel	GE	lighting				1999	3	30	$10,200	
Panel	Electrical	Distribution	Panel	GE	power				1999	3	30	$10,200	
Panel	Electrical	Distribution	Panel	GE	equipment				1999	2	30	$5,950	
Panel	Electrical	Distribution	Panel	GE	equipment				1999	2	30	$5,950	
Panel	Electrical	Distribution	Panel	GE	equipment				1999	2	30	$5,950	
Tenth flr Xmfr	Electrical	Distribution	Transformer	GE		9T23Q3475G03			1999	3	25	$11,050	
Panel	Electrical	Lighting	Panel	GE	lighting				1999	3	30	$10,200	
Panel	Electrical	Distribution	Panel	GE	power				1999	3	30	$10,200	
Panel	Electrical	Distribution	Panel	GE	equipment				1999	2	30	$5,950	
Panel	Electrical	Distribution	Panel	GE	equipment				1999	2	30	$5,950	
11th flr Xmfr	Electrical	Distribution	Transformer	GE		9T23Q3475G03			1999	3	25	$11,050	
Panel	Electrical	Lighting	Panel	GE	lighting				1999	3	30	$10,200	
Panel	Electrical	Distribution	Panel	GE	power				1999	3	30	$10,200	
Panel	Electrical	Distribution	Panel	GE	equipment				1999	2	30	$5,950	
Panel	Electrical	Distribution	Panel	GE	equipment				1999	2	30	$5,950	
Penthse	Electrical	Distribution	Panel	GE	Elev equip panel				1999	3	30	$10,200	
12th floor	Electrical	Distribution	Panel										
												$11,620,104	

MEP Summary of Findings

1.1 Overview

Schreiber Starling & Lane engaged McKinstry to perform a Facility Condition Assessment effort for the Pacific Tower building in September, 2013. The Facility Condition Assessment is meant to provide a high level assessment of the Mechanical HVAC, Plumbing and Electrical Systems and equipment serving the facility. The assessment looks at these facility assets, their age and condition, and identifies any current deficiencies that may prohibit the equipment from both efficiently performing its intended function, and providing long term reliability to meet their intended useful life.

This evaluation of the key MEP building systems is meant to provide the owner with a holistic view of the current facility condition with a focus on long term planning for capital and operational investments.

1.2 Assessment Scope and Methodology

The Facility Assessment completed by the McKinstry team includes:

- Identification of major system components and incorporation into a facility asset tracking document (Equipment List) which identifies the basic equipment parameters for assets tracking.
- Analysis of visually detectable deficiencies associated with the major dynamic building components and systems
    - Mechanical HVAC, Plumbing and Electrical
- Identification of visually detectable code and compliance issues related to the MEP systems and equipment.
- Discussions with facility operations & maintenance personnel to gather system operational data & deficiencies, equipment utilization, and processes.
- Identification of immediately needed repairs and/or maintenance requirements.
- Determination of the Remaining Useful Life (RUL) for each referenced building system and equipment.
- Budget Pricing to address remaining useful life of the equipment over a 30 year capital plan.
- Budget Pricing to address the noted system deficiencies.
- Analysis of current operating performance via the BMS Controls and identification of system or equipment anomalies.
- Analysis of current(2008/2009) utility data with an emphasis on predicting future cost.
- Camera inspections of exterior storm and sewer lines.

The Facility Assessment team consisted of McKinstry service technicians and facility managers, with specific expertise in the systems and equipment surveyed. Assessments were conducted and accompanied by the

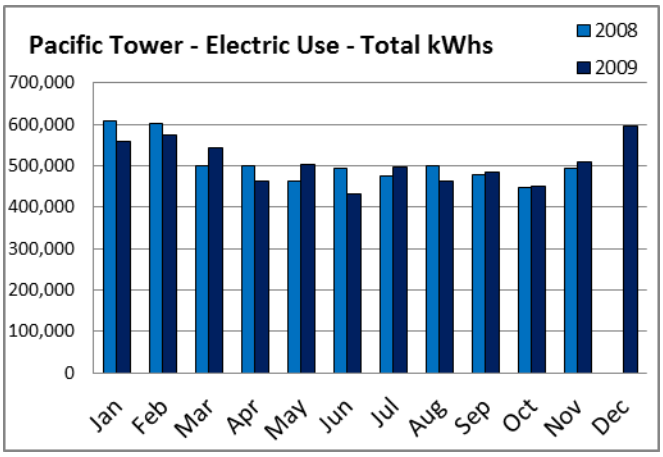
onsite facility management staff, who provided additional comments and operational input to the assessment.

1.3 Utility Expense Summary

Based on the 2008-2009 utility data, Pacific Tower consumption shows that the building operated with a consistent and high "base load". The base load is the minimum average monthly consumption that remains constant throughout seasonal and operational variations. This type of performance is likely attributed to:

- The tenant (Amazon) operations resulted in high computer, data center and plug load use
- All electric building systems

Future performance of the building with the departure of Amazon is likely to result in a reduction in energy use due to lower base loads (less computing and data center loads).



1.4 Summary of Findings

Despite the age of many of the building systems reviewed, in general we found the facility to be well maintained. One of the key indicators in equipment condition, is the cleanliness of the facilities, especially in the mechanical and electrical spaces. Although we do not know how these spaces appeared during the Amazon timeframe, these spaces are currently very clean and organized. The facilities staff has done a commendable job given the available manpower and support.

Service records were requested for the Amazon timeframe, but could not be located. These records tell a story about system and equipment , and should be an essential part of any evaluation of current conditions. In general, aside from one of the Leibert Server room units (where it appears new compressors have been

partially installed), it appears most of the equipment is from the 1999 construction, which would indicate that any major equipment problems did not result in wholesale equipment replacement.

Preventive maintenance records, like service records provide a glimpse of equipment operation. No records were found from the Amazon timeframe.

CMMS records would also provide a history of the issues that were experienced during the Amazon timeframe. No records were located.

In reference to the remaining life and replacement costs indicated on the Equipment List, it is important to note that these estimates are based on a condition assessment only. This is a good benchmark to start a long term capital plan. In forecasting the potential costs of repairs or replacements, there are many variables to consider. Obviously age and condition are key to starting an evaluation, but reliance on these parameters may not provide long term asset value. Preventive maintenance is the most important criteria in measuring operational longevity. Replacement should also be contingent on an analysis of critical function, replace ability of parts, timing of needs (logistics) and disruption.

One additional factor in evaluating the equipment for replacement is components. The floor by floor AHU's in the Pacific Tower are the perfect example. Replacement of any of these units would be expensive(greater than $100K). However, it would be rare that a single unit would need to be completely replaced. Rather it would be likely that a motor or similar component, would be the issue, and replacement cost might be 10% of the replacement or less.

1.5 Summary of Recommendations

Comprehensive Retro commissioning and Controls Optimization

- Multiple scheduling and controls optimization opportunities are available that will reduce energy consumption, including improved control of morning warm-up, including shutdown of the main supply and return fans, optimization of supply air temperature and pressure control, optimization of air economizer control, verification of positive damper closure after hours, and other improvements.

Chiller VFD Retrofit

- The existing chillers are 350 ton Trane Centravac centrifugal chillers. These chillers were installed in 1999 and based on recorded run hours have roughly 20 years of expected life left. These chillers are oversized for the near term projected cooling load. This will lead to excessive cycling of the chillers, reducing equipment life. Also, due to the lack of variable frequency drive (VFD) control of the compressors these units are inefficient at part load and low load conditions. A retrofit of the chillers to provide VFD speed control of the compressors will improve the part load efficiency of the chillers, reduce false loading at

low-load conditions, and reduce cycling which will extend the expected equipment life. Seattle City Light will likely provide an incentive for the retrofit which will reduce the cost of implementing the measure.

Interior Lighting Retrofit

- Existing interior building lighting has higher energy consumption, shorter fixture life, and higher maintenance costs than those of LED fixtures. Seattle City Light offers incentives for lighting retrofits.

Interior Lighting Controls

- Providing occupancy sensor based control of stairwell (code question), conference room, and back of house lighting will reduce lighting energy usage and extend the life of the lighting fixtures serving those spaces. Seattle City Light offers incentives for lighting and lighting controls retrofits.

Exterior Lighting Retrofit

- The existing exterior lighting consists of mostly, inefficient HID type lighting. LED lighting retrofits of the exterior building and parking lot lighting will reduce energy costs and maintenance costs due to longer expected fixture life. Seattle City Light offers incentives for lighting retrofits.

Chemical Free Cooling Tower Water Treatment

- The existing cooling tower utilizes conventional chemical based water treatment to maintain water quality and minimize corrosion. This means of treatment requires significant maintenance costs and blow-down to maintain water quality. A chemical free means of water treatment will greatly reduce maintenance costs and water consumption. Seattle Public Utilities will likely offer an incentive proportional to the water savings realized.

Heat Recovery

- The majority of building ventilation air is provided by central supply and return fans. The proximity of the supply fans to the return fans creates the opportunity for heat recovery. A runaround loop installed between the outside air supply and relief fans will reduce energy usage associated with heating and cooling ventilation air. Modification of the fan systems may be required to accommodate the additional pressure losses imposed by the heat recovery coils and prefilters. Seattle City Light will likely provide an incentive for the retrofit which will reduce the cost of implementing the measure.

MEP Summary of Findings

Demand Controlled Ventilation

- CO_2 and occupancy sensor based ventilation control of the air handling units and terminal units will significantly reduce heating and cooling loads associated with ventilation air. These improvements can be deployed as new tenants are brought online, which reduces upfront equipment and controls costs. Seattle City Light will likely provide an incentive for the retrofit which will reduce the cost of implementing the measure.

Window Inserts

- The tower contains a significant quantity of single pane glazing. This glazing has poor thermal and shading performance and has significant air leakage, resulting in excessive cooling and heating energy loads and comfort issues due to infiltration and drafts. Window inserts would provide a second pane of removable glazing which will reduce heat transmission, solar heat gain, and drafts, reducing energy consumption and improving occupant comfort. The inserts will be installed on the inside face of the existing windows and will not have any impacts on the exterior building appearance. Seattle City Light will likely provide an incentive for the retrofit which will reduce the cost of implementing the measure.

Water Fixture Retrofits

- The existing water fixtures consume excessive amounts of water. A retrofit of the water fixtures, through the installation of low-flow aerators and re-commissioning the flush valves of the urinals and water closets, will reduce water consumption and sewer charges.

Irrigation Controller

- An upgraded irrigation controller will control irrigation rates to the moisture content in the soil, minimizing water waste during summer months

Solar PV

- Given the building is privately owned any Solar PV installation may be eligible for a federal tax credit equal to 30% of the installed cost. The payback would still likely be outside of 50 years, but the project visibility may be useful from a marketing perspective and potentially help them fill the tower quicker. This would be on top of the yearly production credit and the 75% sales tax exemption for equipment cost and labor. A 10 to 20 kW system would be about the right size to maximize the production credit and minimize the payback period…… NOTE- this is more informational than a recommendation, since siting questions may be difficult to overcome.

MEP Summary of Findings

As with any recommendations at this stage of an assessment, further scope development, budgeting, schedule and financing will be needed to vet out the real solutions that can provide long term savings and reliability.

Pacific Tower- HVAC

HVAC System Overview

All of the HVAC equipment was installed in 1999 during a remodel of the building. In 2010, the major tenant moved out and the building has been empty since then except for ½ of the basement area, which will be out-of-scope for this report.

The overall condition of the heating, ventilating and air-conditioning (HVAC) equipment appears to be in fairly good working condition and well maintained. The basic system description is multiple variable air volume (VAV) air handling units (AHUs) on each floor with chilled water coils for cooling and electric resistance re-heat coils for heating. Chilled water is supplied by two 350 ton chillers. A full waterside economizer system is used for energy conservation.

Building relief is provided by fans located on the 12th floor roof areas (EFs). Relief air, core toilet exhaust air and electrical/telephone room exhaust travels via GWB rated shafts from each floor to the roof fans. Building outside air requirements are met by supply fans also located on the 12th floor roof areas (SFs). Outside air is delivered via lined sheet metal duct to the mechanical rooms on each floor.

A central 700 ton chilled water plant serves the floor by floor air handling units. Each chiller includes a factory mounted starter, flow switch and integral control functions. Centrifugal horizontal split case pumps serve the requirements for both the chilled water loop and the condenser water loop. Strainers and/or suction diffusers protect pumps from internal damage and A.S.M.E. expansion tanks eliminate entrained air from all closed loop systems.

The building's HVAC system is monitored and controlled by a Alerton Direct Digital Control (DDC) energy management and environmental controls system.

VAV systems are energy efficient and provide good comfort conditions to occupants. Economizer cooling is used when outside air (OSA) temperature is low enough to supply the cooling requirements (usually 60°F or less). Each AHU does bring in a minimum amount of OSA for ventilation during heating and during mechanical cooling.

Due to the entire building (except part of basement) being unoccupied for the past 3 years, the Facility Manager cycles each floor's AHU for either 1/2 hour per day Mon, Wed or Fri, or running the entire floor for 8-10 hrs all day Mon thru Fri to keep fans and motors lubricated and in working condition. Also due to low occupancy, the Facility Manager runs a few floors as "occupied" during normal business hours in order to put enough of a cooling load on the building to have the chillers produce enough chilled water for the cooling needs of the ½ of the basement that is occupied.

Pacific Tower- HVAC

Following is a description of each of the sub-systems that support the HVAC system:

Air Handling Units (AHUs)

There are three AHUs per floor for floors 1 thru 9, and two AHUs per floor for floors 10 & 11, and the 11th floor East unit also conditions the 12th floor, for a total of 30 AHUs, all manufactured by York. Capacity ranges from 12,250 CFM to 4,560 CFM.

Motor and fan inside AHU-1E

Each AHU's supply fan has a soft start, adjustable speed drive (ASD) to control speed of motor, thus controlling primary air CFM being delivered to the VAV boxes serving each space. The interior VAV boxes would be cooling only terminals while the perimeter VAV boxes would be parallel fan-powered, equipped with electric resistance heating coils. Each unit could be activated for off-hour use for individual tenants without activating the entire building's HVAC system.

AHU- 1E

Supply fans and Exhaust fans (SF-2,3,4 & EF-2,3,4)

Outside air (OSA) and exhaust air are supplied to each AHU via 6 ventilation shafts that run the entire height of that portion of the building (3 for SFs and 3 for EFs) SFs supply the OSA and EFs exhaust out part of the air that gets returned to the AHUs. Both SFs and EFs are high efficiency type (90+% eff) Greenheck motors and each fan is controlled by a soft-start ASD.

There is one Trane SF and one Trane EF located on the 10th floor which serves all the AHUs with the "N" (North) designation on floors 1 thru 8. The other two Greenheck SFs and two EFs are located on the 12th floor roof and serve the AHUs with "E" (East) and "W" (West) designation, respectively on floors 1 thru 11. Their CFM volumes are controlled by an ASD which has input from the Alerton DDC system's needs for OSA. Their on/off is controlled by an Alerton DDC system's scheduling program. Whenever the building is in an "occupied" mode, the SFs are on. The motor drives the fan via fan belts. During inspection, all of the belts were well maintained and tight. All three of these SFs are located outside on the roofs and exposed to the elements.

SF-4 adjustable speed drive

Pacific Tower- HVAC

Exhaust fans (EF-5 thru 19)

These 15 Greenheck manufactured exhaust fans serve the smaller spaces' ventilation needs (ie: kitchen range hood, bathrooms and locker rooms). They are controlled by the Alerton's DDC systems' occupation schedule. When spaces are to be in the "occupied" mode, the exhaust fans are on. The motors dives the fans via direct drive. These units are located outside in the elements on the roofs.

Fan Coil Units (FC-1 & 2)

These Trane air-conditioning only units serve the elevator equipment rooms for elevators #3 & 4. The AHU section of these units have OSA louvers and can go into economizer cooling when OSA temperatures are below 65°F, otherwise the OSA louvers are closed. The units sit outside on the 10th floor roof.

FC-1 & 2

Boiler (B-1)

This 2,000 MBtuh Lochinvar gas-fired boiler serves the domestic hot water needs for the kitchen and locker rooms. It is located on the 2nd floor roof.

Boiler B-1

Chillers (CH-1 & 2)

Each of the chillers has low hours and appears to be in good working order. Each of the compressor motors were tested and they are good at more than 2000 meg ohms to ground at 500 vdc. It's impossible to determine correct charge at the 60% load but they appear to be close. The Purge canisters are over due to be changed out. This is not detrimental to the life of the machine, but it is more environmentally friendly if you change them on a regular basis as it will catch more of the refrigerant while in the purge pump out mode.

Chiller CH-2

Pacific Tower- HVAC

Cooling Tower CT-1

Cooling Tower (TC-1)

The condenser water requirements are served by a counterflow, centrifugal fan cooling tower complete with float and factory corrosion protection. Cooling tower fan staging and three-way valve control, modulate the condenser water temperature as required. A complete chemical treatment system prevents system fouling. The tower is in above average condition for its age.

Chilled water pump CHP-1

Chilled Water Pumps (CHP-1 & 2)

The chilled water pumps are located in the 10th floor chiller mechanical room ceiling. Whenever the chillers are producing chilled water, CHP-1 & 2 are used to pump the water out to all of the AHUS on each floor. The return pumps in the basement (LP-1 & 2) are described below.

Chilled Water Circ Pumps LP-1 & 2

Chilled Water Circulation Return Pumps (LP-1 & 2)

The chilled water return (lift) pumps are located in the basement and used to pump the chilled water back up to the 10th floor where the main chillers are located after they have passed thru all of the AHUs' coils. LP-1 & 2 are on whenever the main chilled water supply pumps (CHP-1 & 2) are on.

Pacific Tower- HVAC

Condenser Water Pumps CDP-1 & 2

Condenser Water Pumps (CDP1 & 2)

The condenser water pumps are located on the 10th floor roof outside in the elements. They are activated when the chillers are running and CDP-1 & 2 pump the returned chilled water thru the cooling tower first for air-source pre-cooling before being pumped thru the chillers.

Heat Exchanger HX-1

Heat Exchanger and Pump (HX-1 & HXP-1)

The heat exchanger is used during the economizer cycle by running the chilled water return water through one side of the heat exchanger and the condenser water loop on the other side of the exchanger. This usually only reduces the return chilled water a few degrees.

Pressurization Fan PFE-1

Pressurization Fans (PFE1-5 & PFS1-5)

The pressurization fans are only used in case of emergency. They bring in 100% OSA to pressurize the elevator shafts (PFEs) and the stairwells (PFSs) when there is a fire. They are controlled by smoke detectors in the shafts themselves.

Pacific Tower- HVAC

Chiller Room Purge & Ventilation Fans (PF-1 & VF-1)

The purge and ventilation fans are only used in case of emergency. There is a refrigerant charge sensor (HCFC-123) located in the Chiller mechanical room. When there is a leak of HCFC-123, PF-1 brings in 100% OSA, while VF-1 exhausts the air to help clean out the air quicker.

Purge and ventilation fans PF-1 & VF-1

Transfer Fans (TF-6A & B)

The transfer fan helps supply air-conditioned air from the MDF rooms into the UPS rooms since the UPS rooms do not have their own dedicated AC units. Only one fan works at a time and the other is for redundancy.

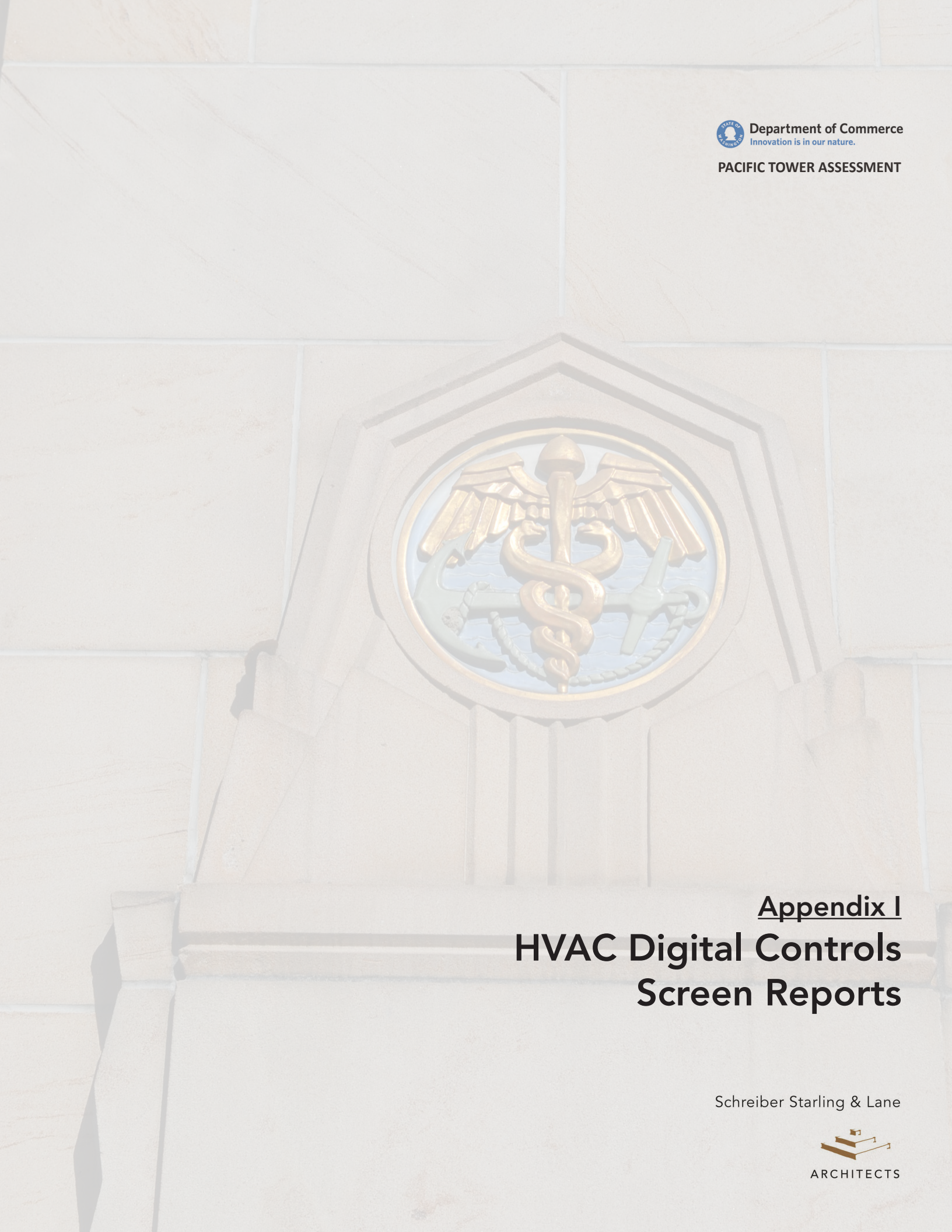
Controls

The building currently has an Alerton Envision for IBEX controls system that was installed in 1999. Key IBEX controller components are becoming hard to procure for manufacturing and a result, Alerton is phasing out this proprietary controls line. The Alerton IBEX Global Controller, called an APEX, is no longer being manufactured and TUX unitary controllers will no longer be produced after 2013. As such, the majority of Alerton's technology investment has been focused towards its native BACnet platform, Envision for BACtalk (EBT). This existing IBEX system has been in operation for many years, and can continue to operate for more, however, in order to mitigate IBEX component shortages and keep your facility using the latest in industry-leading energy management systems, it is important to plan for a migration from IBEX to Alerton's BACtalk system.

Alerton room sensor

Department of Commerce
Innovation is in our nature.

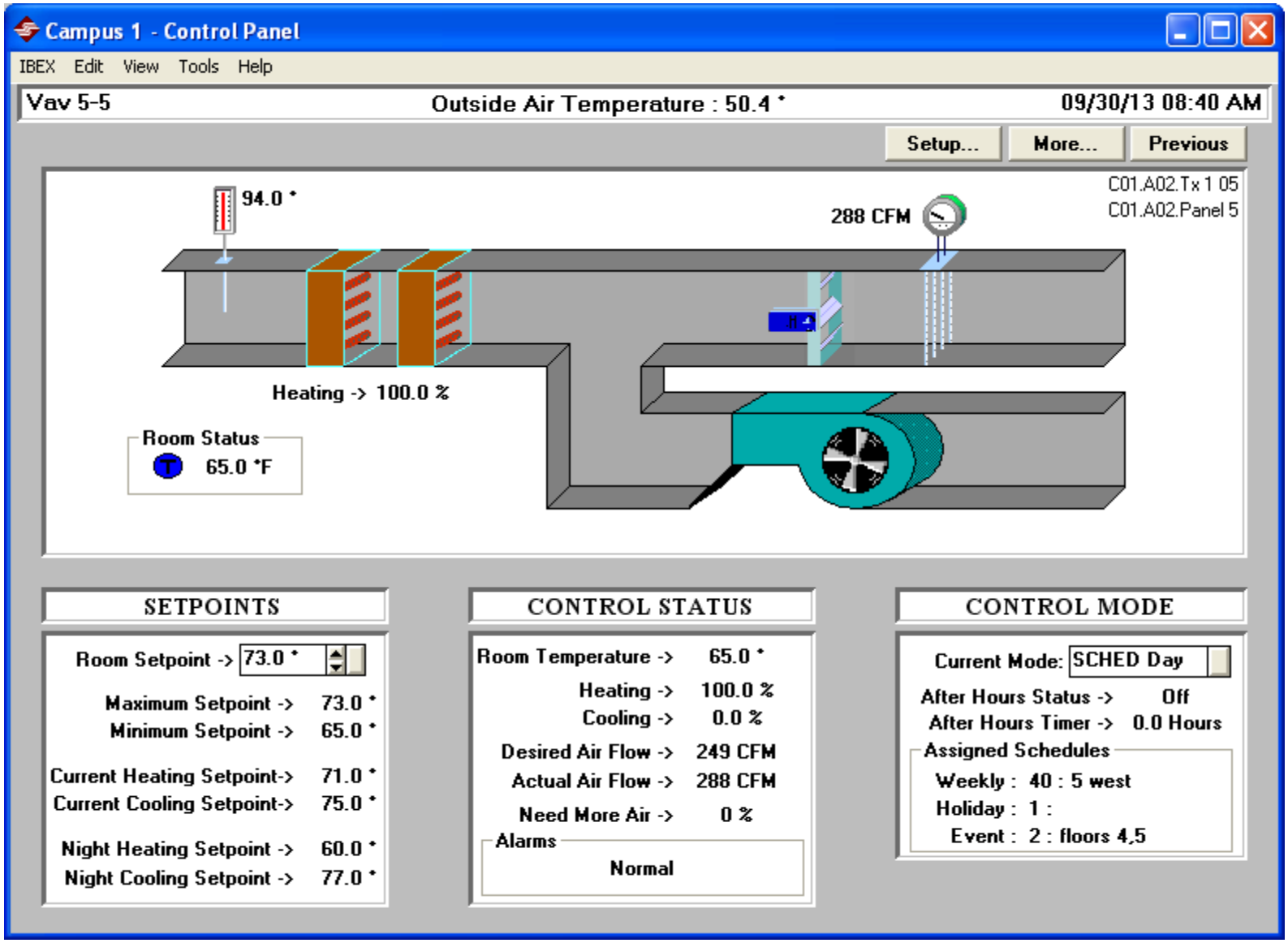
PACIFIC TOWER ASSESSMENT



Appendix I
HVAC Digital Controls Screen Reports

Schreiber Starling & Lane

ARCHITECTS


Campus 1 - Control Panel
IBEX Edit View Tools Help
Vav 5-5
Outside Air Temperature : 50.4 °
09/30/13 08:40 AM
Setup...
More...
Previous
94.0 °
288 CFM
C01.A02.Tx 1 05
C01.A02.Panel 5
Heating -> 100.0 %
Room Status
65.0 °F
SETPOINTS
Room Setpoint -> 73.0 °
Maximum Setpoint -> 73.0 °
Minimum Setpoint -> 65.0 °
Current Heating Setpoint-> 71.0 °
Current Cooling Setpoint-> 75.0 °
Night Heating Setpoint -> 60.0 °
Night Cooling Setpoint -> 77.0 °
CONTROL STATUS
Room Temperature -> 65.0 °
Heating -> 100.0 %
Cooling -> 0.0 %
Desired Air Flow -> 249 CFM
Actual Air Flow -> 288 CFM
Need More Air -> 0 %
Alarms
Normal
CONTROL MODE
Current Mode: SCHED Day
After Hours Status -> Off
After Hours Timer -> 0.0 Hours
Assigned Schedules
Weekly : 40 : 5 west
Holiday : 1 :
Event : 2 : floors 4,5

Campus 1 - Control Panel

IBEX Edit View Tools Help

Vav 5-5 C01.A02.Tx 1 05 C01.A02.Panel 5 09/30/13 08:40 AM

WARNING - Do Not Change Items Below without Approval

Previous

Setup...

TEMPERATURE SETPOINTS

Room Setpoint -> 73.0 °

Maximum Setpoint -> 73.0 °

Minimum Setpoint -> 65.0 °

Heating -Offset -> 2.0 °

Cooling +Offset -> 2.0 °

Unocc Heating Setpt -> 60.0 °

Unocc Cooling Setpt -> 77.0 °

Current Heating Setpoint: 71.0 °

Current Cooling Setpoint: 75.0 °

AIR FLOW

Maximum Air Flow -> 951 CFM

Minimum Air Flow -> 249 CFM

Current Air Flow: 295 CFM

Desired Air Flow: 249 CFM

Only one ON

Force Minimum Air Flow....

Force Maximum Air Flow...

Need More Air Signal: 0 %

Need Colder Air Signal: 0 %

MISCELLANEOUS

After Hours Timer -> 0.0 Hrs

After Hours Limit -> 2.0 Hrs

Field Service Mode... ☑

Only one ON

Emergency Open....

Emergency Close....

Fan Runtime -> 7266 Hrs

Heat Runtime -> 2318 Hrs

CONFIGURATION

Htg Valve Pulse Width -> 1.0 Sec

Damper Pulse Width -> 1.0 Sec

Box Size -> 10

CONTROL REQUESTS

Current Heating Signal: 100 %

Heating Needed ? Yes

Current Cooling Signal: 0 %

Cooling Needed ? No

DEMAND CONTROL

Heating Allowed: Yes

Cooling Allowed: Yes

Campus 1 - Envision for IBEX

IBEX Edit View Tools Help

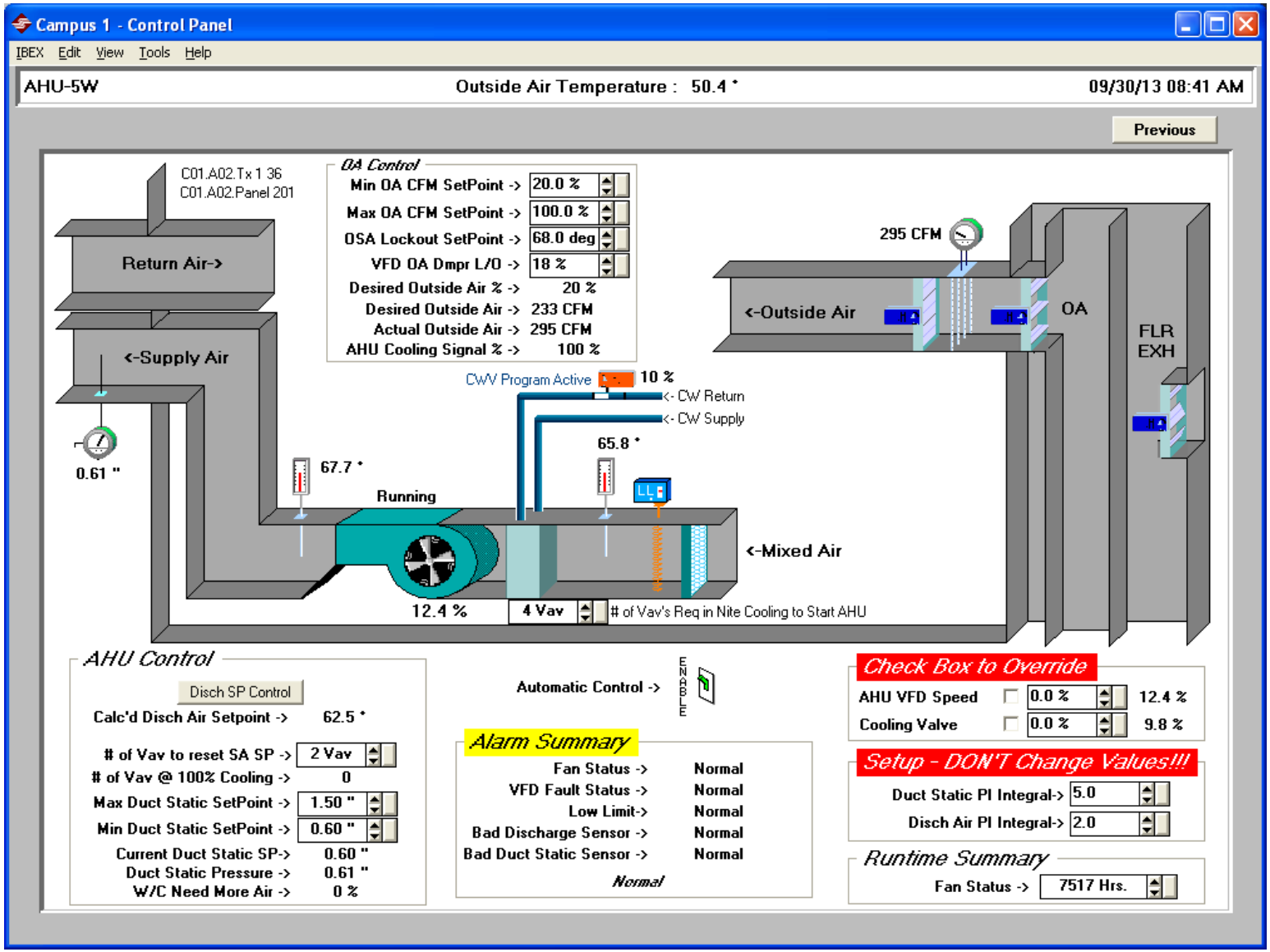
5th Flr. VAV'S

Outside Air Temperature : 50.4 °

Previous

Floor Plan

	BOX	Temp	Setpoint	Supply	Need Air	Clng %	Htng %	Mode
AHU-5W	5-1	67.0 °	73.0 °	109.0 °	0 %	0 %	102 %	SCHED Day
	5-2	68.0 °	73.0 °	92.0 °	0 %	0 %	102 %	SCHED Day
	5-3	67.0 °	73.0 °		0 %	0 %	102 %	SCHED Day
	5-4	66.0 °	73.0 °	112.0 °	0 %	0 %	102 %	SCHED Day
	5-5	65.0 °	73.0 °	94.0 °	0 %	0 %	102 %	SCHED Day
	5-6	67.0 °	73.0 °	91.0 °	0 %	0 %	102 %	SCHED Day
	5-8	67.0 °	73.0 °	94.0 °	0 %	0 %	102 %	SCHED Day
	5-9	65.0 °	73.0 °	91.0 °	0 %	0 %	102 %	SCHED Day
	5-10	65.0 °	73.0 °	91.0 °	0 %	0 %	102 %	SCHED Day
AHU-5E	5-11	65.0 °	73.0 °		0 %	0 %	102 %	SCHED Day
	5-12	65.0 °	73.0 °	94.0 °	0 %	0 %	102 %	SCHED Day
	5-13	67.0 °	73.0 °	95.0 °	0 %	0 %	102 %	SCHED Day
	5-15	67.0 °	73.0 °	99.0 °	0 %	0 %	102 %	SCHED Day
	5-16	70.0 °	73.0 °	97.0 °	0 %	0 %	100 %	SCHED Day
	5-17	70.0 °	73.0 °	81.0 °	0 %	0 %	69 %	SCHED Day
	5-18	67.0 °	73.0 °		0 %	0 %	102 %	SCHED Day
	5-19	70.0 °	73.0 °	87.0 °	0 %	0 %	58 %	SCHED Day
	5-20	67.0 °	73.0 °	90.0 °	0 %	0 %	102 %	SCHED Day
AHU-5N	5-21A	65.0 °	73.0 °	90.0 °	0 %	0 %	102 %	SCHED Day
	5-21B	Unit is Slave to VAV -> 5 - 21 A			0 %	0 %	102 %	
	5-22	66.0 °	73.0 °		0 %	0 %	102 %	SCHED Day
	5-23	67.0 °	73.0 °		0 %	0 %	102 %	SCHED Day
	5-24	65.0 °	73.0 °		0 %	0 %	102 %	SCHED Day
	5-25	65.0 °	73.0 °		0 %	0 %	102 %	SCHED Day
	5-26	64.0 °	73.0 °	87.0 °	0 %	0 %	102 %	SCHED Day
	5-27A	65.0 °	73.0 °	96.0 °	0 %	0 %	102 %	SCHED Day
	5-27B	Unit is Slave to VAV -> 5 - 27 A			0 %	0 %	102 %	


Campus 1 - Control Panel
IBEX Edit View Tools Help
AHU-5W
Outside Air Temperature : 50.4 °
09/30/13 08:41 AM
Previous
C01.A02.Tx 1 36
C01.A02.Panel 201
Return Air->
<-Supply Air
0.61 "
67.7 °
Running
12.4 %
OA Control
Min OA CFM SetPoint -> 20.0 %
Max OA CFM SetPoint -> 100.0 %
OSA Lockout SetPoint -> 68.0 deg
VFD OA Dmpr L/O -> 18 %
Desired Outside Air % -> 20 %
Desired Outside Air -> 233 CFM
Actual Outside Air -> 295 CFM
AHU Cooling Signal % -> 100 %
CWV Program Active
10 %
<- CW Return
<- CW Supply
65.8 °
<-Mixed Air
4 Vav
# of Vav's Req in Nite Cooling to Start AHU
295 CFM
<-Outside Air
OA
FLR
EXH
AHU Control
Disch SP Control
Calc'd Disch Air Setpoint -> 62.5 °
# of Vav to reset SA SP -> 2 Vav
# of Vav @ 100% Cooling -> 0
Max Duct Static SetPoint -> 1.50 "
Min Duct Static SetPoint -> 0.60 "
Current Duct Static SP-> 0.60 "
Duct Static Pressure -> 0.61 "
W/C Need More Air -> 0 %
Automatic Control ->
Alarm Summary
Fan Status -> Normal
VFD Fault Status -> Normal
Low Limit-> Normal
Bad Discharge Sensor -> Normal
Bad Duct Static Sensor -> Normal
Normal
Check Box to Override
AHU VFD Speed 0.0 % 12.4 %
Cooling Valve 0.0 % 9.8 %
Setup - DON'T Change Values!!!
Duct Static PI Integral-> 5.0
Disch Air PI Integral-> 2.0
Runtime Summary
Fan Status -> 7517 Hrs.

Campus 1 - Control Panel

IBEX Edit View Tools Help

AHU-5W

Previous

Outside Air Temperature : 50.4 °

AHU Discharge Air Setpoint Control

Current Setpoint 62.5 °

When OSA temp is at or above 80.0 °

control to a Discharge temperature of 57.0 °

When OSA temp is at or below 37.0 °

control to a Discharge temperature of 65.0 °

The Discharge temperature is linearly reset between these points.

Demand Setpoint offset-> 2.0 °

Demand Feedback -> 0

# of Vav to reset SA SP -> 2 Vav

# of Vav @ 100% Cooling -> 0

Max Duct Static SetPoint -> 1.50 "

Min Duct Static SetPoint -> 0.60 "

Current Duct Static SP-> 0.60 "

Duct Static Pressure -> 0.59 "

W/C Need More Air -> 0 %

C01.A02.Tx 1 36

C01.A02.Panel 201

Campus 1 - Envision for IBEX

IBEX Edit View Tools Help

Outside Air Temperature : 51.7 °

09/30/13 09:11 AM

Previous

Main Display

AHU MENU

VAV MENU

Floor Pressures

CHILLER PLANT

% and Static

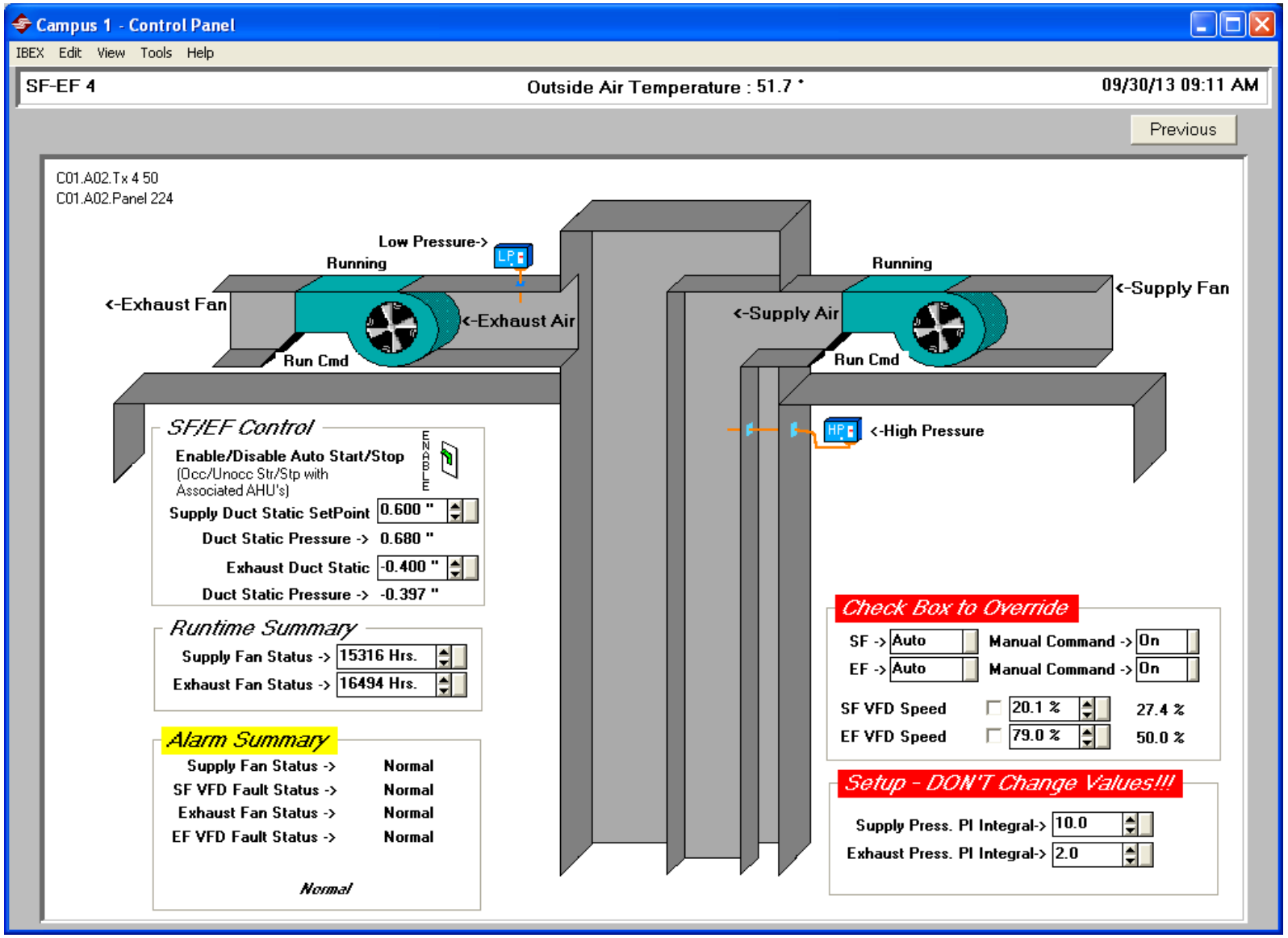
OSA Desired VS. Actual

Fire Alarm Status

NORMAL

Normal

	West SF4 - EF4 Desired	West SF4 - EF4 Actual	North SF2 - EF2 Desired	North SF2 - EF2 Actual	East SF3 - EF3 Desired	East SF3 - EF3 Actual	ANNEX Desired	ANNEX Actual
FLOOR 13								
FLOOR 12								
FLOOR 11	199 CFM	243 CFM			622 CFM	617 CFM		
FLOOR 10	252 CFM	262 CFM			208 CFM	249 CFM		
FLOOR 9	147 CFM	151 CFM	886 CFM	872 CFM	199 CFM	184 CFM		
FLOOR 8	233 CFM	282 CFM	873 CFM	1079 CFM	296 CFM	315 CFM		
FLOOR 7	233 CFM	249 CFM	710 CFM	772 CFM	233 CFM	262 CFM		
FLOOR 6	233 CFM	216 CFM	4195 CFM	3508 CFM	233 CFM	256 CFM		
FLOOR 5	233 CFM	256 CFM	465 CFM	403 CFM	1201 CFM	1161 CFM		
FLOOR 4	233 CFM	236 CFM	2400 CFM	2165 CFM	233 CFM	262 CFM		
FLOOR 3	1201 CFM	1220 CFM	2400 CFM	2333 CFM	233 CFM	269 CFM		
FLOOR 2	692 CFM	793 CFM	1599 CFM	1809 CFM	692 CFM	508 CFM		
FLOOR 1	500 CFM	604 CFM	1111 CFM	1396 CFM	2582 CFM	2434 CFM	957 CFM	747 CFM
GROUND					1758 CFM	1397 CFM		
BASEMENT								


Campus 1 - Control Panel
IBEX Edit View Tools Help
SF-EF 4
Outside Air Temperature : 51.7 °
09/30/13 09:11 AM
Previous
C01.A02.Tx 4 50
C01.A02.Panel 224
Low Pressure->
LP
Running
<-Exhaust Fan
<-Exhaust Air
Run Cmd
Running
<-Supply Fan
<-Supply Air
Run Cmd
HP
<-High Pressure
SF/EF Control
Enable/Disable Auto Start/Stop
(Occ/Unocc Str/Stp with
Associated AHU's)
Supply Duct Static SetPoint 0.600 "
Duct Static Pressure -> 0.680 "
Exhaust Duct Static -0.400 "
Duct Static Pressure -> -0.397 "
Runtime Summary
Supply Fan Status -> 15316 Hrs.
Exhaust Fan Status -> 16494 Hrs.
Alarm Summary
Supply Fan Status -> Normal
SF VFD Fault Status -> Normal
Exhaust Fan Status -> Normal
EF VFD Fault Status -> Normal
Normal
Check Box to Override
SF -> Auto
Manual Command -> On
EF -> Auto
Manual Command -> On
SF VFD Speed 20.1 % 27.4 %
EF VFD Speed 79.0 % 50.0 %
Setup - DON'T Change Values!!!
Supply Press. PI Integral-> 10.0
Exhaust Press. PI Integral-> 2.0

Campus 1 - Envision for IBEX

IBEX Edit View Tools Help

09/30/13 09:15 AM

Main Display

Floor Pressures

OSA CFM

VAV MENU

Previous

Fire Alarm Status

NORMAL

Normal

Chilled Water / Econo Loop

Loop Pressure Setpoint -> 5.4 PSI

SUPPLY RETURN

Loop SP =50.0 °

68.7 °

68.4 °

0.0 PSI

0 gpm

Building Load 0 TONS

Mode -> H2O Economiser OFF Chillers OFF

Outside Air Temperature

51.5 °

CHWV % OPEN

	West	North	East
FL 13 -FC	0 %		
FL 12 VAV			
FL 11 VAV	10 %		10 %
FL 10 VAV	10 %		10 %
FL 9 VAV	10 %	10 %	10 %
FL 8 VAV	10 %	10 %	10 %
FL 7 VAV	10 %	10 %	10 %
FL 6 VAV	10 %	10 %	10 %
FL 5 VAV	10 %	10 %	10 %
FL 4 VAV	10 %	10 %	10 %
FL 3 VAV	10 %	10 %	10 %
FL 2 VAV	10 %	10 %	10 %
FL 1 VAV	10 %	10 %	10 %
ANNEX VAV			10 %
GRND VAV		10 %	10 %
BSMNT VAV			0 %

DUCT STATIC WC"

	West		North		East	
13	Fan Coil 13-1					
12	SF4 - EF4				SF3 - EF3	
11	0.64 "	11 W	SF2 - EF2		0.70 "	11 E
10	0.65 "	10 W	CENTRAL PLANT		0.60 "	10 E
9	0.73 "	9 W	0.65 "	9 N	0.81 "	9 E
8	0.65 "	8 W	0.76 "	8 N	0.76 "	8 E
7	0.61 "	7 W	0.75 "	7 N	0.60 "	7 E
6	0.59 "	6 W	0.74 "	6 N	0.61 "	6 E
5	0.59 "	5 W	0.58 "	5 N	1.00 "	5 E
4	0.60 "	4 W	0.71 "	4 N	0.79 "	4 E
3	0.70 "	3 W	0.61 "	3 N	0.75 "	3 E
2	0.66 "	2 W	0.56 "	2 N	0.64 "	2 E
1	0.80 "	1 W	0.74 "	1 N	0.70 "	1 E
1-A					0.71 "	1EA
G			1.45 "	G N	1.77 "	G E
B	Shop Fan Coil Unit				PacMed Basm't AHU	

PUMP STATION

Campus 1 - Envision for IBEX

IBEX Edit View Tools Help

Outside Air Temperature : 51.5 °

09/30/13 09:15 AM

Previous

FLOOR STATIC SET POINTS AND READINGS

Fire Alarm Status

NORMAL

Normal

Main Display

AHU MENU

		SET POINT	PRESSURE	DAMPER POSITION WEST SF4 - EF4	NORTH SF2 - EF2	EAST SF3 - EF3
	FLOOR 12					
Floor Static Pressure	FLOOR 11	0.025 "	0.006 "	25.0 %		25.0 %
Floor Static Pressure	FLOOR 10	0.025 "	0.016 "	39.9 %		39.6 %
Floor Static Pressure	FLOOR 9	0.025 "	0.020 "	30.0 %	25.0 %	30.0 %
Floor Static Pressure	FLOOR 8	0.025 "	0.026 "	35.0 %	31.4 %	35.0 %
Floor Static Pressure	FLOOR 7	0.025 "	0.007 "	30.0 %	25.0 %	30.0 %
Floor Static Pressure	FLOOR 6	0.025 "	0.019 "	35.0 %	30.0 %	35.0 %
Floor Static Pressure	FLOOR 5	0.025 "	0.013 "	30.0 %	25.0 %	30.0 %
Floor Static Pressure	FLOOR 4	0.025 "	0.027 "	37.9 %	37.9 %	38.1 %
Floor Static Pressure	FLOOR 3	0.032 "	0.030 "	30.0 %	29.9 %	30.0 %
Floor Static Pressure	FLOOR 2	0.035 "	0.030 "	35.0 %	10.1 %	35.0 %
Floor Static Pressure	FLOOR 1	0.035 "	0.032 "	56.1 %	56.1 %	56.1 %
Floor Static Pressure	GROUND	0.035 "	0.030 "	25.4 %	0.0 %	25.4 %
	BASEMENT					

Campus 1 - Envision for IBEX

IBEX Edit View Tools Help

Previous

BUILDING INTERIOR LIGHTS

Fire Alarm Status

NORMAL

Normal

Exterior Lighting

Note:

The lighting panel is momentarily pulsed on to turn the lights OFF only. This will not allow you to turn the lights on.

MASTER OFF

PULSE ALL FLOORS OFF

Only available when floors are in STANDBY mode.

	Floor Sweep Schedule A	Floor Sweep Schedule B
FLOOR 1	SCHED STANDBY	SCHED STANDBY
FLOOR 2	SCHED STANDBY	SCHED STANDBY
FLOOR 3	SCHED STANDBY	SCHED STANDBY
FLOOR 4	SCHED STANDBY	SCHED STANDBY
FLOOR 5	SCHED STANDBY	SCHED STANDBY
FLOOR 6	SCHED STANDBY	SCHED STANDBY
FLOOR 7	SCHED STANDBY	SCHED STANDBY
FLOOR 8	SCHED STANDBY	SCHED STANDBY
FLOOR 9	SCHED STANDBY	SCHED STANDBY
FLOOR 10	SCHED STANDBY	SCHED STANDBY
FLOOR 11	SCHED STANDBY	SCHED STANDBY
FLOOR 12	SCHED STANDBY	SCHED STANDBY

Sweep ALL Floor Lights OFF Schedule

SCHED STANDBY

Scheduling Note:

Floor sweeps are scheduled on two different points. They work together to turn off the lights. Use Schedule A for the first half of the night, and Schedule B for the second half of the night.

To sweep ALL building interior lights OFF together, schedule the point above.

Campus 1 - Envision for IBEX

IBEX Edit View Tools Help

Lighting Control | Outside Air Temperature : 51.5 ° | 09/30/13 09:17 AM

Previous

Lighting Control

Photocell Operation

Photocell Setpoint 25.0 %

Override Photo Cell (check box) ->

Photocell Status

88.5 Light %

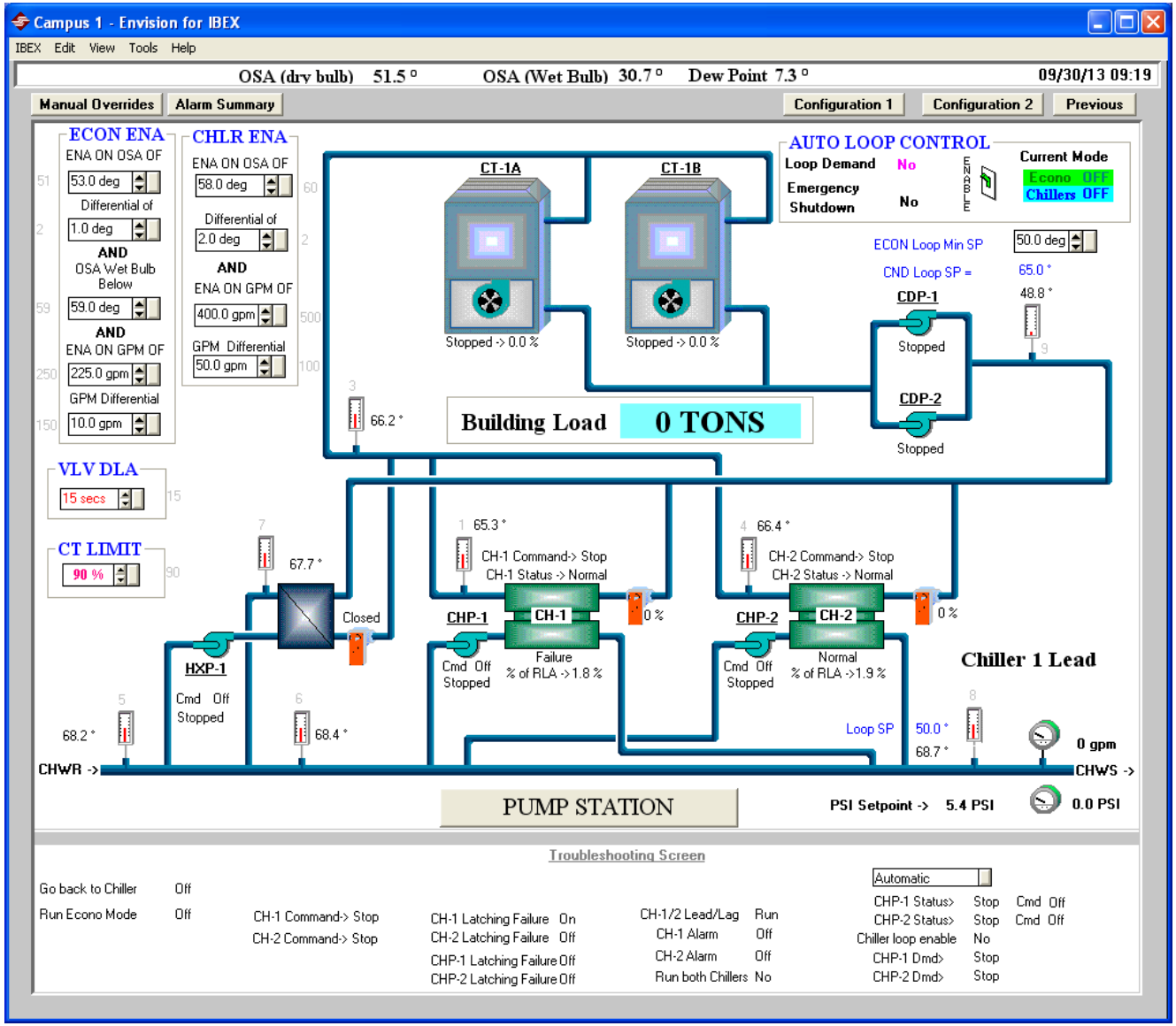
Photocell Off

Lighting Zones

Lighting Command

North Pole Lights	SCHED On	☑ Lighting Master Enable North Pole ☐ Force Lighting On North Pole	Off	
Building UP Lights	SCHED On	☑ Lighting Master Enable Bldg UP ☐ Force Lighting On Bldg UP	Off	
In Ground Lights	SCHED On	☑ Lighting Master Enable In Ground ☐ Force Lighting On In Ground	Off	

Note: 60 Sec. On/Off Delay On All Zones


Campus 1 - Envision for IBEX
IBEX Edit View Tools Help
OSA (dry bulb) 51.5 °
OSA (Wet Bulb) 30.7 °
Dew Point 7.3 °
09/30/13 09:19
Manual Overrides
Alarm Summary
Configuration 1
Configuration 2
Previous
ECON ENA
ENA ON OSA OF
53.0 deg
Differential of
1.0 deg
AND
OSA Wet Bulb Below
59.0 deg
AND
ENA ON GPM OF
225.0 gpm
GPM Differential
10.0 gpm
CHLR ENA
ENA ON OSA OF
58.0 deg
Differential of
2.0 deg
AND
ENA ON GPM OF
400.0 gpm
GPM Differential
50.0 gpm
AUTO LOOP CONTROL
Loop Demand No
Emergency Shutdown No
ENABLE
Current Mode
Econo OFF
Chillers OFF
ECON Loop Min SP
50.0 deg
CND Loop SP =
65.0 °
CT-1A
CT-1B
Stopped -> 0.0 %
Stopped -> 0.0 %
CDP-1
Stopped
CDP-2
Stopped
48.8 °
66.2 °
Building Load
0 TONS
VLV DLA
15 secs
CT LIMIT
90 %
67.7 °
Closed
HXP-1
Cmd Off
Stopped
68.2 °
68.4 °
65.3 °
CH-1 Command-> Stop
CH-1 Status -> Normal
CHP-1
CH-1
Cmd Off
Stopped
Failure
% of RLA -> 1.8 %
0 %
66.4 °
CH-2 Command-> Stop
CH-2 Status -> Normal
CHP-2
CH-2
Cmd Off
Stopped
Normal
% of RLA -> 1.9 %
0 %
Chiller 1 Lead
Loop SP
50.0 °
68.7 °
0 gpm
CHWR ->
CHWS ->
PUMP STATION
PSI Setpoint -> 5.4 PSI
0.0 PSI
Troubleshooting Screen
Go back to Chiller Off
Run Econo Mode Off
CH-1 Command-> Stop
CH-2 Command-> Stop
CH-1 Latching Failure On
CH-2 Latching Failure Off
CHP-1 Latching Failure Off
CHP-2 Latching Failure Off
CH-1/2 Lead/Lag Run
CH-1 Alarm Off
CH-2 Alarm Off
Run both Chillers No
Automatic
CHP-1 Status> Stop Cmd Off
CHP-2 Status> Stop Cmd Off
Chiller loop enable No
CHP-1 Dmd> Stop
CHP-2 Dmd> Stop

Campus 1 - Envision for IBEX

IBEX Edit View Tools Help

Chilled Water System | Outside Air Temperature : 51.5 ° | 09/30/13 09:19 AM

Previous

CHW Supply Reset

Current Setpoint -> 50.0 °

When OSA temp is at or above 75.0 ° 80
control to a loop temperature of 44.0 ° 44
When OSA temp is at or below 60.0 ° 62
control to a loop temperature of 50.0 ° 55
The loop temperature is linearly reset between these points.

When in economizer mode control to 60.0 ° 50

Lag Chiller control

Chillers Requested -> 1

Start lag chiller when lead chiller % of RLA is above 93 % 80
and CHWS temp. is above SP by 8.0 ° 10
and GPM is Above 850 Gpm 850
for more than 15 min 10

Stop lag chiller when building load is less than 300 tons 250
for more than 10 min 5
CH-1 Current Limit 65 % 95
CH-2 Current Limit 65 % 95

Condensor Head Pressure Control

H.P.control ? No
CH-1 Leaving Temp -> 65.3 °F
CH-2 Leaving Temp -> 66.2 °F
WARNING! 0.0 %
CH-2 HP Valve -> 0.0 %
CH-1 Cond Loop SP 75 80.0 °F
CH-2 Cond Loop SP 75 80.0 °F

Chillers surge if valves are set below 30%

CH-1 Condenser valve minimum position 40 50.6 %
CH-2 Condenser valve minimum position 40 30.0 %

CNDW Supply Reset

CNDW Setpoint -> 65.0 °

When OSA temp is at or above 70 80.0 °
control to a loop temperature of 75 64.0 °
When OSA temp is at or below 80 70.0 °
control to a loop temperature of 75 65.0 °
The loop temperature is linearly reset between these points.

Cooling Tower Control

CDWS Setpoint 65.0 °

Towers Requested ->1

Start lag tower when lead tower VFD % is above 60 % 60
for more than 15 sec 15
When starting lag tower start both VFD's at 15 % 15

Stop lag tower when VFD % is below 10 % 10
for more than 180 sec 180
When stopping lag tower increase lead VFD% to 30 % 30

PI Timing for CT'S 10.0 sec 10

Tower Start Diff 5.0 ° 5

Economizer

Parameters for Econo ENA TOP RIGHT of screen

OSA Temp (Wet Bulb) -> 30.7 °
Building Cooling Load -> 0 tons
Run Econo Mode -> No
Limit CT- Fans to 90 % 90
When returning to Econo mode shut down chiller after 3 min 10

Pump Shutdown Delays

CDP-1/2 5 min
CHP-1/2 5 min

Lead/Lag Control

CDP-1/2 Lead Status -> CDP-1
Automatically Switch Lead Pump ☑
Manually Switch Lead Pump ☐

CT-1A/B Lead Status -> CT-1A
Automatically Switch Lead Tower ☑
Manually Switch Lead Tower ☐

CH/CHP-1/2 Lead Status -> CH/CHP-1 Lead
Automatically Switch Lead Pump/Chiller ☑
Manulally Switch Lead Pump/Chiller ☐

CDP 1/2 Lead/Lag
CT 1A/1B Lead/Lag
CH/CHP-1/2 Lead/Lag

Campus 1 - Envision for IBEX

IBEX Edit View Tools Help

OSA (Dry bulb) 51.5 °
OSA (Wet Bulb) 30.7 °

SYSTEM CONFIGURATION

Previous

09/30/13 09:19

Econo/Chiller Enable

AUTO LOOP CONTROL

Loop Demand No
Emergency Shutdown No
ENABLE
Current Mode
Econo OFF
Chillers OFF

ECON ENA

ENA ON OSA OF
53.0 deg
Differential of
1.0 deg
AND
OSA Wet Bulb Below
59.0 deg
AND
ENA ON GPM OF
225.0 gpm
GPM Differential
10.0 gpm

CHLR ENA

ENA ON OSA OF
58.0 deg
Differential of
2.0 deg
AND
ENA ON GPM OF
400.0 gpm
GPM Differential
50.0 gpm

PUMP SYSTEM

Loop Pressure Control

System Master Enable -> ENABLE

Manual Loop Press. Setpt. 12.0 PSI
Current PSI Setpoint -> 5.4 PSI
0.0 PSI
Auto / Manual Control -> Auto
Auto Loop Press. High -> 10.0 PSI
Auto Loop Press. Low -> 5.0 PSI
Highest AHU CWV % -> 9.8 %
PSI SP when Lag CH Dmd 10.0 PSI
Lag Chiller Run Status-> No

Pump Shutdown Delays

LP-1 -> 2.5 min
LP-2 -> 2.5 min

Setup - DON'T Change Values!!!

PI Integral -> 3.0

Lockout SF/EF Operation

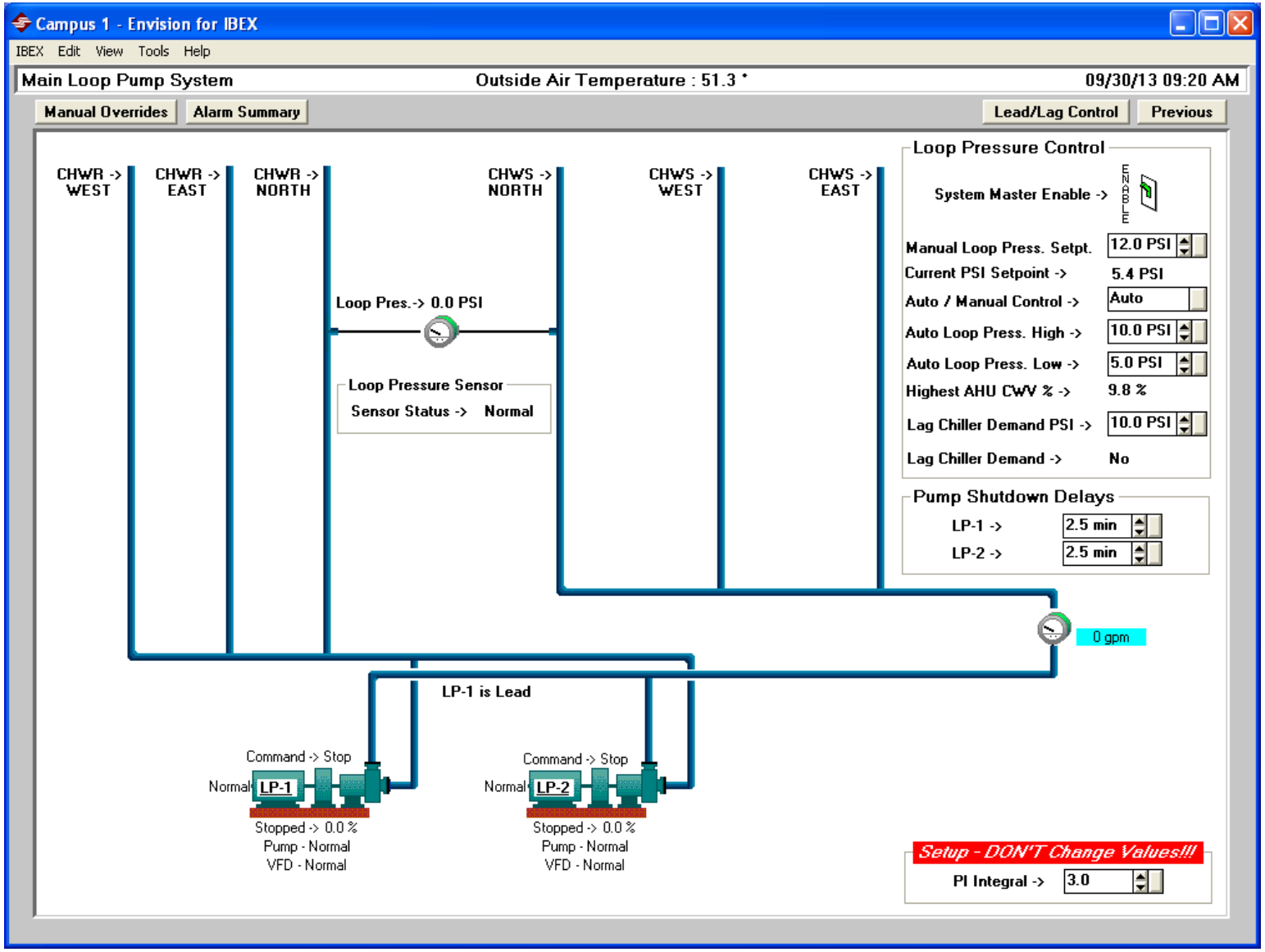
Allow Scheduled Operation = ☑
Lockout Schedule Point = SCHED Off
Lockout Mode Status = Normal Operation

Lockout Econ/Chill Operation

Allow Scheduled Operation Lockout = ☑
Lockout Schedule Point = SCHED Off
Lockout Mode Status = Normal Operation

AHU Chilled Water Valves

Allow AHU CWV Program ☑
Current Program Status = Active
Hold Valves At = 10.0 %
When OSA is Below = 0.0 °
With OAT SP Offset = 0.0 °
Or Schedule Override On Off
Current OSA Temperature 51.5 °


Campus 1 - Envision for IBEX
IBEX Edit View Tools Help
Main Loop Pump System
Outside Air Temperature : 51.3 °
09/30/13 09:20 AM
Manual Overrides
Alarm Summary
Lead/Lag Control
Previous
CHWR -> WEST
CHWR -> EAST
CHWR -> NORTH
CHWS -> NORTH
CHWS -> WEST
CHWS -> EAST
Loop Pres.-> 0.0 PSI
Loop Pressure Sensor
Sensor Status -> Normal
Loop Pressure Control
System Master Enable ->
ENABLE
Manual Loop Press. Setpt.
12.0 PSI
Current PSI Setpoint ->
5.4 PSI
Auto / Manual Control ->
Auto
Auto Loop Press. High ->
10.0 PSI
Auto Loop Press. Low ->
5.0 PSI
Highest AHU CWV % ->
9.8 %
Lag Chiller Demand PSI ->
10.0 PSI
Lag Chiller Demand ->
No
Pump Shutdown Delays
LP-1 ->
2.5 min
LP-2 ->
2.5 min
0 gpm
LP-1 is Lead
Command -> Stop
Normal
LP-1
Stopped -> 0.0 %
Pump - Normal
VFD - Normal
Command -> Stop
Normal
LP-2
Stopped -> 0.0 %
Pump - Normal
VFD - Normal
Setup - DON'T Change Values!!!
PI Integral ->
3.0

Campus 1 - Envision for IBEX

IBEX Edit View Tools Help

10th Floor Status & Alarms | Outside Air Temperature : 51.5 ° | 09/30/13 09:21 AM

Previous

10th Floor Mechanical Room

<- Outside

10th Floor Status

Mechanical Room Temp. -> 67.3 °F

Refrigeration Alarm-> Normal

Alarm Reset ->

PF-1
Stopped

<- Supply

Command-> Stop

VF-1
Stopped

<- Supply

Command-> Stop

VF-1 Key Status -> Off

If Chiller Shutdown EMG BRK GLASS is activated, the following turns off: CDP-1 & CDP-2, CT1A & CT1B, HXP-1

If 10th Floor Mech Room Refrigerant Leak is detected, the following turns off: CHP-1 & CHP-2 (after delay on break).
CH1 & CH-2 stop without delay

Glass Break Shutdown Status

Chiller Emergency Shutdown Status -> Normal

Chiller Emergency Purge Status -> Normal

Check Box to Override

Overide PF-1 On ->

Overide VF-1 On ->

Note:

Glass Break Shutdown will only reset after the glass has been replaced.

Campus 1 - Control Panel

IBEX Edit View Tools Help

Ups Room TF-6A _TF-6B | Outside Air Temperature : 51.5 ° | 09/30/13 09:22 AM

Lead/Lag Control | Previous

UPS Room.

TF Control

Automatic Control -> DISABLED

Room Temp. -> 65.3 °

Pushbutton Override Status-> Normal

TF 6A/6B Lead Status -> TF-6B Lead

Alarm Summary

TF-6A Fan Status -> Normal

TF-6B Fan Status -> Normal

Bad Room Sensor -> Normal

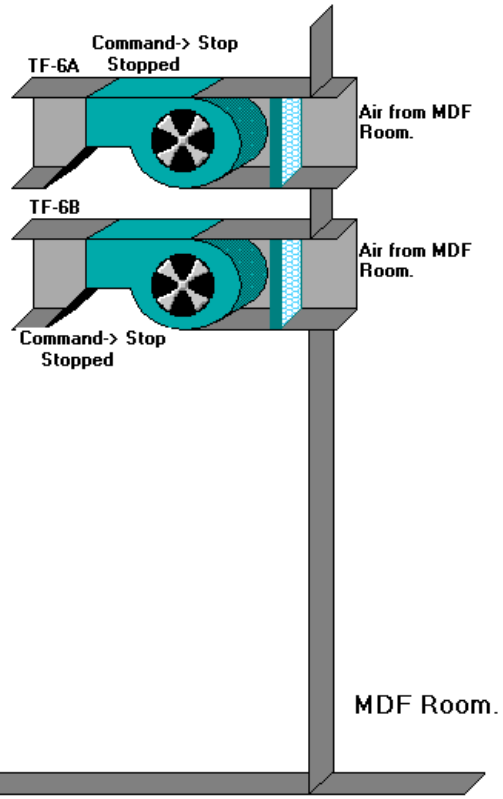
Normal

Alarm Reset ->

Check Box to Override

TF - 6A -> Auto | Manual Command -> Off

TF - 6B -> Auto | Manual Command -> Off



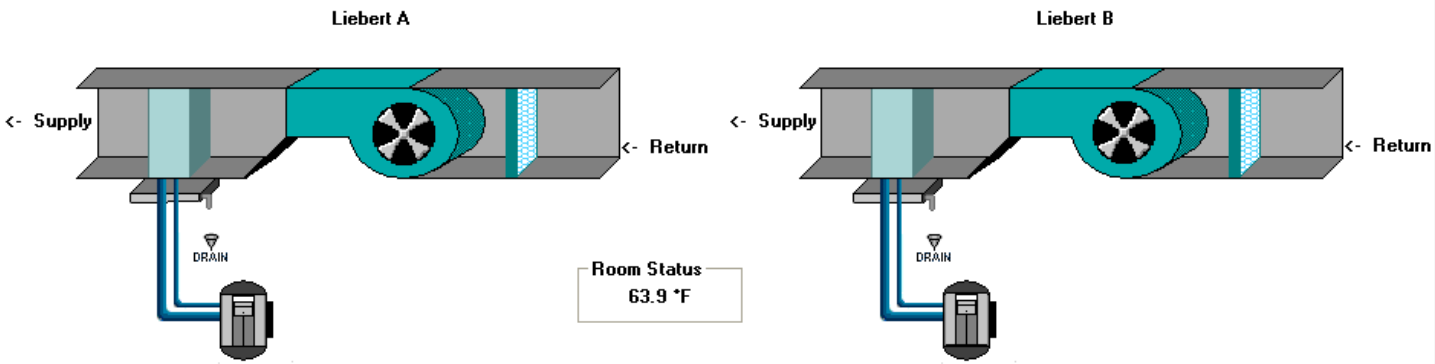
Campus 1 - Control Panel

IBEX Edit View Tools Help

MDF (Liebert Units AB) | Outside Air Temperature : 51.5 ° | 09/30/13 09:22 AM

Lead Lag Control | Previous

MDF Room.



Room Status
63.9 °F

Liebert B Lead

AHU Control

Automatic Control -> DISABLED

Allow Liebert A ->

Allow Liebert B ->

Hi Temp Alarm SetPoint -> 68.0 °F

Max Hi Temp Alarm SetPoint -> 78.0 °F

Min Hi Temp Alarm SetPoint -> 68.0 °F

Alarm Summary

Leibert A Alarm ->	Normal
Leibert B Alarm ->	Normal
Water Detected Alarm ->	Normal
Bad Space Sensor ->	Normal
High Space Alarm ->	Normal

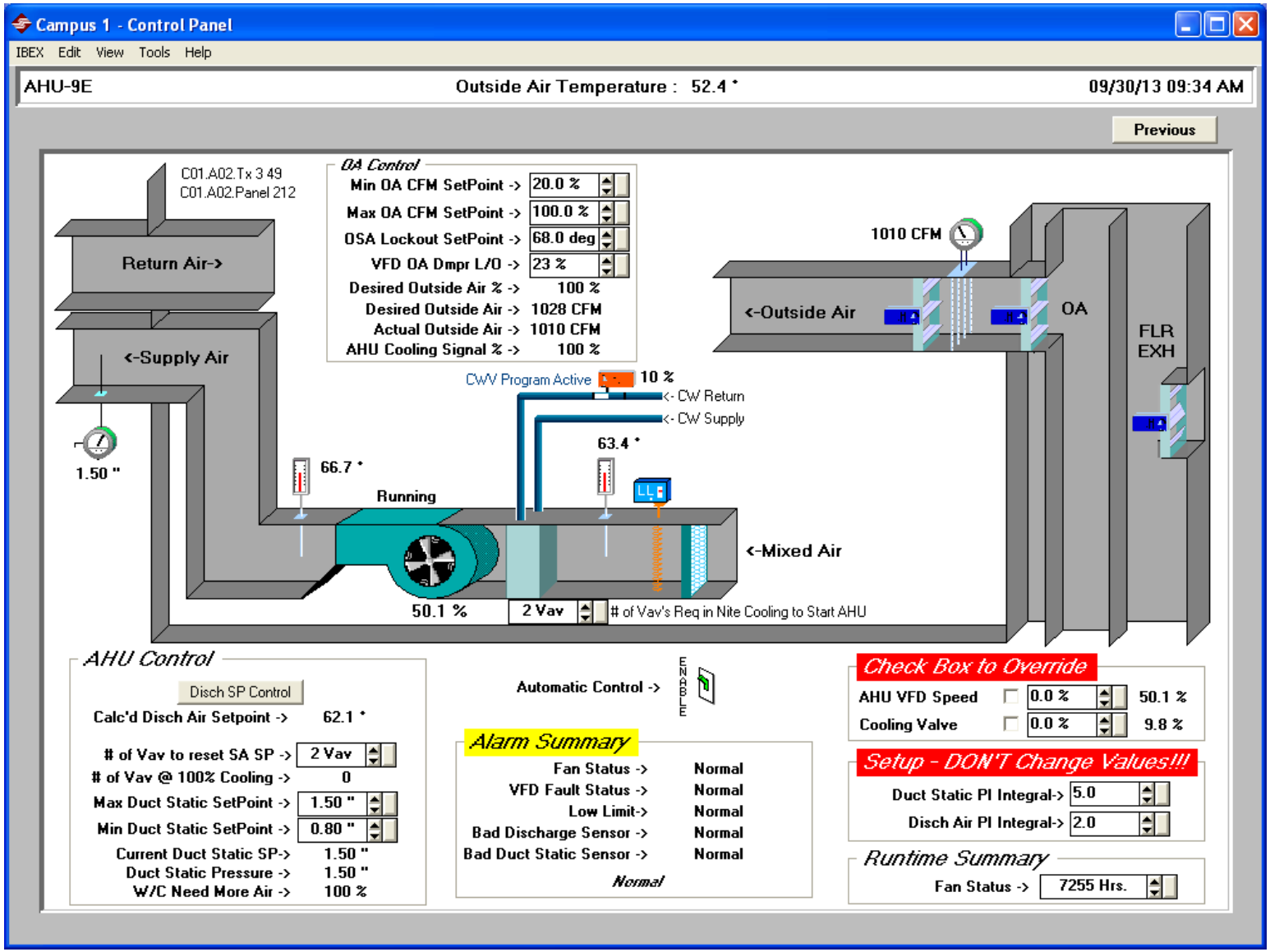
Normal

C01.A02.Tx 2 30

Check Box to Override

Liebert A-> ☑ Manual Command -> Off

Liebert B-> ☑ Manual Command -> Off


Campus 1 - Control Panel
IBEX Edit View Tools Help
AHU-9E
Outside Air Temperature : 52.4 °
09/30/13 09:34 AM
Previous
C01.A02.Tx 3 49
C01.A02.Panel 212
Return Air->
<-Supply Air
1.50 "
66.7 °
Running
50.1 %
OA Control
Min OA CFM SetPoint -> 20.0 %
Max OA CFM SetPoint -> 100.0 %
OSA Lockout SetPoint -> 68.0 deg
VFD OA Dmpr L/O -> 23 %
Desired Outside Air % -> 100 %
Desired Outside Air -> 1028 CFM
Actual Outside Air -> 1010 CFM
AHU Cooling Signal % -> 100 %
CWV Program Active
10 %
<- CW Return
<- CW Supply
63.4 °
<-Mixed Air
2 Vav
# of Vav's Req in Nite Cooling to Start AHU
1010 CFM
<-Outside Air
OA
FLR
EXH
AHU Control
Disch SP Control
Calc'd Disch Air Setpoint -> 62.1 °
# of Vav to reset SA SP -> 2 Vav
# of Vav @ 100% Cooling -> 0
Max Duct Static SetPoint -> 1.50 "
Min Duct Static SetPoint -> 0.80 "
Current Duct Static SP-> 1.50 "
Duct Static Pressure -> 1.50 "
W/C Need More Air -> 100 %
Automatic Control ->
Alarm Summary
Fan Status -> Normal
VFD Fault Status -> Normal
Low Limit-> Normal
Bad Discharge Sensor -> Normal
Bad Duct Static Sensor -> Normal
Normal
Check Box to Override
AHU VFD Speed 0.0 % 50.1 %
Cooling Valve 0.0 % 9.8 %
Setup - DON'T Change Values!!!
Duct Static PI Integral-> 5.0
Disch Air PI Integral-> 2.0
Runtime Summary
Fan Status -> 7255 Hrs.

Campus 1 - Envision for IBEX

IBEX Edit View Tools Help

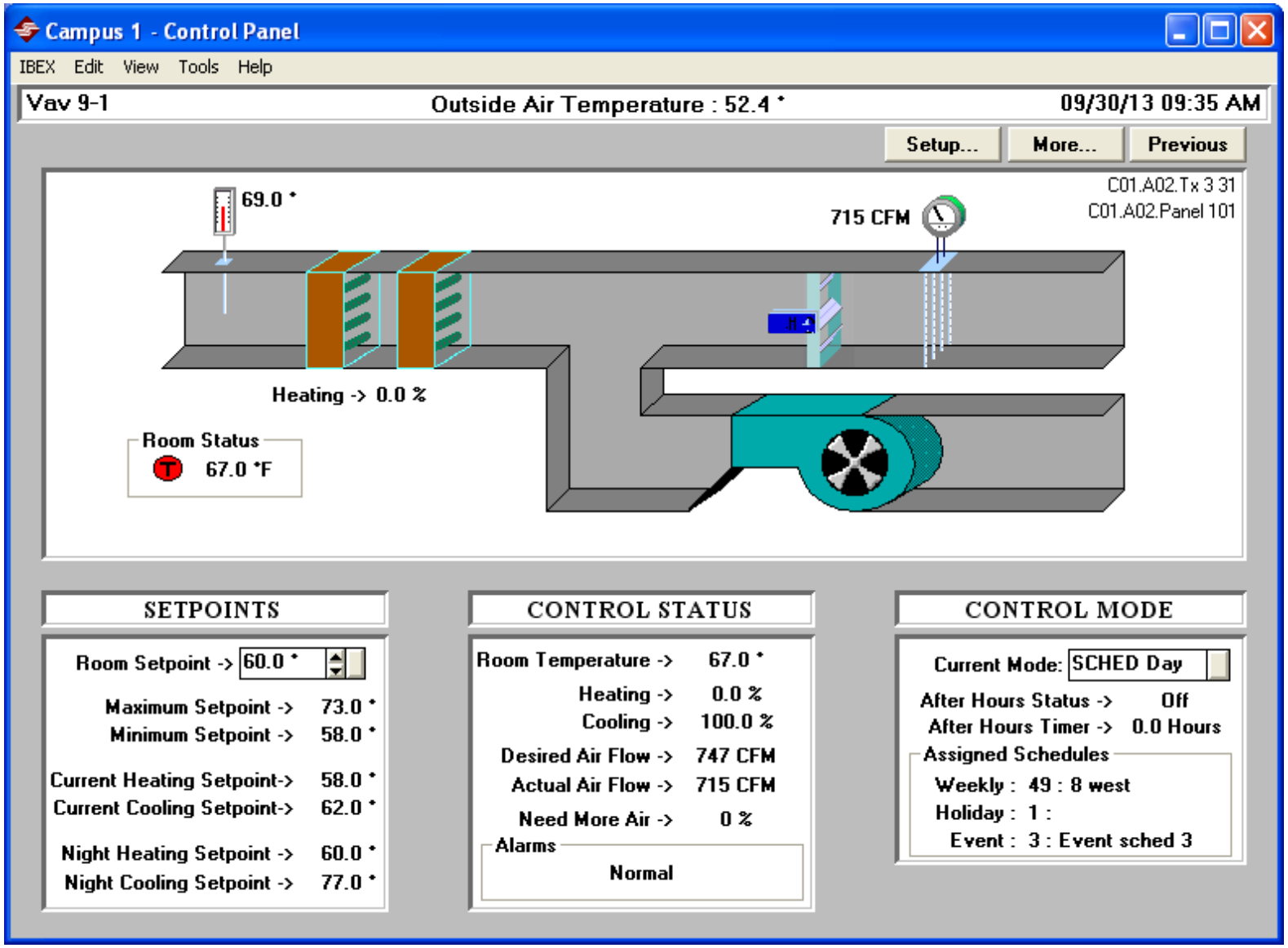
9th Flr. VAV'S

Outside Air Temperature : 52.4 °

Previous

Floor Plan

	BOX	Temp	Setpoint	Supply	Need Air	Clng %	Htng %	Mode
AHU-9W	9-1	67.0 °	60.0 °	69.0 °	0 %	102 %	0 %	SCHED Day
	9-2	68.0 °	60.0 °	68.0 °	0 %	102 %	0 %	SCHED Day
	9-3	68.0 °	60.0 °	68.0 °	4 %	102 %	0 %	SCHED Day
	9-4	70.0 °	60.0 °	69.0 °	42 %	102 %	0 %	SCHED Day
AHU-9E	9-5	68.0 °	60.0 °		0 %	102 %	0 %	SCHED Day
	9-6	70.0 °	60.0 °	68.0 °	0 %	102 %	0 %	SCHED Day
	9-7	67.0 °	60.0 °	68.0 °	0 %	102 %	0 %	SCHED Day
	9-8	67.0 °	60.0 °	69.0 °	102 %	102 %	0 %	SCHED Day
	9-9	67.0 °	60.0 °	68.0 °	0 %	102 %	0 %	SCHED Day
AHU-9N	9-10	67.0 °	60.0 °	67.0 °	0 %	102 %	0 %	SCHED Day
	9-11	67.0 °	60.0 °	68.0 °	102 %	102 %	0 %	SCHED Day
	9-12	67.0 °	60.0 °	67.0 °	100 %	102 %	0 %	SCHED Day
	9-13	67.0 °	60.0 °	68.0 °	0 %	102 %	0 %	SCHED Day
	9-14	67.0 °	60.0 °	67.0 °	0 %	102 %	0 %	SCHED Day
	9-15	67.0 °	60.0 °	67.0 °	40 %	102 %	0 %	SCHED Day
	9-16	65.0 °	60.0 °	67.0 °	40 %	92 %	0 %	SCHED Day


Campus 1 - Control Panel
IBEX Edit View Tools Help
Vav 9-1
Outside Air Temperature : 52.4 °
09/30/13 09:35 AM
Setup...
More...
Previous
69.0 °
715 CFM
C01.A02.Tx 3 31
C01.A02.Panel 101
Heating -> 0.0 %
Room Status
67.0 °F
SETPOINTS
Room Setpoint -> 60.0 °
Maximum Setpoint -> 73.0 °
Minimum Setpoint -> 58.0 °
Current Heating Setpoint-> 58.0 °
Current Cooling Setpoint-> 62.0 °
Night Heating Setpoint -> 60.0 °
Night Cooling Setpoint -> 77.0 °
CONTROL STATUS
Room Temperature -> 67.0 °
Heating -> 0.0 %
Cooling -> 100.0 %
Desired Air Flow -> 747 CFM
Actual Air Flow -> 715 CFM
Need More Air -> 0 %
Alarms
Normal
CONTROL MODE
Current Mode: SCHED Day
After Hours Status -> Off
After Hours Timer -> 0.0 Hours
Assigned Schedules
Weekly : 49 : 8 west
Holiday : 1 :
Event : 3 : Event sched 3

Campus 1 - Control Panel

IBEX Edit View Tools Help

Vav 9-1 C01.A02.Tx 3 31 C01.A02.Panel 101 09/30/13 09:35 AM

WARNING - Do Not Change Items Below without Approval

Previous

Setup...

TEMPERATURE SETPOINTS

Room Setpoint -> 60.0 °

Maximum Setpoint -> 73.0 °

Minimum Setpoint -> 58.0 °

Heating -Offset -> 2.0 °

Cooling +Offset -> 2.0 °

Unocc Heating Setpt -> 60.0 °

Unocc Cooling Setpt -> 77.0 °

Current Heating Setpoint: 58.0 °

Current Cooling Setpoint: 62.0 °

AIR FLOW

Maximum Air Flow -> 747 CFM

Minimum Air Flow -> 269 CFM

Current Air Flow: 734 CFM

Desired Air Flow: 747 CFM

Only one ON

Force Minimum Air Flow....

Force Maximum Air Flow...

Need More Air Signal: 0 %

Need Colder Air Signal: 0 %

MISCELLANEOUS

After Hours Timer -> 0.0 Hrs

After Hours Limit -> 2.0 Hrs

Field Service Mode... ☑

Only one ON

Emergency Open....

Emergency Close....

Fan Runtime -> 4611 Hrs

Heat Runtime -> 2340 Hrs

CONFIGURATION

Htg Valve Pulse Width -> 1.0 Sec

Damper Pulse Width -> 1.0 Sec

Box Size -> 10

CONTROL REQUESTS

Current Heating Signal: 0 %

Heating Needed ? No

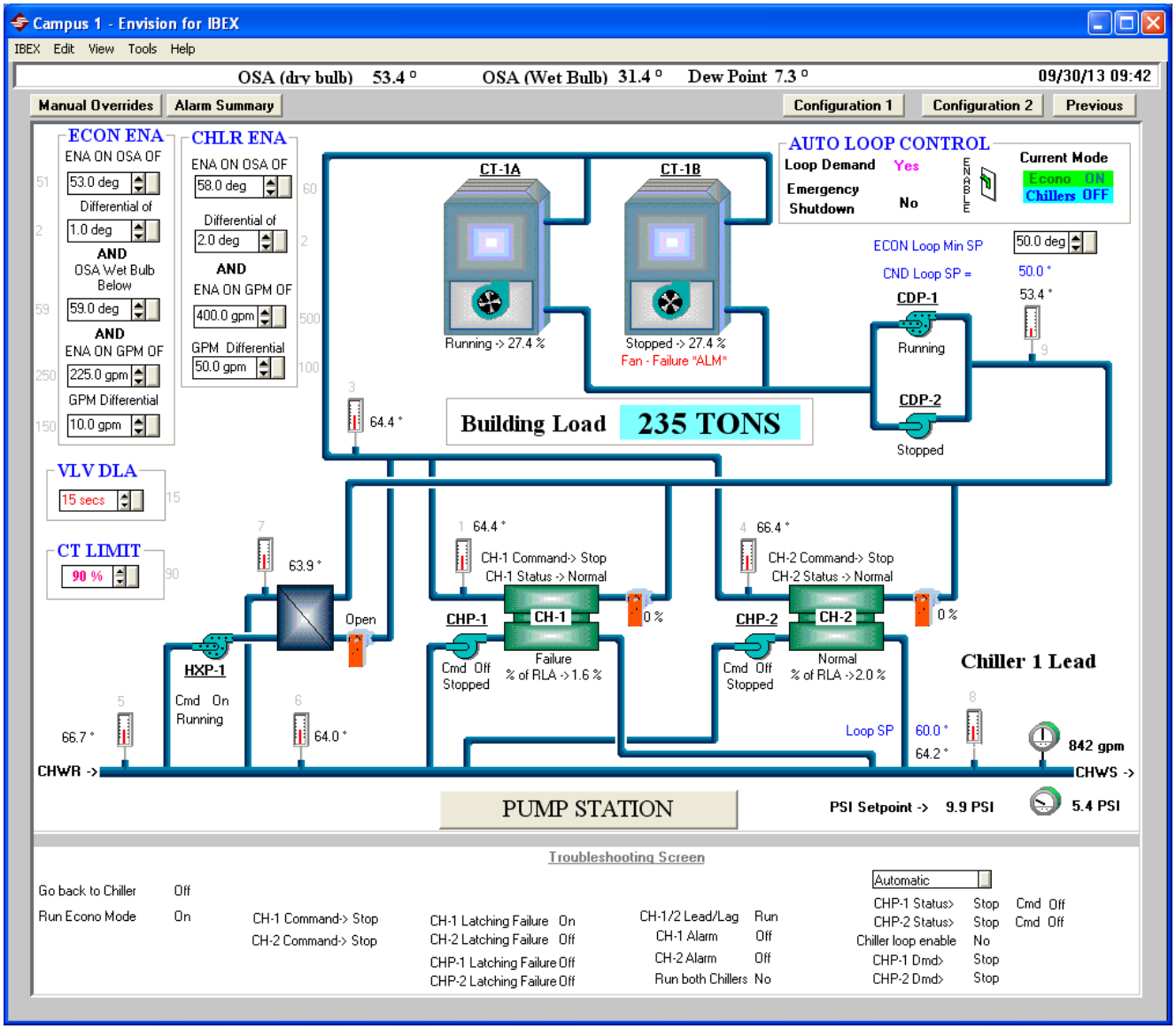
Current Cooling Signal: 100 %

Cooling Needed ? Yes

DEMAND CONTROL

Heating Allowed: Yes

Cooling Allowed: Yes


Campus 1 - Envision for IBEX
IBEX Edit View Tools Help
OSA (dry bulb) 53.4 °
OSA (Wet Bulb) 31.4 °
Dew Point 7.3 °
09/30/13 09:42
Manual Overrides
Alarm Summary
Configuration 1
Configuration 2
Previous
ECON ENA
ENA ON OSA OF
53.0 deg
Differential of
1.0 deg
AND
OSA Wet Bulb Below
59.0 deg
AND
ENA ON GPM OF
225.0 gpm
GPM Differential
10.0 gpm
CHLR ENA
ENA ON OSA OF
58.0 deg
Differential of
2.0 deg
AND
ENA ON GPM OF
400.0 gpm
GPM Differential
50.0 gpm
VLV DLA
15 secs
CT LIMIT
90 %
CT-1A
Running -> 27.4 %
CT-1B
Stopped -> 27.4 %
Fan - Failure *ALM*
AUTO LOOP CONTROL
Loop Demand Yes
Emergency Shutdown No
Current Mode
Econo ON
Chillers OFF
ECON Loop Min SP
50.0 deg
CND Loop SP =
50.0 °
53.4 °
CDP-1
Running
CDP-2
Stopped
64.4 °
Building Load
235 TONS
63.9 °
Open
HXP-1
Cmd On
Running
66.7 °
64.0 °
CHWR ->
64.4 °
CH-1 Command-> Stop
CH-1 Status -> Normal
CHP-1
CH-1
Cmd Off
Stopped
Failure
% of RLA -> 1.6 %
0 %
66.4 °
CH-2 Command-> Stop
CH-2 Status -> Normal
CHP-2
CH-2
Cmd Off
Stopped
Normal
% of RLA -> 2.0 %
0 %
Chiller 1 Lead
Loop SP
60.0 °
64.2 °
842 gpm
CHWS ->
PUMP STATION
PSI Setpoint -> 9.9 PSI
5.4 PSI
Troubleshooting Screen
Go back to Chiller Off
Run Econo Mode On
CH-1 Command-> Stop
CH-2 Command-> Stop
CH-1 Latching Failure On
CH-2 Latching Failure Off
CHP-1 Latching Failure Off
CHP-2 Latching Failure Off
CH-1/2 Lead/Lag Run
CH-1 Alarm Off
CH-2 Alarm Off
Run both Chillers No
Automatic
CHP-1 Status> Stop Cmd Off
CHP-2 Status> Stop Cmd Off
Chiller loop enable No
CHP-1 Dmd> Stop
CHP-2 Dmd> Stop

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Department of Commerce
Innovation is in our nature.

PACIFIC TOWER ASSESSMENT

Appendix J
Energy/Water/Sewer Use Documentation

Schreiber Starling & Lane

ARCHITECTS

Pacific Tower- Utility Data Analysis

Utility Overview

The following utility data analysis for the Pacific Tower building is based on the Seattle City Light (SCL) bills provided. The analysis period is for 2008-2009 and based on full occupancy of the property by Amazon during that period.

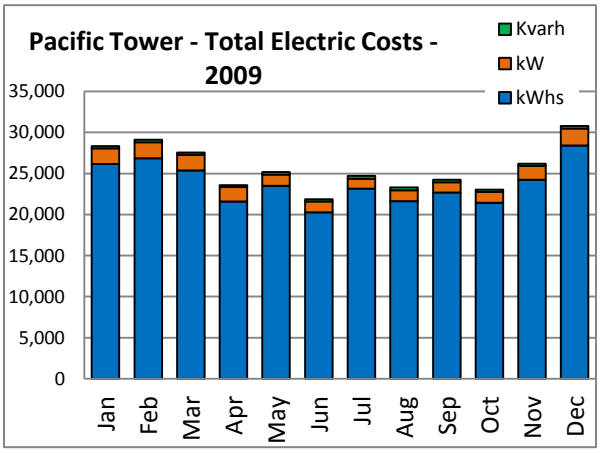
SCL cost and usage data used in this analysis was forecasted for future rates to predict potential utility cost increases assuming baseline operations remain the same without any adjustments to weather or other operational parameters.

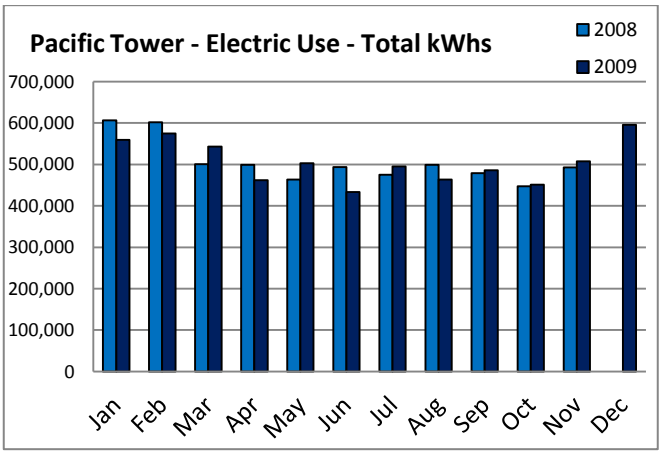
Observations

Based on the 2008-2009 utility data, Pacific Tower consumption shows that the building operated with a consistent and high "base load". The base load is the minimum average monthly consumption that remains constant throughout seasonal and operational variations. This type of performance is likely attributed to:

- The tenant (Amazon) operations resulted in high computer, data center and plug load use
- All electric building systems

Future performance of the building with the departure of Amazon is likely to result in a reduction in energy use due to lower base loads (less computing and data center loads). In addition with less than full occupancy, the energy use should be observed to decrease.





Energy Cost Analysis

Pacific Tower's 2009 electric energy use index (EUI) is 73.0 kBtu/sq.ft.-yr. based on a rentable area of 260,000 sq. ft. This EUI is average for regional office buildings. Based on the higher than normal base load identified in the observations with a change in space use to less computing requirements the EUI benchmark should improve.

Pacific Tower- Utility Data Analysis

In 2009 Pacific Tower's annual energy cost was $308,000 or about $1.18 per sq.ft. SCL rates have escalated by about 20% since 2009. Applying current utility rates to the 2009 energy use brings potential annual energy cost to $382,000. SCL as a utility tends to have some of the lowest rates in the country. Current projections predict only a 3% annual average rate escalation. Using these projections the annual energy costs will be $497,000 in 10 years, $611,000 in 20 years and $726,000 in 30 years.

We recommend that as the facility moves towards full occupancy, a more detailed review of the energy use profile, cost and rate applied to optimize the bottom line impacts.

November 23, 2010

ENERGY STAR Label for Buildings
c/o The Cadmus Group, Inc.
1555 Wilson Boulevard, Suite 300
Arlington, VA 22209

To whom it may concern:

I hereby nominate, on behalf of the building's owner, the following building for award of the ENERGY STAR:

Amazon.Com Building
1200 12th Ave. South
Seattle , WA 98144

I have provided a copy of the *Licensed Professionals Guide to the ENERGY STAR Label for Commercial Buildings* (available at http://www.energystar.gov/ia/business/evaluate_performance/pm_lp_guide.pdf) to our Licensed Professional for reference. As documented by the attached Statement of Energy Performance, the aforementioned building meets the conditions necessary to qualify as ENERGY STAR:

- **Energy performance** in the top 25 percent of similar existing buildings, as indicated by a minimum rating of 75 out of 100 determined through EPA's Portfolio Manager.
- **Thermal comfort** in accordance with the provisions in American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) Standard 55, Thermal Environmental Conditions for Human Occupancy.
- **Indoor air quality** in accordance with the provisions of ASHRAE Standard 62, Ventilation for Acceptable Indoor Air Quality.
- **Illuminance levels** in accordance with the Illuminating Engineering Society of North America, IESNA Lighting Handbook.

I am submitting this application within four months of the Period Ending Date (September 30, 2010) on the enclosed Statement of Energy Performance (SEP). I will assist EPA, if requested, in verifying utility billing data. Furthermore, I agree to associate the ENERGY STAR name and logo only with the aforementioned building and to adhere to ENERGY STAR's Identity Guidelines.

Sincerely,

Signature _____

Signatory Name (Primary Contact for this facility): Travis Smith
Facility Owner: WrightRunstad

STATEMENT OF ENERGY PERFORMANCE
Amazon.Com Building

Building ID: 1327791
For 12-month Period Ending: September 30, 2010[1]
Date SEP becomes ineligible: January 28, 2011

Date SEP Generated: November 23, 2010

Facility
Amazon.Com Building
1200 12th Ave. South
Seattle , WA 98144

Facility Owner
WrightRunstad
1201 3rd Avenue
Suite 2700
Seattle, WA 98101
206 447-900

Primary Contact for this Facility
Travis Smith
201 S. Jackson
suite A14
Seattle, WA 98104
206-218-7126
tsmith@WrightRunstad.com

Year Built: 1930
Gross Floor Area (ft²): 304,047

Energy Performance Rating[2] (1-100) 93

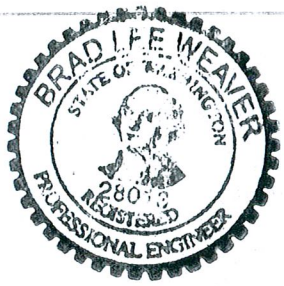
Site Energy Use Summary[3]	
Electricity - Grid Purchase(kBtu)	17,779,274
Natural Gas (kBtu)[4]	2,515,493
Total Energy (kBtu)	20,294,767

Energy Intensity[5]	
Site (kBtu/ft²/yr)	67
Source (kBtu/ft²/yr)	204

Emissions (based on site energy use)	
Greenhouse Gas Emissions ($MtCO_2e$/year)	2,278

Electric Distribution Utility
Seattle City of

National Average Comparison	
National Average Site EUI	118
National Average Source EUI	362
% Difference from National Average Source EUI	-44%
Building Type	Office



Professional Engineer Stamp

Signature: _____

Based on the conditions observed at the time of my visit to this building, I certify that the information contained within this statement is accurate and in accordance with the Licensed Professional Guide.

Meets Industry Standards[6] **for Indoor Environmental Conditions:**

Ventilation for Acceptable Indoor Air Quality	**Yes**
Acceptable Thermal Environmental Conditions	**Yes**
Adequate Illumination	**Yes**

Professional Engineer
License Number: 28013
State: WA
Brad Weaver
10715 NE 109th ST
Kirkland, WA 98033
206 910-9783

Notes:
1. Application for the ENERGY STAR must be submitted to EPA within 4 months of the Period Ending date. Award of the ENERGY STAR is not final until approval is received from EPA.
2. The EPA Energy Performance Rating is based on total source energy. A rating of 75 is the minimum to be eligible for the ENERGY STAR.
3. Values represent energy consumption, annualized to a 12-month period.
4. Natural Gas values in units of volume (e.g. cubic feet) are converted to kBtu with adjustments made for elevation based on Facility zip code.
5. Values represent energy intensity, annualized to a 12-month period.
6. Based on Meeting ASHRAE Standard 62 for ventilation for acceptable indoor air quality, ASHRAE Standard 55 for thermal comfort, and IESNA Lighting Handbook for lighting quality.

The government estimates the average time needed to fill out this form is 6 hours (includes the time for entering energy data, Licensed Professional facility inspection, and notarizing the SEP) and welcomes suggestions for reducing this level of effort. Send comments (referencing OMB control number) to the Director, Collection Strategies Division, U.S., EPA (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460.

ENERGY STAR® Data Checklist for Commercial Buildings

In order for a building to qualify for the ENERGY STAR, a Professional Engineer (PE) or a Registered Architect (RA) must validate the accuracy of the data underlying the building's energy performance rating. This checklist is designed to provide an at-a-glance summary of a property's physical and operating characteristics, as well as its total energy consumption, to assist the PE or RA in double-checking the information that the building owner or operator has entered into Portfolio Manager.

Please complete and sign this checklist and include it with the stamped, signed Statement of Energy Performance.
NOTE: You must check each box to indicate that each value is correct, OR include a note.

CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☑
Building Name	Amazon.Com Building	Is this the official building name to be displayed in the ENERGY STAR Registry of Labeled Buildings?		☑
Type	Office	Is this an accurate description of the space in question?		☑
Location	1200 12th Ave. South, Seattle , WA 98144	Is this address accurate and complete? Correct weather normalization requires an accurate zip code.		☑
Annual Occupancy Rate	79 %	Has the property maintained an average occupancy of 50% or higher across the 12 month period being assessed?		☑
Single Structure	Single Facility	Does this SEP represent a single structure? SEPs cannot be submitted for multiple-building campuses (with the exception of acute care or children's hospitals) nor can they be submitted as representing only a portion of a building		☑

Combined Data Rooms (Data Center)

CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☑
Gross Floor Area	3,652 Sq. Ft.	Is this the total gross floor area measured between the principal exterior surfaces of the enclosing fixed walls, including all supporting functions for the Data Center? This should include the entire Data Center for stand alone facilities, which may have raised floor computing space, server rack aisles, storage silos, control console areas, battery rooms, mechanical rooms for cooling equipment, administrative office areas, elevator shafts, stairways, break rooms and restrooms. When a Data Center is located within a larger building, the total gross floor area should include the computing space as well as any mechanical rooms or office spaces that support the data center.		☑
IT Energy Configuration	IT Energy is not currently metered at this facility - Apply estimates.	Is there inadequate metering at this facility to measure IT energy consumption at either the Output of the UPS or Input of the PDU?		☑
UPS System Redundancy	N/A(Optional)	Is this the level of redundancy of the Uninterruptible Power Supply (UPS)? If there is no UPS system, is this the redundancy for the PDU Meters that support the IT Load?		☑
Cooling Equipment Redundancy	N/A(Optional)	Is this the level of redundancy for the mechanical cooling equipment at the Data Center?		☑
Annual IT Energy	0.00 kBtu	Does this total IT Energy reflect the total IT load at the Data Center in accordance with the EPA metering requirements? EPA metering requirements are for a meter at the output of the UPS meter. 1. Facilities that do not have a UPS meter are permitted to provide readings from the input of the PDU 2. Facilities for which more than 10% of the UPS load is directed to non-IT equipment are permitted to subtract the non-IT loads if they are sub-metered, or to report a reading from the PDU if the non-IT loads are not sub-metered		☑

PacMed Medical Office (Medical Office)

CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☑
Gross Floor Area	74,624 Sq. Ft.	Does this square footage include all supporting functions such as kitchens and break rooms used by staff, storage areas, administrative areas, elevators, stairwells, atria, vent shafts, etc. Also note that existing atriums should only include the base floor area that it occupies. Interstitial (plenum) space between floors should not be included in the total. Finally gross floor area is not the same as leasable space. Leasable space is a subset of gross floor area.		✓
Number of Workers	150	Is this the number of employees present during the main shift? Note this is not the total number of employees or visitors who are in a building during an entire 24 hour period. For example, if there are two daily 8 hour shifts of 100 workers each, the Workers on Main Shift value is 100.		✓
Weekly operating hours	65 Hours	Is this the total number of hours per week that the Medical Office space is 75% occupied? This number should exclude hours when the facility is occupied only by maintenance, security, or other support personnel. For facilities with a schedule that varies during the year, "operating hours/week" refers to the total weekly hours for the schedule most often followed.		✓
Percent Cooled	100 %	Is this the percentage of the total floor space within the facility that is served by mechanical cooling equipment?		✓
Percent Heated	100 %	Is this the percentage of the total floor space within the facility that is served by mechanical heating equipment?		✓

Tower Office Space (Office)

CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☑
Gross Floor Area	161,835 Sq. Ft.	Does this square footage include all supporting functions such as kitchens and break rooms used by staff, storage areas, administrative areas, elevators, stairwells, atria, vent shafts, etc. Also note that existing atriums should only include the base floor area that it occupies. Interstitial (plenum) space between floors should not be included in the total. Finally gross floor area is not the same as leasable space. Leasable space is a subset of gross floor area.		✓
Weekly operating hours	66 Hours	Is this the total number of hours per week that the Office space is 75% occupied? This number should exclude hours when the facility is occupied only by maintenance, security, or other support personnel. For facilities with a schedule that varies during the year, "operating hours/week" refers to the total weekly hours for the schedule most often followed.		✓
Workers on Main Shift	1,126	Is this the number of employees present during the main shift? Note this is not the total number of employees or visitors who are in a building during an entire 24 hour period. For example, if there are two daily 8 hour shifts of 100 workers each, the Workers on Main Shift value is 100. The normal worker density ranges between 0.3 and 5.3 workers per 1000 square feet (92.8 square meters)		✓
Number of PCs	1,388	Is this the number of personal computers in the Office?		✓
Percent Cooled	50% or more	Is this the percentage of the total floor space within the facility that is served by mechanical cooling equipment?		✓
Percent Heated	50% or more	Is this the percentage of the total floor space within the facility that is served by mechanical heating equipment?		✓

Vacant Office Space (Office)

CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☑

Gross Floor Area	62,856 Sq. Ft.	Does this square footage include all supporting functions such as kitchens and break rooms used by staff, storage areas, administrative areas, elevators, stairwells, atria, vent shafts, etc. Also note that existing atriums should only include the base floor area that it occupies. Interstitial (plenum) space between floors should not be included in the total. Finally gross floor area is not the same as leasable space. Leasable space is a subset of gross floor area.		✓
Weekly operating hours	0 Hours	Is this the total number of hours per week that the Office space is 75% occupied? This number should exclude hours when the facility is occupied only by maintenance, security, or other support personnel. For facilities with a schedule that varies during the year, "operating hours/week" refers to the total weekly hours for the schedule most often followed.		✓
Workers on Main Shift	0	Is this the number of employees present during the main shift? Note this is not the total number of employees or visitors who are in a building during an entire 24 hour period. For example, if there are two daily 8 hour shifts of 100 workers each, the Workers on Main Shift value is 100. The normal worker density ranges between 0.3 and 5.3 workers per 1000 square feet (92.8 square meters)		✓
Number of PCs	0	Is this the number of personal computers in the Office?		✓
Percent Cooled	50% or more	Is this the percentage of the total floor space within the facility that is served by mechanical cooling equipment?		✓
Percent Heated	50% or more	Is this the percentage of the total floor space within the facility that is served by mechanical heating equipment?		✓

Landscapers Building (Other)

CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☑
Gross Floor Area	1,080 Sq. Ft.	Does this square footage include all supporting functions such as kitchens and break rooms used by staff, storage areas, administrative areas, elevators, stairwells, atria, vent shafts, etc. Also note that existing atriums should only include the base floor area that it occupies. Interstitial (plenum) space between floors should not be included in the total. Finally gross floor area is not the same as leasable space. Leasable space is a subset of gross floor area.		✓
Number of PCs	N/A(Optional)	Is this the number of personal computers in the space?		✓
Weekly operating hours	40Hours(Optional)	Is this the total number of hours per week that the space is 75% occupied? This number should exclude hours when the facility is occupied only by maintenance, security, or other support personnel. For facilities with a schedule that varies during the year, "operating hours/week" refers to the total weekly hours for the schedule most often followed.		✓
Workers on Main Shift	N/A(Optional)	Is this the number of employees present during the main shift? Note this is not the total number of employees or visitors who are in a building during an entire 24 hour period. For example, if there are two daily 8 hour shifts of 100 workers each, the Workers on Main Shift value is 100.		✓

Combined Parking (Parking)

CRITERION	VALUE AS ENTERED IN PORTFOLIO MANAGER	VERIFICATION QUESTIONS	NOTES	☑
Gross Floor Area	240,930 Sq. Ft.	Is this the total square footage of the entire parking area (enclosed + nonenclosed + open floor area)?		✓
Enclosed Floor Area	153,053 Sq. Ft.	Is this the total square footage of the enclosed garage space? An enclosed garage is defined as having both sides and a roof.		✓
Non-Enclosed Floor Area (w/roof)	0 Sq. Ft.	Is this the total square footage of the nonenclosed garage space? This is typically defined as the portion of the garage above ground (contains no sides but is under a roof).		✓

Open Floor Area (w/o roof)	87,877 Sq. Ft.	Is this the total square footage of the nonenclosed parking area without a roof? This is typically defined as open parking lots or the very top level of an above ground parking garage.		
Weekly Hours of Access	168 Hours	Is this the total number of hours per week when it is possible for a vehicle to enter or exit?		

ENERGY STAR® Data Checklist for Commercial Buildings

Energy Consumption

Power Generation Plant or Distribution Utility: Seattle City of

Fuel Type: Electricity

Meter: 1-454767-25652 (kWh (thousand Watt-hours))
Space(s): Entire Facility
Generation Method: Grid Purchase

Start Date	End Date	Energy Use (kWh (thousand Watt-hours))
08/25/2010	09/27/2010	391,427.00
07/26/2010	08/25/2010	408,394.00
06/24/2010	07/26/2010	410,464.00
05/24/2010	06/24/2010	377,024.00
04/26/2010	05/24/2010	313,200.00
03/31/2010	04/26/2010	360,270.00
03/01/2010	03/30/2010	446,053.00
01/27/2010	03/01/2010	513,905.00
12/24/2009	01/27/2010	557,100.00
11/23/2009	12/24/2009	565,899.00
10/24/2009	11/23/2009	481,174.00
1-454767-25652 Consumption (kWh (thousand Watt-hours))		**4,824,910.00**
1-454767-25652 Consumption (kBtu (thousand Btu))		**16,462,592.92**
Total Electricity (Grid Purchase) Consumption (kBtu (thousand Btu))		**16,462,592.92**
Is this the total Electricity (Grid Purchase) consumption at this building including all Electricity meters?		☑

Fuel Type: Natural Gas

Meter: Amazon gas meter # 000339090 (therms)
Space(s): Entire Facility

Start Date	End Date	Energy Use (therms)
08/04/2010	09/03/2010	1,061.96
07/06/2010	08/04/2010	1,086.67
06/07/2010	07/06/2010	1,172.34
05/05/2010	06/07/2010	969.59
04/06/2010	05/05/2010	1,167.81
03/06/2010	04/05/2010	1,544.68
02/04/2010	03/05/2010	1,648.33
01/06/2010	02/03/2010	1,629.85
12/05/2009	01/05/2010	1,517.80
11/04/2009	12/04/2009	1,763.00
10/06/2009	11/03/2009	1,421.60

Amazon gas meter # 000339090 Consumption (therms)	**14,983.63**
Amazon gas meter # 000339090 Consumption (kBtu (thousand Btu))	**1,498,363.00**

Meter: PacMed Gas Meter # 000794059 (therms)
Space(s): Entire Facility

Start Date	End Date	Energy Use (therms)
08/04/2010	09/03/2010	0.00
07/06/2010	08/04/2010	0.00
06/06/2010	07/06/2010	377.91
05/06/2010	06/06/2010	701.63
04/06/2010	05/05/2010	942.69
03/06/2010	04/05/2010	1,177.08
02/04/2010	03/05/2010	1,207.61
01/06/2010	02/03/2010	1,143.19
12/05/2009	01/05/2010	1,506.29
11/04/2009	12/04/2009	1,186.00
10/06/2009	11/03/2009	771.70
PacMed Gas Meter # 000794059 Consumption (therms)		**9,014.10**
PacMed Gas Meter # 000794059 Consumption (kBtu (thousand Btu))		**901,410.00**
Total Natural Gas Consumption (kBtu (thousand Btu))		**2,399,773.00**
Is this the total Natural Gas consumption at this building including all Natural Gas meters?		N

Additional Fuels	
Do the fuel consumption totals shown above represent the total energy use of this building? Please confirm there are no additional fuels (district energy, generator fuel oil) used in this facility.	N

On-Site Solar and Wind Energy	
Do the fuel consumption totals shown above include all on-site solar and/or wind power located at your facility? Please confirm that no on-site solar or wind installations have been omitted from this list. All on-site systems must be reported.	N

Total IT Energy from All Required Meters	
Annual Site IT Energy (kWh)	**0.00**
Annual Source IT Energy (kWh)	**0.00**

Certifying Professional

(When applying for the ENERGY STAR, the Certifying Professional must be the same PE or RA that signed and stamped the SEP.)

Name: Brad Wilson Date: 11/23/10

Signature: Brad Wilson

Signature is required when applying for the ENERGY STAR.

Amazon

Requirements for Label Application:

1. Generate an eligible Statement of Energy Performance (SEP), including the Data Checklist.

2. Obtain a stamp and signature on the SEP from a certified Licensed Professional (i.e. Professional Engineer or Registered Architect).

3. Complete the Data Checklist and obtain a signature from the Licensed Professional who verified your SEP.

4. Complete the ENERGY STAR Recognition form.

5. Download and sign a copy of the Letter of Agreement.

6. Mail the following documents to EPA for review:

DO

- Signed Letter of Agreement
- Stamped and signed SEP
- Signed Data Checklist by the Licensed Professional who verified your SEP

FOR YOUR RECORDS ONLY. DO NOT SUBMIT TO EPA.

Please keep this Facility Summary for your own records; do not submit it to EPA. Only the Statement of Energy Performance (SEP), Data Checklist and Letter of Agreement need to be submitted to EPA when applying for the ENERGY STAR.

Facility
Amazon.Com Building
1200 12th Ave. South
Seattle , WA 98144

Facility Owner
WrightRunstad
1201 3rd Avenue
Suite 2700
Seattle, WA 98101
206 447-900

Primary Contact for this Facility
Travis Smith
201 S. Jackson
suite A14
Seattle, WA 98104
206-218-7126
tsmith@WrightRunstad.com

General Information

Amazon.Com Building	
Gross Floor Area Excluding Parking: (ft²)	304,047
Year Built	1930
For 12-month Evaluation Period Ending Date:	September 30, 2010

Facility Space Use Summary

Combined Data Rooms	
Space Type	Data Center
Gross Floor Area(ft²)	3,652
IT Energy Configuration	IT Energy is not currently metered at this facility - Apply estimates.
UPS System Redundancy°	N/A
Cooling Equipment Redundancy°	N/A
Annual Source IT Energy (kBtu)	0

PacMed Medical Office	
Space Type	Medical Office
Gross Floor Area(ft²)	74,624
Number of Workers	150
Weekly operating hours	65
Percent Cooled	100
Percent Heated	100

Tower Office Space	
Space Type	Office
Gross Floor Area(ft²)	161,835
Weekly operating hours	66
Workers on Main Shift	1,126
Number of PCs	1,388
Percent Cooled	50% or more
Percent Heated	50% or more

Vacant Office Space	
Space Type	Office
Gross Floor Area(ft²)	62,856
Weekly operating hours	0
Workers on Main Shift	0
Number of PCs	0
Percent Cooled	50% or more
Percent Heated	50% or more

Landscapers Building	
Space Type	Other - Storage/Shipping/Non-Refrigerated Warehouse
Gross Floor Area(ft²)	1,080
Number of PCs°	N/A
Weekly operating hours°	40
Workers on Main Shift°	N/A

Combined Parking	
Space Type	Parking
Gross Floor Area(ft²)	240,930
Enclosed Floor Area	153,053
Non-Enclosed Floor Area (w/roof)	0
Open Floor Area (w/o roof)	87,877
Weekly Hours of Access	168

Energy Performance Comparison

	Evaluation Periods		Comparisons		
Performance Metrics	**Current** (Ending Date 09/30/2010)	**Baseline** (Ending Date 12/31/2006)	**Rating of 75**	**Target**	**National Average**
Energy Performance Rating	93	84	75	90	50
Energy Intensity					
Site (kBtu/ft²)	67	75	92	73	118
Source (kBtu/ft²)	204	230	280	223	362
Energy Cost					

$/year	$ 324,430.00	$ 378,740.98	$ 445,258.91	$ 354,224.10	$ 575,128.12
$/ft²/year	$ 1.07	$ 1.26	$ 1.46	$ 1.17	$ 1.89
Greenhouse Gas Emissions					
$MtCO_2e$/year	2,278	2,531	3,126	2,487	4,038
$kgCO_2e/ft^2$/year	7	8	10	8	13

More than 50% of your building is defined as Office. Please note that your rating accounts for all of the spaces listed. The National Average column presents energy performance data your building would have if your building had an average rating of 50.

Notes:
o - This attribute is optional.
d - A default value has been supplied by Portfolio Manager.

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Pacific Tower – WATER & SEWER

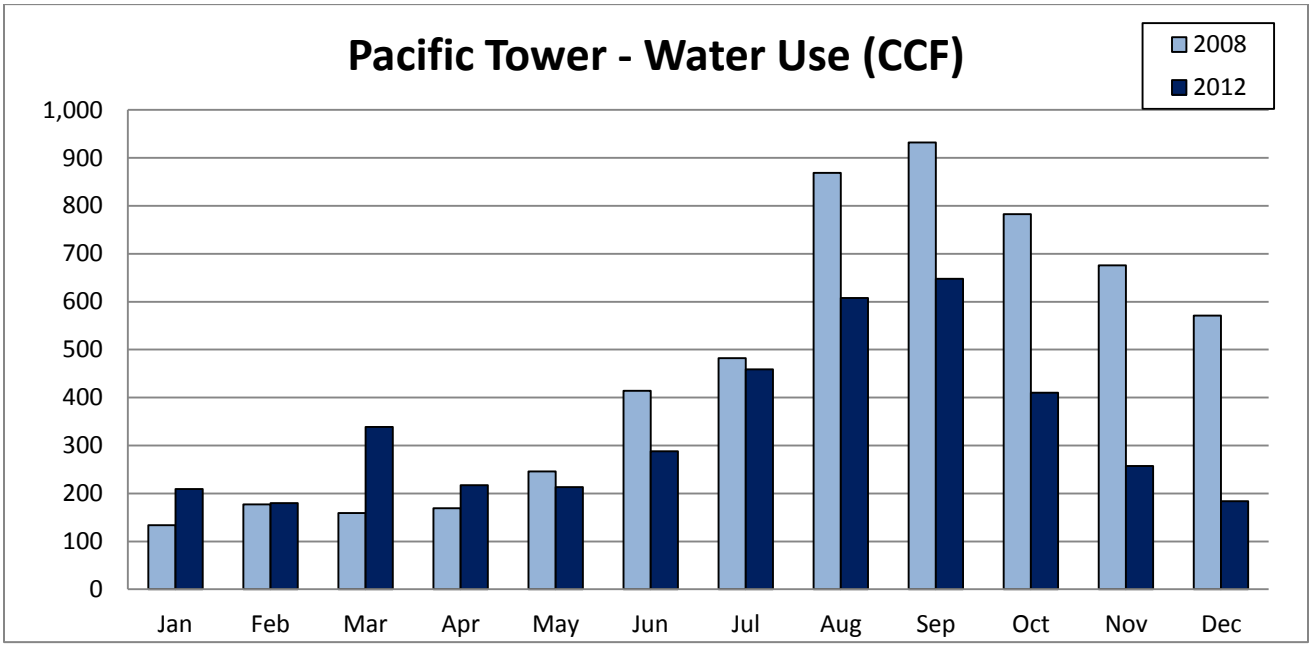
Utility Overview

Water, irrigation and sewage charges were reviewed for trends and costs. Water and sewage services are both supplied City of Seattle. Usage for the main domestic water meter (#NEP-31949583-2) from 2008 were documented and then compared to 2012 to show the difference from fully occupied to an almost empty. This meter also supplies some irrigation and the make-up water for the cooling tower serving the entire building. The irrigation systems and the make-up water system all have "deduct meters" that the utility provider uses to calculate the difference between water used that will end up in the sewage system and water used that either goes into the ground (irrigation) or evaporates into the air (cooling tower make-up water). The other existing meters which just serve the fire mains or the irrigation systems are not much different from 2008 usage, so just 2012 usage and costs were analyzed.

Water meter #NEP-31953680-2 was set up for "future expansion" and costs about $160 per month in customer service fees, but this meter has never had any usage since being installed.

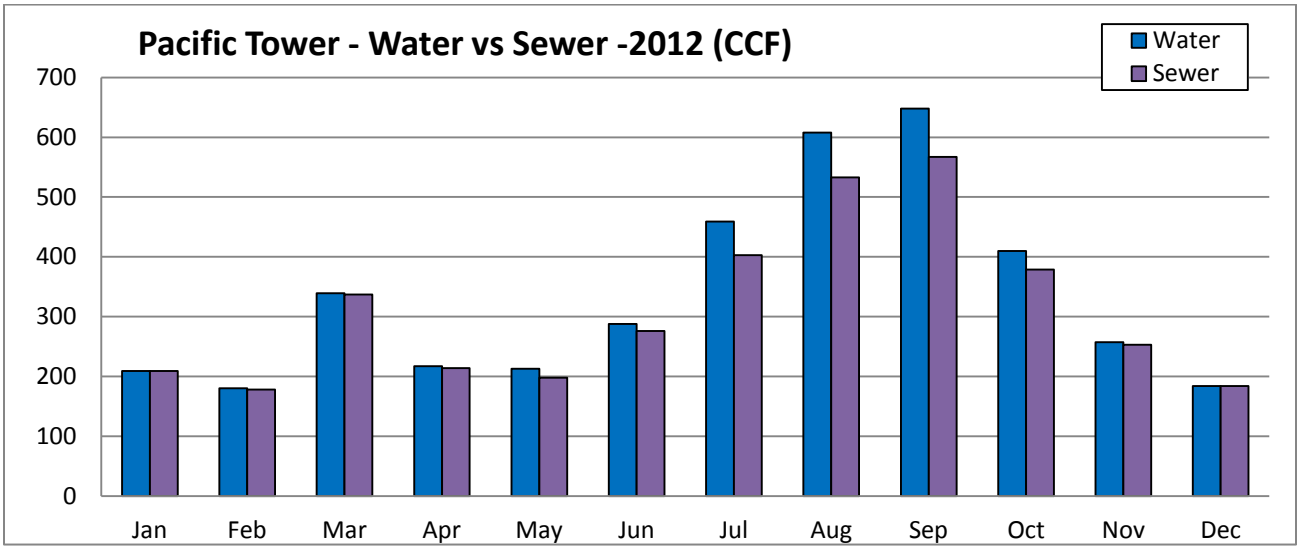
The occupancy of the building in the future may be different from the 2008 tenant (Amazon), in that Amazon had a kitchen service for their employees and future tenants may not have that service.

The chart below shows water use in CCF comparing 2008 with 2012 and shows that about 1,600 more CCF per year were used in 2008 when the building was full as compared to 2012 when only ½ of the basement was occupied. The 1,600 CCF increase resulted in a $17,000 increase in costs.

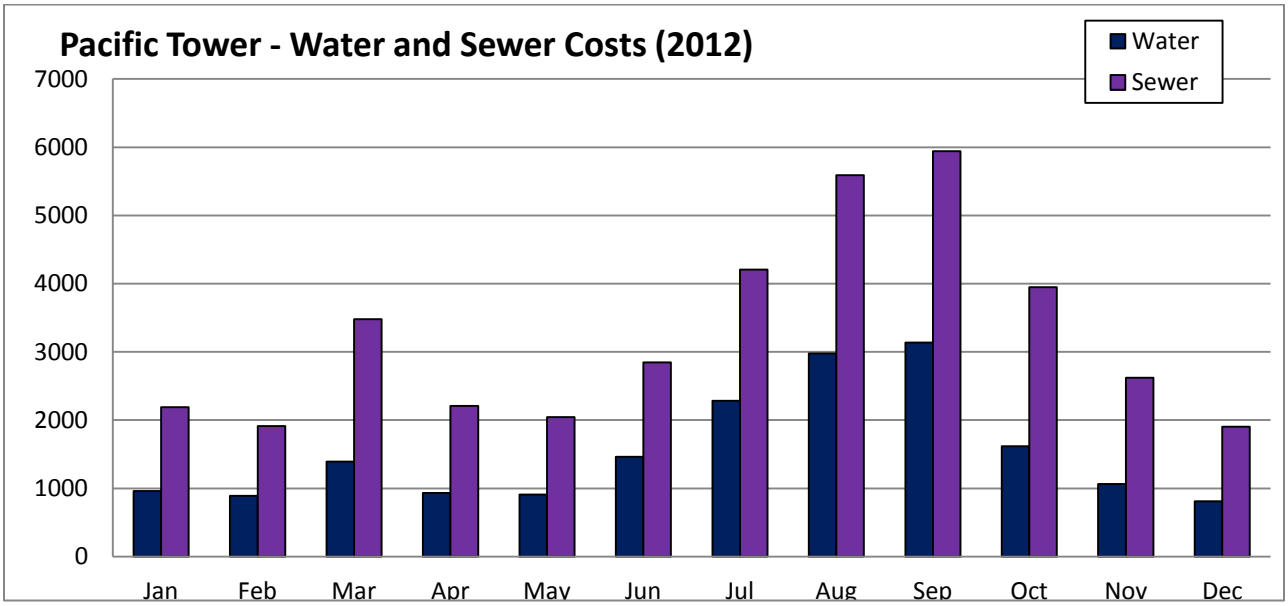


WATER & SEWER

The next chart shows the difference in the usage that you are billed for in water and sewage for your main domestic water meter. As you can see, they are calculating that your domestic water use that ends up in the sewer goes up dramatically in the same way your over-all water use goes up with the increase of irrigation and cooling tower make-up water increases during summer months. Since domestic water use should stay relatively constant throughout the year, and just irrigation and cooling tower make-up use should rise and fall dramatically during summer months, it is recommended to confirm that all irrigation services being served from this meter as well as the cooling tower make-up water are being metered accurately and the data being delivered to the City of Seattle is accurate.

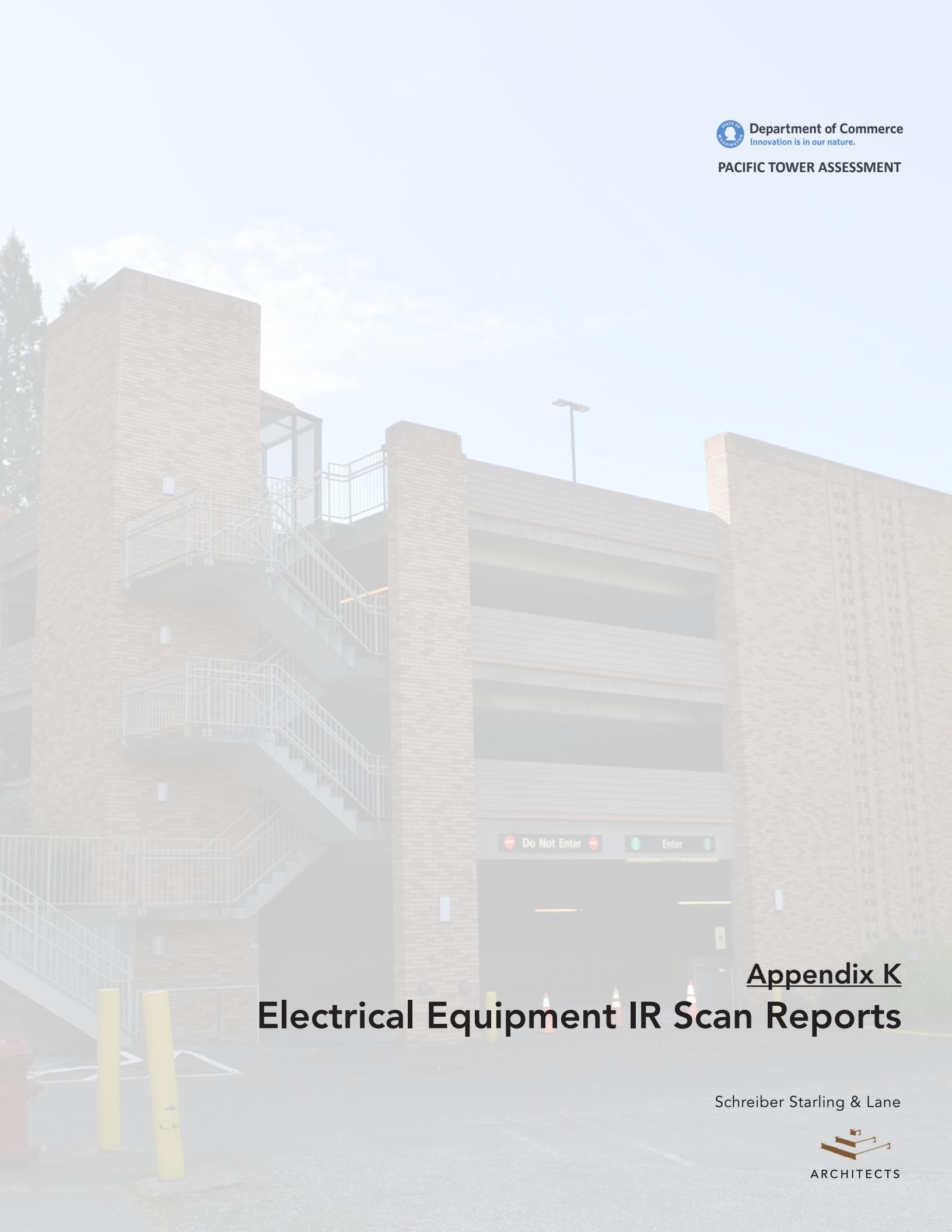


This next chart shows the cost difference between water and sewer. As you can see, sewage costs ($35,500/yr) are more than twice as much per CCF as water costs ($18,400). It is for this reason that it is very important that the deduct meters are calibrated and accurate so that you are not paying the high sewage prices for water that is not going into the sewage system.



Department of Commerce
Innovation is in our nature.

PACIFIC TOWER ASSESSMENT



Appendix K
Electrical Equipment IR Scan Reports

Schreiber Starling & Lane

ARCHITECTS

Colbert Infrared Services

Thermal Trend

Historical Test Status Matrix

Site: WR- AmazonDotCom Building

Location\Equipment	Insp. #7 08/12/2009 Open Prob	Insp. #7 Status	Insp. #6 05/27/2009 Open Prob	Insp. #6 Status	Insp. #5 04/09/2007 Open Prob	Insp. #5 Status	Insp. #4 08/29/2005 Open Prob	Insp. #4 Status	Insp. #3 09/28/2000 Open Prob	Insp. #3 Status
BROWN SHED-LANDSCAPING		Not Tested		Tested		Not Tested		Not Tested		Not Tested
UNMARKED PNL		Not Tested		Tested		Not Tested		Not Tested		Not Tested
XFMR ENCLOSURE OUTSIDE		Not Tested		Tested		Not Tested		Not Tested		Not Tested
EAST PARKING GARAGE		Not Tested		Tested		Tested		Tested		Not Tested
ELECTRICAL ROOM		Not Tested		Tested		Not Tested		Not Tested		Not Tested
PNL PGN2		Not Tested		Tested		Tested		Tested		Not Tested
PNL PGN4		Not Tested		Tested		Tested		Tested		Not Tested
PNL PGX2		Not Tested		Tested		Tested		Tested		Not Tested
PNL PGX4		Not Tested		Tested		Tested		Tested		Not Tested
XFMR 15 KVA (UP)		Not Tested		Tested		Tested		Tested		Not Tested
ELEVATOR EQUIPMENT ROOM		Not Tested		Tested		Not Tested		Not Tested		Not Tested
DISC-ELEVATOR #8		Not Tested		Tested		Not Tested		Not Tested		Not Tested
ELEVATOR #8 CNTL PNL		Not Tested		Tested		Not Tested		Not Tested		Not Tested
EAST SUB BASEMENT		Tested		Tested		Tested		Tested		Not Tested
EF1 DISC		Not Tested		Tested		Not Tested		Tested		Not Tested
MCC - SBB4		Tested		Tested		Tested		Tested		Not Tested
RF-2, RETURN AIR FAN		Tested	*	Tested		Not Tested		Not Tested		Not Tested
SF-1, SUPPLY AIR FAN		Tested	*	Tested		Not Tested		Not Tested		Not Tested
PNL SBB2		Not Tested		Tested		Tested		Tested		Not Tested
SF1 DISC		Not Tested		Tested		Not Tested		Tested		Not Tested
XFMR 15 KVA	*	Tested	*	Tested		Tested	*	Tested		Not Tested
EMERGENCY GENERATOR ELECTRICAL ROOM		Not Tested		Tested		Not Tested		Not Tested		Not Tested
ATS		Not Tested		Tested		Not Tested		Not Tested		Not Tested
EMERGENCY GENERATOR SWBD		Not Tested		Tested		Not Tested		Not Tested		Not Tested
OVERHEAD XFMR		Not Tested		Tested		Not Tested		Not Tested		Not Tested
PNL GAX4		Not Tested		Tested		Not Tested		Not Tested		Not Tested
PNL GX2		Not Tested		Tested		Not Tested		Not Tested		Not Tested
FACILTYS BUILDING		Not Tested		Not Tested		Not Tested		Not Tested		Not Tested
BASEMENT		Not Tested		Not Tested		Not Tested		Not Tested		Not Tested
PANEL EB2		Not Tested		Not Tested		Not Tested		Not Tested		Not Tested
XFMR FOR PANEL EB2		Not Tested		Not Tested		Not Tested		Not Tested		Not Tested
MAIN BLDG 1 FL		Tested		Tested		Tested		Tested		Tested
1ST FLOOR ROOF		Not Tested		Tested		Tested		Not Tested		Not Tested
CHILLER #1 CONTROL PANEL		Not Tested		Tested		Tested		Not Tested		Not Tested
CHILLER #2 CONTROL PANEL		Not Tested		Tested		Tested		Not Tested		Not Tested
CHILLER CH1 DISC		Not Tested		Tested		Tested		Not Tested		Not Tested
CU-1 DISC		Not Tested		Tested		Tested		Not Tested		Not Tested
CU-2 DISC		Not Tested		Tested		Tested		Not Tested		Not Tested
DISC-CHILLER CH2		Not Tested		Tested		Tested		Not Tested		Not Tested
AHU-1E ROOM		Not Tested		Tested		Tested		Not Tested		Not Tested
CONTROL PANEL		Not Tested		Tested		Tested		Not Tested		Not Tested
DISCONNECT		Not Tested		Tested		Tested		Not Tested		Not Tested
AHU-1N ROOM		Not Tested		Tested		Tested		Not Tested		Not Tested
CONTROL PANEL		Not Tested		Tested		Tested		Not Tested		Not Tested
DISCONNECT		Not Tested		Tested		Tested		Not Tested		Not Tested
AHU-1W ROOM		Not Tested		Tested		Tested		Not Tested		Not Tested
CONTROL PANEL		Not Tested		Tested		Tested		Not Tested		Not Tested
DISCONNECT		Not Tested		Tested		Tested		Not Tested		Not Tested
AIR HANDLER RM 1EA		Not Tested		Tested		Tested		Tested		Tested
CONTROL PANEL		Not Tested		Tested		Tested		Not Tested		Not Tested
PNL. 1ME41		Not Tested		Tested		Tested		Tested		Tested
ELECT CLOSET 1202		Not Tested		Not Tested		Tested		Not Tested		Not Tested
PANEL 1A2A		Not Tested		Not Tested		Tested		Not Tested		Not Tested
ELECT CLOSET 1604		Not Tested		Not Tested		Tested		Not Tested		Not Tested
PANEL 1B2A		Not Tested		Not Tested		Tested		Not Tested		Not Tested
PANEL 1B2B		Not Tested		Not Tested		Tested		Not Tested		Not Tested
ELECT CLOSET 1813		Not Tested		Tested		Tested		Tested		Tested
PANEL 1C2		Not Tested		Tested		Tested	*	Tested		Tested
PANEL 1C2A		Not Tested		Tested		Tested		Tested		Tested
ELECT RM 1101		Not Tested		Not Tested		Tested		Not Tested		Not Tested
BUS DISCONNECT 1A4-250 AMP		Not Tested		Not Tested		Tested		Not Tested		Not Tested
BUS RISER		Not Tested		Not Tested		Tested		Not Tested		Not Tested
PANEL 1A2		Not Tested		Not Tested		Tested		Not Tested		Not Tested

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Colbert Infrared Services, Inc. 14900 Interurban Ave. S #230 Seattle, WA 98168 Phone: 206 568-4431

Colbert Infrared Services

Thermal Trend

Historical Test Status Matrix

Site: WR- AmazonDotCom Building

Location\Equipment	Insp. #7 08/12/2009 Open Prob	Insp. #7 Status	Insp. #6 05/27/2009 Open Prob	Insp. #6 Status	Insp. #5 04/09/2007 Open Prob	Insp. #5 Status	Insp. #4 08/29/2005 Open Prob	Insp. #4 Status	Insp. #3 09/28/2000 Open Prob	Insp. #3 Status
PANEL 1A2		Not Tested		Not Tested		Tested		Not Tested		Not Tested
PANEL 1A4		Not Tested		Not Tested		Tested		Not Tested		Not Tested
PANEL 1A4		Not Tested		Not Tested		Tested		Not Tested		Not Tested
PANEL 1AY2		Not Tested		Not Tested		Tested		Not Tested		Not Tested
PNL GA2		Not Tested		Not Tested		Tested		Not Tested		Not Tested
XFMR		Not Tested		Not Tested		Tested		Not Tested		Not Tested
ELECT RM 1402		Tested		Tested		Tested		Tested		Tested
BUS RISER		Not Tested		Tested		Tested		Tested		Tested
PNL. 1D21		Not Tested		Tested		Tested		Tested		Tested
PNL. 1L41		Not Tested		Tested		Tested		Tested		Tested
PNL. 1P21		Not Tested		Tested		Tested		Tested		Tested
PNL. 1P22		Tested	*	Tested	*	Tested	*	Tested		Tested
PNL. 1P23		Not Tested		Tested		Tested		Tested		Tested
XFMR DISC		Not Tested		Tested		Tested		Tested		Not Tested
XFMR T-1 112.5 KVA		Not Tested		Tested		Tested		Tested		Not Tested
ELECT RM 1705		Not Tested		Not Tested		Tested		Not Tested		Not Tested
BUS DISCONNECT PNL 1B4		Not Tested		Not Tested		Tested		Not Tested		Not Tested
BUS RISER		Not Tested		Not Tested		Tested		Not Tested		Not Tested
DISCONNECT HP-1 & 2		Not Tested		Not Tested		Tested		Not Tested		Not Tested
DISCONNECT UNMARKED SQUARE D		Not Tested		Not Tested		Tested		Not Tested		Not Tested
PNL 1B2		Not Tested		Not Tested		Tested		Not Tested		Not Tested
PNL 1B2		Not Tested		Not Tested		Tested		Not Tested		Not Tested
PNL 1B4		Not Tested		Not Tested		Tested		Not Tested		Not Tested
PNL 1BY2		Not Tested		Not Tested		Tested		Not Tested		Not Tested
PNL 1BY4		Not Tested		Not Tested		Tested		Not Tested		Not Tested
TRANSFORMER 150 KVA		Not Tested		Not Tested		Tested		Not Tested		Not Tested
ELECT RM 1804		Not Tested		Tested		Tested		Tested		Tested
BUS RISER		Not Tested		Tested		Tested		Tested		Tested
BUS RISER DISCONNECT		Not Tested		Tested		Not Tested		Not Tested		Not Tested
IA2 DISC.		Not Tested		Tested		Tested		Tested		Tested
PNL. 1MA41		Not Tested		Tested		Tested		Tested		Tested
PNL. 1MA42		Not Tested		Tested		Tested		Tested		Tested
PNL. 1MA43		Not Tested		Tested		Tested		Tested		Tested
PNL. IA2		Not Tested		Tested		Tested		Tested		Tested
PNL. IA4		Not Tested		Tested		Tested		Tested		Tested
XFMR 112.5 KVA		Not Tested		Tested		Tested		Tested		Not Tested
ELECT RM 1904		Not Tested		Tested		Tested		Tested		Tested
BUS RISER		Not Tested		Tested		Tested		Tested		Tested
PNL. IB2		Not Tested		Tested		Tested		Tested		Tested
PNL. IB4		Not Tested		Tested	*	Tested	*	Tested		Tested
PNL. IBY2		Not Tested		Tested		Tested		Tested		Tested
PNL. IBY4		Not Tested		Tested		Tested		Tested		Tested
XFMR 150 KVA		Not Tested		Tested		Tested		Tested		Not Tested
XFMR T-12 30 KVA		Not Tested		Tested		Tested		Tested		Not Tested
MAIN BLDG 10 FL		Not Tested		Tested		Tested		Tested		Tested
AHU-10E ROOM		Not Tested		Tested		Tested		Not Tested		Not Tested
CONTROL PANEL		Not Tested		Tested		Tested		Not Tested		Not Tested
DISCONNECT		Not Tested		Tested		Tested		Not Tested		Not Tested
AHU-10W ROOM		Not Tested		Tested		Tested		Not Tested		Not Tested
CONTROL PANEL		Not Tested		Tested		Tested		Not Tested		Not Tested
DISCONNECT		Not Tested		Tested		Tested		Not Tested		Not Tested
CHILLER RM		Not Tested		Tested		Tested		Tested		Tested
DISC-CHILLER #1		Not Tested		Tested		Not Tested		Not Tested		Not Tested
DISC-CHILLER #2		Not Tested		Tested		Not Tested		Not Tested		Not Tested
HVAC DRIVE CT MOTOR #1		Not Tested		Not Tested		Tested		Tested		Tested
HVAC DRIVE CT MOTOR #2		Not Tested		Tested		Tested		Tested		Tested
HVAC DRIVE EF#2		Not Tested		Tested		Tested		Tested		Tested
HVAC DRIVE SF#2		Not Tested		Tested		Tested		Tested		Tested
MCC 10		Not Tested		Tested		Tested		Tested		Tested
PNL. 4F10A		Not Tested		Tested		Tested		Tested		Tested
PNL. 4F10B		Not Tested		Tested		Tested		Tested		Tested
ELECT RM 10402		Not Tested		Tested		Tested		Tested		Tested
ATS #E1041		Not Tested		Tested		Tested		Tested		Tested

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Colbert Infrared Services

Thermal Trend

Historical Test Status Matrix

Site: WR- AmazonDotCom Building

Location\Equipment	Insp. #7 08/12/2009 Open Prob	Insp. #7 Status	Insp. #6 05/27/2009 Open Prob	Insp. #6 Status	Insp. #5 04/09/2007 Open Prob	Insp. #5 Status	Insp. #4 08/29/2005 Open Prob	Insp. #4 Status	Insp. #3 09/28/2000 Open Prob	Insp. #3 Status
BUS RISER		Not Tested		Tested		Tested		Tested		Tested
PNL. 10D21		Not Tested		Tested		Tested		Tested		Tested
PNL. 10D41		Not Tested		Tested		Tested		Tested		Tested
PNL. 10P21		Not Tested		Tested		Tested		Tested		Tested
PNL. E1041		Not Tested		Tested		Tested		Tested		Tested
XFMR 112.5 KVA		Not Tested		Tested		Tested		Tested		Not Tested
XFMR DISC		Not Tested		Tested		Tested		Tested		Not Tested
ELECTRICAL ROOM #10106		Not Tested		Tested		Not Tested		Not Tested		Not Tested
DISC-LEFT		Not Tested		Tested		Not Tested		Not Tested		Not Tested
DISC-RIGHT		Not Tested		Tested		Not Tested		Not Tested		Not Tested
ELEVATOR #3 & 4 RMS.		Not Tested		Tested		Tested		Tested		Tested
ELEVATOR 3 CONTROL CAB.		Not Tested		Tested		Tested		Tested		Tested
ELEVATOR 4 CONTROL CAB.		Not Tested		Tested		Tested		Tested		Tested
MAIN BLDG 11 FL		Not Tested		Tested		Tested		Tested		Tested
AHU-11E ROOM		Not Tested		Tested		Tested		Not Tested		Not Tested
CONTROL PANEL		Not Tested		Tested		Tested		Not Tested		Not Tested
DISCONNECT		Not Tested		Tested		Tested		Not Tested		Not Tested
AHU-11W ROOM		Not Tested		Tested		Tested		Not Tested		Not Tested
CONTROL PANEL		Not Tested		Tested		Tested		Not Tested		Not Tested
DISCONNECT		Not Tested		Tested		Tested		Not Tested		Not Tested
ELECT RM 11106		Not Tested		Tested		Not Tested		Tested		Tested
UNMARKED PNL.		Not Tested		Tested		Not Tested		Tested		Tested
ELECT RM 11307		Not Tested		Not Tested		Not Tested		Tested		Not Tested
CIRCUIT BREAKER 125 C-H		Not Tested		Not Tested		Not Tested		Tested		Not Tested
PNL 11A2		Not Tested		Not Tested		Not Tested		Tested		Not Tested
PNL 11A2E		Not Tested		Not Tested		Not Tested		Tested		Not Tested
PNL 11A4		Not Tested		Not Tested		Not Tested		Tested		Not Tested
PNL 11AW2		Not Tested		Not Tested		Not Tested		Tested		Not Tested
PNL 11AW2-B		Not Tested		Not Tested		Not Tested		Tested		Not Tested
PNL 11BX2		Not Tested		Not Tested		Not Tested		Tested		Not Tested
PNL 11BX4		Not Tested		Not Tested		Not Tested		Tested		Not Tested
PNL M		Not Tested		Not Tested		Not Tested		Tested		Not Tested
TRANSFORMER 112.5 KVA SYLVANIA		Not Tested		Not Tested		Not Tested		Tested		Not Tested
TRANSFORMER 45 KVA		Not Tested		Not Tested		Not Tested		Tested		Not Tested
ELECT RM 11402		Not Tested		Tested		Tested		Tested		Tested
PNL. 10D42		Not Tested		Tested		Tested		Tested		Tested
PNL. 10D43		Not Tested		Tested		Tested		Tested		Tested
MAIN BLDG 12 FL		Not Tested		Tested		Tested		Tested		Tested
EAST ROOF		Not Tested		Tested		Not Tested		Not Tested		Not Tested
DISC-EF #3		Not Tested		Tested		Not Tested		Not Tested		Not Tested
DISC-SF #3	*	Not Tested	*	Tested		Not Tested		Not Tested		Not Tested
DISC-SF #3(2)		Not Tested		Not Tested		Not Tested		Not Tested		Not Tested
VF DRIVE RM.		Not Tested		Tested		Tested		Tested		Tested
HVAC DRIVE EF#3		Not Tested		Tested		Tested		Tested		Tested
HVAC DRIVE EF#4		Not Tested		Tested		Tested		Tested		Tested
HVAC DRIVE SF#3		Not Tested		Tested		Tested		Tested		Tested
HVAC DRIVE SF#4		Not Tested		Tested		Tested		Tested		Tested
PNL. 12P21		Not Tested		Tested		Tested		Tested		Tested
WEST ROOF		Not Tested		Tested		Tested		Tested		Not Tested
DISC-EF #4		Not Tested		Tested		Not Tested		Not Tested		Not Tested
SF #4 DISC		Not Tested		Tested	*	Tested	*	Tested		Not Tested
MAIN BLDG 14 FL		Tested		Tested		Tested		Tested		Tested
ELEV RM		Not Tested		Tested		Tested		Tested		Tested
ATS #13		Not Tested		Tested		Tested		Tested	*	Tested
DIST SWBD 14BW4		Not Tested		Tested		Tested		Tested		Tested
ELEVATOR #2 DISC.		Not Tested		Tested		Tested		Tested	*	Tested
ELEVATOR #1 BREAKER		Not Tested		Tested		Not Tested		Not Tested		Not Tested
ELEVATOR #1 CONTROL CAB.		Not Tested		Tested		Tested		Tested		Tested
ELEVATOR #2 BREAKER		Not Tested		Tested		Not Tested		Not Tested		Not Tested
ELEVATOR #2 CONTROL CAB.		Not Tested		Tested	*	Not Tested	*	Tested		Tested
ELEVATOR #6 BREAKER		Not Tested		Tested		Not Tested		Not Tested		Not Tested
ELEVATOR #6 CONTROL CAB.		Not Tested		Tested		Tested		Tested		Tested
TRANSFORMER 14BW4-A		Not Tested		Tested		Tested		Tested		Not Tested

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XFMR 75 KVA		Not Tested		Tested		Tested		Tested		Not Tested
HALLWAY		Tested		Tested		Tested		Tested		Not Tested
PNL 14A2		Not Tested		Tested		Tested		Tested		Tested
PNL 14A4		Not Tested		Tested		Tested		Tested		Tested
PNL 14BW2		Not Tested		Tested		Tested		Tested		Tested
XFMR 15 KVA		Tested	*	Tested		Tested		Tested		Not Tested
XFMR 30 KVA		Not Tested		Tested		Tested		Tested		Not Tested
MAIN BLDG 2 FL		Tested		Tested		Tested		Tested		Tested
AHU-2E ROOM		Not Tested		Tested		Tested		Not Tested		Not Tested
CONTROL PANEL		Not Tested		Tested		Tested		Not Tested		Not Tested
DISCONNECT		Not Tested		Tested		Tested		Not Tested		Not Tested
AHU-2N ROOM		Not Tested		Tested		Tested		Not Tested		Not Tested
CONTROL PANEL		Not Tested		Tested		Tested		Not Tested		Not Tested
DISCONNECT		Not Tested		Tested		Tested		Not Tested		Not Tested
AHU-2W ROOM		Not Tested		Tested		Tested		Not Tested		Not Tested
CONTROL PANEL		Not Tested		Tested		Tested		Not Tested		Not Tested
DISCONNECT		Not Tested		Tested		Tested		Not Tested		Not Tested
ELECT CLOSET 2200		Not Tested		Not Tested		Tested		Not Tested		Not Tested
PANEL 2A2-A		Not Tested		Not Tested		Tested		Not Tested		Not Tested
PANEL 2A2-B		Not Tested		Not Tested		Tested		Not Tested		Not Tested
ELECT RM 2101		Not Tested		Not Tested		Tested		Not Tested		Not Tested
BUS RISER		Not Tested		Not Tested		Tested		Not Tested		Not Tested
PANEL 2A4		Not Tested		Not Tested		Tested		Not Tested		Not Tested
ELECT RM 2402		Not Tested		Tested		Tested		Tested		Tested
BUS RISER		Not Tested		Tested		Tested		Tested		Tested
PNL. 2D21		Not Tested		Tested		Tested		Tested		Tested
PNL. 2L41		Not Tested		Tested		Tested		Tested		Tested
PNL. 2P21		Not Tested		Tested		Tested		Tested		Tested
PNL. 2P22		Not Tested		Tested		Tested		Tested		Tested
PNL. 2P23		Not Tested		Tested		Tested		Tested		Tested
XFMR DISC		Not Tested		Tested		Tested		Tested		Not Tested
XFMR T-2 112.5 KVA		Not Tested		Tested		Tested		Tested		Not Tested
ELECT RM 2602		Not Tested		Not Tested		Tested		Not Tested		Not Tested
BREAKER 400 AMP		Not Tested		Not Tested		Tested		Not Tested		Not Tested
MANUAL TRANSFER SWITCH # 9		Not Tested		Not Tested		Tested		Not Tested		Not Tested
PNL 2D2		Not Tested		Not Tested		Tested		Not Tested		Not Tested
PNL 2DW2		Not Tested		Not Tested		Tested		Not Tested		Not Tested
POWER PANEL 2DW4		Not Tested		Not Tested		Tested		Not Tested		Not Tested
TRANSFORMER 100 KVA SYLVANIA		Not Tested		Not Tested		Tested		Not Tested		Not Tested
TRANSFORMER 150 KVA TIERNEY		Not Tested		Not Tested		Tested		Not Tested		Not Tested
ELECT RM 2609		Not Tested		Not Tested		Tested		Not Tested		Not Tested
PNL 2B2		Not Tested		Not Tested		Tested		Not Tested		Not Tested
PNL 2B2A		Not Tested		Not Tested		Tested		Not Tested		Not Tested
PNL 2D 2		Not Tested		Not Tested		Tested		Not Tested		Not Tested
ELECT RM 2804		Not Tested		Tested		Tested		Not Tested		Not Tested
BUS RISER		Not Tested		Tested		Tested		Not Tested		Not Tested
DISC LEFT		Not Tested		Tested		Tested		Not Tested		Not Tested
DISC RIGHT		Not Tested		Tested		Tested		Not Tested		Not Tested
ELECT RM 2904		Not Tested		Tested		Tested		Tested		Not Tested
BUS RISER		Not Tested		Tested		Tested		Tested		Not Tested
DISC LEFT		Not Tested		Tested		Tested		Not Tested		Not Tested
DISC RIGHT		Not Tested		Tested		Tested		Not Tested		Not Tested
DISC-BUS RISER		Not Tested		Tested		Not Tested		Not Tested		Not Tested
KITCHEN OFFICE		Tested		Tested		Tested		Tested		Tested
PNL. 3KP21		Tested	*	Tested		Tested		Tested		Tested
PNL. 3KP22		Tested	*	Tested		Tested		Tested		Tested
PNL. 3KP41		Not Tested		Tested		Tested		Tested		Tested
MAIN BLDG 3 FL		Not Tested		Tested		Tested		Tested		Tested
AHU-3E ROOM		Not Tested		Tested		Tested		Not Tested		Not Tested
CONTROL PANEL		Not Tested		Tested		Tested		Not Tested		Not Tested
DISCONNECT		Not Tested		Tested		Tested		Not Tested		Not Tested
AHU-3N ROOM		Not Tested		Tested		Tested		Not Tested		Not Tested
CONTROL PANEL		Not Tested		Tested		Tested		Not Tested		Not Tested

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DISCONNECT		Not Tested		Tested		Tested		Not Tested		Not Tested
AHU-3W ROOM		Not Tested		Tested		Tested		Not Tested		Not Tested
CONTROL PANEL		Not Tested		Tested		Tested		Not Tested		Not Tested
DISCONNECT		Not Tested		Tested		Tested		Not Tested		Not Tested
ELECT RM 3402		Not Tested		Tested		Tested		Tested		Tested
BUS RISER		Not Tested		Tested		Tested		Tested		Tested
PNL. 3D21		Not Tested		Tested		Tested		Tested		Tested
PNL. 3L41		Not Tested		Tested		Tested		Tested		Tested
PNL. 3P21		Not Tested		Tested		Tested		Tested		Tested
PNL. 3P22		Not Tested		Tested		Tested		Tested		Tested
PNL. 3P23		Not Tested		Tested		Tested		Tested		Tested
XFMR DISC		Not Tested		Tested		Tested		Tested		Not Tested
XFMR T-3 112.5 KVA		Not Tested		Tested		Tested		Tested		Not Tested
ELECT RM 3804		Not Tested		Not Tested		Tested		Tested		Tested
BUS RISER		Not Tested		Not Tested		Tested		Tested		Tested
PNL. 3MA41		Not Tested		Not Tested		Tested		Tested		Tested
PNL. 3MA42		Not Tested		Not Tested		Tested		Tested		Tested
ELECT RM 3904		Not Tested		Tested		Tested		Tested		Tested
ATS #12		Not Tested		Tested		Tested		Tested		Tested
ATS #5		Not Tested		Tested		Tested		Tested		Tested
BUS RISER		Not Tested		Tested		Tested		Tested		Tested
PNL. 3MB41		Not Tested		Tested		Tested		Tested		Tested
PNL. 3MB42		Not Tested		Tested		Tested		Tested		Tested
EVEVATOR RM 3905A		Not Tested		Tested		Tested		Tested		Not Tested
CAR 7 CONT PNL		Not Tested		Tested		Tested		Tested		Not Tested
DISC		Not Tested		Tested		Tested		Tested		Not Tested
PNL 3BW4		Not Tested		Tested		Tested		Tested		Not Tested
XFMR		Not Tested		Tested		Tested		Tested		Not Tested
XFMR 45 KVA		Not Tested		Tested		Tested		Tested		Not Tested
KITCHEN ROOF		Not Tested		Tested		Tested		Not Tested		Not Tested
CONTROL PANEL		Not Tested		Tested		Tested		Not Tested		Not Tested
DISC #1		Not Tested		Tested		Tested		Not Tested		Not Tested
DISC #2		Not Tested		Tested		Tested		Not Tested		Not Tested
DISC #3		Not Tested		Tested		Tested		Not Tested		Not Tested
MAIN BLDG 4 FL		Not Tested		Tested		Tested		Tested		Tested
AHU-4E ROOM		Not Tested		Tested		Tested		Not Tested		Not Tested
CONTROL PANEL		Not Tested		Tested		Tested		Not Tested		Not Tested
DISCONNECT		Not Tested		Tested		Tested		Not Tested		Not Tested
AHU-4N ROOM		Not Tested		Tested		Tested		Not Tested		Not Tested
CONTROL PANEL		Not Tested		Tested		Tested		Not Tested		Not Tested
DISCONNECT		Not Tested		Tested		Tested		Not Tested		Not Tested
AHU-4W ROOM		Not Tested		Tested		Tested		Not Tested		Not Tested
CONTROL PANEL		Not Tested		Tested		Tested		Not Tested		Not Tested
DISCONNECT		Not Tested		Tested		Tested		Not Tested		Not Tested
ELECT RM 4402		Not Tested		Tested		Tested		Tested		Tested
BUS RISER		Not Tested		Tested		Tested		Tested		Tested
PNL. 4D21		Not Tested		Tested		Tested		Tested		Tested
PNL. 4L41		Not Tested		Tested		Tested		Tested		Tested
PNL. 4P21		Not Tested		Tested		Tested		Tested		Tested
PNL. 4P22		Not Tested		Tested		Tested		Tested		Tested
PNL. 4P23		Not Tested		Tested		Tested		Tested		Tested
XFMR DISC		Not Tested		Tested		Tested		Tested		Not Tested
XFMR T-4 112.5 KVA		Not Tested		Tested		Tested		Tested		Not Tested
ELECT RM 4804		Not Tested		Tested		Tested		Not Tested		Not Tested
BUS RISER		Not Tested		Tested		Not Tested		Not Tested		Not Tested
DISC LEFT		Not Tested		Tested		Tested		Not Tested		Not Tested
DISC RIGHT		Not Tested		Tested		Tested		Not Tested		Not Tested
ELECT RM 4904		Not Tested		Tested		Tested		Not Tested		Not Tested
BUS RISER		Not Tested		Tested		Tested		Not Tested		Not Tested
DISC LEFT		Not Tested		Tested		Tested		Not Tested		Not Tested
DISC RIGHT		Not Tested		Tested		Tested		Not Tested		Not Tested
MAIN BLDG 5 FL		Not Tested		Tested		Tested		Tested		Tested
AHU-5E ROOM		Not Tested		Tested		Tested		Not Tested		Not Tested

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CONTROL PANEL		Not Tested		Tested		Tested		Not Tested		Not Tested
DISCONNECT		Not Tested		Tested		Tested		Not Tested		Not Tested
AHU-5N ROOM		Not Tested		Tested		Tested		Not Tested		Not Tested
CONTROL PANEL		Not Tested		Tested		Tested		Not Tested		Not Tested
DISCONNECT		Not Tested		Tested		Tested		Not Tested		Not Tested
AHU-5W ROOM		Not Tested		Tested		Tested		Not Tested		Not Tested
CONTROL PANEL		Not Tested		Tested		Tested		Not Tested		Not Tested
DISCONNECT		Not Tested		Tested		Tested		Not Tested		Not Tested
ELECT RM 5402		Not Tested		Tested		Tested		Tested		Tested
BUS RISER		Not Tested		Tested		Tested		Tested		Tested
PNL. 2F5-A		Not Tested		Tested		Tested		Tested		Tested
PNL. 4F5-A		Not Tested		Tested		Tested		Tested		Tested
PNL. 4F5-B		Not Tested		Tested		Tested		Tested		Tested
PNL. 5P21		Not Tested		Tested		Tested		Tested		Tested
PNL. 5P22		Not Tested		Tested		Tested		Tested		Tested
PNL. 5P23		Not Tested		Tested		Tested		Tested		Tested
PNL. E2-5		Not Tested		Tested		Tested		Tested		Tested
PNL. E4-5		Not Tested		Tested	*	Tested	*	Tested		Tested
XFMR (UP 2)		Not Tested		Tested		Tested		Tested		Not Tested
XFMR (UP)		Not Tested		Tested		Tested		Tested		Not Tested
XFMR T-5 75 KVA		Not Tested		Tested		Tested		Tested		Not Tested
ELECT RM 5804		Not Tested		Tested		Tested		Tested		Tested
ATS #9		Not Tested		Tested		Tested		Tested		Tested
BUS RISER		Not Tested		Tested		Tested		Tested		Tested
PNL. 5MA41		Not Tested		Tested		Tested		Tested		Tested
PNL. 5MA42		Not Tested		Tested		Tested		Tested		Tested
ELECT RM 5904		Not Tested		Tested		Tested		Tested		Tested
BUS RISER		Not Tested		Tested		Tested		Tested		Tested
PNL. 5MB41		Not Tested		Tested		Tested		Tested		Tested
PNL. 5MB42		Not Tested		Tested		Tested		Tested		Tested
MAIN BLDG 6 FL		Not Tested		Tested		Tested		Tested		Tested
AHU-6E ROOM		Not Tested		Tested		Tested		Not Tested		Not Tested
CONTROL PANEL		Not Tested		Tested		Tested		Not Tested		Not Tested
DISCONNECT		Not Tested		Tested		Tested		Not Tested		Not Tested
AHU-6N ROOM		Not Tested		Tested		Tested		Not Tested		Not Tested
CONTROL PANEL		Not Tested		Tested		Tested		Not Tested		Not Tested
DISCONNECT		Not Tested		Tested		Tested		Not Tested		Not Tested
AHU-6W ROOM		Not Tested		Tested		Tested		Not Tested		Not Tested
CONTROL PANEL		Not Tested		Tested		Tested		Not Tested		Not Tested
DISCONNECT		Not Tested		Tested		Tested		Not Tested		Not Tested
ELECT RM 6402		Not Tested		Tested		Tested		Tested		Tested
ATS #10		Not Tested		Tested		Tested		Tested		Tested
BUS RISER		Not Tested		Tested		Tested		Tested		Tested
PNL. 6D21		Not Tested		Tested		Tested		Tested		Tested
PNL. 6L41		Not Tested		Tested		Tested		Tested		Tested
PNL. 6P21		Not Tested		Tested		Tested		Tested		Tested
PNL. 6P22		Not Tested		Tested		Tested		Tested		Tested
PNL. 6P23		Not Tested		Tested		Tested		Tested		Tested
PNL. AC		Not Tested		Tested		Tested		Tested		Tested
XFMR 15 KVA DISC		Not Tested		Tested		Tested		Tested		Not Tested
XFMR DISC		Not Tested		Tested		Tested		Tested		Not Tested
XFMR T-6 112.5 KVA		Not Tested		Tested		Tested		Tested		Not Tested
ELECT RM 6404		Not Tested		Tested		Tested		Not Tested		Not Tested
BUS RISER		Not Tested		Tested		Tested		Not Tested		Not Tested
DISC LEFT		Not Tested		Tested		Tested		Not Tested		Not Tested
DISC RIGHT		Not Tested		Tested		Tested		Not Tested		Not Tested
ELECTRICAL ROOM #6804		Not Tested		Tested		Not Tested		Not Tested		Not Tested
BUS RISER		Not Tested		Tested		Not Tested		Not Tested		Not Tested
DISC-BUS RISER		Not Tested		Tested		Not Tested		Not Tested		Not Tested
DISC-LEFT		Not Tested		Tested		Not Tested		Not Tested		Not Tested
DISC-RIGHT		Not Tested		Tested		Not Tested		Not Tested		Not Tested
MAIN BLDG 7 FL		Not Tested		Tested		Tested		Tested		Tested
AHU-7E ROOM		Not Tested		Tested		Tested		Not Tested		Not Tested

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CONTROL PANEL		Not Tested		Tested		Tested		Not Tested		Not Tested
DISCONNECT		Not Tested		Tested		Tested		Not Tested		Not Tested
AHU-7N ROOM		Not Tested		Tested		Tested		Not Tested		Not Tested
CONTROL PANEL		Not Tested		Tested		Tested		Not Tested		Not Tested
DISCONNECT		Not Tested		Tested		Tested		Not Tested		Not Tested
AHU-7W ROOM		Not Tested		Tested		Tested		Not Tested		Not Tested
CONTROL PANEL		Not Tested		Tested		Tested		Not Tested		Not Tested
DISCONNECT		Not Tested		Tested		Tested		Not Tested		Not Tested
EAST COMPUTER / ELECT RM		Not Tested		Not Tested		Tested		Tested		Not Tested
BUS DISCONNECT SWITCH UNMARKED		Not Tested		Not Tested		Tested		Tested		Not Tested
BUS RISER		Not Tested		Not Tested		Tested		Tested		Not Tested
PNL 7B2		Not Tested		Not Tested		Tested		Tested		Not Tested
PNL 7B4		Not Tested		Not Tested		Tested		Tested		Not Tested
PNL 7BY2		Not Tested		Not Tested		Tested		Tested		Not Tested
TRANSFORMER 7B2		Not Tested		Not Tested		Tested		Tested		Not Tested
ELECT RM. 7402		Not Tested		Tested		Tested		Tested		Tested
BUS RISER		Not Tested		Tested		Tested		Tested		Tested
MAIN DISC		Not Tested		Tested		Tested		Tested		Not Tested
PNL. 7D21		Not Tested		Tested		Tested		Tested		Tested
PNL. 7L41		Not Tested		Tested		Tested		Tested		Tested
PNL. 7P21		Not Tested		Tested		Tested		Tested		Tested
PNL. 7P22		Not Tested		Tested		Tested		Tested		Tested
PNL. 7P23		Not Tested		Tested		Tested		Tested		Tested
XFMR T-7 112.5 KVA		Not Tested		Tested		Tested		Tested		Not Tested
ELECT RM. 7804		Not Tested		Tested		Tested		Tested		Tested
BUS RISER		Not Tested		Tested		Tested		Tested		Not Tested
DISC LEFT		Not Tested		Tested		Tested		Not Tested		Not Tested
DISC RIGHT		Not Tested		Tested		Tested		Not Tested		Not Tested
PNL. 7MA41		Not Tested		Tested		Tested		Tested		Tested
PNL. 7MA42		Not Tested		Tested		Tested		Tested		Tested
ELECT RM. 7904		Not Tested		Tested		Tested		Tested		Tested
BUS RISER		Not Tested		Tested		Tested		Tested		Tested
PNL. 7MB41		Not Tested		Tested		Tested		Tested		Tested
PNL. 7MB42		Not Tested		Tested		Tested		Tested		Tested
MAIN BLDG 8 FL		Tested		Tested		Tested		Tested		Tested
AHU-8E ROOM		Not Tested		Tested		Tested		Not Tested		Not Tested
CONTROL PANEL		Not Tested		Tested		Tested		Not Tested		Not Tested
DISCONNECT		Not Tested		Tested		Tested		Not Tested		Not Tested
AHU-8N ROOM		Not Tested		Not Tested		Tested		Not Tested		Not Tested
CONTROL PANEL		Not Tested		Not Tested		Tested		Not Tested		Not Tested
DISCONNECT		Not Tested		Not Tested		Tested		Not Tested		Not Tested
AHU-8W ROOM		Not Tested		Tested		Tested		Not Tested		Not Tested
CONTROL PANEL		Not Tested		Tested		Tested		Not Tested		Not Tested
DISCONNECT		Not Tested		Tested		Tested		Not Tested		Not Tested
ELECT RM 8402		Tested		Tested		Tested		Tested		Tested
BUS RISER		Not Tested		Tested		Tested		Tested		Tested
PNL. 8D21		Tested	*	Tested		Tested		Tested		Tested
PNL. 8L41		Not Tested		Tested		Tested		Tested		Tested
PNL. 8P21		Not Tested		Tested		Tested		Tested		Tested
PNL. 8P22		Not Tested		Tested		Tested		Tested		Tested
PNL. 8P23		Not Tested		Tested		Tested		Tested		Tested
XFMR 112.5 KVA		Not Tested		Tested		Tested		Tested		Not Tested
XFMR DISC		Not Tested		Tested		Tested		Tested		Not Tested
ELECT RM 8804		Not Tested		Not Tested		Tested		Not Tested		Not Tested
BUS DISC BOTTOM		Not Tested		Not Tested		Tested		Not Tested		Not Tested
BUS DISC TOP		Not Tested		Not Tested		Tested		Not Tested		Not Tested
BUS RISER		Not Tested		Not Tested		Tested		Not Tested		Not Tested
UNMARKED PNL		Not Tested		Not Tested		Tested		Not Tested		Not Tested
ELECT RM 8904		Not Tested		Tested		Tested		Not Tested		Not Tested
BUS DISC		Not Tested		Tested		Tested		Not Tested		Not Tested
BUS RISER		Not Tested		Tested		Tested		Not Tested		Not Tested
DISC LEFT		Not Tested		Tested		Tested		Not Tested		Not Tested
DISC RIGHT		Not Tested		Tested		Tested		Not Tested		Not Tested

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ELEVATOR ROOM		Not Tested		Not Tested		Tested		Not Tested		Not Tested
E-FAN		Not Tested		Not Tested		Tested		Not Tested		Not Tested
ELEVATOR #5 CONTROL CAB.		Not Tested		Not Tested		Tested		Not Tested		Not Tested
XFMR		Not Tested		Not Tested		Tested		Not Tested		Not Tested
MAIN BLDG 9 FL		Not Tested		Tested		Tested		Tested		Tested
AHU-9E ROOM		Not Tested		Tested		Tested		Not Tested		Not Tested
CONTROL PANEL		Not Tested		Tested		Tested		Not Tested		Not Tested
DISCONNECT		Not Tested		Tested		Tested		Not Tested		Not Tested
AHU-9N ROOM		Not Tested		Tested		Tested		Not Tested		Not Tested
CONTROL PANEL		Not Tested		Tested		Tested		Not Tested		Not Tested
DISCONNECT		Not Tested		Tested		Tested		Not Tested		Not Tested
AHU-9W ROOM		Not Tested		Tested		Tested		Not Tested		Not Tested
CONTROL PANEL		Not Tested		Tested		Tested		Not Tested		Not Tested
DISCONNECT		Not Tested		Tested		Tested		Not Tested		Not Tested
ELECT RM 9402		Not Tested		Tested		Tested		Tested		Tested
BUS RISER		Not Tested		Tested		Tested		Tested		Tested
PNL. 2F9-A		Not Tested		Tested		Tested		Tested		Tested
PNL. 4F9A		Not Tested		Tested		Tested		Tested		Tested
PNL. 4F9B		Not Tested		Tested		Tested		Tested		Tested
PNL. 9P21		Not Tested		Tested		Tested		Tested		Tested
PNL. 9P22		Not Tested		Tested		Tested		Tested		Tested
PNL. E-29		Not Tested		Tested		Tested		Tested		Tested
PNL. E4-9A		Not Tested		Tested		Tested		Tested		Tested
PNL. E4-9B		Not Tested		Not Tested		Tested		Tested		Tested
XFMR (UP)		Not Tested		Tested		Tested		Tested		Not Tested
XFMR (UP-2)		Not Tested		Tested		Tested		Tested		Not Tested
XFMR 45 KVA		Not Tested		Tested		Tested		Tested		Not Tested
MAIN BLDG BASEMENT		Tested		Tested		Tested		Tested		Tested
ELECT CLOSET B-829		Not Tested		Tested		Tested		Tested		Tested
PNL. BBW2A		Not Tested		Tested		Tested		Tested		Tested
PNL. BC2C SEC.1		Not Tested		Tested		Tested		Tested		Tested
PNL. BC2C SEC.2		Not Tested		Tested		Tested		Tested		Tested
ELECT RM B215		Not Tested		Tested		Tested		Tested		Tested
ATS BC PANEL W4 480V		Not Tested		Tested		Not Tested		Tested		Tested
BUS RISER A		Not Tested		Tested		Tested		Tested		Tested
BUS RISER B		Not Tested		Tested		Tested		Tested		Tested
DISCONNECT FOR PANEL BCW 4		Not Tested		Not Tested		Not Tested		Tested		Tested
E1041 DISC.		Not Tested		Not Tested		Tested		Tested		Tested
FIRE PUMP DISC		Not Tested		Tested		Not Tested		Tested		Not Tested
MAIN SWBD FOR BUS RISERS A & B		Not Tested		Tested		Tested		Tested		Tested
PACMED HEAT DISC.		Not Tested		Tested		Tested		Tested		Tested
PANEL BJ2		Not Tested		Not Tested		Tested		Tested		Tested
PARKING GARAGE		Not Tested		Not Tested		Tested		Tested		Tested
PNL. 1ME41 DISC.		Not Tested		Tested		Tested		Tested		Tested
SUB DIST SWBD SDS		Not Tested		Tested		Tested		Tested		Tested
TRAILER FEEDER		Not Tested		Not Tested		Tested		Tested		Tested
ELECT RM B703		Not Tested		Tested		Tested		Tested		Tested
PNL. BB4		Not Tested		Tested		* Tested		Tested		Tested
XFMR 45 KVA		Not Tested		Tested		Tested		Tested		Not Tested
ELECT RM B807		Tested		Tested		Tested		Tested		Tested
ATS SWITCH # 4		Not Tested		Tested		Not Tested		Tested		* Tested
CIRCUIT BREAKER 150 AMP WESTINGHUOSE		Not Tested		Not Tested		Tested		Tested		Tested
CONTACTOR FHEF 2		Not Tested		Not Tested		Tested		Not Tested		Tested
CONTACTOR FHEF 5		Not Tested		Not Tested		Tested		Not Tested		Tested
CONTACTOR FHEF 7		Not Tested		Not Tested		Tested		Not Tested		Tested
CONTACTOR FHEF 8		Not Tested		Not Tested		Tested		Not Tested		Tested
PNL BBW2		Not Tested		Tested		Tested		Tested		Tested
PNL BBW2 SECT 2		Not Tested		Tested		Tested		Tested		Tested
PNL BBW4		Not Tested		Tested		Tested		Tested		Tested
PNL BC 2		Not Tested		Tested		Tested		Tested		Tested
PNL BC2A		Tested		* Tested		Tested		* Tested		Tested
PNL BC2B		Not Tested		Tested		Tested		Tested		Tested
PNL BCW4		Not Tested		Tested		Tested		Tested		Tested

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XFMR DT-3		Not Tested		Tested		Tested		Tested		Not Tested
ELECT RM B809		Not Tested		Tested		Tested		Tested		Tested
PNL. AA DENTAL		Not Tested		Tested		Tested		Not Tested		Tested
XFMR 112.5 KVA		Not Tested		Tested		Tested		Tested		Not Tested
XFMR 150 KVA		Not Tested		Tested		Tested		Tested		Not Tested
XFMR 75 KVA		Not Tested		Tested		Tested		Tested		Not Tested
ELECT RM WEST		Not Tested		Tested		Tested		Tested		Tested
ATS #1		Not Tested		Tested		Not Tested		Tested		Tested
ESSENTIAL SERVICE SWITCHBOARD ESS		Not Tested		Tested		Tested		Not Tested		Tested
PNL BA2		Not Tested		Tested		Tested		Tested		Tested
PNL BA4		Not Tested		Tested		Tested		Tested	*	Tested
HVAC DRIVE #1		Not Tested		Not Tested		Tested		Not Tested		Tested
HVAC DRIVE #2		Not Tested		Not Tested		Tested		Not Tested		Tested
JANITORS CLOSET B620		Tested		Tested		Not Tested		Tested		Tested
PNL. BB2		Tested	*	Tested	*	Not Tested	*	Tested	*	Tested
SHOP MAIN SWITCHGEAR #2 RM.		Not Tested		Tested		Tested		Tested		Tested
PNL 2BA		Not Tested		Tested		Tested		Tested		Not Tested
PNL 4BA		Not Tested		Tested		Tested		Tested		Not Tested
UNMARKED SWITCHBOARD		Not Tested		Tested		Tested		Tested		Tested
XFMR OVERHEAD		Not Tested		Tested		Tested		Tested		Not Tested
STORAGE RM B219		Not Tested		Tested		Tested		Tested		Not Tested
PNL 2BA		Not Tested		Tested		Tested		Tested		Not Tested
XFMR 45 KVA		Not Tested		Tested		Tested		Tested		Not Tested
STORAGE RM B305		Not Tested		Tested		Tested		Tested		Not Tested
PNL BA2C		Not Tested		Tested		Tested		Tested		Not Tested
STORAGE RM B402		Not Tested		Tested		Tested		Tested		Not Tested
PNL BA2B		Not Tested		Tested		Tested		Tested		Not Tested
WEST SUB BASEMENT		Not Tested		Tested		Tested		Tested		Tested
DWBP-1 WATER BOOSTER CONTROL PNL.		Not Tested		Tested		Tested		Tested		Tested
EWH-1 HOT WATER TANK		Not Tested		Not Tested		Tested		Tested		Tested
FIRE PUMP #1 CNTL PNL		Not Tested		Tested		Not Tested		Not Tested		Not Tested
FIRE PUMP #2 CNTL PNL		Not Tested		Tested		Not Tested		Not Tested		Not Tested
HVAC DRIVE #1		Not Tested		Tested		Tested		Tested		Tested
HVAC DRIVE #2		Not Tested		Not Tested		Not Tested		Tested		Tested
MCC B		Not Tested		Tested		Tested		Tested		Tested
PNL GAX2A		Not Tested		Tested		Not Tested		Not Tested		Not Tested
UNMARKED BREAKER PNL.		Not Tested		Tested		Tested		Tested		Tested
XFMR 15 KVA		Not Tested		Tested		Tested		Tested		Not Tested
MAIN BLDG GROUND FLOOR		Tested		Tested		Tested		Tested		Tested
ELECT CLOSET G809 HALLWAY OUTSIDE OF PRIMARY CARE CHECK-IN		Not Tested		Tested		Tested		Tested		Tested
PANEL GBY2		Not Tested		Tested		Tested		Not Tested		Tested
PANEL GC2		Not Tested		Tested		Tested		Tested		Tested
PANEL GC2A		Not Tested		Tested		Tested		Tested		Tested
PNL CG2-2		Not Tested		Tested		Tested		Tested		Tested
ELECT RM G202		Not Tested		Tested		Tested		Tested		Tested
PNL. GA2		Not Tested		Tested		Tested		Tested		Tested
ELECT RM G-240		Not Tested		Tested		Tested		Tested		Tested
BUS RISER		Not Tested		Tested		Tested		Tested		Tested
OVERHEAD XFMR ABOVE PNL 2GA		Not Tested		Tested		Not Tested		Not Tested		Not Tested
OVERHEAD XFMR ABOVE PNLE2G		Not Tested		Tested		Not Tested		Not Tested		Not Tested
PNL GMC-41		Not Tested		Tested		Not Tested		Not Tested		Not Tested
PNL GMC-42		Not Tested		Tested		Not Tested		Not Tested		Not Tested
PNL. 2GA		Not Tested		Tested		Tested		Tested		Tested
PNL. 4GA		Not Tested		Tested		Tested		Tested		Tested
PNL. 4GB		Not Tested		Tested		Tested		Tested		Tested
PNL. E2-G		Not Tested		Tested		Tested		Not Tested		Tested
PNL. E4-G		Not Tested		Tested		Tested		Not Tested		Tested
UNMARKED PNL		Not Tested		Tested		Not Tested		Not Tested		Not Tested
ELECT RM G612		Not Tested		Tested		Tested		Tested		Tested
PANEL GB2		Not Tested		Tested		Tested		Tested		Tested
ELECT RM G705 INSIDE OF OUTPATIENT PHARMACY		Not Tested		Tested		Tested		Tested		Tested
BUS RISER		Not Tested		Tested		Tested		Tested		Tested

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DISC-BUS RISER 100 AMPS		Not Tested		Tested		Tested		Tested		Tested
DISC-BUS RISER 400 AMPS		Not Tested		Tested		Tested		Tested		Tested
PANEL GB4		Not Tested		Tested		Tested		Tested		Tested
PANEL GBB4 SUB BSMT MCC PANELS		Not Tested		Tested		Tested		Tested		Tested
PANEL GBX4		Not Tested		Tested		Tested		Tested		Tested
ELECT RM G804		Not Tested		Tested		Tested		Tested		Tested
ATS 6		Not Tested		Tested		Tested		Tested		Tested
BUS DISCONNECT BA4-150 AMP		Not Tested		Tested		Tested		Tested		Tested
BUS DISCONNECT BA4A-150 AMP		Not Tested		Tested		Tested		Tested		Not Tested
BUS RISER		Not Tested		Tested		Tested		Tested		Tested
PANEL GA4		Not Tested		Tested		Tested		Tested		Tested
PANEL GAX2B		Not Tested		Tested		Tested		Tested		Tested
PANEL GAX4		Not Tested		Tested		Tested		Tested		Tested
XFMR 15 KVA		Not Tested		Tested		Tested		Tested		Not Tested
ELECT RM G898		Not Tested		Tested		Tested		Tested		Tested
PANEL GC2-B		Not Tested		Tested		Tested		Tested	*	Tested
PANEL GC2-C		Not Tested		Tested		Tested		Tested		Tested
ELECTRICAL CLOSET G-913		Not Tested		Tested		Not Tested		Not Tested		Not Tested
PNL MCB		Not Tested		Tested		Not Tested		Not Tested		Not Tested
MECHANICAL TELEPHONE SWITCHROOM G301		Tested		Tested		Tested		Tested		Tested
AC-1		Not Tested		Not Tested		Not Tested		Not Tested		Not Tested
AC-2		Not Tested		Not Tested		Not Tested		Tested		Not Tested
ATS 7	*	Tested	*	Tested		Tested		Tested		Tested
CONSTANT VOLTAGE CHARGER LEFT		Not Tested		Not Tested		Tested		Not Tested		Not Tested
CONSTANT VOLTAGE CHARGER RIGHT		Not Tested		Not Tested		Tested		Not Tested		Not Tested
DISCONNECT SWITCH AC-1		Not Tested		Not Tested		Tested		Not Tested		Not Tested
DISCONNECT TO ROLM		Not Tested		Not Tested		Tested		Not Tested		Not Tested
EMEGENCY BATTERY DISCONNECT FROM BATTERY		Not Tested		Not Tested		Tested		Not Tested		Not Tested
PANEL GAX2		Tested	*	Tested		Tested		Tested		Tested
PANEL GAX2B		Not Tested		Tested		Tested		Tested		Tested
MRI ELECT RM (G-950)		Not Tested		Tested		Tested		Not Tested		Not Tested
DISC EC-1		Not Tested		Tested		Tested		Not Tested		Not Tested
DISC EC-2		Not Tested		Tested		Tested		Not Tested		Not Tested
PNL CBP		Not Tested		Tested		Tested		Not Tested		Not Tested
PNL GB2		Not Tested		Tested		Tested		Not Tested		Not Tested
PNL GB4A		Not Tested		Tested		Tested		Not Tested		Not Tested
PNL GB4B		Not Tested		Tested		Tested		Not Tested		Not Tested
XFMR 45 KVA		Not Tested		Tested		Tested		Not Tested		Not Tested
PHYSICAL THERAPY RECEPTION AREA		Not Tested		Tested		Tested		Tested		Tested
PANEL G2A		Not Tested		Tested		Tested		Tested		Tested
NORTH PARKING LOT		Not Tested		Tested		Not Tested		Not Tested		Not Tested
DISC-METER		Not Tested		Tested		Not Tested		Not Tested		Not Tested
SKYLINE PNL		Not Tested		Tested		Not Tested		Not Tested		Not Tested
QUARTER BUILDING #1		Not Tested		Tested		Tested		Not Tested		Not Tested
BASEMENT		Not Tested		Tested		Not Tested		Not Tested		Not Tested
PNL #1		Not Tested		Tested		Not Tested		Not Tested		Not Tested
PNL #2		Not Tested		Tested		Not Tested		Not Tested		Not Tested
WEST PARKING GARAGE		Not Tested		Tested		Tested		Tested		Not Tested
ELECTRICAL ROOM G102		Not Tested		Tested		Not Tested		Not Tested		Not Tested
PNL LPA		Not Tested		Tested		Tested		Tested		Not Tested
PNL PDP		Not Tested		Tested		Tested		Tested		Not Tested
XFMR 45 KVA (UP)		Not Tested		Tested		Tested		Tested		Not Tested
ELEVATOR MACHINE ROOM		Not Tested		Tested		Not Tested		Not Tested		Not Tested
DISC-HEAT PUMP (OUTSIDE OF ROOM)		Not Tested		Tested		Not Tested		Not Tested		Not Tested
ELEVATOR #9 BREAKER		Not Tested		Tested		Not Tested		Not Tested		Not Tested
ELEVATOR #9 CNTL PNL		Not Tested		Tested		Not Tested		Not Tested		Not Tested
UNMARKED PNL		Not Tested		Tested		Not Tested		Not Tested		Not Tested

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