Citywide
Facility Condition Assessment

Report of

Facility Condition Assessment

For
City of Manhattan Beach
Pier Roundhouse and Comfort Station
100 Manhattan Beach Boulevard, Manhattan Beach, CA

September 18, 2013
(Rev B)

Provided By:

Faithful+Gould, Inc.

Provided For:

CITY OF MANHATTAN BEACH
3621 Bell Avenue, Manhattan Beach, CA 90266
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TABLE OF CONTENTS

APPENDICES

SECTION 1 - EXECUTIVE SUMMARY

INTRODUCTION

In accordance with the agreement held between City of Manhattan Beach, dated May 9, 2013 and Faithful+Gould Inc, this completed report provides a comprehensive Facility Condition Assessment of the Pier Roundhouse and Comfort Station located at 100 Manhattan Beach Boulevard, Manhattan Beach, CA (The Facility). The facility consisted of the following buildings:

- Pier Roundhouse
- Pier Comfort Station

This report provides a summary of the facility information known to us at the time of the study, the scope of work performed, an equipment inventory, evaluation of the visually apparent condition of the Property and an expenditure forecast of expenditures anticipated over the next 10 years. The expenditure forecast does not account for typical planned maintenance items such as changing filters to fan coil units and only considers deficiencies above a $500 aggregated value.

Our cost rates to produce life cycle and replacement cost estimates are based on our knowledge of the local regional market rates. Our line item costs assume that the work will be undertaken by either in-house or by direct sub-contract labor. If the work is procured through public general contractor bids, we recommend budgeting for additional project costs of between 25%-30% to allow for professional fees and general contractor overhead/profit and management costs.

Charts EX-1 through to EX-4 provide a summary of the anticipated primary expenditures over the 10 year study period. Further details of these expenditures are included within each respective report section and within the 10 year expenditure forecast, in Appendix A.

The report also calculates the Facility Condition Index (FCI) of each building based upon the calculated FCI. Further discussion of the Facility Condition Index is detailed in the sections below. The FCI does not include the general site systems, however we have still included repair and replacement costs so that they can be represented in the study.

This report was completed in general accordance with the ASTM E2018-08 Standard Guide for Property Condition Assessments: Baseline Property Condition Assessment Process.

PROJECT DETAILS

On May 17, 2013, Mr. Richard Needler of Faithful+Gould visited the facility to observe and document the condition of each building and the site components. During our site visit, Faithful+Gould was assisted by Mr. Doug Foster, Senior Facilities Maintenance Technician for the City of Manhattan Beach.

Overview of the Buildings at the Facility

Assumed site boundary

BUILDING SUMMARY

Table EX-1 Facility Details

BUILDING NAME:	Pier Roundhouse		LAT/LONG:	33° 53' 13" N / 118° 24' 52" W	
ADDRESS:	100 Manhattan Beach Boulevard, Manhattan Beach, CA 90266		OCCUPANCY STATUS: OCCUPIED ☒ VACANT ☐ PARTIALLY ☐		
HISTORIC DISTRICT:	YES ☐	NO ☒	HISTORIC BUILDING:	YES ☒	NO ☐
GROSS SQUARE FOOTAGE OF BUILDING:	2,222		GROSS SQUARE FOOTAGE OF LAND:	35,190 (estimated) Whole Facility	
CURRENT REPLACEMENT VALUE:	$606,606 Estimated		YEAR OF CONSTRUCTION:	1921; Reconstructed 1992; Renovated 2002	
			BUILDING EUL:	100+ Years	
			BUILDING RUL:	80+ Years	
BUILDING USE:	Recreation		NUMBER OF STORIES:	1	

BUILDING DESCRIPTION

The Pier Roundhouse is part of the Manhattan Beach Pier facility and is located at the west end of the pier projecting into the Pacific Ocean, acting at the terminus of Manhattan Beach Boulevard. We understand that the pier was developed between 1917-1920 and the Pier Roundhouse was reportedly originally constructed in 1921, rebuilt in 1992 and further renovated in 2002.

The building has a steel and wood superstructure, enclosed with cementitious stucco cladding. The sloped roof covering is clay tile. The main floor of the facility is the pier's reinforced concrete deck, framing and piles, with a wood-framed mezzanine level. Windows are typically wood framed double hung-type units and doors are single- and double-leaf flush metal and glazed wood units; roll-down storm protection shutters are provided. The interior finishes include sealed concrete and carpeted floors, painted and ceramic tiled walls and painted gypsum board and acoustical tiled ceilings.

The building heating/cooling is provided by two electric fan-coil units; supplemental cooling is provided by a window-type air conditioner. Domestic hot water is provided by a 10 gallon electric water heater. The electrical system is supplied under the pier from a 400-amp electrical main distribution panel with meter located in the Comfort Station electrical room. The lighting is typically surface mounted fluorescent lamp fixtures. A hydraulic wheelchair lift provides access to the mezzanine level. A wet-pipe fire sprinkler system with water flow monitoring alarm is provided; an electronic security system or emergency generator are not provided.

Table EX-2 Facility Details

BUILDING NAME:	Pier Comfort Station		LAT/LONG:	33° 53' 04" N / 118° 24' 44" W	
ADDRESS:	100 Manhattan Beach Boulevard, Manhattan Beach, CA 90266		OCCUPANCY STATUS: OCCUPIED ☒ VACANT ☐ PARTIALLY ☐		
HISTORIC DISTRICT:	YES ☐	NO ☒	HISTORIC BUILDING:	YES ☐	NO ☒
GROSS SQUARE FOOTAGE OF BUILDING:	1,280		GROSS SQUARE FOOTAGE OF LAND:	35,190 (estimated) Whole Facility	
CURRENT REPLACEMENT VALUE:	$256,000 Estimated		YEAR OF CONSTRUCTION:	1992	
			BUILDING EUL:	100+ Years	
			BUILDING RUL:	80+ Years	
BUILDING USE:	Recreation		NUMBER OF STORIES:	1	

BUILDING DESCRIPTION

The Pier Comfort Station building forms a part of the Manhattan Beach Pier facility and is located at the east end of the pier, at the terminus of Manhattan Beach Boulevard. We understand that the pier was developed between 1917-1920 and the Pier Comfort Station was constructed prior to a 1990 renovation.

The building has wood rafter roof construction supported on the painted exterior enclosing concrete masonry walls. The sloped roof has a clay tile roof covering, draining over the roof edge, and has eight skylights. The floors are cast-in-place reinforced concrete slabs-on-grade. The building has no windows, metal gates at the restroom entrances and single-leaf flush metal doors at the electrical rooms at the east facade. The interior finishes include exposed concrete floors, painted concrete masonry and ceramic tiled walls and painted, exposed roof framing at the ceilings.

Heating, ventilation and cooling systems are not provided. Plumbing systems include domestic water supply and sanitary waste systems to restroom fixtures and showers.

The electrical system is supplied underground at 480-volts to main distribution panels in an electrical room at the east side of the building. Transformers reduce the service to 120/240-volts to a 100-amp electrical panelboard serving lighting and power needs in the building. The lighting is surface mounted LED fixtures. The building is not provided with electronic security, fire suppression or fire alarm systems.

ENVIRONMENTAL REVIEW

During the assessment period an inspection and survey to ascertain if Asbestos Containing Materials (ACM) and Lead-Based Paint (LBP) are present at the interior and exteriors of the Pier Comfort Station only. The assessment was undertaken by Andersen Environmental and their full report can be reviewed Appendix E. A summary of results indicate the following:

The following materials were found to contain asbestos and considered ACM:

Table EX-3 Summary of Asbestos Results

Material Description	Material Location	Condition	Asbestos Percentage	Estimated Quantity*
Roofing Materials (Mastic & Felts)	Roof	Good	Presumed	1,500

* These quantities are only approximations

Expenditure relating to the removal of the ACM has not been provided within this report. We recommend that the abatement contractor is selected through a bidding process.

Lead-Based Paint was also identified at the Pier Comfort Station. Through sampling of several paint components the presence of LBP was indicated at or above the action level at the following locations:

- (Exterior) Metal Gate Frame
- Restroom Ceramic Green Tile (Men's & Women's)

The areas where LBP was found, it was observed to be intact (good condition). LBP components in good condition may remain in place subsequent to renovation/demolition or they may be removed intact by lead trained personnel in accordance with all applicable federal, state and local regulations. Expenditure relating to the removal of the LBP has not been provided within this report.

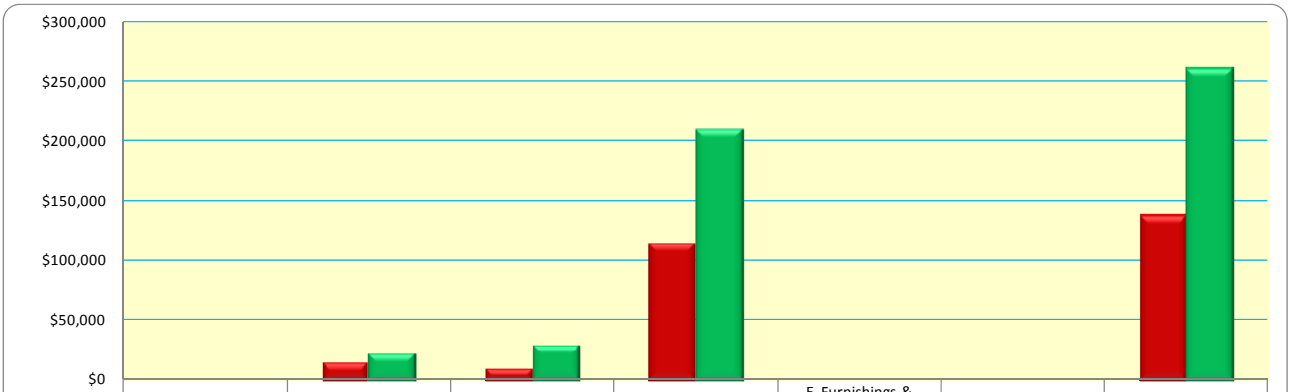
BUILDING EXPENDITURE SUMMARY

The building expenditure summary section provides an executive overview of the findings from the assessments. Charts EX-1 and EX-2 provide a summary of anticipated expenditures over the study period. Chart EX-3 provides a cursory review and assessment of the major site assets to further assist the City in understanding the condition of the facility over all. We have scheduled key findings highlighting key items of significance and their anticipated failure year. Further details of these expenditures and others are included within each respective report section and within the expenditure forecast, in Appendix A of this report.

Pier Roundhouse

The results illustrate a total anticipated expenditure over the study period of circa $398,211.

Chart EX-1 Building Expenditure Summary [1 & 2]



	A. Substructure	B. Shell	C. Interiors	D. Services	E. Furnishings & Equipment	G. Building Site work	TOTAL
Deferred	$0.00	$14,710	$9,225	$113,736	$0	$0	$137,671
Scheduled	$0.00	$21,450	$29,550	$209,541	$0	$0	$260,541

KEY FINDINGS

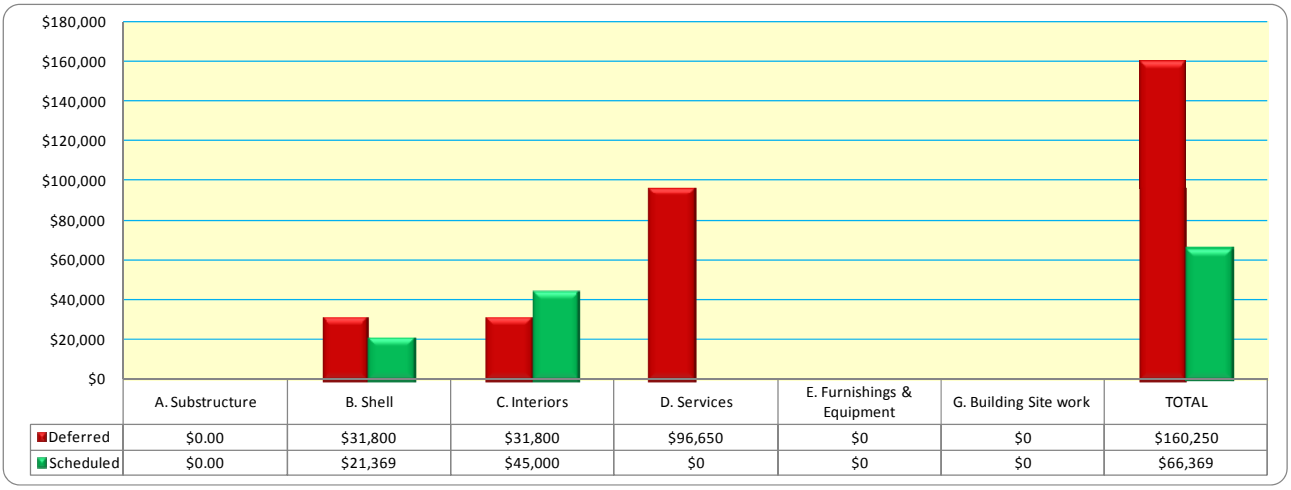
- B Shell: Repaint exterior walls at an estimated cost of $7,150 in years 2013, 2016, 2019 and 2022
- C Interiors: Repaint interior wall and ceiling surfaces at an estimated cost of $6,825 in years 2013, 2015, 2017, 2019 and 2021
- D Services: Renovate restrooms at an estimated cost of $95,000 in year 2013
- D Services: Renovate restroom at an estimated cost of $95,000 in 2013
- D Services: Replace exposed sanitary service piping at an estimated cost of $87,232 in year 2017
- D Services: Replace exposed fire water service piping at an estimated cost of $60,719 in year 2017

[1] All costs presented in present day values
[2] Costs represent total anticipated values over the 10 year study period

Pier Comfort Station

The results illustrate a total anticipated expenditure over the study period of circa $226,619.

Chart EX-2 Building Expenditure Summary [1 & 2]



	A. Substructure	B. Shell	C. Interiors	D. Services	E. Furnishings & Equipment	G. Building Site work	TOTAL
Deferred	$0.00	$31,800	$31,800	$96,650	$0	$0	$160,250
Scheduled	$0.00	$21,369	$45,000	$0	$0	$0	$66,369

KEY FINDINGS

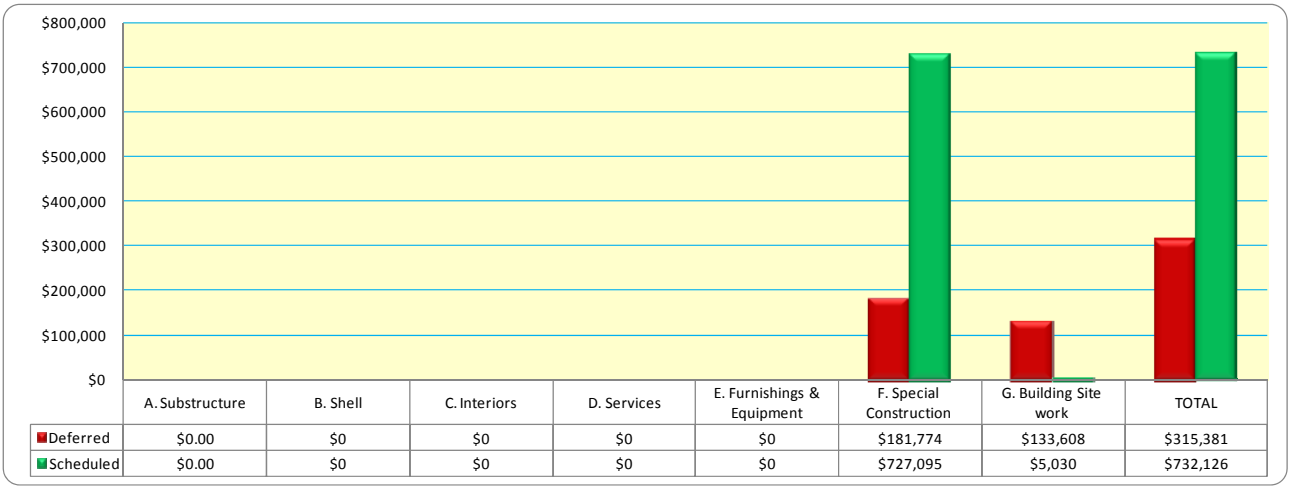
- B Shell: Repaint exterior walls at an estimated cost of $5,850 in years 2013, 2016, 2019 and 2022
- C Interiors: Repaint interior wall and ceiling surfaces at an estimated cost of $9,750 in years 2013, 2015, 2017, 2019 and 2021
- D Services: Renovate restrooms at an estimated cost of $95,000 in year 2013

[1] All costs presented in present day values
[2] Costs represent total anticipated values over the 10 year study period

Site Systems

The results illustrate a total anticipated expenditure over the study period of circa $964,707.

Chart EX-3 Site Expenditure Summary [1 & 2]



	A. Substructure	B. Shell	C. Interiors	D. Services	E. Furnishings & Equipment	F. Special Construction	G. Building Site work	TOTAL
Deferred	$0.00	$0	$0	$0	$0	$181,774	$133,608	$315,381
Scheduled	$0.00	$0	$0	$0	$0	$727,095	$5,030	$732,126

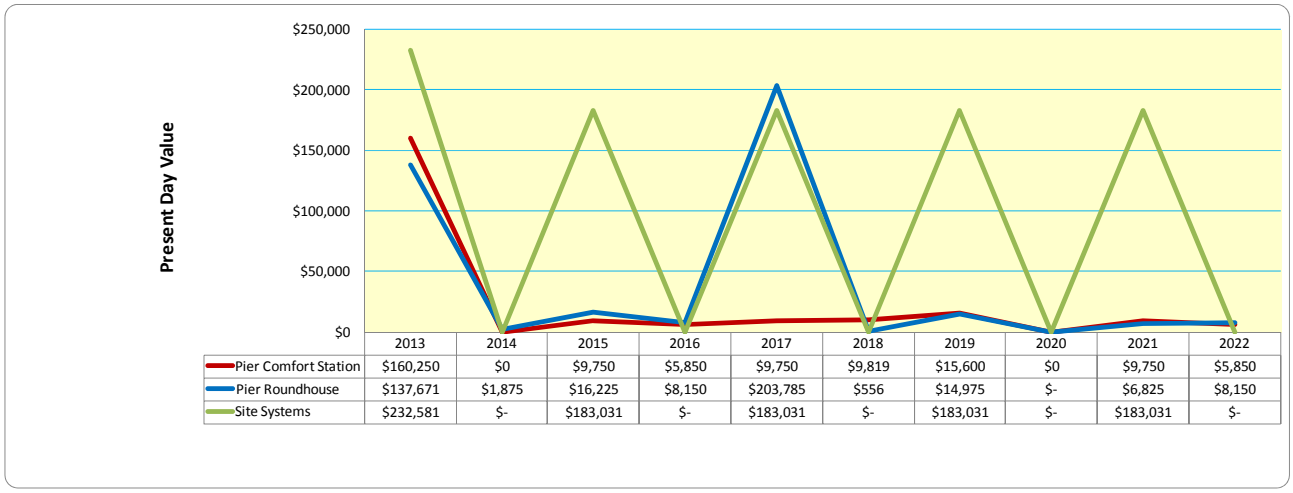
KEY FINDINGS

- F Special Construction: Maintenance repairs to the pier deck, framing and pilings at an estimated cost of $151,774 in years 2013, 2015, 2017, 2019 and 2021
- F Special Construction: Repaint pier railings and weld repairs at an estimated cost of $30,000 in years 2013, 2015, 2017, 2019 and 2021
- G Building Sitework: Repaint metal railings and gates at an estimated cost of $1,258 in years 2013, 2015, 2017, 2019 and 2021
- G Building Sitework: Replace light fixtures and wiring at a combined estimated cost of $32,400 in year 2013

[1] All costs presented in present day values
[2] Costs represent total anticipated values over the 10 year study period

Chart EX-4 illustrates a summary of yearly anticipated expenditures over the cost study period for each of the Pier buildings and site systems. A detailed breakdown of anticipated expenditures is contained within Appendix A of this report.

Chart EX-4 Expenditure Forecast [1 & 2]



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Pier Comfort Station	$160,250	$0	$9,750	$5,850	$9,750	$9,819	$15,600	$0	$9,750	$5,850
Pier Roundhouse	$137,671	$1,875	$16,225	$8,150	$203,785	$556	$14,975	$-	$6,825	$8,150
Site Systems	$232,581	$-	$183,031	$-	$183,031	$-	$183,031	$-	$183,031	$-

[1] All costs presented in present day values
[2] Costs represent total anticipated values over the 10 year study period

This chart highlights significant expenditure for the Manhattan Beach Pier buildings and site systems within years 2018 and 2022 primarily due to the following systems which are expected to reach their Estimated Useful Life (EUL) and therefore due for replacement. The lines represent the total expenditure for each year, and are a useful tool to indicate the magnitude of the impeding issues the buildings will face.

Pier Roundhouse

Year 2013

- Renovate restroom

Year 2017

- Interior repainting
- Replace water supply and sanitary pipe work

Pier Comfort Station

Year 2013

- Renovate restroom

Site Systems

Year 2013

- Maintenance repairs to pier deck, frame and piles
- Repaint pier railings

Year 2017

- Repair pier concrete deck, framing and pilings
- Repaint pier railings

Year 2021

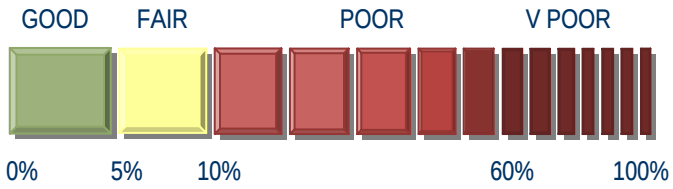
- Repair pier concrete deck, framing and pilings
- Repaint pier railings

INTERPRETING RESULTS

In this report we have calculated the Facility Condition Index (FCI) for the facility; illustrating the likely condition of the systems and equipment should the required funding not be expended over the cost study period. The FCI is used in Facilities Management to provide a benchmark to compare the relative condition of a group of facilities. The FCI is primarily used to support asset management initiatives of federal, state, and local government facilities organizations.

The FCI is the ratio of accumulated Deferred Maintenance (DM) (total sum of required and recommended works) to the Current Replacement Value (CRV) for a constructed asset calculated by dividing DM by CRV. The range is from zero for a newly constructed asset, to one for a constructed asset with a DM value equal to its CRV. Acceptable ranges vary by "Asset Type', but as a general guideline the FCI scoring system is as follows:

$$FCI = \frac{\text{Maintenance, Repair, and Replacement Deficiencies of the Facility(s) (DM)}}{\text{Current Replacement Value of the Facility(s) (CRV)}}$$



The FCI is a relative indicator of condition, and should be tracked over time to maximize its benefit. It is advantageous to define condition ratings based on ranges of the FCI. There are a set of ratings: GOOD (under 0.05 (under 5%)), FAIR (0.5 to 0.10 (5% to 10%)), POOR (over 0.10 (over 10%)) and V-POOR (over 0.60 (over 60%)) based on evaluating data from various clients at the time of the publication. Table EX-4 will help interpret the results:

Table EX-4 FCI Scoring System

Condition	Definition	Score	Percentage Value
GOOD	In a new or well maintained condition, with no visual evidence of wear, soiling or other deficiencies	0.00 to 0.05	0% to 5%
FAIR	Subject to wear, and soiling but is still in a serviceable and functioning condition	0.05 to 0.10	5% to 10%
POOR	Subjected to hard or long-term wear. Nearing the end of its useful or serviceable life.	Greater than 0.10	Greater than 10%
V-POOR	Subjected to hard or long-term wear. Has reached the end of its useful or serviceable life. Renewal now necessary	Greater than 0.60	Greater than 60%

If the FCI rating is 60% or greater then replacement of the asset/building should be considered instead of renewal.

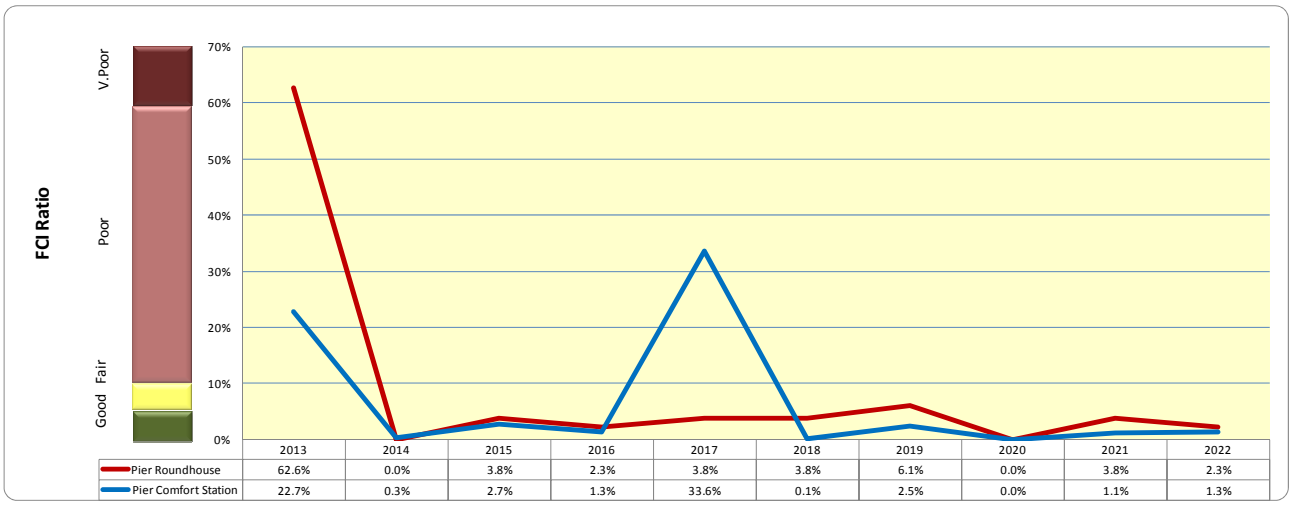
Table EX-5 provides calculations of the FCI for each of the Manhattan Beach Pier buildings (excluding the site system expenditure costs); illustrating both the current condition of the buildings and the likely condition of the buildings should the required funding not be expended over the study period. The results of the study indicate that currently the buildings are similar in their condition, starting in the POOR or V.POOR condition rating, which suggest that the buildings are in a deteriorated state of condition.

Table EX-5 Facility Condition Index

Building Name	FCI	Gross Square Foot (GSF)	CRV per GSF	Current Replacement Value (CRV)	Deferred Maintenance Value (DM)	FCI Ratio	Property Condition
Pier Roundhouse	Current FCI Ratio	2,222	$273	$606,600	$137,670	22.7%	POOR
Pier Roundhouse	Year 10 FCI Ratio	2,222	$273	$606,600	$398,211	65.6%	V.POOR
Pier Comfort Station	Current FCI Ratio	1,280	$200	$256,000	$160,250	62.6%	V.POOR
Pier Comfort Station	Year 10 FCI Ratio	1.280	$200	$256,000	$226,618	88.5%	V.POOR

Chart EX-5 indicates the affects of the FCI ratio per year, assuming the required funds and expenditures ARE made to address the identified works and deferred maintenance each year. As explained, the buildings are in a similar condition at this current time, starting in the POOR and V.POOR condition rating.

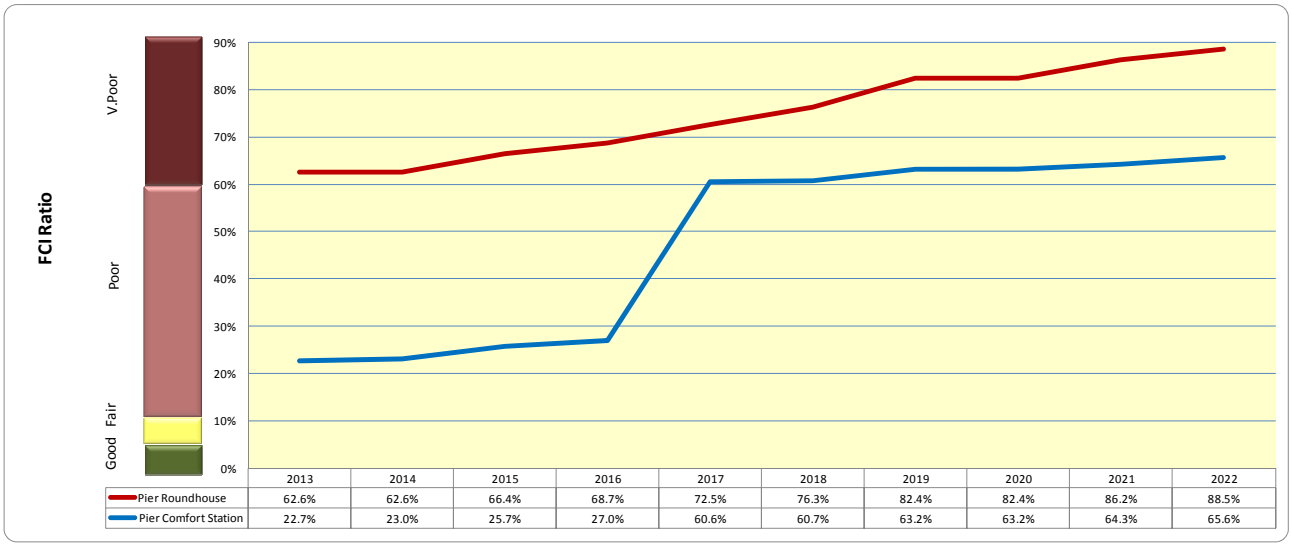
Chart EX-5 Year by Year Effects of FCI over the Study Period



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Pier Roundhouse	62.6%	0.0%	3.8%	2.3%	3.8%	3.8%	6.1%	0.0%	3.8%	2.3%
Pier Comfort Station	22.7%	0.3%	2.7%	1.3%	33.6%	0.1%	2.5%	0.0%	1.1%	1.3%

Chart EX-6 indicates the cumulative effects of the FCI ratio over the study period assuming the required funds and expenditures are NOT provided to address the identified actions and deferred maintenance each year. The buildings start in the POOR and V.POOR condition rating, and stay there for the entire study period.

Chart EX-6 Cumulative Effects of FCI over the Study Period



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Pier Roundhouse	62.6%	62.6%	66.4%	68.7%	72.5%	76.3%	82.4%	82.4%	86.2%	88.5%
Pier Comfort Station	22.7%	23.0%	25.7%	27.0%	60.6%	60.7%	63.2%	63.2%	64.3%	65.6%

PRIORITIZATION OF WORK

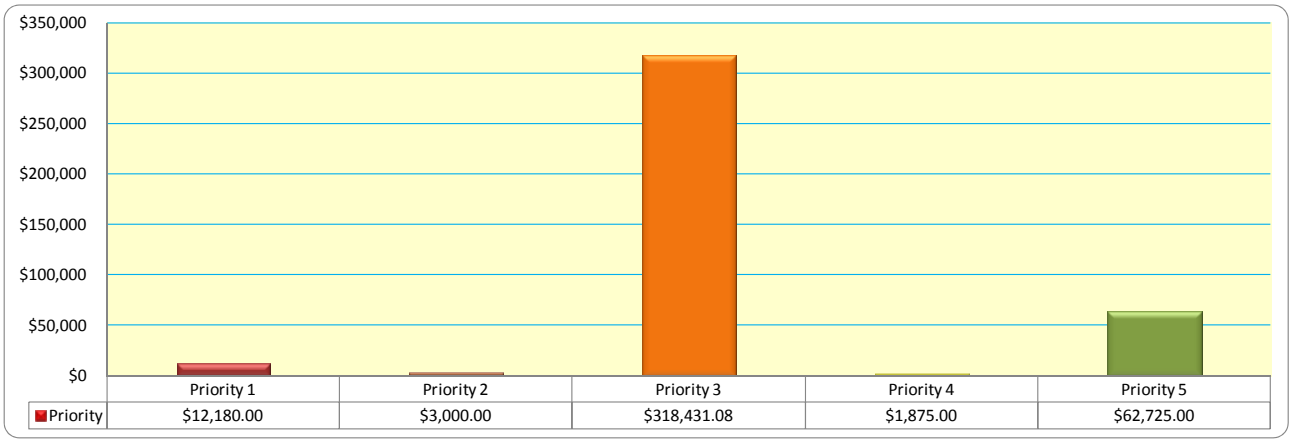
Faithful+Gould has prioritized the identified work in order to assist with analyzing the deficiencies found during the assessments. The following Priorities are shown below:

Priority 1 - Life Safety/ Code Compliance/ADA:	•Compromises staff or public safety or when a system requires to be upgraded to comply with current codes and standards.
Priority 2 – Currently Critical:	•A system or component is inoperable or compromised and requires immediate action
Priority 3 – Necessary / Not Critical:	•Maintain the integrity of the facility or component and replace those items, which have exceeded their expected useful life
Priority 4 – Recommended:	•Necessary for optimal performance of the facility or component
Priority 5 – Appearance:	•Used when a system has degraded and requires refurbishment

Chart EX-7 through to EX-9 illustrate the breakdown of expenditure according the priority coding providing an opportunity to strategically plan and effectively direct funding to the highest priority for each building and the site systems.

Pier Roundhouse

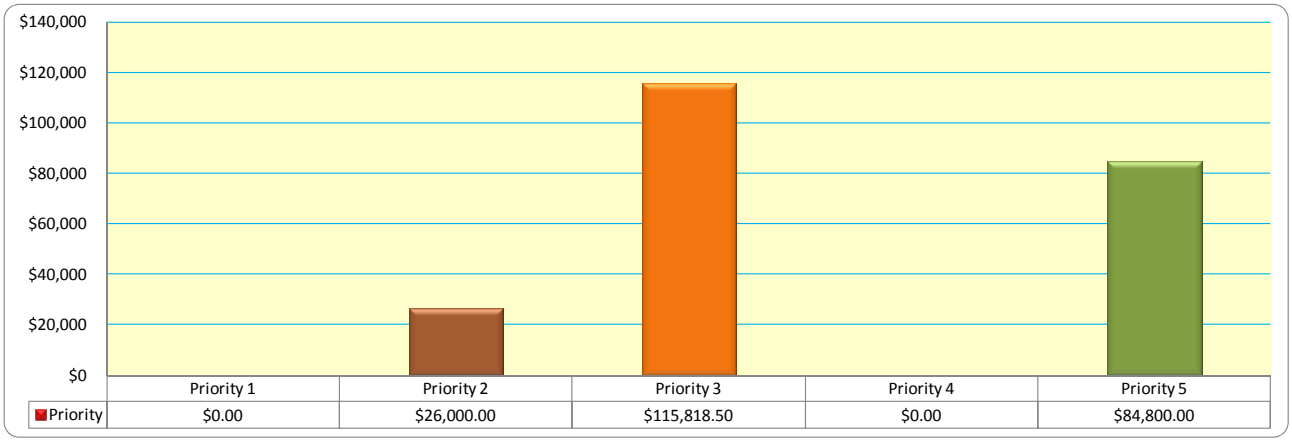
Chart EX-7 Cumulative Prioritization of Work



Priority 3 appears to require the greatest amount of expenditure in this study. This category illustrates that the majority of the work which needs to be undertaken is associated with normal replacements.

Pier Comfort Station

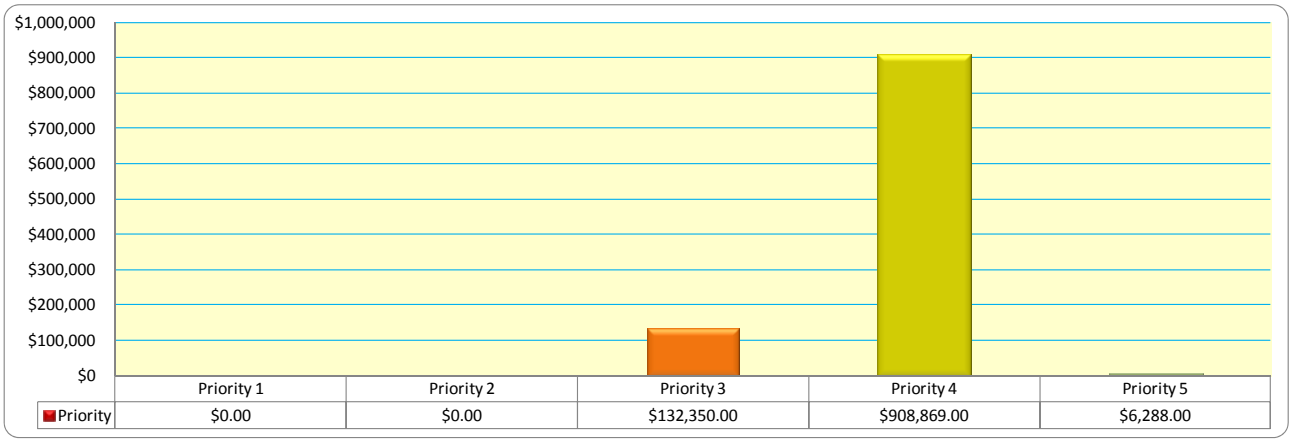
Chart EX-8 Cumulative Prioritization of Work



Priority 3 appears to require the greatest amount of expenditure in this study. This category illustrates that the majority of the work which needs to be undertaken is associated with normal replacements.

Site Systems

Chart EX-9 Cumulative Prioritization of Work

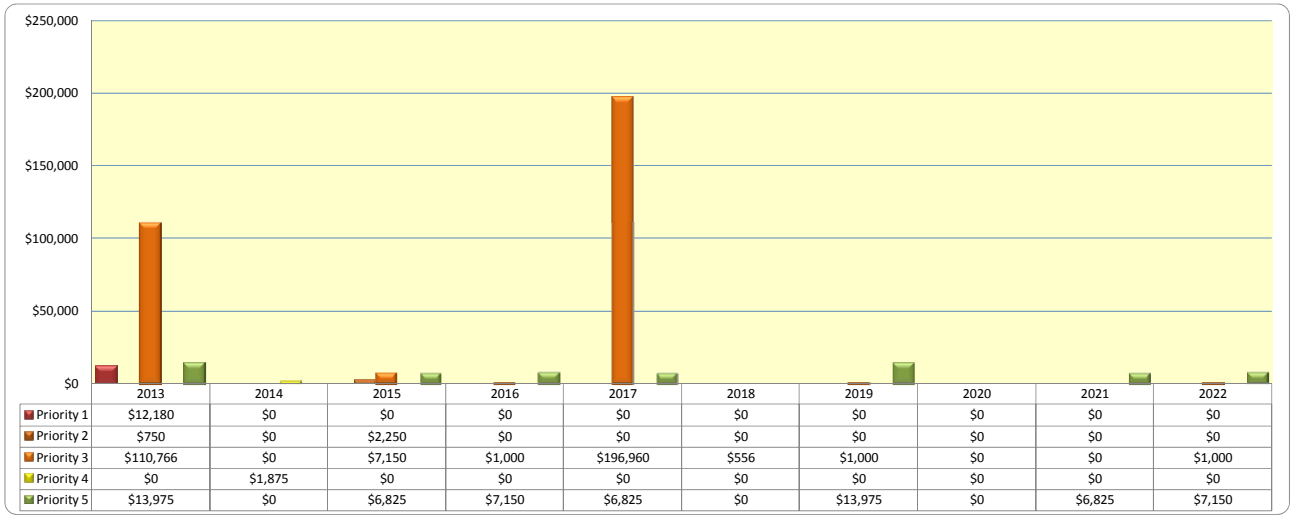


Priority 4 appears to require the greatest amount of expenditure in this study, relating to the optimal performance of the facility.

Chart EX-10 through to EX-12 illustrate the expenditure per priority code, per each year within the 10 year study period.

Pier Roundhouse

Chart EX-10 Year by Year Cumulative Prioritization of Work

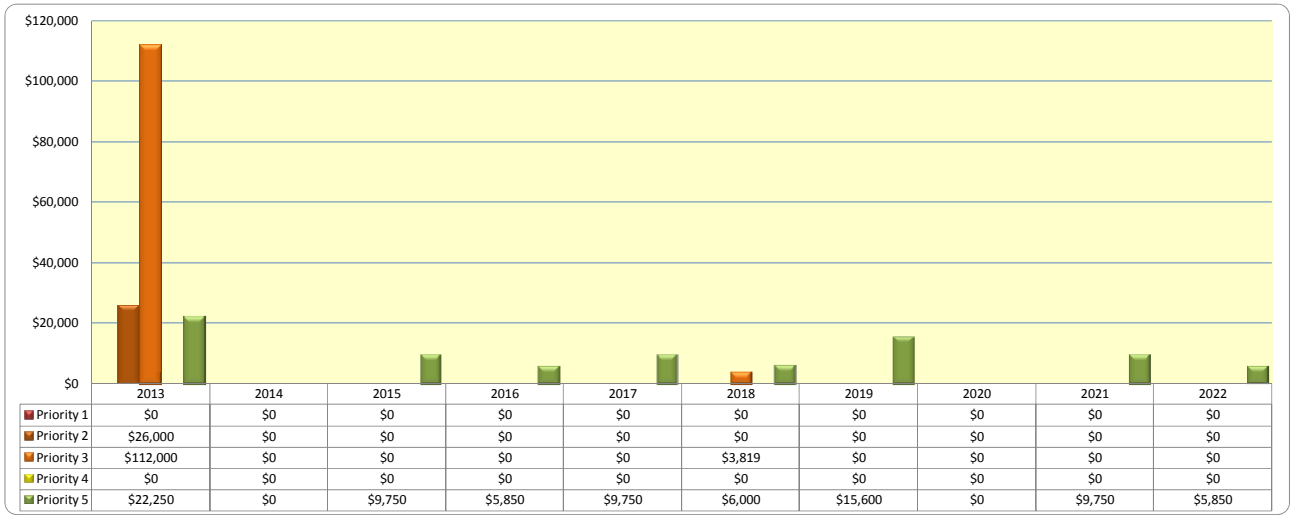


	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Priority 1	$12,180	$0	$0	$0	$0	$0	$0	$0	$0	$0
Priority 2	$750	$0	$2,250	$0	$0	$0	$0	$0	$0	$0
Priority 3	$110,766	$0	$7,150	$1,000	$196,960	$556	$1,000	$0	$0	$1,000
Priority 4	$0	$1,875	$0	$0	$0	$0	$0	$0	$0	$0
Priority 5	$13,975	$0	$6,825	$7,150	$6,825	$0	$13,975	$0	$6,825	$7,150

Chart EX-10 illustrates that there are two key years for Priority 3 coding in the first start of the study period.

Pier Comfort Station

Chart EX-11 Year by Year Cumulative Prioritization of Work

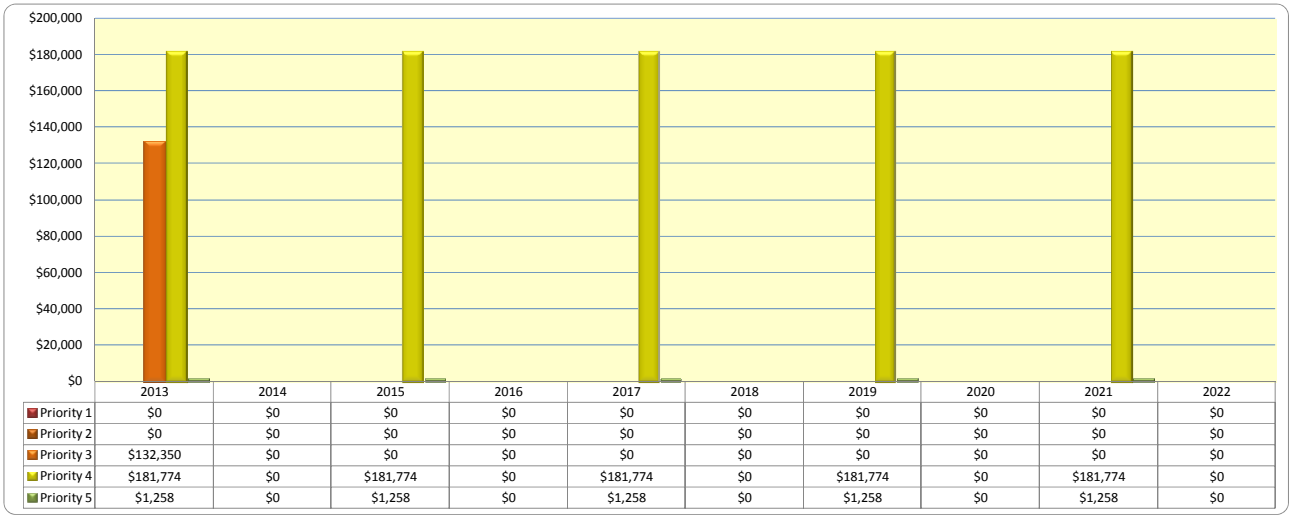


	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Priority 1	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Priority 2	$26,000	$0	$0	$0	$0	$0	$0	$0	$0	$0
Priority 3	$112,000	$0	$0	$0	$0	$3,819	$0	$0	$0	$0
Priority 4	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Priority 5	$22,250	$0	$9,750	$5,850	$9,750	$6,000	$15,600	$0	$9,750	$5,850

Chart EX-11 illustrates that there are a number of key years for Priority 5 and one main year for Priority 3 at the start of the study period.

Site Systems

Chart EX-12 Year by Year Cumulative Prioritization of Work



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Priority 1	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Priority 2	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Priority 3	$132,350	$0	$0	$0	$0	$0	$0	$0	$0	$0
Priority 4	$181,774	$0	$181,774	$0	$181,774	$0	$181,774	$0	$181,774	$0
Priority 5	$1,258	$0	$1,258	$0	$1,258	$0	$1,258	$0	$1,258	$0

Chart EX-12 illustrates that there are five key years for Priority 4 coding throughout the study period.

PLAN TYPES

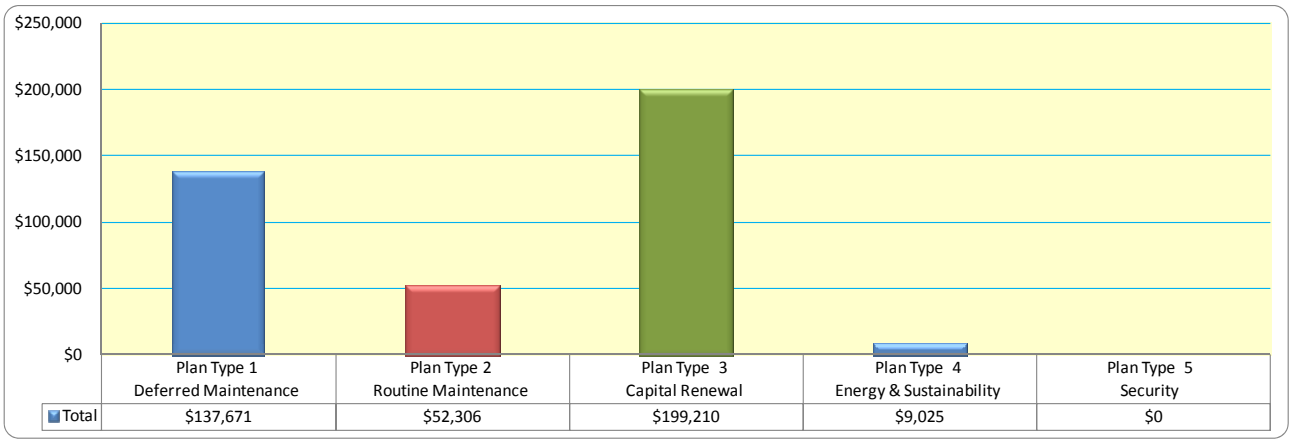
Faithful+Gould has prioritized the identified work according to the Plan Type or deficiency categories in order to assist with analyzing the deficiencies found during the assessments. The following Plan Types are shown below:

Plan Type 1 Deferred Maintenance	•Maintenance that was not performed when it was scheduled or past its useful life resulting in immediate repair or replacement
Plan Type 2 Routine Maintenance	•Maintenance that is planned and performed on a routine basis to maintain and preserve the condition
Plan Type 3 Capital Renewal	•Planned replacement of building systems that have reached the end of their useful life
Plan Type 4 Energy & Sustainability	•When the repair or replace of equipment or systems are recommended to improve energy and sustainability performance.
Plan Type 5 Security	•When a system requires replacement due to a security risk or requirement

Chart EX-13 through to EX-15 illustrate the amount of expenditure, per category within the 10 year study period. These figures include each of the buildings and the site systems.

Pier Roundhouse

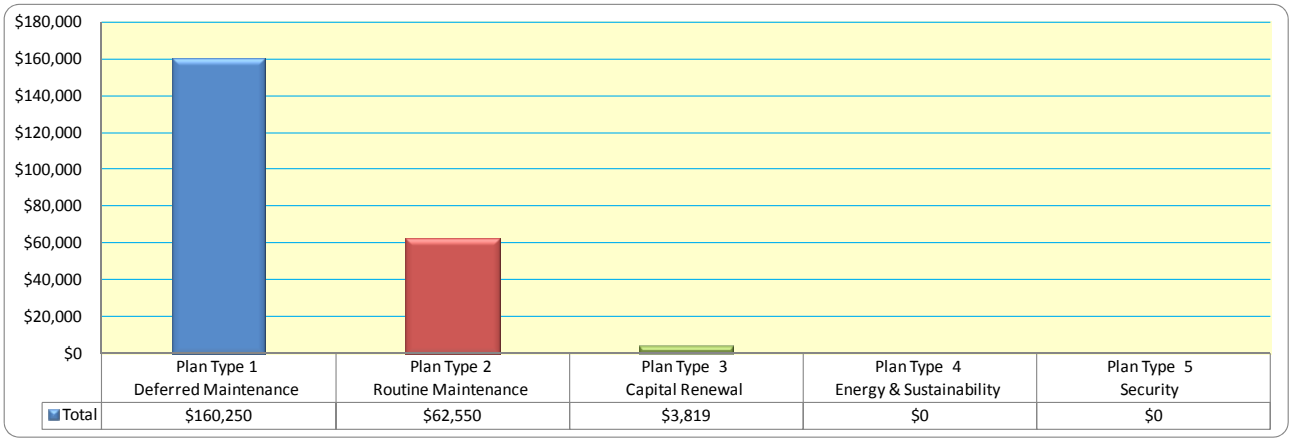
Chart EX-13 Cumulative Expenditure per Category of Works



Plan Type 3 – Capital Renewal appears to require the greatest amount of expenditure in this study.

Pier Comfort Station

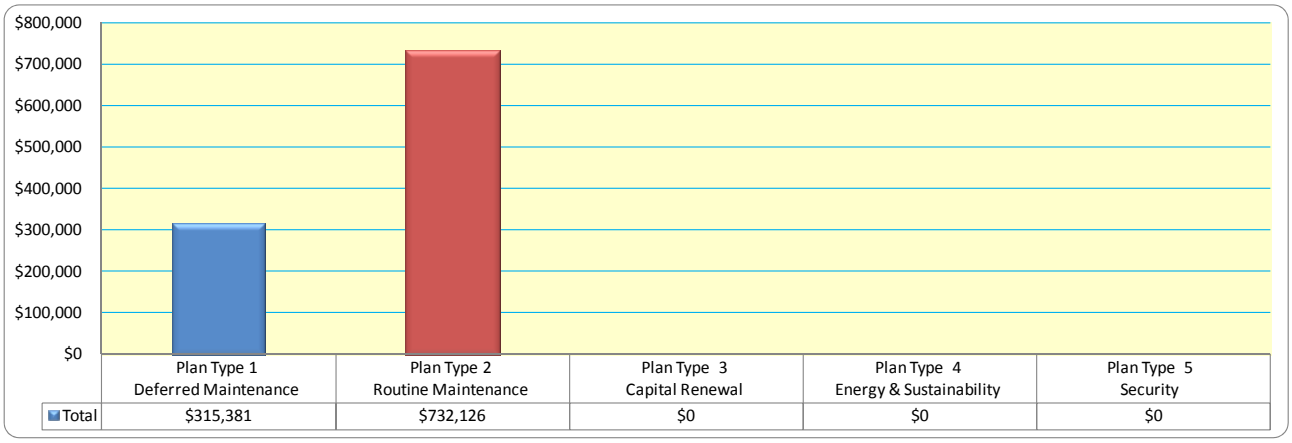
Chart EX-14 Cumulative Expenditure per Category of Works



Plan Type 1 – Deferred Maintenance appears to require the greatest amount of expenditure in this study.

Site Systems

Chart EX-15 Cumulative Expenditure per Category of Works

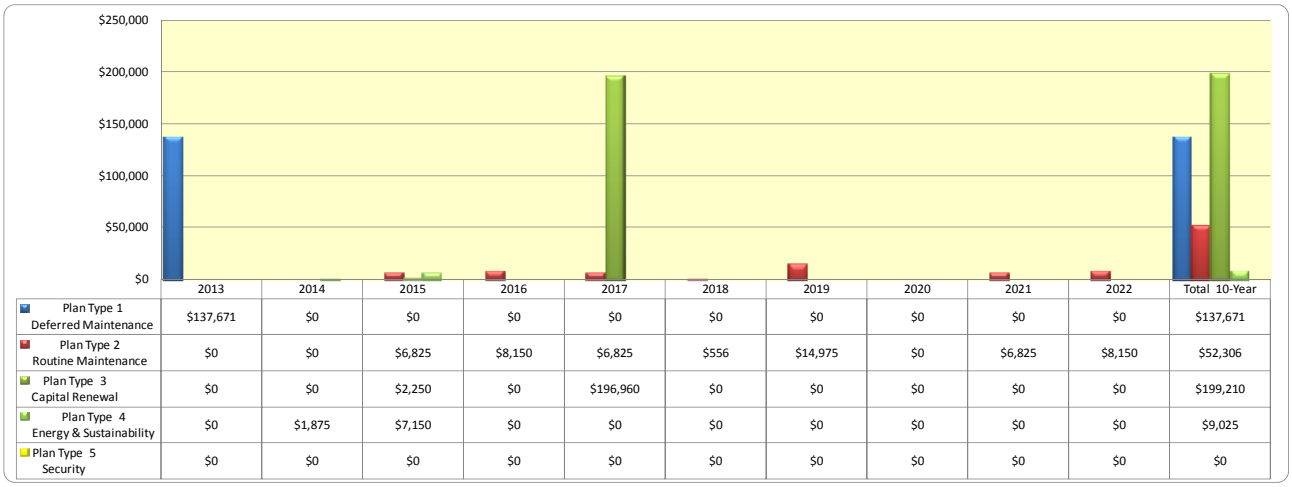


Plan Type 2 – Routine Maintenance appears to require the greatest expenditure in this study.

Chart EX-16 through to EX-18 illustrates the amount of expenditure, per category, per each year within the 10 year study period.

Pier Roundhouse

Chart EX-16 Year by Year Cumulative Expenditure per Category of Works

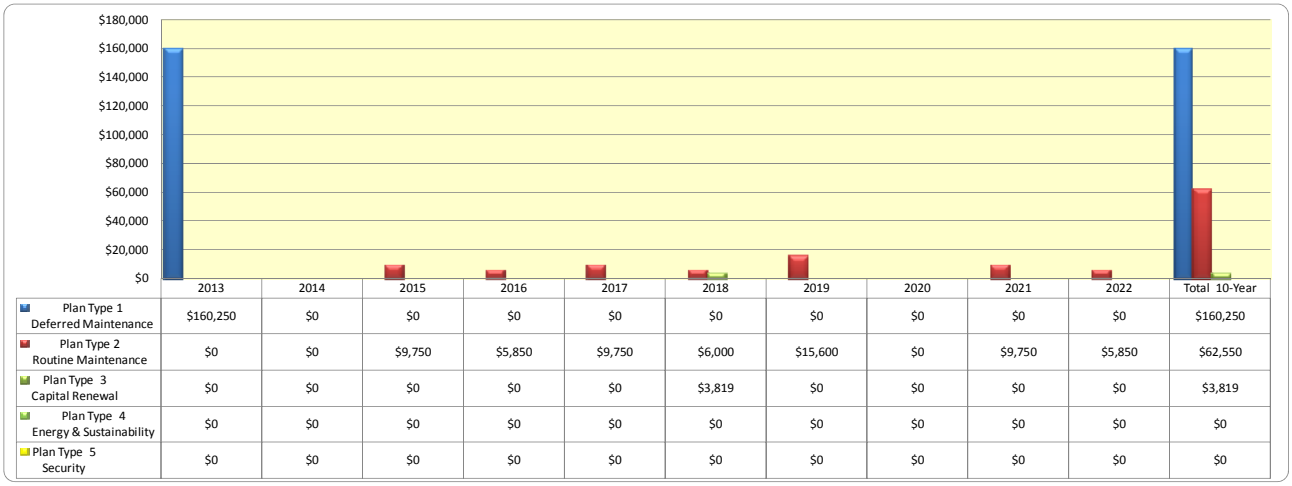


	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total 10-Year
Plan Type 1 Deferred Maintenance	$137,671	$0	$0	$0	$0	$0	$0	$0	$0	$0	$137,671
Plan Type 2 Routine Maintenance	$0	$0	$6,825	$8,150	$6,825	$556	$14,975	$0	$6,825	$8,150	$52,306
Plan Type 3 Capital Renewal	$0	$0	$2,250	$0	$196,960	$0	$0	$0	$0	$0	$199,210
Plan Type 4 Energy & Sustainability	$0	$1,875	$7,150	$0	$0	$0	$0	$0	$0	$0	$9,025
Plan Type 5 Security	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Chart EX-16 illustrates that there is one key year for Plan Type 3 – Capital Renewal, mid-term in the study period.

Pier Comfort Station

Chart EX-17 Year by Year Cumulative Expenditure per Category of Works

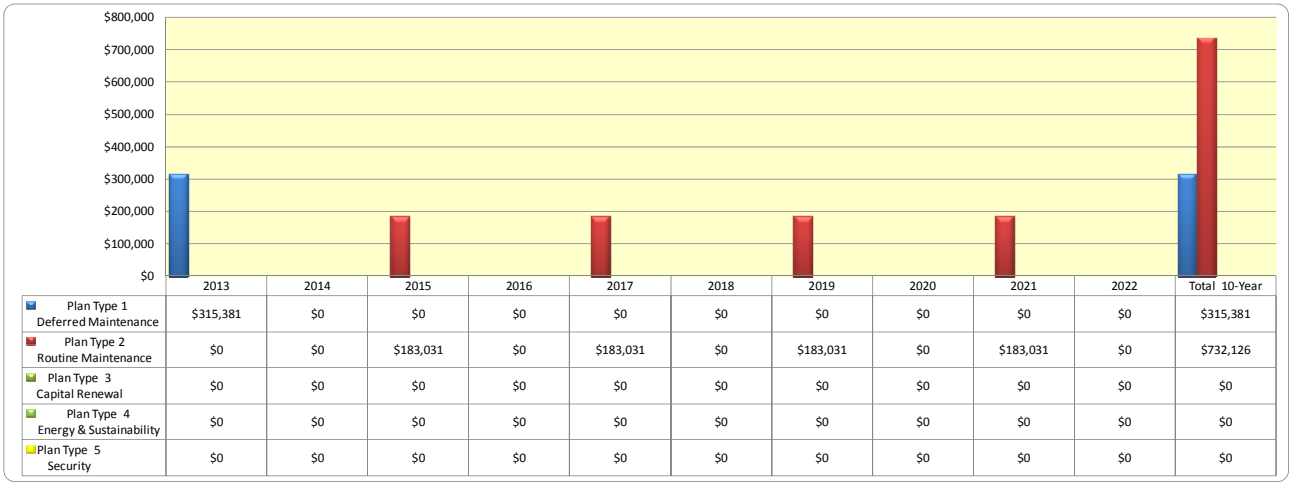


	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total 10-Year
Plan Type 1 Deferred Maintenance	$160,250	$0	$0	$0	$0	$0	$0	$0	$0	$0	$160,250
Plan Type 2 Routine Maintenance	$0	$0	$9,750	$5,850	$9,750	$6,000	$15,600	$0	$9,750	$5,850	$62,550
Plan Type 3 Capital Renewal	$0	$0	$0	$0	$0	$3,819	$0	$0	$0	$0	$3,819
Plan Type 4 Energy & Sustainability	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Plan Type 5 Security	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Chart EX-17 illustrates that there is one key years for Plan Type 1 – Deferred Maintenance.

Site Systems

Chart EX-18 Year by Year Cumulative Expenditure per Category of Works



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total 10-Year
Plan Type 1 Deferred Maintenance	$315,381	$0	$0	$0	$0	$0	$0	$0	$0	$0	$315,381
Plan Type 2 Routine Maintenance	$0	$0	$183,031	$0	$183,031	$0	$183,031	$0	$183,031	$0	$732,126
Plan Type 3 Capital Renewal	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Plan Type 4 Energy & Sustainability	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Plan Type 5 Security	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Chart EX-18 illustrates that there are four key years for Plan Type 2 – Routine Maintenance throughout the study period.

SECTION 2 - A SUBSTRUCTURE

A10 FOUNDATIONS

DESCRIPTION

The description of the respective structural systems for each building is based upon our observation of exposed portions of the building structure and a limited number of available construction drawings for review.

A1010 STANDARD FOUNDATIONS

Pier Comfort Station

A1011 Wall Foundations

Although original construction drawings were not available for reference, it is assumed the building has been placed on conventional steel-reinforced concrete spread footings and foundation walls.

A1020 SPECIAL FOUNDATIONS

Pier Roundhouse

A1021 Pile Foundations

The building has been placed on the steel-reinforced concrete pile, beam and deck of the pier. Drawings indicating construction details for the pier were not available for reference during our assessment.

A1030 SLABS-ON-GRADE

Pier Comfort Station

A1031 Standard Slab on Grade

The floor of the building consists of cast-in-place concrete slabs-on-grade, assumed to be 4" to 5" thick and reinforced with welded wire fabric. Drawings indicating the slabs thickness, reinforcement, and design concrete compressive strength were not available for reference during our assessment.

CONDITION

A1010 STANDARD FOUNDATIONS

Pier Comfort Station

A1011 Wall Foundations

The load-bearing walls of the building did not have indications of foundational insufficiency and appeared to be in good condition. Therefore, we assume that the concrete supports are also in fair to good condition. We did observe instances of horizontal cracking which we have included for repair actions in section B2011 Exterior Wall Constructions.

A1020 SPECIAL FOUNDATIONS

Pier Roundhouse

A1021 Pile Foundations

The exterior walls and load-bearing superstructure of the building did not have indications of inadequacy and appeared to be in good condition. Therefore, we assume that the pier's load-bearing structural elements and deck are also in good condition. We do not anticipate that any actions will be necessary during the study period.

A1030 SLABS-ON-GRADE

Pier Comfort Station

A1031 Standard Slab on Grade

The cast-in-place concrete slabs of the building appeared to be in fair condition. However the slab surface has deteriorated, see section C3023 for recommendations.

PROJECTED EXPENDITURES

No projected expenditures are identified for A Substructure during the study period.

SECTION 3 - B SHELL

B10 SUPERSTRUCTURE

DESCRIPTION

The description of the respective structural systems for each building is based upon our observation of exposed portions of the building structures. There were limited original construction drawings available to review.

B1010 FLOOR CONSTRUCTION

Pier Roundhouse

B1012 Upper Floors Construction

The building has a main floor of concrete slabs placed over the pier's structural deck, most likely reinforced with welded wire fabric. A small office mezzanine at the east side of the building is wood framed with 2" x 12" joists at 16" on center, supported on wood framed walls, with ¾" plywood decking. A stair, framed with 4" x 16" wood stringers, 1" solid wood treads and ¾" plywood risers, is provided for access to the mezzanine.

B1020 ROOF CONSTRUCTION

Pier Roundhouse and Pier Comfort Station

B1022 Pitched Roof Construction

The buildings have sloped roofs constructed, with the Pier Roundhouse having sloped W12 steel beams supported by perimeter steel beams and columns, in-filled with 2" x 8" wood rafters at 16" on center and topped with ½" plywood decking. The Pier Comfort Station roof has a wood framed roof of horizontal 6" x 10" joists and pairs of sloped 3" x 10" rafters, supported by the perimeter concrete masonry walls (reference Photographs 22, 23 and 28 in Appendix B). The wood rafters are spaced at 36" on center, with the horizontal joists at 6' on center and are topped with ¾" plywood decking.

B1030 STRUCTURAL FRAME

Pier Roundhouse

B1033 Steel Frame Structure

The building has a steel structural frame of wide-flange W10 steel columns at its perimeter supporting W8 perimeter beams and sloped W12 steel beams meeting at a central point. The remainder of the roof is in-filled with wood joist framing, with wood framed perimeter walls.

CONDITION

B1010 FLOOR CONSTRUCTION

Pier Roundhouse

B1012 Upper Floors Construction

The building's concrete floor did not exhibit evidence of structural distress or instability and appeared to be in good condition. No significant expenditures are anticipated during the study period.

B1020 ROOF CONSTRUCTION

Pier Roundhouse and Pier Comfort Station

B1022 Pitched Roof Construction

The pitched roof structural construction of the Pier Roundhouse appeared to be in fair condition. There were no major signs of distress or instability noted. However, the east and west load-bearing walls of the Pier Comfort Station has horizontal cracking and splaying along the top at various locations (reference Photographs 22 and 23 in Appendix B). This cracking indicates lateral stresses have been placed on the walls, possibly by the roof framing though rebar corrosion should not be overlooked. We recommend repairs to the masonry walls and strengthening of the wall/roof framing connections be completed in the near term of the study period.

B1030 STRUCTURAL FRAME

Pier Roundhouse

B1033 Steel Frame Structure

The building/s steel framed construction appeared to be in good condition. We do not anticipate any expenditure during the study period which relates to replacement of the structural system.

B20 EXTERIOR ENCLOSURES

DESCRIPTION

B2010 EXTERIOR WALLS

Pier Roundhouse

B2011 Exterior Wall Construction

The building has exterior walls of painted cementitious stucco over plywood or solid wood sheathing, with painted wood trim and inset ceramic tile (reference Photographs 1 to 3 in Appendix B). The drawings indicate 7/8" of Portland cement plaster on paper-backed lath secured to the wood-framed walls, with R-11 batt insulation placed within the exterior walls.

Pier Comfort Station

B2011 Exterior Wall Construction

The building has 8" thick load-bearing steel-reinforced concrete masonry exterior walls in stack bond, supporting the wood framed roof (reference Photographs 22 and 23 in Appendix B). Ceramic tile is installed over the concrete masonry on a portion of the west façade, in a shower area. The walls are uninsulated. Vertical painted wood louvers are provided across the gable ends of the building above the concrete masonry walls, on the north and south facades.

B2020 EXTERIOR WINDOWS

Pier Roundhouse

B2021 Windows

The windows at the building consist of fixed, double-hung and casement type wood-framed windows, with double pane glazing (reference Photographs 1 through 3, 8 and 9B in Appendix B). Pull-down storm protection grilles formed from aluminum and vinyl are provided over the windows on each façade. Urethane-type sealants are utilized at the perimeter of window and door frames.

B2030 EXTERIOR DOORS

Pier Roundhouse

B2031 Glazed Doors & Entrances

The building's primary doors are wood-framed units with double-pane glazing, painted wood trim and aluminum thresholds (reference Photographs 2 and 3 in Appendix B). The doors are placed in pairs on the north and south facades and as single units on the east façade, with exterior pull, interior panic-type push bar, overhead closer and hinge hardware. Pull-down aluminum storm protection grilles are provided over the doors on each façade.

B2032 Solid Exterior Doors

The building contains a pair of flush metal doors with louvered openings, in a steel frame, with painted finish at the north façade at the electrical room (reference Photograph 6 in Appendix B). Door hardware consists solely of a deadbolt lock set and hinges.

Pier Comfort Station

B2032 Solid Exterior Doors

The building contains two pairs of flush metal doors in steel frames, with painted finishes, at the east façade at the electrical rooms (reference Photograph 17 in Appendix B). Door hardware consists solely of deadbolt lock sets and hinges.

B2039 Other Doors & Entrances

The building has painted steel gates at the entrances to the restrooms at the west façade (reference Photograph 24 in Appendix B).

CONDITION

B2010 EXTERIOR WALLS

Pier Roundhouse

B2011 Exterior Wall Construction

The buildings' painted cementitious stucco cladding and painted wood trim are in good to fair condition. The surfaces of the walls appeared to be in good to fair condition, having been recently painted. Based on the EUL for this particular building of 3 years for exterior paint, we recommend budgeting for re-painting and replacement of sealants near-term in the study period, to maintain appearance and protect the exterior.

Pier Comfort Station

B2011 Exterior Wall Construction

The building's concrete masonry is in fair condition; although horizontal cracking was noted at the top of the walls in various locations (reference Photographs 22 and 23 in Appendix B). The local facilities team advises that this cracking and swelling is increasing on a yearly basis and is pushing tiles out of the shower unit walls. We have recommended repairs be completed to the masonry walls and that strengthening of the wall/roof framing connections be completed in the near term of the study period. We also recommend that a qualified structural engineer is appointed by the City to investigate/examine the structural issues further and confirm our recommendation. The reasoning behind this is that we have only undertaken an observation of the issues and have not performed any destructive investigations.

We have recommended repairs be completed to the masonry walls and that strengthening of the wall/roof framing connections be completed near-term in the study period. Based observed condition and on the EUL of 3 years for exterior paint that is exposed to the harsh environmental condition, we recommend budgeting for re-painting and replacement of sealants in the near-term of the study period, to maintain appearance and protect the exterior.

B2020 EXTERIOR WINDOWS

Pier Roundhouse

B2021 Windows

The windows are in fair condition, with no significant wood frame or glazing deterioration noted. With an EUL of 30 years, we do not anticipate the need for significant repairs or replacements during the study period. The caulking at the perimeter of the window units was generally in fair condition and, with an estimated useful life of 10- to 15-years, we recommend replacement of the sealants at the time of exterior repainting.

B2030 EXTERIOR DOORS

Pier Roundhouse

B2031 Glazed Doors & Entrances

In general, the operation of the doors appeared to be satisfactory, operating without difficulty. Re-painting of frames, at the time of other exterior re-painting, will be necessary to maintain appearance and to protect the frame surfaces.

B2032 Solid Exterior Doors

In general, the operation of the doors was unsatisfactory, operating with difficulty. Mild corrosion was noted on the door faces and frames; re-painting, at the time of other exterior re-painting, will be necessary to maintain appearance and to protect the metal surfaces.

Pier Comfort Station

B2032 Solid Exterior Doors

In general, the operation of the doors were satisfactory, operating without difficulty at the time of our assessment. Mild corrosion was noted on the base of door faces and frames; re-painting, at the time of other exterior re-painting, will be necessary to maintain appearance and to protect the metal surfaces. Corrosion was noted on the door faces and frames.

B2039 Other Doors & Entrances

The metal gated entrances are in fair condition, not exhibiting corrosion or other deficiency. Re-painting of the gates, at the time of other exterior re-painting, will be necessary to maintain appearance and to protect the metal surfaces.

B30 ROOFING

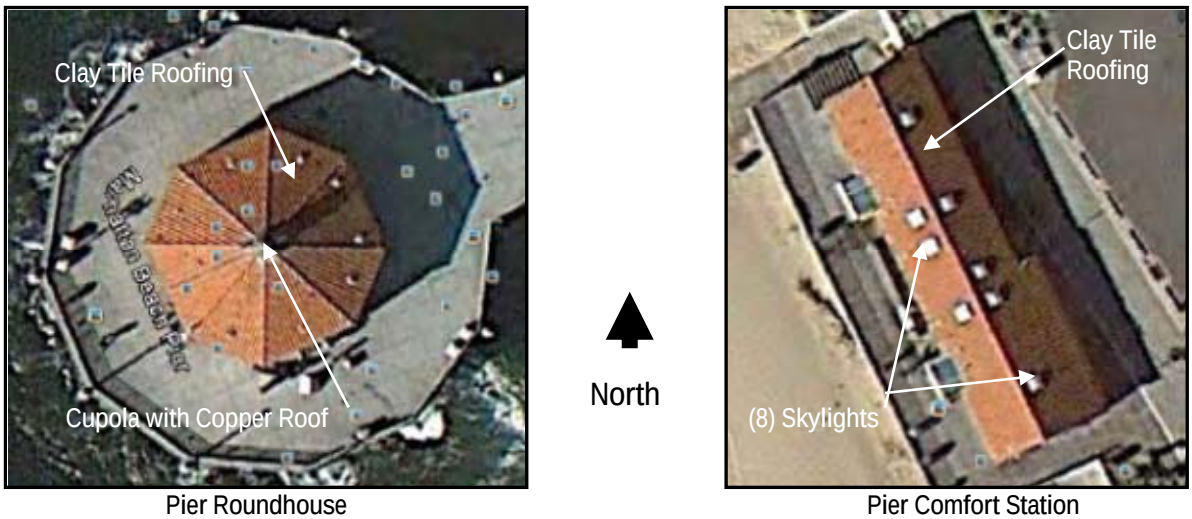
DESCRIPTION

B3010 ROOF COVERINGS

B3011 Roof Finishes

The facility contains two buildings, each with pitched steep-sloped roof; these are shown on the following aerial plans:

Overview of Roof Locations & Configurations



Pier Roundhouse | Pier Comfort Station

Pier Roundhouse

The building's 5" in 12" sloped roof contains barrel-shaped mortared clay tiles placed over a roofing membrane, with clay tile ridge caps, metal flashing and drip edge and a pre-fabricated fiberglass cupola with a copper-clad dome, copper flashing and decorative weather vane (reference Photographs 1, 4 and 5 in Appendix B). Half-round fiberglass attic vent dormers are located on each roofing section. We understand that the roofing and cupola were installed in 1992.

Pier Comfort Station

The building's 5" in 12" sloped roof contains barrel-shaped clay tiles placed over roofing felt, with clay tile ridge cap and metal drip edge (reference Photographs 16 through 18, 20 and 21 in Appendix B). Storm water drainage is directly over the roof edge.

B3016 Guttering and Downspouts

Pier Roundhouse

No guttering is in place on this building. Storm water drainage is directly over the roof edge.

Table B30-1 provides a summary of the roof coverings:

Table B30-1 Summary of Roof Coverings

Roof Component	Pier Roundhouse	Pier Comfort Station
Age *	21 Years (1992)	23 Years (1990)
Roof Area (total / approx. square footage)	1,675	1,913
Application / Membrane	Clay Tile	Clay Tile
Manufacturer / Model	Unknown	Unknown
Surface	Exposed Clay Tile	Exposed Clay Tile
Deck Type	½" Plywood	¾" Plywood
Insulation	R-19 Batts	None
Cover Board	None	None
Drainage	Over Roof Edge	Over Roof Edge
Overflow Scuppers	None	None
Base Flashings	None	None
Cap Flashings	Clay Tile at Ridges	Clay Tile at Ridge
Perimeter Enclosure	None	None
Warranty (Manufacturer)	Unknown	Unknown
Warranty (Contractor)	Unknown	Unknown

*Actual installation date unknown.

B3021 Glazed Roof Openings

Pier Comfort Station

The building contains eight skylights on raised metal curbs, with aluminum frames and translucent domed plastic lenses. The age of the skylights in not known, but they appear to be approximately 20 years old.

CONDITION

B3010 ROOF COVERINGS

B3011 Roof Finishes

Pier Roundhouse

The clay tile roofing of the building is in fair to good condition, with a limited number of displaced or damaged tiles noted. However after discussions with building users and City maintenance personnel we understand that the roof does occasionally leak. Based on conditions and an EUL of 50+ years, we do not anticipate significant repairs or replacements during the study period.

We recommend that a qualified roofing contractor assess the roof in more detail at the start of the study period to ascertain any failures and points at which moisture ingress can travel to the interior. We have included an estimated expenditure amount for clay tile repairs in the near-term in the study period.

The cupola wood structure has rotten wood in places and this needs replacing. Also, the seal on the decorative weather vane has failed and will need to be replaced early in the study period.

Pier Comfort Station

The clay tile roofing is in good to fair condition, with locations of slipped, cracked or missing tiles noted. Based on conditions and a typical EUL of 50+ years, we do not anticipate the need for roofing replacement during the study period, but repairs to damaged or missing tiles should be completed in the near term. We have included an estimated expenditure amount for clay tile repairs in the near-term in the study period.

B3016 Guttering and Downspouts

Pier Roundhouse

There is no storm water capture present; however after discussions with the City maintenance personnel we understand that a length of gutter and downspout is required over the entrance. We have included for this near-term in the study period.

B3021 Glazed Roof Openings

Pier Comfort Station

The skylights are in fair condition, with few locations of water intrusion noted on the building interior and open aluminum frame joints and surface crazing in the plastic lenses suspected. Based on the conditions and an EUL of 25- to 30-years, we recommend budgeting for the replacement of the skylights in the mid- to late-term of the study period.

PROJECTED EXPENDITURES

Identified recommended works that are required during the 10 year study period are scheduled below. We recommend budgeting for additional project costs of between 25%-30% to allow for professional fees and general contractor overhead/profit and management costs.

Pier Roundhouse

Element No.	Building Element	Recommendation	Qty	Unit	Rate	Cost	Year	Priority Code
B2011	Exterior Wall Construction	Repaint all previously exterior painted surfaces	2,200	SF	$3.25	$7,150	2013	5
B2011	Exterior Wall Construction	Repaint all previously exterior painted surfaces	2,200	SF	$3.25	$7,150	2016	5
B2011	Exterior Wall Construction	Repaint all previously exterior painted surfaces	2,200	SF	$3.25	$7,150	2019	5
B2011	Exterior Wall Construction	Repaint all previously exterior painted surfaces	2,200	SF	$3.25	$7,150	2022	5
B3010	Roof Finishes	Replace the rotten wood at the cupola wood structure	1	LS	$2,500	$2,500	2013	3
B3010	Roof Finishes	Undertake clay tile roof covering repairs	1	LS	$750	$750	2013	2
B3010	Roof Finishes	Replace weather vane	1	LS	$650	$650	2013	3
B3016	Guttering and downspout	Install copper guttering and downspout to roundhouse	244*	LF	$15	$3,660	2013	3
		Total Anticipated Expenditure for B Shell				$36,160		

* Amount includes for 156ft linear guttering and 4 downspouts at 22ft each

Pier Comfort Station

Element No.	Building Element	Recommendation	Qty	Unit	Rate	Cost	Year	Priority Code
B1022	Exterior Wall Construction	Repair concrete masonry walls & roof framing anchoring	1	LS	$25,000	$25,000	2013	2
B2011	Exterior Wall Construction	Repaint all previously exterior painted surfaces	1,800	SF	$3.25	$5,850	2013	5
B2011	Exterior Wall Construction	Repaint all previously exterior painted surfaces	1,800	SF	$3.25	$5,850	2016	5
B2011	Exterior Wall Construction	Repaint all previously exterior painted surfaces	1,800	SF	$3.25	$5,850	2019	5
B2011	Exterior Wall Construction	Repaint all previously exterior painted surfaces	1,800	SF	$3.25	$5,850	2022	5
B3010	Roof Finishes	Undertake clay tile roof covering repairs	1	LS	$950	$950	2013	3
B3021	Glazed Roof Openings	Replace the skylights	50	SF	$76.37	$3,819	2018	3
		Total Anticipated Expenditure for B Shell				$53,169		

SECTION 4 - C INTERIORS

C10 INTERIOR CONSTRUCTION

DESCRIPTION

C1010 PARTITIONS

C1011 Fixed Partitions

Pier Roundhouse

The building contains wood-stud framed partitions with painted gypsum board sheathing (reference Photographs 7 through 11 in Appendix B). The partitioning separates the main floor's exhibit area from restrooms, storage rooms, mechanical and electrical closets, and tenant equipment rooms within the building.

Pier Comfort Station

The building contains painted concrete masonry partitions (reference Photographs 25 through 27 in Appendix B). The partitioning separates the dressing areas and the individual restroom plumbing fixture stalls within the building.

C1020 INTERIOR DOORS

C1021 Interior Doors

Pier Roundhouse

The building contains single-leaf wood framed/glazed French doors and louvered wood doors, in wood frames.

Pier Comfort Station

The building contains partial height single flush panel metal doors in metal frames at the plumbing fixture stalls within the restroom areas (reference Photograph 27 in Appendix B).

Pier Roundhouse and Pier Comfort Station

C1023 Interior Door Hardware

The doors contained steel and aluminum hardware consisting of and cylindrical knobs, deadbolt locksets, twist/lock occupancy latches, and standard service hinges. Door closers are not provided.

CONDITION

C1010 PARTITIONS

C1011 Fixed Partitions

The interior fixed partitions appeared to be in fair condition, with no significant deficiencies identified. We do not anticipate any major expenditure during the study period.

C1020 INTERIOR DOORS

C1021 Interior Doors

The interior doors appeared to be in poor to fair condition. The doors and frames are generally warped, causing doors to stick; and therefore we have recommended that they are replaced near-term. Furthermore as the doors are housed within metal door frames these will also need to be replaced in most instances as they have blistered with rust which will prevent new doors being fitted.

C1023 Interior Door Hardware

Pier Roundhouse and Pier Comfort Station

The hardware at each of the doors is reported to be in poor condition. The hinges and other hardware are rusted and in many cases inoperable. The condition of the doors noted in C1021 prevents re-use of existing hardware. We recommend replacing door hardware at the time of door replacements.

C30 INTERIOR FINISHES

DESCRIPTION

C3010 WALL FINISHES

C3012 Wall Finishes to Interior Walls

Pier Roundhouse

The interior walls typically have painted finishes, with ceramic tile in the restrooms (reference Photographs 8 through 11 in Appendix B).

Pier Comfort Station

The interior walls have painted finishes at exposed concrete masonry locations and also ceramic wall tile at plumbing fixture walls (reference Photographs 23 and 25 through 27 in Appendix B).

C3020 FLOOR FINISHES

C3021 Floor Toppings

Pier Comfort Station

The floors in the building are exposed concrete with a clear seal coating (reference Photographs 25 through 27 in Appendix B).

C3023 Hardeners and Sealers

Pier Comfort Station

The concrete floor slab has a clear seal coated finish.

C3024 Flooring

Pier Roundhouse

The flooring in the building is a primarily sealed concrete, with carpet in the office mezzanine (reference Photographs 9A & 9B in Appendix B).

C3030 CEILING FINISHES

C3031 Ceiling Finishes

Pier Roundhouse

The ceiling finishes throughout the building are predominantly suspended acoustical tile, with painted gypsum board soffits and bulkheads (reference Photograph 7 in Appendix B).

Pier Comfort Station

The building does not have ceiling systems, with the painted roof structural systems exposed (reference Photograph 28 in Appendix B).

CONDITION

C3010 WALL FINISHES

C3012 Wall Finishes to Interior Walls

Pier Roundhouse

Interior wall finishes appeared to be in fair condition generally throughout the building, with minor marks, staining and surface damage observed. The typical EUL of interior painted walls is 2 years, and based on our observations, we recommend re-painting at the start of the study period, to maintain the appearance of the building and work areas. However we it was unclear if the interiors are the responsibility of the tenant, and therefore even though they have been included they may not be an expense to the City.

Pier Comfort Station

Interior wall finishes appeared to be in fair condition throughout the building, with locations of painted walls with marking and staining observed. The ceramic tiled walls have locations of cracked and displaced tile (reference Photograph 23 in Appendix B). The typical EUL of these interior painted walls is 2 years, and based on our observations, we recommend re-painting at the start of the study period to maintain the appearance of the building.

We also recommend repairing locations of damage ceramic tile, we anticipate that the cost of these works to be around the threshold level and therefore we have included for these costs.

C3020 FLOOR FINISHES

C3021 Floor Toppings

Pier Comfort Station

The exposed concrete floor appeared to be in fair condition, as the top surfaces were observed to be de-laminating from the slab, which consists of the leveling course failing. The areas where the concrete leveling/topping has deteriorated and cracked, we recommend grinding/repair/resurfacing near-term in the study period.

C3023 Hardeners and Sealers

Pier Comfort Station

The areas where the concrete slab has been repaired we recommend the reapplication of the seal coating. Furthermore the seal coating is recommended for replacement at every 5 years.

C3024 Flooring

Pier Roundhouse

The carpeted floors appeared to be in fair overall condition. With an EUL of 7 to 10 years and an estimated age of 10 years, we recommend replacing the carpet on the mezzanine level during the early- to mid-term of the study period, at one of the repainting intervals, to maintain the appearance of the building.

C3030 CEILING FINISHES

C3031 Ceiling Finishes

Pier Roundhouse

The acoustical tile and painted gypsum board ceilings appeared to be in good to fair condition. Painted surfaces usually have a typical EUL of five years; therefore, we recommend the painted ceiling areas be re-painting at the time of wall re-painting.

Pier Comfort Station

The painted exposed roof structure appeared to be in good to fair condition. Painted surfaces usually have a typical EUL of five years; therefore, we recommend that the painted structural framing and the underside of the roof deck be re-painting at the time of wall re-painting.

PROJECTED EXPENDITURES

Identified recommended works that are required during the 10 year study period are scheduled below. We recommend budgeting for additional project costs of between 25%-30% to allow for professional fees and general contractor overhead/profit and management costs.

Pier Roundhouse

Element No.	Building Element	Recommendation	Qty	Unit	Rate	Cost	Year	Priority Code
C1021	Interior Doors	Replace interior doors and frames	2	EA	$1,200	$2,400	2013	3
C3012	Wall Finishes to Interior Walls	Repaint interior wall and ceiling surfaces	2,100	SF	$3.25	$6,825	2013	5
C3012	Wall Finishes to Interior Walls	Repaint interior wall and ceiling surfaces	2,100	SF	$3.25	$6,825	2015	5
C3012	Wall Finishes to Interior Walls	Repaint interior wall and ceiling surfaces	2,100	SF	$3.25	$6,825	2017	5
C3012	Wall Finishes to Interior Walls	Repaint interior wall and ceiling surfaces	2,100	SF	$3.25	$6,825	2019	5
C3012	Wall Finishes to Interior Walls	Repaint interior wall and ceiling surfaces	2,100	SF	$3.25	$6,825	2021	5
C3023	Flooring	Replace carpeting	50	SY	$45	$2,250	2015	5
		Total Anticipated Expenditure for C Interiors				$38,775		

Pier Comfort Station

Element No.	Building Element	Recommendation	Qty	Unit	Rate	Cost	Year	Priority Code
C1021	Interior Doors	Replace interior doors and frames	12	EACH	$1,200	$14,400	2013	3
C3012	Wall Finishes to Interior Walls	Repaint interior wall and ceiling surfaces	3,000	SF	$3.25	$9,750	2013	5
C3012	Wall Finishes to Interior Walls	Repaint interior wall and ceiling surfaces	3,000	SF	$3.25	$9,750	2015	5

Element No.	Building Element	Recommendation	Qty	Unit	Rate	Cost	Year	Priority Code
C3012	Wall Finishes to Interior Walls	Repaint interior wall and ceiling surfaces	3,000	SF	$3.25	$9,750	2017	5
C3012	Wall Finishes to Interior Walls	Repaint interior wall and ceiling surfaces	3,000	SF	$3.25	$9,750	2019	5
C3012	Wall Finishes to Interior Walls	Repaint interior wall and ceiling surfaces	3,000	SF	$3.25	$9,750	2021	5
C3012	Wall Finishes to Interior Walls	Replace damaged sections of ceramic wall tiles	1	LS	$650	$650	2013	5
C3023	Hardeners and Sealers	Apply seal coating at concrete floor surfaces	1,600	SF	$3.75	$6,000	2013	5
C3023	Hardeners and Sealers	Apply seal coating at concrete floor surfaces	1,600	SF	$3.75	$6,000	2018	5
C3024	Flooring Toppings	Repair concrete floor topping	40	SY	$25	$1,000	2013	2
		Total Anticipated Expenditure for C Interiors				$76,800		

SECTION 5 - D SERVICES

D10 ELEVATORS & LIFTS

DESCRIPTION

D1010 ELEVATORS & LIFTS

D1013 Lifts

Pier Roundhouse

A wheelchair lift is provided for access at the mezzanine level, located near the south entrance to the central exhibit space (reference Photograph 13 in Appendix B). A data tag was not visible on the equipment and information regarding capacity and date of installation was not available for reference.

CONDITION

D1010 ELEVATORS & LIFTS

D1013 Lifts

Pier Roundhouse

The wheelchair lift was not operable at the time of assessment and was being used for storage by the occupying tenant. This needs to be addressed. We recommend replacement of the lift early in the study period as access must always be available for use for disabled users.

D20 PLUMBING

DESCRIPTION

D2010 PLUMBING FIXTURES

D2011 Water Closets

Pier Roundhouse

The building contains two wall-mounted stainless steel tank-less water closets with automatic flush controls (reference Photograph 10 in Appendix B).

Pier Comfort Station

The building contains nine wall-mounted stainless steel tankless water closets with automatic flush controls (reference Photograph 27 in Appendix B).

D2013 Lavatories

Pier Roundhouse

The building contains two stainless steel lavatories recessed in ceramic tiled countertops (reference Photograph 11 in Appendix B). The lavatories have dual-handle type, non-metering faucets.

Pier Comfort Station

The building contains six wall-mounted stainless steel lavatories (reference Photograph 27 in Appendix B). The lavatories have single-handle, push-type, metering faucets. Water is supplied via copper pipe work and assumed to be drained through cast iron pipe work and fittings.

Pier Comfort Station

D2012 Urinals

The men's restroom contains two stainless steel trough-type wall-hung urinals with manual flush controls (reference Photograph 26 in Appendix B).

D2018 Drinking Fountains and Coolers

There are two exterior stainless steel water fountain, mounted on the exterior of the building on the west and south façades.

D2020 DOMESTIC WATER DISTRIBUTION

Pier Roundhouse & Pier Comfort Station

D2021 Cold Water Service

Cold water piping to the building are suspended from the sides of the pier, a 2" diameter steel cold water service line and a 6" diameter steel fire water service line (reference Photographs 32, 37 and 38 in Appendix B). Piping throughout the building is assumed to be copper tubing. We believe the cold water service for the facility is supplied directly from the street pressure. Taps are made to the water lines and routed to the plumbing fixtures and equipment via copper pipe work and drained through galvanized steel and cast iron pipe work and fittings.

D2022 Hot Water Service

Domestic hot water is provided in the restaurant's kitchen area and restrooms. The hot water is generated via an electric water heater located in a small room at the south side of the building (reference Photograph 12 in Appendix B).

Table D20-1 provides a summary of the water heater:

Table D20-1 Summary of the Domestic Water Heating Equipment at the Pier Roundhouse

Location	Manufacturer	Model #	Serial #	Fuel / Rating	Capacity	Year of Installation
South Equipment Room	Rheem	Unknown	Unknown	Electric	10 GAL	2010

Unknown = Access limited or equipment had no name plates present.

Pier Roundhouse & Pier Comfort Station

D2021 Cold Water Service

Cold water piping throughout the building is assumed to be copper tubing. We believe the cold water service for the facility is supplied directly from the street pressure. A tap is made to the water line and routed to the plumbing fixtures via this copper pipe work. Domestic hot water is not provided within the building.

D2030 SANITARY WASTE

Pier Roundhouse & Pier Comfort Station

D2031 Waste Piping

Waste piping within the building is indicated on the drawings to be 2" to 4" diameter cast iron material, with some locations observed to have 2" diameter PVC lines (reference Photographs 32, 37 and 38 in Appendix B).

D2031 Waste Piping

Waste piping within the building is indicated on the drawings is 2" to 4" diameter cast iron material.

Pier Roundhouse

D2034 Sanitary Waste Equipment

Waste from the building is from a 4" diameter line into a sewage ejector located under the pier, and then into a 4" diameter cast iron force main located under the pier. The drawings indicate the pump is a duplex submersible 3" sewage pump assembly, rated at 2 horsepower, 60 gallons per minute, with 4 float switches. The controller and alarm panel is located in the electrical room at the east side of the Pier Comfort Station.

CONDITION

D2010 PLUMBING FIXTURES

Pier Roundhouse & Pier Comfort Station

D2011 Water Closets

The water closets at each building appeared to be in good condition, and are low-flow-type models. The water closets flushed properly and did not have evidence of damage. With a typical EUL of thirty-five-years, we do not anticipate that there will be a need for their end-of-useful-life replacement during the study period. Each restroom contained a disabled accessible water closet. We have recommended a full upgrade / renovation of the restrooms during the study period which will include full replacement of the fixtures.

D2012 Urinals

The urinals appeared to be in fair to good condition at each building, operating properly without evidence of damage. We understand that the valves require automation, due to none use by users and they become blocked on a semi regular basis. The urinals do not appear to be mounted at a disabled accessible height, and there are no privacy screens. We have recommended a full upgrade / renovation of the restrooms during the study period which will include full replacement of the fixtures.

D2013 Lavatories

The lavatories and faucets at each the building appeared to be in fair to good condition. The faucets appeared to be low-flow type models and the sinks drained properly and did not have evidence of damage. Therefore, based upon observed conditions and with a typical EUL of thirty-five-years, we do not anticipate that there will be a requirement for replacement during the study period. Each restroom contained disabled accessible lavatories. We have recommended a full upgrade / renovation of the restrooms during the study period which will include full replacement of the fixtures.

D2018 Drinking Fountains and Coolers

The drinking fountains appeared to be in poor to fair condition. The drinking fountains appear to be provided with controls and sufficient knee clearances for access by the disabled. Based upon observed conditions, we recommend that they are replaced at the same time as the restroom renovations.

D2020 DOMESTIC WATER DISTRIBUTION

Pier Roundhouse & Pier Comfort Station

D2021 Cold Water Service

The domestic water systems within each of the buildings appeared to be in fair condition. No major problems were observed that could be attributed to age or deferred maintenance. However, the exposed supply lines along the sides of the pier exhibit heavy corrosion and budgeting for their replacement mid-term in the study period.

We also recommend that the pressure regulator and valve are replaced and moved above grade for ease of access mid-term in the study period as these are nearing the end of their useful life.

D2022 Hot Water Service

Pier Roundhouse

The domestic water heater appeared to be in good fair condition, fairly recently installed, functional and operating correctly. However, water heaters generally have a typical EUL of ten years. The water heater, estimated to have been installed in 2010, will require replacement to maintain efficiency late in the study period. However, based on the size and type of water heater, the cost for its replacement is expected to fall below the threshold for inclusion the capital expenditure forecast; replacement of the unit should be undertaken as a maintenance operational expense.

Pier Comfort Station

There is no hot water facility within the building; therefore after discussions with City maintenance personnel a water heating system has been included as a new installation early in the study period. The capacity has been kept similar to the water heater that was found at the Pier Roundhouse building. However, based on the size and type of water heater, the cost for its replacement is expected to fall below the threshold for inclusion the capital expenditure forecast; replacement of the unit should be undertaken as a maintenance operational expense.

D2030 SANITARY WASTE

Pier Roundhouse & Pier Comfort Station

D2031 Waste Piping

No apparent problems with the sanitary waste piping were observed within the buildings. However, the exposed waste lines along the side of the pier exhibit heavy corrosion and some hairline cracking, and budgeting for their replacement mid-term in the study period.

After discussions with the City maintenance personnel we understand that a number of the City buildings have been having issues with sewer blockages and pipe deterioration, therefore we have been requested to include for camera inspections of the drainage/sewer system at the Pier Comfort Station.

Pier Roundhouse

D2034 Sanitary Waste Equipment

The sewage ejector is reportedly functioning as designed. However, the age of the pump assembly located under the pier is not known. With an EUL of 10 to 15 years, we recommend budgeting for its replacement mid-term in the study period.

D30 HVAC

DESCRIPTION

D3040 AIR DISTRIBUTION SYSTEMS

D3041 Air Distribution Systems

Pier Roundhouse

The conditioned air is distributed throughout the building from the two forced air units via metal ductwork to ceiling and bulkhead diffusers. The ductwork is sheet metal, except for flexible duct connections to ceiling diffusers in suspended ceiling areas. The drawings indicate round spiral seam metal ducts of 8" to 12" in diameter and rectangular galvanized metal ducts of 10" x 6".

D3042 Exhaust Ventilation Systems

Pier Roundhouse

Two exhaust fans with through-wall louvers are located above the ceilings for ventilation of the restrooms. The drawings indicate use of 100-cubic-feet-per-minute models, the controls interconnected with the lighting switches.

Pier Comfort Station

There are no exhaust fans servicing the building.

D3050 HEAT TRANSFER TERMINAL AND PACKAGED UNITS

D3051 Terminal Self-Contained Units

Pier Roundhouse

The building contains two electric fan-coil type units with electric strip heating elements, located in mezzanine level closets (reference Photograph 9A in Appendix B), with fresh air drawn through wall louvers and return air is through main floor wall louvers and ductwork to the units. Refer to the following table D30-1 for further details of the terminal units.

Table D30-1 Summary of the HVAC Equipment at Pier Roundhouse

Location	Equipment Type	Manufacturer	Model No.	Serial No.	Capacity / Rating	Fuel Type	Year of Installation
Mezzanine Closet	Forced Air Fan Coil Unit	Carrier	FB4AW036	Unknown	36,000 BTUH / 25,980 KWH	Electric / Strip Heater	1992
Mezzanine Closet	Forced Air Fan Coil Unit	Carrier	FB4AW036	Unknown	36,000 BTUH / 25,980 KWH	Electric / Strip Heater	1992

Unknown = Access limited or equipment had no name plates present.

D3060 HVAC INSTRUMENTATION AND CONTROLS

Pier Roundhouse

D3069 Other Controls & Instrumentation

The building users are able to control the room temperature via separate wall-mounted electronic thermostats for the fan-coil units.

CONDITION

D3040 AIR DISTRIBUTION SYSTEMS

D3041 Air Distribution Systems

Pier Roundhouse

Although not observable at the time of our assessment, the interior metal ductwork is reportedly distributing the tempered air properly and the diffusers/grills appear to be adequately placed for occupant comfort. Only a small proportion of the ducting in the building was reviewed but that portion was noted to be in fair to good condition with no deficiencies. We recommend that the duct work is cleaned every 5 years starting at the start of the study period, as it was unclear when they were last cleaned.

D3042 Exhaust Ventilation Systems

Pier Roundhouse

The building's exhaust fans appear to be in poor to fair condition, having been installed in approximately 1992. With an EUL of 15- to 20-years, replacement of the fans is anticipated near-term in the study period; however, the estimated cost for this replacement falls below the threshold for inclusion in the capital expenditure forecast and we recommend replacement as an operational expense. We understand that one is due/scheduled to be replaced shortly.

Pier Comfort Station

The building has no exhaust fan units present; we understand that there is reports of stale air and moisture that needs to be evacuated from building, therefore we recommend that suitably sized exhaust fans are installed at the building to comply with the issues near-term in the study period. However the estimated cost for this installation falls below the threshold for inclusion in the capital expenditure forecast and we recommend replacement as an operational expense.

D3050 HEAT TRANSFER TERMINAL AND PACKAGED UNITS

Pier Roundhouse

D3051 Terminal Self-Contained Units

The building's fan-coil units, manufactured in approximately 1991, are more than twenty years old and are considered to be in fair condition. With a typical EUL of 15 to 20 years for this type of equipment, replacement of the units should be scheduled for the near term of the study period.

D3060 HVAC INSTRUMENTATION AND CONTROLS

Pier Roundhouse

D3069 Other Controls & Instrumentation

The thermostats appeared to be in fair to good condition and functional. We are unaware of any issues with the controls, but anticipate their replacement in conjunction with the replacement of the terminal units.

D40 FIRE PROTECTION

DESCRIPTION

D4010 SPRINKLERS

Pier Roundhouse

D4011 Sprinkler Water Supply

The building contains a wet-pipe fire sprinkler system, with ceiling pendant heads, supplied from a riser at the south side of the building (reference Photographs 7 & 15A in Appendix B). System water supply is provided by municipal main pressure through a 6" steel line under the pier, without the use of a fire pump, and water flow is monitored by a local alarm system.

D4030 FIRE PROTECTION SPECIALTIES

Pier Roundhouse

D4031 Fire Extinguishers

Multipurpose portable wall-mounted handheld fire extinguishers were provided throughout the building. We understand that these systems are the Tenant's responsibility.

CONDITION

D4010 SPRINKLERS

Pier Roundhouse

D4011 Sprinkler Water Supply

The system appears to be fully operational and in fair to good condition. We understand it is maintained by a contracted service provider, but the date of the last inspection/testing was not reported. The exposed supply line along the side of the pier exhibits heavy corrosion (reference Photographs 32, 37 and 38 in Appendix B) and budgeting for its replacement mid-term in the study period is recommended.

D4030 FIRE PROTECTION SPECIALTIES

Pier Roundhouse

D4031 Fire Extinguishers

The fire extinguishers appeared to be in good condition. We understand that they are maintained on a yearly basis by DCS Testing & Equipment, a contracted service provider and were last inspected in February of 2013. We do not anticipate a need for significant replacement of fire extinguishers during the study period.

D50 ELECTRICAL

DESCRIPTION

The following information was obtained through our visual observations of each of the buildings' systems. The electrical systems include the service entrance equipment, exterior and interior panel boards, safety switches, lighting fixtures, and limited fire alarm systems. Limited drawings detailing electrical systems were available for review.

D5010 ELECTRICAL SERVICE & DISTRIBUTION

Pier Roundhouse and Pier Comfort Station

D5012 Low Tension Service & Dist.

The buildings are served by underground service from the east end of the pier to the electrical room at the east side of the Pier Comfort Station. The service is to a two-section 480-volt, 400-amp main/600-amp distribution panel. Three power step down transformers convert the power to 120/240-volts for distribution to 200-amp load center panelboards for lighting and receptacles at the buildings.

Service to the Pier Roundhouse is provided through 2" and 3" diameter conduit run from the main electrical room in-deck off the pier with multiple pull boxes. The electrical room also contains service meters for the Pier Roundhouse, its tenants and the Pier Comfort Station (reference Photographs 15B, 29 and 30 in Appendix B).

D5020 LIGHTING & BRANCH WIRING

Pier Roundhouse

D5021 Branch Wiring Devices

The branch wiring devices at the building includes wall-mounted switches and power receptacles that would be generally associated with this type of building. Branch wiring is typically distributed in Electric Metallic Tubing (EMT), with some flexible metal conduit likely utilized within walls and ceilings.

D5022 Lighting Equipment

The interior lighting within the building is typically provided by suspended and surface-mounted 4' long, 32-watt, 2-lamp T8 fluorescent fixtures (reference Photographs 7 through 9B in Appendix B). Suspended exhibit spot fixtures with single, 250-watt metal halide lamps are also provided; tenant aquarium lighting includes 2' long, 24-watt T5 fluorescent lighting. The restrooms have surface-mounted single-lamp, 32-watt T8 fluorescent lighting fixtures. The florescent fixtures typically contain electronic ballasts. The lighting is typically controlled via local switching in the respective rooms.

Pier Comfort Station

D5021 Branch Wiring Devices

The branch wiring devices at the building includes photocell lighting controls; branch wiring is typically distributed in GRC cabling.

D5022 Lighting Equipment

The interior lighting within the building is provided by roof-structure-mounted LED fixtures (reference Photograph 28 in Appendix B). The lighting is typically photo-cell controlled, with skylights typically providing natural light when the building is in use.

D5030 COMMUNICATIONS & SECURITY

Pier Roundhouse

D5033 Telephone Systems

Telephone systems are present within the various spaces of the building.

D5090 OTHER ELECTRICAL SYSTEMS

Pier Roundhouse

D5037 Fire Alarm Systems

The building's fire sprinkler system is provided with a flow-monitoring alarm system. The system appears to be locally alarming only, with a water flow monitor on the system riser valve at the building's south equipment room and a gong at the south facade (reference Photograph 15A in Appendix B).

D5092 Emergency Light & Power Systems

Illuminated exit signs, located above exterior doors, are provided in the building.

CONDITION

D5010 ELECTRICAL SERVICE AND DISTRIBUTION

Pier Roundhouse and Pier Comfort Station

D5012 Low Tension Service & Dist.

The electrical equipment was noted to be in fair condition, with some of the transformers and panelboards exhibiting initial rusting on their housings/cabinets. Electrical distribution systems tend to have a typical EUL of 30 years, however in this instance with very close proximity to the sea and salt air environment the EUL is 15 years. We recommend that repairs to the electrical system be costed for every 3 years in the study period, starting near-term to maintain suitable service.

D5020 LIGHTING & BRANCH WIRING

Pier Roundhouse

D5021 Branch Wiring Devices

The general receptacles and wiring appeared to be in fair condition within the building. We do not anticipate a need for significant repair or replacement during the cost study period.

D5022 Lighting Equipment

The interior lighting was observed to be in fair to good condition and all fixtures were operating properly with no broken lenses or deteriorated housings. We recommend that the local lighting switches be replaced with motion-sensing occupancy type controls to increase energy efficiency, minimizing the use of lighting in unoccupied spaces. We have included costs for the lighting controls replacement in this building in the near term of the study period.

Pier Comfort Station

D5021 Branch Wiring Devices

The general junction boxes and wiring appeared to be in fair condition within the building. We do not anticipate a need for significant repair or replacement during the cost study period.

D5022 Lighting Equipment

The interior lighting was observed to be in good condition and recently installed to LED type fixtures. Although the fixtures were not operating during the daylight hours of our assessment they are assumed to be properly operating with no broken lenses or deteriorated housings. We do not anticipate a need for significant repair or replacement during the cost study period.

D5030 COMMUNICATIONS & SECURITY

Pier Roundhouse

D5033 Telephone Systems

The existing telephone equipment was observed to be in fair condition. We do not anticipate significant repairs or replacements during the cost study period.

D5090 OTHER ELECTRICAL SYSTEMS

Pier Roundhouse

D5037 Fire Alarm Systems

The limited fire alarm system appeared to be in fair condition; we are unaware of any issues with the system and it appears to receive regular testing. We do not anticipate any significant repairs or replacement during the cost study period.

D5092 Emergency Light & Power Systems

The exit signs were illuminated and appeared to be operating properly; we do not anticipate significant repairs or replacements during the cost study period.

PROJECTED EXPENDITURES

Identified recommended works that are required during the ten-year study period are detailed below. These opinions of cost include a 25%-30% allowance for professional fees and general contractor overhead/profit and management costs (where applicable).

Pier Roundhouse

Element No.	Building Element	Recommendation	Qty	Unit	Rate	Cost	Year	Priority Code
D1013	Lifts	Replace the wheelchair lift for disabled accessibility	1	LS	$12,180	$12,180	2013	1
D20	Plumbing	Renovate restroom	1	LS	$95,000	$95,000	2013	3
D2018	Drinking Fountains and Coolers	Replace drinking fountains	2	EACH	$2,500	$5,000	2013	3

D2021	Cold Water Service	Replace 2" dia. exposed water service piping on the pier	928	LF	$45.43	$42,159	2017	3
D2031	Waste Piping	Replace 4" dia. exposed sanitary waste service piping on the pier	928	LF	$94.00	$87,232	2017	3
D2031	Waste Piping	Replace pressure regulator and valve and move above ground	1	LS	$650	$650	2017	3
D2034	Sanitary Waste Equipment	Replace the duplex sewage ejector pump assembly	1	LS	$6,200	$6,200	2017	3
D3041	Air Distribution Systems	Clean ductwork	2,222	SF	$0.25	$556	2013	3
D3041	Air Distribution Systems	Clean ductwork	2,222	SF	$0.25	$556	2018	3
D3051	Terminal Self-Contained Units	Replace electric fan-coil units	2	EACH	$3,575	$7,150	2015	3
D4011	Sprinkler Water Supply	Replace 6" dia. exposed water service piping on the pier	928	LF	$65.43	$60,719	2017	3
D5012	Low Tension Service & Dist.	Undertake electrical repairs – as needed	1	LS	$1,000	$1,000	2013	3
D5012	Low Tension Service & Dist.	Undertake electrical repairs – as needed	1	LS	$1,000	$1,000	2016	3
D5012	Low Tension Service & Dist.	Undertake electrical repairs – as needed	1	LS	$1,000	$1,000	2019	3
D5012	Low Tension Service & Dist.	Undertake electrical repairs – as needed	1	LS	$1,000	$1,000	2022	3
D5022	Lighting Equipment	Install motion sensor type switches	10	EACH	$187.50	$1,875	2014	4
		Total Anticipated Expenditure for D Services				$323,276		

Pier Comfort Station

Element No.	Building Element	Recommendation	Qty	Unit	Rate	Cost	Year	Priority Code
D20	Plumbing	Renovate restroom	1	LS	$95,000	$95,000	2013	3
D2031	Waste Piping	Undertake camera inspection of sewer lines	1	LS	$1,000	$1,000	2013	3
D2031	Waste Piping	Replace pressure regulator and valve and move above ground	1	LS	$650	$650	2013	3
		Total Anticipated Expenditure for D Services				$96,650		

SECTION 6 - E EQUIPMENT & FURNISHINGS

E10 EQUIPMENT

E1020 INSTITUTIONAL EQUIPMENT

DESCRIPTION

Pier Roundhouse

E1029 Other Institutional Equipment

The building contains aquarium equipment related to the primary tenant's exhibit and teaching programs, including live fish tanks and audio-visual equipment (reference Photographs 8 and 9B in Appendix B). The building also contains limited tenant commercial kitchen equipment for the small walk-up food service at the east side of the building.

CONDITION

Pier Roundhouse

E1029 Other Institutional Equipment

The equipment, primarily tenant installed and maintained, is in good to fair condition. We do not anticipate any significant repairs or replacement during the cost study period.

E20 FURNISHINGS

DESCRIPTION

E2010 FIXED FURNISHINGS

Pier Roundhouse

E2012 Fixed Casework

The building contains painted wood and plastic-laminate constructed fixed casework (reference Photographs 8, 9A and 9B in Appendix B). The cabinets and display cases are located in the central exhibit space and relate to the tenant's exhibit and teaching programs. The building also contains plastic-laminate-faced base cabinets with ceramic-tiled countertops in the restrooms.

CONDITION

E2010 FIXED FURNISHINGS

Pier Roundhouse

E2012 Fixed Casework

The fixed casework appeared to be in fair condition and observed to be suitable for the Tenant's use. There is some delamination to the laminated countertops caused by graffiti and the general environment. Primarily the Tenant installed and maintained furnishings; we do not anticipate any significant repairs or replacement during the cost study period.

PROJECTED EXPENDITURES

There are no projected expenditures for E Equipment & Furnishings during the study period.

SECTION 7 - F SPECIAL CONSTRUCTION

F10 SPECIAL STRUCTURES

In addition to the buildings located at the Pier, we have also undertaken a cursory review and assessment of the pier construction and it's finishes to further assist the City in understanding the condition of the site over all. The FCI calculations which are located in the Executive Summary do not include any likely cost that has been shown in this section.

DESCRIPTION

F1010 SPECIAL STRUCTURES

F1013 Other Special Structures

The Manhattan Beach Pier, a 24' wide steel-reinforced concrete structure on raised piles, was originally built between 1917 and 1920 and projects approximately 928 feet into the Pacific Ocean at the western terminus of Manhattan Beach Boulevard (reference Photographs 31 through 36 in Appendix B). The Pier Roundhouse building was added to the pier in 1921 and rebuilt in 1992. The pier is included in the California Register of Historical Landmarks (No. 1018). Painted metal railings placed on raised concrete curbs are provided along each side of the pier at a height of approximately 48". A series of 16' tall decorative pole-mounted lighting fixtures are spaced along the sides of the pier at 80' on center, utilizing 70-watt high-pressure sodium lamps controlled by photocell. Drawings provided for reference indicate the pier's concrete deck was repaired and substantially rebuilt on the original piles in 1992; wood stairs with metal railings were installed at that time on each side of the pier, providing access from the pier to the municipal beach.

The east end of the pier, at its connection to public roads The Strand and Manhattan Beach Boulevard, a two-level wood-framed lifeguard station is located (reference Photographs 40 and 41 in Appendix B). The station's exterior includes cementitious stucco cladding, painted wood trim and metal railings, and clay tile roofing. The upper level contains a projecting, wood-framed observation walkway with painted metal railings, accessed by a wood-framed stair at its south side. Windows are aluminum-framed, single paned units and doors are painted, flush metal units in metal frames.

CONDITION

F1010 SPECIAL STRUCTURES

F1013 Other Special Structures

The pier appears to be in fair to good overall condition, walking surface cracking and evidence of water infiltration on the underside of the deck noted (reference Photographs 33 and 34 in Appendix B). Although the pier's deck was substantially rebuilt in 1992, based on the observed conditions and an EUL of 80 to 100 years, we recommend budgeting funds for as-needed concrete patching and crack-filling repairs to the deck, beams and piles throughout the study period.

Budgeting should also be provided for cyclical repainting of the metal railings. All other exterior paint work should have an EUL of 2 years in this corrosive environment, with touchups on an yearly basis as needed.

The lifeguard station appears to be in fair overall condition, with cracking stucco cladding, peeling paint and wood trim deterioration observed. We recommend budgeting for repairs to the stucco cladding, repairs to the wood trim and framing and exterior re-painting during the study period.

PROJECTED EXPENDITURES

Identified recommended works that are required during the 10 year study period are scheduled below. We recommend budgeting for additional project costs of between 25%-30% to allow for professional fees and general contractor overhead/profit and management costs.

Element No.	Building Element	Recommendation	Qty	Unit	Rate	Cost	Year	Priority Code
F1013	Other Special Structures	Maintenance repairs to the pier deck, framing and piles (assumes 10% of pier surface area)*	2,230	SF	$68.06	$151,774	2013	4
F1013	Other Special Structures	Repaint the pier's metal railings with as-needed welding repairs	1	LS	$30,000	$30,000	2013	4
F1013	Other Special Structures	Maintenance repairs to the pier deck, framing and piles (assumes 10% of pier surface area)*	2,230	SF	$68.06	$151,774	2015	4
F1013	Other Special Structures	Repaint the pier's metal railings with as-needed welding repairs	1	LS	$30,000	$30,000	2015	4
F1013	Other Special Structures	Maintenance repairs to the pier deck, framing and piles (assumes 10% of pier surface area)*	2,230	SF	$68.06	$151,774	2017	4
F1013	Other Special Structures	Repaint the pier's metal railings with as-needed welding repairs	1	LS	$30,000	$30,000	2017	4

F1013	Other Special Structures	Maintenance repairs to the pier deck, framing and piles (assumes 10% of pier surface area)*	2,230	SF	$68.06	$151,774	2019	4
F1013	Other Special Structures	Repaint the pier's metal railings with as-needed welding repairs	1	LS	$30,000	$30,000	2019	4
F1013	Other Special Structures	Maintenance repairs to the pier deck, framing and piles (assumes 10% of pier surface area)*	2,230	SF	$68.06	$151,774	2021	4
F1013	Other Special Structures	Repaint the pier's metal railings with as-needed welding repairs	1	LS	$30,000	$30,000	2021	4
		Total Anticipated Expenditure for F Special Construction				$908,869		

* Assumed most extensive 10% to be maintained/repaired each time

SECTION 8 - G SITEWORK

F10 SITE IMPROVEMENTS

In addition to the buildings located at the site, we have also undertaken a cursory review and assessment of the major site assets to further assist the City in understanding the condition of the site over all. The FCI calculations which are located in the Executive Summary do not include any likely cost that has been shown in this section.

DESCRIPTION

G2030 PEDESTRIAN PAVING

G2031 Paving & Surfacing

Variable-width concrete and concrete paver walkways are located along the public road The Strand at the east end of the pier and around the Pier Comfort Station (reference Photographs 16 through 19 in Appendix B). Also bordering the east edge of the site is a concrete-paved bicycle lane along The Strand. We were not provided with construction specifications or original installation details for the paving; therefore specific concrete mix, design strength, or its suitability for its existing use is not known.

G2033 Exterior Steps

Reinforced concrete stairs with anodized metal railings, providing access from the Pier Comfort Station to the municipal beach, are located at the north and south ends of the comfort station. Wood-framed stairs with painted metal railings are located near the east end of the pier near the lifeguard station, providing access from the pier to the beach (reference Photographs 42 and 45 in Appendix B).

G2040 SITE DEVELOPMENT

G2041 Fences & Gates

The east end of the pier contains gates at the lifeguard station (reference Photographs 40 and 45 in Appendix B). The gates are made of painted steel railings to match the pier's railings and are utilized to restrict access to the pier. Anodized metal railings topping retaining walls are provided along the walkway along The Strand to the north and south of the pier, and precast concrete bollards are placed at pier entrance to prevent vehicular access.

G2042 Retaining Walls

There are concrete retaining walls located along the north, south and west sides of the Pier Comfort Station and to the north and south sides of the pier entrance along The Strand (reference Photographs 46 through 48 in Appendix B). The surfaces of the walls are covered with patterns of decorative tile, are typically 8' to 10' in height and are topped by painted or anodized metal railings.

G2045 Site Furnishings

The site furnishings include precast-concrete benches, precast concrete and plastic waste receptacles, flagpoles, beach viewing telescopes, and at the Pier Roundhouse, exterior stainless steel sinks for fish cleaning (reference Photographs 17, 31 and 40 in Appendix B).

G2050 LANDSCAPING

G2055 Planting

Landscaping is limited to locations around the Pier Comfort Station and at the east side of the site along The Strand and consists of small shrubs and small and large palm trees (reference Photographs 17 and 18 in Appendix B).

CONDITION

G2030 PEDESTRIAN PAVING

G2031 Paving & Surfacing

The pedestrian walkways appeared to be in good to fair condition, with only minor issues of cracking, surface spalling loosened pavers observed. The walkways will require routine maintenance during the study period and this should be addressed on an as-needed basis as part of routine maintenance and funded as an operational expense.

G2033 Exterior Steps

The concrete stairs appeared to be in good to fair condition, with limited issues of cracking observed, although we noted several locations of cracking and loosened material in the concrete curbs along railing locations. We recommend localized repairs be completed to the concrete curbs in the near term at areas of cracking and spalling, to prevent accelerated deterioration, as part of routine maintenance operations. Based on a typical EUL of five to seven years for exterior painting, the painted railings will require repainting during the study period, and we recommend this be addressed in conjunction with the painting of the pier's railings.

G2040 SITE DEVELOPMENT

G2041 Fences & Gates

The gates at the east end of the pier are in good condition. Based on a typical EUL of 2 years for exterior painting in this marine environment, the painted gates will require repainting during the study period, and we recommend this be addressed in conjunction with the painting of the pier's railings. The concrete bollards are in fair condition, but one third are damaged and should be replaced.

G2042 Retaining Walls

The retaining walls appeared to generally be in good condition, although with locations of missing or loosened decorative tiles. We recommend completion of tile repairs as a routine maintenance item as an operational expense.

G2045 Site Furnishings

The site furnishings appeared to be in fair to good overall condition. Repairs necessary during the study period should be addressed on an as-needed basis, as part of routine maintenance and funded as operational expenses.

G2050 LANDSCAPING

G2055 Planting

The planted materials are in fair to good overall condition; although they will require routine maintenance and replacements during the study period, these conditions can be addressed on an as-needed basis as part of maintenance and funded as operational expenses.

G40 SITE ELECTRICAL UTILITIES

DESCRIPTION

G4020 SITE LIGHTING

G4021 Fixtures & Transformers

Exterior lighting throughout the site consisted pole-mounted fixtures along the sides of the pier and building mounted fixtures at the Pier Roundhouse and Pier comfort Station (reference Photographs 1, 19 and 31 in Appendix B).

- A series of 16' tall painted decorative pole-mounted lighting fixtures are spaced along the sides of the pier at 80' on center, each utilizing 70-watt high-pressure sodium lamps controlled by photocell.
- At the Pier Roundhouse, exterior lighting fixtures include four roof-mounted quartz-lamped fixtures with photocell controls.
- At the Pier Comfort Station, exterior lighting fixtures include building-mounted fixtures with LED or quad-tube CFL lamping on each façade.

CONDITION

G4020 SITE LIGHTING

G4021 Fixtures & Transformers

The site lighting appeared to be in poor to fair condition, although our assessment was completed during daylight hours. The condition of the light fixtures are as follows:

The pier lighting in generally in poor condition with wiring shorts reported on a regular occurrence due to insulation failure. Furthermore the light fixtures have deteriorated due to the marine environment through corrosion. The light poles also have corrosion present. We recommend that the wiring, light fixtures and poles are all replaced at the start of the study period to maintain good light levels along the pier and also to reduce the maintenance that is being performed.

The other building exterior lights have already been changed or are scheduled to be changed and therefore they have not been included for replacement and will last beyond the study period without replacement necessary.

PROJECTED EXPENDITURES

Identified recommended works that are required during the 10 year study period are scheduled below. We recommend budgeting for additional project costs of between 25%-30% to allow for professional fees and general contractor overhead/profit and management costs.

Element No. Item	Building Element	Recommendation	Qty	Unit	Rate	Cost	Year	Priority Code
G2041	Fences & Gates	Repaint the metal railings and gates	240	LF	$5.24	$1,258	2013	5
G2041	Fences & Gates	Replace damaged bollards	7	EACH	$350	$2,450	2013	3
G2041	Fences & Gates	Repaint the metal railings and gates	240	LF	$5.24	$1,258	2015	5
G2041	Fences & Gates	Repaint the metal railings and gates	240	LF	$5.24	$1,258	2017	5
G2041	Fences & Gates	Repaint the metal railings and gates	240	LF	$5.24	$1,258	2019	5
G2041	Fences & Gates	Repaint the metal railings and gates	240	LF	$5.24	$1,258	2021	5
G4021	Fixtures & Transformers	Replace light fixtures along pier to LED type fixtures	36	EACH	$650	$23,400	2013	3
G4021	Fixtures & Transformers	Replace wiring for pier light fixtures	36	EACH	$250	$9,000	2013	3
		Total Anticipated Expenditure for G Building Sitework				$55,838		

Appendix A

Ten-Year
Expenditure Forecast
2012 - 2021

FAITHFUL+GOULD
CONSTRUCTIVE EXPERTISE

10 YEAR EXPENDITURE FORECAST

Pier Comfort Station
100 Manhattan Beach Boulevard
Manhattan Beach, CA
Rev B

Element No.	Component Description	Estimated Useful Life or Replacement Cycle (Yrs)	Remaining Useful Life (Yrs)	Quantity	Unit of Measurement	Unit Cost	Plan Type	Priority	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total	Total	Combined Total
						$			1	2	3	4	5	6	7	8	9	10			
									Deferred	Scheduled	Scheduled	Scheduled	Scheduled	Scheduled	Scheduled	Scheduled	Scheduled	Scheduled	Deferred	Scheduled	
A. SUBSTRUCTURE																					
							A. SUBSTRUCTURE SUB-TOTALS		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
B. SHELL																					
B1022	Repair concrete masonry walls & roof framing anchoring	30	0	1.00	LS	$25,000.00	Deferred Maintenance	2	$25,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$25,000	$0	$25,000
B2011	Repaint all previously exterior painted surfaces	3	0	1,800.00	SF	$3.25	Deferred Maintenance	5	$5,850	$0	$0	$0	$0	$0	$0	$0	$0	$0	$5,850	$0	$5,850
B2011	Repaint all previously exterior painted surfaces	3	3	1,800.00	SF	$3.25	Routine Maintenance	5	$0	$0	$0	$5,850	$0	$0	$5,850	$0	$0	$5,850	$0	$17,550	$17,550
B3010	Undertake clay tile roof covering repairs	40	0	1.00	LS	$950.00	Deferred Maintenance	3	$950	$0	$0	$0	$0	$0	$0	$0	$0	$0	$950	$0	$950
B3021	Replace the skylights	30	5	50.00	SF	$76.37	Capital Renewal	3	$0	$0	$0	$0	$0	$3,819	$0	$0	$0	$0	$0	$3,819	$3,819
							B. SHELL SUB-TOTALS		$31,800	$0	$0	$5,850	$0	$3,819	$5,850	$0	$0	$5,850	$31,800	$21,369	$53,169
C. INTERIORS																					
C1021	Replace interior doors and frames	20	0	12.00	EACH	$1,200.00	Deferred Maintenance	3	$14,400	$0	$0	$0	$0	$0	$0	$0	$0	$0	$14,400	$0	$14,400
C3012	Repaint interior wall and ceiling surfaces	2	0	3,000.00	SF	$3.25	Deferred Maintenance	5	$9,750	$0	$0	$0	$0	$0	$0	$0	$0	$0	$9,750	$0	$9,750
C3012	Repaint interior wall and ceiling surfaces	2	2	3,000.00	SF	$3.25	Routine Maintenance	5	$0	$0	$9,750	$0	$9,750	$0	$9,750	$0	$9,750	$0	$0	$39,000	$39,000
C3012	Replace damaged sections of ceramic wall tiles	5	0	1.00	LS	$650.00	Deferred Maintenance	5	$650	$0	$0	$0	$0	$0	$0	$0	$0	$0	$650	$0	$650
C3023	Apply seal coating at concrete floor surfaces	5	5	1,600.00	SF	$3.75	Deferred Maintenance	5	$6,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$6,000	$0	$6,000
C3023	Apply seal coating at concrete floor surfaces	30	0	1,600.00	SF	$3.75	Routine Maintenance	5	$0	$0	$0	$0	$0	$6,000	$0	$0	$0	$0	$0	$6,000	$6,000
C3024	Repair concrete floor topping	30	0	40.00	SY	$25.00	Deferred Maintenance	2	$1,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,000	$0	$1,000
							C. INTERIORS SUB-TOTALS		$31,800	$0	$9,750	$0	$9,750	$6,000	$9,750	$0	$9,750	$0	$31,800	$45,000	$76,800
D. SERVICES																					
D20	Renovate restroom	15	0	1.00	LS	$95,000.00	Deferred Maintenance	3	$95,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$95,000	$0	$95,000
D2031	Undertake camera inspection of sewer lines	N/A	0	1.00	LS	$1,000.00	Deferred Maintenance	3	$1,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,000	$0	$1,000
D2031	Replace pressure regulator and valve and move above ground	N/A	0	1.00	LS	$650.00	Deferred Maintenance	3	$650	$0	$0	$0	$0	$0	$0	$0	$0	$0	$650	$0	$650
							D. SERVICES SUB-TOTALS		$96,650	$0	$0	$0	$0	$0	$0	$0	$0	$0	$96,650	$0	$96,650
E. EQUIPMENT & FURNISHING																					
							E. EQUIPMENT & FURNISHING SUB-TOTALS		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
F. SPECIAL CONSTRUCTION AND DEMOLITION																					
							F. SPECIAL CONSTRUCTION AND DEMOLITION SUB-TOTALS		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
G. BUILDING SITEWORK																					
							G. BUILDING SITEWORK SUB-TOTALS		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Z. GENERAL																					
							Z. GENERAL SUB-TOTALS		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
							Expenditure Totals per Year		$160,250	$0	$9,750	$5,850	$9,750	$9,819	$15,600	$0	$9,750	$5,850	$160,250	$66,369	$226,619
							Total Cost (Inflated @ 4% per Yr.)		$160,250	$0	$10,546	$6,580	$11,406	$11,946	$19,739	$0	$13,344	$8,326	$160,250	$81,887	$242,137

10 YEAR EXPENDITURE FORECAST

Pier Roundhouse
100 Manhattan Beach Boulevard
Manhattan Beach, CA
Rev B

Element No.	Component Description	Estimated Useful Life or Replacement Cycle (Yrs)	Remaining Useful Life (Yrs)	Quantity	Unit of Measurement	Unit Cost	Plan Type	Priority	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total	Total	Combined Total
						$			1	2	3	4	5	6	7	8	9	10			
									Deferred	Scheduled	Scheduled	Scheduled	Scheduled	Scheduled	Scheduled	Scheduled	Scheduled	Scheduled	Deferred	Scheduled	
A. SUBSTRUCTURE																					
							A. SUBSTRUCTURE SUB-TOTALS		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
B. SHELL																					
B2011	Repaint all previously exterior painted surfaces	3	0	2,200.00	SF	$3.25	Deferred Maintenance	5	$7,150	$0	$0	$0	$0	$0	$0	$0	$0	$0	$7,150	$0	$7,150
B2011	Repaint all previously exterior painted surfaces	3	3	2,200.00	SF	$3.25	Routine Maintenance	5	$0	$0	$0	$7,150	$0	$0	$7,150	$0	$0	$7,150	$0	$21,450	$21,450
B3010	Replace the rotten wood at the cupola wood structure	N/A	0	1.00	LS	$2,500.00	Deferred Maintenance	3	$2,500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,500	$0	$2,500
B3010	Undertake clay tile roof covering repairs	40	0	1.00	LS	$750.00	Deferred Maintenance	2	$750	$0	$0	$0	$0	$0	$0	$0	$0	$0	$750	$0	$750
B3010	Replace the weather vane	N/A	0	1.00	LS	$650.00	Deferred Maintenance	3	$650	$0	$0	$0	$0	$0	$0	$0	$0	$0	$650	$0	$650
B3016	Install copper guttering and downspout to Roundhouse	20	0	244.00	LF	$15.00	Deferred Maintenance	3	$3,660	$0	$0	$0	$0	$0	$0	$0	$0	$0	$3,660	$0	$3,660
							B. SHELL SUB-TOTALS		$14,710	$0	$0	$7,150	$0	$0	$7,150	$0	$0	$7,150	$14,710	$21,450	$36,160
C. INTERIORS																					
C1021	Replace interior doors and frames	20	0	2.00	EACH	$1,200.00	Deferred Maintenance	3	$2,400	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,400	$0	$2,400
C3012	Repaint interior wall and ceiling surfaces	2	0	2,100.00	SF	$3.25	Deferred Maintenance	5	$6,825	$0	$0	$0	$0	$0	$0	$0	$0	$0	$6,825	$0	$6,825
C3012	Repaint interior wall and ceiling surfaces	2	2	2,100.00	SF	$3.25	Routine Maintenance	5	$0	$0	$6,825	$0	$6,825	$0	$6,825	$0	$6,825	$0	$0	$27,300	$27,300
C3024	Replace carpeting	10	2	50.00	SY	$45.00	Capital Renewal	2	$0	$0	$2,250	$0	$0	$0	$0	$0	$0	$0	$0	$2,250	$2,250
							C. INTERIORS SUB-TOTALS		$9,225	$0	$9,075	$0	$6,825	$0	$6,825	$0	$6,825	$0	$9,225	$29,550	$38,775
D. SERVICES																					
D1013	Replace wheelchair lift for disabled access	20	0	1.00	LS	$12,180	Deferred Maintenance	1	$12,180	$0	$0	$0	$0	$0	$0	$0	$0	$0	$12,180	$0	$12,180
D20	Renovate restroom	15	0	1.00	LS	$95,000	Deferred Maintenance	3	$95,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$95,000	$0	$95,000
D2018	Replace drinking fountains	20	0	2.00	EACH	$2,500.00	Deferred Maintenance	3	$5,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$5,000	$0	$5,000
D2021	Replace 2" dia. exposed water service piping on the pier	30	4	928.00	LF	$45.43	Capital Renewal	3	$0	$0	$0	$0	$42,159	$0	$0	$0	$0	$0	$0	$42,159	$42,159
D2031	Replace 4" dia. exposed sanitary waste service piping on the pier	30	4	928.00	LF	$94.00	Capital Renewal	3	$0	$0	$0	$0	$87,232	$0	$0	$0	$0	$0	$0	$87,232	$87,232
D2031	Replace pressure regulator and valve and move above ground	N/A	4	1.00	LS	$650.00	Capital Renewal	3	$0	$0	$0	$0	$650	$0	$0	$0	$0	$0	$0	$650	$650
D2034	Replace the duplex sewage ejector pump assembly	20	4	1.00	LS	$6,200.00	Capital Renewal	3	$0	$0	$0	$0	$6,200	$0	$0	$0	$0	$0	$0	$6,200	$6,200
D3041	Clean ductwork	5	0	2,222.00	SF	$0.25	Deferred Maintenance	3	$556	$0	$0	$0	$0	$0	$0	$0	$0	$0	$556	$0	$556
D3041	Clean ductwork	5	5	2,222.00	SF	$0.25	Routine Maintenance	3	$0	$0	$0	$0	$0	$556	$0	$0	$0	$0	$0	$556	$556
D3051	Replace electric fan-coil units	20	2	2.00	EACH	$3,575.00	Energy & Sustainability	3	$0	$0	$7,150	$0	$0	$0	$0	$0	$0	$0	$0	$7,150	$7,150
D4011	Replace 6" exposed water service piping on the pier	30	4	928.00	LF	$65.43	Capital Renewal	3	$0	$0	$0	$0	$60,719	$0	$0	$0	$0	$0	$0	$60,719	$60,719
D5012	Undertake electrical repairs - as needed	3	0	1.00	LS	$1,000.00	Deferred Maintenance	3	$1,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,000	$0	$1,000
D5012	Undertake electrical repairs - as needed	3	3	1.00	LS	$1,000.00	Routine Maintenance	3	$0	$0	$0	$1,000	$0	$0	$1,000	$0	$0	$1,000	$0	$3,000	$3,000
D5022	Install motion sensor lighting controls	10	1	10.00	EACH	$187.50	Energy & Sustainability	4	$0	$1,875	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,875	$1,875
							D. SERVICES SUB-TOTALS		$113,736	$1,875	$7,150	$1,000	$196,960	$556	$1,000	$0	$0	$1,000	$113,736	$209,541	$323,276
E. EQUIPMENT & FURNISHING																					
							E. EQUIPMENT & FURNISHING SUB-TOTALS		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
F. SPECIAL CONSTRUCTION AND DEMOLITION																					
							F. SPECIAL CONSTRUCTION AND DEMOLITION SUB-TOTALS		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
G. BUILDING SITEWORK																					
							G. BUILDING SITEWORK SUB-TOTALS		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Z. GENERAL																					
							Z. GENERAL SUB-TOTALS		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
							Expenditure Totals per Year		$137,671	$1,875	$16,225	$8,150	$203,785	$556	$14,975	$0	$6,825	$8,150	$137,671	$260,541	$398,211
							Total Cost (Inflated @ 4% per Yr.)		$137,671	$1,950	$17,549	$9,168	$238,400	$676	$18,948	$0	$9,340	$11,600	$137,671	$307,631	$445,301

10 YEAR EXPENDITURE FORECAST

Pier - Site Systems
100 Manhattan Beach Boulevard
Manhattan Beach, CA
Rev B

Element No.	Component Description	Estimated Useful Life or Replacement Cycle (Yrs)	Remaining Useful Life (Yrs)	Quantity	Unit of Measurement	Unit Cost	Plan Type	Priority	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total	Total	Combined Total
						$			1	2	3	4	5	6	7	8	9	10			
									Deferred	Scheduled	Scheduled	Scheduled	Scheduled	Scheduled	Scheduled	Scheduled	Scheduled	Scheduled	Deferred	Scheduled	
A. SUBSTRUCTURE																					
								A. SUBSTRUCTURE SUB-TOTALS	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
B. SHELL																					
								B. SHELL SUB-TOTALS	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
C. INTERIORS																					
								C. INTERIORS SUB-TOTALS	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
D. SERVICES																					
								D. SERVICES SUB-TOTALS	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
E. EQUIPMENT & FURNISHING																					
								E. EQUIPMENT & FURNISHING SUB-TOTALS	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
F. SPECIAL CONSTRUCTION AND DEMOLITION																					
F1013	Maintenance repairs to the pier deck, framing and piles (assumes 10% of pier surface area)	2	0	2,230	SF	$68.06	Deferred Maintenance	4	$151,774	$0	$0	$0	$0	$0	$0	$0	$0	$0	$151,774	$0	$151,774
F1013	Maintenance repairs to the pier deck, framing and piles (assumes 10% of pier surface area)	2	2	2,230	SF	$68.06	Routine Maintenance	4	$0	$0	$151,774	$0	$151,774	$0	$151,774	$0	$151,774	$0	$0	$607,095	$607,095
F1013	Repaint the pier's metal railings with as-needed welding repairs	2	0	1	LS	$30,000.00	Deferred Maintenance	4	$30,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$30,000	$0	$30,000
F1013	Repaint the pier's metal railings with as-needed welding repairs	2	2	1	LS	$30,000.00	Routine Maintenance	4	$0	$0	$30,000	$0	$30,000	$0	$30,000	$0	$30,000	$0	$0	$120,000	$120,000
								F. SPECIAL CONSTRUCTION AND DEMOLITION SUB-TOTALS	$181,774	$0	$181,774	$0	$181,774	$0	$181,774	$0	$181,774	$0	$181,774	$727,095	$908,869
G. BUILDING SITEWORK																					
G2041	Repaint the metal railings and gates	2	0	240.00	LF	$5.24	Deferred Maintenance	5	$1,258	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,258	$0	$1,258
G2041	Repaint the metal railings and gates	2	2	240.00	LF	$5.24	Routine Maintenance	5	$0	$0	$1,258	$0	$1,258	$0	$1,258	$0	$1,258	$0	$0	$5,030	$5,030
G2041	Replace damaged bollards	10	0	7.00	EACH	$2,450.00	Deferred Maintenance	3	$17,150	$0	$0	$0	$0	$0	$0	$0	$0	$0	$17,150	$0	$17,150
G4021	Replcae light fixtures along pier to LED type fixtures	15	0	36.00	EACH	$650.00	Deferred Maintenance	3	$23,400	$0	$0	$0	$0	$0	$0	$0	$0	$0	$23,400	$0	$23,400
G2041	Replace wiring for pier light fixtures	15	0	36.00	EACH	$250.00	Deferred Maintenance	3	$9,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$9,000	$0	$9,000
								G. BUILDING SITEWORK SUB-TOTALS	$50,808	$0	$1,258	$0	$1,258	$0	$1,258	$0	$1,258	$0	$50,808	$5,030	$55,838
Z. GENERAL																					
								Z. GENERAL SUB-TOTALS	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
							Expenditure Totals per Year		$232,581	$0	$183,031	$0	$183,031	$0	$183,031	$0	$183,031	$0	$232,581	$732,126	$964,707
							Total Cost (Inflated @ 4% per Yr.)		$232,581	$0	$197,967	$0	$214,121	$0	$231,593	$0	$250,491	$0	$232,581	$894,172	$1,126,753

Appendix B
Photographs

FAITHFUL+GOULD
CONSTRUCTIVE EXPERTISE

Pier Roundhouse

Photograph No. 1

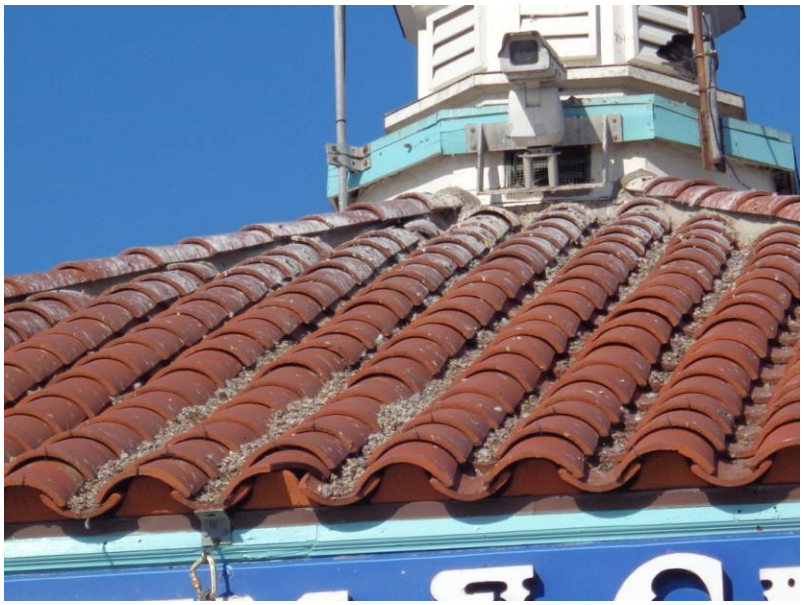
View of the east facade facing the pier.

Photograph No. 2

View of the north façade.

Photograph No. 3

View of the south façade.



Photograph No. 4

View of the clay roofing.

Photograph No. 5

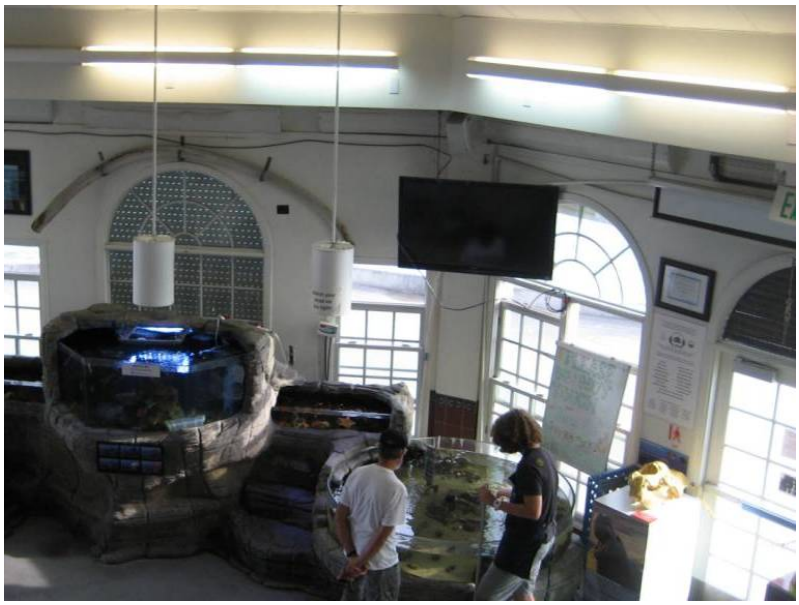
View of the building's cupola.

Photograph No. 6

View of typical metal door with louvers at the electrical room on the north façade.

Photograph No. 7

Interior view of the central exhibit space's ceiling.



Photograph No. 8

Interior view of the central exhibit space.

Photograph Nos. 9A & 9B

Interior view of mezzanine office area (9A left) and of the main exhibit space (9B right).

Photograph No. 10

View of the men’s restroom water closet stall.

Photograph No. 11

View of the men’s restroom lavatory.

Photograph No. 12

View of the domestic water heater.

Photograph No. 13

View of the inoperable wheelchair lift in the central exhibit space.

Photograph No. 14

View of the supplemental air conditioner.

Photograph Nos. 15A & 15B

View of fire sprinkler system riser (15A left) and the electrical room equipment (15B right).

Pier Comfort Station

Photograph No. 16

View of the west façade of the Pier Comfort Station, from the pier.

Photograph No. 17

View of the south and east facades.

Photograph Nos. 18

View of the north and east facades.

Photograph No. 19

View of the ceramic tiled shower area on the west façade of the building.

Photograph No. 20

View of the roof edge with detached and missing clay tiles.

Photograph No. 21

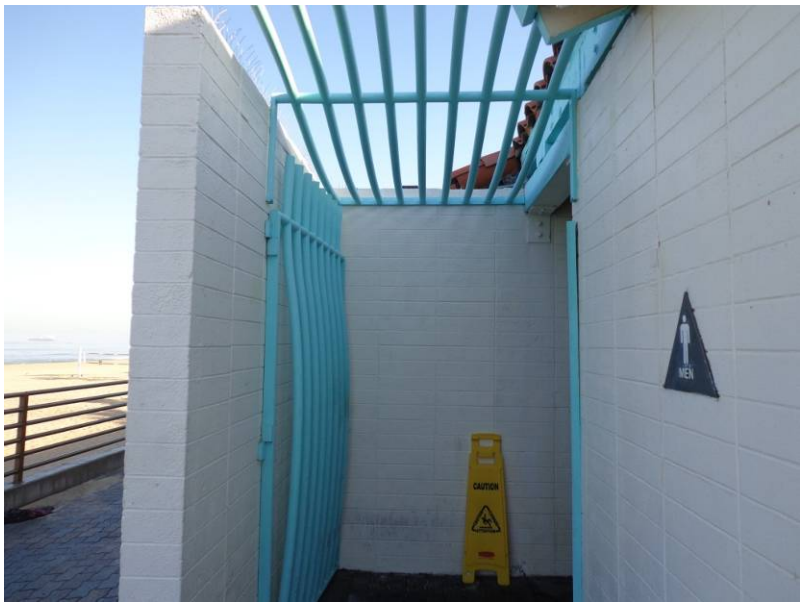
View of the roof edge with missing clay tiles.

Photograph No. 22

View of horizontal cracking at the top of the façade's concrete masonry wall at the east side of the building.

Photograph No. 23

Interior view of horizontal cracking in the ceramic tile at the top of the wall at the west side of the building.



Photograph No. 24

View of one of the restroom entrance gates at the west side of the building.

Photograph No. 25

Interior view of the men’s restroom dressing area.

Photograph No. 26

Interior view of the men’s restroom urinals.

Photograph No. 27

Interior view of the men’s restroom water closet stall.

Photograph No. 28

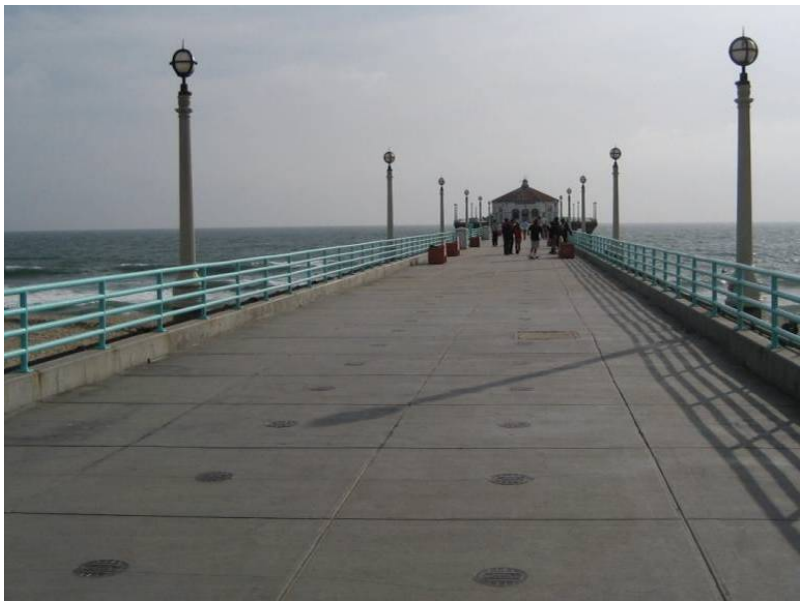
Interior view of the exposed roof framing and skylight in the men's restroom.

Photograph No. 29

View of the building's electrical main distribution panels and meters.

Photograph No. 30

View of the building's electrical panel boards.



Site Systems

Photograph No. 31

View of the pier, looking west from Manhattan Beach Boulevard and The Strand.

Photograph No. 32

View of the pier from the beach, looking west.

Photograph No. 33

View of the surface cracking in the pier's concrete deck.

Photograph No. 34

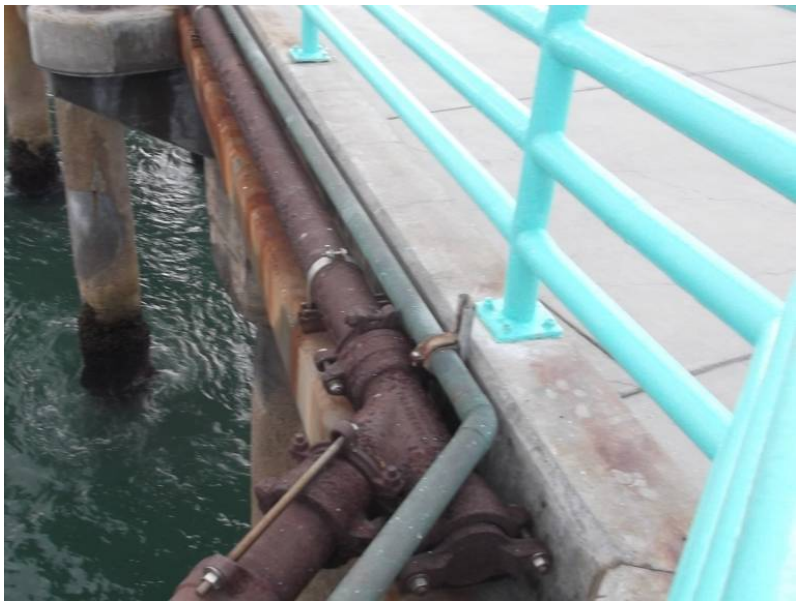
View of the cracking and efflorescence on the underside of the pier deck.

Photograph No. 35

View under the pier, looking east toward its connection with The Strand and Manhattan Beach Boulevard.

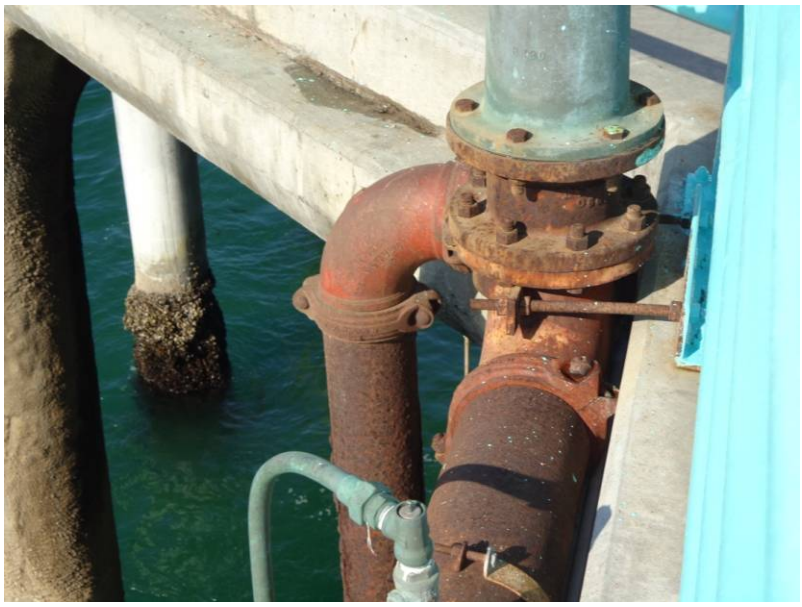
Photograph No. 36

View under the pier, looking west toward its terminus at the Pier Roundhouse.



Photograph No. 37

View the pier's painted metal railings and corroding utility piping along the deck edge.



Photograph No. 38

View corroding utility lines at the pier's edge.

Photograph No. 39

Overhead view of suspended utility line under the pier deck.

Photograph No. 40

View the lifeguard station and gates at the east end of the pier .

Photograph No. 41

View of the deteriorated conditions of the lifeguard station's upper level walkway.

Photograph No. 42

View of the concrete stairs and anodized metal railings at the north end of the Pier Comfort Station.

Photograph No. 43

View of deterioration in the concrete curbing below the railings at the west side of the Pier Comfort Station.

Photograph No. 44

View of cracking and efflorescence in the concrete wall and curbing, below the railings, at the west side of the Pier Comfort Station.

Photograph No. 45

View of one of the wood framed stairs at the east end of the pier.

Photograph No. 46

View of concrete retaining walls at the Pier Comfort Station and along The Strand.

Photograph No. 47

View of retaining wall, with shower stations, at the west side of the Pier Comfort Station.

Photograph No. 48

Detail view of the decorative tiles applied to the retaining walls at the east side of the site.

Appendix C

Asset Inventory

ASSET INVENTORY

Pier Roundhouse

D20 PLUMBING

Location	Manufacturer	Model #	Serial #	Fuel / Rating	Capacity	≈ Year of Installation
South Equipment Room	Rheem	Unknown	Unknown	Electric	10 Gal	2010

D30 HVAC

Location	Equipment Type	Manufacturer	Model No.	Serial No.	Capacity / Rating	Fuel Type	Year of Installation
Mezzanine Closet	Forced Air Fan Coil Unit	Carrier	FB4AW036	Unknown	36,000 BTUH / 25,980 KWH	Electric / Strip Heater	1992
Mezzanine Closet	Forced Air Fan Coil Unit	Carrier	FB4AW036	Unknown	36,000 BTUH / 25,980 KWH	Electric / Strip Heater	1992

Unknown = Access limited or equipment had no name plates present.
Assumed = Based on size of unit and area it serves / or possible year installed.

Appendix D

Document Review and
Warranty Information

FAITHFUL+GOULD

DOCUMENT REVIEW & WARRANTY INFORMATION

Pier Roundhouse and Comfort Station

In addition to the completion of our visual evaluation, Faithful+Gould interviewed the various representatives from the City of Manhattan Beach (where possible), and reviewed the following documentation:

New Roundhouse Structure and Remodel of Existing Comfort Station - 24 Drawings; Richard Gemigniani; dated September 1992

Roundhouse Remodel – 14 Drawings; Ron Yeo, F.T. Andrews and Consolidated Engineering; dated July 25, 2002

Comprehensive Energy Audit; PE Consulting; dated October 13, 2009

Roofing Evaluation Report; Tremco Inc.; dated June 4, 2013

Appendix E

Environmental Report:
Asbestos & Lead-Based Paint

FAITHFUL GOULD

ANDERSEN ENVIRONMENTAL
5261 W. Imperial Highway, Los Angeles, CA 90045
Toll Free: (888) 705-6300 Tel: (310) 854-6300 Fax: (310) 854-0199

LIMITED ASBESTOS & LEAD–BASED PAINT ASSESSMENT REPORT

Presented To:

Faithful & Gould
3400 North Central Avenue
Suite 2400
Pheonix, AZ 85014

Assessment Location:
Pier Comfort Station
100 Manhattan Beach Blvd.
Manhattan Beach, CA. 90266

Andersen Environmental Project No. 1304-584

Report Date: June 6, 2013

TABLE OF CONTENTS

DESCRIPTION **PAGE NO.**

APPENDICES

1.0 INTRODUCTION

This report presents the results of Andersen Environmental's Limited Asbestos & Lead-Based Paint Assessment of the restroom facilities located at 100 Manhattan Beach Blvd., Manhattan Beach, CA 90266 (referred to hereunder as the subject property). This document is prepared for the sole use of The City of Manhattan Beach and any regulatory agencies that are directly involved in this project. No other party should rely on the information contained herein without prior written consent of The City of Manhattan Beach scope of services, inspection methodology, and results are presented below.

2.0 SCOPE OF WORK

The purpose of this inspection and survey is to identify the Asbestos Containing Materials (ACM) and Lead-Based Paint (LBP) present within the interiors and exteriors of the subject property building. As the asbestos sampling is destructive in nature, and may void any roof warrantees, the roofing materials of the building were not sampled during this assessment.

Asbestos

The purpose of this assessment was to perform bulk sampling of suspect materials in order to determine the presence or absence of ACM associated with the two buildings at the subject property. The scope of this assessment included reviewing any provided building records and/or previous investigation records, visually identifying homogeneous areas and functional spaces, collecting bulk samples of suspect ACM, interpreting the laboratory results, producing a written report of our findings, recommendations, floor plans and approximations of ACM quantities.

Lead-Based Paint

The purpose of this assessment was to perform an X-Ray Fluorescence (XRF) survey of the two buildings onsite in order to determine which components may be covered with lead laden coatings. To comply with Title 17, EPA and HUD guidelines, painted and varnished surfaces in every accessible "room equivalent" were sampled for the presence of lead-based paint (LBP) and the condition of the painted surfaces was assessed. The intent was to ascertain the presence of LBP above the Los Angeles County action level using X-Ray Fluorescence. If LBP was found, the inspection would identify individual architectural components and their respective concentrations of lead in such a manner that this report would be used to characterize the presence of LBP at this property. The scope of work also included producing a written report of our findings and recommendations.

3.0 PROPERTY DESCRIPTION

The subject property consists of a single story, wood framed building utilized as a restroom facility. The exterior finishes consist of stucco CMU block walls on a concrete slab foundation with a pitched roof finished with Spanish tiles. The interior finishes include a concrete floor, CMU block walls and a wood framed roof.

4.0 INSPECTOR'S QUALIFICATIONS

Andersen Environmental performed the lead inspection at the site using a Niton XRF spectrum analyzer instrument. Freddy Torres has completed an EPA approved curriculum in Lead in Construction Inspector / Risk Assessor Training.

Benjamin Curry and Lamont Leiva of Andersen Environmental performed the asbestos inspection at the site. Lamont Leiva is certified by the State of California Division of Occupational Safety and Health (DOSH) as Certified Site Surveillance Technician and worked under the supervision of Benjamin Curry, a DOSH Certified Asbestos Consultant.

Personnel certificates have been provided in ***Appendix C.***

5.0 TESTING PROTOCOL

Asbestos

The sampling was performed in accordance with requirements of the following regulations:

- Asbestos Hazard Emergency Response Act (AHERA); 40 CFR 763 Subpart E
- Asbestos School Hazard Abatement Reauthorization Act (ASHARA); Section 206 of the Toxic Substance Control Act
- National Emissions Standards for Hazardous Air Pollutants (NESHAPS); 40 CFR 61 Subpart M.

This report is a record of activities, observations, analytical results and recommendations performed to date.

Lead-Based Paint

The sampling was performed in accordance with requirements of the following regulations:

- Chapter 7 of the HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing[i].
- Title 17, California Code of Regulations
- EPA Lead Based Paint Program

XRF Testing: Testing of the painted surfaces was patterned after the inspection protocol in Chapter 7 of the HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing[ii]. In every "room equivalent" within the tested property, one representative surface of each "testing combination" was tested. Multiple readings were collected to resolve inconsistencies in the test results.

Regulatory Compliance: Several public (government) agencies have a published "regulatory action level" to classify LBP. To further complicate matters, some of the established "levels" are quantified in different units of measurement. Listed below are the current regulatory agencies that have defined LBP, along with the respective action level:

Agency	Ordinance #	Action level (mg / cm^2)	Action level (ppm[iii])
HUD / EPA	24 CFR 35.86 & 40 CFR 745.103	1.0 mg / cm^2	5,000 ppm
L.A. County	Title 11, 11.28.010	0.7 mg / cm^2	600 ppm[iv]
OSHA / CAL OSHA	29 CFR 1926.62 & Title 8, 1532.1	*Not Specified*	600 ppm[v]

HUD / EPA have recently issued the following guidance regarding units of measurement for paint samples:

"Report lead paint amounts in mg/cm² because this unit of measurement does not depend on the number of layers of non-lead-based paint and can usually be obtained without damaging the painted surface. All measurements of lead in paint should be in mg/cm², unless the surface area cannot be measured or if all paint cannot be removed from the measured surface area. In such cases, concentrations may be reported in weight percent (%) or parts per million by weight (ppm)."[vi]

Furthermore, EPA has previously issued guidance on lead content classification as follows:

"… The rule, at 24 CFR 35.86 and 40 CFR 745.103 states that a lead-based paint free finding must demonstrate that the building is free of 'paint or other surface coatings that contain lead in excess of 1.0 milligrams per square centimeter *(1.0 mg / cm^2)* or 0.5 percent by weight *(5000 ppm)*.' The State standards are not applicable, whether more or less stringent, since a State cannot amend Federal requirements."[vii]

In recognition of the various action levels the testing results are classified as follows for this report:

- Painted surfaces with readings at or above 0.7 mg / cm^2 are considered - Positive
- Painted surfaces with readings below 0.7 mg / cm^2 are considered - Negative

The individual readings have been provided on all field data sheets. Any future change in action levels by one of the regulating agencies may affect the classification of results.

For purposes of this survey, any material containing any detectable level of lead is subject to OSHA's Lead Exposure in Construction Rule (29 CFR Part 1926). Any work that disturbs these materials must be performed in accordance with these and any other applicable standards.

6.0 METHOD OF TESTING

Lead-Based Paint

Paint Testing: The method employed was X-ray fluorescence (XRF) using a Niton XLp 303A by Thermo Scientific, this unit uses a radioactive source of Cadmium 109. It was calibrated to NIST standard lead concentration samples prior to and after its use. Uncoated surfaces and other bare materials were not tested. The instrument was operated in "Quick Mode," where the duration for each test result is determined by a combination of:

- The actual reading relative to the designated action level;
- Age of the radioactive source;
- The substrate on which the test was taken.

The instrument's calibration was verified according to the manufacturer's specifications in compliance with the Performance Characteristic Sheet (PCS) developed for this instrument.

The readings from this instrument produce a 95% confidence level that the "lead" reading accurately reflects the actual level of lead in the tested surfaces, relative to the federal action level.

7.0 SUMMARY OF RESULTS

Asbestos

The following materials are presumed to contain asbestos and are considered ACM unless further sampling proves otherwise:

Material Description	Material Locations	Condition	Asbestos Percentage	Estimated Quantity*
Roofing Materials (Mastic & Felts)	Roof	Good	Presumed	1,500

* These quantities are only approximations. The exact quantities should be measured by the abatement contractor during the bidding process.

All other suspect materials sampled during this assessment tested negative for asbestos.

Lead-Based Paint

Paint Sampling: Throughout the subject property, several of the painted components indicated the presence of lead-based paint (LBP) at or above the action level. The following summary lists the specific components that tested above the action level and their respective locations:

- (Exterior) Metal Gate Frame - 11.3 mg / cm^2
- Restroom Ceramic Green Tile (Men's & Women's) – 5.4 – 6.1 mg / cm^2

Sampling for this inspection was representative and any components that were not tested but similar to those components that tested positive for LBP should be considered and treated as lead laden.

8.0 RECOMMENDATIONS

Given the clients anticipated renovation of the subject property buildings, Andersen Environmental recommends the following:

Asbestos

If materials found to contain asbestos and/or presumed to contain asbestos are going to be disturbed or removed; by law, they must first be abated and properly disposed of by a licensed and Cal/OSHA registered asbestos abatement contractor prior to any renovation or demolition activities.

In as such that no destructive investigation has been performed during the survey, the report may not reveal concealed asbestos-containing materials. Subsequently, additional investigation including construction documents review and/or destructive investigation is recommended as a precaution to prevent accidental exposure when construction or demolition is planned for this facility. Any suspect

materials that are uncovered during construction activities; that were not sampled during this assessment, should be considered asbestos containing, unless sampled to prove otherwise.

It is highly recommended that abatement monitoring be performed by the asbestos consultant (Andersen Environmental) if asbestos abatement is to be performed while non-abatement persons (employees, tenants, other building occupants, or general public) are present in adjacent areas. Abatement monitoring included the collection of air samples in adjacent areas to demonstrate that asbestos fibers are not migrating out of the regulated areas. In addition to air sampling, the monitoring includes oversight of the abatement contractor to ensure that the work is being conducted in compliance with all applicable regulations and in accordance with the scope of work and abatement specifications. Such abatement monitoring serves to limit the legal liabilities of the building owner.

Lead-Based Paint

Numerous components and painted surfaces throughout the interior and exterior of the subject property were determined to contain lead concentrations above the regulated amount. LBP was found intact (good condition).

LBP components in good condition may remain in place subsequent to renovation/demolition or they may be removed intact by lead trained personnel in accordance with all applicable federal, state and local regulations.

Should the contractor choose not to remove the lead-based paint materials and remove the materials in their entirety with the lead-paint components in place, it is recommended that samples representative of the entire mass of the prospective waste stream be collected by the contractor. These samples should then be analyzed according to the CAL EPA protocols for waste characterization as follows:

To characterize all waste streams, the following should be performed:

- Collect a representative sample of the waste material.
- For a pile of waste take one sample of a proportionate combination of Component in the pile. If a large quantity of waste is generated no less than four samples may be required.

Analysis for the waste characterization samples shall be performed as follows:

- Waste generated by chemical stripping shall, in addition to the requirements for determining the solid and soluble lead concentrations, shall be tested for corrosiveness and other contaminants, as applicable, resulting from the chemical stripping process.

- Analyze samples for Total Threshold Limit Concentration (TTLC)
  - If results are less than 50 mg/kg, the waste is not hazardous and shall be disposed as general construction waste.
  - If sample results are between 50 and 1,000 mg/kg the waste shall be tested for Soluble Threshold Limit Concentration (STLC).
  - If the sample results are above 1,000 mg/kg the waste is considered California Regulated Hazardous Waste, and no further testing is needed.

Where waste is required to be tested for STLC, the following shall apply:

- If the STLC results are less than 5 mg/L and had a TTLC of less than 350 mg/kg, the material shall be disposed at a Class II waste landfill. Evidence of such results of the STLC testing will be required by the landfill before waste is accepted. No further testing is required.
- If the STLC results are 5 mg/L or greater, or had a TTLC between 350 mg/kg and 1,000 mg/kg, the waste is a California regulated waste and the material shall be tested using the federally mandated Toxicity Characterization Leaching Procedure (TCLP)

Where waste is required to be tested by TCLP the following shall apply:

- If the TCLP is less than 5 mg/L, the waste is California regulated hazardous solid waste (non-RCRA). This material shall be disposed in a Class I hazardous waste landfill.
- If the TCLP is equal to or greater than 5 mg/L, the waste is a federally regulated hazardous waste solid (RCRA). The waste will then require treatment before being disposed in a Class I hazardous waste landfill.

9.0 RENOVATION, REPAIR AND PAINTING (RRP) RULE

Anyone performing renovation, repair and painting projects that disturb painted surfaces in residences, child care facilities, and schools built before 1978 must be EPA RRP certified and follow specific lead safe work practices to prevent lead contamination. The rule applies where more than 6 square feet per room or 20 square feet outside will be "disturbed" by workers(s) being compensated.

9.0 INSPECTION LIMITATIONS

This Assessment was planned, developed, and implemented based on Andersen Environmental previous experience in performing asbestos and lead-based paint assessments. This inspection was patterned after Chapter 7 of the *HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (1997 Revision)* and NESHAPS; 40 CFR 61 Subpart M. Andersen Environmental utilized state-of-the-art-practices and techniques in accordance with regulatory standards while performing this assessment. Andersen Environmental evaluation of the relative risk of exposure to lead identified during this inspection/risk assessment is based on conditions observed at the time of the inspection. Andersen Environmental cannot be responsible for changing conditions that may alter the relative exposure risk or for future changes in accepted methodology. Andersen Environmental uses only qualified personnel to perform building surveys. Reasonable effort was made to survey accessible suspect materials. Additional suspect materials may be located between walls, in voids, or in other inaccessible areas; caution should be exercised regarding these areas.

Andersen Environmental cannot warrant that these buildings do not contain LBP or ACM in locations other than those identified in this report.

Enclosed are the diagram(s), actual test results, and all relevant certifications and licenses.

Survey and Report by:

Benjamin Curry
DOSH Certified Asbestos Consultant No. 09-4549
CDPH Certified Lead Inspector/Assessor/Supervisor No. 20747

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[i] 1997 Revision
[ii] 1997 Revision
[iii] Parts per million
[iv] Applies to sale and application of LBP.
[v] Applies to construction related activities
[vi] Chapter 7 of the HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (1997 Revision).
[vii] Office of Pollution Prevention and Toxics, (August 20, 1996)

Appendix F

Glossary of Terms

Acronyms & Glossary of Terms

CMU	Concrete Masonry Unit
BUR	Built-Up Roof
EIFS	Exterior Insulation and Finish System
EPDM	Ethylene Propylene Diene Monomer
SC	Solid Core Doors
HM	Hollow Metal Doors
MH	Man Holes
ABC	Aggregate Base Course
EMT	Electrical Metallic Conduit
EUL	Estimated Useful Life
RUL	Recommended Useful Life
EOL	End of Life
FCI	Facility Condition Index
CRV	Current Replacement Value
DM	Deferred Maintenance
SF	Square Foot
SY	Square Yards
PSF	Pounds-Per-Square-Foot
PSI	Pounds-Per-Square-Inch
NFPA	National Fire Protection Association
FACP	Fire Alarm Control Panel
NAC	Notification Appliance Circuit
FCC	Fire Command Center
HVAC	Heating Ventilating and Air conditioning
VAV	Variable Air Volume
AHU	Main Air Handling Units
HP	Horse Power
FSS	Fuel Supply System
MDP	Main Distribution Panel
SES	Service Entrance Switchboard's
NEMA	National Electrical Manufactures Association
HID	Intensity Discharge
EMT	Electrical Metallic Tubing
KVA	kilovolt-ampere
RO	Reverse Osmosis
BTU/HR	British Thermal Units per Hour
kW	Kilowatt
FPM	Feet per Minute (Elevator Speed)
Amp	Amperage

Acronyms & Glossary of Terms

BTU – British Thermal Unit; the energy required to raise the temperature of one pound of water by one degree.

Building Envelope - The enclosure of the building that protects the building's interior from the outside elements, namely the exterior walls, roof and soffit areas.

Building Systems – Interacting or independent components or assemblies, which from single integrated units, that comprise a building and its site work, such as, pavement and flatwork, structural frame, roofing, exterior walls, plumbing, HVAC, electrical, etc.

Caulking – Soft, putty-like material used to fill joints, seams, and cracks.

Codes – See building codes.

Component – A fully functional portion of a building system, piece of equipment, or building element.

Deferred Maintenance – Physical deficiencies that cannot be remedied with routine maintenance, normal operating maintenance, etc., excluding de minimis conditions that generally do not present a material physical deficiency to the subject property.

Expected Useful Life (EUL) – The average amount of time in years that an item, component or system is estimated to function when installed new and assuming routine maintenance is practiced.

Facility – All or any portion of buildings, structures, site improvements, complexes, equipment, roads, walks, passageways, parking lots, or other real or personal property located on site.

Flashing – A thin, impervious sheet of material placed in construction to prevent water penetration or to direct the flow of water. Flashing is used especially at roof hips and valleys, roof penetrations, joints between a roof and a vertical wall, and in masonry walls to direct the flow of water and moisture.

Remaining Useful Life (RUL) – A subjective estimate based upon observations, or average estimates of similar items, components, or systems, or a combination thereof, of a number of remaining years that an item, component, or system is established to be able to function in accordance with its intended purpose before warranting replacement. Such period of time is affected by the initial quality of an item, component, or system, the quality of the initial installation, the quality and amount of preventative maintenance exercised, climatic conditions, extent of use, etc.

Thermal Resistance (R) – A unit used to measure a material's resistance to heat transfer. The formula for thermal resistance is: R = Thickness(in inches)/K

Structural Frame – The components or building systems that support the building's nonvariable forces or weights (dead loads) and variable forces or weights (live loads).

Warranty – Legally enforceable assurance of quality or performance of a product or work, or of the duration of satisfactory performance. Warranty guarantee and guaranty are substantially identical in meaning; nevertheless, confusion frequently arises from supposed distinctions attributed to guarantee (or guaranty) being exclusively indicative of duration of satisfactory performance or of a legally enforceable assurance furnished by a manufacturer or other third party. The uniform commercial code provisions on sales (effective in all states except Louisiana) use warranty but recognize the continuation of the use of guarantee and guaranty.