EVANSTON PUBLIC LIBRARY BOARD OF TRUSTEES

FACILITIES COMMITTEE MEETING

WEDNESDAY, SEPTEMBER 22, 2021

VIRTUAL

5:30 P.M.

https://us06web.zoom.us/j/84601728357
1. CALL TO ORDER / DECLARATION OF QUORUM

2. CITIZEN COMMENT Not to exceed 45 minutes

3. NEW BUSINESS
   A. Approval of Change Order for Elevator Upgrade (ACTION)
   B. Review of updated WJE study (Discussion)
   C. Naming in honor of Dr. Patricia Efiom (Discussion)
   D. Overview of Library 2022 CIP

4. ADJOURNMENT

The City of Evanston and the Evanston Public Library are committed to ensuring accessibility for all citizens. If an accommodation is needed to participate in this meeting, please contact the Library at 847-448-8650 or TDD/TTY number 847-866-5095 at least 48 hours in advance of the meeting so that arrangements can be made for the accommodation if possible.
To: Evanston Public Library Facilities Committee
    Evanston Public Library Board of Trustees

From: John Devaney - Facilities Manager

Subject: Seeking Approval – COE Project Change Order #1 for Schindler Elevator Corporation.
Evanston Public Library 2021 CIP – 4800025 Elevator Controls Upgrade
2019 Required Code Compliance and field conditions additional items for change order.

Date: September 15, 2021

Recommended Action:
Staff recommends approval of Change Order #1 for Schindler Elevator Corporation to fund Illinois mandated code compliance items and found field conditions to Schindler Elevator Corp 853 N. Church Ct., Elmhurst, IL 60126-1036 in the amount of $28,990.00. This change order will fund necessary components and labor to complete the elevator operating controls upgrade for the Main Library.

Funding Source:
Funding is from the 2021 Main Library CIP Account 185.48.4862.65515. The budget for the purchase is $28,990.00.

<table>
<thead>
<tr>
<th>Contractor</th>
<th>Address</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schindler Elevator Corp.</td>
<td>853 N. Church Ct. Elmhurst, IL 60126-1036</td>
<td>$28,990.00</td>
</tr>
</tbody>
</table>

Summary:
This proposal included three (3) Schindler Corporation change orders:

CHANGE ORDER P3357/001–ELEVATOR VIDEO SYSTEMS (Code mandate)
CHANGE ORDER P3357/002–ELEVATOR KEYPAD SECURITY ACCESS (Security)
CHANGE ORDER P3357/003–ELEVATOR POSITION INDICATORS (Code mandate)
A result of EPL’s 2014 library wide building reserve study produced by architectural firm Wiss, Janney, Elstner (WJE), WJE recommended several upgrades for the main library elevators. A number of the upgrades have been incorporated. The elevators are original to the property (circa 1994), and are proprietary. The elevators at Main library are our most used mechanical system and very reliable. These additional enhancement will make the systems code compliant and will help ensure many tears of reliable service.

During December, 2020 EPL entered into an agreement with Schindler Elevator for the controls modernization project. Schindler Elevator informed staff that most components are custom fabricated, which normally results in an extended lead-time.

A component of the elevator modernization project includes upgrading the elevator lighting (Cars 1&2) to an LED fixture. This lighting portion will be performed by COE staff which will result in a savings of $17,000.

EPL maintains a 3-year renewable, service contract with Schindler Elevator

Staff recommends Committee and Board approval for the required additional parts and services.

Authorizing signature:

Karen Danczak Lyons

Date

Attachments:

1. Change orders #1-3 Schindler Elevator
2. Supporting documentation from the State of Illinois and Schindler Elevator.
3. Executed COE change Order Form.
CITY OF EVANSTON
CHANGE ORDER

Order No. 001
Date: 9/1/2021
Agreement Date: 2/9/21

PROJECT: Single Source – Schindler Elevator Modernization
OWNER: Evanston Public Library
CONTRACTOR: Schindler Elevator Corp.

The following changes are hereby made to the AGREEMENT: Additional required items need to be added to the project in order to meet Illinois code requirements.

<table>
<thead>
<tr>
<th>Original CONTRACT PRICE:</th>
<th>$ 147,900</th>
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</thead>
<tbody>
<tr>
<td>Current CONTRACT PRICE adjusted by previous CHANGE ORDERS</td>
<td>$ 147,900</td>
</tr>
<tr>
<td>Total change in CONTRACT PRICE for this CHANGE ORDER</td>
<td>$ 28,990</td>
</tr>
<tr>
<td>The CONTRACT PRICE including this CHANGE ORDER will be</td>
<td>$ 176,890</td>
</tr>
</tbody>
</table>

Original Date for Contract Completion: 09/31/21
Time Extension (in calendar days): N/A
Modified Date for Contract Completion: N/A

Approved by (Owner): John Devaney
City of Evanston – Evanston Public Library
09/01/2021 Date

Accepted by (Contractor): Pete Long
Contractor
Territory Modernization Manager
09/01/2021 Date
RE: EPL - Lobby Panel and Bond

1 message

Sharon Bonfitto <sharon.bonfitto@schindler.com>  
To: "jdevaney@cityofevanston.org" <jdevaney@cityofevanston.org>  
Cc: Jason Lazzara <jason.lazzara@schindler.com>, Mark Bertola <mark.bertola@schindler.com>  

Tue, Aug 24, 2021 at 9:17 AM

Good Morning John,

I have attached the formal change notices with regard to your upcoming modernization at Evanston Public Library. The attachments are for the following amendments:

- Notice to change existing PI’s
- Notice for keypad integration
- Notice for 2019 code upgrades

I have also attached some additional information regarding the newly mandated 2019 code upgrades. Please review these files, sign and return to me as soon as possible. If you have any questions, feel free to contact me.

Regards,

Sharon

---

Schindler

Sharon Bonfitto | Associate Project Manager
Phone 630-478-7109 | Mobile 312-502-5647
sharon.bonfitto@schindler.com

Schindler Elevator Corporation | District Suburban Chicago
853 North Church Court
Elmhurst, IL 60126-1036, United States
www.us.schindler.com

We Elevate
Change Order

Change Order Number: P3357-001

Job Information

<table>
<thead>
<tr>
<th>Job Name:</th>
<th>EVANSTON PUBLIC LIBRARY</th>
<th>Job No:</th>
<th>P3357</th>
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<tbody>
<tr>
<td>To:</td>
<td></td>
<td>From:</td>
<td>JASON LAZZARA</td>
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<tr>
<td>Address:</td>
<td></td>
<td>Schindler Elevator Corporation</td>
<td></td>
</tr>
<tr>
<td>Attn:</td>
<td>JOHN DEVANEY</td>
<td>Address:</td>
<td>853 N CHURCH CT</td>
</tr>
<tr>
<td>Fax:</td>
<td>00000000000</td>
<td>Phone:</td>
<td>630-478-7113</td>
</tr>
<tr>
<td>Email:</td>
<td></td>
<td>Fax:</td>
<td>630-478-7184</td>
</tr>
<tr>
<td>Date:</td>
<td>August 24, 2021</td>
<td>Email:</td>
<td><a href="mailto:Jason.Lazzara@schindler.com">Jason.Lazzara@schindler.com</a></td>
</tr>
</tbody>
</table>

Change Order Description

Scope: Schindler Elevator proposes to provide labor and material to install ADA video monitoring system to comply with state mandated 2019 code upgrades, effective 5.25.2021, including in-car video displays for hearing impaired and/or speech impaired passengers, 3D door edge and software

Total Cost: $16400.00

This Change Order amends the terms, conditions and scope of the Agreement for the referenced Job. By execution of this Change Order, the Contractor / Purchaser accepts the contract price change / scope change / schedule change described herein. Except as expressly modified, all terms of the original trade contract / subcontract shall remain in full force and effect.

Authorization

Please sign and return a copy to our office as approval and authorization by Subcontractor to make the change(s) in its Scope of Work.

Contractor
Signature of Authorized Person
Date:

Subcontractor
Signature of Authorized Person
Date:

Schindler Elevator Corporation
By: (Type Name)
# Change Order

**Change Order Number:** P3357-002

## Job Information

<table>
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<td>Email:</td>
<td><a href="mailto:Jason.Lazzara@schindler.com">Jason.Lazzara@schindler.com</a></td>
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## Change Order Description

**Scope:** Labor and material to integrate keypad on both elevators.

**Total Cost:** $5285.00

This Change Order amends the terms, conditions and scope of the Agreement for the referenced Job. By execution of this Change Order, the Contractor / Purchaser accepts the contract price change / scope change / schedule change described herein. Except as expressly modified, all terms of the original trade contract / subcontract shall remain in full force and effect.

## Authorization

Please sign and return a copy to our office as approval and authorization by Subcontractor to make the change(s) in its Scope of Work.

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<th>Subcontractor</th>
<th>Schindler Elevator Corporation</th>
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<tbody>
<tr>
<td>Signature</td>
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<td>Schindler Elevator Corporation</td>
</tr>
<tr>
<td>Authorized Person</td>
<td>Authorized Person</td>
<td>Date:</td>
</tr>
<tr>
<td>Date:</td>
<td>Date:</td>
<td>By: (Type Name)</td>
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<tr>
<td>By: (Type Name)</td>
<td>Title</td>
<td>By: (Type Name)</td>
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# Change Order

**Change Order Number:** P3357-003

## Job Information

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## Change Order Description

**Scope:**
Replace existing PI's with CE ME205 red bar segment PI's, provide adapter plates to adapt to existing stud pattern. Provide new CE Microcom drivers (SMCDU-B1B), single line/floor per car & corresponding SW in HX control.

**Total Cost:** $7305.00

This Change Order amends the terms, conditions and scope of the Agreement for the referenced Job. By execution of this Change Order, the Contractor / Purchaser accepts the contract price change / scope change / schedule change described herein. Except as expressly modified, all terms of the original trade contract / subcontract shall remain in full force and effect.

## Authorization

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<td>Date:</td>
<td>Date:</td>
</tr>
<tr>
<td>By: (Type Name) Title</td>
<td>By: (Type Name)</td>
<td>By: (Type Name)</td>
</tr>
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</table>
TO: All Illinois Licensed Contractors, Inspectors and Municipalities with Agreements
RE: Adoption of Nationally recognized Safety Codes

The Illinois Elevator Safety Rules have recently been updated and become State law on May 25, 2021. Accordingly, the Office of the State Fire Marshal ("OSFM") provides the following explanation of the major changes to the Rules, especially as they pertain to new and existing conveyances:

Conveyances for which a building permit is issued after the amended Rules’ effective date of May 25, 2021 (building permit for new construction or a permit issued for the repair/modification of an existing conveyance) must be designed, constructed, installed, operated, inspected, tested, maintained, altered and repaired in accordance with the following standards and recommended practices:

1) American Society of Mechanical Engineers (ASME)
   Three Park Avenue
   New York NY 10016-5990

   A) Safety Code for Elevators and Escalators (ASME-A17.1/CSA B44-2019) and Performance-Based Safety Code for Elevators and Escalators (ASME A17.7-2012/CSA B44.7-07);

   B) Safety Code for Existing Elevators and Escalators (ASME A17.3-2005), but only as required under Section 35(h) and (i) of the Act and subsection (d) of this Section;

   C) Safety Standard for Platform Lifts and Stairway Chairlifts (ASME A18.1-2017);


2) American Society of Civil Engineers (ASCE)
   1801 Alexander Bell Drive
   Reston VA 20191-4400

   Automated People Mover Standards (ANSI/ASCE/T&D 1-2013).

   b) All the materials incorporated by reference in this Section are incorporated as of the date specified and include no later editions or amendments.

   c) The Board shall adopt, or amend and adopt, the latest editions of the standards referenced in this Section within 12 months after the effective date of the standards. [225 ILCS 312/35(a)]

   d) Upgrade Requirements for Existing Conveyances
1) Notwithstanding anything else in this Part, the following upgrade requirements of the 2007 edition of the Safety Code for Elevators and Escalators (ASME A17.1) and the 2005 edition of the Safety Code for Existing Elevators (ASME A17.3) must be completed by January 1, 2015, but OSFM or the Local Administrator may not require their completion prior to January 1, 2013:

A) Restricted opening of hoistway doors or car doors on passenger elevators in accordance with ASME A17.3-2005;

B) Car illumination in accordance with ASME A17.3-2005;

C) Emergency operation and signaling devices in accordance with ASME A17.3-2005;

D) Phase reversal and failure protection in accordance with ASME A17.3-2005;

E) Reopening device for power operated doors or gates in accordance with ASME A17.3-2005;

F) Stop switch pits in accordance with ASME A17.3-2005; and

G) Pit ladder installation in accordance with Section 2.2.4.2 of ASME A17.1-2007.

2) In the event that a conveyance regulated by this Part is altered, the alteration shall comply with. ASME-A17.1/CSA B44 -2019

3) Notwithstanding anything else in this Section, the firefighter's emergency operation and the hydraulic elevator cylinder, including the associated safety devices outlined in Section 4.3.3(b) of ASME A17.3-2005, are not required to be upgraded unless:

A) There is an alteration;

B) The equipment fails; or

C) Failing to replace the equipment jeopardizes the public safety and welfare as determined by the Local Administrator or the Board. [225 ILCS 312/35(h) and (i)]
e) Non-Mandatory Guidelines. It is recommended that all conveyances be inspected and tested in accordance with the following recommended practices. The following list should not be interpreted as excluding other practices recommended by equipment manufacturers.

American Society of Mechanical Engineers (ASME)
Three Park Avenue
New York NY 10016-5990


(41 Ill.Admin.Code 1000.60(a)). All State licensees (mechanics and inspectors) and Municipal partners (Local Administrators) are responsible for ensuring that these standards are applied only to those conveyances constructed, repaired or modified after May 25, 2021. Starting May 25, 2021, however, the new codes adopted by the amended Rules at Section 1000.60(a) shall apply to all conveyances, existing and new. If you become aware of any violations to this directive, please report such instances to the OSFM’s attention immediately.

As for the remaining sections of the amended Rules, they contain both major and minor changes. For your consideration, the sections containing the most significant modifications are listed below so that you may read and understand them prior to their promulgation as State law:

- Adoption of updated safety codes: Section 1000.60.

The new rules can be found online at:

Please feel free to contact the Elevator Safety Division in the future if you have any questions or need further assistance.

Respectfully,

Bob Capuani
2.27.1 Car Emergency Signaling Devices

2.27.1.1 Emergency Communications. The two-way communications shall conform to 2.27.1.1.1 through 2.27.1.1.6.

2.27.1.1.1 A communications means between the car and a location staffed by authorized personnel who can take appropriate action shall be provided.

2.27.1.1.2 If the call is not acknowledged [2.27.1.1.3(c)] within 45 s, the call shall be automatically directed to an alternate on- or off-site location.

2.27.1.1.3 The communications means within the car shall comply with the following requirements:

(a) In jurisdictions enforcing the NBCC, Nonmandatory Appendix E; in jurisdictions not enforcing the NBCC, ANSI/ICC A117.1, ADAAG, or ADA/ABAA.

(b) A push button to actuate the communications means shall be provided in or adjacent to a car operating panel. The push button shall be visible and permanently identified with the phone symbol (see 2.26.12.1). The identification shall be on or adjacent to the push button. The communications means shall be initiated when the push button is actuated.

(c) On the same panel as the phone push button, a message shall be displayed that is activated by authorized personnel to acknowledge that communications are established. The message shall be permitted to be extinguished where necessary to display a new message [see (d) and (e)] or when the communications are terminated.

(d) On the same panel as the phone push button, messages shall be displayed that permit authorized personnel to communicate with and obtain responses from a trapped passenger(s), including a passenger(s) who cannot verbally communicate or hear.

(e) On the same panel as the phone push button, a message shall be displayed that is activated by the authorized personnel to indicate when help is on the way. The message shall continue to be displayed until a new message is displayed [see 2.27.1.1.4(c)] or the communications are terminated.

(f) The communications means shall provide on demand to authorized personnel information that identifies the building location and elevator number.

(g) The communications, once established, shall be disconnected only when authorized personnel terminate the call or a timed termination occurs. A timed termination by the communications means in the elevator, with the ability to extend the call by authorized personnel, is permitted if voice notification is sent by the communications means to authorized personnel a minimum of 3 min after communication has been established. Upon notification, authorized personnel shall have the ability to extend the call; automatic disconnection shall be permitted if the means to extend are not enacted within 20 s of the voice notification.

(h) The communications means shall not use a handset in the car.

(i) The communications shall not be transmitted to an automated answering system. The call shall be answered by authorized personnel.

(j) Operating instructions shall be incorporated with or adjacent to the phone push button.

(k) A means to display video to observe passengers at any location on the car floor, to authorized personnel for entrapment assessment, shall be provided.

2.27.1.1.4 Where the elevator rise is 18 m (60 ft) or more, a communications means within the building accessible to emergency personnel shall be provided and shall comply with the following requirements:

(a) The means shall enable emergency personnel within the building to establish communications to each car individually. The communications shall be established without any intentional delay and shall not require intervention by a person within the car. The means shall override voice communications to outside of the building.

(b) The communications, once established, shall be disconnected only when emergency personnel terminate the call or a timed termination occurs. A timed termination by the communications means in the elevator, with the ability to extend the call by emergency personnel, is permitted if voice notification is sent by the communications means to emergency personnel a minimum of 3 min after communication has been established. Upon notification, emergency personnel shall have the ability to extend the call; automatic disconnection shall be permitted if the means to extend are not enacted within 20 s of the voice notification.

(c) Once the communications have been established, a message shall be displayed on the same panel as the phone push button, that is activated by emergency personnel to indicate that help is on-site. The message shall be permitted to be extinguished where necessary to display a new message [see (e)] or when the communications are terminated.

(d) Operating instructions shall be incorporated with or adjacent to the communications means outside the car. Instructions shall conform to 2.27.7.3.

(e) On the same panel as the phone push button, messages shall be displayed that permit emergency personnel to communicate with and obtain responses from a trapped passenger, including a passenger who cannot verbally communicate or hear.

(f) A means to display video to observe passengers at any location on the car floor, to emergency personnel for entrapment assessment, shall be provided.

2.27.1.1.5 If the communications means is connected to the normal building power, it shall automatically transfer to an auxiliary power supply as required by the applicable building code or, where applicable, NFPA 99, after the normal building power fails. This
power source(s) shall be capable of providing for the means of communications (see 2.27.1.1.3 and 2.27.1.1.4) for at least 4 h and the audible signaling device (see 2.27.1.2) for at least 1 h.

2.27.1.1.6

(a) The voice communication means within the car shall include a means to verify operability of the telephone line, where

(1) verification of the telephone line operability shall be automatically performed

(2) verification may be continuous or periodic

(3) periodic verification shall be at least on a daily basis

(4) verification shall not require activation of the communications link(s)

If means other than a telephone line (e.g., VOIP, network, intercom) are used for the communications, similar verification of this equivalent means shall be performed.

(b) If the verification means in (a) determines that the telephone line or equivalent means is not functional, an audible and illuminated visual signal shall be activated. A minimum of one visual and one audible signal shall be provided for each group of elevators controlled by a fire recall switch.

(1) The visual signal shall

(-a) be located at the designated landing in the vicinity of the fire recall switch and visible to elevator user(s)

(-b) be labeled “ELEVATOR COMMUNICATIONS FAILURE” in red letters a minimum of 5 mm (0.25 in.) high

(-c) illuminate intermittently

(-d) continue illuminating intermittently until the telephone line or equivalent means is functional

(2) The audible signal shall

(-a) be 10 dBA minimum above ambient, but shall not exceed 80 dBA measured at the designated landing fire recall switch

(-b) sound at least once every 30 s with a minimum duration of 1/4 s

(-c) continue to sound until silenced by authorized personnel or the telephone line or equivalent means is functional

(3) A means to silence the audible signal shall be provided and shall be accessible only to authorized personnel. The signal when silenced shall remain silent for a period of no less than 12 h or until activated by the next failed periodic verification [see (a)(3)].

(4) The verification means in (a) shall continue to monitor the operability of the telephone line or equivalent means while the telephone line or equivalent means is not functional on a continuous basis or periodically with intervals of not more than 5 min.

When the verification determines that the operability of the telephone line or equivalent means has been restored after being nonfunctional, the audible signal shall be silenced unless the signal has already been silenced in accordance with (b)(3) and the illuminated visual signal shall be extinguished.

2.27.1.2 Emergency Stop Switch Audible Signal

When an emergency stop switch (2.26.2.5) is provided, an audible signaling device shall be provided. The audible signaling device shall

(a) have a rated sound pressure rating of not less than 80 dBA nor greater than 90 dBA at 3 m (10 ft)

(b) respond without delay after the switch has been activated

(c) be located inside the building and audible inside the car and outside the hoistway

(d) for elevators with a rise greater than 30 m (100 ft), be duplicated as follows:

(1) one device shall be mounted on the car

(2) a second device shall be placed at the designated level

2.27.2 Emergency or Standby Power System

Elevators provided with an emergency or standby power system to operate the elevator in case the normal power supply fails shall comply with the requirements of 2.27.2.1 through 2.27.2.5.

NOTE (2.27.2): Requirements for emergency or standby power systems are addressed in the building code. Requirements for health care facilities are addressed in NFPA 99 and NFPA 70, Article 517.

2.27.2.1 The emergency or standby power system shall be capable of operating the elevator(s) with rated load (see 2.16.8), at least one at a time, unless otherwise required by the building code.

2.27.2.2 The transfer between the normal and the emergency or standby power system shall be automatic.

2.27.2.3 An illuminated signal(s) marked "ELEVATOR EMERGENCY POWER" shall be provided in the elevator lobby at the designated level for each group of elevators or for any single elevator not in a group. The signal(s) shall indicate that the normal power supply has failed and the emergency or standby power is in effect for one or more of the cars in that group of elevators or that single elevator.

2.27.2.4 Where the emergency or standby power system is not capable of operating all elevators simultaneously, the elevators shall conform to 2.27.2.4.1 through 2.27.2.4.6.

2.27.2.4.1 A manually operated means marked “ELEVATOR EMERGENCY POWER” in red lettering a minimum of 5 mm (0.25 in.) high shall be provided to permit the selection of the elevator(s) to operate on the emergency or standby power system. The selection
Evanston Public Library

Building Reserve Analysis – 2021 Update
1703 Orrington Avenue
Evanston, Illinois 60201

September 10, 2021
WJE No. 2021.0895

PREPARED FOR:
Evanston Public Library
1703 Orrington Avenue
Evanston, Illinois 60201

PREPARED BY:
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INTRODUCTION

FOREWORD TO THE 2021 UPDATE

This updated Building Reserve Analysis has been prepared by Wiss, Janney, Elstner Associates, Inc. (WJE) on behalf of the Evanston Public Library, to guide capital improvements over the next five years (2022 to 2026). It updates and supersedes our original Building Reserve Analysis dated December 20, 2013, and a previous update dated December 14, 2018. For ease of reference, the background, description, existing conditions, and figures from the 2018 report are included herein. The existing conditions and figures have been revised to delete those items that have been addressed from 2014 to 2021; only the unaddressed items remain in the current report, although the original item numbering has been maintained. Minor edits in these sections as necessary to provide updated information are formatted as **bold underscore** text. The Recommendations portion of each section of the report have been revised to reflect projects already completed and remaining recommended items. The numbering of the recommended items is consistent with the 2013 report. Table 2 has been revised, incorporating updated pricing information and updated prioritization of scope items. (Previous versions also addressed the north branch, which has closed and is omitted from this updated report.) Table 1, the itemized list of building components, and Table 3, annualized budgets, have been omitted from this revised report. Among the completed work, repairs to the parking garage of the main library were designed by WJE; other professional firms designed other repair and renovation projects.

BACKGROUND AND PROJECT SCOPE

The Evanston Public Library, located at 1703 Orrington Avenue, was designed by Joseph Powell Architect with Nagle, Hartray & Associates, Ltd., as Architect of Record and opened in October 1994, replacing the previous 1961 library building on the site.

The purpose of the Building Reserve Analysis is to develop a comprehensive condition assessment report for each building, including recommendations for facility renovations and maintenance, estimated costs for recommended repairs, and phasing plans for project implementation. In accordance with our proposal dated June 28, 2013, Wiss, Janney, Elstner Associates, Inc. (WJE) reviewed relevant documents provided to us, performed an on-site visual inspection of select building components, and reviewed public spaces for compliance with the Americans with Disabilities Act (ADA). Our observations were initially provided in our Phase I report. In Phase II of the project, we developed recommendations based on our observations and estimated annual reserve budgets projected over a ten year period.

The following narrative addressed the exterior walls; roofing; windows and doors; interiors; accessibility; fire protection, HVAC, building management, plumbing, electrical, and fire alarm systems; and site features of the library.

BUILDING DESCRIPTION

The library has approximately 120,000 square feet divided among four floors and a basement; the building is approximately 60 feet high from grade to the top of the main parapet wall. The majority of the basement level consists of a parking garage. At the south facade is a clock tower that rises 30 feet higher than the main roof parapet. In plan, the building is essentially rectangular, with projections on the
southeast and the northwest. The library includes flat roofs on multiple levels and a standing seam metal barrel vault roof covering the collections area at the southwest corner of the building.

The facades are clad in brick with cast stone ornament and copings and large aluminum framed windows and entrance doors. The main entrance is located on Church Street near the center of the south facade, to the east of the clock tower. A secondary entrance is located on the east exterior wall. The north exterior wall includes the service area and an entrance to the basement-level parking garage. Along Orrington Avenue, the west exterior wall includes a curved roof form and two sheet metal sculptures at the fourth floor setback roof.

Since the Main Library opened to the public in October 1994, major projects have included remodeling of the west half of the first floor to serve as an enlarged children’s area, and the creation of a dedicated space for teenagers at the northeast corner of the third floor. These renovations were completed in 2007. The basement-level parking garage was repaired and renovated in two phases in 2016 and 2017.

The project team received the following documents pertinent to the Main Library for review as part of this project:

- Cast Stone Shop Drawings by Dallas Cast Stone Co., Inc., dated September 14, 1993
- Cast Stone Shop Drawings by Dallas Cast Stone Co., Inc., dated November 19, 1993 (revised)
- Cast Stone Coping Repair proposal by Weathershield, dated July 23, 2013
- Electrical Equipment Test Report by Schneider Electric, dated December 14, 2012
- Com Ed statement issued December 10, 2010
- Com Ed statements for the period January 2012 through December 2012
- Carrier Nu-Fin Coils product data sheet
- Primer Pump Repair proposal by Metropolitan Pump Company, dated August 26, 2013
- Schindler Elevator Corporation, various repair proposals dated July 22, 2013, including door operator replacement, hydraulic oil cooler installation, submersible power unit replacement, and solid state linestarter/soft start replacement.
Exterior Walls

Description

The exterior walls of the Main Library of the Evanston Public Library are composed of brick masonry units with cast stone ornament and coping units. The brick masonry units are Norman brick laid in a one-third running bond pattern. Norman brick units are 11-5/8-inches long, 2-1/4-inches tall, and 3-5/8-inches deep. Approximately 38,000 square feet of red brick masonry comprise the majority of the exterior walls on the structure and site walls. Brick joints are pointed with mortar, with bed joints struck to a V-groove profile. In addition, cast stone features, including watertables (continuous projecting masonry bands), window sills and lintels, decorative cladding, and coping units, are present throughout the exterior of the building, for a total of approximately 4,500 square feet of exposed surface area. Most joints between cast stone units are pointed with mortar, but sealant is used at joints between coping units. As shown on the original drawings, the typical wall construction from exterior to interior includes the 4 inch nominal thickness brick or cast stone veneer; a 1 inch drainage cavity; 1 inch of rigid insulation; 6 inch nominal thickness concrete masonry; light gauge steel studs; and interior gypsum board finish. Membrane through-wall flashings are provided at relieving angles, window sills, and window and door lintels; these flashings function to direct any moisture within the wall cavity to the exterior and protect the materials below the flashing. Similar membrane flashings are not indicated to be used below the cast stone coping units; therefore, any moisture that enters through open joints or cracks in the coping will enter the wall system.

In addition to the brick masonry and cast stone, the north facade includes approximately 650 square feet of exposed structural concrete and approximately 290 square feet of concrete masonry unit exterior walls at the entrance to the below grade parking garage. There are approximately 3,225 linear feet of vertical expansion joints with elastomeric sealant throughout the masonry facade.

Rafters, beams, and seven exposed painted steel columns comprising approximately 1,000 square feet of surface area are present above the cast stone decoration on the south exterior wall. In isolated locations on the south and east sides, metal sun shading devices are anchored to the exterior masonry wall. Other attachments include the clock on the west facade and the flagpole on the south facade of the tower. An approximately 1,300 square foot metal panel sound attenuation wall conceals chiller units located on the main roof. The joints between these panels are sealed with sealant; however, due to the placement of the panels above the roof surface, joint sealant is not required at these panels. Also, the doors at the east entrance through the sound attenuation wall have been previously removed.

Above the recessed basement-level garage entrance, there is a painted gypsum board soffit. A similar soffit is present above a group of recessed windows on the south facade.

Recommendations

Completed Work, 2014–2021

- 04-01. Cast stone parapets were repaired, joints were resealed, damaged cast stone units were replaced, and an elastomeric coating was applied to top and roof-facing back sides.
- 04-02. In 2018, the exterior structural steel columns at the south elevation were repainted.
04-04. Expansion joints in the facade have been resealed.
04-05. In 2017, localized repointing of open joints between cast stone units was completed.
04-06. In 2017, individual damaged cast stone units were repaired.
04-07. In 2014–2016, a clear, penetrating water-repellant sealer was applied to cast stone on the facades.
04-08. The missing marker for the clock on the tower has been replaced. A new clockwork mechanism, lights, and electronics has been ordered and is scheduled to be installed in early 2019.
04-09. As part of recent masonry facade work, efflorescence was cleaned from the facade.
04-10. As part of work on the parking garage, the exterior soffit was repainted. (Other areas remain to be completed, as noted below.)
04-11. In 2018, the north concrete basement wall was recoated with an elastomeric coating.
04-12. As part of recent masonry facade work, protruding portions of membrane flashing were cut flush with the wall surface.

**High Priority Items (Next 1 to 2 Years)**
- 04-03. The exposed structural steel framing that supports the metal panel sound attenuation wall should be repainted. The surface should be prepared to remove corrosion, and the steel should be primed and painted.

**Medium Priority Items (Next 3 to 5 Years)**
- 04-10. At the south facade, the exterior soffits should be repainted to maintain a uniform protective coating and improve aesthetics.

**Low Priority Items (Next 6 to 10+ Years)**
- 04-07. In the time frame 2024–2026, re-apply a clear, penetrating water-repellant sealer to cast stone on the facades, as cyclical maintenance.
- Continue to monitor the performance of the brick and cast stone masonry, and address breaches or other failures in sealant joints as necessary.
Roofing

Description

The roof at the Main Library is divided into eleven primary sections, with additional small roofed areas located in facade recesses on the south exterior wall. The majority of the roof areas (approximately 19,500 square feet) are low-sloped roofs covered in built-up roofing with rock ballast. According to the original drawings, the concrete structural roof deck is flat and is overlaid with a sloped concrete fill to provide slope for drainage. The roof membrane is wrapped up the back face of the parapet wall, and the top edge of the membrane flashing is protected by a surface-mounted galvanized steel counterflashing. Although the drawings indicate that the counterflashing was to be terminated into the bed joint under the cast stone coping, as installed the counterflashing is anchored into cast stone units, covering the bed joints. Approximately 1,500 linear feet of galvanized steel counterflashing are installed at the library. Most roof areas observed include at least two internal roof drains, with large roof areas including up to eleven drains. One exception is the low-sloped roof area over the mechanical penthouse, which drains to a lower roof via a gutter and downspout system.

The main roof includes bent eye-bolt anchors, referred to as "davits" on the original drawings, which were likely intended to serve as tie-backs for window washing and exterior wall maintenance. The detail for this item is shown on sheet A511 of the original architectural drawings. Each anchor consists of a 3/4 inch diameter eyebolt embedded into the concrete roof slab.

At the southwest of the building there is an approximately 8,500 square foot standing seam metal barrel vault roof oriented on an east-west axis. The wood roof deck is exposed at the undersides of the vaulted roof overhang on the south and west sides. The vaulted roof drains to gutters located along the north and south. At the north side, the hanging metal gutter has three downspouts that discharge onto the adjacent low-sloped main roof. The south built-in gutter includes a heat trace system. The south gutter drains to two downspouts, one at either end. These downspouts discharge onto small balcony roofs at the third floor level, located under the roof overhang. Overflow scuppers were not observed at these small balcony roofs, and the architectural and plumbing drawings only show a single 4 inch drain in this location. At the other similar balcony roofs along the south wall of the third floor reading room, single 3 inch drains and no overflow provisions are shown on the original drawings. Altogether, there are eight balcony roofs under the vaulted roof, and two additional balcony roofs on the east portion of the south exterior wall. The small balcony roofs are each approximately 40 square feet in plan. The condition of the roof membrane and drainage at the small balcony roofs was not observable, since wood blocking and gravel-filled planter boxes were present at each small balcony roof.

Existing Conditions

- 07-07. The existing heat trace in the standing seam metal roof gutter is non-functional.
- 07-09. At one location near the northwest corner, the standing seam metal roof was loose and not well fastened to the roof deck. This location could be susceptible to wind-induced uplift forces. Also, approximately four locations of leakage have been reported at the standing seam metal roof during heavy wind-driven rains.
- 07-10. Small balconies, including those onto which downspouts drain from the barrel vault roof, do not include overflow scuppers or secondary roof drains. If the primary roof drain becomes blocked, the water will not have a drainage path.

- 07-14. The existing roof in the low-sloped roof areas is original to the building and was constructed in 1994. Crazing was observed on the surface of the built up roof perimeter flashing throughout the low-sloped roof areas. Within the next ten years the roof will be nearing the end of its service life.

- 07-15. The height of the existing roof tie-back anchors above the roof structural deck varies greatly. The height from the roof to the anchor may influence the anchor’s ability to properly support the required load. The relevant OSHA requirements vary somewhat depending on whether the anchor is to be used for personal safety lifeline tie-backs or for equipment tie-back; however, to be reliable tie-backs, the anchors would need to provide 5,000 lbs. ultimate capacity. Also, it is required that these types of anchors be tested when first installed and then inspected visually at least once a year. No record has been located for any testing of the anchors upon their installation in 1994 or any subsequent visual inspection.

**Recommendations**

**Completed Work, 2014–2021**

- 07-01. Isolated patching of the membrane roof system and isolated sealing of membrane flashing seams has been implemented (7521, 7528). Additional maintenance and repair work of this type will be required until the roof system is replaced.

- 07-03. As part of the cast stone coping work, the roof counterflashing was resealed.

- 07-04. As part of the cast stone coping work, loose portions of the roof counterflashing were reattached.

- 07-05. As part of the cast stone coping work, corroded sections of counterflashing were replaced with new galvanized sheet metal.

- 07-10a. The planter boxes and wood blocking have been removed from the small balcony roofs.

- 07-11. Sealant was installed at the gap between the west curtain wall and the underside of the vaulted roof in 2018.

- 07-12. As part of 2018 facade work, the exposed exterior wood roof deck under the standing seam roof was reportedly recoated.

- 07-13. The sculpture on the west facade was cleaned in 2018.

**Minor Items to be Implemented by Facilities Staff**

- The current budget for annual maintenance of the roof is $40,000.

- 07-01. All roof areas should continue to be monitored for signs of leakage or deterioration. As part of annual roof maintenance, perform the following work:

- Isolated leaks should be repaired as they occur.

- Where present near the drains or in locations obstructing water flow to drains, moss growth should be removed from the flat membrane roof.
- Debris should be cleaned from the gutters at the standing seam metal roof.
- Any minor breaches in the gutter seams should be resealed.

**High Priority Items (Next 1 to 2 Years)**

- **07-07.** The non-functional heat trace in the standing seam metal roof should be replaced to mitigate the potential for ice damming in this gutter.

- **07-16. A damaged downspout at the southeast corner of the barrel vault roof has been temporarily patched (7540).** Replacement with new properly connected and supported piping is recommended.

**Medium Priority Items (Next 3 to 5 Years)**

- **07-09.** The standing seam metal roof appears to still be in good condition, but localized repairs are needed to address a few locations of loose anchorage and to address the sources of active leakage. Further documentation and/or water testing is needed to confirm the locations and pathways of existing water infiltration prior to developing repairs.

- **07-14.** Likely within the next five years, replacement of all membrane roofing will be required. Further study is needed to determine the type of membrane system to be installed and other system components (such as thermal insulation). Built-up membranes have become less common since the installation of the original roof in the 1990s, so options for fully adhered single-ply membranes should be reviewed. Since the tieback anchors at the roof have not been used, consideration could be given to removing these anchors entirely when the building is re-roofed.

**Low Priority Items (Next 6 to 10+ Years)**

- **07-10b.** Consideration should be given to installing through-wall overflow scuppers at the two small roofs where the downspouts for the south side gutter of the barrel vaulted roof discharge. The through-wall scuppers would serve as a secondary source of drainage if the primary drains become blocked.
Windows and Doors

Description

Aluminum framed windows, doors, and storefront systems comprise the majority of the fenestration. Aluminum framed storefronts are located at the public entrances on the south and east exterior walls and within the parking garage. An aluminum framed staff entrance door is located on the north exterior wall. The majority of the windows are single story in height; however, multiple story openings are located on the west and south exterior walls. Fenestration on the west exterior wall includes the glazed area on the third floor reading room under the curve of the roof. All of the exterior glass consists of insulating glazing units, for a total of approximately 9,000 square feet of glazing.

There are also two hollow steel fire exit doors on the north exterior wall at the east and west stair towers; two overhead steel-clad panel doors at the loading dock; and two overhead panel doors for the basement-level parking garage. Louvers are present on the north exterior wall at the fourth level; the louvers have an area of approximately 325 square feet. These louvers are fresh air intake grilles for the mechanical system.

The perimeter of each window and door opening is sealed with elastomeric sealant where it abuts adjacent building materials, for a total of 4,050 linear feet of joint sealant.

Recommendations

Completed Work, 2014–2021

- 08-02. The emergency exit doors were replaced.
- 08-03. In 2018, the loading dock doors were replaced.
- **08-04. The public doors at the east and south entrances have been replaced (7561).**
- 08-05. Replacement of window perimeter sealant was completed as part of the masonry facade repair work.
- 08-06. This item is deleted from the scope. The doors at the chiller sound attenuation wall were removed several years ago, and noise from the rooftop equipment has not been an issue. Therefore, installation of new doors is not necessary.
- 08-07. The garage entrance doors and controllers were replaced during the 2017 project.

Minor Items to be Implemented by Facilities Staff

- 08-01. When observed, any displaced window components should be gently tapped with a rubber mallet to return them to their original alignment. This will help ensure that the intended secondary drainage pathways in the window system design are functional.

Low Priority Items (Next 6 to 10+ Years)

- Continue to monitor the performance of the window perimeter sealant, and address breaches or other failures in sealant joints as necessary.
- 08-09. The exterior door at the north employee entrance has deteriorated and no longer fits securely in the door frame. This door should be replaced.
Interiors

Description

The interior of the library includes public and private spaces as well as equipment and service areas. Parking, storage, and equipment areas are located in the basement. The first level houses collections areas, including the children’s section, service desk area, restrooms, receiving area and offices, meeting rooms, and circulation spaces. The second level includes large collection spaces, a service area, restrooms, work rooms, and circulation spaces. The third level is similar to the second and includes the periodicals area. Office spaces, staff services, storage, and mechanical rooms are located on the fourth level. Also at the fourth level is an area open to below; this area is located above the reading room at the southwest corner of the building.

Typical interior finishes on the first through fourth levels include carpet (approximately 79,000 square feet), sheet vinyl flooring (approximately 2,250 square feet), and terrazzo (approximately 9,350 square feet); wood or rubber base (approximately 2,350 linear feet of wood and 5,400 linear feet of rubber); painted plaster or gypsum board walls (approximately 128,500 square feet); decorative wood trim; and painted gypsum board ceiling (approximately 6,100 square feet) or suspended acoustic tile ceilings (approximately 78,900 square feet). Back of house and garage areas include approximately 30,000 square feet of concrete floors and exposed painted concrete and concrete masonry walls. Specialty items such as aluminum corner guards are located in high-traffic and impact prone areas.

Most of these finishes are original to the construction of the building; new carpeting was installed and walls were repainted in the first floor children’s area and third floor teen area as part of the 2007 renovation of these spaces. Also, certain areas such as the first floor lobby have been repainted this year. Also, the gypsum board cladding and batt insulation along the north wall of the water service room in the basement level was affected by biological growth and was removed this year.

Existing Conditions

- 09-03. Protective metal corner guards have been added to several walls in high-traffic areas; however, the guards as installed do not extend to the floors and; therefore, the baseboards are not protected from impact.
- 09-04. At many locations, the rubber wall base is split and detached from the wall, particularly in high-traffic areas.
- 09-05. Most areas of carpet are worn, discolored, and nearing the end of their serviceable life.
- 09-06. An open horizontal crack was observed in the non-structural concrete masonry wall at the east wall of the fourth floor boiler room. This crack may indicate movement of the wall or floor system. Per the original drawings, the floor system in this area is a 12 inch thick two-way reinforced concrete slab. The partition wall itself is a non-structural 6 inch thick wall located 28 inches west of column line 3.
- 09-07. Discoloration and dirt is present on acoustic ceiling tiles surrounding air supply and return vents.
09-11. In 2013, moisture-damaged original gypsum board and batt insulation finishes were removed from the north wall of the water service room at the basement level. The concrete masonry structural wall was left exposed.

09-12. Toilet partitions are worn and stained.

Recommendations

Many of the recommended interior repair items are expected to be addressed during the proposed major interior renovation. A detailed scope and budget for this project have been prepared by others. Therefore, many of the maintenance and repair items recommended in 2013 are expected to be deferred until addressed by the major renovation project, as noted below. These deferred items have been deleted from the budget tables included in this report.

Completed Work, 2014–2018

09-01. Floor drains and cleanouts in the garage were replaced in 2016.

09-02. Garage drainage was corrected in 2016, and the entrance doors to the fire exit stairwells were replaced.

09-08. Starting in 2020, the public areas of the library have been repainted, including gypsum board finishes and painted doors and frames. All public areas of the third floor have been completed, as well as the community room, meeting room, and children’s area of the first floor (7539, 7538, 7545, 7542).

09-09. Cracks in the concrete garage floor were address in the 2017 work.

09-10. The garage floor was coated with an elastomeric membrane in 2017.

09-11. The water service room in the basement has remained at an appropriate temperature despite the removal in 2013 of the previous gypsum board finish and batt insulation on the outside wall. Therefore, this item (installation of new insulation and wall finish) is deleted from the scope.

09-12a. Toilet partitions were replaced on the first and second floors.

Deferred Indefinitely Pending Major Renovation Project

09-03. Metal corner guards.

09-04. Rubber base.

Minor Items to be Implemented by Facilities Staff

09-05. Worn areas of carpet tile should be replaced from attic stock material.

09-06. The cracked non-structural concrete masonry partition wall located in the boiler room should continue to be monitored over time. A crack gauge installed in the boiler room shows no additional displacement as of 2018.

09-07. Severely stained ceiling tile should be replaced from attic stock material.

High Priority Items (Next 1 to 2 Years)

09-08a. Complete the repainting of interior finishes at public areas, including the remaining portions of the first and second floors and the main stairwell.
09-08b. Repaint staff areas throughout the building, including the entire fourth floor

09-12b. Toilet room partitions in public restrooms should be replaced. The first and second floors have been completed; the third and fourth floors remain to be done.

Low Priority Items (Next 6 to 10+ Years)

09-14. Consider adding a unisex single-occupant restroom to the second or third floor, near the existing bathroom area.

09-15. Consider adding a family lounge and single-occupant restroom to the first floor, near the children’s area.
Accessibility

Description

The drawings provided for review do not indicate the codes referenced as the basis of design; however, the 1991 ADA Standards for Accessible Design would have been in effect at the time of the library’s design.

The library incorporates accessibility into the site, hallways, and circulation spaces through the presence of designated parking spaces, entrance ramps, automated door openers, elevators, handrails, tactile strips at stairs, and accessible service counters. In addition, accessible restrooms and drinking fountains are provided. As part of this assessment, WJE performed a brief review of the typical accessibility accommodations of public spaces for compliance. The accessible design was determined to be generally compliant with current standards at all areas reviewed. One exception occurs at locations where movable furniture such as kiosks blocks the clear travel paths in book stack locations. This can be resolved by modifying the furniture layout to provide a 30 inch minimum clear straight travel path or larger area for a right angle turn. If work is performed at the locations mentioned below in the future, some modifications to enhance universal accessibility may be desired.

Existing Conditions

Although not required by the code unless major renovations are implemented, the following observed items could be modified if the library desires to meet present-day accessibility standards.

- 10-01. Movable furniture was observed to obstruct some aisles and not allow for a minimum 30 inches of clearance at all locations.
- 10-04. Handrail extensions do not always return to a wall, guard, or landing surface.

Recommendations

Completed Work, 2014–2018

- 10-02. The elevator door closing delay has been adjusted to meet current code criteria.
- 10-03. Power-assisted doors have been adjusted to ensure proper hold-open time and position.

Minor Items to be Implemented by Facilities Staff

- 10-01. Furniture in the book stack areas should be rearranged provide a minimum of 30 inches clearance at all locations.

Low Priority Items (Next 6 to 10+ Years)

- 10-04. Wherever existing handrails are affected by other renovation work, they should be modified so that extensions return to a wall, guard, or landing surface.
Elevators

Description

This building has a total of three hydraulic elevators. Elevator 1 (passenger) serves floors one through four. Elevator 2 (freight/passenger) serves all building levels, basement through four, and includes front and back doors. Elevator 3 serves the parking garage and front lobby only, floors basement and one. All elevators are by Schindler and maintained by Schindler. Elevator rooms in the basement house elevator screw motors, oil tank, controllers, and disconnects.

Recommendations

Completed Work, 2014–2021

14-01. The elevator communication system has been upgraded.
14-02. Two hydraulic oil cooling systems have been installed for the elevators.
14-04. The elevator door operators have been replaced.
23-01. Exhaust fans have been installed to minimize heat build-up in the elevator equipment rooms.

High Priority Items (Next 1 to 2 Years)

14-05. The elevator controls and lighting should be replaced. [$150K]
Fire Protection System

Description

The fire sprinkler system consists of a combined water service to a fire pump and jockey pump serving the building with primarily wet sprinkler systems zoned per floor. The building has standpipes located in the stairwells. The loading dock is served by a dry valve located in the ground floor janitor closet. The basement is served by a dry valve located in the basement mechanical room. The fourth floor mechanical room/plenum air handler room is served by a dry valve located in the heated mechanical room.

Existing Conditions

The piping in the fourth floor mechanical/air handler room has corroded fittings and supports. As noted in a previous inspection, none of the desiccant dryers are currently functional. The fire pump is original and has been regularly tested. The jockey pump has been replaced sometime since the original installation. The dry valves have been regularly tested, and the small system serving the loading dock has a replacement air compressor. Heads in finished spaces, in general, appear clean. Heads in mechanical spaces generally appear dusty. Since the 2013 report was prepared, further deterioration of the dry sprinkler system has been observed, and replacement of the piping is now recommended. The air compressor for the fourth floor dry system has been recently replaced (7516).

Potential replacement of sprinkler heads throughout the building has been discussed. Per the NFPA 25 standard, wet-system sprinkler heads require testing after the first 50 years of service life, then every 10 years thereafter. Only if this testing showed a problem with the sprinkler heads would replacement be required. Given the age of the building, the first round of testing is not required until the year 2043, beyond the time horizon of the present Building Reserve Analysis report.

Recommendations

Cyclical Maintenance

- 21-01. Every five years, the dry sprinkler systems should be treated in place per the system inspection recommendations.
- 21-02. Pipe samples should be taken of the wet sprinkler pipe for analysis of life expectancy.
- 21-04. The drying medium in the desiccant dryers for all of the dry valves should be replaced. This item should be added to the regular maintenance of the dry system.

High Priority Items (Next 1 to 2 Years)

- 21-06a. During the next scheduled five-year maintenance service of the dry sprinkler system, the dry system piping, hangers, and supports at the fourth floor mechanical wing should be replaced. [$172k]

Low Priority Items (Next 6 to 10+ Years)

- 21-08. The fire pump should not require any more than yearly servicing and more extensive service every twenty years.
- 21-06b. The dry system piping, hangers, and supports in the parking garage and loading dock should also be replaced, similar to the fourth floor work recommended above.
Plumbing System

Description

The plumbing systems are mostly original and include the following:

- **Plumbing fixtures**: Wall hung water closets and concealed sensor flush valves, wall hung porcelain lavatories with sensor faucets, mop basins, electric water coolers, stainless steel break room sinks, and wall hung porcelain urinals with concealed flush valves.

- **Equipment**:
  - Electric water heaters are A.O. Smith DEL models (30 to 50 gallon tank sizes) located in janitor closets serving main toilet rooms and units at each break room sink.
  - Duplex constant speed 3 HP, 60 psi discharge pressure domestic water booster pump with an expansion tank in the basement at the water main, Metropolitan model VES-CS-33-DT-60.
  - Self-priming duplex sump pump, Metropolitan model 60 MP 10 HP.
  - Self-priming duplex sewage ejector, Metropolitan model 20 MPC 1/3 HP.
  - Triple compartment oil basin serving the basement-level parking garage floor drains.
  - Settling basin serving the foundation drainage and sump basin.

- **Piping systems**: Domestic hot and cold water all appears to be copper piping with insulation. Waste and vent piping is a mixture of PVC, cast iron, copper, and galvanized. Storm drain piping is cast iron hub and spigot. Foundation drain cleanout risers are cast iron.

Recommendations

Completed Work, 2014–2021

- 22-02. Insulation has been added to exposed piping under sinks.
- 22-04. The domestic potable water booster pumps were replaced in 2016.
- 22-05. Seven small electric water heaters have been replaced.
- 22-08. The sewage ejector pumps were replaced (7566).

Minor Items to be Implemented by Facilities Staff

- On an annual basis, continue to regularly clean the existing triple oil basin and the settling basin.

High Priority Items (Next 1 to 2 Years)

- 22-01. The booster pump, sump pump, and sewage ejector should be added to the building automation system.
- 22-03. All of the grade cleanouts should be reset to grade and secured with concrete below grade.

Medium Priority Items (Next 3 to 5 Years)

- 22-06. When required due to wear or damage, the existing plumbing fixtures should be replaced.
HVAC System

Description

Ventilation Systems

The building is ventilated and conditioned from a single built-up variable volume air handling system located at the fourth floor. The air handling system has no integral wall casing, but relies on building structural wall components as part of the air raceway system. Air handling system components include two variable pitch blade vane-axial supply blowers with 100 HP motors, chilled water cooling coils with galvanized casing drain pans and support structure, filter bank with 2-inch pleated primary filters and 8-inch bag-type secondary filters with a front loaded frame, two 72-inch by 60-inch outdoor air dampers (a minimum outdoor air damper and an economizer damper), a 6-foot by 10-foot return air damper, and three propeller type spill exhaust fans, each with 10 HP motors. While the air handling system does not have a heating coil, hot water unit heaters are employed to temper the return air plenum and raise the mixed air temperature.

The air handling system supplies a medium pressure supply air duct distribution loop feeding thirty-two single duct variable air volume (VAV) terminal units as well as nineteen series-type constant volume fan powered terminal boxes. Room air distribution is provided by overhead ceiling diffusers. To maintain variable volume air flow, the air flow from the main supply blowers is adjusted by varying the fan pitch to meet duct static pressure sensor signals. Fan pitch is pneumatically controlled with a self-guided pilot positioner and has a pneumatic-to-electric transducer to interpret the electrical signal from the building automation system. Return air is not fully ducted back to the air handling system, but utilizes the ceiling cavity as a return air plenum. To limit noise transmission through the building, sound attenuators are installed on both the upstream and downstream sides of the supply fans as well in the return air plenum chamber. (Refer to Existing Conditions section below for a description of components as well as conditions that require remediation.)

Combustion air supply to the boiler room is provided by a constant volume 1,500 cubic feet per minute (CFM) single wall air handling unit with a pleated air filter, hot water heating coil, and forward-curved centrifugal supply fan. A rooftop relief hood with a barometric damper maintains pressure in the boiler room.

The parking garage below the building is enclosed and relies on two propeller type exhaust fans operating off stand-alone carbon monoxide (CO) sensors to ventilate the garage. One fan is located in a galvanized steel plenum housing, connected to ductwork running the length of the west side of the garage. Intake air louvers are located on the east side of the garage.

Miscellaneous exhaust systems include two centrifugal (mushroom-type) rooftop toilet exhaust fans with fractional horsepower motors, and two cabinet-type inline fans (one in each electrical room) discharging to a common riser duct.

Heating and Cooling Plant

The building is heated and cooled from a central hot water and chilled water plant using a four-pipe distribution system. Two gas-fired 4.5 million BTU/hour water tube boilers with forced draft modulating burners provide hot water heat to the entire facility. Boiler water is distributed by a primary/secondary
pumping distribution loop to perimeter hot water fin tube elements, overhead fan powered terminal unit reheat coils, and unit heaters to heat the facility. In addition, the building boilers feed a tertiary pumping snow melt system which heats the garage entrance ramp, south entrance ramp, and south entrance steps. The piping distribution in the fourth floor boiler room includes a pressurized make-up water line, in-line air separator, steel compression type expansion tank, two closed coupled pipe mounted boiler recirculation pumps each with 1/2 horsepower (HP) motors (one per boiler maintaining minimum flow), two base-mounted end suction secondary pumps with 30 HP motors, a three-way control valve which appeared to be controlling a hot water reset, and a side stream chemical feeder tank.

Snow melt equipment in the lower level includes a shell and tube heat exchanger, air separator, steel compression type tank, two closed coupled pipe mounted 1-1/2 HP pumps (one per zone) feeding PEX tube manifolds with three-way temperature control valves. A small fractional HP circulator pump feeds a distribution line under the south entrance ramp.

Chilled water used in the main air handling unit cooling coil (with a glycol brine solution) is produced by two nominal 153-ton air-cooled packaged outdoor chillers with scroll compressors. The chilled pumping distribution system includes two fully redundant based mounted end suction chilled water pumps with 15 HP motors, a glycol chemical feeder, air separator, and steel compression type expansion tank. Constant volume chilled water flow is provided to the cooling coil during cooling. Chilled water temperature is indirectly controlled by the building management system using the chiller panel to reset water temperature to meet the fluctuating building loads.

Existing Conditions

The equipment and systems listed below were furnished and installed in 1994 as part of the construction of the building. Items that have been modified or replaced are noted in this report.

Air Handling System

- 23-16 and 23-17. Reportedly, the terminal boxes have begun to experience failures and are difficult to repair. Based on typical life expectancy for this type of equipment, phased replacement of the terminal boxes is anticipated over the next five to ten years.

- 23-19. AHU-1, providing make-up air to the boiler room, is approaching the end of its useful life (7518).

Miscellaneous Ventilation Systems

- 23-15. Parking garage fans have been replaced. The housing associated with the fans should be cleaned out periodically to remove any leaves and other debris that may accumulate in the area well and housing.

- There were no reported issues with the combustion air supply system feeding the boiler room. The system should remain operational for the life of the boilers.

Heating Plant

- 23-18. Boilers are reported to be in working condition, with limited major maintenance and annual safety checks and cleaning performed on the system. An internal inspection of the tubes on the fireside revealed extensive rust build-up. Rust build-up was particularly prominent on boiler B-2, the
boiler closest to the hot water return. Rust build-up is an indication of condensing operation and can lead to premature failure. The reset temperature for the boilers and the system should be raised so that return water does not drop below 130 degrees Fahrenheit. No pipe pitting and very little soot was observed in the fireside chamber. The boiler gas train, burners, and controls appeared to be in good condition. It is imperative that scheduled routine maintenance be done on the boilers to keep the system operating efficiently. While a detailed maintenance schedule for the boilers is listed in the operations manual of Bryan Boilers website, as a minimum the following yearly maintenance routines should be performed:

1. Make visual inspection of linkage and proper operation of flue, vent, stack, or outlet dampers.
2. Check draft.
3. Check float low water cutoff.
4. Check low draft, fan, air pressure and damper position interlocks as specified in burner manual.
5. Check high and low gas pressure interlocks.
6. Perform leakage tests on pilot and main gas or main oil fuel valves as specified in manufacturer’s instructions.
7. Check operating control, high limit, low fire start control, and low water cutoff as specified in manufacturer’s instructions.
8. Check air atomizing interlock, fuel valve interlock switch, purge switch, burner position interlock, and fuel changeover control, as specified in burner manual.
9. The boiler should be checked at least yearly by the local gas utility company. Particular attention should be paid to the pilot burner safety devices. The pilot burner should be checked to ensure that prompt ignition of all burners occurs as the gas valve opens.
10. The flue gas passages and the exterior surfaces of the boiler tubes should be inspected at least annually. Any accumulation of soot or debris should be thoroughly cleaned out. If the inspection of the boiler tube surfaces reveals a build-up of soot (carbon) or rust, the tubes surfaces should be thoroughly brushed and vacuumed. Failure to do so may result in fire or asphyxiation hazards.
11. The boiler pressure vessel and piping should be checked annually.
12. Check combustion safety control for pilot turndown and hot refractory hold-in as specified in manufacturer’s instructions.

Based on recent inspections, replacement of the boilers within approximately the next few years is anticipated.

- 23-09. It was reported that bearings were replaced in 2012 on base-mounted hot water pump P-3. While no other issues were noticed or reported, the boiler circulating pumps and main distribution pumps should be serviced and repaired in the next five to ten years as they approach the median service life.
- Hot water piping distribution, local fin tube elements, and reheat coils are not projected to require repair or maintenance in the next ten years. It should be noted that rust is prevalent on piping and pipe hangers in the building. Piping chemical treatment should checked and maintained to limit excessive oxidation from occurring in the piping.
A number of garage unit heaters were noted to have rust build up on the directional discharge louvers. These louvers can be removed and discarded without much impact to the performance of the heaters. No other maintenance should be required for these heaters in the next ten years.

23-12. The snow melt equipment appeared to be in good operating condition. Since service life expectancy for inline pipe mounted pumps is typically less than twenty years, snow melt pumps P-7 and P-8 should be anticipated to require replacement in the next five to ten years.

**Chilled Water Plant**

- Original building air cooled chillers were replaced in 2010 by the current air cooled chillers with scroll compressors. Rooftop piping was replaced along with the chillers. Chillers are reported to be in good condition, and should provide dependable operation with only routine maintenance for the next twenty years or more.

- 23-13. Chilled water pumps are original to the building. The bearings have already been replaced for both chilled water pumps P-1, and P-2. The baseplate for pump P-1 had peeling paint due to glycol leaks in the past. Since the pumps will exceed their median service life expectancy in the next ten years, it would be prudent to replace the chilled water pumps in the next few years.

**Recommendations**

**Completed Work, 2014–2021**

- 23-01. Exhaust fans were installed to prevent overheating of the elevator equipment rooms.
- 23-02. The cooling coils of the main air handling unit have been replaced.
- 23-03. New variable frequency drives have been installed for the general exhaust fans.
- 23-04. This item has been deleted from the scope.
- 23-05. The carbon monoxide sensors in the parking garage have been replaced.
- 23-06. The rooftop toilet exhaust fans have been replaced.
- 23-07. The return air and outside air dampers have been replaced.
- 23-08. The fan spring vibration isolators have been replaced.
- 23-11. This item has been deleted from the scope.
- 23-14. This item has been deleted from the scope.
- **23-15. The parking garage fans have been replaced.**
- **Two supply fans have been replaced with new vane axial fans.**
- **Two failed coils in Chiller 1 were replaced. Cost was $11,000.**

**Ongoing Maintenance Items**

- Boiler tubes should be thoroughly cleaned and examined and included as part of a comprehensive yearly scheduled maintenance program. Boiler burners should be adjusted as required. If extensive corrosion or pitting is discovered, boiler tubes should be replaced new tubes.
High Priority Items (Next 1 to 2 Years)

- **23-18.** Replacement parts for the boilers are no longer available. Replacement of the boilers should be planned for the near future. This work should include the boiler circulating pumps and the main heating distribution pumps and associated valves and piping.

- **23-19.** Air handler 1 providing make-up air to the boiler room should be replaced in kind.

- The phased replacement of VAV and fan powered boxes should continue as needed; see items 23-16 and 23-17, below.

Medium Priority Items (Next 3 to 5 Years)

- **23-12.** Based on typical equipment lifespan, the replacement of the snow melt pumps (two pumps) should anticipated within the next five years.

- **23-13.** Based on typical equipment lifespan, the replacement of the chilled water pumps (two pumps, valves and vibrations isolators) should anticipated within the next few years.

Low Priority Items (Next 6 to 10+ Years)

- **23-16.** Over the next ten years, VAV terminal boxes and their controllers will likely require replacement. For budgeting purposes, it is assumed that replacement of the existing boxes will be phased, with a budget allowance for selective box replaced each year.

- **23-17.** Over the next ten years, fan powered boxes will likely require replacement. For budgeting purposes, it is assumed that replacement of the existing boxes will be phased, with a budget allowance for selective box replaced each year.
Building Management System

Description

The Building Automation System (BAS) is a full direct digital control system using proprietary software and many of the original sensors. The front-end for the BAS along with software reside on a local hard drive installed on a personal computer (PC) in the building. While the system has a graphic interface, offsite access is limited.

Existing Conditions

The Building Management System currently uses non-interoperable proprietary software. It would be desirable to provide a new expandable system using BACnet based controllers and migrate the front end to a web based server. Currently most of the points are addressable from the front end. Further investigation will be required to determine where copies of the existing software reside and how the system could be reprogrammed.

Recommendations

Completed Work, 2014–2021

- 25-01. Additional BAS control points have been added for the general building exhaust variable frequency drives.
- 25-02. Additional BAS control points have been added to control the heating distribution pump variable frequency drives.
- 25-03. The original building management system has been upgraded by the addition of a new expandable open communication based system, “SIEMANS Desigo.”
- 25-04. Carbon monoxide sensors installed in the garage have been integrated with the BAS.
Electrical System

Description

Electrical System

All services and switchboards are original to the building and are in good working condition. A pad-mounted transformer, 1500 kVA, 480/277V, three-phase, four-wire secondary, is located to the north of the building on library property. Evanston Public Library owns the transformer.

Main Electrical Service

- Meter #141682884. This meter serves the entire facility through switchboard B-SWBD-H1. Derived from a pad-mounted transformer located outside. 3000A, 480/277V, 3-phase, 4-wire, with recently replaced ground fault protection. Also feeds 400A Automatic Transfer Switch (ATS) EHD and 600A ATS 4-SMCC-1. Switchboard has three spaces for 400A fused switch each.

- Meter #141244129. This meter serves the supply and return fans of the facility, motor control center 4-SMCC-1. 600A, 480/277V, 3-phase, 4-wire, Square-D motor control center, is located on the fourth floor (in the corridor south of the mechanical room) with space for one Hands-Off-Auto (HOA) combo starter, and three 100A spaces for fused disconnect switches.

- Meter #141682883. This meter serves emergency lighting, elevators, miscellaneous pumps, (i.e. jockey, sewage ejector, sump pump, etc.) and feeds panel EHD. Square-D, 400A, 277/480V, 3-phase, 4-wire, located in separate electrical room across from the main electrical room. Panel EHD has one 200A, and two 100A spare switches.

- Meter #141177535. This meter serves the 125HP, 480V, 3-phase fire pump in fire pump room in the basement via the Firetrol controller (#FTA 1900-AB125B).

Distribution

Electrical rooms at each level are vertically stacked and typically contain house lighting panelboards, lighting controllers, and receptacle panelboards serving loads relevant to receptacle floors. Each electrical room has lighting contactors for control of public spaces such as restrooms, corridors, open reading rooms, etc.

The electrical room at the first floor has three transformers. This room is open to the return air ceiling plenum.

- One transformer at 112.5 kVA (480V Delta to 120/208V Wye) serving “computer panelboards.”
- One transformer at 112.5 kVA (480V Delta to 120/208V Wye) serving lights and receptacles.
- One transformer at 15 kVA (480V Delta to 120/208V Wye) for elevator cab lights and other emergency loads.

The electrical room on the third floor has one transformer at 112.5 kVA (Delta to Wye). This transformer was observed to be hot when touched. This room is open to return air ceiling plenum.
IT Services

AT&T service is located in the first floor IT room. The second, third, and fourth floor IT closets are vertically stacked. The IT rooms are all open to the return air ceiling plenum.

Lighting

The building has a mix of different light sources. Most places have T-8 fluorescent lamps or other varieties of fluorescent lamps. Lights are controlled via lighting contactors, typically one per floor, located in the respective electrical room. Exit and emergency lights were noted to be appropriately located.

Existing Conditions

- 26-01. The concrete pad under the service transformer at the rear of the building has been undermined by vermin.
- 26-04. The original customer metering that was intended to permit facilities staff to monitor electrical usage is not operational.

Recommendations

Completed Work, 2014–2021

- 26-02. This item has been deleted from the scope.
- 26-05. Some original fluorescent light fixtures have been replaced with new LED fixtures, which provide higher efficiency as well as improved light quality (7515).
- 26-06. The bonding clamp for the electrical grounding at the water service entry has been replaced.

High Priority Items (Next 1 to 2 Years)

- 26-03. The installation of emergency generators has been designed and is awaiting construction funding. [$2M]
- 26-05. As funding permits over the next five years, continue to replace original fluorescent fixtures with LED fixtures or re-lamp fixtures with LED bulbs. [$200K]
- 26-01. The service transformer pad needs to be shored up and a firm ground beneath must be provided. The main service ground as well and the ground loop around the transformer should be inspected. In conjunction with this work, the interior of the transformer should be cleaned and inspected. [$67.5]

Low Priority Items (Next 6 to 10+ Years)

- 26-04. The customer meter should be replaced with Square-D “ION” meter, interfaced with the building automation system.
Fire Alarm System

Description

The building is fully sprinklered and also has fire alarm detection and notification devices supplementing some areas. The building is equipped with two-way talk/listen push button system.

Existing Conditions

The main fire alarm control panel (Simplex make, with firefighters voice communication to the elevator cab for fire-related emergencies only) is located in the south main entrance vestibule. An auxiliary fire alarm annunciator panel is located in the maintenance office. The Simplex detectors and components likely have a thirty to forty year life expectancy.

The area of rescue system provides communication between fire department at the south main entrance vestibule and the person requesting rescue, normally in designated stair landings. Reportedly, this system is not working as intended.

Recommendations

Completed Work, 2014–2021

- 28-01. The fire alarm has been integrated with the elevator controls.
- 28-03. The elevator in-cab phone system has been repaired.
- **28-04. This item has been removed from the scope.**
- 28-06. The main fire alarm panel has been replaced.
- 28-07. Simplex smoke detectors have been replaced in-kind.

High Priority Items (Next 1 to 2 Years)

- 28-02. **Replacement of the area of rescue system has been partially completed; the remaining work should be completed in the next 1 to 2 years.** Proper signage should be provided in general/open/outside designated stair landings, to direct a person seeking refuge and rescue. The existing communication system should be replaced with a new digital two-way communication system.

Medium Priority Items (Next 3 to 5 Years)

- 28-05. The building public address system should be maintained and updated.
Site Features

Description

Site features include landscaping and built features. Site features on the primary (south) side of the building include brick masonry and cast stone site walls, a concrete sloped walk with inlaid brick paver panels, drainage components, concrete curbs, concrete stairs and painted steel stair railings at the public entrance, and plantings. The main entrance ramp brick and concrete paving was replaced in 2010. Also, tactile warning panels were added to the pavement adjacent to the top tread of the south entrance stair. The handrails at the south steps have been replaced.

At the east side of the building there are brick masonry and cast stone site walls, a concrete ramp with painted steel railings, concrete curbs, concrete stairs and painted steel stair railings, and plantings. The handrails at the east stairs and ramp have been replaced, except at the disused stairs to the south mid-height landing of the ramp. Bicycle racks are also located south and east of the building.

On the north there are paved areas including driveways and the parking garage entrance, bollards, and concrete stairs with painted steel railings at the staff entrance. There are also retaining walls and planted areas. According to the original drawings, the majority of the concrete retaining wall along the north property line already existed in conjunction with the previous 1961 library building on the site.

West of the building there are planted areas that are delineated by concrete curbs and a concrete walkway at the fire stair exit.

There are approximately 500 linear feet of exterior railings, including handrails and guard rails; approximately 360 linear feet of brick masonry site walls; 235 linear feet of concrete site and retaining walls; 675 square feet of exterior concrete stairs not including landings; and 8,250 square feet of paved exterior ramp, parking, driving, and landing areas. Incorporated into the paved areas are approximately 620 linear feet of joint sealant.

The exterior ramps to the parking garage and the south entrance stairs and sloped walk include a snow melting system. In the original construction, no snow melting system was provided at the east entrance stairs and ramp or at the north staff entrance or loading dock.

Trees and plantings include deciduous trees, evergreen shrubs, and ground cover. Plantings are located along the west side of the building, between the sloped south entrance ramp and the building wall, between the edge of the south entrance ramp paving and the south wall, between the ramp wall and the sidewalk, and at the northeast corner of the building. The major trees at the south side of the building are river birches (Betula nigra) and are sufficiently mature to date to original construction. A planting area north of the building around the electrical transformer was recently completely cleared of weedy overgrowth (except for a few hostas near the staff entrance and a row of evergreens near the driveway). The planting beds at the south and west sides of the building are served by an irrigation system.

Existing Conditions

- Water leakage has been reported where the snow melt tubes enter the storage/workshop room in the basement of the building. (The irrigation system for the planting beds at the building perimeter provides a continuous source of water at this location.)
Recommendations

**Completed Work, 2014–2021**

- 32-01. The overgrown area adjacent to the north staff entrance has been cleared. Also, site plantings on the west side of the library were cleared in 2020 (7560). New landscaping was installed in 2021.
- 32-03. The north staff entrance stairs, landing, and railing have been replaced (7554).
- 32-05. The guardrail at the retaining wall on the north property line has been replaced with a new steel fence (7556).
- 32-07. The gap between the north side wall and the east entrance stairs was sealed with sealant as part of the facade repair work.
- 32-09. Handrails at entrances were repainted as part of the stair replacement work.
- 32-11. The north concrete retaining wall has been coated (refer to 7556).
- 32-12. Existing bollards have been covered with plastic sleeves.
- 32-15. The south and east entrance stairs have been replaced (7563).

**Cyclical Maintenance**

- Exterior railings- spring cleaning and paint touch-up.
- Sealant in paving joints and at the interface of paved areas should be monitored. These types of sealant require frequent maintenance and will likely require replacement every five years.

**High Priority Items (Next 1 to 2 Years)**

- 32-04. Leakage at the south wall of the basement (within the carpentry shop) requires further investigation. Reportedly, this leakage is not related to the snow melt system penetration, as previously suspected. Based on the observed timing of leakage, the observed infiltration may be related to water overflowing the gutter of the curved roof of the main reading room. Refer to the discussion of roof issues, above.

**Medium Priority Items (Next 3 to 5 Years)**

- 32-14. The health of the mature trees at the perimeter of the building should be monitored. In the next five to ten years, the existing birch trees will be approaching the end of their expected forty-year life.
### TABLE 2. RECOMMENDATIONS AND ESTIMATED COSTS

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Estimated Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structure repair</td>
<td>$25,000</td>
</tr>
<tr>
<td>Electrical update</td>
<td>$15,000</td>
</tr>
<tr>
<td>HVAC replacement</td>
<td>$30,000</td>
</tr>
</tbody>
</table>

**Total Estimated Cost:** $70,000
### Table 2. Recommendations and Estimated Costs

<table>
<thead>
<tr>
<th>Recommended Work Item</th>
<th>Cost (2021)</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Division 04: Exterior Wall</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>04-03. Recoating exterior steel at sound attenuation wall</td>
<td>$10,000</td>
<td>High</td>
</tr>
<tr>
<td>04-10. Repaint exterior gypsum board soffits</td>
<td>$15,000</td>
<td>Medium</td>
</tr>
<tr>
<td><strong>Division 07: Roofing</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>07-01. Annual roof maintenance and inspection</td>
<td>$40,000</td>
<td>Annual</td>
</tr>
<tr>
<td>07-07. Replace heat-trace in south gutter</td>
<td>$9,000</td>
<td>High</td>
</tr>
<tr>
<td>07-09. Repair of standing seam roof</td>
<td>$45,000</td>
<td>Medium</td>
</tr>
<tr>
<td>07-10b. Install two overflow scuppers</td>
<td>$6,000</td>
<td>Low</td>
</tr>
<tr>
<td>07-14. Replacement of membrane roof</td>
<td>$900,000</td>
<td>Medium</td>
</tr>
<tr>
<td>07-15. Removal of roof tie-backs (cost included with 07-14)</td>
<td>N/A</td>
<td>Low</td>
</tr>
<tr>
<td>07-16. Replace downspout at southeast corner of barrel vault roof</td>
<td>$10,000</td>
<td>High</td>
</tr>
<tr>
<td><strong>Division 08: Windows and Doors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>08-01. Re-align window system snap covers</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>08-08. Annual cleaning and paint touch-up</td>
<td>$5,000</td>
<td>N/A</td>
</tr>
<tr>
<td>08-09. Replace employee entrance door</td>
<td>$7,500</td>
<td>Low</td>
</tr>
<tr>
<td><strong>Division 09: Interiors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>09-06. Monitor the concrete masonry boiler room wall</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>09-08a. Repaint interior: 2nd floor, lobbies, corridors, stairwell</td>
<td>$70,000</td>
<td>High</td>
</tr>
<tr>
<td>09-08b. Repaint interior: 4th floor, staff areas</td>
<td>$70,000</td>
<td>High</td>
</tr>
<tr>
<td>09-12. Replace toilet partitions</td>
<td>$20,000</td>
<td>High</td>
</tr>
<tr>
<td>09-14. Unisex restroom (2nd or 3rd floor)</td>
<td>$100,000</td>
<td>Low</td>
</tr>
<tr>
<td>09-15. Family lounge &amp; restroom (children's area)</td>
<td>$100,000</td>
<td>Low</td>
</tr>
<tr>
<td><strong>Division 10: Specialties</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-01. Rearrange bookstack furniture to provide clearance</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>10-04. Modify handrail design if affected by other work</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Division 14: Conveying Equipment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14-05. Elevator controls and lighting</td>
<td>$150,000</td>
<td>High</td>
</tr>
<tr>
<td><strong>Division 21: Fire Protection System</strong></td>
<td></td>
<td></td>
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<tr>
<td>21-01. Dry valve inspection and pipe treatment</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>21-02. Sampling and analysis of wet sprinkler pipes</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>21-04. Replace drying medium for all dry valves</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>21-06a. Fourth floor dry system piping replacement</td>
<td>$170,000</td>
<td>High</td>
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<tr>
<td>21-06b. Garage and loading dock dry system piping replacement</td>
<td>$100,000</td>
<td>Low</td>
</tr>
<tr>
<td>21-08. Fire pump major servicing</td>
<td>N/A</td>
<td>Low</td>
</tr>
<tr>
<td><strong>Division 22: Plumbing System</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22-01. Adding the major plumbing equipment to the BAS</td>
<td>$5,600</td>
<td>High</td>
</tr>
<tr>
<td>22-03. Yard cleanouts reset to grade, approximately 20 total</td>
<td>$28,000</td>
<td>Medium</td>
</tr>
<tr>
<td>22-04. Booster pump replacement</td>
<td>$40,000</td>
<td>High</td>
</tr>
<tr>
<td>22-06. Plumbing fixture replacement: approximately 65 total fixtures at $2,500 each</td>
<td>$162,500</td>
<td>Medium</td>
</tr>
<tr>
<td><strong>Division 23: HVAC System</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23-12. Snow melt pumps (two pumps)</td>
<td>$15,000</td>
<td>Medium</td>
</tr>
<tr>
<td>23-13. Chilled Water Pumps (two pumps, valves and vibrations isolators)</td>
<td>$20,000</td>
<td>Medium</td>
</tr>
<tr>
<td>23-16. VAV terminal Box replacement (phased, yearly cost)</td>
<td>$14,000</td>
<td>Low</td>
</tr>
<tr>
<td>23-17. Fan Powered Box replacement (phased, yearly cost)</td>
<td>$11,000</td>
<td>Low</td>
</tr>
<tr>
<td>23-18. Replace boilers and associated pumps and piping</td>
<td>$485,000</td>
<td>High</td>
</tr>
<tr>
<td>23-19. Replace AH-1 in boiler room</td>
<td>$25,000</td>
<td>High</td>
</tr>
<tr>
<td><strong>Division 25: Building Management System</strong></td>
<td></td>
<td></td>
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<tr>
<td>Division 26: Electrical System</td>
<td></td>
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<tr>
<td>--------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26-01. Service transformer pad shoring, grounding repairs, transformer cleaning $</td>
<td>67,500</td>
<td>High</td>
</tr>
<tr>
<td>26-03. Install emergency generator $</td>
<td>2,000,000</td>
<td>High</td>
</tr>
<tr>
<td>26-04. Meter interfaced with building automation system $</td>
<td>10,000</td>
<td>Low</td>
</tr>
<tr>
<td>26-05. Retrofit lighting with LED $</td>
<td>200,000</td>
<td>High</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Division 28: Fire Alarm System</th>
</tr>
</thead>
<tbody>
<tr>
<td>28-02. Area of rescue system replacement $</td>
</tr>
<tr>
<td>28-05. Building public address system $</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Division 32: Site Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>32-01. Replace vegetation at west planting area $</td>
</tr>
<tr>
<td>32-04. Foundation leakage at south ramp N/A</td>
</tr>
<tr>
<td>32-14. Monitor tree health N/A</td>
</tr>
</tbody>
</table>