PERSHING ROAD BUILDING

1819 W Pershing Ave, Chicago, IL 60609

Facility Evaluation Report 07/09/2021

HARDING MODE JOINT VENTURE

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EXECUTIVE SUMMARY:

1819 W Pershing Avenue is a six-story storage facility that is a portion of a multi-building campus maintained operated by the Department of Assets, Information & Services (AIS) in the McKinley Park neighborhood. The campus consists of three identical 6-story buildings connected with underground tunnels at the basement level and bridge connections between the second and sixth floors. At the south side of the property there is an asphalt parking lot, with two additional one-story structures utilized by other Chicago City agencies ((fig 0.1&0.2). The three buildings were constructed in 1918 and 1919 by the U.S Army Quartermaster Corp, as warehouses serviced by the adjacent railroad. The architect was Samual Scott Jay. They were sold to the City of Chicago in 1978. Starting in 1978 they were occupied by Chicago Public Schools. The upper floors were built out for office use.

Fig 0.1 - South Elevaton of 1819

Fig 0.2 - Drive between 1869 and 1819

The building at 1819 W Pershing is partially utilized at this time, with the Board of Elections utilizing the fourth, floor and portions of the third, second and first floors, with storage uses by OEMC at part of the third floor, AIS at a portion of the second floor and CPD and CFD storage at the first floor. The basement is generally unused, and the fifth and sixth floors are not occupied. The assessment report will describe the existing conditions of the facility as assessed on site, focused primarily on interior conditions with some description of envelope and site conditions. Minimum code compliance requirements will be indicated with recommendations for bringing the facility into compliance. In addition, recommendations for additional work exceeding code minimums will be identified where appropriate. The intent for the 1819 Pershing facility is to bring the building into compliance with minimum building requirements with an emphasis on life safety requirements, as well as to address existing and future uses within the facility.

The primary document for assessing compliance for the facility is Title 14X – 2019 Chicago Minimum Requirements for Existing Building. Title 14X applies to all existing structures, whether any new construction or alterations are being performed. Title 14X focusses on structural safety, weather tightness and life safety compliance, as well as minimum standards for occupant use. All new work will be regulated by Title 14B Chicago Building Code and Title 14R Building Rehabilitation Code, while Title 14X dictates the minimum requirements at 1819 W Pershing where only corrections of existing non-compliant conditions are present.

- 14X-3-303 – Exterior Structure: Exterior Envelope must be maintained in structurally sound and weather tight condition. Includes structural members, masonry and cornices and trim, roof, windows and skylights and doors. Section 303.7 – Roofs must be sound tight and adequate to prevent dampness or deterioration to interior structure.
- 14X-3-304 – Interior Structure – The interior including wall and walking surfaces must be maintained in sound and sanitary conditions.
- 14X-3-306 – Handrails and Guardrails: Section 306.1 Requires a handrail between 30 and 42 inches all stairs (one side). Section 306.2 requires Guards at open side of railing of 30” and minimum 36” where open side is 12’ or more above surface below. Guards required to be 36” high must have balusters with minimum 6” passthrough below 34” aff, except 21” passthrough at type S occupancy.
- 14X-3-307 – Rubbish and Garbage shall be removed from interiors.
- 14X-5-502.3.3 – Fire Wall, barriers and partitions are required to be maintained including doors and dampers and all penetrations in accordance with NFPA 80

EXECUTIVE SUMMARY (cont.):

- 14X-5-502.4 – Opening Protectives must be maintained – Fire doors cannot be blocked or held open (unless by approved hold open devices) and must have operable closers and latches
- 14X-5-502.7.3 – Vertical enclosures required to be 1 hour at all enclosures exceeding 5 stories
- 14X-5-504.2.9 – High Rise Buildings are required to have automatic fire sprinkler systems throughout, however exemption 6 indicates that buildings identified as Orange in the Chicago Historic Resources Survey are exempt. Section 14X-5-504.4.4 does require a standpipe system for high rises without exemption.
- 14X-5-504.4 – Existing High Rise buildings must be equipped with standpipes.
- 14X-5-504.5 – Portable Fire Extinguishers must comply with 14B-906 requirements for fire extinguishers which requires one fire extinguisher per every 11,250sf of floor area and maximum 75' of travel distance
- 14X-5-504.6 – A fire alarm system must be provided
- 14X-5-504.7 – Voice Communication systems are required in High Rise Building consisting of both one way and two way communication systems.
- 14X-5-504.9.3 – Carbon Monoxide detectors are required at all areas with fuel burning appliances.
- 14X-5-504.10 – Fire protection systems may not be disabled in occupied buildings.
- 14X-5-505 – Means of Egress must comply with minimum requirements of 14B including occupant load and exiting capacity, and minimum number of exits from all spaces and areas.
- 14X-5-505.6 – Means of Egress Illumination – a minimum of 1 foot candle of illumination required at the walking surface, with emergency illumination provided in accordance with Article 700 of Chicago Electric Code.
- 14X-5-505.8 – Doors must have a minimum 28" clear width (26" where capacity is below 20 persons)
- 14X-5-505.9.7 – Existing stairways must have identification signage indicating stair and floor identifier and reentry information at every floor.
- 14X-5-505.9.9 – Doors in exit stairways connecting more than 4 levels must either not be locked from stairway side at any time or be equipped with a fail-safe electronic system to release manually and automatically in connection to an automatic fair alarm/protection system, including a 2-way communication system at every 5th floor. If high rise, any locked stairway doors must be automatically unlocked upon a signal from the fire alarm center.
- 14X-5-505.13 – Exit Signage must comply with section 1013 of Title 14B – internally illuminated with backup power source. Tactile signage is required at stairs.
- 14X-5-506 – Life Safety Compliance Plan is a document that applies to all high rise buildings. This document details building conformance or non-conformance to life safety requirements.
- 14X-6 Light and Ventilation. Means of egress lighting required, mechanical or natural ventilation required. Process ventilation required at area producing fumes or gasses, locally ventilated.
- 14X-7-702.4 – Electrical Hazards. Components (wiring, lighting, etc.) exposed to water must be replaced. Section 703.3 – Abandoned electrical equipment where reachable must be demolished. Section 705.1 – Known Electrical Hazards must be abated.
- 14X-9-903.2.2 – Employee toilets must be located within 500' and 1 level of all work areas.
- 14X-10 – Elevators must comply with Chicago Conveyance Device Code. In buildings with passenger elevators a minimum of 1 passenger elevator must be maintained in operation at all times.

While envelope repairs are not generally included in the scope for this project, roof masonry and window repairs are required for all existing structures. The code requirements will need to be reviewed with both building code and fire department officials to confirm no additional actions would be required. Of particular concern are the lack of life safety protection features throughout the building, including inadequate conformance to means of egress requirements, fire alarm and fire protection. In addition existing interior hazardous environmental conditions should be abated, and openings will require modifications at some exterior entrances to ensure compliance with egress.

EXISTING CONDITIONS OVERVIEW:

The total floor area is approximately 524,000sf, with a floorplate 324'-8" (N/S) by 276'-8" (E/W) with a total building height of 80'-6", which qualifies the structure as a High-Rise per Chicago Building Code. At the basement level a utility tunnel south of the building connects to buildings to the east and west, and near the center of the building a basement tunnel and bridge levels at 2nd-6th floors connect from building to the east and west. The connecting tunnels were observed to have significant structural concerns, and other cracking was observed within the structure. Refer to the detailed tunnel and structural reports in the appendix for details and corrective recommendations. The separation between the buildings and bridge length is approximately 46'-8". The structure is concrete, with columns and flat slab structure. The exterior envelope is brick with terracotta trim and cornices, and the roof a gravel ballasted built-up membrane roof with monitor skylights. There are six stair towers within the building, five of which connect all levels from basement to 6th floor, and the sixth extending from the sixth to second floor then exiting directly to grade without access from first floor or basement levels. There are two existing passenger elevators and five remaining freight elevators, with only the freight elevator at the west side of the building in operation. Loading docks are located at the west and south sides of the building.

The facility was occupied by the Board of Education from the 1970s through the 1990s. The 5th and 6th floors were extensively renovated and built out, and some modifications have been performed at all other floor levels to accommodate various program over time. Detailed interior descriptions by floor are included in the detailed conditions assessment.

The 1819 Facility would be considered Moderate Hazard Storage, Group S-1 based on the existing usage of the facility, with any minor office areas considered as accessory uses. Based on review of the existing building structure the construction complies with Type IA construction, which allows for the highest permissive use of construction. Per Title 14B, Type IA construction allows unlimited building area and number of floors regardless of whether a building is sprinkled or unsprinkled, however buildings exceeding 80' in height are only allowable if fully sprinkled.

The facility at 1819 W Pershing has a separate electrical service located in the basement. Currently the building is energized, with functional lighting through most of the floor areas, however general, emergency and exit lighting is missing or inoperative in locations throughout. Steam boilers in the basement of the 1869 building feed heat to the 1819 facility, however, there appear to be no temperature controls for areas within the building. The building was at one point served by air handlers at most office areas via the steam heat a chilled water system, with a cooling tower located on the roof and chillers in the basement, however the chilled water system has been abandoned, with inoperative equipment abandoned in place. Currently, only one air handler at the second floor is functional and provides heating only. Domestic water piping fed from 1869 supplies plumbing. The facility has sprinkler piping, fed by a fire pump located in 1869, however the system is not currently operational. Complete facility description, including site, exterior, interior and MEP systems, and remediation recommendations for minimum code compliance for vacant buildings is provided in the detailed existing conditions assessment. Abatement for asbestos and lead are not addressed as a portion of this assessment as material testing has not been performed. The descriptions and detailed assessments contained herein are not intended to be exhaustive or to identify all potential deficiencies, but rather to identify minimum code compliance requirements and recommendations for remedial action. This assessment of the overall general condition of the properties has been developed based upon visual observation of "representative" areas of the facilities. Some areas were not visible due to suspended ceilings, existing floor finishes, debris, boxes, and equipment. Conditions were evaluated from visual observation that did not include intrusive measures, destructive investigations, and testing. Structural, mechanical, electrical, and plumbing calculations were not within the scope of this service. Another engineering firm retained by AIS was responsible for assessing the exterior envelope, including exterior walls, roof, and roof deck structure. Investigation for the presence of asbestos containing materials (ACM), lead paint, mold, PCB's, CFC's, radon and other environmentally hazardous materials is provided by other consultants, and is not part of this agreement and assessment.

Detailed Existing Conditions Assessments and Corrective Action Recommendations

1. Site
2. Exterior
3. Interior
    - Floor By Floor Conditions
    - Stairs Elevators and Vertical Enclosures
    - Accessibility
    - High Rise Requirements
    - Code Deficiencies and Recommendations
4. Mechanical
5. Electrical
6. Plumbing
7. Fire Protection

1. Site

The subject property is located on the south side of Pershing Road, and was constructed as a portion of warehousing and manufacturing facilities for the US Army dating to approximately 1920. The property is bound by a CDOT parking lot to the east, a materials yard and rail yard to the south, additional warehouse buildings to the west and Pershing Road to the north. The subject building is located in the middle of three identical warehouse buildings owned by the City of Chicago. At the northeast corner of the building is a traffic light at Wood St. Between the 1819 building and 1769 building to the east, an original brick paved drive provides access to the asphalt parking lot at the south side of the property. An asphalt paved aisle between 1819 and 1869 to the east provides additional parking and access back to Pershing Road. The parking lot extends from the east edge of 1769 to the west face of 1819 where a one-story Chicago Fire Department structure is located to the south of 1869 Pershing.

Fig 1.1 - South Parking facing 1819

Fig 1.2 - Scaffolding along the North of 1819

At the south face of the building there is a chain link fence separating the façade from the parking lot (fig 1.1). Within this fenced area there is landscaping that is heavily overgrown and is not maintained. There are multiple building exits on this side of the property, but due to overgrowth two are not accessible and plants would prevent any exiting from the building due to inability to open the exit door. These south exit doors serve long term CDP and CFD storage and may constitute code required exiting from these spaces. The both the east and west sides of the building face directly onto the brick paver and asphalt access drives from Pershing, and the north face of the building is directly on the sidewalk at the property line. Scaffolding is installed along the north and east sides of the building to protect pedestrians from deteriorated building masonry.(fig 1.2)

The parking lot area is approximately 150’ x 600’. The parking lot is fully asphalt paved at the west portion of the lot and generally in good condition, however the east side of the lot is primarily an unpaved gravel lot and some areas are in poor condition. The west portion of the parking lot has visible striping, however the east side of the lot is not striped.

1. Site (cont.)

- Code Compliance:
  - Per section 14X-12-1202.3 Outdoor Areas the landscaping at the south side of the building requires maintenance. Remove overgrowth and planting preventing egress from required exits. In case of exiting occupants will require route from enclosed fenced area, may require modifications to fencing.
- Recommendations:
  - Plant growth on the south side of 1819 occurs directly over the utility tunnel connecting buildings to east and west. Some of this growth is significant and may already be causing damage to the tunnel structure. Growth should be cleared and structure reviewed for potential remedial actions.
  - Parking lot area may require some patching and repairs. Per CBC stormwater requirements, modifications to an existing parking lot that exceed 7500 of impermeable area require full compliance with stormwater management requirements. Based on existing lot and property area modifications should be limited below this threshold due to budget constraints.

2. Exterior Envelope

The subject property is a six story concrete frame structure with masonry infill and veneer with terracotta detailing and coping. There are single pane glazing ribbon windows between brick piers at the exterior, with cement stucco infill panels between floors. A bridge connects the 1769 Pershing structure to the 1819 structure to the east at floors two through six. (fig 2.1) At the north and west sides of the building there is scaffolding to protect pedestrians due to deterioration of the envelope, as well as over two dock doors at the south elevation.

At the west side of the building there is a large loading dock recessed into the building with four overhead doors. There are additional overhead loading dock doors at the south and east elevations. There are multiple exits at grade around the perimeter of the building, including three double door entrances/exits on the north elevation onto Pershing, three exits to the east from interior stairwells, three exits from ground floor to grade at south elevation and one door exiting directly from a stairwell on the west side of the building. At the north side of the building scaffolding obstructs the ability to exit or enter through the doors at the east and west sides of the building and the center doors are covered in plywood (fig 2.2). At the south side two of the three doors and access are obstructed by vegetation (fig 2.3). Doors at the east and west side are accessible, however the concrete threshold is deteriorated at the east side (fig 2.4). At the north corner of the east elevation there is a one-story guard booth which has access directly to the building interior through Stair B and is generally in poor condition (fig 2.5).

Fig 2.1 - Bridge between 1819 and 1769

The roof is a built-up membrane system with gravel ballast over a sloped concrete structural deck. There are skylights across the entire roof area of the building, and there are elevator penthouses at all original elevator shaft locations. There is no direct roof access from the interior of the 1819 building, though it can be accessed from either adjacent roof. There is significant degradation to the roof, and significant plant growth across the entire building area. At the south side of the roof there are four lights mounted on pole arms that provide lighting for the parking area to the south.

The west elevation and bridge connection to 1869 have recently been tuckpointed and received structural repairs, however the remaining elevations were observed to be in poor condition and in need of repair.

Fig 2.2 - Covered Entrace at the North of 1819

2. Exterior Envelope (cont.)

Exterior envelope assessments are being completed under a separate contract, however compliance with minimum code requirements for vacant buildings primarily focuses on exterior envelope integrity, so observed deficiencies and improvements are included herein for project compliance, though are expected to be completed under a separate contract.

- Code Compliance
  - Per section 14X-3-303 Exterior Structure the building is required to be structurally sound. Masonry is displaced, damaged and missing across portions the exterior of the structure, with spalling concrete spandrel panels at the north east and south. At the roof level parapets and copings were observed to be displaced, damaged and not structurally sound at locations. Significant corrective actions are required, beyond the scope of the current assessment.
  - While the exterior envelope is generally beyond the scope of this assessment, the tunnel at the south side of the property connecting 1769, 1819 and 1869 Pershing was observed to have some significant deterioration. The drive aisles from Pershing to the parking areas at the south pass over these tunnels. Per section 14X-3-303.4 the structural members must be maintained, and structural repairs are required for any compromised docks or drive areas over these tunnels. A tunnel assessment report including these tunnels is included in the appendix.
  - Per 14X-3-303.7 Roofs are required to be watertight. The existing roof has visibly damaged membranes across the structure, and significant water infiltration at skylights. At one portion of the roof the membrane and insulation are missing, and the concrete roof slab is exposed. Equipment and penetrations are not secure and water and other elements are able to freely enter the building. Significant plant growth at the roof level has compromised both the roofing system and may be compromising the structural slab. Significant corrective actions are required, beyond the scope of the current assessment.
  - Per section 14X-3-303.13-17 exterior windows and doors must be maintained, however there are multiple broken and missing window panes around the building perimeter at many floor levels, some boarded with plywood and others open to the elements. Plywood is not an allowable material for securing exterior openings, however the center door on the north elevation is boarded over with plywood. In order to maintain minimum exiting from the building, some of the doors would require replacement or repair to allow exiting on the north elevation, existing plywood would need to be removed, or doors to be removed and replaced with secure panels if not required for exiting. Scaffolding will be required to be modified or removed to allow for required egress. Repairs at the Stair E exit door threshold are required where concrete has deteriorated.

Fig 2.3 - Vegetation obstruction at the South Side

Fig 2.4 - Deteriorated Threshold at East side

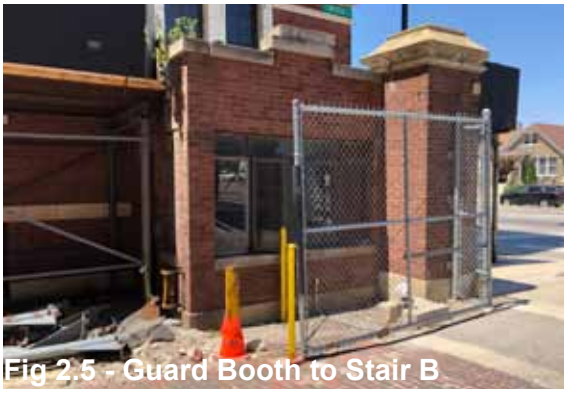


Fig 2.5 - Guard Booth to Stair B

2. Exterior Envelope (cont.)

- Recommendations:
  - The existing parking and access drives are not well lit at this time. Recommend adding additional wall or roof mounted or ceiling mounted lighting at the loading dock and bridge areas at access between east and west buildings. For the parking lot area to the south additional lighting should be added, however due to existing masonry deterioration it is recommended that lighting is not attached to the building at the south elevation, but rather that light posts are added at the east and south perimeter of the site to augment existing lighting from the roof level.
  - The guard booth at the east drive aisle is in poor condition and is not well secured. There is direct building access into Stair B, the door of which is currently not secured. Recommend securing security booth area and removing unnecessary door between interior and exterior to prevent unauthorized access or animal access.
  - The exterior door on Stair D at the east side of the building does not latch at grade and should be repaired to prevent unauthorized building access.

3. Interior

The building interior for 1819 W Pershing Road is characterized by a dense concrete columnar grid on generally open floor plates. The original construction had continuous fire separation walls extending from the east to west sides of the building that divided the building into three relatively evenly divided floor areas to the north, center and south at all levels above the first floor. The firewall bifurcates the connecting bridges and tunnel location at the north/center third, though generally the fire wall terminates at the bridge. Overhead coiling doors fire shutters are located at each side of the fire wall separation at each side of the bridges and tunnels. The fire walls align with the center of vertical freight elevator shafts, with five shafts along each firewall. Four hour sliding fire doors with fusible links protect the openings in the firewalls, although status of existing link operation is unknown.

There are six stair towers within the floor plate, which are arranged so that there are a minimum of 3 stair access exits from each fire area. At the north side of the building there is a stair in the northwest (Stair A) and northeast (Stair B) corners, as well as a stair in the southeast corner (Stair C) that has an exit door into the stairwell from both sides of the firewall to serve both north and center areas. Continuing down the east side of the building Stair D is divided by the south firewall and serves both the center and south sections, and at the southeast corner of the south section (Stair E) provides a second exit from the south section, with the third stair at the northwest side of the area (Stair F) again being split by the firewall and serving the south and center areas.

While the building may have once required fire separations due to use, such as hazardous materials storage or manufacturing, with the construction type and current usage the fire area separations are no longer required by code. Renovations at some floor levels have removed portions of the fire walls and fire doors, and there is no requirement that existing be maintained. Detailed assessments by floor and for each stair follow to describe existing uses, renovations and deficiencies per code as observed.

- Basement Level: The basement level is approximately 8’ below grade. The basement area does not occupy the full floor plate, as the center of the basement area from the south end to near the north end is unexcavated where train car loading occurred within the building accessed from the south, as well as below loading docks at the west side of the building. There are rated masonry enclosures at the active electrical service and some storage and utility rooms at the north side of the floor. At the south side of the building and at the center of the building tunnels connect to 1869 building to west and 1769 building to the east. There are multiple non-operational chillers that have been abandoned in place at the east side of the basement. There are built out locker and toilet rooms at the west side of the basement level which are not currently utilized and status of plumbing at this location is unknown. There is a built-out office area at the west corner of the floor plate that is in poor condition, and various other fenced or partial

3. Interior (cont.)

enclosures for storage areas at the floor level. There is space is lit throughout with fluorescent lighting, though in some areas general, exit and emergency lighting is missing or inoperative. Generally, the area appeared to be dry, and active sump pumps exist. There was some rubbish at the level and the drywall areas at the office buildout (fig 3.1) show signs of mold from previous water issues. At the south tunnel there was significant spalling and cracking that is further detailed in the structural report in the appendix.

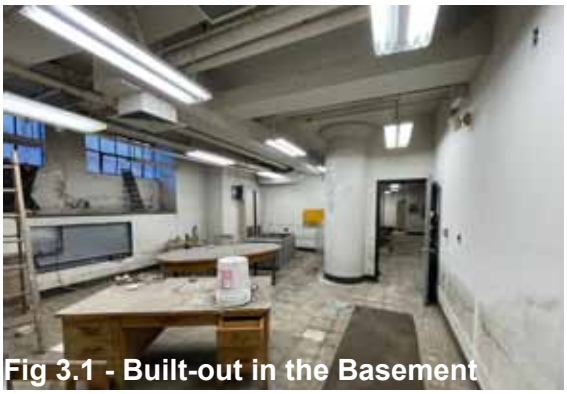


Fig 3.1 - Built-out in the Basement

- First Floor: The first floor is elevated approximately 4'-6" above grade, with the exception of an entry lobby at the center of the north elevation that is at grade. Two passenger elevators at either side of this lobby would provide access to upper level, however neither elevator is operational. Rather than east west fire separations, there are fire walls that partition the plan into east, center and west areas. At the north side of the floor plate there is an office from the Board of Education buildout that extends across the full elevation and down to Stair C on the east elevation. The Board of Elections utilizes the loading dock areas (fig 3.2) at the west side of the floor, and existing inoperative cold-storage areas from Board of Education remain between the west and center areas. The center and east areas of the floor plate are utilized by CPD and CFP for cold storage, however the only access to these areas appear to be through the single operable door on the south elevation. It is expected that means of egress requirement revisions may be required for the center portion of this floor. While the observed areas appeared generally dry, there were some indications of mold at some walls at the north buildout area. Refuse and debris was observed at some locations including loading docks at west and in the office area at north side of the building, and at the office building there were damaged floor wall and ceiling systems including loose wiring and lighting. Lighting within this office area is poor and exiting is not maintained. Rubbish and environmental issues require attention at the office buildout. There are abandoned toilets at the east side of the floor plate by Stair C and there is a small toilet room at the dock area that is in use.

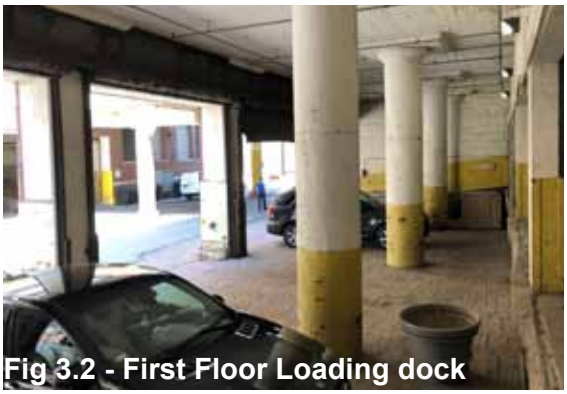


Fig 3.2 - First Floor Loading dock

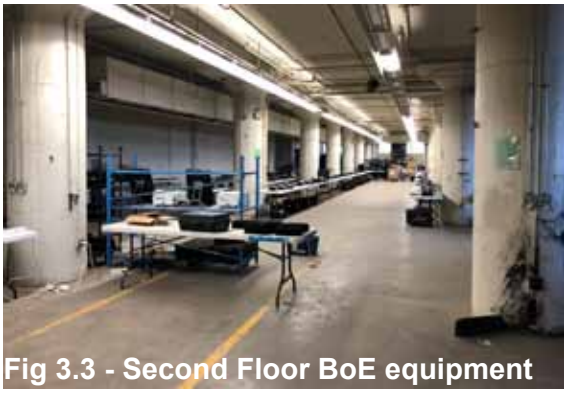


Fig 3.3 - Second Floor BoE equipment


Fig 3.4 - Second Floor AIS Storage

- Second Floor: The second floor is the first of the typical floor layouts that divide the building into thirds north, center and south. The north and center portions of the floor are utilized by the Board of Elections, and south third of the floor is utilized by AIS for storage. The north portion of the floor contains some areas buildout utilized by BoE, including office and equipment programming tasks (fig 3.3). There is a toilet area in poor condition in this area. The remainder of the floorplate is open warehouse space with the original fire walls. There are densely stored materials within the warehouse area at this floor (fig 3.4). Exit doors into stairwells from the floor were observed to be screwed shut at multiple locations.

3. Interior (cont.)

- Third Floor: The third floor is a typical floor plate with a masonry enclosure buildout at the north side of the floor that is utilized by OEMC. The remaining center and south portions of the floor plate are not built outs and are utilized by BoE (fig 3.5). The floor is heavily utilized for storage. The OEMC areas were not accessible during the visit, and access to Stair B could not be observed due to its location within the secured storage area. Multiple exit doors into stairwells from the floor were observed to be screwed shut, and several other doors were inaccessible due to stored materials.


Fig 3.5 -Third Floor BoE Storage

- Fourth Floor: The fourth floor was mostly built-out during Board of Education renovations, and the floor is fully occupied by the Board of Elections. The BoE utilizes this level primarily for record storage and archival storage (fig 3.6) , however water infiltration from roof leaks penetrates to the fourth floor (fig 3.7), and certain areas have been set up with localized air conditioning and dehumidification to remediate building issues. Archival storage includes older documentation dating to 1800's that is temperature and humidity sensitive and should be stored in a controlled environment, which is not available in the 1819 facility. The floor and wall finishes throughout this level exhibit significant damage and wear. Toilet facilities at this floor are in partially operable condition. Exit doors into stairwells from the floor were observed to be screwed shut at multiple locations, including a non-rated door without hardware at one opening.


Fig 3.6 -Fourth BoE Archival Storage


Fig 3.7 -Fourth Floor water infiltration

- Fifth Floor: The fifth floor was fully built-out during renovations by the Board of Education and is currently unoccupied (fig 3.8). Spaces are finished throughout the floorplate and includes buildout in the connecting bridge to 1769. The north side of the floorplate consists primarily of office areas, the center of the floor is mostly unfinished storage space, and the south side of the floor is a commercial kitchen and cafeteria with dining areas. Finishes consist of acoustic ceilings, gypsum partitions and carpet through much of the space, with concrete block cores built around the freight elevator and fire wall separations to create mechanical spaces, toilet rooms and other support areas. Due to construction around the entire floor plate, including offices at much of the exterior perimeter, and there is limited natural light at the north and none within the center of the building. There is minimal operable lighting within the floor. Throughout the floor there are abandoned furnishings and equipment that require removal. Due to water infiltration, it expected that many materials will exhibit mold growth and may require abatement.


Fig 3.8 -Fifth Floor built-out

- Sixth Floor: The top floor was fully built-out during renovations by the Board of Education and is currently unoccupied. Spaces are finished throughout the floorplate and includes buildout in the connecting bridge to 1769. Finishes consist of acoustic ceilings, gypsum partitions and carpet through much of the space, with concrete block cores built around the freight elevator and fire wall separations to create

3. Interior (cont.)

mechanical spaces, toilet rooms and other support areas. There are monitor skylights throughout the entire floor area, which allow for ample natural light into most of the floor, however the ongoing of infiltration of water into this area also means that there is significant water damage and mold growth at many skylight areas (fig 3.9). Finishes and materials are damaged throughout and exhibit signs of ongoing water infiltration; it expected that all finishes will need to abated. Throughout the floor there are abandoned furnishings and materials that require disposal.

Fig 3.9 -Sixth Floor built-out and water damage

Stairs Elevators and Vertical Enclosures

The building is served by six stairs at the perimeter of the building, with stairs A, B, C, E and F connecting all levels from the basement to sixth floors, and stair D connecting the roof through 2nd floors and exiting directly to the exterior without access at the first floor. While the top two floors are not currently occupied, code requires that the existing building comply with means of egress minimum requirements, enclosure of shafts, reentry hardware, and other fire and life safety minimum code with which the project is currently out of compliance. Generally all stairs were missing operable lighting and exit lighting.

In addition to the stairs the facility originally had eleven freight elevators and two passenger elevators. At the time of the Board of Education renovations multiple elevators were removed and the shafts were converted to mechanical shafts, with several remaining elevators left in place as inactive, and only the two passenger elevators C1 and C2 and two freight elevators C3 and C8 in operation. At this time only elevator C8, located on the western perimeter of the building adjacent to Stair F is active, with elevator C3 damaged an inoperable due to water damage.

- Stair A: Located at the northwest corner of the building, this stair connects all levels. The stair and landing construction are of concrete, and the enclosure is CMU at all levels. At the basement, the stair is enclosed with a masonry enclosure (fig 3.10). A pair of doors facing north onto Pershing provide exiting for the stair at grade, however this door is obstructed by scaffolding and it is not known if hardware is operational. The glazing in these doors is intact, however at other doors where glazing is damaged it is assumed that this glass is not tempered. A 34” wide rated door protects openings at all levels, however there are surface mounted bolts attached at at the 3rd and 4th floors prevent operation of the door. At the second floor there is an exit light, even though exit cannot be used at grade. At the 4th through 6th floors the door is missing hardware from the stair side (fig 3.11), and a vision lite is broken at the 5th and 6th floors. During the assessment doors at the basement and fifth floor were propped open. The interior handrail and guardrail at top of stair do not comply with minimum code requirements at areas where fall distance exceed 8’.
- Stair B: Located at the northeast corner of the building, this stair connects all levels. The stair and landing construction are of concrete, and the enclosure is CMU at all levels. At the landing

Fig 3.10 - Stair A at Basement

Fig 3.11 - Missing hardware at Stairside

3. Interior (cont.)

from the basement stair basement at grade level there is a door with egress hardware into the guard station, although this is not an exit. A pair of doors facing north onto Pershing provide exiting for the stair, however this door is completely boarded over from the interior and is obstructed by scaffolding at the exterior and exiting is not possible. A 34" to 36" wide rated door protects openings at all levels. During the assessment doors at the basement and fifth floor were propped open, and at all other floors doors were locked or bolted and could not be opened from stairwell. The interior handrail and guardrail at top of stair do not comply with minimum code requirements at areas where fall distance exceed 8'. At the walls and ceiling at the top level of the stair there is significant plaster deterioration and debris on the stairs and landings (fig 3.12).


Fig 3.12 - Plaster and Wall Deteriation at top level of Stair B

- Stair C: Located at the east side of the building between the north and center area firewalls in line with the bridge connecting 1769 to the east. This stair connects all levels. The stair, slab and enclosure construction are entirely of concrete. The stair is enclosed at all levels to basement, with a pair of 31" wide rated doors protecting openings at levels two through six, and a single 34" door at the first floor and basement. At almost all floor levels the doors have been bolted or screwed shut from outside the stairwell (fig 3.13), and operable hardware. During the assessment doors at the first and fifth floors were propped open. There was no operable lighting within the stairwell. The opening width of the doors may not provide the minimum clear exiting width required by code. The interior handrail and guardrail at top of stair do not comply with minimum code requirements at areas where fall distance exceed 8'.


Fig 3.13 - Typical Bolted shut door

- Stair D: Located at the east side of the building between the center and south area fire walls, this stair connects from sixth floor to grade, with no access at the first floor. The landing slab and enclosure construction are entirely of concrete and the stairs are entirely of metal. The stair is accessed by a pair of 34" wide rated doors protecting openings at levels two through six, that swing into a vestibule area, with a separate 34" door swinging into the stair, which entirely blocks the egress path. There is no re-entry hardware on any doors within the exit stairwell. At several levels access to the exit doors is blocked by debris or stored materials. (fig 3.14) At the ground floor exit the door does not latch, and access to the building is unsecured. The interior handrail and guardrail at top of stair comply with minimum code requirements for storage buildings, and no modifications would be required.


Fig 3.14 - Blocked exit door


Fig 3.15 - Damaged concrete threshold at grade

- Stair E: Located at the southeast corner of the building, this stair connects all levels. The stair, slab and enclosure construction are entirely of concrete. At the basement, the stair is open to the landing at grade level, and the railing at the bottom of the stairs is damaged and partially missing. A partition at the grade landing provides a rated

3. Interior (cont.)

enclosure, however this door is missing hardware. A door facing to the east provide exiting for this stairwell, but the concrete threshold is damaged and door will not fully open (fig 3.15), and there is garbage and debris within the stairwell. A 36" wide opening provides access to the stair at all levels, however doors have been sealed shut from outside the stairwell from the 1st through 4th floors and can not be used for egress, and from within the stairwell no doors could be opened. At the 4th floor the fire door has been replaced by a wood door with no hardware for which rating is unknown. There is some finish deterioration at the ceilings and walls at the sixth floor. The interior handrail and guardrail at top of stair do not comply with minimum code requirements at areas where fall distance exceed 8'.

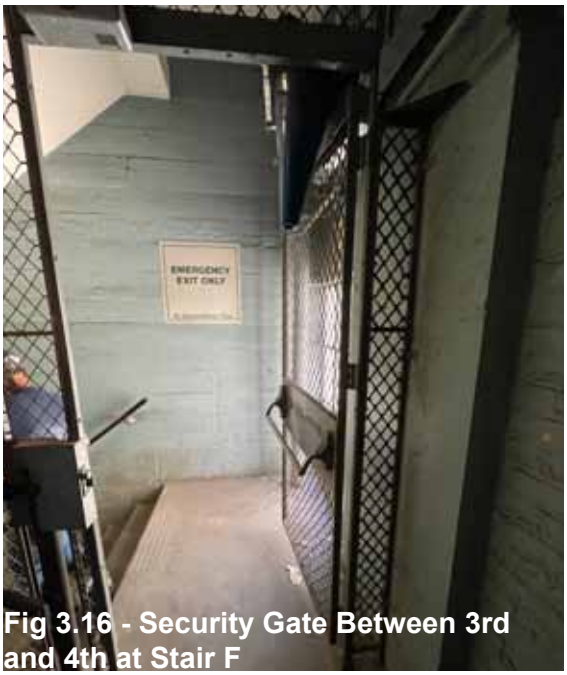


Fig 3.16 - Security Gate Between 3rd and 4th at Stair F

- Stair F: Located at the west side of the building between the center and south area firewalls, this stair connects all levels. The stair, slab and enclosure construction are entirely of concrete. The stair is enclosed at all levels to basement, with a pair of 30" wide rated doors protecting openings at levels two through six, and a single 34" door at the first floor and basement. This stair is the 'main stair' for the facility and is the only stair with operable hardware at both sides of doors throughout. A security gate is located between the 3rd and 4th floor intermediate landing that would need to be removed (fig 3.16). During the assessment doors at all most levels were propped open, with some doors missing hardware or damaged. The narrow width of the doors means that the openings do not comply with minimum egress width. At the sixth floor the glazing lite was missing from one door, and some hardware was damaged at the 5th and 4th floors. The interior handrail and guardrail at top of stair do not comply with minimum code requirements at areas where fall distance exceed 8'.
- Elevator 8: The freight elevator adjacent to Stair F is the only operable elevator at 1819 Pershing. This elevator appears to be fully manual, including floor and door operation, with no automatic features. There does not appear to be a phone line connection for emergency use, fire recall functions or any other modernization requirements of Title 14C Chicago Conveyance Device Code.

Special Detailed Requirements High Rise Buildings

The Chicago Building Code defines High Rise Buildings as structures exceeding 80' in height. Title 14B defines building height as the distance from average grade to the top of the roof deck on low slope roof buildings where insulation is entirely above the roof deck. By this metric the structure at 1819 W Pershing just exceeds the minimum requirements, as from grade to top of structure building height is approximately 80'-6". The building must comply with Title 14X high rise requirements for existing buildings, which includes several 14B scope requirements. Additional high-rise requirements that do not apply to structures below this height include:

- Automatic Sprinkler (403.3) system with fire pump located in a protected room.
- Emergency Systems (404.4) – Smoke Detection, Fire Alarm, Standpipe System, Voice Communication System, Fire Command, Smoke Removal, Standby and Emergency Power, Electrical Equipment Room in Vaults.
- Stairway Door operation (re-entry applies to all stairs over 4 stories) and communications systems
- Fire Service Elevators

Existing facilities will not need to comply with all requirements, however 14X-5-506 Life Safety Compliance Plan describes

a document that applies to all high rise buildings. This document assesses existing high-rise buildings for conformance or non-conformance to life safety requirements and is utilized mostly to assess whether an existing structure requires the addition of a full sprinkler system or other life safety modifications. There are three components to the reports; Fire Safety, which is predicated on the inflammability and fire protection of the structure and separations, Means of Egress, which measures aids in assisting occupants in exiting the building, and General Safety which includes all aspects of the building.

A draft Life Safety Evaluation Plan has been conducted and is attached as an appendix at the conclusion of this report. Per the evaluation, the building complies with Fire Safety since the building construction is Type 1A, the most resistant to fire, and the building could be considered as a single tenant without the need for fire separations between different occupants. The building is however very deficient in Means of Egress and General Safety metrics, and significant alterations will be required to bring the facility into minimum compliance. Not included in the Life Safety Evaluation criteria are Fire Alarm Systems and Standpipe Systems, both of which are assumed to exist as prerequisite requirements. Currently the 1819 Facility has neither of these systems. While title 14X excludes buildings identified as Orange on the Historic Survey from the requirement for sprinkler systems, since an existing sprinkler was operational in the building fire and building code officials will need to determine whether it is acceptable to leave the inactive system in place or if it will need to be refurbished and activated.

Code Deficiencies and Recommendations

Minimum code requirement modifications for the building interior are listed as outlined under Title 14X. All scope items are based on observation walkthroughs, and should not be expected to be exhaustive of all potential violations or deficiencies on site:

- Per section 14X-3-304 interior surfaces must be maintained such that wall and walking surfaces are stable and secure. At most floor levels the existing concrete construction at floors and walls are in stable condition. Areas of concern include the following:
  - At Board of Elections renovations on the first, fifth and sixth floor levels decaying interiors and carpets leave unsafe environmental and walking conditions. It is recommended that unstable surfaces in these areas be demolished.
  - Floor at wall finishes at the fourth floor are damaged due to storage activities. Tile flooring should be removed at corridor areas, wall finishes patched and repaired
  - Floor Finishes at active toilet room at second floor are in poor condition, potential friable asbestos materials present.
  - Plaster deterioration at Stair B impedes egress route, should remove damaged finished and repair water infiltration at roof and parapets.
  - Refer to interior structural assessment in appendix for additional deficiencies and recommendation.
- Per section 14X-3-306 handrails and guardrails are required to comply with minimum standards. At required stairs it is proposed that continuous metal grate panels be attached to the concrete stair structure similar to the security gates existing at some levels at existing stairs. Review of the condition with code officials may be sought to reduce guard protection requirements to limit to upper landings at stairs. The damaged handrail at Stair E basement will require repair.
- Per section 14X-3-307 Rubbish and Garbage shall be removed from all interiors, with items as identified in the report. This includes items at unoccupied floor areas at the first fifth and sixth floors and basement areas, as well as items within stairwells.
- Per sections 14X-5-502.3.3 fire walls, barriers and partitions are required to be maintained including all penetrations in accordance with NFPA 80. The existing fire wall separations are not required by code due to building construction and have been removed in some locations. Existing fire shutters and fire doors to remain should be inspected and

3. Interior (cont.)

serviced to confirm proper operation in case of a fire, or propped open and removed if not required.

- Per section 14X-5-502.4 opening protectives in fire walls or partitions must be maintained. Fire doors cannot be blocked or held open (unless by approved hold open devices) and must have operable closers and latches. Several egress doors have missing or damaged hardware that would prevent proper operation and require repair or replacement. The non-rated door at Stair E must be replaced with a rated door. For rated door that are currently held open a magnetic hold open attached to the fir alarm must be provided. For the stair enclosure opening protective doors may not be held open per code due to number of stories served.
- Per section 14X-5-504.2.9 high-rise buildings are required to have automatic fire sprinkler systems throughout, however an exemption is permitted for buildings identified as Orange in the Chicago Historic Resources Survey are exempt. This exemption would apply to buildings without sprinkler systems, however since an existing system was disabled this exemption may not apply, and a determination must be provided by a fire code official.
- Per section 14X-5-504.4 existing high-rise buildings must be equipped with a standpipe system. There are existing firehose stations connected to the inoperative sprinkler distribution piping, but these do not comply with the building code requirements. Additional details on the standpipe system are included in the fire protection narrative.
- Per section 14X-5-504.5 portable fire extinguishers must comply with 14B-906 requirements for fire extinguishers which requires one fire extinguisher per every 11,250sf of floor area and maximum 75' of travel distance. While fire extinguishers were observed throughout the building, most extinguisher certifications expired in 2018 or before, with extinguishers in lower occupancy areas like the basement or unoccupied areas being far out of compliance. In some areas fire extinguishers were being used to prop fire doors open. It is expected that compliant fire extinguishers will be required throughout the facility.
- Per section 14X-5-504.6 a fire alarm system must be provided. The fire alarm system must comply with all current code requirements of title 14B Chicago Building Code. See additional requirements and notes in the electrical and fire protection narratives.
- Per section 14X-5-504.7 voice communication systems are required in high-rise building consisting of both one way and two-way communication systems. This includes annunciator panels throughout the building and two way communication within the stairwells. See additional requirements and notes in the electrical and fire protection narratives.
- Per section 14X-5-504.10 fire protection systems may not be disabled in occupied buildings. The sprinkler system has been disabled for 1819 Pershing, and it is not known whether fire code officials will allow for the existing sprinkler system to remain inoperative or be removed.
- Per section 14X-5-505 means of egress must comply with minimum requirements of 14B including occupant load and exiting capacity, and minimum number of exits from all spaces and areas. Of particular concern are existing exit stairs that are not useable, with doors sealed shut throughout the facility, and exterior exits not useable at grade. An appendix to this report provides exiting diagrams and load calculations for all floors as a portion of a building life safety analysis indicating exiting loading, travel distances and minimum required exits from all areas.
- Per section 14X-5-505.6 a minimum of 1 foot candle of illumination required at the walking surface at all portions of the means of egress, with emergency illumination provided in accordance with Article 700 of Chicago Electric Code. While this is a very low level of lighting, within several egress stairs there was no operable lighting. At some floor areas there was minimal operable lighting. Refer to the electrical assessment section for additional lighting details including emergency lighting.
- Per section 14X-5-505.8 all doors on an egress path must have a minimum 28" clear width. The doors leading into Stair C and Stair F do not comply with this requirement – the clear width from egress to hardware to door frame is less than 24" at Stair F when the egress doors are fully open. The doors at these stairs are in concrete openings and may be difficult to enlarge structurally. The recommendation is to build rated vestibules outside of these stairs at the 2nd through 6th floors and provide a single 36" wide entry door into the vestibule. Within the vestibule areas of refuge, and code required 2-way communication systems could be provided. The non-compliant doors would be

3. Interior (cont.)

removed within the stair enclosures to allow for adequate clear width.

- Per section 14X-5-505.9.7 existing stairways must have tactile identification signage indicating stair and floor identifier and reentry information at every floor.
- Per section 14X-5-505.9.9 doors in exit stairways connecting more than 4 levels must either not be locked from stairway side at any time or be equipped with a fail-safe electronic system to release manually and automatically in connection to an automatic fair alarm/protection system, including a 2-way communication system at every 5th floor. As this building qualifies as a high-rise any locked stairway doors must be automatically unlocked upon a signal from the fire alarm center. Currently all doors are locked or may be locked to prevent re-entry from the stairwell. At a minimum, all door hardware will need to be replaced at any doors to remain to allow for re-entry at all stair levels, and if security restrictions are required then a fail-safe system will be required to allow for door usage. Reentry of doors from stairwells it the most critical category in the Life Safety Evaluation criteria.
- Per section 14X-5-505.13 internally illuminated exit signage must be provided with backup power source. Existing lighting throughout the building is generally inoperative, missing or damaged, and without backup power source, and will require replacement throughout the building. See electrical assessment narrative for additional information.
- Per chapter 14X-6 means of egress lighting required for the facility and mechanical or natural ventilation required. While existing window are operable at some locations and there are a few operable exhaust fans, it is recommended that a building ventilation system be assessed for the entire facility. For lighting requirements see the electrical narrative, and for ventilation see mechanical narrative.
- Per chapter 14X-7 known electrical hazards must be abated – refer to electrical narrative for details.
- Per section 14X-10 Elevators must comply with Chicago Conveyance Device Code. An elevator assessment has not been prepared for the elevator in 1819 Pershing, however AIS utilizes a service contract for the facility. If a list of code required requirements cannot be provided by the service contract provided it is recommended that an independent elevator consultant provide a report for the facility to bring elevator C8 into compliance and assess the requirements to bring elevators C3 online.

Recommendations for occupant use and security:

- Due to heavy usage of floors for storage and observed blockage of means of egress during assessments, it is recommended that high visibility traffic coatings be added to floor areas to define storage areas and egress routes to ensure materials are not stored in a manner that would compromise life safety.
- Close up guard station securely, remove door hardware and secure opening into Stair B.
- It is recommended that all exit door glazing at north elevation be replaced to provide tempered glazing for safety reasons.
- Existing toilet rooms are located within the maximum travel distance and floor level separation at all occupied floors at 1819 Pershing, however the conditions for the toilet rooms and plumbing fixtures are in poor and inoperative condition in some locations. It is recommended that updated toilet facilities complying with accessibility requirements.
- Existing general lighting is in poor condition or missing at some locations, and recommendations for replacing lighting with new LED lighting is provided in the electrical portion of the assessment. Lighting renovations may be limited to certain floor areas or uses depending on budget and scope, and options such as re-lamping rather than fixture replacement may be undertaken by AIS rather than a contractor for significant cost reductions where the infrastructure exists.
- Local controls for the heating system should be provided within 1819 Pershing, as the facility is not operating efficiently, with exterior windows opened during the winter due to extreme heat at some areas. Additional discussion is included in the mechanical narrative.
- Isolated temperature and humidity controls for sensitive archival materials for the Board of Education should be considered. A split system and some enclosure renovations may be required. Additional discussion is included in the mechanical narrative.

4. Mechanical

1819 W Pershing is currently a partially occupied property with six floors above grade and a partial basement. The building has brick masonry exterior walls and original single pane glass windows on floors 1-6. There are plans to replace the roofing system and storm drainage to prevent water intrusion to the upper floors. The first floor is used for loading and unloading, and floors 2 thru 4 are leased to tenants. Extensive water damage exists on floors 5 and 6 and they are not actively used.

The building is heated by the central steam boiler plant in the basement of the west 1869 building. Steam is provided by (2) Burnham Series 3 200 HP Firetube boilers with an output 7080 MBH each. The main steam line thru the interconnecting utility tunnel has been cut off and capped at the central 1819 building between the west and east ends of the partial basement. A steam riser in the west basement with functional condensate pumps serves the upper floors. A steam riser in the east basement has been cut off from the steam service and is not active. The active steam riser serves original cast iron radiators and air handling unit steam coils on each floor. The radiators do not have any control valves to modulate heat output.

Ventilation is provided by air handling units typically located in the mechanical core spaces on each floor. The air handling units have steam heating coils, chilled water cooling coils, and pneumatic controls. None of the air handling units were running during the field investigation and no functional testing was done to evaluate their condition. The air handling units are manufactured by Bohn, a company that no longer exists. Two air handling units on the second floor had DX cooling coils with non-functional condensing units on the roof. Other small capacity cooling systems and exhaust fans were distributed across different floors for supplemental cooling and ventilation. Roof exhaust fans serve toilet rooms and abandoned cafeteria.

Cooling to the air handling units was provided by an abandoned chiller system in the basement and a cooling tower on the roof. The three chillers in the basement are manufactured by York and appear to have been installed in 1986. The entire chilled water system and air handling units are assumed to be from this same time period. All of the mechanical equipment is past its useful ASHRAE recommended service life. The chillers use R-11 refrigerant which is no longer manufactured.

Code Requirements

Mechanical ventilation is required to be supplied to occupied spaces in accordance with Section 18-28-403 of the Chicago Building Code. The minimum supply and exhaust ventilation rates for different space types is provided in Table 18-28-403.3. The code section also specifies that a minimum of 1/3 of the required ventilation air comes from the outdoors. The ventilation rates for the different space types noted in this building are as follows:

- Toilet Rooms – 2 CFM/SF exhaust
- Offices – 0.6 CFM/SF supply, 0.3 CFM/SF exhaust
- Active Storage – 0.5 CFM/SF supply, 0.5 CFM/SF exhaust
- Inactive Storage – Not required
- Corridors – Not required

Recommendations – Code Required Toilet Rooms

Functional toilet rooms are required every other floor for men and women per a code analysis. Code required exhaust ventilation is required at a rate of 2 CFM per square foot for active toilet rooms. Provide exhaust scope as follows:

- Provide test and balance report of existing toilet exhaust system documenting fan condition and location of all exhaust grilles.
- Cap and seal toilet exhaust grilles on unused floors
- Provide new exhaust grilles with integral balancing dampers in renovated toilet rooms. Size grilles for 2 CFM per

square foot of floor area. Provide transfer grilles to corridor sized for 300 FPM.
  - Titus model PAR or similar by Price or Krueger.
- Demolish roof exhaust fan and provide new downblast exhaust fan sized for the new total toilet room CFM. Provide with prefabricated curb, hinged curb cap kit with cables, aluminum birdscreen, motorized backdraft damper matching fan voltage, and prewired disconnect switch.
  - Loren Cook model ACE-B or similar by Greenheck or Twin City Fan.
  -

Code Required Ventilation Analysis

Code required ventilation for each floor should be provided per the current space use. The current space use for areas on each floor is as follows. Any proposed future space use will require further engineering analysis.

- Basement – Approximately 65,000 SF of floor area is inactive mechanical room and storage space.
  - No ventilation required
- 1st Floor – Approximately 90,000 SF of floor area is inactive storage and loading staging areas. Trucks cannot drive in to loading dock doors. Loading dock area is open to the outdoors. (fig 4.1)
  - No ventilation required
- 2nd Floor – Approximately 25,000 SF is occupied and used as office workspace. The remaining 65,000 SF is used for inactive storage of large metal cases, equipment shelving, suitcases, and other supplies. (fig 4.2)
  - Provide 15,000 CFM of ventilation in office space (0.6 CFM/SF)
  - No ventilation required in inactive storage space
- 3rd Floor – Approximately 90,000 SF is used for inactive storage of pallets, cardboard, and other supplies. (fig 4.3)
  - No ventilation required
- 4th Floor – Approximately 80,000 SF is built out as office space, but appears to be used as inactive storage of files and other supplies. An interior space of approximately 10,000 SF is used as conditioned file storage. (fig 4.4)
  - No ventilation required in inactive storage space
  - Nominal 5,000 CFM ventilation recommended for archival storage space (0.5 CFM/sf)
  - Further direction and analysis required for any space that are used as office space
- 5th Floor – Approximately 45,000 SF is built out as cafeteria and office space and 45,000 SF is open space used for storage. There is water infiltration from the floor above, and the entire floor appears to be abandoned and used for storage of old furniture systems and other office equipment. (fig 4.5)
  - No ventilation required
- 6th Floor – Approximately 90,000 SF is built out as office space. There is extensive water damage from the roof and decay of flooring and finishes. The area is not occupiable and use of ventilation is not recommended until the area is fully protected from the elements and remediated. (fig 4.6)
  - No ventilation required

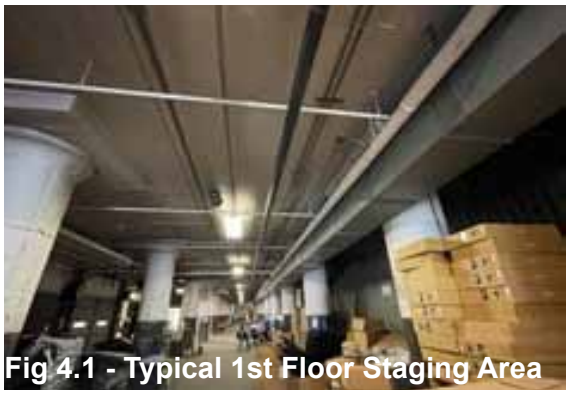


Fig 4.1 - Typical 1st Floor Staging Area

Fig 4.2 - Typical 2nd Floor occupied work area

4. Mechanical (cont.)

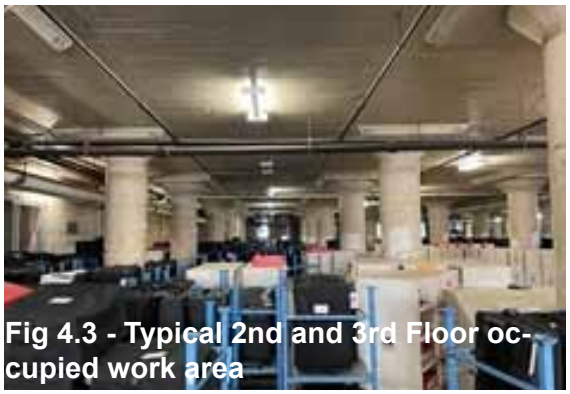


Fig 4.3 - Typical 2nd and 3rd Floor occupied work area

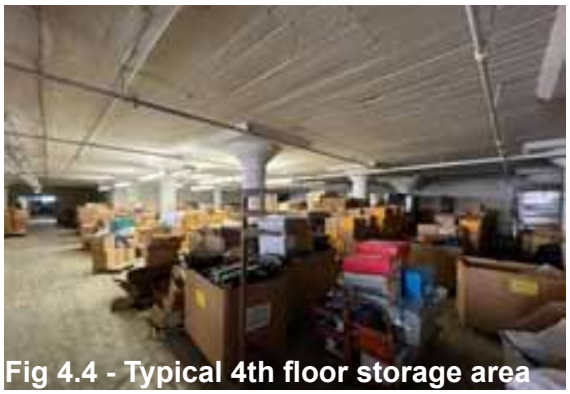


Fig 4.4 - Typical 4th floor storage area

Fig 4.5 - Typical 5th floor storage area

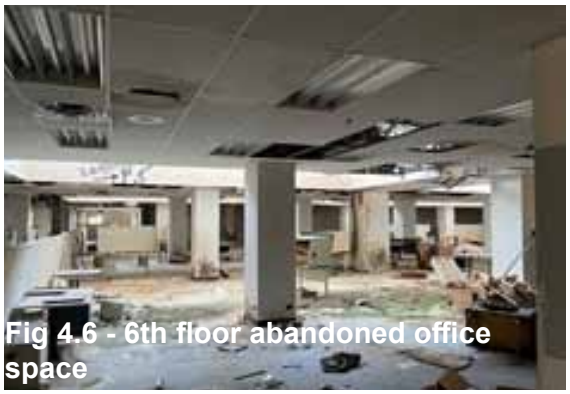


Fig 4.6 - 6th floor abandoned office space

Ventilation Scope of Work Recommendations

For the 2nd floor work area, the following scope of work is recommended due to the age and condition of existing air handlers:

- Demolish (2) suspended air handling units at the northeast and northwest corners of the occupied work area. Demolish associated pneumatic control panels, outside air louver, steam control valves, and associated steam isolation valves and traps. Demolish associated roof mounted condensing units and interconnecting refrigerant piping. Existing ductwork, steam, and condensate drain piping shall remain for connection to new work. Provide test and balance report of fan prior to demolition.
- Provide (2) new outside air louvers in existing openings sized for minimum 7,500 CFM and (2) relief air louvers at code required distance away from the intake.
- Provide (2) new suspended air handling units by Carrier, Trane, York, or Daikin. Provide with mixed air dampers, steam heating coil, DX cooling coil, economizer controls, variable speed belt drive supply fan, DDC controls, and vibration isolation hangers. Provide all new steam control valves and piping package. Units shall be nominally 7,500 CFM and 20 tons each. Connect to existing ductwork. Provide test and balance of existing duct systems.
- Provide (2) new nominal 20-ton roof mounted condensing units and interconnecting refrigerant piping.
-

For the 4th floor archival storage area, the following scope of work is recommended:

- Provide (3) 4-ton wall-mounted precision DX cooling and humidification units with outdoor remote condensing unit. Provide with low ambient cooling down to -20F, hot gas reheat, SCR reheat coil, 5 lb/hr steam generator humidification, Merv 8 filters, and condensate pump with overflow switch. Provide manufacturer's controls with high/low temperature and humidity alarms. Units shall be by Data Aire or similar precision cooling manufacturer.

4. Mechanical (cont.)

Existing AHU Scope of Work Recommendations

Although ventilation is not required on all floors due to current space utilization, existing AHUs in the core mechanical spaces on each floor may be rehabilitated to provide ventilation and heat. Provide the following renovation scope for all AHUs:

- Supply and Return Fans
  - Check fan wheel for proper rotation
  - Check bearings and other moving parts for proper lubrication
  - Record motor data including motor make, horsepower, RPM, volts, phase, hertz, full load amperage, and service factor
  - Adjust or replace loose or damaged belts
  - Check motor starters and system fan controls for proper operation
  - Provide test and balance report with all fan system deficiencies noted
- Heating Coils
  - Inspect heating coils and associated piping for leaks
  - Clean and comb heating coil fins
  - Check control valves and system heating controls for proper operation
  - Check control dampers for proper operation
  - Calibrate and adjust thermostats and system temperature sensors
  - Provide test and balance report with all heating system deficiencies noted
- Ductwork
  - Replace filters
  - Clean interior of ductwork
  - Securely fasten loose insulation
  - Clean and adjust supply diffusers
  - Clean and adjust outside air intakes

5. Electrical

Electrical Power Distribution System

There is COMED vault located in the building which provides power connection to (2) switchgears. First one is 3000A 480Y/277V 3ph 4W switchgear (SWBD-1) located in main electrical room at the basement level (fig 5.1). This switchgear mainly serves large mechanical equipment (e.g. HVAC, pumps). Second switchgear is 2000A 208Y/120V 3ph 4W (SWBD-2) and it's located in the same room (fig 5.2). It provides 120/208V power for branch circuiting and general use equipment. The equipment is in working condition but both switchgears exceeded their life span. Both switchboards don't have spare spaces for additional breakers installation.

Fig 5.1 - 3000A 480Y/277V Switchboard SWBD-1

Fig 5.2 - 2000A 208Y/120V Switchboard SWBD-2

5. Electrical (cont.)

In general, all major mechanical and plumbing equipment (HVAC, pumps, boilers etc.) is fed from 480V, 3Ph, 4W distribution panelboards (fig 5.3). Lighting, general receptacles, some miscellaneous controls and smaller equipment are fed from 120/208V branch panelboards (fig 5.4). Mainly distribution and branch panelboards have been located throughout the building in designated electrical/mechanical rooms (two rooms per floor). Overall panels are in fair, working condition but there are some panels with missing or removed front cover and all “life” elements are exposed (fig 5.5-5.7). Also it is possible that some of panels and associated power equipment located on 4th, 5th and 6th floor have been exposed to water due to water infiltration from roof leaks.

Fig 5.3 - Typical Distribution Panel

Fig 5.4 - Typical Branch Circuit Panels (w/ fuses) installed in the buildings

Fig 5.5 - Exposed "Life" Elements

Fig 5.6 - Exposed "Life" Elements

Code Requirements:

- 14X-7-702.4.1 Hazards associated with water exposure.
  - Floor 4th, 5th, and 6th - Provide inspection of existing electrical distribution equipment, motor circuits, power equipment, transformers, wire, cable, flexible cords, wiring devices, ground fault circuit interrupters, surge protectors, molded case circuit breakers, low-voltage fuses, fuses, luminaires, ballasts, motors, and electronic control, signaling, and communication equipment) that have been exposed to water. Any damaged equipment must be replaced in accordance with the Chicago Building Rehabilitation Code
- 14X-7-703.2 Unsafe conditions.
  - Provide missing cover to open electrical panel and junction boxes
  - Open-wiring splices are prohibited.

Fig 5.7 Removed front cover

5. Electrical (cont.)

- Covers shall be provided for all switch and electrical outlet boxes.
- Provide all missing covers for electrical panel and junction boxes

- 14X-7-703.3 Abandoned electrical equipment.
  - Remove all abandoned or non-operational wiring, raceways, cables, conductors, boxes, and electrical equipment in locations that are able to be accessed without causing damage, or requiring demolition to the building
- 14X-7-703.4 Wiring.
  - Remove any flexible cords used for permanent wiring, or for running though doors, windows, or cabinets, or concealed within walls, floors, or ceilings.

Power Distribution Scope of Work Recommendations:

- Based on age and condition of exiting distribution system it's recommended as follow:
- Option 1: Existing distribution system in general is original to the building and already exceeded its life span. It is recommended to replace it in its entirety.
- Option 2: Replace part of distribution system which were exposed to the water or is unsafe to function properly based on exiting conditions.

Fig 5.8 - Typical Exit sign

Emergengy Sytem

The building has emergency system type II with auxiliary source as separate feed from COMED vault located in the building. System is serving mainly emergency (egress) lighting and exist signs throughout. Most of fixtures are not working or are in very poor condition. (fig 5.8)

Code Requirements:

- 14X-5-505.6 – Means of Egress Illumination
  - Provide a minimum of 1 foot candle of illumination required at the walking surface, with emergency illumination provided in accordance with Article 700 of Chicago Electric Code.
  - Option 1: Replace exiting emergency lighting fixtures with new LED fixtures and re-connect to exiting emergency circuit serving the area. Provide additional emergency lighting fixtures as required to maintain min 1 foot candle of illumination at the egress path.
  - Option 2: Re-lamp existing emergency lighting fixtures throughout the building. Provide additional emergency lighting fixtures as required to maintain min 1 foot candle of illumination at the egress path.
  - Remove existing lighting fixture and provide new LED linear lighting fixtures in each staircase. Quantity and location of new fixture shall guarantee min 5 foot candle of illumination at the floor level (Approximately 12 fixtures per staircase)
  - Replace existing exist signs with new LED exit signs (Chicago approved). Re-connect to existing emergency circuit. New exit sings shall be equipped with battery packs (Approximately 30 fixtures per floor)
  - Provide new emergency battery packs (Chicago approved) in addition to emergency lighting fixtures throughout the building (Approximately 30 fixtures per floor)

Interior Lighting

Interior general lighting in the building is provided mostly by fluorescent linear fixtures. Condition of the fixture vary through

5. Electrical (cont.)

the floors. In general lighting fixture are in poor to fair condition and many fixture are not working (burnt out lamps). Lighting fixture installed in basement, 1st, and 2nd are in better condition but lighting control don't meet new energy code (no occupancy sensors). Some of fixtures located in 4th, 5th, and 5th most likely were exposed to water from roof leaks. These are OSHA minimum illumination standards for areas that was observed in the building. (fig 5.9 - 5.15)

- Warehouse/Storage 10-20 ft-c (approximately 80% of the building)
- Loading areas 30-40 ft-c (approximately 5% of the building)
- Offices 50 ft-c (approximately 10% of the building)
- Corridors 20 ft-c (approximately 5% of the building)
- Tunnel 5 ft-c
- Mechanical spaces 20-30 ft-c

Fig 5.9 - Typical light fixtures in Basement

Fig 5.10 - Typical light fixture on first floor

Fig 5.11 - Typical light fixture on second floor

Fig 5.12 -Typical light fixtures on third floor

Fig 5.13 - Typical light fixtures on fourth floor

Fig 5.14 - Typical light fixtures on fifth floor

Fig 5.15 - Typical light fixtures on sixth floor

5. Electrical (cont.)

Interior Lighting Scope of Work Recommendations:

Due to different condition of exiting lighting fixtures on each floor it's recommended as follow:

- Basement –
  - Option 1: Replace existing lighting fixture with new 4' LED linear and provide new controls to meet 2018 IECC. (Approximately 1000 new fixture on this floor)
  - Option 2: Re-lamp and clean existing lighting fixtures. Provide new occupancy sensors to control lighting in the area.
- 1st Floor –
  - Option 1: Replace existing lighting fixture with new 4' LED linear and provide new controls to meet 2018 IECC. (Approximately 1000 new fixture on this floor)
  - Option 2: Re-lamp and clean existing lighting fixtures. Provide new occupancy sensors to control lighting in the area.
- 2nd Floor –
  - Option 1: Replace existing lighting fixture with new 4' LED linear and provide new controls to meet 2018 IECC. (Approximately 1000 new fixture on this floor)
  - Option 2: Re-lamp and clean existing lighting fixtures. Provide new occupancy sensors to control lighting in the area.
- 3rd Floor – Lighting fixture on this floor are in very poor condition
  - Provide new 4' LED linear and provide new controls to meet 2018 IECC. (Approximately 1000 new fixture on this floor)
- 4th Floor – Some of exiting lighting fixtures might be damaged by water on this floor
  - Replace exiting lighting fixture with new 4' LED linear and provide new controls to meet 2018 IECC. (Approximately 1000 new fixture on this floor)
- 5th Floor – Some of exiting lighting fixtures might be damaged by water on this floor
  - Replace exiting lighting fixture with new 4' LED linear and provide new controls to meet 2018 IECC. (Approximately 1000 new fixture on this floor)
- 6th Floor – Some of exiting lighting fixtures might be damaged by water on this floor
  - Replace exiting lighting fixture with new 4' LED linear and provide new controls to meet 2018 IECC. (Approximately 1000 new fixture on this floor)

Exterior Lighting

The building perimeter and adjacent parking lot are lid by exterior lighting fixtures located on the roof of the building and on the wall at first floor level. Fixtures are in poor condition and approximately half of them are not working. (fig 5.16) Lighting fixture serving loading area are in good condition.

Exterior Lighting Scope of Work Recommendations:

- Replace existing roof mounted lighting fixture with new LED fixture and provide new control to meet 2018 IECC. (Approximately 10 fixtures)
- Replace existing wall mounted lighting fixture with new LED fixture and provide new control to meet 2018 IECC. (Approximately 8 fixtures)

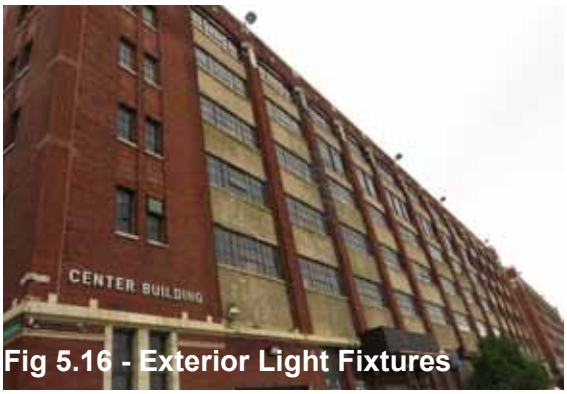


Fig 5.16 - Exterior Light Fixtures

5. Electrical (cont.)

Fire Alarm System

There is no fire alarm system installed in the building.

Code Requirements:

- 14X-5-504.6 Fire alarm systems.
  - Provide complete fire alarm system including conduit and wiring for new fire alarm devices. System shall be provided per local code and Chicago high rise requirements. Provide fire alarm monitoring points and associated devices for sprinkler switches, fire pump, elevator shaft, elevator control, etc.
- 14X-5-504.7 Voice communication systems.
- 14X-5-504.7.1 - Provide selective one-way voice communication system that allows communication from the fire command center to the following areas:
  1. Elevators.
  2. Elevator lobbies.
  3. Exit stairways, with at least one speaker on every fifth floor.
  4. Office areas exceeding 5,000 square feet (465 m2).
  5. In corridors at intervals not to exceed 75 feet (22.9 m).
  6. At doors to exit stairway enclosures.
- 14X-5-504.7.2 – Provide two-way voice communication system that allows two-way voice communication between the fire command center and stations located in every exit stairway at least every fifth floor.

6. Plumbing

Domestic Water Service

1819 W Pershing is currently a partially occupied property, with domestic water service cut off to floor 6. The domestic water is provided from the 1869 W Pershing building basement from a combined 12" service. A 4" domestic water feed provides water to each of the 3 connecting buildings. (fig 6.1) A triplex domestic water booster pump, also located at the 1869 building, was reported to provide adequate pressure and flow to all buildings (fig 6.2). Domestic water is supplied to each of the 6 stories, across all buildings, through the connecting walkways at floors 2, 3 and 6. The "cut off" point or valved off point to floor 6 was not observed but was confirmed disconnected by facility staff.

Fig 6.1 - Domestic water service and meter

Fig 6.2 - Domestic water booster pumps

Toilet Rooms

Toilet rooms are located on all floors but active only on floors 4 (1 active), 2 (2 active) and floor 1 (1 active). Not all Toilet rooms were observed due to debris and inaccessibility. Toilet rooms on the built-out floors, 5 and 6, were observed to have extreme damage to the ceilings and floors and are debris covered. (fig 6.3 & 6.5) The fixtures, while outdated, were observed to be in decent condition. The toilet rooms have sustained heavy damage due to infiltrating water and present significant environmental concerns. Toilet rooms on floors 1-4, where accessible, were observed to be dated but for the most part, functional. (fig 6.4 & 6.6)

6. Plumbing (cont.)

Code compliance:

- 18-29-403 Plumbing fixtures shall be provided for each occupancy and use in the minimum number shown in Table 18-29-403.1. Occupancies and uses not shown in Table 18-29-403.1 shall be considered individually by the building commissioner. Occupancies and the number of persons (for various occupancies and uses) shall be as determined by Chapter 13-56. Provide plumbing fixtures as required to meet CBC section 18-29-403.

Recommendations:

- Renovate each, a Men's and Women's Toilet room on floors 1, 3 and 5.
- Demolish all existing toilet fixtures at each Toilet room to be renovated. Demolish all carriers, trim and accessories.
- Replace all existing domestic water service main piping to renovated toilet rooms. Pipes may be fed from vertical risers. As it is unclear as to the locations of the water mains (no existing as built drawings available, not observed in field) the recommendation is to replace back to the main supplies to the 1819 property at or near the point of entry to the building. Insulate all new piping.
- Replace domestic water piping in chases from overhead/below tees or vertical riser. Insulate all new piping.
- Replace all sanitary waste and vent in chase to waste drops and vent tees at main.
- Replace all fixtures and provide as required to meet minimum code standards per section 403. Provide manual controls on all faucets and flushometers. Maximum flow rates as follow: (1.6GPF – water closets, 0.125GPF – urinals, 0.5GPM – lavatories). Insulate all new water piping to existing and provide shut-off ball valves at new domestic water drops in chase. Provide access panel.
- Rod floor drains to nearest cleanout. Replace strainers.
- Existing functional Toilet rooms on floors 2 and 4 to remain unrenovated but to remain active.

Fig 6.3 - Example Toilet Room Floors 5-6

Fig 6.4 - Example toilet room floor 1-4

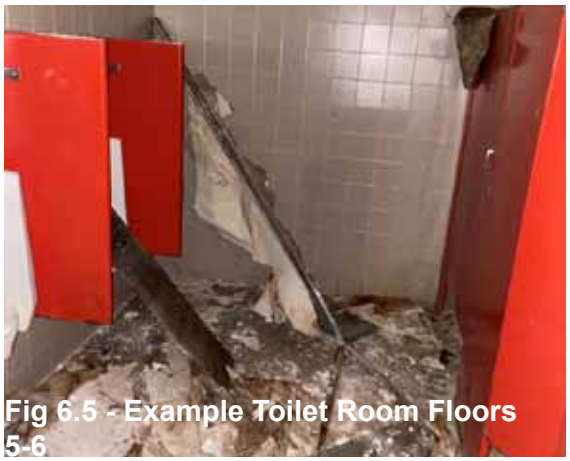


Fig 6.5 - Example Toilet Room Floors 5-6

Fig 6.6 - Example toilet room floors 1-4

6. Plumbing (cont.)

Domestic Water Piping

Domestic water piping was observed to the extent feasible when exposed. Only a small sample was viewed. No official determination can be made to the overall condition. Most of the piping is believed to be original steel with minor sections replaced with copper.

Code compliance

- 18-29-605.26 Unused sections of water supply piping systems (or so called, dead-ends) where city water will become stagnant are prohibited other than fire protection systems. All domestic water pipes (hot and cold on all floors) supplying the 1769 building must be brought back to a point of service where no dead ends will occur. Piping must be capped or valved off.

Recommendations

- Replace existing domestic water piping serving toilet rooms to be renovated within plumbing wall or chase from main to fixtures. Replace all domestic water main piping feeding toilet rooms back to the main supplies to the 1819 property at or near the point of entry to the building. Insulate all new piping.

Domestic Hot Water Plant

Not observed as part of the initial walkthrough. The domestic hot water plant is located in the 1869 building and services all 3 buildings. Hot water is supplied to each of the 6 stories, across all buildings, through the connecting walkways at floors 2, 3 and 6. The domestic hot water return line is located in the ceiling of the lower level. Hot water has been cut off to the 5th and 6th floor of the 1819 building.

Sanitary Wast and Vent

Waste and vent piping was observed to the extent feasible when exposed. Only a small sample was viewed. No official determination can be made to the overall condition. Waste and vent observed at the basement level ceiling appeared to be in poor condition. The existing ejector pump was observed to be in new to newer condition. (fig 6.7) The pit was observed to be in poor condition with a plate section missing. All electrical connections appear to be connected. Functionality was not confirmed but was reported to be working.

Recommendations

- Test pump and high-water alarm/switch for functionality. Seal open section of pit with new steel plate
- Waste and vent piping serving toilet rooms to be renovated to be replaced down to basement level ceiling for waste and up to vent terminals at roof. Replace only where serving toilet rooms to be renovated.

Fig 6.7 - Duplex sewage ejector

6. Plumbing (cont.)

Storm Piping

Storm piping was observed to the extent feasible when exposed. Significant water infiltration on the upper floors was observed resulting in damage and environmental concerns. Although not observed, it is believed that the roof and possibly the roof drain piping is causing the water infiltration. Per existing As-Built drawings the storm piping from the roof drains travels vertically to the basement level. Horizontal runs only occur at the lower level.

Recommendations

- Rod and televise existing storm leaders from roof drains to lower-level wyes. Provide Owner and A/E representatives with a Plumber's report with all findings, obstructions and damage. Provide 1" thick insulation with jacket on all horizontal storm runs to foundation wall.

Pumbing Fixtures

Plumbing fixtures were observed to the extent feasible as not all toilet rooms were accessible. The fixtures observed were generally in decent (functional) to poor condition in active toilet rooms. A sampling of fixtures tested were found to be functional in the toilet rooms that were active. Metering faucets at a sampling of the lavatories within toilet rooms had very low flow.

Plumbing fixtures that were observed in the non-occupied, built out floors, were observed to be in decent condition despite the damage and environmental concerns to the toilet room itself. The fixtures are not active and cannot be determined to be functional.

Recommendations

- See toilet room section above within this report. Any fixture outside of a toilet room that is deemed to be a necessary outlet for occupancy, ie. Mop basin, drinking fountain, hose bibb, etc. should be tested for functionality and replaced as required.

7. Fire Protection

1819 W Pershing is currently a partially occupied property with fire protection services cut off to all sprinklers and hose valves. Per staff, the fire protection service has been disconnected and drained for roughly 3 years. The sprinkler and hose valve fire protection water service is served from the 1869 W Pershing building basement Pump Room from a combined 12" service. A 12" fire protection main provides sprinkler / standpipe water to each of the 3 connecting buildings. An electric drive, split case fire pump (1000GPM, 75HP, 208V), also located at the 1869 building, is active and functional and was reported to provide adequate pressure and flow to all buildings(fig 7.1). There is a decommissioned natural gas fire pump also located in the Pump Room (fig 7.2). Fire protection is supplied to each building, through the connecting Lower-level utility tunnel through a 10" service main. The "cut off" point to 1819 was observed disconnected within the utility tunnel with a capped end at the demarcation point between the 1869 and 1819 property.

The fire alarm annunciator panel is located at the Northwest entrance to the 1869 building. The only points within the panel alarming to 1819 are on the 10" main feeding the 1819 building. No flow alarms are present for the existing sprinkler system at the 1819 building.

Fig 7.1 - Electric drive fire pump

7. Fire Protection (cont.)

Fire Protection Piping

Fire protection mains were observed to be in generally poor condition. Fire protection branch piping was observed to be in poor condition and undersized per current code requirements. ¾" branch piping is not compliant with current codes. The 1819 building has 6 total sprinkler risers that extend up from the lower-level basement ceiling. Each riser splits on all floors above into two zones for a total of 12 sprinkler zones per floor. No water flow alarms exist to the main fire alarm panel at the 1869 facility entrance. (fig 7.4& 7.5)

Fig 7.2 - Disel driven fire pump (deco-missioned)

Fig 7.3 - Fire protection backflow preventer

Recommendations:

- Reference CBC sections 15-16-360 and 15-16-370 and NFPA 13.
- All existing fire protection mains, risers and branch piping to be removed. Remove all hangers and fill in existing floor cores. Provide new 10" main from capped connection in connecting utility tunnel. Provide new 6" Combined sprinkler standpipe risers (2qty) and new 4" standpipe risers (2qty) at approved stairwells. Locations of risers must be located as to allow for CBC and fire department distances for hose lengths and spray distance. Provide new sprinkler branch piping, sized per CBC section 15-16-370 to support new wet-pipe sprinkler system. Recommendation pending review by the Fire Prevention Bureau.

Spinklers

Non-active sprinklers throughout were observed to be in poor condition. Sprinklers are provided though out the entire building on all floors. Upright heads provided at all non-finished ceiling areas. Pendant heads provided at finished ceiling locations. The majority of the sprinklers in the non-built out floors appear to be original. The sprinklers installed at the built-out floors (5-6) were installed in the 1980's. It is unclear as to the functionality of the sprinklers but can be determined the entire system on floors basement through 4th floor should be replaced.

Fig 7.4 - Typical zone valve split on upper floor

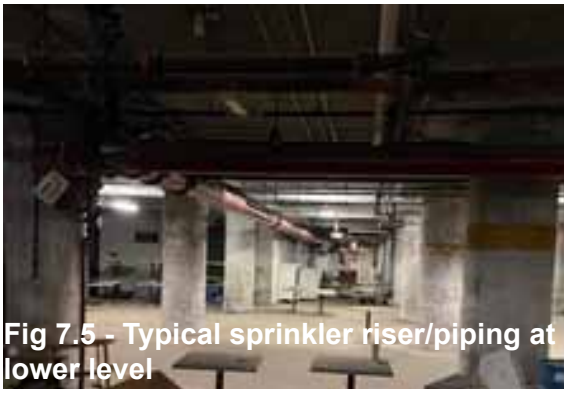


Fig 7.5 - Typical sprinkler riser/piping at lower level

Recommendations:

- Reference CBC sections 15-16-360 and 15-16-370 and NFPA 13.
- Provide new wet pipe sprinkle system on floors 5-6. Existing sprinklers can be reused pending the following: Any sprinkler that shows signs of any of the following shall be replaced: leakage, corrosion, physical damage, loss of fluid, debris loaded, and painted. Any sprinkler older than 50 years shall be replaced. Any sprinkler less than 50 years old shall be tested per NFPA 25. Test 4 sprinklers or 1 percent of sample area, whichever is greater. If one sprinkler fails, then all sprinklers in sample area must be

7. Fire Protection (cont.)

replaced. All new branch piping required.

- Provide new wet pipe sprinkler system on floors B-4, Replace all sprinkler heads through floors Basement – 4th. Provide upright heads at all non-finished ceiling areas. Provide pendant heads at all finished ceiling areas. Sprinkler heads to be provided as required per the hazard classification of the space.
- Provide 2" drain at each riser location. Drain outlet locations to be located to daylight or the nearest available waste outlet. New open site drains will be required at the basement level.
- Recommendation pending review by the Fire Prevention Bureau.

Hose Valves

Fire protection 1-1/2" hose valves are located though-out the building, on all floors, at or near stairwells and at the core interior. The valve cabinets appear to be fed from a 2" riser. Most cabinets are missing hoses and fire extinguishers. (fig 7.6-7.7)

Fig 7.6 - Fire hose cabinet at lower level

Fig 7.7 - Typical fire hose cabinet on upper floor

Recommendations

- Remove all existing 1-1/2" hose valve cabinets. Remove existing risers and fill in cores. Recommendation pending review by the Fire Prevention Bureau.

Standpipes

Standpipes are not installed. The existing building is currently protected (when active) by a wet pipe sprinkler system and 1-1/2" hose valves.

Recommendations:

- Reference CBC section: 15-16-710 STANDARD INSIDE STANDPIPE SYSTEMS.
  - Provide 10" fire protection main from capped service main in tunnel. Route new piping to new standpipe/ combined risers in basement ceiling.
  - Provide (2) 6" combined sprinkler/standpipe risers and (2) 4" standpipe risers at approved stairwell locations. New cores required. Locations of risers must be located as to allow for CBC and fire department distances for hose lengths and spray distance.
  - Provide two sprinkler zones per floor (Bsmt-6), one from each combined riser. Provide connection points to new fire alarm panel at 1819 property from each zone valve.
  - Provide 2-1/2" valves on each floor for fire department at each standpipe/combined standpipe location.

7. Fire Protection (cont.)

- Siamese connections (15-16-1020): (2) Siamese connections required. Locations pending Fire Prevention Bureau review.
- Fire Pump (15-16-780): The existing fire pump is adequate to provide full service to the new fire protection system. The existing fire pump is an electric drive, split case type, rated at 1000GPM, 75HP, 208V.
- Recommendation pending review by the Fire Prevention Bureau.

Dry Valve

The dry valve that serves the exterior sprinkler heads at the loading dock is not functional. It was not officially confirmed by staff if valve is damaged or has been de-activated.


Fig 7.8 - Loading dock dry valve

Recommendations

- The existing valve and compressor shall be tested for functionality and replaced if required. Exterior loading dock heads to be replaced with new dry heads with protective cage covers. Recommendation pending review by the Fire Prevention Bureau.

PERSHING ROAD BUILDING

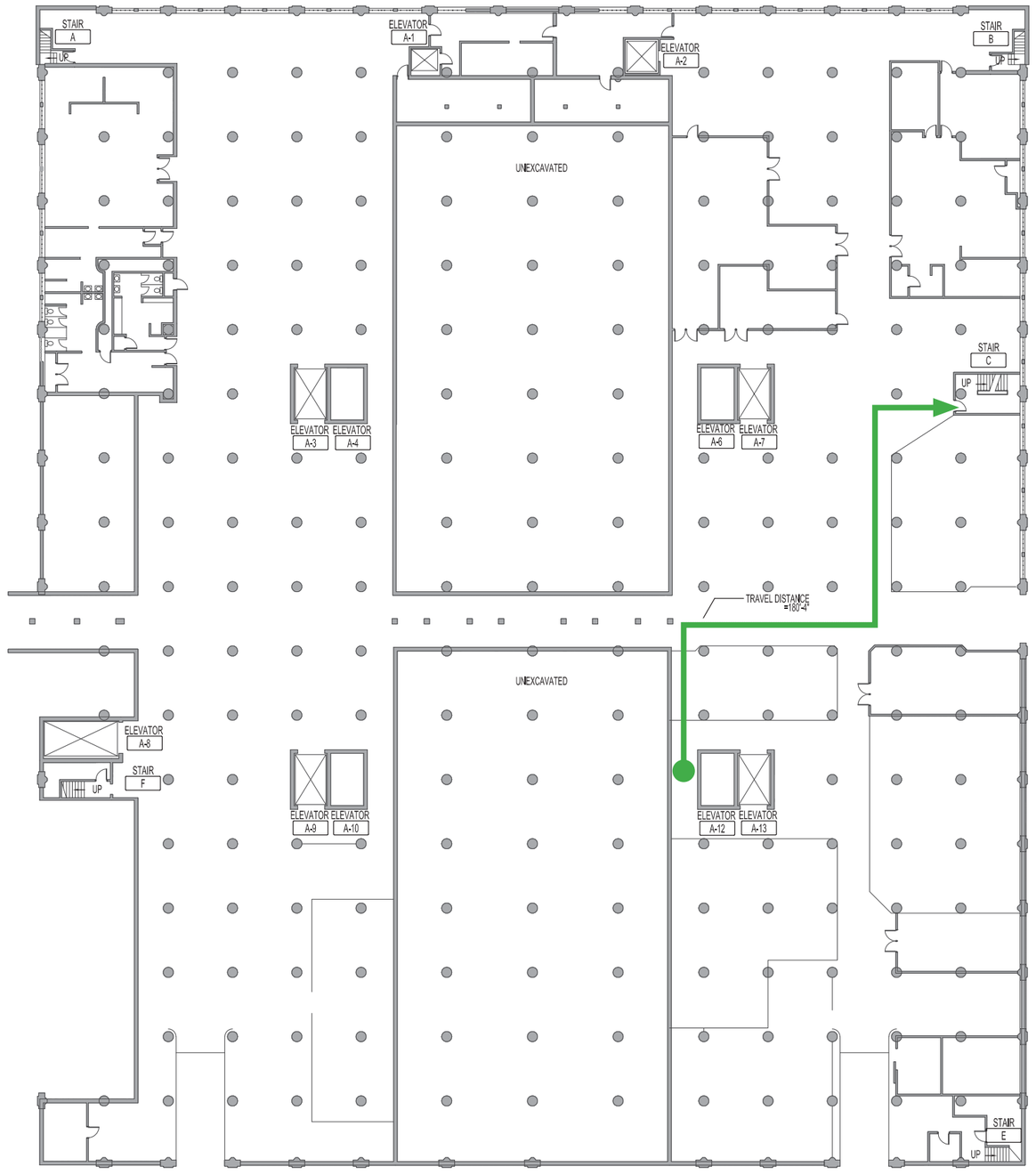
1819 W Pershing Ave, Chicago, IL 60609

Appendix A
Floor Plans

HARDING MODE JOINT VENTURE

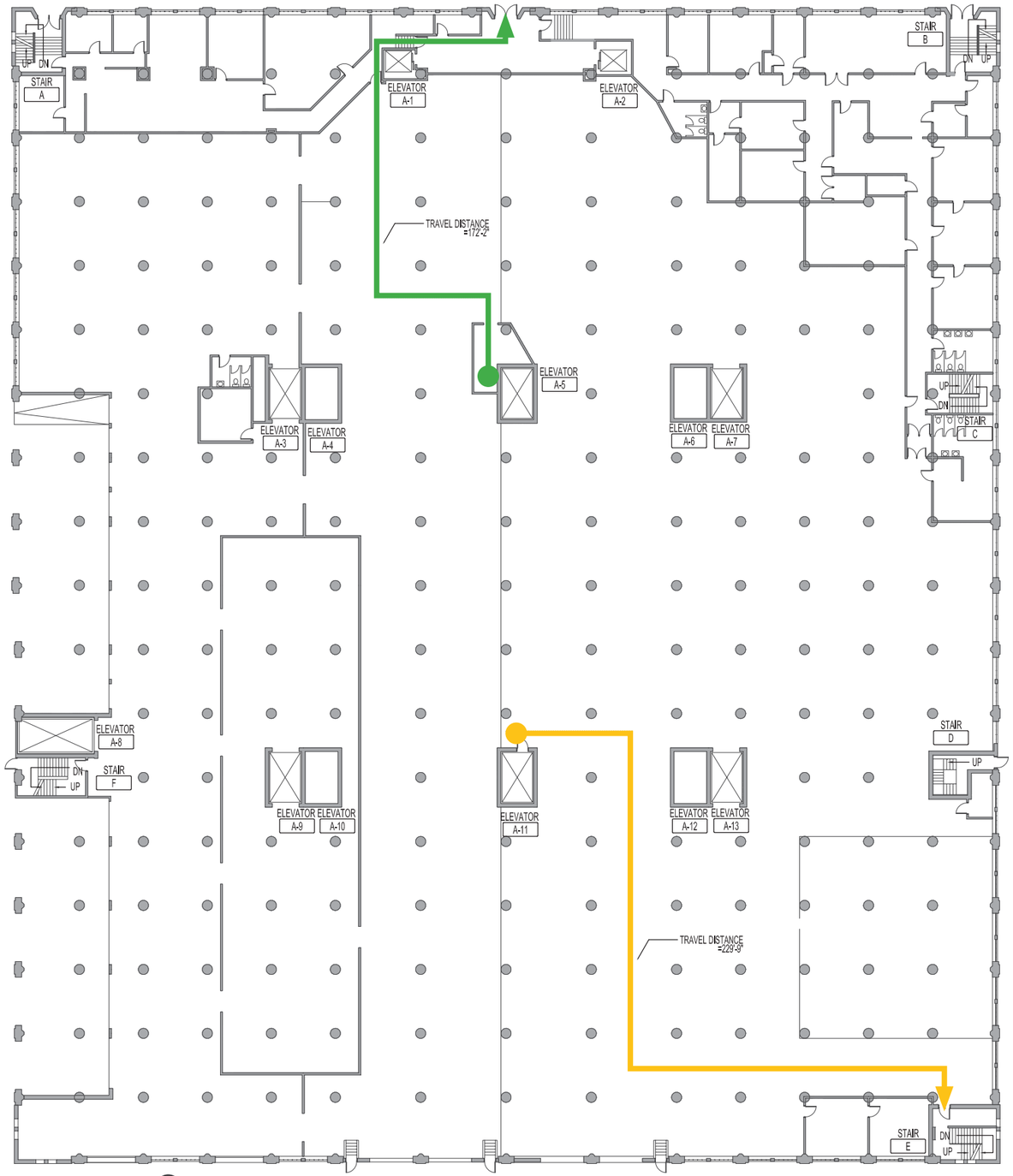
Exiting Diagrams

Exiting Diagrams for 1819 indicate the maximum travel distance to exits on each floor areas. Per the means of aggress requirements of 2019 Title 14B, maximum travels distances for S-2 (Storage) occupancies are 200 ft for unsprinkled buildings and 250 ft for sprinkled buildings. At certain locations within the existing floor plates there are distances that currently exceed 200’ at all floor levels and 250’ at some locations. These non-compliant exit distances may be modified with the addition of openings in walls, which may be addressed in programming and review of future work scope.

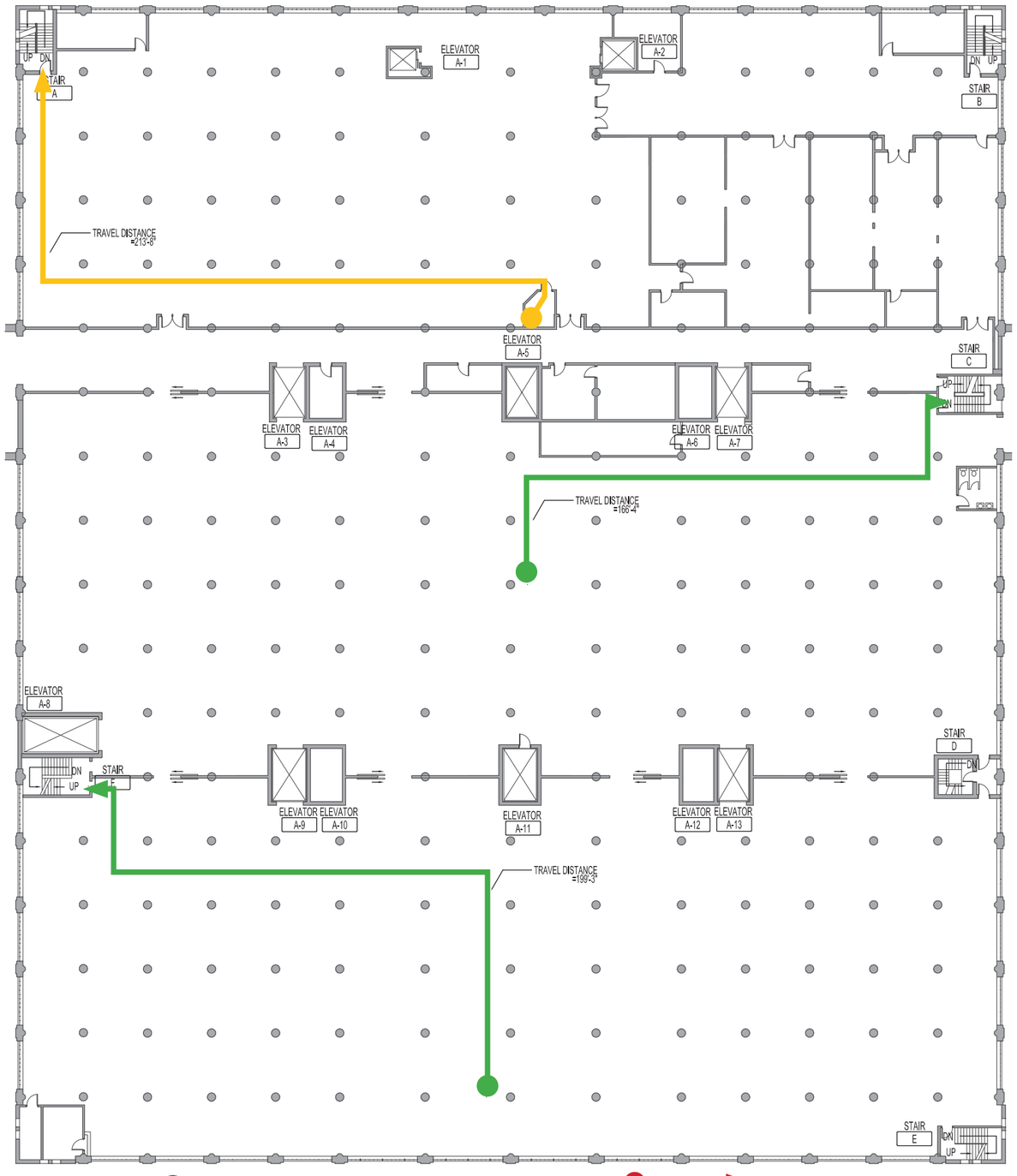


Basement Floor Plan

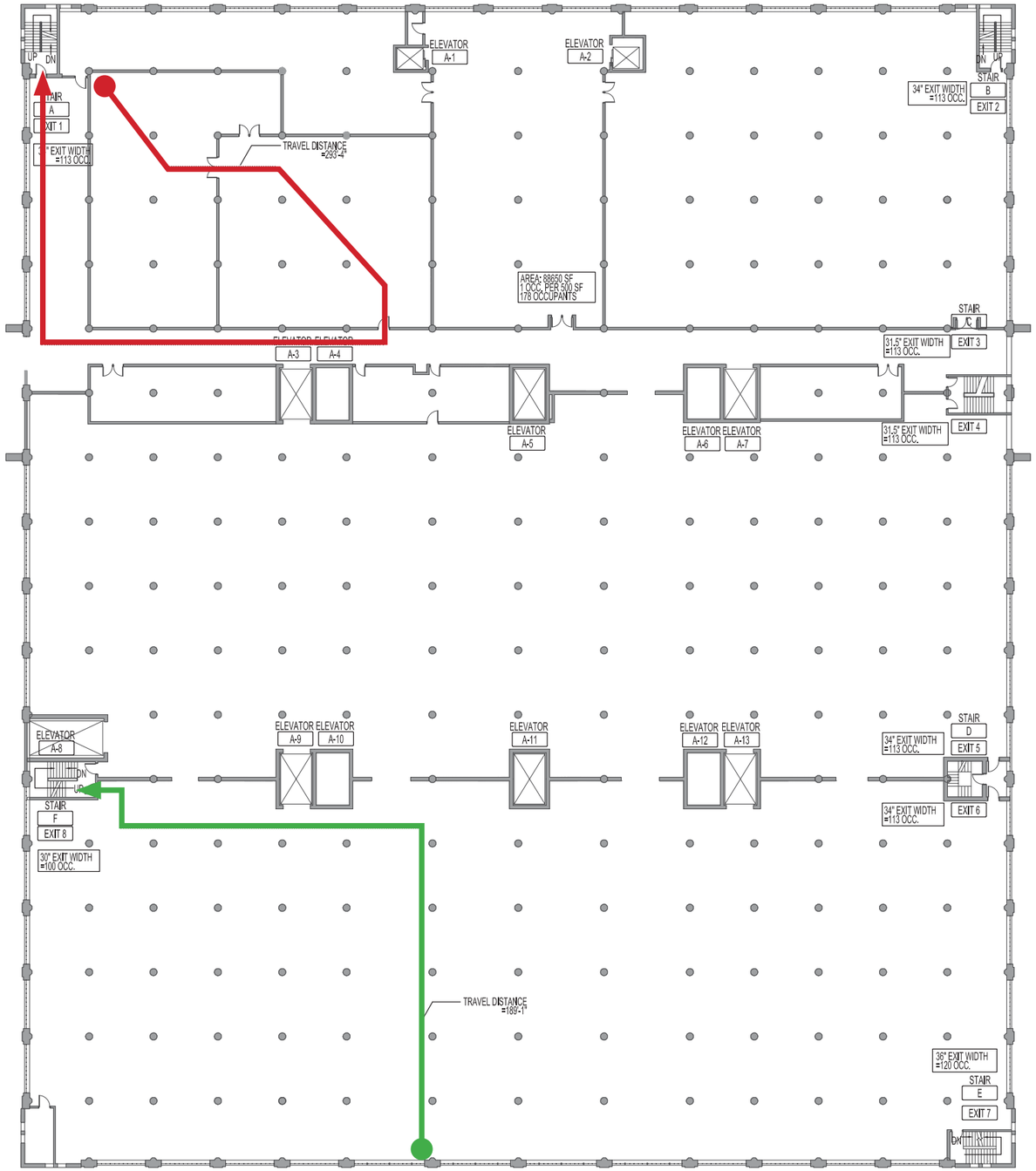
More than 250 feet Travel Distance
More than 200 feet Travel Distance
Less than 200 feet Travel Distance



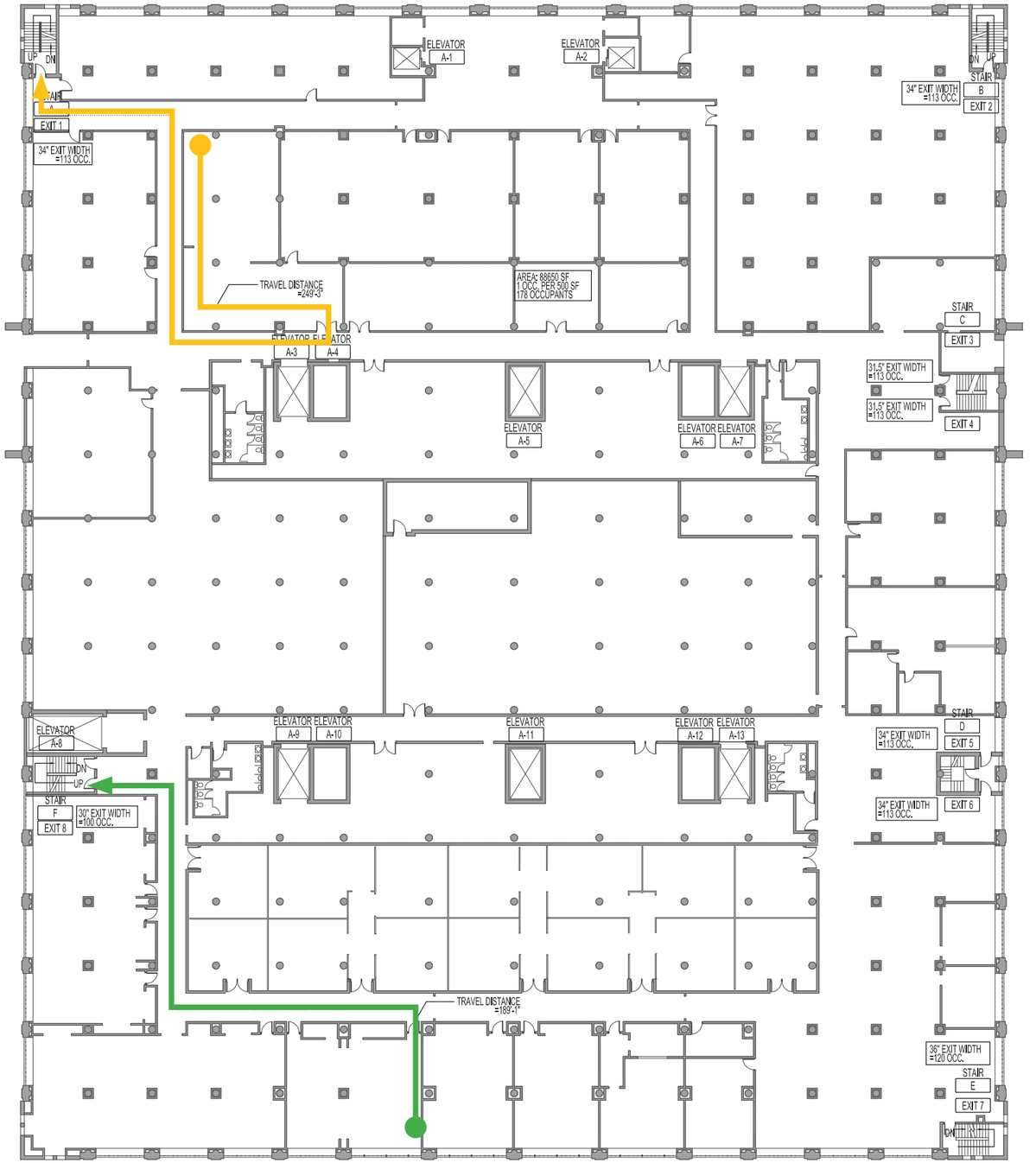
First Floor Plan



Second Floor Plan

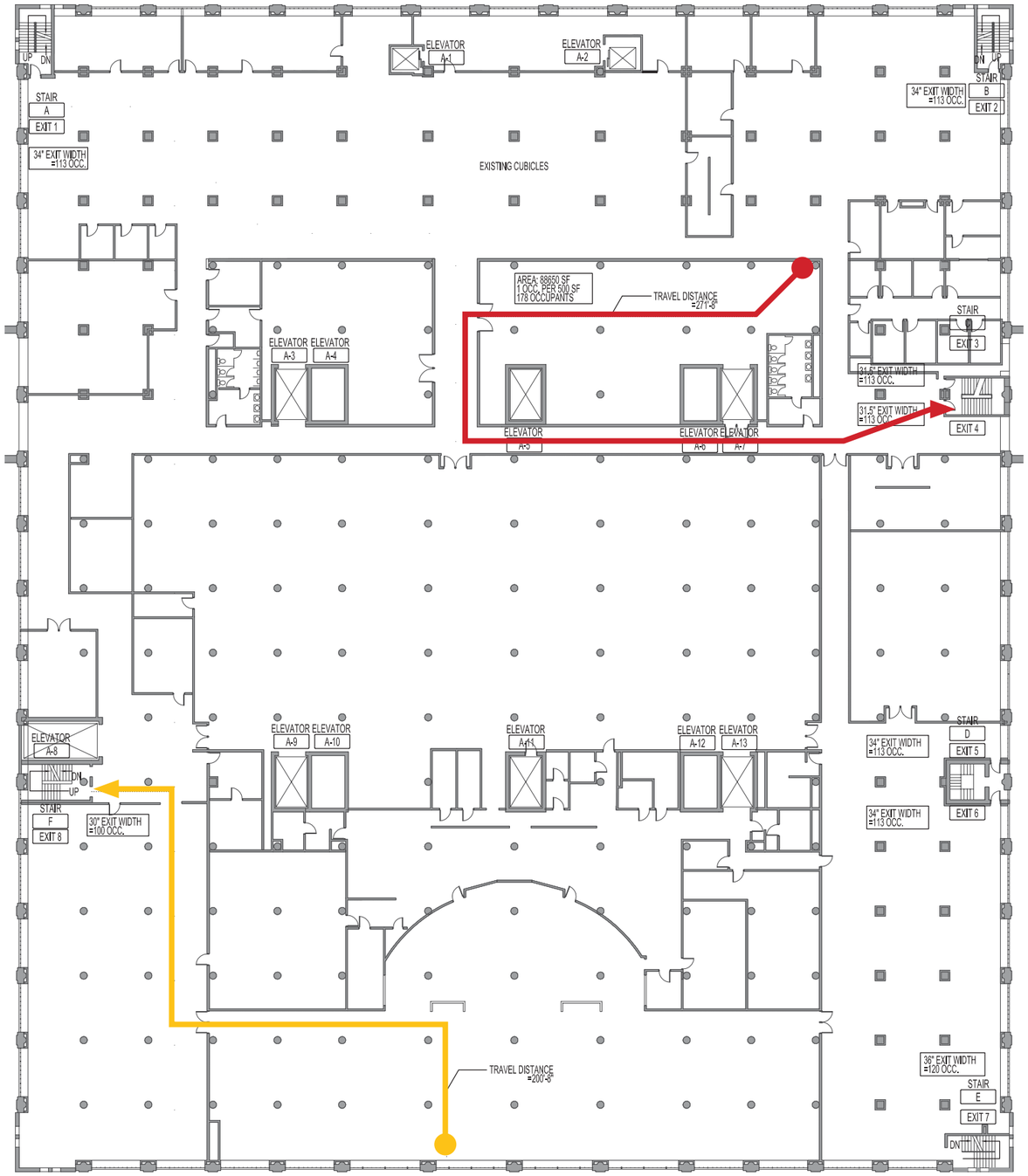


Third Floor Plan

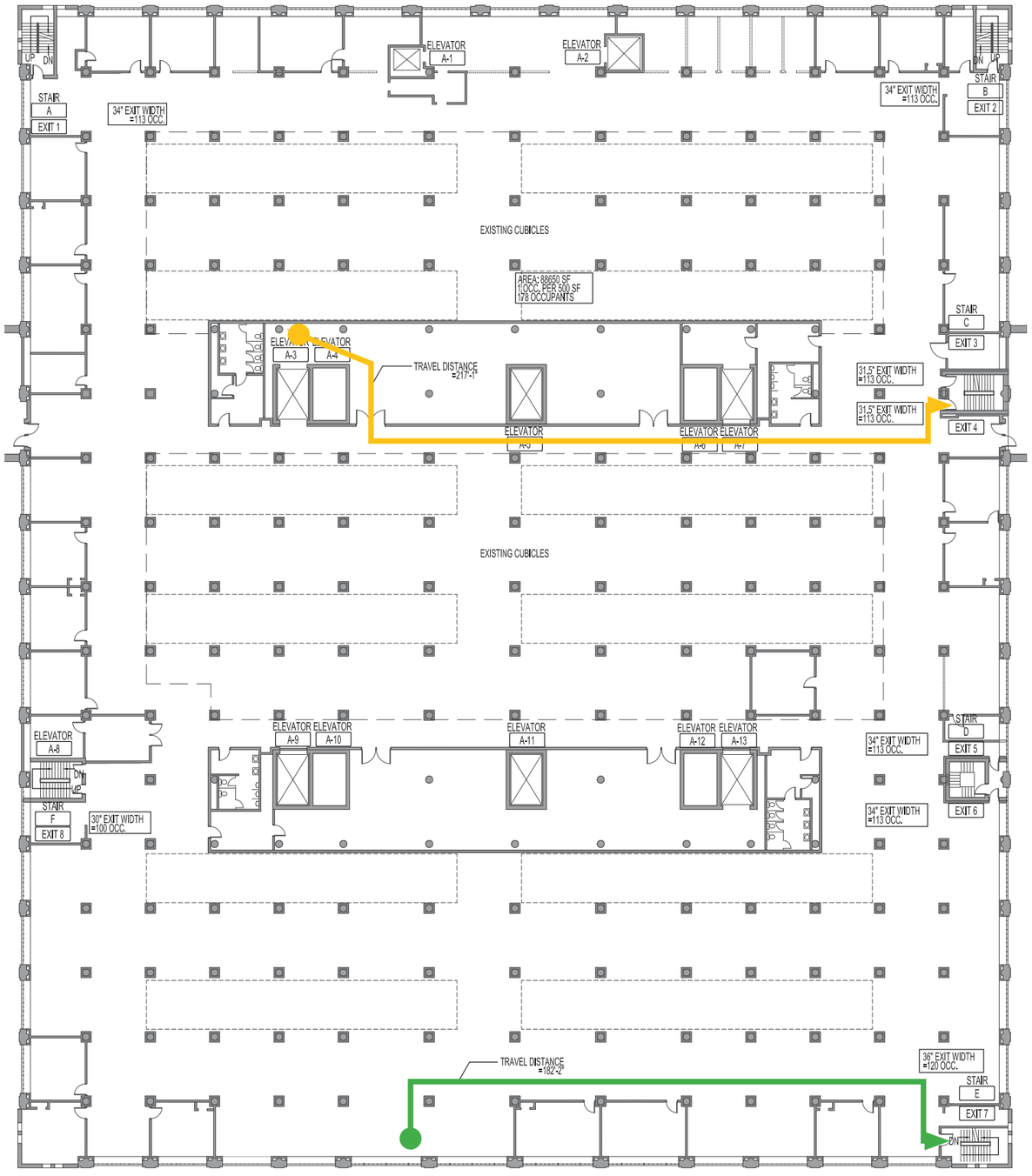


Fourth Floor Plan

More than 250 feet Travel Distance
More than 200 feet Travel Distance
Less than 200 feet Travel Distance



Fifth Floor Plan



Sixth Floor Plan

More than 250 feet Travel Distance
More than 200 feet Travel Distance
Less than 200 feet Travel Distance

PERSHING ROAD BUILDING

1819 W Pershing Ave, Chicago, IL 60609

Appendix B

Structural Assessment Report

HARDING MODE JOINT VENTURE

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60606
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STRUCTURAL ASSESSMENT REPORT

Date: **July 12, 2021**
Date of visit: **June 25 & June 28, 2021**

Project: **EPR Pershing Structural Assessment**
1769, 1819, & 1869 W. Pershing
Chicago, Illinois

Weather: **Rain, 78º F (June 25); Partly Cloudy, 75º F (June 28)**

Participants: **C. Perrin**
M. Fagerson
M. McClendon

Distribution: **FILE**
Paul Harding
C. Anderson

Accompanied by Paul Harding of Harding Partners and the building engineer of EPR Pershing, we observed the general structural conditions of the EPR Pershing buildings at 1769, 1819, and 1869 W. Pershing in Chicago, IL. We performed a walk-through of the three buildings, that included the 6 floors and basement of each building, the 2 interconnecting bridges, and 3 tunnels, to assess visible structural issues. The building envelope, including the exterior façade and roofing, were not assessed by cea&a. We previously issued a report on June 28, 2021, that discussed the condition of the 3 tunnels in the basement that required immediate attention. This report will discuss the condition of the remainder of the building.

The three buildings were originally constructed in 1917. The existing structure of each building consists of concrete two-way flat slabs, spanning between concrete columns with capitals and drop panels. Given the relatively close column spacing of 18'-0" on center and the presence of drop panels, the concrete structure was likely designed for heavy loads, such as required for storage or manufacturing. The interconnecting bridge buildings are separated from each main building with expansion joints on each end.

1869 W. Pershing (West Building)

The building structure was generally in good condition. On Level 6, we observed a hole in the roof concrete slab, where the concrete had been removed, but the rebar was still intact and visible. We also observed a concrete beam above the Elevator B-6 opening that appeared to have been cut. Some of the bottom bar reinforcement and stirrups in the cut beam were visible. Generally, on Level 6, we observed several locations of concrete spalling and exposed, rusted rebar. Typically, when reinforcing is exposed to water and rusts it expands. The forces that result from the rusting cracks and eventually spalls the concrete cover. The majority of the locations of rusted rebar and spalled concrete were around skylights. It appeared that there had been leaks in the past, which caused the rebar to rust and concrete to spall. At the time of our visit, we did not observe any leaks, possibly the roof and skylights had been repaired and the water damage rusting and spalling occurred some time ago.

Cut Slab Near Column M.2

Cut Beam at Elevator B6

Exposed Rebar around Skylight

Exposed Rebar around Skylight

Levels 1 to 5 of 1869 W. Pershing were in relatively good condition. There were many existing cores through the concrete structure for plumbing and other utilities. Some cores occurred through column capitals. The cores reduce the strength of the concrete slabs. Cores through the column capitals and drop panels reduces the shear and flexural strength of the slab/column connection. We observed several locations where there were cracks in the floors. We did not see these cracks telegraphing through to the underside of slab in the locations we checked. There are many causes for concrete surface cracks, such as initial shrinkage cracks that enlarged over time due to overloading of the slab by heavy equipment, or long-term deflection of the slab due to creep. The surface damage cracks may also have occurred from the forklifts and equipment that were driven over the slab.

Pipes Through Column Capital

Plumbing Cores Through Concrete Slab

Floor Cracks at Level 5

Floor Cracks at Level 5

<u>1819 W. Pershing (Center Building)</u>

At Level 6, there was extensive visible damage due to water infiltration. There was visible water leaking through the roof structure, and there was mold and water damage throughout the floor. The majority of the substantial leaks were occurring at the skylights. There were many areas where the concrete structure around the skylight was covered with mold, and there was visible rusted rebar. The majority of the structure around the skylights will need to be repaired or replaced. There were other leaks in the roof away from the skylights that could result in damage to the reinforcing and concrete. There were

approximately 10 locations of leaks and possible water damage in other locations away from the skylights.

Water Damage at Skylights

Water Damage at Skylights

On Levels 3 to 5 of 1819 W. Pershing, we observed areas of water damage, spalling concrete, and rusted rebar that corresponded with areas of leaking water from above. It appeared that the water infiltrated the slab and caused the rebar to rust. The rusted rebar spalled the concrete and created a crack in the slab. The water then filtered through the cracks and pond on the level below creating similar damage on multiple levels. The extent of the water damage diminished as it progressed down the building to lower floors. There were some areas that were not visible at the time of our visit, because the structure was covered with drop ceiling tiles.

There were also several locations where we observed a continuous crack at the underside of the slab at the midspan of a bay. At the upper levels, water was infiltrating these continuous cracks and leaking down to the floor below. At the lower levels, the crack was visible, but there was no water leaking through. A possible cause of the continuous cracks is that there are no intermediate building expansion joints in the large floor plates. When the building expands and contracts, it creates internal stresses within the slab, and those stresses are relieved by developing cracks. Another possible cause of the cracks in the bottom of the slabs is that the slab is under-reinforced for the span conditions. This condition would be exasperated by the thermal expansion and contraction noted above.

At the ground floor and 2nd floor, the condition of the structure was generally good. We observed thin continuous cracks on the underside of the floor slab in the midspan of several bays. The cracks were similar to those that had been observed on the upper floors, but there was no water infiltrating these cracks at the time of our visit.

Level 5 Water Damage

Water Damage at Column

Level 5 Water Damage

Continuous Crack at Slab Underside

Also, at 1819 W. Pershing, we observed the condition of the metal stair in the southeast corner. Based on the sound of the metal when struck with a hammer, we believe that the stair may be made of cast iron. The metal should be tested, as required, to verify this assumption. It should be noted that after testing the metal, if it is cast iron, cast iron is difficult to modify. If welding or cutting of the stairs is anticipated to modify the stairs, special construction procedures and guidelines will need to be implemented. The stair appeared to be in fair condition, however there was some rust color on the metal, and there was visible water near the top of the stair.

At Level 3, in the interconnecting bridge building, we observed water dripping through the building expansion joints on each side. There was some deterioration of the structure due to water damage.

Water Damage at Expansion Joint between Main Building and Interconnecting Bridge

1769 W. Pershing (East Building)

There was widespread water damage to the roof slab of the 1769 W. Pershing building. There were active leaks at all skylight locations. At least 1/3 of the bays observed across the entire roof structure had some sort of active leak or visible corrosion. There were other areas of the roof that were not visible due to a dropped ceiling. There was extensive mold across the 6th floor, with moss and plants growing under the skylights where there was direct sunlight. Much of the carpeted floor was moist, so much of the concrete slab below is constantly being exposed to moisture.

Mold and Corrosion @ Skylight

Water Damage and Cracking in Roof Slab

Plant growth at skylight areas

Corrosion visible on underside of Roof slab

Corrosion visible on underside of Roof slab

Overall condition of all elements on Level 6

On Level 5, there were at least 10 locations observed throughout the building where there were active leaks with signs of concrete deterioration. Most of these were small cracks that ranged from within one bay to several bays in length. There was also a location where water was leaking through a column capital, indicating possible corrosion of reinforcing within the column. A good portion of the concrete structure on this level is concealed by dropped ceilings, but judging from locations of water leaks on the floors below, there could be up to 10 more locations where active leaks are occurring through the 6th floor slab. In addition to the cracks through the floor, there is also deterioration around the freight elevators, and in other locations where plumbing penetrates the floor structure.

Active leak through column capital

Corrosion of slab surrounding the freight elevator shaft

Cracking @ Water Infiltration in Floor Slab

Deterioration of spandrel beam on north side of building

Life forms growing on surface of 5th floor slab

On Level 4, there were 18 observed locations of concrete deterioration around cracks. More locations were observed on this level than on the upper levels because there were no dropped ceilings, so all concrete structure was visible for inspection. Most of these locations were discoloration or efflorescence, but at 4 of the locations there were active leaks. A good length of the spandrel beam at the north wall was deteriorated, and there was also some corrosion visible along the south wall, particularly at one of the columns.

Spalling at North Spandrel Beam

Deterioration of spandrel beam on north side of building

Crack running through multiple bays, with corrosion

At Level 3 of the 1769 W. Pershing building, the condition of the structure was generally good with a few isolated areas of water leaks located within the interior areas of the floor plan. There were several locations at the elevator doors that had visible water leaking. Additionally, there were large pieces of spalled concrete from the beam above the elevator opening. Based on the color of the concrete, it appeared that these beams had been patched at some time in the past. The patched concrete was spalling in large pieces, and were on the floor slab below the opening. This could have been attributed to the patches applied without wire or pins, for a positive mechanical connection to the original base concrete. This issue is recurring on the other levels of this building at the 4 interior freight elevator shafts.

Elevator 13 Concrete Beam Deterioration

Elevator 13 Spalled Concrete

Elevator 9 South Door

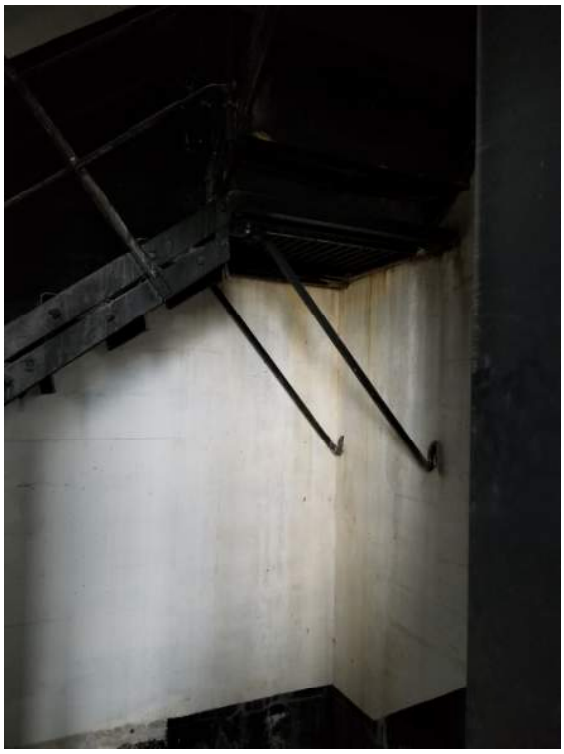
Elevator 9 North Door

At the levels below the 3rd floor, the deterioration was minor, mainly in the form of efflorescence at some of the cracks. There were very few locations of active leaking, except at the freight elevator shafts and some of the adjacent pipe penetrations.

Corrosion visible on underside of 3rd floor slab

Deteriorated beam at freight elevator, and corrosion in adjacent 3rd floor slab

We also observed the condition of a metal stair, possibly cast iron, in the 1769 W. Pershing building. This stair had more visible rust, including on the face of the stair shaft walls.



Rust from Metal Stair Structure

Recommendations

1869 W. Pershing (West Building)

This building structure is in good condition. Minor concrete repairs are recommended at the corroded areas around the skylights, and at the door of the freight elevator shaft. The openings in the slab should be patched with new concrete.

1819 W. Pershing (Center Building)

The roof needs to be replaced on this building as soon as possible to avoid any further water infiltration and damage to the structure. At the time of the roof replacement, all damage to the roof structure should also be repaired. All existing dropped ceilings and drywall finishes should be removed as soon as possible to expose all deteriorated areas of the roof slab. The slabs surrounding all cracked and corroded areas should be shored so the concrete around the corroded spots can be removed and the reinforcing bars can be inspected and replaced as required. After the roof is replaced, repairs should be made in a similar fashion to the floors below, where there is any sign of corrosion around cracks.

Areas A and B on the attached plan are where the worst deterioration is visible on the lower levels, so it is assumed that these would also be the worst areas of deterioration on the upper levels. We recommend that all dropped ceilings, drywall ceilings, carpet, and ducts be removed from areas A and B as soon as possible to allow for a more detailed visual inspection of those areas, to determine the extent of deterioration on the upper two levels.

We also recommend that all dropped ceilings, drywall ceilings, carpet, and ducts be removed from area C on the 5th and 6th floors so the remainder of the structure can be inspected. Partitions need to be removed, or the architect needs to provide a plan of existing partitions to assist in the locating of damaged areas. After this demolition is completed, we can provide a more detailed location of areas that may need to be shored temporarily so the floors below can remain occupied.

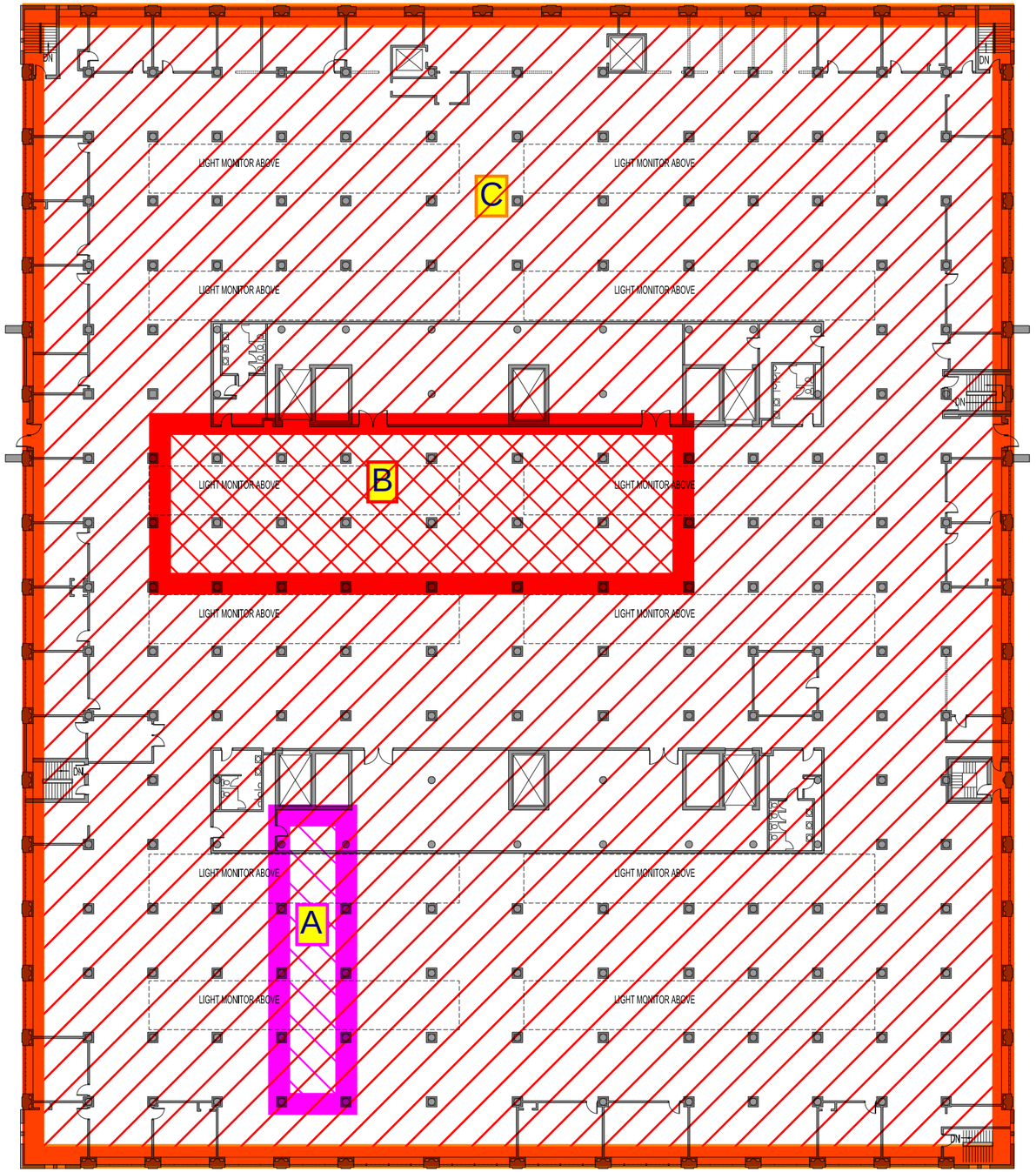
1769 W. Pershing (East Building)

The roof needs to be replaced on this building as soon as possible to avoid any further water infiltration and damage to the structure. More inspection will be required at this level, once all interior finishes and roofing is removed, to fully assess the condition of the roof structure. Due to the widespread water infiltration noted at this level, consideration should be given to completely removing the roof slab and replacing with new structure, or removing the uppermost level entirely and roofing the floor below. At the time of the roof replacement, all damage to the roof structure should also be repaired. The slabs surrounding all cracked and corroded areas should be shored, so the concrete around the corroded spots can be removed, and the reinforcing bars can be inspected and replaced as required. After the roof is replaced, repairs should be made in a similar fashion to the floors below where there are any signs of corrosion around cracks. Further inspection is required of the interior of the freight elevator shafts, where extensive water damage is likely.

The above constitutes our understanding of events observed and issues discussed. Any discrepancies should be immediately addressed, in writing, to the observers. If there are any questions or additional information required, please do not hesitate to contact us.

C. E. Anderson & Associates PC

Charles E. Anderson SE AIA
President



Sixth Floor Plan

RECOMMENDED AREAS FOR FURTHER INSPECTION OF THE STRUCTURE

General Notes

NOTE 1:

IT'S LIKELY THERE ARE MORE AREAS OF DETERIORATION ON THE 5TH AND 6TH FLOORS, BUT THE FULL EXTENT OF DETERIORATION WAS NOT VISIBLE DUE TO FINISHES THAT WERE OBSTRUCTING OUR VIEW. EXACT LOCATIONS OF WATER INFILTRATION COULD NOT BE DETERMINED DUE TO OBSTRUCTIONS AND PARTITIONS. PERFORM ONE OF THE TWO OPTIONS BELOW:

OPTION 1: ALL DROPPED CEILINGS, DRYWALL CEILINGS, CARPET, AND DUCTS NEED TO BE REMOVED FROM THE 5TH AND 6TH FLOORS SO THE REMAINDER OF THE STRUCTURE CAN BE INSPECTED. PARTITIONS NEED TO BE REMOVED, OR THE ARCHITECT NEEDS TO PROVIDE A PLAN OF EXISTING PARTITIONS TO ASSIST IN THE LOCATING OF DAMAGED AREAS. AFTER THIS DEMOLITION IS COMPLETED, WE CAN PROVIDE A MORE DETAILED LOCATION OF AREAS TO BE SHORED.

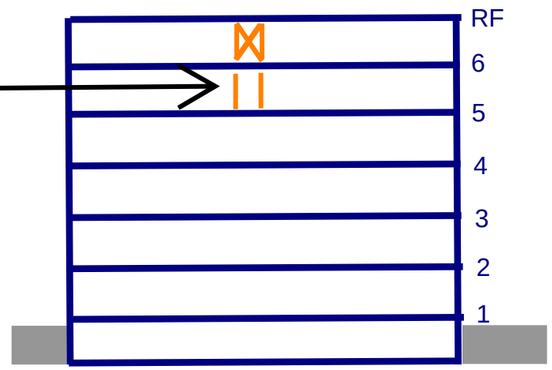
OPTION 2: SHORE THE ENTIRE 6TH FLOOR AND ROOF STRUCTURE AS A PRECAUTIONARY MEASURE.

NOTE 2:

EXTEND ALL SHORING AT LEAST TWO STORIES BELOW THE LOWEST LEVEL TO BE SHORED IN EACH LOCATION. SHORING IS TO BE DESIGNED BY THE SHORING CONTRACTOR'S STRUCTURAL ENGINEER.

Section

EXAMPLE: IF SHORING THE ROOF STRUCTURE, ADDITIONAL LEVEL OF SHORING REQ'D BELOW 6TH FLOOR TO DISTRIBUTE THE LOAD TO TWO FLOORS



Legend

A — HIGHEST PRIORITY, AREA OF WORST DETERIORATION. CLEAR OUT ALL FINISHES AND OBSTRUCTIONS ON THE 3RD, 4TH, 5TH, AND 6TH FLOORS AS SOON AS POSSIBLE, TO ALLOW FOR FURTHER INSPECTION OF THE STRUCTURE.

B — SECOND HIGHEST PRIORITY, AREA OF WORST DETERIORATION. CLEAR OUT ALL FINISHES AND OBSTRUCTIONS ON THE 4TH, 5TH, AND 6TH FLOORS AS SOON AS POSSIBLE, TO ALLOW FOR FURTHER INSPECTION OF THE STRUCTURE

C — POTENTIAL AREAS OF DETERIORATION, WHICH INCLUDES AREAS ALONG THE EDGES OF THE LIGHT MONITORS. THE FULL EXTENT OF THE DETERIORATION IS UNKNOWN, DUE TO EXISTING FINISHES AND OBSTRUCTIONS, SEE NOTE 1.

PERSHING ROAD BUILDING

1819 W Pershing Ave, Chicago, IL 60609

Appendix C
Tunnel Report

HARDING MODE JOINT VENTURE

cea&a
STRUCTURAL ENGINEERS
175 N Franklin Street
Chicago, Illinois
(312) 750-1701
Suite 410
60606
Fax (312) 750-1704

STRUCTURAL ASSESSMENT REPORT - TUNNELS

Date: **July 2, 2021**
Date of visit: **June 25 & June 28, 2021**

Participants: **C. Perrin**
M. Fagerson
M. McClendon

Project: **ERP Pershing Structural Assessment**
1769, 1819, & 1869 W. Pershing
Chicago, Illinois

Distribution: **FILE**
Paul Harding
C. Anderson

Weather: **Rain, 78^{O} F (June 25); Partly Cloudy, 75^{O} F (June 28)**

Accompanied by Paul Harding of Harding Partners and the building engineer of ERP Pershing, we observed the general structural conditions of the ERP Pershing buildings at 1769, 1819, and 1869 W. Pershing in Chicago, IL. We performed a walk-through of the three buildings, including the 6 floors and basement of each building, the 2 interconnecting bridges, and 3 tunnels, to assess structural issues that were visible at the time of our visit. The building envelope, including the exterior façade and roofing, were not assessed by cea&a. This report will discuss the condition of the 3 tunnels in the basement that require immediate attention.

1869 W. Pershing (West Building)

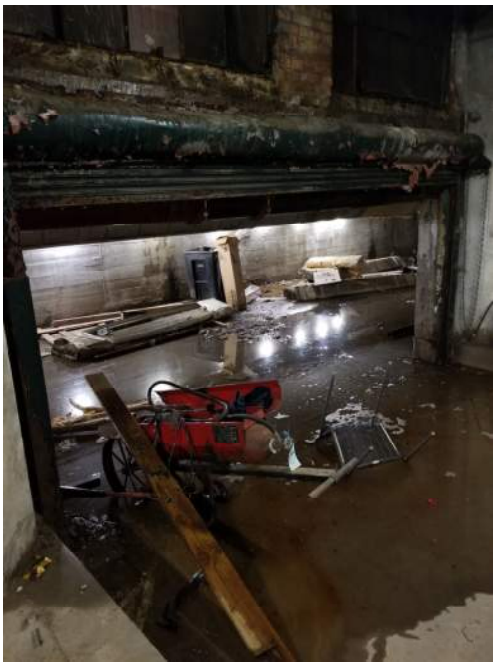
In the basement of 1869 W. Pershing, at the tunnel area beneath the loading docks, we observed spalled concrete and exposed, rusted rebar from water damage that was occurring at the joint in the building basement wall and the pavement slab above the tunnel. There was damage in the concrete wall under the exterior face of the building above, and there were some areas of the tunnel slab that were deteriorated and may need replacement.

Deteriorated Rebar in West Building Tunnel

Deteriorated Masonry at Tunnel Entrance

1819 W. Pershing (Center Building)

In the tunnel beneath 1819 W. Pershing, there was visible leaking at the west entrance to the tunnel and along the exterior basement walls. There was also approximately 3-4” of standing water at the entrance to the tunnel. At the east entrance of the tunnel, there were many locations of spalled concrete and exposed, rusted rebar. The damaged sections of the concrete slab were extensive and will need to be replaced. The rebar was visible, and by measuring, we estimated it to be #4 bars spaced at 2” on center. There were areas of rusted rebar spanning from exterior building wall to exterior tunnels wall, that occurred approximately every 10’. In some locations, the rebar was falling out of the slab and no longer in contact with the concrete.



Standing Water at West Tunnel Entrance

Water Leaks on Interior Face of Wall

Exposed Rebar in Tunnel Roof Slab

Strips of Rusted Rebar at 10’ on center

At the link between the 1819 and 1769 W. Pershing buildings, we observed an area of water damage and deteriorated structure. The concrete on the underside of the slab and the concrete on the face of the column that supports the link building above had spalled off, and pieces of concrete were on the floor slab of the link tunnel. The rebar in the underside of slab and in the face of the column was exposed and extensively rusted.

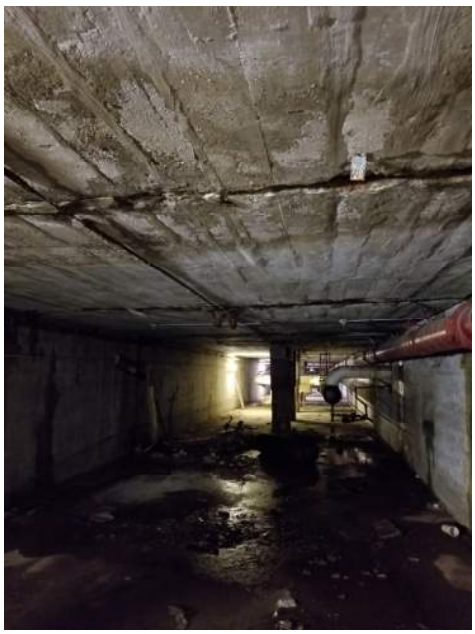
Deterioration in Underside of Link Slab

Deterioration of Link Column

<u>1769 W. Pershing (East Building)</u>

In the tunnel of the 1769 W. Pershing building, we observed the same areas of rusted rebar in the slab occurring at approximately 10’ on center that we observed in the 1819 W. Pershing building. There were visible leaks within the tunnel and many areas of deteriorated slab reinforcement. There was also cracking, spalled concrete, and rusted rebar in the interior face of the basement wall.

Tunnel, Looking East



Tunnel, Looking West

Exposed Rebar in Tunnel Slab

Exposed Rebar in Basement Wall

There was portion of the tunnel slab that had been supported by a dropped concrete beam and reinforced concrete posts on each end. The bottom of each of the existing concrete posts has excessive spalling and corroded rebar.

Concrete Post in Tunnel with Exposed Rebar

Concrete Post in Tunnel with Spalling at Base

Recommendations

Due to the severe deterioration of the tunnel slabs and the column beneath the link building, we recommend that any loading on the slab, such as from vehicle traffic, be removed from the slab immediately. Temporary shoring and bracing may be installed underneath the slab to provide support until permanent repairs can be made. Shoring should be placed immediately under the link building column and slab, and vehicle traffic through the area should be rerouted until the shoring is installed. Along the tunnels, shoring should be placed immediately under traffic areas and all areas used for loading dock purposes. The areas used for parking should be barricaded from traffic and parking; shoring can be installed under these areas, if desired. See the attached key plan for shoring requirements. The temporary shoring should be designed by the shoring contractor's licensed Illinois Structural Engineer.

The above constitutes our understanding of events observed and issues discussed. Any discrepancies should be immediately addressed, in writing, to the observer.


SITE PLAN
REV. 7/2/2021
Humberto's Pizza
Takeout • Delivery
Twin Lens Auto
Service and Repair
S Honore St
S Wood St
W Pershing Rd
W Pershing Rd
W Pershing Rd
Chicago Fire Department
S Wolcott Ave
BARRICADE
IMMEDIATELY SHORE THE AREA OF SLAB SURROUNDING THE DETERIORATED BEAMS AND COLUMN IN THE BASEMENT OF THE LINK (SHORE THE FULL LENGTH OF THE TUNNEL BETWEEN BUILDINGS 1769 AND 1819.)
1869
1819
1769
10' FROM CORNER OF BLDG
5' FROM CORNER OF BLDG
5' FROM CORNER OF BLDG
EXTENT OF TUNNEL BELOW
EXTENT OF TUNNEL BELOW
23' FROM FACE OF BLDG
BARRICADE
IMMEDIATELY SHORE THE FULL LENGTH OF THE TUNNEL SLAB UNDER ALL TRAFFIC AREAS, AND ALL AREAS USED FOR LOADING DOCK PURPOSES
IMMEDIATELY SHORE THE FULL LENGTH OF THE TUNNEL SLAB UNDER ALL TRAFFIC AREAS, AND ALL AREAS USED FOR LOADING DOCK PURPOSES
IMMEDIATELY BARRICADE ALL OTHER AREAS ABOVE THE TUNNEL FROM TRAFFIC AND PARKING. REMOVE ALL LOADING FROM THE AREA ABOVE THE TUNNEL SLAB, AND IN ALL AREAS WITHIN 5 FEET OF THE PERIMETER OF THE TUNNEL. THESE AREAS CAN ALSO BE SHORED, IF MAINTAINING ACCESS DESIRED.

PERSHING ROAD BUILDING

1819 W Pershing Ave, Chicago, IL 60609

Appendix D

Life Safety Evaluation

HARDING MODE JOINT VENTURE

Life Safety Evaluation Summary - 1819 W Pershing Avenue

Section	Criteria	Points	Notes
10.1 Building Height	>80’ to 100’	4	80’-6” building height
10.2 Construction Type	IA	16	
10.3.2 Construction Area	>100,000 sf	0	Commercial Use
10.4.2 Tenant Separations	2 hr or more separation	5	Single occupancy categorization for all floors
10.5.2 Corridor Separation	Full tenant	-2	No corridors at most floors
10.6 Vertical Openings	2 hour or more	1	Some repairs required at fire doors, Elevator doors assumed ass 1hr rated equivalency. All shafts minimum 2 hour construction
10.7 HVAC System	2 floors	4	No existing operable HVAC system, however existing equipment and duct penetrations may serve multiple levels at upper floors 5 and 6
10.8 Smoke Detection	None	0	No identified smoke detectors
10.9 Communication	None	0	No one way or two way communication systems
10.10 Smoke Control	None	-5	Operable windows exist at building perimeter, however unknown if operable at all areas or levels
10.11.2 Means of Egress Capacity and Number	Stair Doors do not comply with re-entry requirements	-40	Number and arrangement of exits exceeds capacity, however hardware and door modifications would be required throughout to comply to allow re-entry as doors currently lockable, and no automatic fire alarm system
10.12.2 Dead End Corridors	Dead end corridors 20’ or less	5	No dead end corridors typically identified
10.13.2 Maximum Travel Distance	151’ to 300’	-5	From center of building maximum travel distance exceeds 150’
10.14 Elevator Controls	None	-7	Only 1 Freight Elevator in operation, does not contain any automatic or fire department controls
10.15 Emergency Lighting	No EM power	-10	Limited number of battery backup fixtures, those identified did not appear operational
10.16 Mixed Occupancies	No Mixed Occupancy	0	
10.17 Automatic Sprinklers	None	0	Existing sprinkler piping installed, however not currently connected to supply or operational. Functionality of heads would require testing
10.18 Auxiliary Uses	In compliance	0	Less than 5%
Total Points	**Minimum 25 (FS) Minimum 22 (ME) Minimum 22 (GS)**	**28 (FS) -34 (ME) -34 (GS)**	**Building meets Fire Safety (FS) requirement, is not in compliance with minimum life safety requirements for Means of Egress (ME) or General Safety (GS)**