



Saint Paul Public Library

Hamline Midway Library



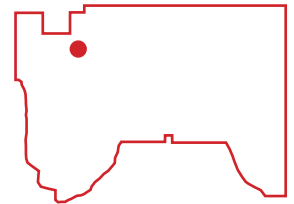
Pre-Design Report

May 13, 2022



HAMLIN MIDWAY LIBRARY

1558 W Minnehaha Avenue
Saint Paul, Minnesota



Hamline Midway is located in the Hamline Midway neighborhood that primarily serves the residents in the Hamline Midway and Como Neighborhoods. Built in 1935 it contains a reading room on the main level and community room, toilets, and the Hamline Midway Coalition offices on the lower level. The library added an elevator in 1990 to provide access to the main reading room for those with disabilities and the toilet facilities were modified to create two single user toilets with some accessible accommodations but the structure has significant accessibility challenges.

The site is located two blocks south of Hamline University and directly east of Snelling Avenue and the route of the Metro A Line Bus Rapid Transit.

The last major renovation of the library was in 1990.

Project Team 5

Executive Summary 6

Building Assessment 10

 Existing Plan 11

 Existing Program 12

 Additions 13

 Code Review 14

 Existing Conditions..... 20

Process & Timeline 40

 Timeline..... 41

 Community Engagement 42

 Survey..... 43

Design Concepts 48

 Concept A..... 50

 Concept B..... 54

 Cost Estimate 58

 Comparisons..... 59

 Narratives..... 60

Appendix..... Volume 2



Mission

We welcome all people to connect, learn, discover and grow.

Vision

We imagine a Saint Paul where all people feel seen, safe, and welcome. We imagine a city where libraries bring people together to experience hope, joy, and creativity through learning.

Our Values

The Library belongs to the people of Saint Paul. We are your Library and you — our library users — shape our work. The following values guide our work.

We believe that learning is a human right.

To live, adapt, and thrive in a constantly changing world, all people need supportive learning environments and free access to information and ideas from diverse points of view.

We believe in curiosity.

Curiosity can change the world and the path of one's life. We believe in igniting its spark through discovery and creative exploration.

We believe in connection.

The Library is a place for quiet reflection and boisterous activity; for likeness and for difference. It is comfortable, inclusive, and vital to creating healthy, strong communities.

We believe in the power of belonging.

When people feel they belong, they are able to learn and grow. The Library brings people together to access knowledge, information, and connection. We actively work to ensure that all people see themselves and our city's rich diversity reflected in our libraries.

Owner
City of Saint Paul

Melvin Carter, Mayor
Michael Burnett, Construction Project Manager, Design & Construction Group
Kelly Wilcox - Construction Project Manager, Design & Construction Group

Owner
Saint Paul Public Library

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EXECUTIVE SUMMARY

**Hamline Midway Library
Saint Paul Public Library**

Purpose

Purpose of this Pre-Design Report is to provide a recommended design concept and a summary of the information and work that has led to a recommendation for a singular design of the Hamline Midway Library Facility Transformation.

Project Overview

LSE Architects and a team of engineering consultants and Artist were selected in October of 2021 to provide design, community engagement and construction services for the Hamline Midway Library. The scope of the project was identified as being either a full renovation of the existing two story, 1930 building and an addition, or new construction to support the needs of the Saint Paul Public Library Strategic Direction to deliver:

- o Safe, inviting, affirming, and comfortable libraries for people of all cultures, abilities, and communities
- o Improved accessibility
- o Additional spaces and study rooms for communities to gather, work, study, and collaborate
- o Separation of quiet & loud spaces
- o Enhanced play & learn space
- o Technology-rich environments

The Hamline Midway project budget has been established at \$8,169,280 and like most public projects, is finite. Construction estimates and project budgets have been established based on a 2023 Spring Construction start.

The design team was provided background information which included four previous years of study and engagement.

- o 2018 Imagine | Deliver SPPL Community Engagement
- o 2019-2022 Strategic Direction – included engagement with nearly 3,000 people
- o 2020 Facility Direction Study – HGA
- o 2021 St. Paul Public Library Youth Engagement Project Recommendations
- o Existing building construction documents
- o Library collection and usage data

This Pre-Design report and Appendix serve as the summary of the Pre-Design Phase and establishes a recommendation for a singular design direction that will be further studied and developed during Schematic Design and Design Development. Robust Community Engagement will continue through the end of Phase 1.

Process

Over the last six months, the design team has conducted facility assessments, facilitated a multi-layered community engagement process with the Artist Cohort, and has developed responsive building programs and design options.

Engagement

The engagement process has been robust and for transparency has adhered to the IAP2 Spectrum for Engagement.

The Layers of engagement have been inclusive of:

- o Library Design Project Ambassadors - IAP2 Level Involve | Collaborate
Comprised of invited neighborhood groups, associations, and youth leadership teens - Four meetings to date with approximately 34 participants
- o All Inclusive Community Engagement - IAP2 Level Involve
Series of progressive Open House Meetings and Listening Sessions - Three meetings/sessions to date with meeting attendance ranging up to 99 attendees at the most recent Open House on April 23, 2022
- o All Inclusive Community and Library Users - IAP2 Level Involve
Series of progressive Surveys – One Survey and one questionnaire to date with 1254 responses
- o Artist Advisory Cohort - IAP2 Level Collaborate | Embedded in the Design
Co Facilitators of Engagement, lead ideation on engagement sessions and create creative encounters within the community, including pop-ups and interactive tools
- o Library Staff Input – IAP2 Level Collaborate
Interviews and listening sessions – Two meetings to date with staff from the library location

Design Options

The options for expansion were distilled down to four strategies, each with a precedent example. From the four strategies it was further narrowed down to two design concepts based on community input, Library staff input, and the ability and degree to meet the project criteria.

Project Criteria

- o Delivers on Saint Paul Public Library commitments to provide spaces that are safe, inviting, affirming and comfortable for people of all cultures, abilities, and communities
- o Responds to what was heard in the community engagement process: Surveys, Open Houses, Listening Sessions, Pop-Ups, Creative Encounters, Staff Interviews
- o Improves the safety and security of staff and library users by incorporating Crime Prevention through Environmental Design Guidelines
- o Meets the Saint Paul Overlay, Saint Paul Climate Action & Resiliency Plan and the SB 2030 which calls for an Energy and Carbon use reduction of 80% through 2024, and 90% in 2025 and carbon neutrality by 2050
- o Exemplifies the intent and requirements of the American Disabilities Act (ADA)
- o Improves operations with a plan that supports staff efficiency and material management
- o Looks to the future, providing Transformational Equity to meet the needs of the community today and the future

Option A

Option A is the renovation and expansion to the 1930, two story building. The renovation addresses the existing building deficiencies identified in detail in the Assessment portion of this report and is in part summarized below:

- o Add mechanical ventilation system to meet code
- o Replace electrical system to meet code
- o Add a Fire Suppression system
- o Replace the 2012 roof and flashing.
- o Replace the existing entry stair built in 1980 to allow for accessibility and repair damage
- o Replace large circular light fixture added in 1980 with LED fixtures
- o Replace existing library windows installed in 1980. Current windows are single pane with a storm and do not meet energy code
- o Excavate foundations, waterproof, insulate and repair from water infiltration and degradation
- o Conduct forensic deconstruction of the plaster ceiling in the lower level to determine extent of damage to structure
- o Plaster removal/repair from water infiltration
- o Tuckpoint brick and repair spalling stone
- o Replace worn interior finishes, interiors are not original

The expansion option includes demolition of the rear third of the building and then expands the building as much as the site and budget permits while maintaining the front two-thirds of the existing building. This expansion increases the almost 4000 sf Main Level, to a 6,200 sf Main Level. The lower level mitigated use public space includes the community room with 1100 square feet.

Safety and security improvements are made by building restrooms on the Main level and closing off access to the lower level unless staff are available for supervision, this usage is referred to as "mitigated use". The community room, staff area and partner space remain on lower level. The community room will have limited hours and mitigated use based on operational limitations.

This expansion option addresses accessibility with a front ramp, allowing all visitors to use the front door. Parking in this option is provided on the street.

The expansion strategy to the rear of the building that maintains the front facade along Minnehaha Avenue is the renovation strategy that had the most support in the surveys. The addition size is limited both by the available area and the budget, delivering a portion of the desired building program.

Option B

Option B is the new construction option that preserves elements of the building and front façade and was the overall preferred option based on survey response. The elements of the building that would be options for re-used include the brick, select stonework, entry archway, select woodwork and the fireplace. The existing windows, lighting and most of the woodwork are from the 1980's, not original, and/or do not meet the quality or the necessary performance standards of SPPL.

The new construction option allows for a 9400 sf single story library, meeting the desired size of building program space, expanding collection and program space and including main level study and community rooms. There is the opportunity in Option B to expand by an additional 1400 sf if like Option A, parking is limited to street parking. That would allow for a 10,800 sf new library.

Accessibility is met with the main entry at grade, maximizing the opportunity for equitable accessibility. Safety and security goals are met with staff have clear sightlines of spaces including the entry, restrooms and community room.

Flexibility is achieved with a main floor community room which can be used through-out the day for programs such as Storytime, and quiet reading when not reserved for community use.

The new construction allows for the building envelope and systems to be designed to meet the SB 2030 and best meets goals for carbon neutrality. Parking is maintained at the rear of the building, with additional parking on the street. Throughout the engagement process there has been community support for both Option A and Option B.

Throughout the engagement process there has been community support for both Option A and Option B.

Recommendation

After six months of work focused on delivering options that meet the criteria determined for this important project, the Design Team and Artist Cohort recommend that SPPL proceed into the Schematic Design phase with Option B. We feel this option best meets the needs of the broader community for transformative equity and an expanded, efficient, safe and sustainable library prepared to meet the needs of the community today and for the future.



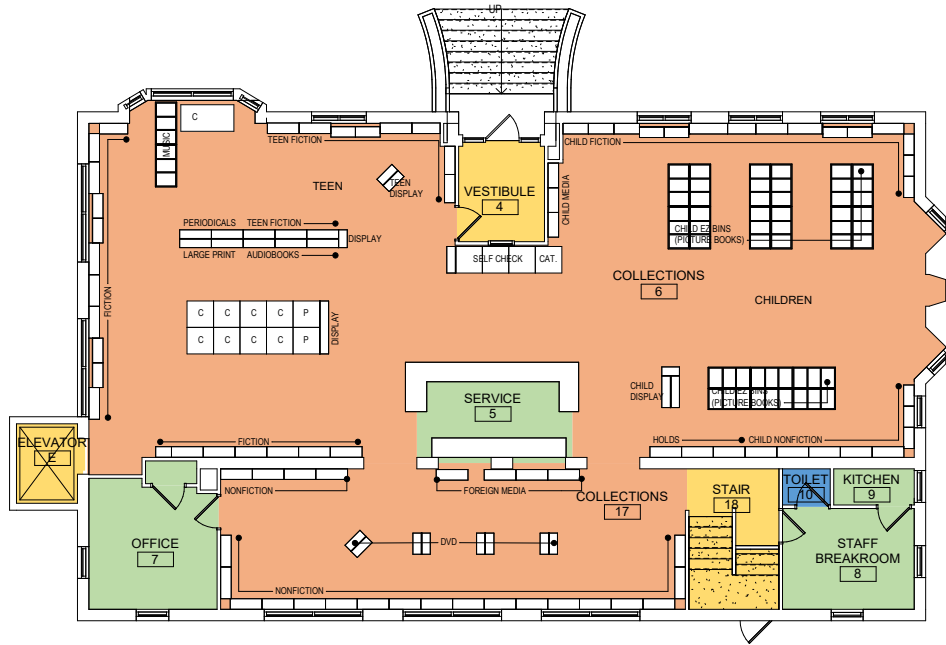


BUILDING ASSESSMENT

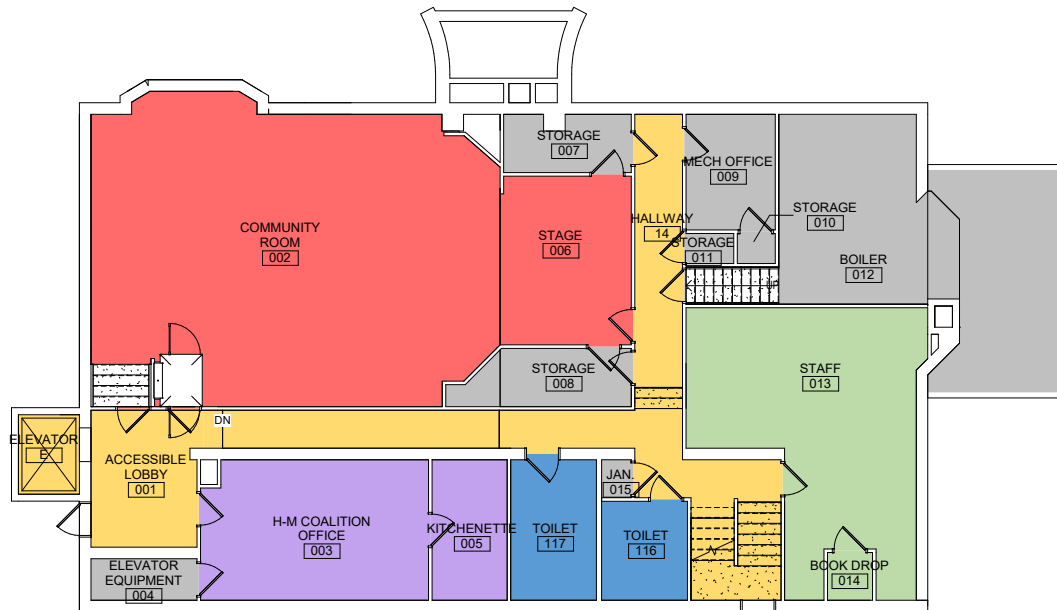
Hamline Midway Library
Saint Paul Public Library

Intent of the Building Assessment is to determine work required to maintain the existing building and identify deficiencies in the building systems as they currently stand and elements that have reached the end of their usable life. Assessment assumes no change with building use or form despite known programmatic deficiencies.

Additionally building assessment identifies issues with code, safety, security, and equity to be addressed in design concepts.

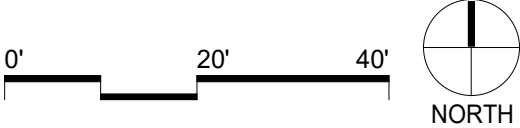
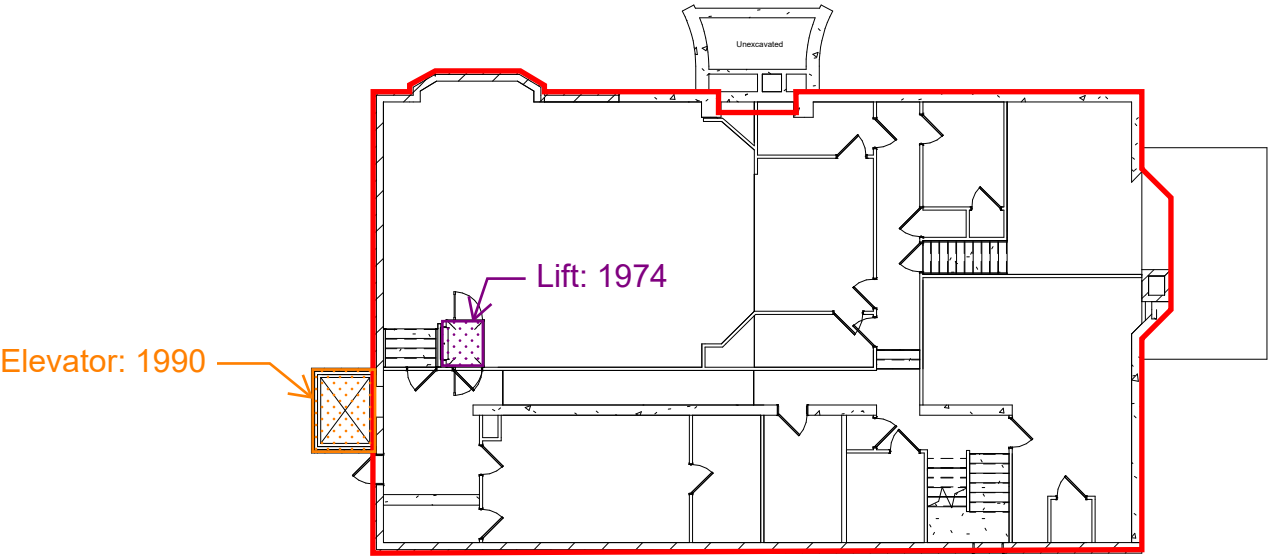
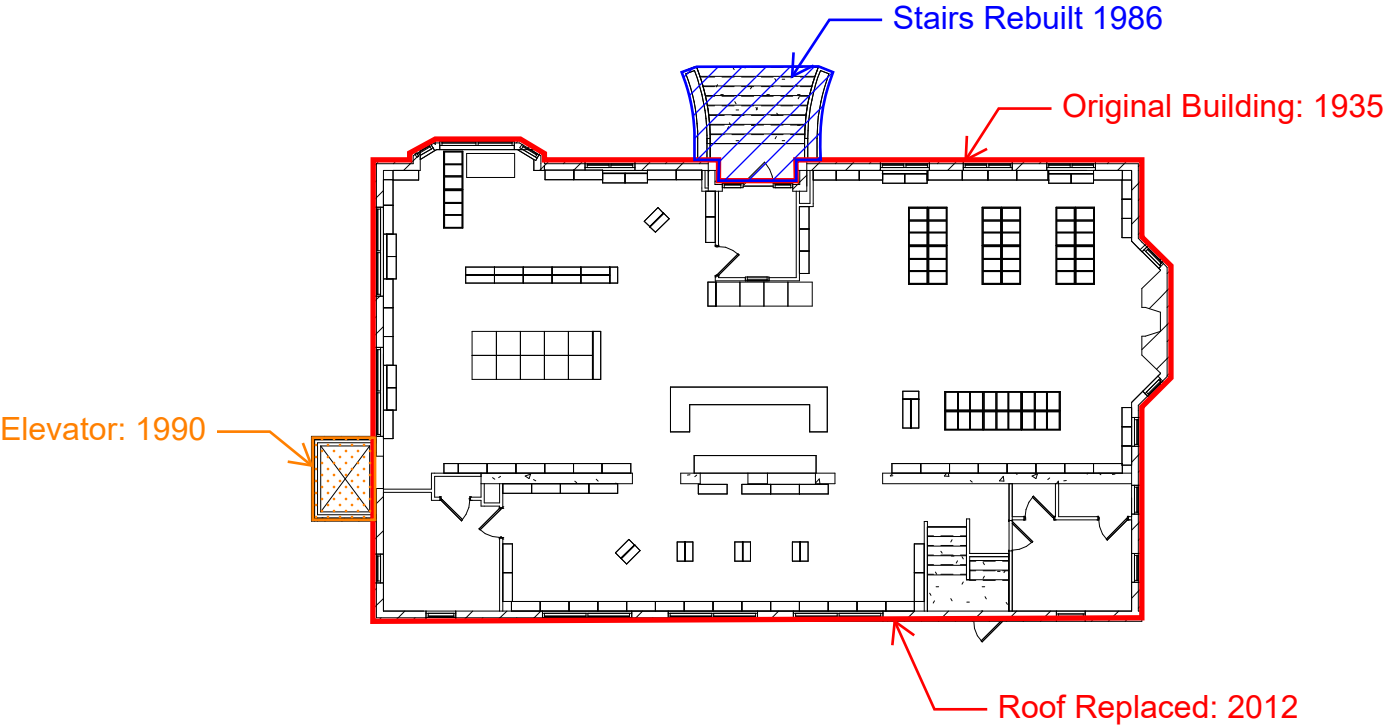


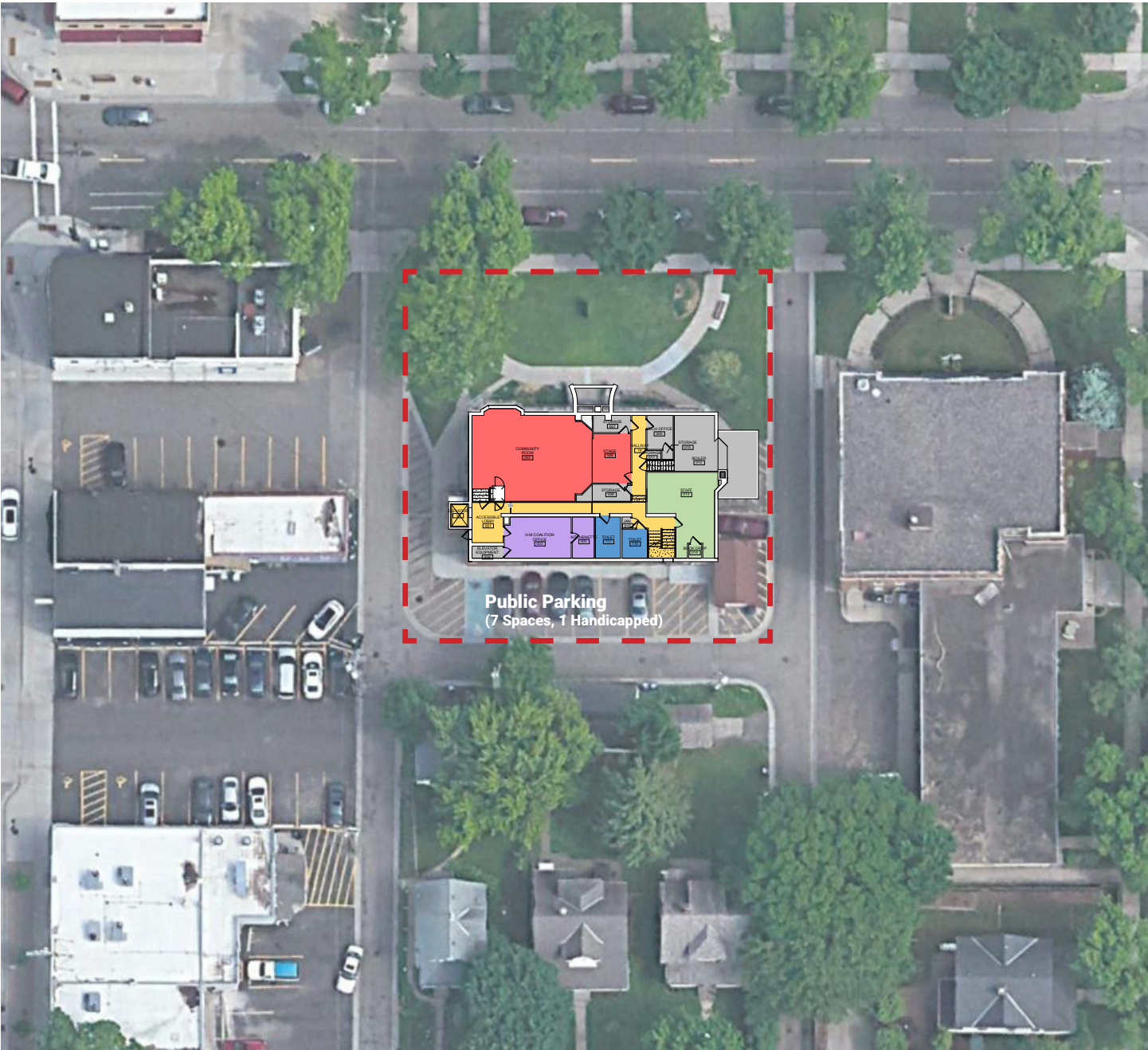
Main Level



Lower Level

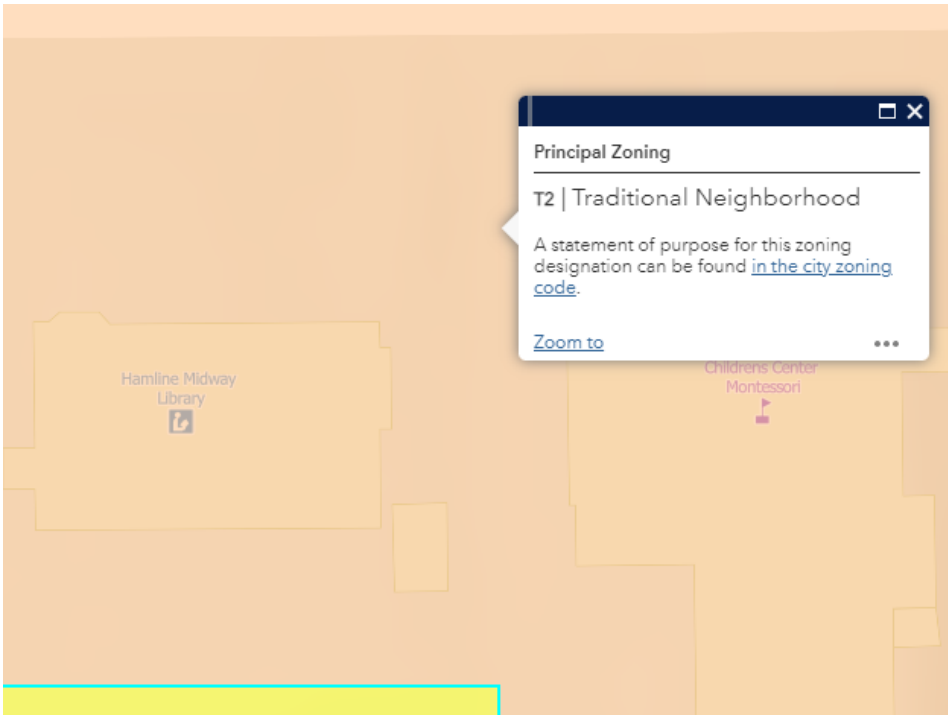
SPPL Libraries		Hamline Midway			
		Quantity	Size	Subtotal	Total
0	Circulation				1,085
	Vestibule	1	75	75	
	Lobby	1	400	400	
	Stairs	1	100	100	
	Elevator	2	45	90	
	Elevator Lobby	-	-	-	
	Corridor	1	420	420	
1	Administration				870
	Staff Workroom	1	445	445	
	Staff Office	1	140	140	
	Breakroom	1	115	115	
	Service Desk	1	135	135	
	Book Drop	1	20	20	
	Staff Kitchen	1	15	15	
	Self Check	2			2 Self Check
2	Collections				2,870
	Collections	1	2,870	2,870	Circulation & Display
Shelving	Nonfiction			-	
	Fiction			-	
	Large Print			-	
	Periodicals			-	
	Audiobooks			-	
	Media			-	
	Children			-	Includes Children Play, Spanish, Nonfiction
	Teen			-	Includes Teen Seating
	Foreign Language			-	Spanish
	Automotive			-	-
Seating	Seating			-	Part of Periodicals & Nonfiction
	Children Play			-	Part of Children shelving
	Teen			-	Part of Teen Shelving
Computers				-	
	General			-	6 computers + 1 search
	Children			-	No family computer
	Teen			-	2 teen computer
3	Community & Breakout Spaces				1,247
	Community Room	1	1052	1052	
	Meeting Room	-	-	-	
	Study Room	-	-	-	
	Stage	1	195	195	Not accessible
4	Toilets / Mothers Rooms / Quiet Rooms				155
Toilets	Public Multiuser Toilet	-			
	Public Single User Toilet	2	70	140	
	Staff Toilet	1	15	15	Not accessible
5	Partner Spaces				375
	Neighborhood Office	1	280	280	Hamline - Midway Coalition
	Neighborhood Office Kitchenette	1	95	95	Hamline Midway Coalition
6	Services / Storage				590
	Storage	4	35	140	
	Mechanical	-	0	-	
	Boiler	1	300	300	
	Hallway / Receiving	-	0	-	
	Janitor	2	10	20	
	Facility Office	1	90	90	
	Elevator Equipment	1	40	40	
Sub Total				7,192	Net Square Feet
Gross Factor				10%	719 Walls & Partitions
Building Total Area				7,911	Gross Square Feet
7	Exterior				-
	Book Drop	0			Book Drop internal to building
	Parking Lot	1			Approximately 8 Parking Spaces
	Exterior Storage	1			Garage
	Mechanical Enclosure	1			Generator





Parking Requirements: (For reference only, reflects existing conditions only)

Uses	Minimum Parking Spaces (No parking minimums)	Maximum Parking Spaces (1 per 350 SF)	Existing Parking	Bike Parking (1 per 500 SF)
Library, Public	0 Spaces	33 Spaces	7 Spaces (1 ADA)	17 Spaces



Zoning District	Lot Size Density		Building Height Maximum		Yard Setback Minimum (feet)		
	Min	Max	Stories	Feet	Front	Side	Rear
T2 - Traditional Neighborhood	.3 FAR	2 FAR	3	35	0 (10 max)	0	0

Principal use: public library
This use is permitted in this zoning district

Zoning District Actual	Lot Size Actual		Building Height Actual		Yard Setback Minimum (feet)		
	Area (Sq ft)	Width (ft)	Stories	Feet	Front	Side	Rear
T2 - Traditional Neighborhood	14,300	~130	1	40	70	10	20

Site Information:

Neighborhood: Hamline - Midway Neighborhood
Community Organization: Hamline Midway Coalition
Council Ward: 4
Watershed District: Capitol Watershed

Code Review:

Building is a two story, load bearing masonry structure with a composite steel and concrete framed roof. Building is not sprinkled and while the Minnesota Building Code does allow for non-sprinkled structures, the fire marshal or insurer may require the addition of an automatic sprinkler system and it is recommended a pressurized dry pipe system be installed for occupant safety and asset protection.

Applicable Codes: 2020 Minnesota Building Code
 2020 Minnesota Fire Code
 2020 Minnesota Energy Code
 2020 Minnesota Accessibility Code
 Saint Paul Zoning Code

Construction Type: III-B (Not sprinkled)

Occupancy Type: (A3), Business (B), Equipment Storage (S1)

Base Allowable Building Area: 6,000 SF (Not Sprinkled)

Frontage Increase: $6,000 \times 1 = 6,000$ SF (Increase for open area on three sides of building)

Total Allowable Area 12,000 GSF

Actual Area: 7,911 GSF

Climate Zone: 6

Occupant Load Factors: (For reference only, reflects existing conditions, MNBC 1004)

Uses	GSF	Factor	Occupancy
Library Stacks (A-3)	1,930	100	19.3
Library Reading/Study Areas (A-3)	1,110	50	22.2
Storage/Mechanical (S-1)	520	300	1.8
Assembly (A-3)	1,210	15	80.6
Office (B)	1,275	150	8.5
Total			133 People

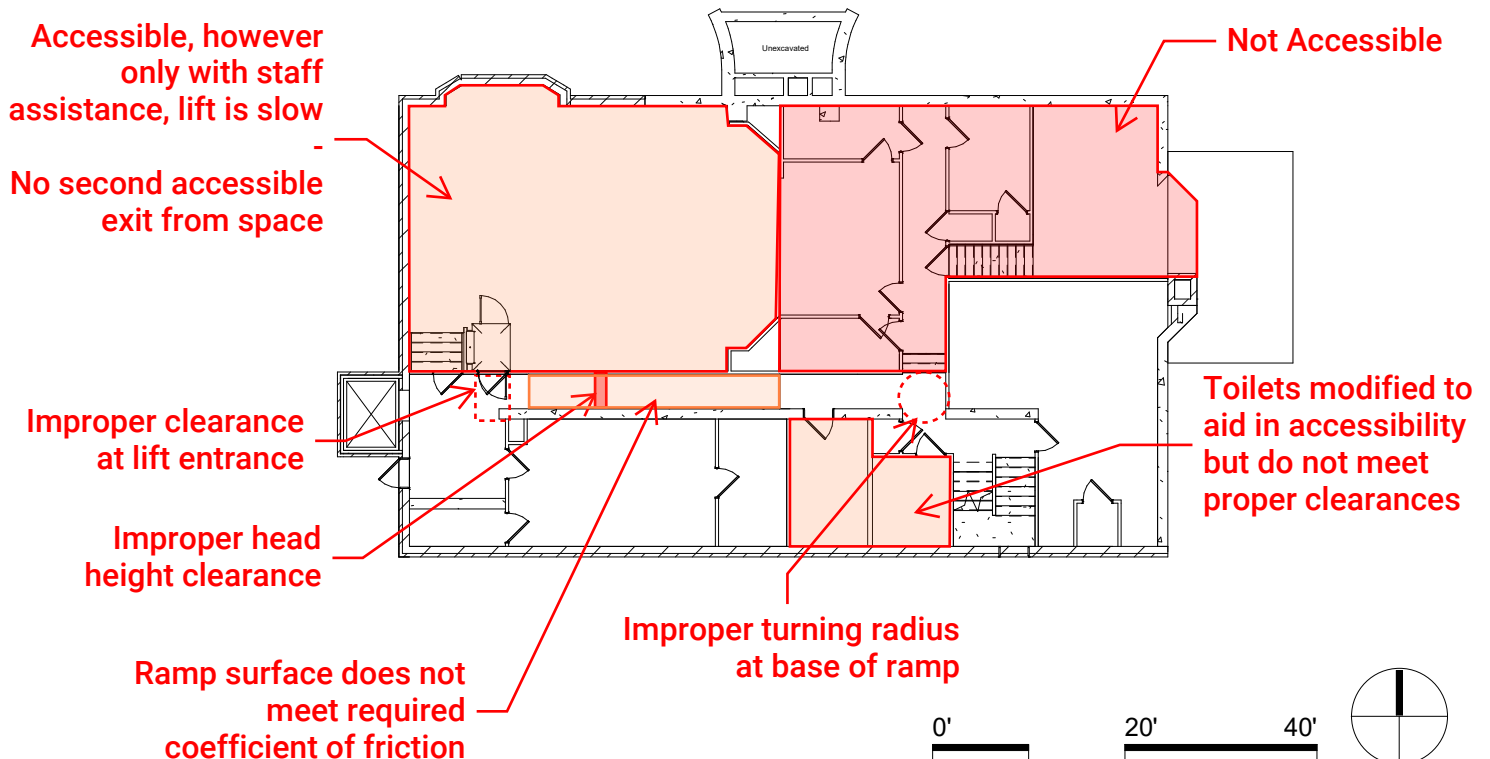
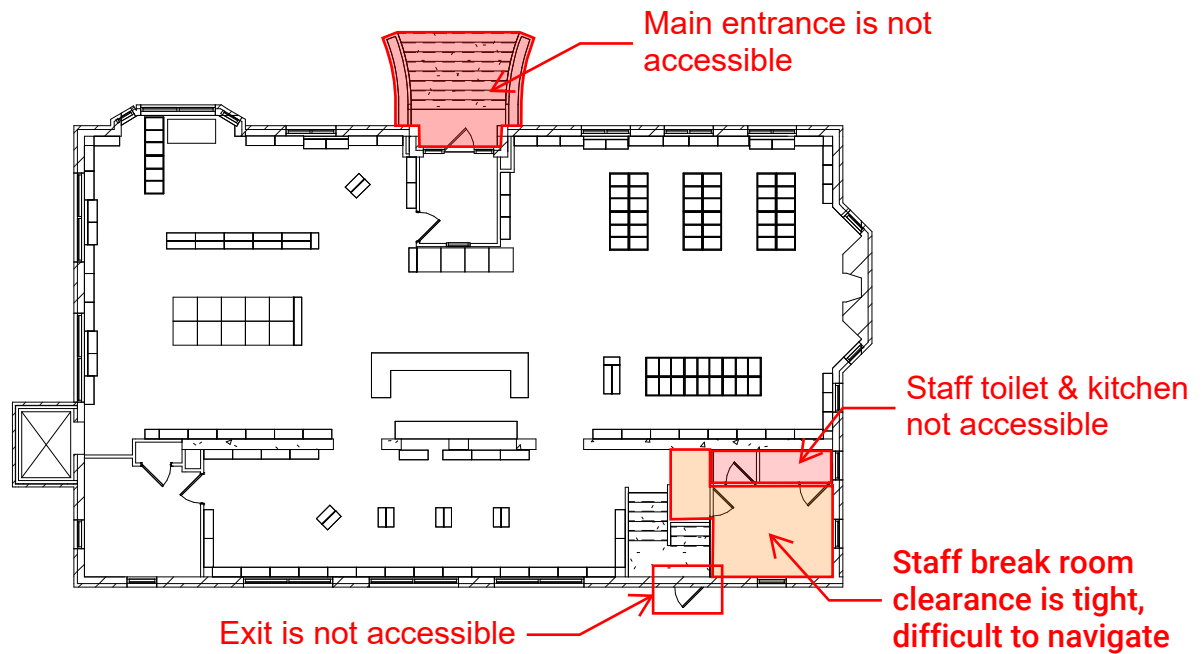
Toilet Review: (For reference only, reflects existing conditions, MNBC 2902.1)

		Water Closets		Lavatories		Drinking Fountains		Service Sinks	
		Required	Provided	Required	Provided	Required	Provided	Required	Provided
Men	67	1	0	1	0				
Women	67	2	0	1	0				
Unisex		0	3	0	3	1	1	1	1
Total	132	3	3	2	3	1	1	1	1

Includes 1 Non-accessible Staff toilet

CODE RECOMMENDATIONS;

- Add Sprinkler system to entire building
- Rework toilet to provide accessible toilets with proper clearances and accessible staff toilet
- Provide accessible exit or area of refuge in assembly room
- Provide accessible staff breakroom toilet



Safety & Security:

Building being two stories with service desk on the main level and entries on both levels create a significant number of potentially unsafe conditions.

Entries:

Main entry is not accessible and the accessible entrance is not obvious from the entry or visible from the street. The accessible entrance does not have any supervision from staffed areas and requires taking an elevator from the lower level to main level or a lift into the community room.

Corridors:

Lower level hallways are not accessible and inadequate as public spaces. Hallway from accessible entry to toilets is too narrow for passing, and hallway behind stage is a dead end corridor not visible from any other spaces and could allow someone to hide or trap someone.

Stairs:

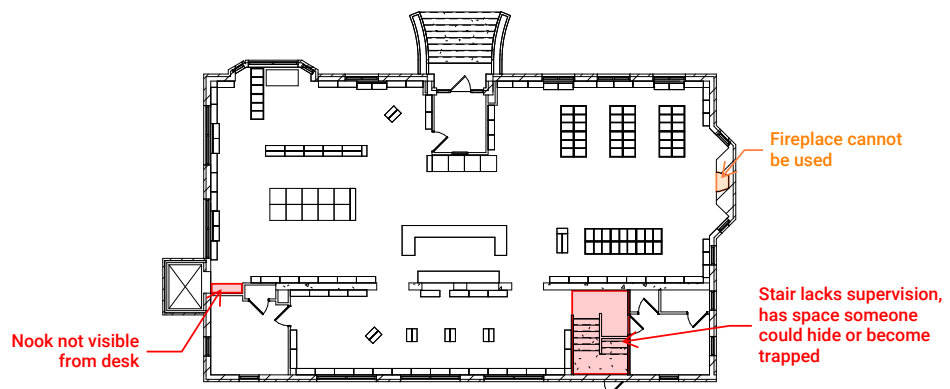
Stairs are not visible to any public spaces and there is a recess at the bottom of the stairs that could provide a space for someone to hide.

Fireplace:

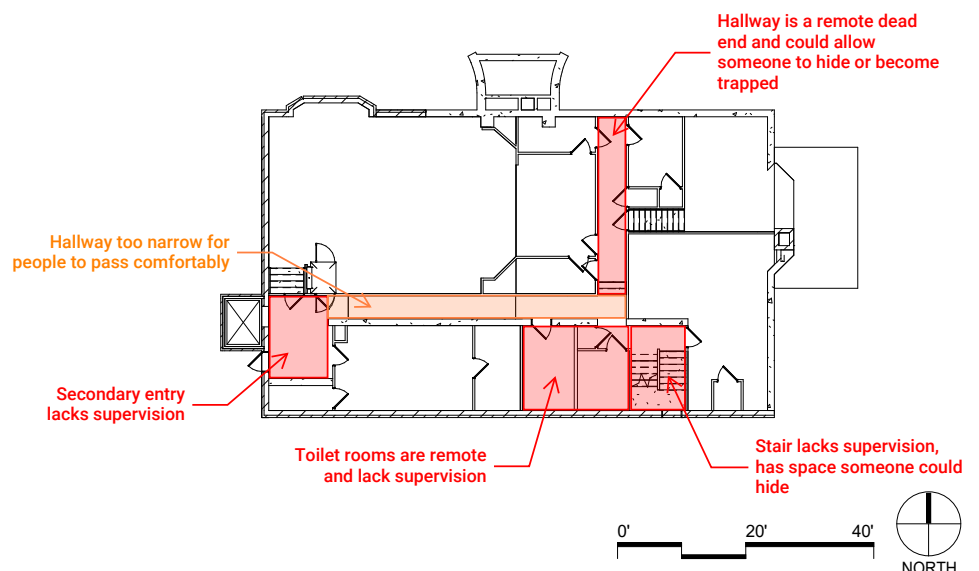
Fireplace is no longer in use due to concern of fire in a public space.

Toilets:

Toilets are not in an area that provides visibility by staff. Currently toilet requires a key from staff to be used but has a record of incidents.



Lower level dead end corridor



Accessibility:

Accessible entrance is not the main entrance and is significantly inferior to the entry stairs. Accessible entrance leads into the lower level and requires an elevator to a drop off at the back corner of the main reading room where the main entry is visible from the street and enters into the center of the main reading room.

A significant portion of the lower level is not accessible including the stage in the community room. The community room was made partially accessible by the addition of a lift, however the lift is slow and requires operation by a staff member. To have a staff member operate the lift a patron in a wheelchair would need to take the elevator up to the main level, speak with a staff member, take elevator back to lower level, then take a slow lift into the community room.

Toilet rooms being locked on the lower level and requiring a key on the upper level a patron in a wheelchair would need at least two elevator rides to use the bathroom.

Staff break room and staff toilet are not accessible and would make employing a staff member in a wheelchair difficult.

Air Quality:

Lack of ventilation and significant water infiltration in the community room and the lower level as a whole has contributed to significantly worse air quality in these public and staff areas that are not safe for people with respiratory health concerns.

Auditory:

As noted in the acoustic report, public spaces including the community room do not have proper acoustic control and make presentations difficult for people with hearing loss and distracting to everyone.

Reading Level Distinction:

Lack of distinct children, teen, and adult areas make congregating in the library uninviting to many community members, especially those engaged in small group activities.



Main Entrance



Accessible Entrance

Pierce Pini Associates | Civil Engineer

Site Location and Layout

The existing Hamline Midway Library site is located just east of Snelling Avenue in St. Paul and is bounded by Minnehaha Avenue to the north and alleys on the east, south and west.

There is currently 6 standard parking stalls and 1 ADA parking stall immediately south of the building that is accessible using the alleys. There is a landscaped area on the north side of the building that includes sidewalks and benches.

The ADA access for the building is located at the southwest corner adjacent to the ADA parking stall. There is a detached storage building at the southeast corner of the building.

Sanitary Sewer

A Gopher One Call utility map request was placed in early January, but the city of St. Paul has not provided any sewer maps to date. It is anticipated that there is an existing sanitary sewer main located in Minnehaha Avenue.

The original 1930 mechanical drawings indicate a 6" sanitary sewer service constructed from the sewer main in Minnehaha Avenue to the building west of grand staircase between the westernmost lower level windows.

Based on available information, the library is still utilizing the original 6" sanitary service from the 1930 construction. It is very likely that this service was constructed of vitreous clay and is now more than 90 years old. It is recommended that the existing service line be assessed via televising camera. The televising camera documentation will assist in evaluating the existing condition and determining the need for future replacement.

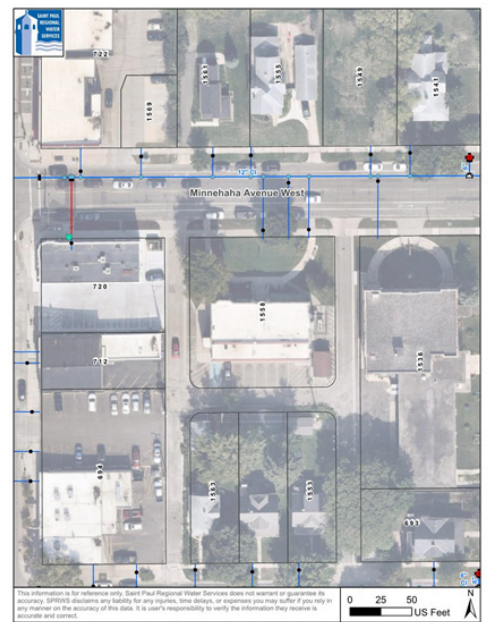
Water Main

There is an existing 12" city watermain located on the north side of Minnehaha Avenue. The original 1930 mechanical drawings indicate that the building is served by 1-1/2" domestic water service from the main in Minnehaha Avenue into the mechanical room at the northeast corner of the building. This is consistent with the record drawings from St. Paul Regional Water Services.

There is an existing fire hydrant located on the intersection of



Front Entry



Minnehaha Avenue and Snelling Avenue as well and another at the intersection of Minnehaha Avenue and Asbury Street. These hydrants are consistent with urban development and serve as the source of fire protection for the library.

Storm Sewer

A Gopher One Call utility map request was placed in early January, but the city of St. Paul has not provided any sewer maps to date. It is anticipated that there is an existing storm sewer infrastructure located in the alley west of the library as well as in Minnehaha Avenue.

The original 1930 building construction plans indicate that the roof utilizes two (2) roof drains that are built internal to the structure. It appears that the sanitary sewer and storm sewer are combined. Common practice for building renovations is to separate the storm sewer and sanitary sewer as they have very different pollutant types and required treatments. This should be evaluated with future improvements.

Telecommunications, Gas and Electrical

The local telecommunications provider is Centurylink. They have a telecom line that runs in the alley west and south of the existing library.

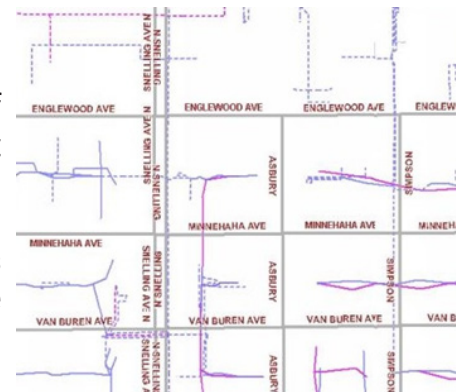
The local provider for electrical service is Xcel Energy. There is overhead electrical lines and a pole-mounted transformer in the alley south of the library. A 4-wire service is routed from the transformer to the building.

The local provider for gas service is Xcel Energy. There is a 1-1/8" polyethylene gas service to the building from the gas distribution main in Minnehaha Avenue. The existing gas meter is on the front of the building at the northeast corner. This is also consistent with the mechanical plans from the original 19030 construction drawings.

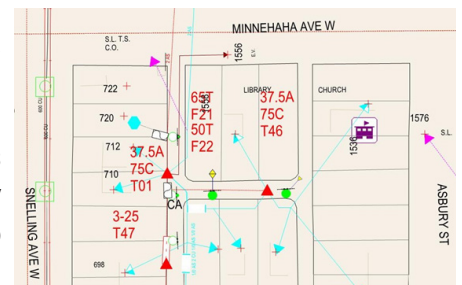
See the mechanical engineering narrative for further information regarding the adequacy of the existing gas, electric and telecommunication services.

Grading and Drainage

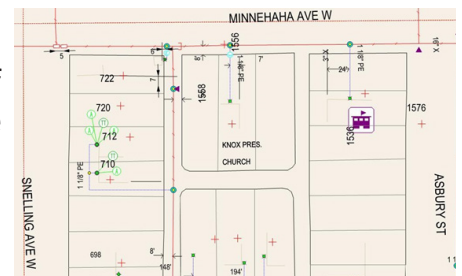
A detailed topographic survey was not available at the time of the site assessment, but the landscaping and adjacent concrete sidewalk generally appear to have adequate slope away from the building. There was a notable stockpile of snow at the lower-level window adjacent to the front entry stairs. This is likely from shoveling snow at the main



Centurylink Asset Records



Xcel Energy Utility Records - Electric



Xcel Energy Utility Records - Gas

entry stoop and stairs. The parking area and the detached storage building both appear to adequately drain to the alleys. Future improvements to the site should verify that all areas adjacent to the building maintain positive drainage to the alleys.

Pavement

The parking lot on the south side of the site is bituminous pavement with concrete curb and gutter and has 6 standard parking stalls and 1 ADA parking stall. One ADA parking stall meets current code requirements for number of ADA parking stalls. A complete pavement assessment was not performed at the time of the site review as most of the parking area was covered in snow, however it appeared that the overall bituminous parking lot was in adequate condition and did not have any functional issues. There are likely some existing cracks throughout the parking lot, but no significant deterioration observed. It is recommended that the parking lot receive a crack seal and new chip coat as part of any upcoming library improvements.

Most of the concrete sidewalk appeared to be in good condition. There is evidence of some select sidewalk panels that have cracked. All concrete sidewalks should be evaluated during future building improvements to identify locations of tripping hazards and replacement needs.

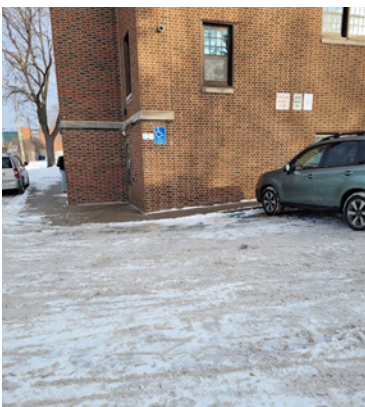
The existing ADA entrance ramp at the southwest building entry appears to be steeper than 2% cross slope. This should be considered with future building improvements as this not in conformance with ADA parking stall grading and construction.



Snow at front entry window



Storage building gutter system



ADA Parking Stall Cross Slope



Deteriorated Concrete at Transformer



Storage building gutter system

Asakura Robinson | Landscape Architects

Hardscape

Condition: Good, no visible cracking, full condition to be assessed in spring
Material: Concrete, colored concrete, bituminous (parking lot surface)

Size: 5 ft width sidewalks

Maintenance Type: Sidewalk and path cleared in winter months.

Brief Description: Sidewalk and path cleared regularly in winter and edges trimmed regularly in temperate months. Western & Rear sidewalk slope toward western alley to drain in street.

Site Accessibility

Parking: One (1) accessible stall available

Maintenance Type: Sidewalk clear, parking stall lines not visible in winter

Parking

Parking: 6 parking stalls and loading zone available

Safety: Light pole in alley

Maintenance Type: City responsible for clearing alleyway

Brief Description: Parking lot alley shared with private property and garage entrance. Snow is stored in corner of alley.

Views on/off site

Library has large front lawn

Entries

Condition: In need of some repair

Safety: Stairs are lit at the top by building-mounted sconce lighting.

Maintenance Type: De-iced and maintained during visit.

Brief Description: Stairway does not offer accessible ramp access to main floor. Original side and mid rails have been removed and replaced with galvanized side rails.

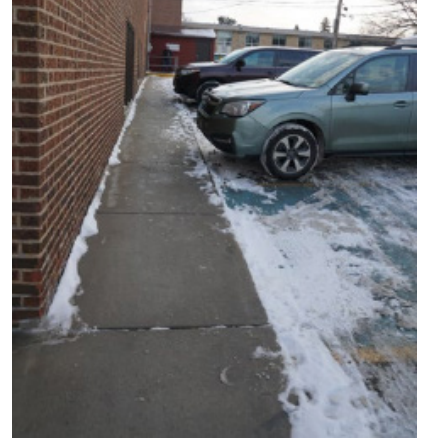
Planting Beds

University of Minnesota Extension: Pollinator Cafe

Species: To be assessed in spring

Maintenance Type: Unknown

Brief Description: Pollinator demonstration planting bed.



Rear sidewalk access to lower level



Southwest corner of library



South parking lot



Library from street



Pollinator Cafe

Nature Smart Library: Planting bed to foster learning

Species: To be assessed in spring

Maintenance Type: Unknown

Brief Description: Planting bed designed for nature learning. It is not clear if it is a raingarden or an arrangement of natives. More information is needed.

Planting bed and adjacent seating at main entry

Condition: Out of season; to be assessed in spring

Species: To be assessed in spring; deciduous plantings predominant throughout site; turf grass dominant groundcover.

Maintenance Type: Unknown

Brief Description: Is not clear if it is a raingarden or an arrangement of natives.

More information is needed. Dormant perennial plants similar to the nature learning planting bed previously identified.

Site FurnishingBenches

Condition: Victor Stanley bench appears to be in good condition, Unidentified bench appears to be older and in need of replacement. No apparent bench standard on site or among library sites within project scope.

Material: Victor Stanley bench made from metal and composite plastic material. Unidentified bench made from iron and real wood.

Trash Receptacle

Condition: Good condition; outdated style; appears to be typical trash receptacle style among all library sites within project scope.

Maintenance Type: Trash bag changed when full; no rain hood indicates receptacle may see water intrusion during precipitation events.

Recycle bin available: No

Standard Galvanized Bike Rack

Condition: Galvanized steel, condition at base not known, to be reviewed in spring upon clearing of snow. Matches Riverview site but does not appear to be typical bike rack style among various library sites within project scope.

Capacity: Up to 8 bicycles

Irrigation

Brief Summary: Located in sub-basement. Could not confirm system type or functionality with staff.



Nature Smart Library



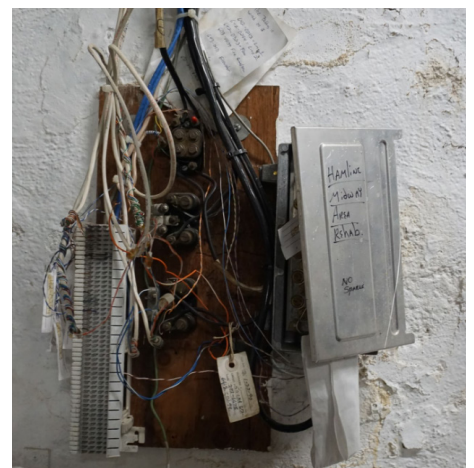
Planting Bed



Bench & trash receptacle



Standard galvanized bike rack



Irrigation control unit

Lighting and Surveillance

Condition: Good upon day-time inspection.

Maintenance Type: Bulbs replaced regularly as noted by staff.

Safety: Main entry sconces and additional light poles located along entry pathways. Surveillance camera above entries in front and rear at parking lot. Alleys to the east and west have been noted as blind spots in system per staff comments.

Signage

Brief Summary: Contemporary street frontage library building signage does not match other library signage in project scope.

Utility Systems

Brief Description: Meter located at NE corner of building.

Stormwater

Condition: Roof overflow scuppers identified at top of building at base of parapet. Primary internal roof drain function and ground condition to be identified in spring.

Brief Summary: Interior analysis of auditorium space indicates water intrusion and damage where visible ice buildup occurs at exterior NW corner of building on sidewalk.

Landcare

Maintenance:

- Mowing noted to occur twice a month in the summer by maintenance staff.
- Winter site maintenance is dependent on precipitation events and temperature fluctuations, specifically:
 - Regular de-icing of steps and paths
 - Plowing sidewalks and accessways

Brief Summary: Maintenance practices are applied in the same manner across all three sites. It is the same St. Paul Public Libraries staff personnel that maintains the grounds for all three libraries, utilizing identical equipment and storage facilities.

Irrigation

Brief Summary: Located in sub-basement. Could not confirm system type or functionality with staff.



Light fixture



Signage and temporary sail sign



Gas meter



Ice buildup at Northwest corner of building



Maintenance equipment

Facade

Exterior facade is primary brick with stone accents. Masonry has cracking and requires tuckpointing. Stone accents are generally proud of masonry and collect water. Stone is dirty and should be cleaned by a restoration contractor. Stone could be salvaged for reuse or continued use. Stone at entry has spalling that requires repair.

Roof

Roof was replaced in 2012. Flashing was replaced in the mid 1990s and was modified in 2012 but due to age now requires replacement.

Windows

Windows were replaced with single pane aluminum windows and storm windows. Windows are generally in acceptable condition with some locations that require repair however replacement should be replaced due to poor thermal control and air leakage.

Through Wall Flashing

Walls do not have through wall flashing. Elevator addition also does not have flashing or weeps and vents. Lack of drainage from wall has contributed to the water and moisture infiltration in walls.

Roof Access

Roof ladder provides unauthorized access to the roof and is an unsafe condition. First several rungs are covered however uncovered rungs are within reach for most adults.

Entry stair

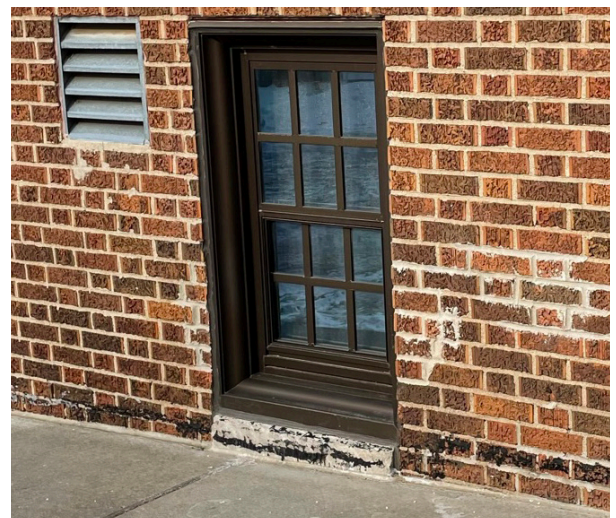
Entry stair was replaced in the 1980s but is in poor conditions. Stair risers are concrete and have chipped. Masonry shows signs of deterioration. Railing was previously removed and post embeds rusted and have stained stairs. Stairs should be demolished and replaced.

Foundation

Foundation has no drain tile or waterproofing and interior has significant evidence of water infiltration that has damaged foundation wall.



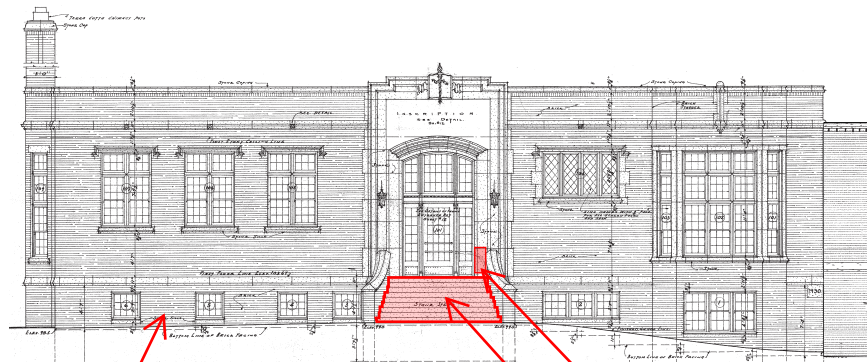
Deterioration at entry stair



Grade at windows



Masonry at stairs

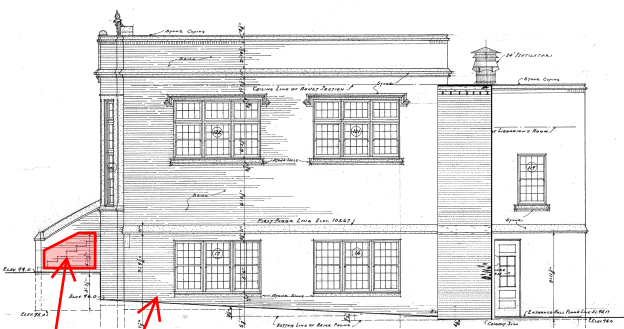


NORTH ELEVATION

Evidence of water infiltration

Stone spalling

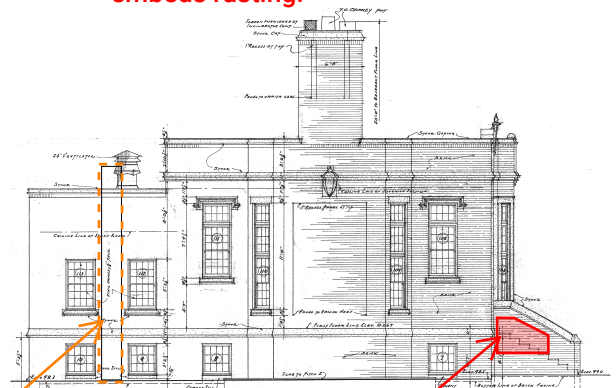
Concrete steps and stone chipped and stained due to embeds rusting.



WEST ELEVATION

Evidence of water infiltration

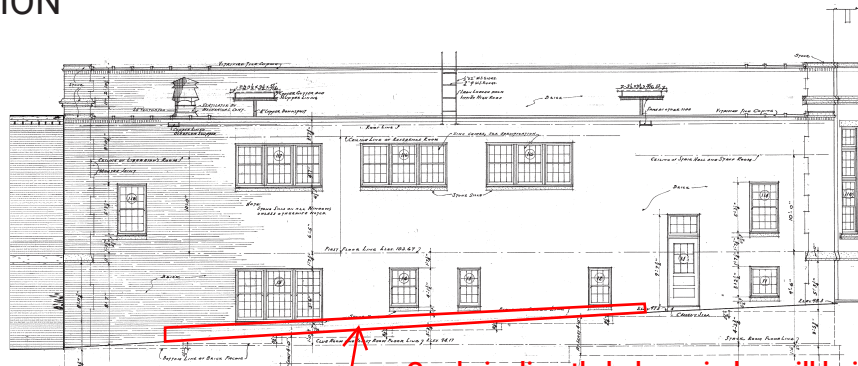
Masonry damage and evidence of water infiltration



Ladder provides unauthorized access to roof

Masonry damage and evidence of water infiltration

EAST ELEVATION



SOUTH ELEVATION

Grade is directly below window sill height, not protected from parking lot. Wall below grade lacks drain tile and waterproofing leading to water infiltration.



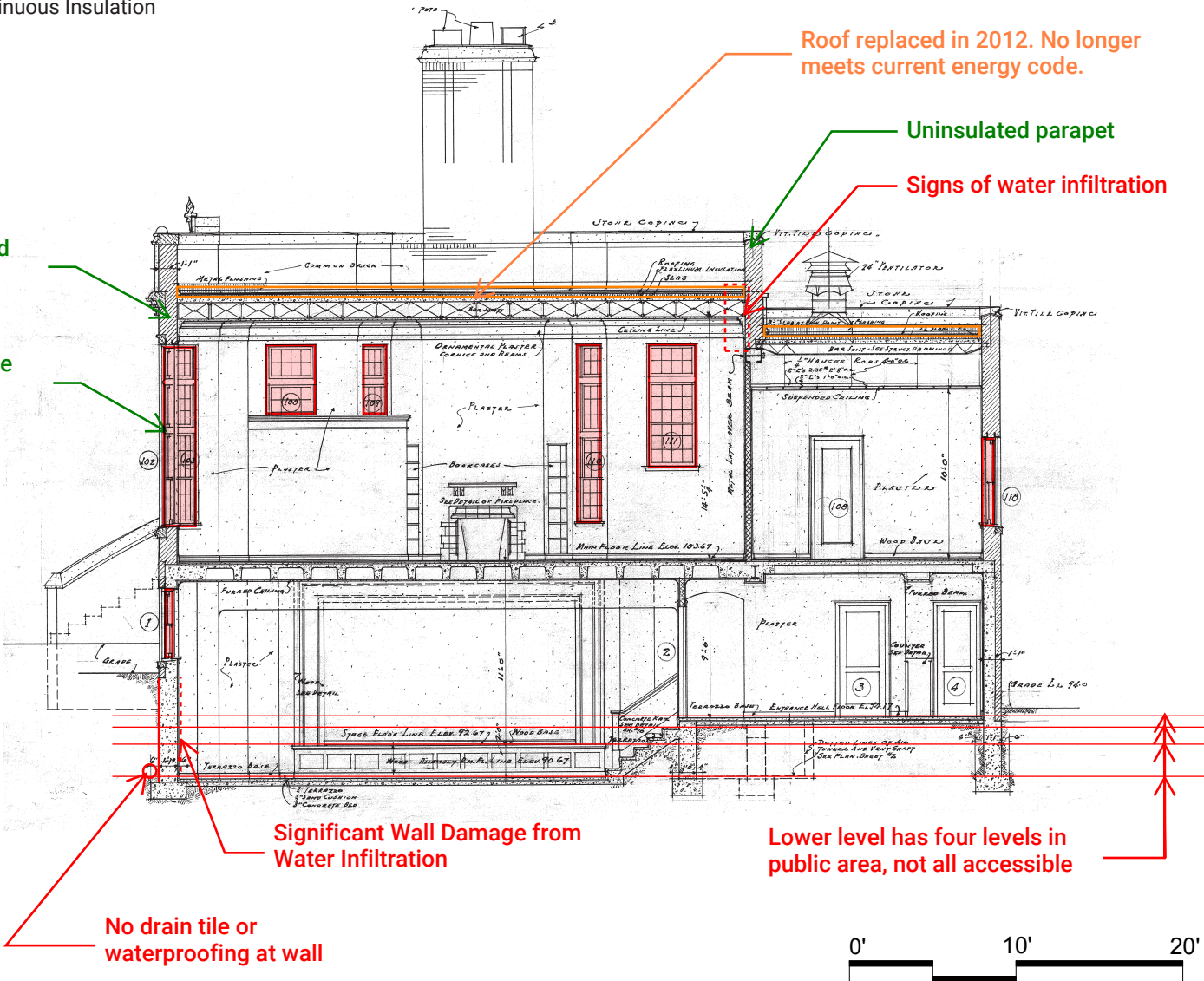
Energy

Energy efficiency of building enclosure is governed by the Minnesota Energy Code. Existing wall, roof, and windows do not meet current code minimums, and without significant replacement meeting City sustainability goals will not be possible.

The only insulation in the building is on the roof which was insulated to energy code at the time but no longer meets today's codes.

	Year	Assembly	Estimated R-Value	Code R Value
Roof	2012	2" rigid insulation plus sloped expanded insulation (Average ~3")	15	30
Exterior Wall	1935	12" Masonry (4" Face brick + 8" block), plaster lath, uninsulated	1.9	13 CI
Windows	Unknown	Single Pane Aluminum window with interior storm window	2	3
Foundation	1935	12" Cast in place Concrete	2.5	7.5 CI

CI: Continuous Insulation



SECTION LOOKING EAST

Interior Assessment

The intent of the interior assessment was to document interior finishes that are worn and require replacement and finishes that require maintenance to extend their usable life.

Flooring

Flooring throughout is worn. The main library level is carpet has exceeded its expected life and should be replaced throughout. On the lower level, carpet in work rooms and office should be replaced. Terrazzo in hallways and vertical circulation is in OK condition but requires some repair. Terrazzo in toilet rooms has been modified and patched with non-matching patches that it should be replaced completely.

Flooring in multipurpose room is in OK condition, but may not be the right choice in performance or style for a multipurpose space. Stage flooring is in OK condition but is not accessible.

Lower level ramp is terrazzo and does not meet code due to insufficient coefficient of friction.



Main Reading Room

Walls and Ceilings

Ceilings and walls in main reading room have several areas of water damage, ceiling in Hamline Midway Coalition space shows signs of water damage. Walls through show signs of wear and require touch ups throughout. Walls in multipurpose room show significant water damage. The majority of trim and built-in casework is in OK condition.

Furniture

Furniture throughout is dated and worn. Movable shelving does not match the built-in shelving or each other. EZ Bins show signs of wear and edge banding has been screwed back on in many cases.

Doors

Most doors panels are original and in OK condition, door hardware is mismatched and most has knobs that do not meet ADA. Door hardware should be replaced either in modified or new doors. Doors into toilet rooms are in poor condition, do not appear to be original, and should be replaced. Door at vestibule is missing entirely.

Toilets

Toilet finishes are worn and beyond usable life. Toilet rooms should receive complete replacement.



Ceiling Plaster Damage in Reading Room



Ceiling Water Damage in Hamline Midway Coalition Office



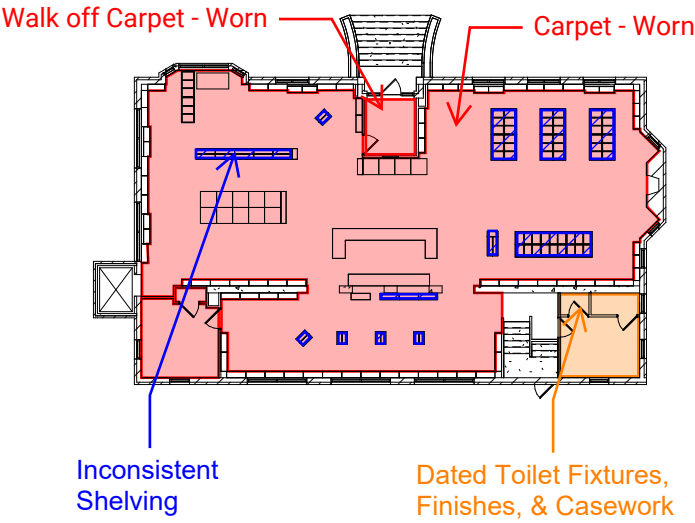
Exposed Wires at Ceiling and Low Structure in Hallway



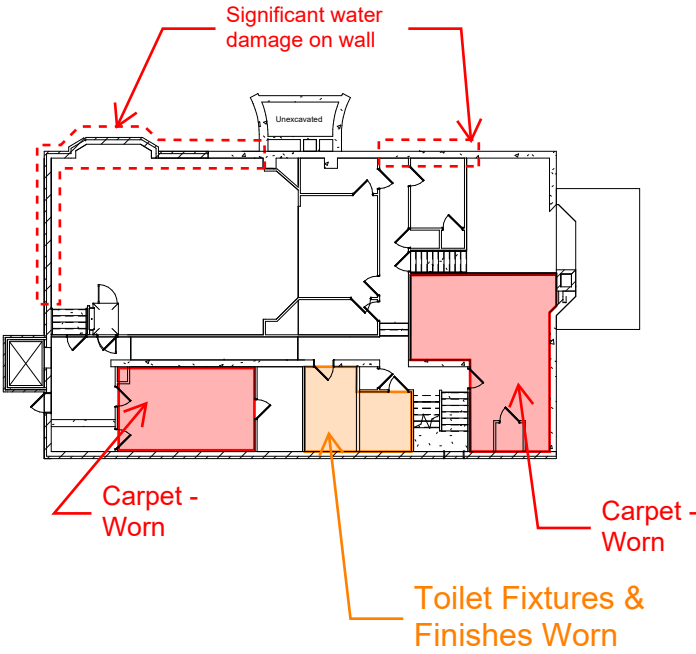
Meeting Room



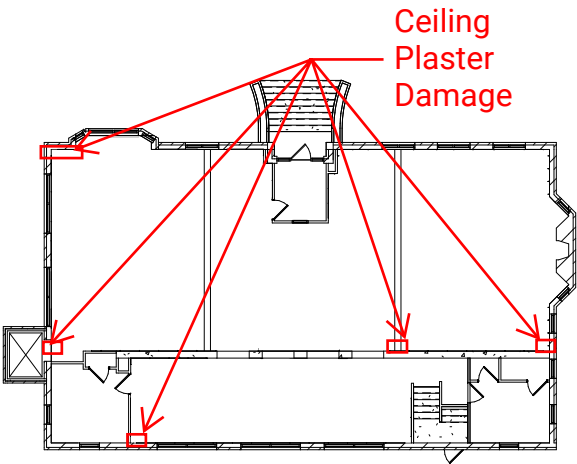
Wall Damage at Meeting Room



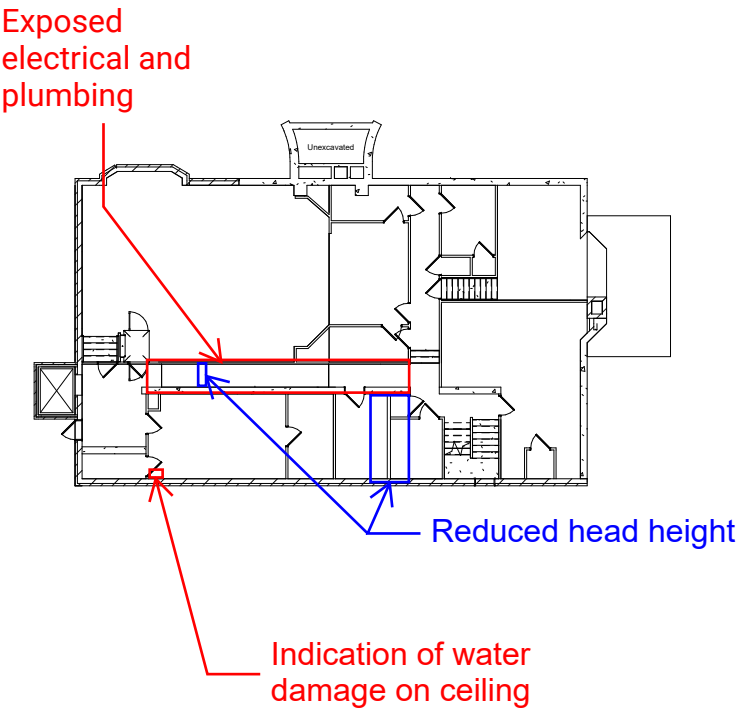
MAIN LEVEL



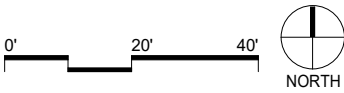
LOWER LEVEL



MAIN LEVEL CEILING PLAN



LOWER LEVEL CEILING PLAN



IMEG | STRUCTURAL ENGINEERS

Existing Building Information

The original building drawings are dated 1930. The roof framing is concrete deck on steel bar joists supported on steel beams which are supported on masonry walls or steel columns embedded in the masonry walls. The floor framing is concrete pan and joists supported on steel beams encased in concrete or masonry bearing walls.

An elevator addition was added in the early 1990's.

Limited Visual Structural Observation

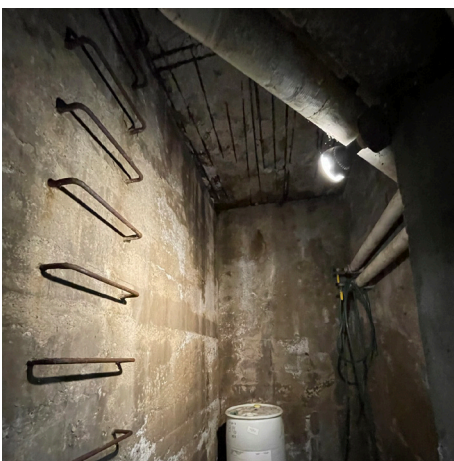
IMEG performed a limited cursory visual observation on January 18, 2022. The observation was limited to a visual review, no finishes were removed, and no destructive demolition was performed to observe the structural frame.

Interior Observation

The interior review indicated very minor and limited cracking in the plaster at or near the ceiling. There are very few control joints in the plaster and therefore, it is not uncommon to see cracking in the plaster.

There are signs of water infiltration, especially in the auditorium room in the lower level where the plaster has water damage on the wall. We did not see signs of structural distress on the interior walls in the area of the water damage that causes concerns.

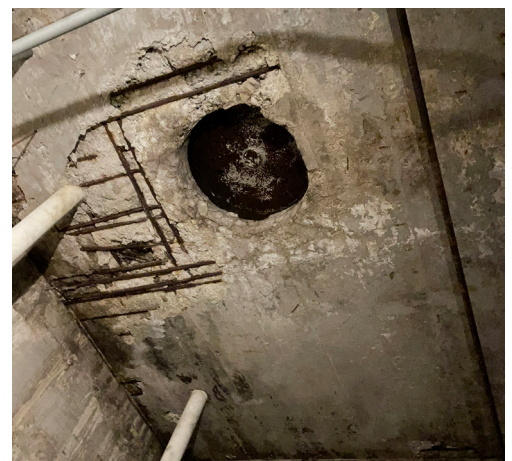
Inside the original fuel room and ash room on the east side of the building there is significant deterioration on the underside of the concrete slab over these rooms, as well as signs of water infiltration. These rooms are located outside of the building footprint above. A piece of mechanical equipment is sitting on this slab. The existing reinforcing in the slab is visible, and there is corrosion of the existing rebar. See the attached photos. The concrete slabs over these rooms need to be repaired and/or removed



Exposed Rebar in slab



Exposed Rebar in slab



Exposed Rebar in slab

Exterior Observation

The exterior review was limited due to snow cover; however, there is a sidewalk around the majority of the building that was cleared off to see most of the wall. We did observe an isolated area in the exterior wall with minor cracking. Typically, these cracks were near the top of the brick walls or located in the bricks adjacent to the ends of the limestone band. In modern construction, there would be control joints in the brick at these locations; however, control joints are not common in buildings constructed at the time the Hamline-Midway Library was constructed. Control joints could be placed in the wall during any renovation.

We did observe locations where the sidewalks abut the building where the joint should be caulked to prevent water seeping down this joint.



Sidewalk at building



Exterior Slab degradation

Building HVAC Systems

The building does not have ventilation air supplied to the occupied spaces.

- Perimeter unit ventilators recirculate interior air, with a dual temperature coil. See Figure 1 for typical unit.
- HEPA filter fan units have been installed throughout the building. Two (2) units with capacity for 2000 cfm, each filter the auditorium and upper level. Additional residential system HEPA filter fan units are operating throughout the smaller spaces.

The building is currently heated by two (2) 400MBH input hydronic boilers.

- The boiler plant equipment was replaced in 2017, and is in good working condition. The boiler plant operates on a primary – secondary system for flow.
- The hydronic piping, is dual temperature. During cooler months, the two boilers provide 180°F throughout the building. During warmer months, the same piping is utilized with an air-cooled chiller providing 42°F throughout the same system.
- The piping serves perimeter unit ventilators, unit heaters, and fin tube radiation. The unit vents only recirculate interior air, and are not ducted to the exterior.
- The boiler vent stacks are showing signs of discoloration. The venting utilizes schedule 40 PVC, which has a maximum operating temperature of 140°F. It is recommended to replace the venting with schedule 80 CPVC or stainless steel.
- During the onsite assessment, boiler flue gas was noted to be recirculating back into the building, and combustion air intakes. This was due to wind direction and speed. The separation of the intake and flues meet code requirements. See Figure 2.
- There are signs of high humidity levels within the boiler room. Exposed steel piping is forming surface rust. See Figure 3.

The building is conditioned with an air-cooled chiller. The unit is located on the east side of the building. See Figure 4. The unit has approximately 20 tons capacity.

- Chilled water is distributed through the dual temperature piping, to serve perimeter unit ventilation.

Restrooms are exhausted through exhaust fans. The exhaust systems are inadequate based on code, and number of units.

The building automation system (BAS) is a mixture of pneumatic and direct digital controls (DDC) by Johnson Controls. Graphics were unable to be accessed at the time of the site assessment.



Figure 1: Unit Ventilator



Figure 2: Boiler flue exhaust entering combustion air intake



Figure 3: Boiler hydronic piping rust



Figure 4: Air-cooled chiller

Building Plumbing Systems

The building is connected to city sewer and water. Storm water is routed through drains and scuppers to grade.

Domestic water piping has been replaced within the boiler room, to copper. Domestic piping throughout the building is mostly galvanized, and in need of replacement.

Plumbing fixtures

- One (1) non-ADA compliant water cooler is located on the upper level. See Figure 5.
- Restroom fixtures are dated and in need of replacement, including water closets, flush valves, and lavatories. Water closets are floor mounted, flush valve type.
- The breakroom consists of residential type fixtures (coffee maker and microwave) and sink. It was noted this space does not contain a heat source, and risks freezing domestic piping.

Natural gas is supplied to the building, to the boilers. Domestic water is heated by a residential type electric water heater.



Figure 5: Water Cooler

Building Fire Protection System

The building does not utilize a wet fire suppression system.

Building Power Distribution System

The building is served by a 120/208-volt, 3 phase, 4 wire, 200-amp service. The building electrical service originates from an overhead power line at the south side of the building.

- The power company meter is located on the southeast corner of the building with a weather head located above.
- A surface mounted conduit is routed around the east side of the building, where it turns down and enters the basement.
- Within the basement, the conduit enters what appears to be an old coal storage room, where it runs exposed to the main disconnect. The National Electrical Code (NEC) requires the entrance service feeder to be routed directly to a service disconnect. The existing condition is a code violation.

A 200-amp main service disconnect switch is located within the coal storage room. See Figure 6.

- This disconnect does not appear to be service entrance rated.

The disconnect switch feeds three (3) main lug only 200-amp panelboards located within the boiler room. See Figure 7.

- These panelboards appear to be in good condition.



Figure 6: Main Disconnect



Figure 7: Electrical Panels

Most devices in the building, receptacles and switches are surface mounted with surface wireways connecting the devices.

Building Lighting

Lighting in the main library is provided via large semicircular pendant fixtures. On site staff indicated the lamps for these fixtures have been replaced with LED lamps. See Figure 8.

- These fixtures appear to be in good condition.

Lighting throughout the remainder of the building consists of several different types of fixtures, surface wraparounds, surface LED's, and surface drum. As noted, some of these fixtures are LED, however, some appear to be fluorescent fixtures. It is unknown if the LED retrofit lamps have been installed in some of these fixtures.

The lower level meeting room lighting is similar to the main library lighting, semicircular pendant fixtures. There also are some incandescent spotlights at the stage adjacent to the meeting room.

Lighting controls consist of switches and occupancy sensors.

- The energy code will require new lighting controls including occupancy control, dimming, and daylighting controls.

Exterior lighting consists of two (2) architectural fixtures adjacent to the main entrance door and two (2) building mounted LED wall packs located at the back doors.

Fire Alarm Systems

The building fire alarm system is a Silent Knight model 5700 addressable fire alarm system.

The system includes smoke detectors in all spaces, manual pull stations at the exits, an annunciator at the front entrance, and horn strobe annunciation units in all public spaces. The system appears to be in good condition. See Figure 9.

No mass notification or voice evacuation systems are presently utilized.

Technology Systems

Telecommunications

- A data rack is located in the work room in the basement. The cabinet was locked.
- Voice/data jacks throughout the building are surface mounted and connected with surface raceway.

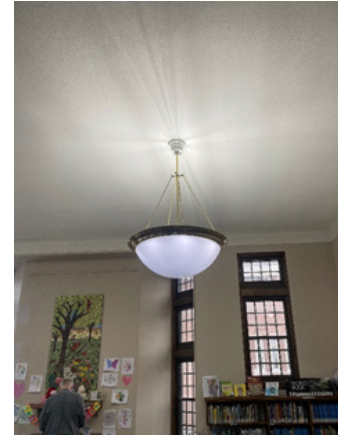


Figure 8: Main Library Pendant Fixture



Figure 9: Fire Alarm Control Panel

- Voice PABX is a Panasonic TVA50 system.
- Voice/data cabling is mostly Category 5/5e cabling.
- Wireless LAN coverage (WLAN) should be looked at for proper coverage.
- The voice/data jacks appeared to be in fair condition. Data cabling is not typically supported adequately with cabling zip-tied together or attached to conduit.
- The telecommunications lines enter the building from a utility pole at the south side of the building, and are routed on the surface of the building. This wiring is susceptible to damage. See Figure 12.



Figure 10: Exposed interior low voltage wiring

Security

Access Control

- The building has a Keyscan Access Control System.
- A card reader controls access to the lower level west entrance. This was the only card reader observed.
- HID Card reader is utilized.

Intrusion Detection

- The building has ten (10) zones (14 available) of intrusion detection (four (4) motion sensors, four (4) doors, one (1) video trouble signal, and one (1) overhead garage door).
- System is a GE Security Concord 4 series system.
- Motion sensors were observed in main rooms and corridors.

Video Surveillance

Cameras are installed at several locations throughout the building. Cameras are also located at the back (south side) of the building and at the west entrance.

- These are monitored by the staff at computer stations.
- Staff indicated that the camera coverage is spotty.
- System is a Panasonic TDA50 series system Hybrid IP-PBX (KX-TDA50)

Audio/Video

Overhead paging system does not have adequate coverage for the space and should be replaced (if existing) or utilize fire alarm for supervised mass notification voice.

Very little audio-video equipment was existing in spaces including in conference rooms. This will need to be added in a renovation for technology functionality expected by the public.

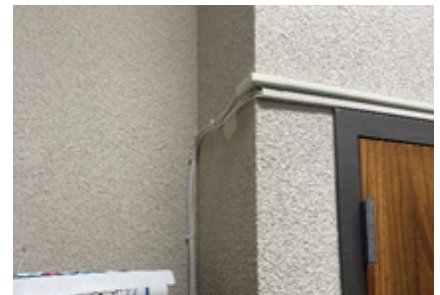


Figure 11: Exposed interior low voltage wiring and partially exposed raceway



Figure 12: Exposed Exterior Low Voltage Wiring

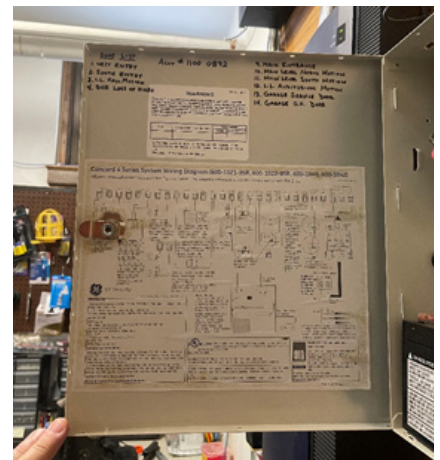


Figure 13: Intrusion Detection System

Kvernstoen, Rönholm & Associates

Room Acoustics

Existing room acoustical materials and characteristics are as follows:

- Plaster walls and ceiling in the collections, children's, and teen areas
- Hard ceiling and wall surfaces amplify conversational noise and reflect noise between different library areas.
- Carpeted floor in the collections, children's, and teen areas
- Book shelves provide sound absorption in the above areas
- Auditorium has plaster ceiling with the exception of a soffit with a 2' wide band of approximately NRC 0.65 rated ceiling tile
- Auditorium has VCT flooring

Current Reverberation Times in the Auditorium are shown in Table 1 below:

Table 1: Auditorium RT's

125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz
1.1 Seconds	1.4 Seconds	1.1 Seconds	1.2 Seconds	1.1 Seconds	0.8 Seconds

These RT's are significantly higher than recommended for the size and use of the space.

Mechanical Noise Control

The Measures Ambient Noise Levels were as follows:

Collections/Children's	56.1 dBA
Collections/Teen	60.1 dBA
Auditorium	60.2 dBA

The measured ANLs were higher than industry standards for library ambient noise levels, but primary noise sources were the air purifiers above the main entry door, and the air purifier and dehumidifier in the Auditorium which are a temporary solution.

For reference, the ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers) design guideline for HVAC-related background noise level in libraries is NC 30 (35 dBA).

MN B3 does not have specific recommendation for library background noise levels, but the general guideline is NC 40 (45 dBA). See discussion regarding the Auditorium below.

Auditorium Acoustics

For state funded projects MN B3 and Minnesota Statute §16C.054 require adequate acoustic conditions of gathering spaces and accommodation for hard-of-hearing for all spaces which accommodate and are intended for gatherings of 15 or more people, and where audible communications is integral to the use of the space:

1. Include audio-induction loops to provide an electromagnetic signal for hearing aids and cochlear implants if a permanent audio amplification system is present in the space.
2. The space must meet the American National Standards Institute Acoustical Performance Criteria, Design Requirements and Guidelines for Schools for:
 - Maximum background
 - Reverberation times

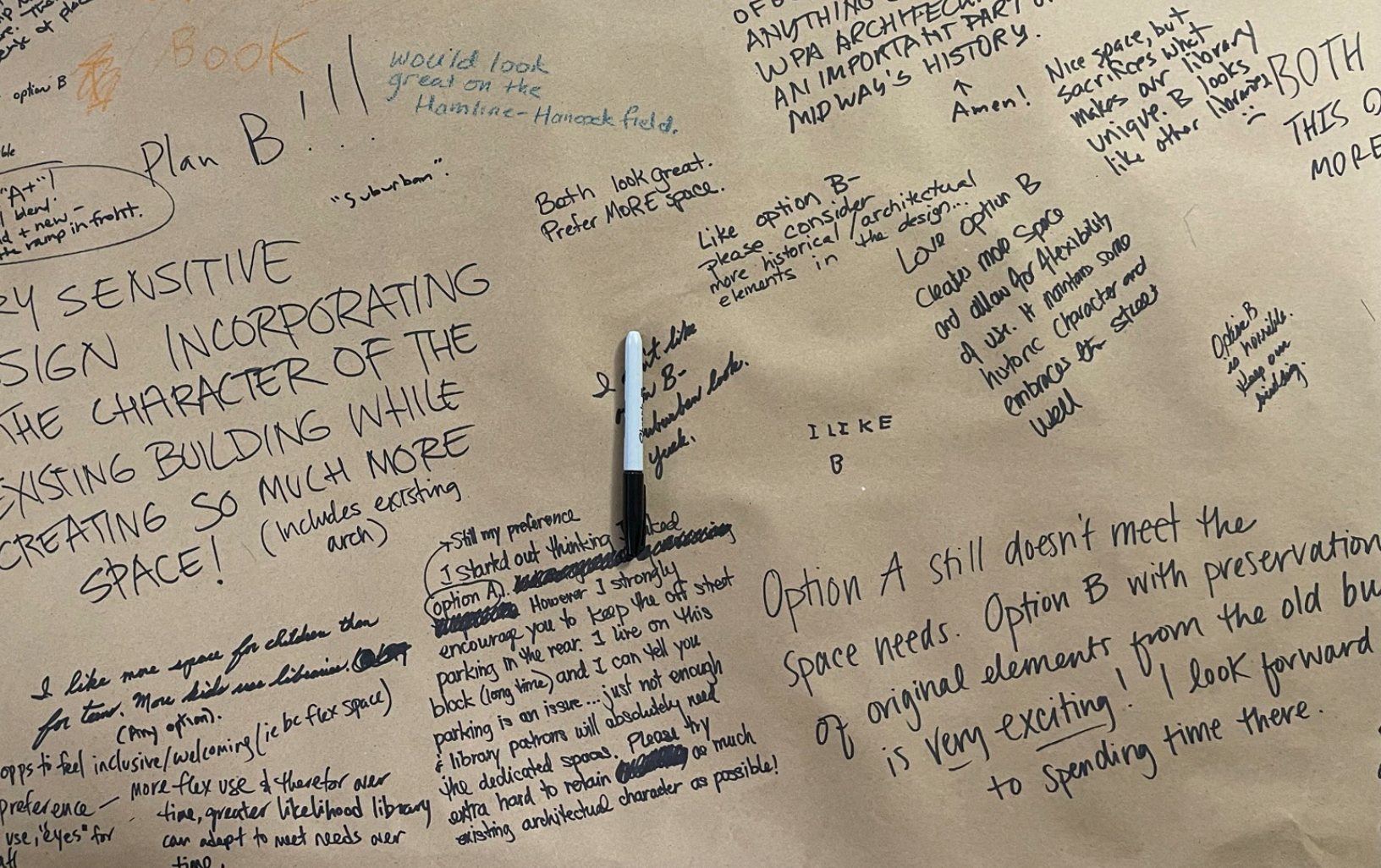
For this size assembly space the maximum background noise level requirement is 35 dBA (NC 30) and RT requirement is 0.7 seconds @ 500, 1k, and 2k Hz.



Temporary portable filter makes hearing presentations in auditorium difficult



Existing auditorium



PROCESS & TIMELINE

Hamline Midway Library
Saint Paul Public Library

LSE and SPPL undertook a robust and multifaceted public engagement process that took into account over one thousand voices from across Saint Paul. This in addition to SPPL's multi-year engagement process.

Project Ambassadors were invited to informational meetings where information on progress was shared to local stakeholders and the general public was invited to a series of open houses. One that covered general information pertaining to all projects and two specific to each library.

LSE utilized the IIAP2 spectrum to lead meetings with each group on a consistent location on the spectrum through the process. Both Project Ambassador and Open House meetings fell on the Involve spectrum that ensures feedback is reflected in final decisions but does not ultimately leave decision making into the hands of attendees. This was shared with attendees in the first open house.

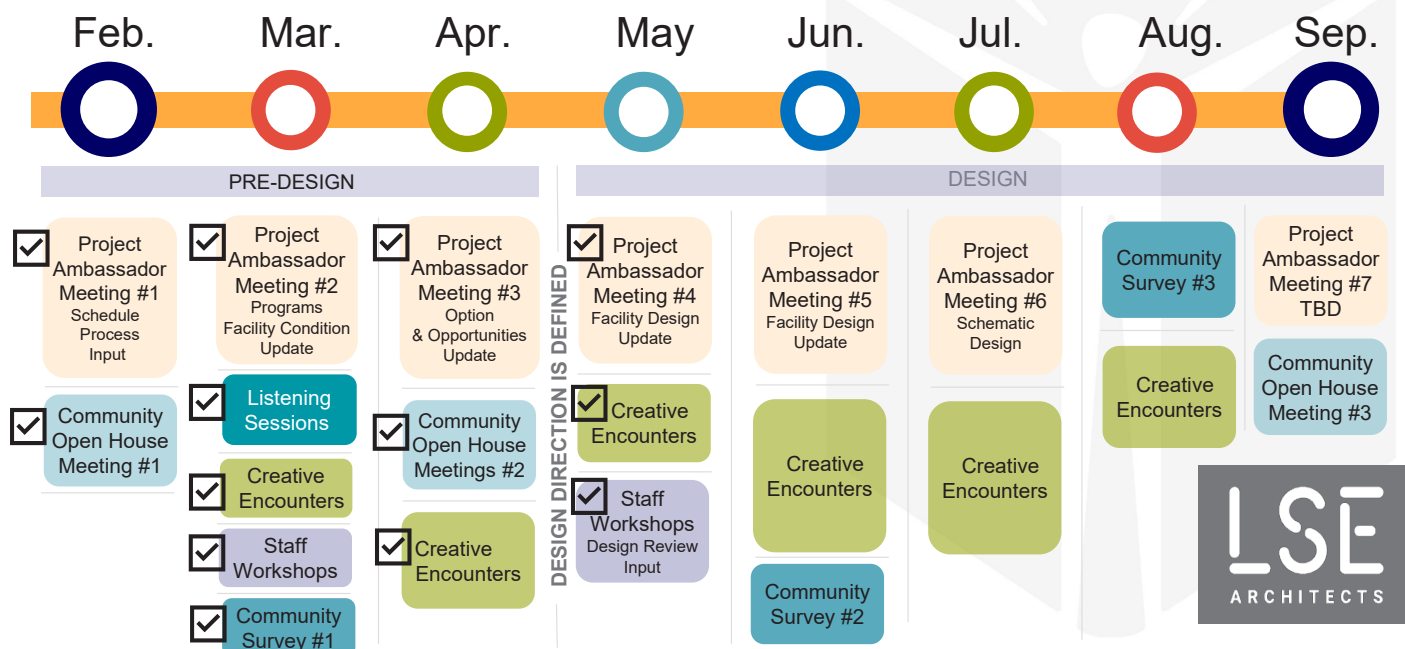
Further, surveys shared online and in pop-up events were distributed to the community.

	INFORM	CONSULT	INVOLVE	COLLABORATE	EMPOWER
PUBLIC PARTICIPATION GOAL	To provide the public with balanced and objective information to assist them in understanding the problem, alternatives and/or solutions.	To obtain public feedback on analysis, alternatives and/or decision.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.	To place final decision-making in the hands of the public.
PROMISE TO THE PUBLIC	We will keep you informed.	We will keep you informed, listen to and acknowledge concerns and aspirations, and provide feedback on how public input influenced the decision.	We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision.	We will look to you for advice and innovation in formulating solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.	We will implement what you decide.



IAP2 Spectrum as shared in Open House #1 (2.24.22)

Community Engagement Timeline



Community Engagement Timeline

Open Houses - IAP2 Level Involve

Series of 3-4 progressive meetings

- Open House #1, Virtual, February 24 6:30 PM
- Open House #2, In Person, April 22, 3-5 PM
- Open House #3 - In Schematic Design
- Open House #4 - In Design Development if Required

Listening Sessions

In-person listening sessions at each library

- Listening Session: In person, March 2, 4-6 PM

Community Surveys - IAP2 Level Involve

Series of progressive surveys

Library Design Project Ambassador Meetings - IAP2 Level Involve | Collaborate

Comprised of invited neighborhood groups, associations and youth leadership teens

Project Ambassador Meetings

- Project Ambassador Meeting #1, Virtual, February 8, 4 PM
- Project Ambassador Meeting #2, Virtual, March 8, 4 PM
- Project Ambassador Meeting #3, Virtual, March 30, 4 PM
- Project Ambassador Meeting #4, Virtual, April 26, 4 PM

Artist Advisory Cohort | Creative Encounters - IAP2 Level Collaborate

Co Facilitators of Engagement, lead ideation on engagement sessions and create creative encounters within the community

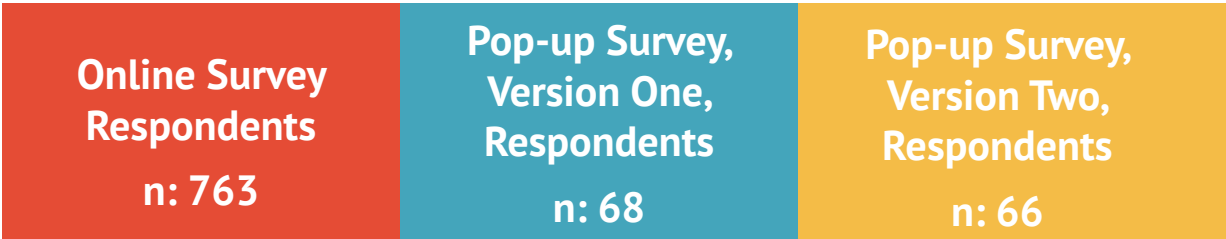
Ongoing

Library Staff Input – IAP2 Level Collaborate

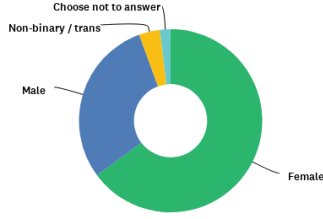
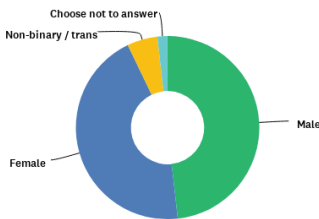
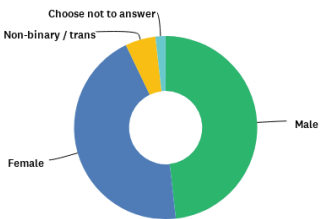
Ongoing



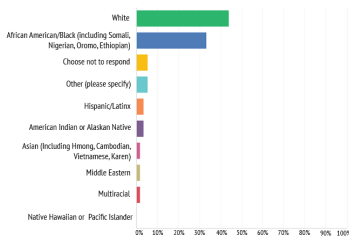
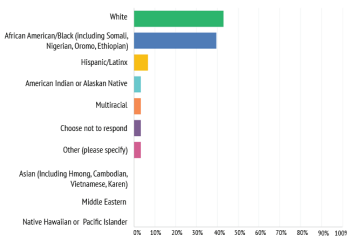
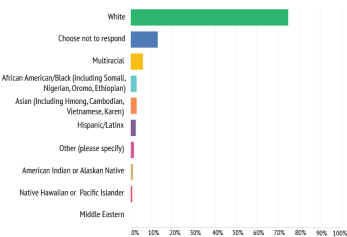
Survey was held in March 2022 and elicited over 1000 responses with 897 specific to Hamline Midway library.



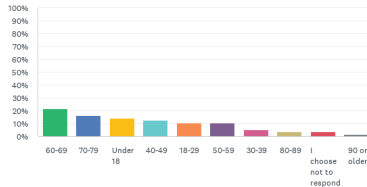
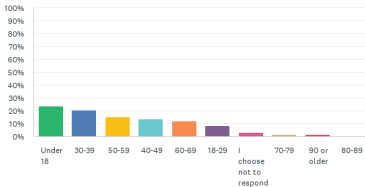
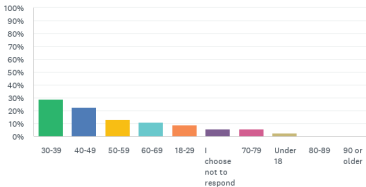
Gender
Identity



Race/
Ethnicity



Age



1

WE ASKED: What library features are most important to meeting the needs of the community?

WE HEARD:

**all
respondents**

- Improved accessibility
- Community meeting and/or program spaces and study rooms
- A space that reflects the cultures in my community

**BIPOC
respondents**

- A space that reflects the cultures in my community
- Improved accessibility

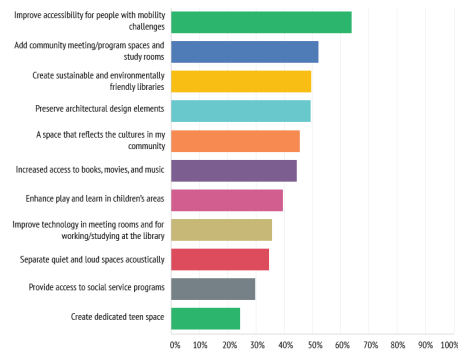
**respondents
under age 18**

- Sustainable and environmentally-friendly libraries
- Improved accessibility

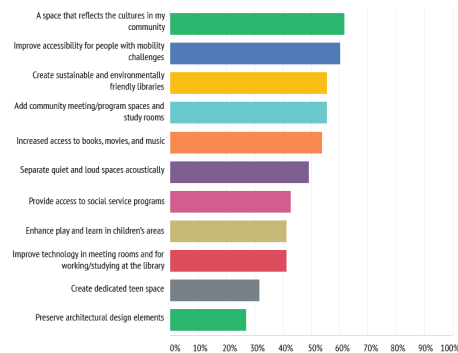
WE ASKED: What library features are most important to meeting the needs of the community?

WE HEARD:

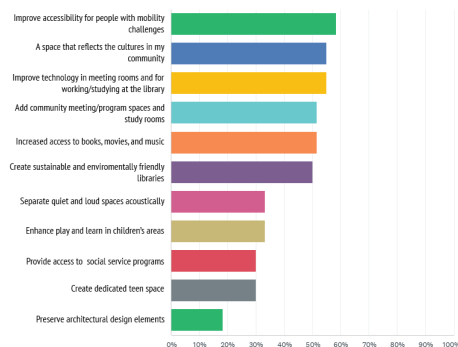
**online survey
respondents**



**pop-up survey,
version 1,
respondents**



**pop-up survey,
version 2,
respondents**



There are two versions of pop-up survey data due to a difference in the way respondents answered survey questions.

WE ASKED: What concepts best meet the needs of the community today and for the next 100 years?

WE HEARD:

**all
respondents**

No strong community consensus on concepts. Support for concepts varied.

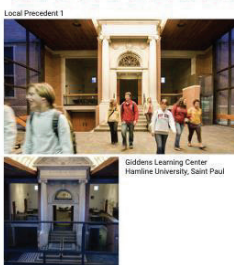
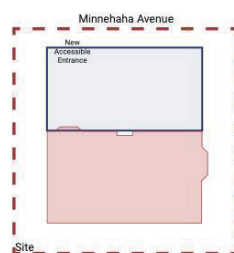
**BIPOC
respondents**

Support for concepts varied.

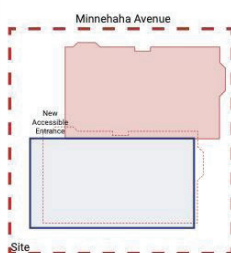
**respondents
under age 18**

Consistent support for concept 2.

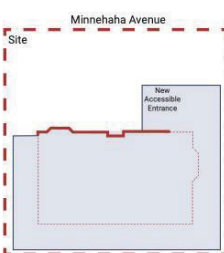
1. Addition to building in front of existing building



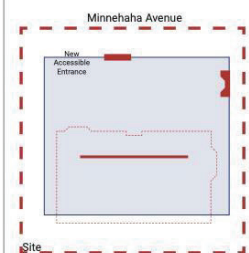
2. Move building to new location on site and addition



3. Preserve facade new building



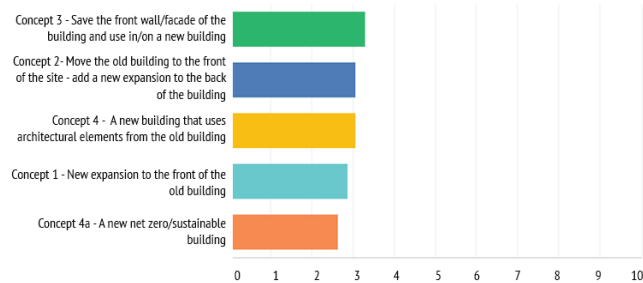
4. Reuse architectural features and materials in new construction



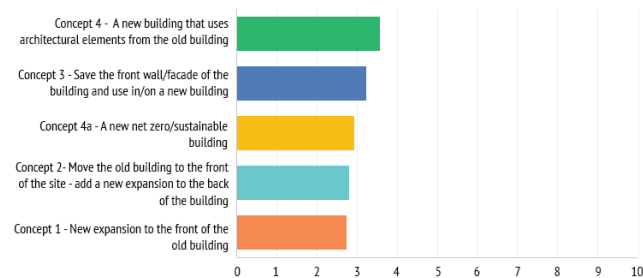
WE ASKED: What concepts best meet the needs of the community today and for the next 100 years?

WE HEARD:

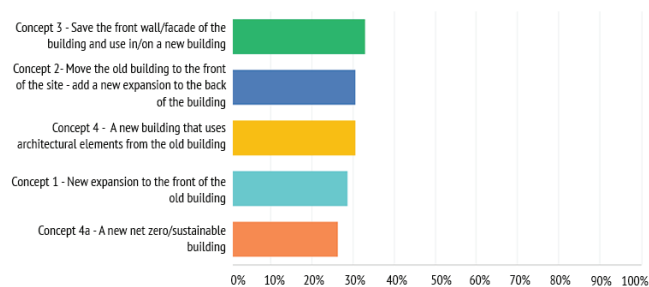
**online survey
respondents**



**pop-up survey,
version 1,
respondents**

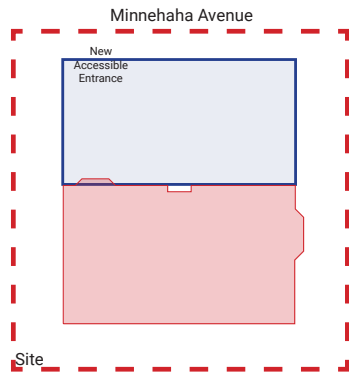


**pop-up survey,
version 2,
respondents**



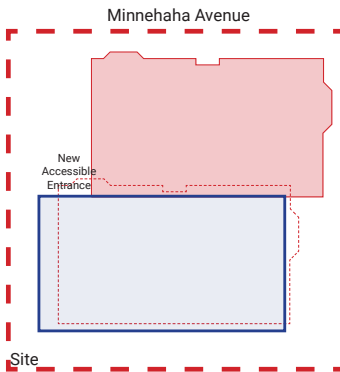
There are two versions of pop-up survey data due to a difference in the way respondents answered survey questions.

1. Addition to building in front of existing building



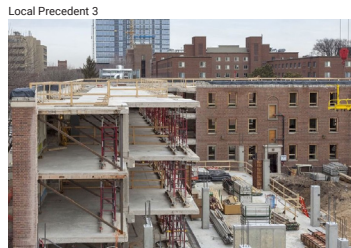
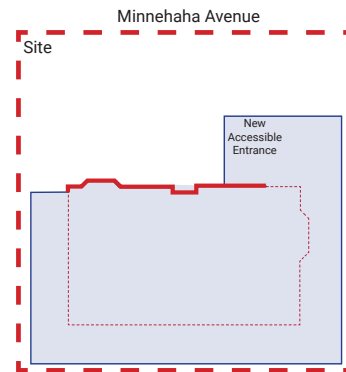
Giddens Learning Center
Hamline University, Saint Paul

2. Move building to new location on site and addition



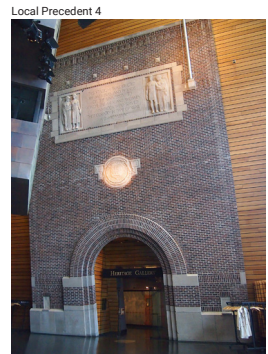
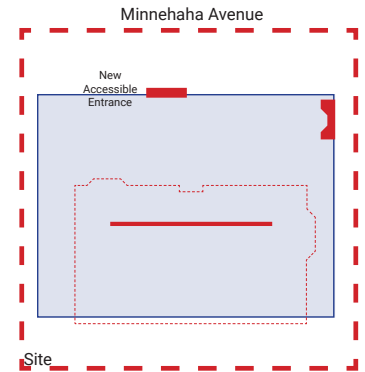
Moving of the Schubert Theater
Minneapolis

3. Preserve facade on new building



Pioneer Hall
University of Minnesota, Minneapolis

4. Reuse architectural features and materials in new construction



Above: McNamara Alumni Center
University of Minnesota, Minneapolis
Antoine Predock with key LSE Team Members

CONCEPT DEVELOPMENT

Hamline Midway Library Saint Paul Public Library

Option A

The extensive renovation and expansion to the 1930, two story building, addresses existing building deficiencies identified in the Assessment portion of this report, demolishes of the rear third of the building, and expands the building from a 4000 sf Main Level, to a 6,200 sf Main Level. The expansion strategy to the rear of the building that maintains the front of the building is the renovation strategy that had the most support in the surveys. This expansion option addresses accessibility with a front ramp, allowing all visitors to use the front door. The addition size is limited both by the available area and the budget. Parking in this option is provided on the street.

Option B

The new construction option that preserves elements of the building and front façade was the overall preferred option in the surveys. This option allows for a 9400 sf single story library, which would include a Main floor flexible Multi-Purpose Community Room. Parking is maintained at the rear of the building, with additional parking on the street. The new construction allows for the building envelope and systems to be designed to meet the SB 2030 and best set up to meet carbon neutrality.

SPPL Libraries		Hamline Midway - Goal Program			
		Quantity	Size	Subtotal	Total Notes
0	Circulation	75			
	Vestibule	1	75	75	Program ideal is a single entrance
	Stairs	-	-	-	Program ideal is on one level
	Elevator	-	-	-	Program ideal is on one level
	Elevator Lobby	-	-	-	Program ideal is on one level
	Circulation				
1	Administration	1,510			
	Staff Workroom	1	800	800	
	Staff Office	1	140	140	
	Breakroom	1	250	250	
	Service Desk	1	250	250	
	Book Drop	1	20	20	
	Self Check	2	25	50	
2	Collections	3,600			
Adult				-	
	Display	1	300	300	
	Collections	1	900	900	
	Tech	1	600	600	
	Seating	1	300	300	
Children					
	Collections	1	450	450	
	Play	1	250	250	
	Tech	1	150	150	
	Seating	1	150	150	
Teen					
	Collections	1	100	100	
	Maker / Seating	1	250	250	
	Tech	1	150	150	
				-	
3	Community & Breakout Spaces	1,040			
	Community Room	1	900	900	
	Study Rooms	2	70	140	
4	Toilets / Mothers Rooms / Quiet Rooms	4		330	
Toilets					
	Public Single User Toilet	2	85	170	
	Staff Toilet	1	85	85	
	Mothers / Wellness Room	1	75	75	
5	Partner Spaces	600			
	Partner Spaces	1	600	600	
6	Storage	250			
	Outdoor Storage	1	250	250	Direct Access to Exterior
	Sub Total			7,405	Net Square Feet
	Gross Factor			25%	1,851 Walls, Partitions, Circulation
	Building Area			9,256	Gross Square Feet
	Mechanical	1	900	900	Not required on main level
	TOTAL			10,156	Gross Square Feet
7	Exterior	-			
	Parking Lot				Not required by city, may be desired
	Reading Garden				Desired outdoor programming space



CONCEPT A

Hamline Midway Library Saint Paul Public Library

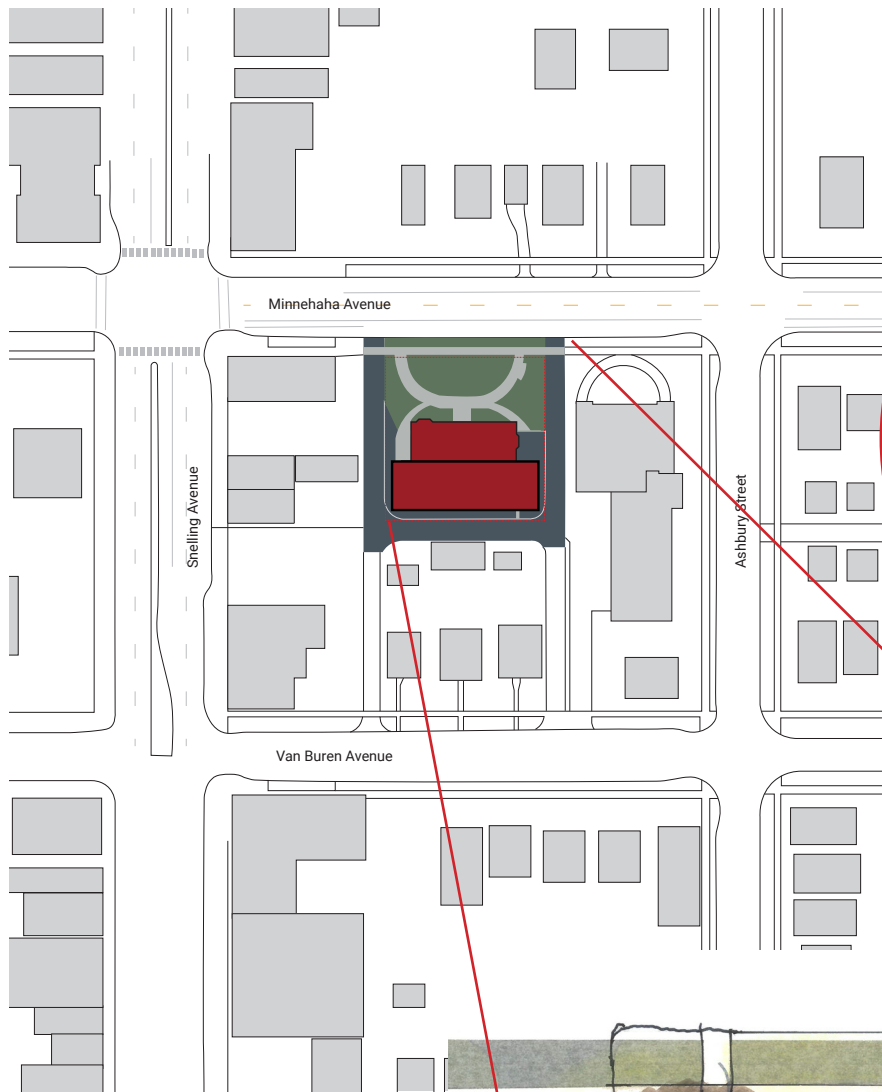
Based on Surveys, moving the existing building forward and expanding to the back of the existing building was the preferred Renovation and Expansion Option. After pricing each of the concepts, moving the building forward was not feasible. The option shown here, like that option, maintains the existing library Reading Room and expands to the back. Given the renovation cost and the amount of space for expansion to the back, the Main Level Library space in Option A is smaller than the proposed SPPL program area with 6000 sf on the Main Public Level and additional space in the lower level available only when mediated by staff.

Accessibility has been improved in this option by providing a 1:20 sloped walkway to the Main Entry, allowing everyone to enter through the front door. The materials used for the rear addition could be selected to compliment the existing brick and precast but not an exact match.

Having the staff Workroom, and the book drop on the lower level of the library is inefficient for staff and material management. Having the Community Room on the lower level will mean mediated use only. The need for a lift to the lower level Community Room has been eliminated by aligning the floor elevation of the addition with the community room and rebuilding the back portion of the building that does not currently meet accessibility.

The existing building envelope (foundation, slab, walls and roof) and mechanical systems do not meet today's energy code and will require significant investment to meet the Saint Paul Sustainable Building Policy.

Street parking available in the option as shown.



Conceptual Site Plan A

Q: What is a "conceptual site plan?"

A: Conceptual is the first phase of the project. The overall idea for the site is established however there is still a significant opportunity for input in design.



Exterior programming opportunities provide safe space for children and community access to outdoor space for storytime and events.



Safety and maintenance upgrades include new site lighting, bike parking, cameras, and concrete and paving repairs.





New entry provides accessible access to building, **everyone can enter through the front door.**



Equity and safety are improved with new single user gender-neutral and accessible restrooms, relocated to improve sightlines for library staff.



Lower level includes a community room and a flex-space for **creative programming and meetings.**

This space is accessible to the public when library programs are in operation or by community reservation.

SPPL Libraries		Hamline Midway - Concept A			
		Quantity	Size	Subtotal	Total Notes
0	Circulation	1,650			
	Vestibule	1	120	120	
	Stairs	2	190	380	Program on Two Levels
	Elevator	2	65	130	Program on Two Levels
	Elevator Lobby	2	60	120	Program on Two Levels
	Circulation			900	
1	Administration	1,200			
	Staff Workroom	1	600	600	On Lower Level
	Staff Office	1	150	150	
	Breakroom	1	130	130	On Lower Level
	Service Desk	1	250	250	
	Book Drop	1	20	20	
	Self Check	2	25	50	
2	Collections	3,540			
Adult				-	
	Display	1	260	260	
	Collections	1	850	850	
	Tech	1	610	610	
	Seating	1	275	275	
Children					
	Collections	1	450	450	
	Play	1	240	240	
	Tech	1	160	160	
	Seating	1	160	160	
Teen					
	Collections	1	100	100	
	Maker / Seating	1	275	275	
	Tech	1	160	160	
				-	
3	Community & Breakout Spaces	1,100			
	Community Room	1	1000	1000	On Lower Level
	Study Rooms	2	50	100	On Lower Level
4	Toilets / Mothers Rooms / Quiet Rooms	4	333		
Toilets					
	Public Single User Toilet	2	86	172	
	Staff Toilet	1	86	86	On Lower Level
	Mothers / Wellness Room	1	75	75	
5	Partner Spaces	615			
	Partner Spaces	1	615	615	
6	Storage	225			
	Outdoor Storage	1	225	225	
	Sub Total			8,663	Net Square Feet
	Gross Factor			18%	1,559 Walls & Partitions
	Building Area			10,222	Gross Square Feet
	Mechanical	1	1400	1,400	Basement
	TOTAL			11,622	Gross Square Feet
7	Exterior	-			
	Parking Lot	0	Spaces		Not required by city, may be desired
	Reading Garden	1			Front Yard



CONCEPT B

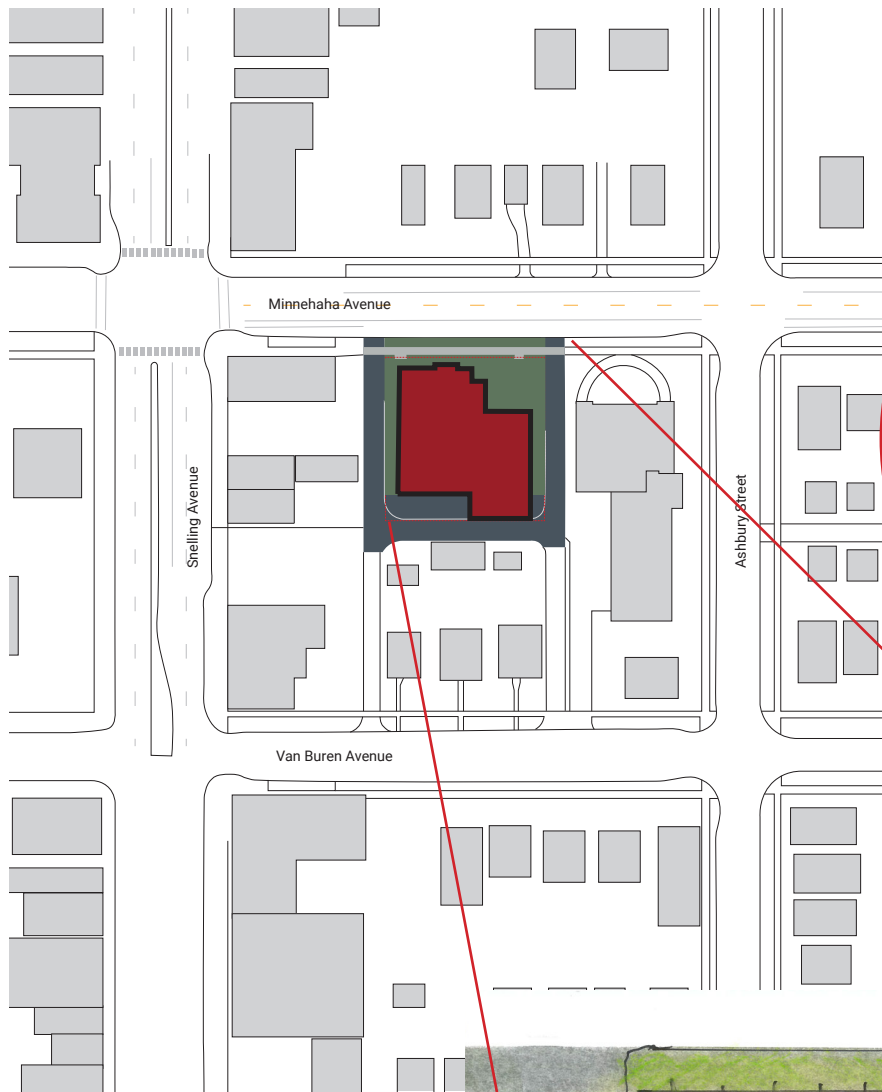
Hamline Midway Library Saint Paul Public Library

Based on Surveys, a new larger library with features of the existing buildings front façade and elements from the existing building is the overall preferred option for expanding the library. This concept for a new Hamline Midway Library meets the proposed SPPL program area with 9400 sf on one Level within the limit of the Library Transformation project budget.

Accessibility has been dramatically improved with a single level library where everyone enters the through the front door. The materials for the new library could include reuse of existing materials such as the arched entry and salvaged brick and precast. In a new library we could look not only to the historical materials, but also incorporate references to the diversity of cultures represented in the community today with use of added patterning in the brick and precast. Having the staff Workroom, and the book drop on a single level supports staff efficiencies and improves security. In this option, the Community Room is a part of the main level, central to the library, with flexible, operable walls into both the Children's. This flexibility allows the community room to be utilized throughout the day for programs such as Story time, guest author readings, large group meetings, educational programs and more. When it is not reserved, the operable doors could remain open for library patrons to utilize for quiet reading or focused work. Added community and meeting space was the top request we heard during engagement.

A new library will be designed to meet Saint Paul's Sustainable Building Policy and has greater opportunity to achieve a Net Zero status if desired.

The option shown maintains the current parking.



Conceptual Site Plan A

Q: What is a "conceptual site plan?"

A: Conceptual is the first phase of the project. The overall idea for the site is established however there is still a significant opportunity for input in design.



Exterior programming opportunities provide safe space for children and community access to outdoor space for storytime and events.



Safety and maintenance upgrades include new site lighting, bike parking, cameras, and concrete and paving repairs.



Conceptual Floor Plan B

The estimated cost is within the Library Transformations project budget.

Q: What is a "conceptual floor plan?"

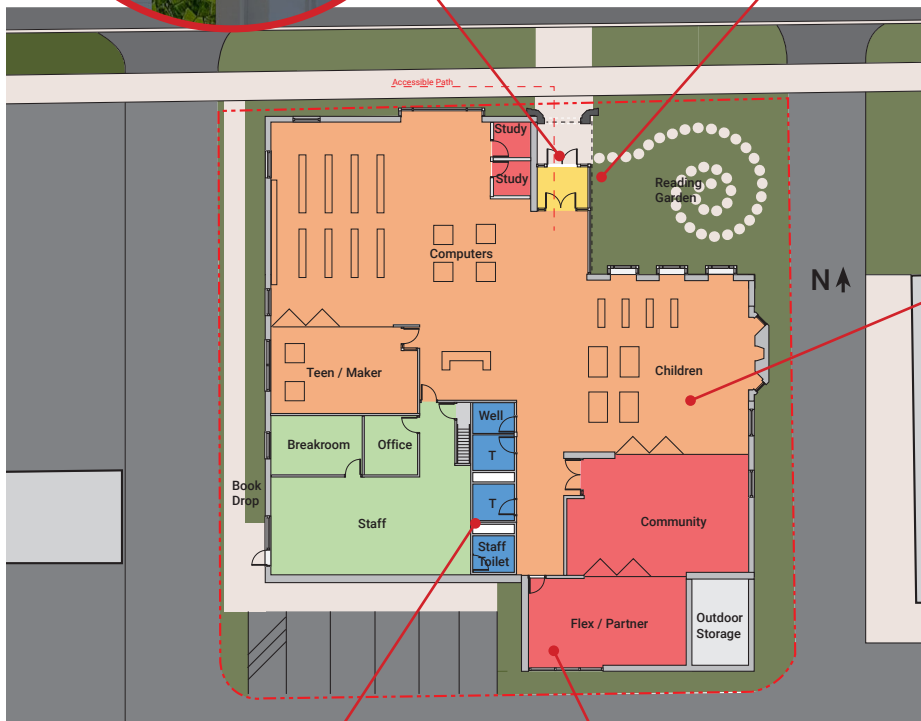
A: Conceptual is the first phase of the project. The overall idea for the building layout is established however there is still a significant opportunity for input in design.



New entry provides opportunities for **reuse of building materials**, in a new way that provides equitable access through the front door.



Opportunities for iconic **public art installations** that reflect the Hamline Midway community.



Expanded **children's area** provides opportunities for dynamic family play and a fireplace and adjacent community room for storytime.



High-performance enclosure and systems will provide best-in-class **energy performance**, opportunities for rooftop solar, and daylight harvesting.



Equity and safety are improved with new single user gender-neutral and accessible restrooms, relocated to improve sightlines for library staff.





Based on survey responses and community desire for **flexible space to support creative programming and community meets**, plan includes flexible meeting rooms that allow small, medium, and large-sized configurations.

SPPL Libraries		Hamline Midway - Concept B			
		Quantity	Size	Subtotal	Total Notes
0	Circulation	260			
	Vestibule	1	80	80	
	Stairs	-	-	-	Program on Two Levels
	Elevator	-	-	-	Program on Two Levels
	Elevator Lobby	-	-	-	Program on Two Levels
	Circulation			180	
1	Administration	1,795			
	Staff Workroom	1	800	800	
	Staff Office	1	140	140	
	Breakroom	1	245	245	
	Service Desk	1	250	250	
	Book Drop	1	310	310	
	Self Check	2	25	50	
2	Collections	4,015			
Adult				-	
	Display	1	300	300	
	Collections	1	990	990	
	Tech	1	650	650	
	Seating	1	470	470	
Children					
	Collections	1	480	480	
	Play	1	250	250	
	Tech	1	180	180	
	Seating	1	160	160	
Teen					
	Collections	1	100	100	
	Maker / Seating	1	275	275	
	Tech	1	160	160	
				-	
3	Community & Breakout Spaces	1,080			
	Community Room	1	950	950	
	Study Rooms	2	65	130	
4	Toilets / Mothers Rooms / Quiet Rooms	4		333	
Toilets					
	Public Single User Toilet	2	86	172	
	Staff Toilet	1	86	86	
	Mothers / Wellness Room	1	75	75	
5	Partner Spaces	650			
	Partner Spaces	1	650	650	
6	Storage	260			
	Outdoor Storage	1	260	260	
	Sub Total			8,393	Net Square Feet
	Gross Factor			12%	1,007 Walls & Partitions
	Building Area			9,400	Gross Square Feet
	Mechanical	1	900	900	Penthouse
	TOTAL			10,300	Gross Square Feet
7	Exterior	-			
	Parking Lot	5	Spaces		Not required by city, may be desired
	Reading Garden	1			Front Yard

Cost estimate produced by Eden Resources of Saint Paul. Full breakdown of assumptions in appendix.

Of the overall project budget of \$8.1 million the construction portion of the budget is \$6,075,000.

SECTION A: CONCEPTUAL		HAMLINE MIDWAY	
MODEL INFORMATION		Option-A	Option-B
LSE conceptual plans, dated 4/22/2022			
Description of Scope Addition / New / or ETR Exterior SOW		Demo, Major RENO 2L Addition - Plan S	Demo, Build New New 1-storey
Building Areas include:			
Main L / L1 Renovation		2,787	-
Lower L / LL Renovation		2,786	-
RENOVATION TOTAL SF		5,573	-
Main L / L1 Addition		3,508	9,400
Lower L / LL Addition		2,552	
ADDITION TOTAL SF		6,060	9,400
VALUE-1 / RENOVATION SF		5,573	-
VALUE-2 / ADDITION SF		6,060	9,400

SECTION B - CONCEPTUAL		HAMLINE MIDW	
MODEL ESTIMATE		Option-A	Option-B
Demolition, Site/Salvage	\$	132,000	\$ 50,000
Demolition, Building	\$	75,620	\$ 65,100
Site Construction	\$	359,450	\$ 420,000
Building Construction	\$	4,461,935	\$ 4,089,000
SubTOTAL Site / Building Construction	\$	5,029,005	\$ 4,624,100
Unit \$ / SF	\$	432.31	\$ 491.93
SubTOTAL Site / Building Construction	\$	5,029,005	\$ 4,624,100
Contractor, Fee/OHP	\$	341,469	\$ 312,127
SubTOTAL Construction	\$	5,370,474	\$ 4,936,227
Contingency (+10%)	\$	537,047	\$ 370,217
Owner FF&E	\$	452,000	\$ 452,000
Owner FF&E-2	\$	48,000	\$ 48,000
Escalation (+5%)		considered	spr2023 construct
Location Factor (0-5%)		considered	considered
Gross Up Factor (optional, excl.)		recommend +\$255K	none - N/R
A/E Professional Fee's, Testing		excluded	excluded
Project TOTAL - Conceptual ESTIMATE, 2023	\$	6,407,522	\$ 5,806,444
Project \$, Unit \$ / SF	\$	550.81	\$ 617.71
<i>If 2024 construction, then</i> Escalate (+5%)	\$	320,376	\$ 290,322
<i>If 2025 construction, then</i> Escalate (+5%)	\$	336,395	\$ 304,838

Directive	Response	Concept A	Concept B
Accessibility & Entry	Library and community response supports radical accessibility, not just meeting ADA, but providing a welcoming library for people of all abilities.	Concept A improves accessibility as compared to the existing building. Everyone can enter through the front door, many functions are on the main level. Sloped access could provide some accessibility concerns.	Concept B provides identical access throughout building and site for people of all abilities. There are no barriers to access.
Sustainability	Library and community response strongly supports sustainable construction.	Concept A, in preserving some of the existing building does save some embodied energy however a significant portion of the building needs renovation and the final product includes uninsulated walls that will hinder energy performance for the life of the building. Final building is a larger volume of space due to inefficiencies that will use more energy to heat, cool, and maintain. Elevator to lower level staff will be a significant source of energy.	Concept B provides the best energy use over the life of the building. Concept B has the greatest ability for on-site renewables and the highest efficiency enclosures. The volume of the enclosure is designed to the size of the program and will use less energy to heat, cool, and maintain. Single level provide a significant energy savings.
Site	Library supports use of site for programming. City does not require parking on site, however staff feedback indicates a desire for a small amount of parking.	Concept A provides opportunities for site use on existing front yard. Feedback has informed concerns that lack of parking will be of concern to some patrons and staff. Lack of barrier to Snelling Avenue may render yard too loud for some uses.	Concept B provides shielded reading garden space that is ideal for programmatic spaces. Concept loses overall site area and a developed site tree. Concept provides option for parking.
Staff Areas	Library has strong desire for office on the main level. Staff workroom on lower level decreases efficiency.	Concept A provides managers office on main level. Staff areas remain on lower level which is not desired by staff due to using elevator to move books, but is a larger space that is fully accessible which is an improvement to the existing conditions.	Concept B provides all staff areas on the main level. This is the most efficient option for staffing and circulation and allows for better staff collaboration and safety.
Technology	Library and community response shows strong desire for increase access to technology	Concept A provides larger tech area, improved wifi, teen/maker space.	Concept B provides larger tech area, improved wifi, teen/maker space.
Separation of Quiet and Loud Spaces	Library and community response shows desire for active and quiet spaces	Concept A is a singular room and will not provide significant sound improvements between spaces. Concept adds quiet study rooms and teen area can be partially closed off from larger library.	Concept B is a singular room split to provide some acoustic control in main space. Meeting room is supervisable and can be used as a quiet study room. Concept adds quiet study rooms and teen area can be partially closed off from larger library.
Preservation of existing building	Building is not designated as historic, however some community response shows a desire to preserve some or all of existing building.	Concept A preserves front facade with some community response strongly in favor.	Concept B uses some elements from library in new construction including the entry arch and reuse of brick and stone. Some community response strongly in favor.
Safety & Security	Desire of library to contain as much if not all library programming space on main level	Concept A moves a significant amount of library programming space to the main level including toilet facilities. All lower level programming is mediated use. All patrons to use a single entrance.	Concept B provides all library and staff programming on one level that is supervisable. All patrons use a single entrance.

Civil Engineers

Pierce Pini & Associates

The concept plans for the Hamline Midway Library improvements include the removal of the front entry stair, detached storage garage, former coal bins and current mechanical equipment above, and either partial or complete removal of the existing building. All existing utility services should be removed to the main in Minnehaha Avenue. New sanitary sewer, water, and storm services will need to be constructed to the building. Site finish grading will be required to ensure positive drainage away from the building. In both the partial demolition option and the full demolition option, it is anticipated that substantial disturbance will occur to the south of the building and the adjacent alley and parking stall will need to be reconstructed. New sidewalks at the front of the building will be constructed to provide adequate accessibility to the entry.

Architectural

LSE Architects

Concept plans vary significantly between options.

Concept A indicates selective demolition of the rear portion of the existing building and a new addition that will increase floor to floor height on the lower level to allow for mechanical space. Existing building requires a significant renovation that adds waterproofing at the foundation, repairs the foundation due to water infiltration, and complete replacement of the interior finishes. The windows and storefront system will be replaced. A new roof meeting code will be installed. Existing masonry will be tuck-pointed but additional insulation is infeasible without a significant reconstruction of the wall. The addition will be a masonry rainscreen system with continuous insulation per Minnesota energy code.

Concept B indicates complete demolition of the existing building and a new building in its place. The exterior facade will be a rainscreen system with continuous insulation per Minnesota energy code and a high-performance curtainwall glazing system.

In both options, the interior partitions will be gypsum on metal stud partitions and insulated for acoustical purposes at new partition walls. New flooring will be carpet. Toilet rooms will be single user toilets with new tile finishes. Glazed operable partition at teen area and at the meeting room (in option B only) will provide flexibility to use space as part of the larger library and its own acoustically separated space.

Structural Engineers

IMEG Engineering

Option A involves demolition of a portion of the existing building and adding a 2-story addition.

The typical roof framing will be 1 1/2" steel roof deck supported on steel bar joists (or steel wide flange purlins) spaced at a maximum of 5 feet on-center. The bar joists will be supported on an exterior steel beam and column line as well as a beam and column line adjacent to the existing building.

The floor framing will be a composite steel system. The slab will be 3 1/2" of concrete over 2"-20 ga. Composite deck for a total slab thickness of 5 1/2" supported on steel wide flange purlins. There will be 3/4" diameter headed studs welded to the steel beams to provide composite action between the

beams and floor slab. The floor framing will be supported on steel columns at the exterior wall and adjacent to the existing building .

The exterior walls will be non-load bearing steel studs.

We have assumed the foundations will be standard spread footing foundations.

Mechanical, Electrical, and Plumbing Engineers

KFI Engineers, Mechanical, Electrical, and Plumbing Engineers

Building HVAC Systems

- A. With both Options 1 and 2, new air handling units (AHUs) will provide ventilation, heating, and cooling to the occupied spaces. These units will be located within the mechanical room. ASHRAE 90.1 2019 will be utilized to determine required efficiencies.
- B. For heating and cooling of the building, sustainable options will be reviewed which include ground source heat pumps and air side total energy recovery. Other options may include:
 - a. A new 30 ton air cooled chiller shall provide dehumidification and cooling to the AHUs. Unit shall be located on the roof within a sound enclosure, or on grade.
- C. Restrooms will be exhausted through exhaust fans, through the roof.
- D. The building automation system will be direct digital controls and meet SPPL standards. The following requirements will be included:
 - a. Air side economizer
 - b. Demand control ventilation
 - c. Boiler / chiller system controls
 - d. Supply air temperature reset for multizone
- E. Metering of HVAC loads will meet guidelines listed in B3 2030. Meeting a two-percenter goal for renewable energy will be evaluated and included if found to be cost effective.
- F. Systems shall be commissioned.

Building Plumbing Systems

- A. Storm water will be routed through drains and scuppered to grade.
- B. Solar thermal systems will be evaluated for domestic water heating.
- C. Water fixtures shall be low flow and meet the following requirements:
 - a. Lavatory faucets less than or equal to 1.5 gallons / minute
 - b. Kitchen and panty faucets less than or equal to 2.0 gallons / minute

Building Fire Protection System

- A. The new building would be considered A-3 occupancy, not requiring an automatic sprinkler system if less than 12,000 square feet and less than 300 occupant load. However, consideration of other trade-off costs should be reviewed that financially affect the project (ie insurance, fire alarm and detection requirements).

Building Power Distribution System

- 1. Provide a new 120/208 volt, 3 phase, 4 wire, 400 amp Electrical Service. The service will consist of a new 400 amp main panelboard and two (2) 200 amp branch circuit panelboards.
 - a. Large mechanical loads will be fed from the main panelboard.

- b. Lighting and small loads will be fed from the two (2) branch circuit panelboards.
- 2. New general purpose receptacles will be provided throughout the building.

Building Lighting

- A. New LED lighting fixtures will be provided throughout the building.
 - a. The lighting design and light fixture selections will be developed as a joint effort by LSE Architects and KFI Engineers.
 - b. New automatic lighting controls will be provided for all spaces to meet the energy code. Lighting control will consist of:
 - i. Occupancy control.
 - ii. Dimming control.
 - iii. Daylighting Control.
 - c. Emergency lighting will be provided by battery powered emergency light fixtures.
 - d. New exterior lighting will be provided at building entrances and exits.
 - e. New site lighting will be provided.
 - i. Exterior and site lighting will be controlled by a photocell for dusk to dawn control and dimmed by 30% on a time of day schedule.

Fire Alarm Systems & Technology Systems

- A. A new Fire Alarm System will be provided. The fire Alarm system will consist of the following:
 - a. Main Fire Alarm Control Panel.
 - b. Remote annunciator at the building entrance.
 - c. Smoke Detectors.
 - d. Annunciation devices (Speakers and Strobes).
 - e. The fire alarm system will be capable of supervised mass notification.
- B. New telecommunications systems infrastructure will be provided. The telecommunications system infrastructure will consist of the following:
 - a. New data rack/cabinet.
 - b. New voice/data jacks and Cat 6A cabling.
 - c. Wireless access points will be installed to provide coverage throughout the building.
- C. A new access control system will be provided for the building. Card readers will be provided at entrance doors, and non-public spaces.
- D. A new security system will be provided, the security system will consist of:
 - a. Motion sensors.
 - b. Door contacts.
 - c. Security cameras. Cameras will be installed to provide comprehensive coverage.
- E. New audio visual systems will be provided in all meeting rooms. Audio visual components will include:
 - a. Flat panel displays (projector and projector screen where needed due to size).
 - b. HDMI Inputs where needed.
 - c. Network access.¹

Saint Paul Sustainable Building Policy

LSE Architects

Saint Paul Sustainable Building Policy applies to the planning, design, construction, and commissioning of any new construction project receiving more than \$200,000 in City and/or HRA funding. This policy allows for a number of rating systems and levels with which to minimally comply, for this project the State Guidelines Building Benchmarking and Beyond (B3) rating system has been selected. The B3 rating system employs the SB 3030 Energy Standard, which is a passive energy and carbon reduction program. SB 2030 recently adopted a target reduction of 80% - this relative to an energy model that simulates the energy use of a 2003 average building of the same function and operation.

For renovation projects – the SB2030 recently adopted targets for passive energy and carbon reduction of 80% are difficult to achieve. In light of this, during the last half of 2019, the cost-effectiveness evaluation was updated, permitting a verification of the metric (payback period, excluding incentives) and the value to ensure that the program continues to adhere to the cost-effectiveness outlined in the authorizing legislation.

This updated evaluation will be used on this project to determine the cost-effective boundary used in evaluation of the hierarchy of efficiency and renewable energy options. The updated analysis concludes that a payback period of 12 years is the cost-effective boundary for measures under the SB 2030 program, using the analysis method outlined above for current utility factors. Once this cost-effective boundary is met with efficiencies, the project may then look to renewable energy supply options first on-site, then off-site, and finally the remaining renewable energy needed to meet the SB 2030 standard shall be procured through Renewable Energy Credits (RECs).

For new projects – the SB2030 recently adopted targets for passive energy and carbon reduction of 80% (or perhaps even Zero Carbon) are less difficulty to achieve through energy efficiencies, as new materials and building envelope systems are more conducive to attaining higher energy efficiencies. With this said, the cost-effectiveness evaluation becomes less relevant, but is still applicable, permitting a verification of the metric (payback period, excluding incentives) and the value to ensure that the program continues to adhere to the cost-effectiveness outlined in the authorizing legislation.

Similar to renovations, the updated evaluation for new construction will be used on this project to determine the cost-effective boundary used in evaluation of the hierarchy of efficiency and renewable energy options. The updated analysis concludes that a payback period of 12 years is the cost-effective boundary for measures under the SB 2030 program, using the analysis method outlined above for current utility factors. Once this cost-effective boundary is met with efficiencies, the project may then look to renewable energy supply options first on-site, then off-site, and finally the remaining renewable energy needed to meet the SB 2030 standard shall be procured through Renewable Energy Credits (RECs).

In addition to the B3 SB2030 requirements, the project will also be subject to the following mandatory requirements, known as the “Saint Paul Overlay,” will also be met within the in addition chosen rating system:

1. Predicted use of potable water in the building must be at least 30% below EPA Policy Act of 1990.

2. Predicted water use for landscaping must be at least 50% less than a traditionally irrigated site using typical water consumption for underground irrigation systems standards.
3. Actual solid waste of construction materials, excluding demolition waste, must be at least 75% recycled or otherwise diverted from landfills.
4. Indoor Environmental Quality (IEQ) must be addressed through the following strategies:
 - a. ventilation based on ASHRAE 62.1-2004 or meet the minimum requirements of Sections 4 through 7 of ASHRAE Standard 62.1-2007
 - b. construction IEQ management plan
 - c. low-emitting materials
 - d. thermal comfort
5. Storm Water Management Requirements:
 - a. Site Eligibility: Sites with $\frac{1}{4}$ acre or more of total land disturbance
 - b. Rate Control: 1.64 cubic feet per second (cfs) /acres disturbed
 - c. Water Quality Management: For a 2 year, 24-hour rainfall event, provide treatment systems designed to remove 80% of the average annual post development Total Suspended Solids (TSS) and remove 60% of the average annual post development Total Phosphorus (TP), by implementing Best Management Practices (BMPs) outlined in "Urban Small Sites Best Management Practices" handbook (Metropolitan Council), "Protecting Water Quality in Urban Areas" handbook (Minnesota Pollution Control Agency), the "Minnesota Storm water Manual" (Minnesota Pollution Control Agency). All BMP treatment systems for subject site need to include safety factors, maintenance, and a back-up plan in case of failure. All manufactured devices require independent laboratory testing to confirm product claims.
 - d. Volume Control/ Infiltration: Maintain or increase infiltration rates from pre-project site conditions.
 - e. Operation and maintenance: All practices must have an O and M plan.



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