SAINT PAUL PUBLIC LIBRARY **HAYDEN HEIGHTS** 

**DESIGN REPORT** 

October 28, 2022



ARCHITECTS



Design Report Hayden Heights Library 1456 White Bear Avenue Saint Paul, Minnesota 55106

> Prepared for Saint Paul Public Library 90 West 4th Street Saint Paul, Minnesota 55102

Project Number 1004465

Prepared by: LSE Architects, Inc. 100 Portland Avenue South, Suite 100 Minneapolis, Minnesota 55401

October 28, 2022

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# PROJECT TEAM

#### OWNER

### CITY OF SAINT PAUL

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

### SAINT PAUL PUBLIC LIBRARY

90 West 4th Street

Saint Paul, Minnesota 55102 Barb Sporlein, Interim Library Director Marika Staloch, Special Projects and Initiatives Manager Stacy Opitz, Marketing and Communications Manager Tiana Bellamy, Equity, Inclusion, and Anti-racism Coordinator

#### ARCHITECT

#### LSE ARCHITECTS, INC.

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Jennifer Anderson-Tuttle, Principal Director of Public Sector Keon Blasingame, Project Manager | Principal Chris Laabs, AIA, Project Architect | Associate Ross Anderson, CID, Interior Designer

#### CIVIL ENGINEER

#### PIERCE PINI AND ASSOCIATES, INC.

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### LANDSCAPE ARCHITECT

#### ASAKURA ROBINSON

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#### STRUCTURAL ENGINEER

#### IMEG ENGINEERING

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### MECHANICAL AND ELECTRICAL ENGINEERS

#### **KFI ENGINEERS**

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#### ACOUSTICIAN

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#### ART ENGAGEMENT

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## PROJECT OBJECTIVES

Saint Paul Public Library intends to refurbish the existing Hayden Heights Library to update the current library and make it more efficient, welcoming, and user friendly. Hayden Heights Library is located at 1456 White Bear Avenue in Saint Paul, Minnesota.

The renovation of Hayden Heights Library intends to further Saint Paul Public Library's mission to welcome all people to connect, learn, discover, and grow through:

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

## PROJECT BACKGROUND

Hayden Heights Library began in 1955 and has been in its current building since 1977.

Hayden Heights serves the Greater East Side neighborhood, one Saint Paul's densest and most diverse neighborhoods and is directly adjacent to White Bear Avenue. The library is within walking distance of several schools and the planned redevelopment of Hillcrest Golf Course.

The structure is modernist in design, featuring long spans and a large skylight. There have been no significant renovations to the building since the mid-1990s and much of the finishes are original.

LSE Architects and a team of engineers, artists, and building consultants were selected in October 2021 to provide design, community engagement, and construction services for the Hayden Heights Library. The scope of the project was identified as being a renovation of the existing 1970s building to support the needs of the Saint Paul Public Library.

In spring of 2022 LSE Architects issued a pre-design report with two proposed concepts and with input from the community, Saint Paul Public Library chose Concept A that increases glazing on the façade, a new interior layout, and exterior programming spaces, but does not increase the overall size of the library building.

The community room is shown in the center of the library, with operable walls that open into both the Children's and the Teen areas. This flexibility allows the community room to be utilized throughout the day for programs such as storytime, guest author readings, large group meetings, educational programs and more. When it is not reserved, the operable wall 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. In support of Libraries as Resilience Centers, a flex/partner space has been included. Needs for flexible and potential partner space

## Project Team (CONT.)

can be met by providing access to a classroom/large group meeting space, technology, sinks, small consultation rooms, and a potential private or transaction type space. Added and expanded windows which improve the visibility of the library, create a more comfortable and welcoming environment, and contribute to the overall safety of the site. This option suggests a seating and work area be located at the new expansive corner window.

A parking spot is indicated outside of an area that the automotive collection may be located within the library. This adjacently allows for additional automotive related programs to be supported at this site. For respondents aware of the Saint Paul Public Library Automotive Collection, it is an appreciated and valued resource.



Rendering as shared in the pre-design

## SPACE & PROGRAM

LSE Architects

### Space & Program (CONT.)

## OVERALL GROSS SQUARE FOOTAGE

 Existing:
 11,356 sq. ft.

 Final Area:
 11,356 sq. ft.

 Net Change:
 +0 sq. ft.

## PROGRAM SUMMARY

#### Children

- Children's Collection
- Early Literature Collection
- Play and Learn Space
- Story Time Area
- Computers
- Comfortable Seating for Families

#### Teen

- Computers
- Teen Collections
- Teen Collaborative/Study Spaces
- Comfortable Seating

#### Adult

- Computers
- Collections
- Periodicals
- World Language
- Study/Reading areas
- Comfortable Seating

#### Gathering

- Meeting Rooms
- Study Spaces for quiet and collaborative use
- Outdoor Reading/Programming Space
- Flex Space

#### Service Space

- Service Desk
- Self Check-Out
- Printer/Copier Space
- Book Return (Interior & Exterior)
- Community Information Area
- Holds Area

#### Staff

- Staff Workroom
- Staff Restroom
- Material Handling
- Breakroom
- Collaborative Work Area

#### **Building Support**

- Toilets
- Mechanical/Utility Room
- Data/Netcom Room
- Janitor's Closet
- Entry Vestibules

## SITE AND BUILDING AREA

Site Location: Corner of White Bear Avenue and Nevada Avenue in Saint Paul, Minnesota.

Site Area: 0.69 acres

#### **Gross Building Areas:**

Existing Building Area	l I,356 sq. ft.
Final Building Area	I I,356 sq. ft.
Net Change	0 sq. ft.

## CODE SUMMARY

### **Applicable Codes**

2018 International Building Code
2018 International Mechanical Code
2017 National Electrical Code (NFPA 70-2017)
2020 MSBC (Minnesota State Building Code)
2020 Minnesota Fire Code
2020 Minnesota Energy Code
NFPA 13 Installation of Fire Sprinklers (Latest Edition)
2018 International Energy Conservation Code
2020 Minnesota Accessibility Code

#### Occupancy Classification: Assembly Group A-3, Library

#### Type of Construction: Type IIB

#### **Building Area:**

Allowable: 28,500 SF Base <u>+ 9,500 SF area increase</u> = 38,000 SF allowable (5062.2 & 506.2.3) Actual: 11,356 SF

Currently the building is unsprinkled. In the renovation sprinklers will be added.

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

Uses	GSF	Factor	Occupancy
Library Stacks (A-3)	2,020	100	20.2
Library Reading/Study Areas (A-3)	5,100	50	102
Storage/Mechanical (S-I)	1019	300	10
Assembly (A-3)	1,115	15	74.3
Office (B)	1,520	150	10.1
Total			217 People

#### Required number of exits: 2 Actual number of exits: 3

#### Toilet Review: (MNBC 2902.1)

	Water Closets Lavatories		Water Closets		Drinking Fountains		Service Sinks		
		Required	Provided	Required	Provided	Required	Provided	Required	Provided
Men	109	1	0	I	0				
Women	109	2	0	1	0				
Unisex		0	3*	0	3	I	2	1	1
Total	34	3	3	2	3	I	2	I	I

#### Site Information:

Neighborhood: Hayden Heights (Greater Eastside) Neighborhood Community Organization: Greater Eastside Council Council Ward: 6 Watershed District: Ramsey Washington Metro Watershed White Bear Avenue overlay district

### Space & Program (CONT.)

## ZONING SUMMARY

#### **Zoning & Local Requirements**

The site is zoned R4 (single family residential district) and there is no need to re-zone the site. Bloomington does not list a requirement for off-street parking for libraries and the current parking lot meets the zoning requirements for lot dimensions and setbacks and exceeds the number of spaces required for the library's operations.

Site is in the White Bear Avenue overlay district.

Zoning District	Lot Size Minimum		Building Height Maximum		Yard Setback Minimum (feet)		
R4 one-family	Area (Sq ft)	Width (ft)	Stories	Feet	Front	Side	Rear
	5000	40	3	30	25	4	25

Principal use: public library

This use is permitted in this zoning district

Zoning District Actual	Lot Size Actual		Building Height Maximum		Yard Setback Minimum (feet)		
R4 one-family	Area (Sq ft)	Width (ft)	Stories	Feet	Front	Side	Rear
	~30,000	~200	1	14	10	40	0

#### **Off-Street Parking Requirements:**

The city of Saint Paul does not have a minimum parking requirement. The site will have approximately thirty five spaces including two ADA stalls. If parking is provided, the Saint Paul Sustainable Overlay will require electrified parking. White Bear Avenue overlay requires maximum parking to be reduced by 5%.

Uses	Minimum Parking Spaces (No parking minimums)	Maximum Parking Spaces (1 per 350 SF minus 5%*)	Proposed Parking	Bike Parking (I per 500 SF)
Library, Public	0 Spaces	32 Spaces	24 Spaces (I ADA)	17 Spaces

\*Parking maximum assumes planned BRT.

#### **Bicycle Parking Requirements:**

Minimum: 3 (1 space per 5,000 sf of GFA) More than the requirement will be provided due to the teen-centric nature of the library.



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## SITE WORK

## SITE LOCATION AND LAYOUT

The existing Hayden Heights Library site is located on the east side of White Bear Avenue in Saint Paul and is bounded by Nevada Avenue to the north and alleys on the east and south. The project is anticipated to include a major interior renovate the existing building and there are no proposed additions or significant exterior changes to parking lots.

There is currently approximately 20 standard parking stalls and I ADA parking stall immediately south of the building that is accessible using White Bear Avenue or the alley east of the site. There is also a staff parking lot with approximately 8 parking stalls north of the building that is accessible from Nevada Avenue. There is a small landscaped area to the east and west of the staff parking lot.

The ADA access for the building is located at the main entry along White Bear Avenue. The ADA parking stall is located closest to the entry door and appears to have flush sidewalk that does not require any pedestrian ramps.

## REGULATORY/PERMITTING AGENCIES

The following entities have regulatory authority for work associated with site improvements:

- City of Saint Paul
- Ramsey County
- Ramsey Washington Metro Watershed District
- Minnesota Department of Labor and Industry

## SANITARY SEWER

Based on as-built maps from the city of Saint Paul, it is anticipated that there is an existing 12" sanitary sewer located in White Bear Avenue. There is also an existing 30" sanitary sewer in Nevada Avenue. The original 1977 mechanical drawings indicate a 6" sanitary sewer service constructed from the sewer main in Nevada Avenue to the north side of the building just east of the transformer.

Based on available information, the library is still utilizing the original 6" sanitary service from the 1977 construction. It is our understanding that the current sanitary service is functioning appropriately and will continue to be used. 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 replacement.

## WATER MAIN

There is an existing 12" city watermain located in White Bear Avenue as well as a 6" watermain located in Nevada Avenue. The original 1977 mechanical drawings indicate that the building is served by 2" domestic water service from the main in Nevada Avenue into the mechanical room at the northwest corner of the building. This is consistent with the record drawings from Saint Paul Regional Water Services.

There is currently no dedicated fire service to the building. Based on conversations with the design

team, the building is under the square footage threshold for requiring a sprinkler system and it is anticipated that no additional water service improvements will be required.

There is an existing fire hydrant located on the southwest quadrant of the intersection of White Bear Avenue and Nevada. This hydrant is across the street from the library and serves as the source of fire protection for the building.

## STORM SEWER

Based on as-built maps from the city of Saint Paul, it is anticipated that there is an existing storm sewer infrastructure located in White Bear Avenue and Nevada Avenue. The original 1977 building construction plans indicate that the roof utilizes roof drains that are built internal to the structure. There is a dedicated roof drain storm service that runs parallel to the sanitary service. The original 1977 mechanical drawings indicate that a 6" storm service is routed from the building to the existing 27" storm sewer in Nevada Avenue. It is anticipated that the existing storm drains will continue to be utilized. 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 replacement.

# TELECOMMUNICATIONS, GAS, AND ELECTRICAL

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

The local provider for electrical service is Xcel Energy. There are underground electrical lines on the south side of Nevada Avenue that are routed to the exterior transformer located on the west side of the staff parking lot.A 3-wire service is routed from the transformer to the building.

The local provider for gas service is Xcel Energy. There is an underground gas main in Nevada Avenue and the gas service is routed from the main to the building just west of the staff parking lot. The existing gas meter is on the north of the building adjacent to the staff parking lot. This is also consistent with the mechanical plans from the original 1977 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 boundary and topographic survey was recently completed for the site. The north parking lot has adequate drainage away from the building towards Nevada Avenue. Likewise, the south parking lot appears to have adequate drainage towards the west to White Bear Avenue. The spot elevations on the east and west sides of the building indicate that drainage is directed away from the building. Overall, it appears that the site drains appropriately and it is not anticipated that any extensive grading improvements will be needed.

## STORMWATER MANAGEMENT

The site is located within the City of Saint Paul and the Ramsey Washington Metro Water District. Site development/redevelopment projects are required to meet the following RWMWD standards:

• Runoff Rate – Proposed runoff shall not exceed existing runoff rates for the 2-yr, 10-yr and 100-yr 24-hour storm events.

- Runoff Volume Sites shall retain 1.0 inches of runoff from new or disturbed impervious area for infiltration on site.
- Water Quality Sites shall provide stormwater treatment to achieve 90% total suspended solid reduction.

In accordance with the RWMWD requirements all site improvements that disturb over one acre will have to provide stormwater management. In addition, the city of Saint Paul requires stormwater management for project that disturb over one-quarter of an acre. The total library property is approximately 0.7 acres, however it anticipated that the exterior improvements will be under any threshold that would trigger stormwater management requirements from the city or RWMWD.

Current B3 stormwater management guidelines (Section S.2) are applicable for any projects renovating more than 2,000 sq.ft. of impervious surface. It is likely that the select site improvements will exceed this amount and that the project will need to incorporate a stormwater management system to address the rate control and runoff volume requirements for B3. A rain garden is anticipated on the north side of the site along with a connection to the existing storm sewer infrastructure in Nevada Avenue.

## PAVEMENT CONDITIONS

The parking lot on the south side of the site is bituminous pavement. There is no concrete curb and gutter, and the concrete sidewalk is flush with the bituminous pavement. It is not anticipated that any curb and gutter replacement or improvements will be needed.

There are approximately 20 standard parking stalls and I ADA parking stall. One ADA parking stall meets current code requirements for number of ADA parking stalls. It appears that there are notable full-depth cracks in the overall bituminous parking lots. Both the north and south parking lots will need a mill and overlay as part of the library renovation.

The concrete sidewalk on the south side of the building adjacent to the bituminous parking lot has significant cracking and deterioration. This concrete sidewalk needs to be replaced with the project. The concrete sidewalk on the west side of the library between White Bear Avenue and the structure have several noticeable heaved panels that also warrant replacement.

## LANDSCAPE

#### **Site Description**

The Hayden Heights Library is located on an approximately 25,800 sf (.60 acre) property in Saint Paul, Minnesota along White Bear Avenue between Nevada Ave E and Arlington Ave E, and includes over 12,000 sf of library building footprint. The building is located in the northern central portion of the site situated between the two parking lots. There are two existing entries

### Site Work (CONT.)

to the library building, on the west and north sides of the building. The main building entrance faces west toward White Bear Ave and adjacent bus stop and provides good visibility and connection for bus riders.

Site improvements intend to align aesthetically with the modernized mid-century architecture and take advantage of underutilized outdoor spaces to expand seasonal programming and amenities at the library. The new site design will create easy and safe access to the library for the public who arrive using various transportation methods.

Specific programmatic improvements include an outdoor greenspace approximately 1,000 sf in size that will be added to the southeast exterior area of the building, to abut the building for visible connectivity between the interior teen space and the outdoor green space. This outdoor green space will include a 320 sf concrete paver patio with four sets of café tables and chairs as furnishing elements. This space will have an overhead modern-style painted steel pergola structure approximately 16'x16' for shade that will attach to the building on one side and have supporting columns on the other. A stabilized decomposed granite area will fill another 320 sf of this area and feature various types of "lounge" seating elements that can be freely moved and re-arranged throughout the space, such as Adirondack chairs and coffee-style tables. The remaining 360 sf of space will be densely-planted shrub and perennial beds. Lighting bollards will occur surrounding the perimeter of the space every 20'.

One other programmatic improvement to the site includes an outdoor storytime garden approximately 880 sf in size that will fill the entirety of the existing northeast patch of turf grass space. This outdoor space will include a 400 sf circular concrete paver patio, laid out in a decorative pattern to mimic a labyrinth with a minimum of two colors of pavers. Furnishings within this space will be a series of custom curved wooden benches on the exterior perimeter of the paver patio area to form a story-telling space focusing in on the center of the circle. The remainder of the space will be densely planted with shrubs and perennials. The entire storytime garden will be encompassed with a decorative fencing to be developed in tandem with the project artist, but will be nearly-opaque metal paneling at 6' in height, possibly weathered steel paneling with decorative perforations. Lighting bollards will be internal to the storytime garden.

The existing outdoor utility area will see a new sound-dampening enclosure, possibly of opaque metal paneling. Black painted aluminum fencing similar to AmeriStar brand "Montage" style fencing will be installed along the entire site perimeter, with the exception of the two drive aprons. An 8" wide flush concrete maintenance strip will be installed along the base of the run of the fencing for maintenance ease.

The remainder of the green space on the site is relatively limited and will be improved but left predominantly unprogrammed. This includes the existing space along the northwest side of the site between White Bear Ave and the library building. This space will be cleared of all vegetation and landscape features and re-planted with 1,000 sf of native prairie perennials at the corner of White Bear Ave and Nevada Ave E. Foundation shrub plantings will occur along the base of the western façade of the building up to the pavement near the main entrance. The rest of the green space will be re-sodded. An artificial green wall installation will be applied to the vertical building façade at the northwest corner of the building, approximately 24' in length and matching the height of the building from ground to roofline.

## CIRCULATION

Pedestrian, bicycle, and vehicular circulation improvements will all occur on this site.

Parking is located on the north and south sides of the building. The north parking lot features 8 parking spaces and will remain the same size, but be re-paved to match the existing bituminous material, re-striped, and see the drive apron and curbs re-constructed. The southern parking lot, being the larger of the two with 22 spaces and I accessible space, will also be re-paved as bituminous, re-striped, and see the drive apron and curbs re-constructed, but the parking lot will be reduced by approximately six parking stalls in size on the eastern side to accommodate an outdoor green space on the southeast exterior of the library building. Additionally, the access to the eastern alleyway will be removed from this parking lot with a concrete curb in front of a 6' wide minimum planted strip. Refer to civil for improvements to accessible parking space access to sidewalk. Both parking areas will feature new signage for drivers indicating "Library Parking Only" at the southern lot, and "Library Staff and Deliveries Only" at the northern lot. Accessible parking will also see updated signage.

The overall square footage of concrete sidewalk will remain about the same, but be completely replaced to address cracked and failing surfaces, including paths within the site property boundary as well as city-owned sidewalks along Nevada Ave E and White Bear Ave. About 100 sf of concrete pavement will be added near the main entrance to expand bike parking opportunities on site.

## LANDSCAPE

Landscape improvements throughout the site include the following:

Soil amendments will occur where existing soils are tested and prove to require remediation or amendment to provide optimal growing conditions for trees, shrubs, perennials, and turf grass. This will be especially important at greenspace locations adjacent to hard surfaces that may see salt/sand operations in the winter, and where the bituminous parking lot is being converted to outdoor green space southeast of the library building.

Plant bed replacement and additions will cover approximately 2,400 sf of the site, including the 1,000 sf of prairie and added shrub and perennial beds at the new outdoor amenity spaces as noted above. Green spaces not captured in this plant bed area, including the sod area near the library main entrance, as well as boulevard spaces, will be re-sodded.

Several trees should be accounted for to add vertical interest and shade canopy to the site. Trees will be installed at minimum to meet the city's minimum caliper requirements. Trees will be added at the outdoor storytime garden for shade, and near the main building entrance.

Hardwood mulching will occur at all tree locations and within all plant beds. Metal edging will occur at the perimeters of all plant beds, as well as along the perimeter of any decomposed granite areas.

## SITE FURNISHING

All existing site furnishings will be removed. New site furnishings will include benches, planters, bike racks, trash receptacles, artwork, site lighting, book locker, and overhead pergola structures.

Multiple modern-style wooden benches (potentially ipe or similar hardwood) will be surfacemounted near the building main entrance to accommodate those waiting for the bus or other forms of transportation to/from the library. A small seating area with a few benches will also be added near the drive apron to the southern parking lot where there is a larger paved area.

Café-style tables and chairs (similar to Landscape Forms "Chipman" line) will be added to the southern outdoor green space paver patio (6 sets maximum). Additionally, near this space a handful of Adirondack style chairs with coffee tables will also be added.

A custom wood-top and metal-frame curved bench will be installed in the northern storytime garden, to match the radius of the paver area. A reader's tall-back adirondack chair will be added to the center of this space.

10 single-hoop embed-mounted bike racks will be installed near the building main entrance.

Various stand-alone planters for perennial plantings will be installed near the building entrances and near the bench area near the southern parking lot. These will be round concrete planters, approx. 3' in height and 3' in width.

A new book locker will be located near the southwest corner of the building.

A modern powdercoated steel overhead pergola structure approx. 16'x16' will cover the south outdoor green space, and be structurally attached to the building.

A trash and recycling receptacle pairing will be located in each of the following locations: main entrance, south outdoor green space, north service entrance.

The project artist will be engaged to install various pieces of artwork throughout the site, including near the main entrance and in the northern storytime garden. These sculptures will vary in size, but be near human-scale. The existing library sculpture/column at the library entrance will be revisioned with new lettering as the discretion of the owner. For safety purposes, the column will be re-set in place on a new foundation.

LED lighting bollards will be installed approx. every 20' surrounding the perimeter of the northern and southern programmed spaces, as well as along all sidewalks leading toward the main building entrance from both parking lots. Overhead parking lot lighting will be replaced with high-efficiency LED lighting that achieves dark sky compliance. Architecture and/or MEP may specify additional lighting packs or safety lighting attached to the building or at the building main entrance, see other's narratives.

### IRRIGATION

There is an existing irrigation system throughout the site that will be evaluated and updated to accommodate the revised site plan layout, planting type water needs, and modern irrigation technology. Any new plantings will be connected to the irrigation system to maintain plant health and vigor, including bubblers on trees, spray at lawns, and drip-line in plant beds. Scuppers providing drainage from the roof at the roof-level will be directed into down-spouts and connected to storm drains to decrease runoff on site (see civil for further information on stormwater).

## CONCLUSION

The site concept design for Hayden Heights will increase outdoor space usage for activities, storytelling, and general gathering to enjoy the exterior of the site seasonally and from a visual connection to the interior spaces. Improvements to the site will also improve access to the library, improve the visual presence of the library site within the City of Saint Paul, and allow for enhanced and growth in library programming.



## ARCHITECTURE & INTERIORS

## FORM & DESIGN

Hayden Heights Library is a Brutalist structure with ribbon windows tight to the roof structure that limits views in and out of the library. The renovated Hayden Heights will still feature the original massing and form, but with new, larger expanses of glass that invite views out of the library and from White Bear Avenue. The new interior form features the same open and long spans but introduces a new curved wall and soffit feature that breaks down the form of the building and provides clear sightlines.

Relocating the community room to the back of the building allows library functions to push forward to the front of the building and be more visible. The community room serves as a buffer between the teen and children's area and helps deflect noise. Relocating the service desk more central to the library provides sightlines across the building and locating the desk further from the entrance with seating areas up front will provide a less transactional experience with library staff.

A children's area and a teen area at the rear of the library give patrons of all ages spaces to learn, collaborate, and play that have views, access to natural light, and a mixture of seating and access to technology.

A revamped entry and glazing with a lit fin element will welcome patrons from the parking lot, walking from the neighborhood, and from transit and create an icon on White Bear Avenue. Finally, new landscaped and programmed exterior areas will provide new programming opportunities without building new building space and increase the street appeal of the library.



### INTERIORS

Flexibility for the collections and library spaces is a main objective for the floor plan. This is achieved through selective demolition of the existing building components that constrict the existing spaces. By introducing a curved form, the floor plan allows for easy re-arrangement of furniture to fit any new programmatic uses.

### Ceilings

Two types of lay-in acoustical ceiling panels (ACP) will be installed in the main library space and in the meeting room. The use of different ceiling heights will differentiate spaces and help control noise. At the teen and adult areas within the new addition there will be exposed deck, and all components will be painted. Toilet rooms will have epoxy painted gypsum board ceilings, and the Mechanical/Electrical Room will remain existing exposed deck.

#### **Floor Finish**

Carpet tiles are utilized throughout public and staff workroom areas. Vestibules will have a heavy duty walk-off style carpet tile. The Community/Maker Space room will have Kinetex textile composite tile flooring for versatility. Toilet rooms will have sheet vinyl flooring with integral base 6"H. The utility room will keep its existing exposed concrete floor.

#### Wall Finish

New wall surfaces would primarily have painted gypsum board with the use of vinyl wallcovering and wood facing and paneling in select areas. Toilet rooms will have porcelain tile on the wet wall and grab bar wall, one wall will have glass mosaics, and the 4th wall will be epoxy painted. Meeting rooms will have glass walls to allow for visibility and sound transmission control. Glass walls facing the interior of the library will have patterned window film to keep presentations from being readable in the main library and keep patrons and staff from walking into glass.

#### Acoustic Control

Addition of fabric wrapped acoustic panels in locations where extra sound control is required will be introduced to fine tune acoustic control. Walls between spaces will be insulated and run to deck to limit sound transfer between rooms.

#### Furnishings

The existing library furniture is heavily used, worn, and near the end of its useful life. New furnishings for public spaces and staff work areas will be durable, easily cleanable and comfortable for a wide range of patrons and uses. Flexible furniture that can be easily reconfigured is important. Electrical outlets and USB chargers will be provided at tables and seating areas for patron use.

About <sup>1</sup>/<sub>4</sub> of the existing shelving will be reused in the new library with the rest of the shelving being new. New and reused shelving will receive a solid wood millwork surround.

#### Signage

Interior and exterior signage will be replaced as part of the project. Existing monumental pillar sign will remain. New illuminated exterior building mounted signage will be added to the front facade.

#### Window Treatments

New woven roller windows shades will be added to exterior windows throughout. Public areas will have motorized shades, and the staff areas will have manual shades. All with 3% openness to reduce glare.



### ACOUSTICAL TREATMENT

#### **Mechanical Noise Control**

MN B3 Small Building Guidelines does not include requirements for library background noise levels, but the recommended max level is NC 40 (45 dBA). 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:

- 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.
  - The space must meet the American National Standards Institute Acoustical Performance

Criteria, Design Requirements and Guidelines for Schools (public buildings) 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, I k, and 2k Hz.

The above requirement apply to the Community room, and potentially to the flex space.

### **Room Acoustics**

All Regularly Occupied space need to meet the B3 Reverberation Time, or average area weighted NRC-requirements. These include:

- Children/Tech/Teen/Collaborate
- Study
- Community room
- Flex
- Office
- Staff Workroom

Recommended room acoustical treatments for all Regularly Occupied Spaces to meet the B3 Reverberation Time requirements (MN B3 1.6.C.2 path i) include:

- Sound absorptive ceiling treatment rated minimum NRC 0.75 in all Regularly Occupied Spaces. Options
  include ACT-ceiling, direct attached acoustical panels, acoustical spray-on treatment, and vertical acoustical
  baffles.
- Acoustical wall treatment in Teen and Children's area. Options include fabric wrapped acoustical wall panels, acoustical felt, and acoustically transparent material with sound absorptive material placed behind. Minimum NRC 0.8.
- Acoustical wall treatment in the Community Room. Minimum NRC 0.8.
- Need for acoustical wall treatment in the Collections/Study/Tech will be determined based on the type of ceiling treatment selected.



LSE Architects

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## SUSTAINABLE DESIGN

Hayden Heights library will be submitted under B3 (Buildings, Benchmarks, and Beyond) and meet the Saint Paul sustainable overlay and SB 2030.

B3 Sustainable Building 2030 (SB 2030) is a program that tailors the Architecture 2030 program to the needs of Minnesota buildings. SB 2030 requires buildings built between 2020 and 2024 to be 80% more energy efficient than a typical baseline equivalent building. Because of this standard, Hayden Heights will perform significantly better than its peer buildings at reducing carbon emissions.

Because of the size of Hayden Heights Library, it is eligible for the Small Buildings Method. This path does not reduce the effectiveness of B3 but better caters the guidelines to projects under 20,000 SF where a prescriptive approach can be used to achieve some benchmarks.

SB 2030 will be achieved through:

- Replacement of aging glazing systems with new high-performance glazing
- Replacement of aging mechanical equipment with new high-efficiency equipment
- Replacement of lighting and electrical systems with new lower energy lighting
- Addition of photovoltaic systems to the roof

Other sustainable factors include:

- Low flow plumbing fixtures
- On site stormwater retention and treatment
- Use of low-water and native plantings
- Reuse of building materials where possible
- Construction waste diversion plan

## STRUCTURAL SYSTEMS

## EXISTING STRUCTURAL SYSTEM

The original building drawings are dated 1977. The roof framing is steel deck and joists supported on steel beams. The roof beams are supported on interior  $10^{\circ} \times 10^{\circ}$  concrete columns. The exterior walls are masonry walls. At the window locations there are steel columns embedded in the masonry wall that extend up to support the roof structure. Where there are no windows the masonry walls are bearing walls that also act as shear walls for the building

## REMODELING WITHIN EXISTING BUILDING

The interior roof framing is supported on steel beams and columns with no interior bearing walls therefore the interior remodeling does not affect the existing building framing. It is our understanding the existing skylight will stay as-is.

Along the exterior there are several proposed locations to modify and/or expand the existing window opening. Since these locations are already supported by exterior beams and columns there is minimal structural impact. However, at the southwest corner the current plan is open this corner of the building and provide glass on all sides of the collaborate space area. The west wall is a masonry wall that supports the roof. New beams and columns will be required to support the roof.

### FOUNDATION

The existing building is on a standard spread footing foundation. We have assumed the foundations for the structural modifications will modify the spread footing foundation as well, however a geotechnical report will verify this assumption.

## MECHANICAL SYSTEMS

## OBJECTIVES

- Provide an energy efficient HVAC system that is easy to operate and maintain.
- Utilize solar photovoltaic panels (7,000 SF) on the roof for electric generation. It is estimated
- Provide water efficient plumbing fixtures and electric type domestic hot water.
- Incorporate sustainable technologies into the MEP design that comply with Building, Benchmarking and Beyond (B3). These systems may include:
  - Recirculation of domestic hot water pump
  - Carbon dioxide occupancy sensors
  - Displacement ventilation
  - Energy recovery system (total energy wheel)
  - Variable speed drives
  - · Provide stepped daylighting controls on lighting systems
  - · Utilize occupancy sensors for both ventilation and lighting controls
  - Utilize LED lighting throughout

## HEATING, VENTILATING, & AIR CONDITIONING (HVAC) SYSTEMS

Weather conditions: Minneapolis Airport, Minnesota – 2020 Minnesota Energy Code with ASHRAE 90.1-2016, referencing ASHRAE 1% cooling and 99.6% heating data.

Replacement of the existing multizone air handling unit (AHU) with a new dedicated outdoor air handling unit. This unit will provide ventilation, heating, and dehumidification to the zone level equipment. The new unit will be located within the existing mechanical room. ASHRAE 90.1 2019 will be utilized for efficiencies and sizing the unit.

- Motors will operate with variable frequency drives.
- Total energy wheel will provide both latent and sensible recovery.
- Carbon dioxide sensors will monitor levels and modulate ventilation.

Zone equipment for the library will include air valves to modulate ventilation air to the chilled beams. Each zone will contain multiple four-pipe chilled beams for space temperature control. Fine tube radiation will be installed below glazing, utilizing hot water, and space control valves.

Heating and cooling of the building will be provided by the source heat pumps, approximately 30 tons of cooling and 440 MBH heating. One 10; nominal size, deep well heat exchanger will be installed (Darcy Solutions). A water source heat pump (by Water Furnace) will convert the ground source water to building hydronic hot water and chilled water loops. This heat pump has the ability to provide heating and chilled water during any season.

Restrooms will be exhausted through exhaust fans, through the roof. Exhaust heat will be captured through an energy recovery unit.

The building automation system will be direct digital controls and meet SPPL standards. The following requirements will be included:

- Air side economizer
- Demand control ventilation
- Boiler / chiller system controls
- Supply air temperature reset for multizone

Metering of HVAC loads will meet guidelines listed in B3 2030. Meeting a two-percent goal for renewable energy will be evaluated and included if found to be cost effective.

• Systems considered are solar photovoltaic

Systems shall be commissioned.

## BUILDING PLUMBING SYSTEMS

Storm water drainage is existing. Modifications as required based on the renovation will include rerouting of piping.

The existing residential style natural gas water heater will be removed. A new domestic electric tank type water heater will provide domestic hot water to lavatories and sinks. A recirculation pump will ensure hot water at each fixture.

Water fixtures shall be low flow and meet the following requirements:

- Lavatory faucets less than or equal to 1.5 gallons / minute
- Staff kitchen and pantry faucets less than or equal to 2.0 gallons / minute

## BUILDING AUTOMATION SYSTEM

The Building Automation System (BAS) will be web based with graphics and control points. It will be an extension of or compatible with the existing Johnson Controls Metasys system. Training for operators and staff will be provided to allow enhanced controllability and operating features for manipulation of operating schedules and temperature set points. The air-handling system will include demand-controlled ventilation (DCV) for control of outdoor air ventilation based on occupancy.

Electronic sensors and controls will be provided for heating and cooling equipment. Temperature control of the zones will be accomplished by temperature sensors. Temperature set point control for the rooms themselves will be from the BAS. Setback temperatures will be established for unoccupied periods of time.

## BUILDING FIRE PROTECTION SYSTEM

This 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 ELECTRICAL POWER DISTRIBUTION SYSTEM

The existing 120/208-volt, 3 phase, 4 wire, 600-amp Electrical Service Entrance equipment will remain as is.

The existing double tub branch circuit panels and lighting control relays will be disconnected and removed.

Provide two (2) new 120/208-volt, 3 phase, 4 wire, 84 circuit, 200-amp branch circuit panelboards.

• Lighting and small loads will be fed form the two (2) branch circuit panelboards.

New general-purpose tamper proof receptacles will be provided throughout the building.

A photovoltaic system will be installed on the roof of the building. Provide disconnect switches, metering and relays to interface with the building electrical system and the utility. Coordinate requirements with the utility.

## BUILDING LIGHTING SYSTEMS

All existing building lighting will be disconnected and removed.

New LED lighting fixtures will be provided thought out the building.

- The lighting design and light fixture selections will be developed as a joint effort by LSE Architects and KFI Engineers.
- New automatic lighting controls will be provided for all spaces to meet the energy code. Lighting control will consist of:
  - Occupancy control
  - Dimming control
  - Daylighting Control
- Emergency lighting will be provided by battery powered emergency light fixtures.
- Provide new LED battery powered exit lights.
- New exterior lighting will be provided at building entrances and exits.
- New site lighting will be provided.
  - 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.

Existing building mounted exterior lighting will be disconnected and removed

Existing pole mounted parking and sidewalk lighting will be disconnected and removed

New exterior building mounted LED wall packs will be provided

New pole mounted LED parking and sidewalk lighting will be provided

# FIRE ALARM SYSTEM AND TECHNOLOGY SYSTEMS

A new Fire Alarm System will be provided. The fire Alarm system will consist of the following:

- Main Fire Alarm Control Panel
- Remote annunciator at the building entrance
- Smoke Detectors
- Annunciation devices (Speakers and Strobes)
- The fire alarm system will be capable of supervised mass notification

New telecommunications systems infrastructure will be provided. The telecommunications system infrastructure will consist of the following:

- New data rack/cabinet.
- New voice/data jacks and Cat 6A cabling
- Wireless access points will be installed to provide coverage throughout the building.

A new access control system will be provided for the building. Card readers will be provided at entrance doors, and non-public spaces

A new security system will be provided, the security system will consist of:

- Motion sensors
- Door contacts
- Security cameras installed to provide comprehensive coverage.

New audio-visual systems will be provided in all meeting rooms. Audio visual components will include:

- Flat panel displays (projector and projector screen where needed due to size)
- HDMI Inputs where needed
- Network access

## ELECTRICAL TESTING

Performance testing of equipment and system installation and operation by an accredited testing firm in conformance with criteria by the International Electrical Testing Association.

- Quality Assurance: Compliance with the standards and associations of the industry including UL, IEEE, NEMA, NFPA, NBFU, ICEA, ASTM, OSHA, NESC, ANSI, ETL, NETA, where applicable. The testing firm will be a qualified independent testing agency
- Electrical Equipment and Systems Tested: Perform test on equipment and systems listed, tabulate data and submit with equipment submittal (factory) or acceptance checkout (contractor)
- Electrical switchboards: Factory certification
- Electrical equipment including panels: Factor certification
- Cables (600V): Insulation and continuity
- Motors: Phase, rotation, characteristics
- Grounding: Resistance
- Fire Alarm System: Per NFPA

Electrical Start up and Commissioning: Electrical system and components shall be fully functional, operational, and verified prior to Commissioning and final acceptance by Owner.

## PROJECT SCHEDULE

LSE Architects

## Project Schedule



Saint Paul Public Library invested in an extensive, equity-focused community engagement effort starting in 2018 with a Strategic Design process that resulted in 3,000 participants sharing their desire for library spaces that are safe, inviting, affirming, and comfort for people of all cultures, abilities, and communities.

In 2022 LSE joined SPPL's community engagement process leading open houses and listening sessions with a total of 664 attendees. Surveys were developed online and through pop-up events in the community that received 2355 responses. LSE's artist cohort developed informal engagements including in-library Dream Boards. From this outreach there was a common themes across respondents were:

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



## DESIGN INFLUENCES

HAYDEN LIBRARY . DESIGN REPORT





### DESIGN INFLUENCES HAYDEN LIBRARY . DESIGN REPORT





- Accessibility was indicated in community surveys to be the number one need.
- 2. Safety is a priority with clear sightlines throughout the plan.
- 3. Improving visibility of the library with new signage, entry feature, and expansive windows was a high priority from community input.
- 4. Outdoor green spaces help connect to nature, and include program, seating, and reading space is added with amenities such as shade, tables and chairs, and landscaping in response to community input.
- 5. Exterior amenities such as new paving and landscaping along White Bear Avenue, and bike parking in a safe and secure location near the entry were requested by staff and library users.
- 6. Proposed locations for community artwork have been suggested and will be further developed in future arts processes.
- Materials in the library have been selected to support sustainability and durability goals.
- 8. Layout supports quiet and loud activities.
   9. Reuses existing building elements in a new and modern way.
- 10. New glassy exterior connects the bustling corridor to the interior of the library.
- 11. The community room's movable walls can open to the children's area to allow for large programs such as story hours, author readings, large group meetings, and more.



### DESIGN INFLUENCES HAYDEN LIBRARY . DESIGN REPORT





### DESIGN INFLUENCES HAYDEN LIBRARY . DESIGN REPORT



## DESIGN DRAWINGS





ARCHITECTS



![](_page_45_Picture_1.jpeg)

![](_page_46_Figure_0.jpeg)

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North Elevation

![](_page_46_Picture_3.jpeg)

## ELEVATIONS HAYDEN HEIGHTS • DESIGN REPORT

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16'

![](_page_46_Figure_6.jpeg)

0'

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## ELEVATIONS HAYDEN HEIGHTS LIBRARY • DESIGN REPORT

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INTERIOR IMAGERY HAYDEN HEIGHTS LIBRARY • DESIGN REPORT

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HAYDEN HEIGHTS LIBRARY • DESIGN REPORT

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DRAWING HAYDEN LIBRARY • DESIGN REPORT

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# HAYDEN LIBRARY • DESIGN REPORT

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