

Community Presentation

December 3, 2024



Vaysen Studio



ASHLEY MCGRAW

Agenda

- **Project Goals & Timeline**
- **Plan & Scope Review**
- **Cost Review**
- **Design Review**
- **What's Next**
- **Q&A**



the WHY's?

1 Address outdated and aging components of the Library facility.

- Building was constructed 50 years ago.
- There is some presence of asbestos which puts limitations on some maintenance needs.
- The mezzanine level is not suitable for public, or staff needs.

2 Add in-demand space for Library users.

- Patrons are routinely turned away from the limited meeting and study rooms.
- Meeting space / popular Library programs are limited to 100 people.
- Improve performance space functionality.

3 Add in-demand collections space and improve Library function.

- Bethlehem Public Library's circulation is the highest in the Upper Hudson Library System.
- Children's area is often crowded and limited in terms of offerings. Teen area is lacking dedicated space.
- Properly address curbside pickup function.
- Improve and expand staff space for better workflow, safety, efficiency, and adequacy.

4 Enhance accessibility of the Library facility & resources.

- Reduce distance between parking and entry
- Improve accessibility to and within the facility to the spaces as well as to resources
- Improve parking area safety and add parking spaces
- Improve sense of arrival and wayfinding

5 Enhance the Library's environmental sustainability footprint.

- Increase energy efficiency leading to operational savings
- Update the green space around the Library and preserve the park-like feel
- Modernize site utilities to improve Library as a "good neighbor"

the PURPOSE.

To position the Library as a **community resource** that is accessible to all, offering modern programming in a mindful environment that's nestled within the fabric of the **community**.

Designed in a way that's welcoming, simple to navigate, modern, and adaptable to a variety of programs, both inside the library and throughout the site.

Optimizing the library so that both **patrons and staff** have cohesive environments to suit their evolving needs, and to support the next generation of collaboration, discovery, and learning.

Project Timeline



Current Project
Ashley McGraw
September 2022 - today

Construction Manager Solicitation
Bethlehem Public Library
Spring 2024

SEPT 2022	Planning Study Project Kickoff	JUN 2023	STAFF Stakeholder Mtg Programming & Design Iterations	OCT 2023	Building Committee Mtg	APR 2024	STUDENTS BCSD Career Day Design Overview	SEPT 2024	Building Committee Mtg
NOV 2022	STAFF Stakeholder Mtg Programming	JUN 2023	Board of Trustees Mtg 50% Schematic Design Review	NOV 2023	Board of Trustees Mtg 100% Schematic Design Review	MAY 2024	Community Engagement Design Presentation & Activity	OCT 2024	Board of Trustees Mtg
DEC 2022	Board of Trustees Mtg Pre-Design Addition & Site	JUL 2023	Building Committee Mtg Cost and Value Analysis	DEC 2023	STAFF Stakeholder Mtg Open Forum Design Questions	MAY 2024	STAFF Stakeholder Mtg Facility Needs, Operations, & Security	NOV 2024	Community Engagement Presentation
JAN 2023	Building Committee Mtg Initial Design Studies	JUL 2023	STAFF Stakeholder Mtg Open Forum Design Questions	JAN 2024	Board of Trustees Mtg Design Options, VE, and Energy	JUN 2024	Board of Trustees Mtg	NOV 2024	STAFF Stakeholder Mtg Collections Area review
FEB 2023	Board of Trustees Mtg Planning Study	JUL 2023	Board of Trustees Mtg	FEB 2024	Building Committee Mtg	JUN 2024	Community Engagement Children's Area design activity	NOV 2024	STAFF Stakeholder Mtg Staff Space review
MAY 2023	STAFF Stakeholder Mtg Community Room + Collections	JUL 2023	Community Engagement Programming Worksession	MAR 2024	Building Committee Mtg	JUN 2024	Building Committee Mtg		
MAY 2023	Building Committee Mtg Design Discussion	AUG 2023	Board of Trustees Mtg	APR 2024	Community Engagement Talk to the Architect Session 1	JUL 2024	Community Engagement Talk to the Architect Session 2		
MAY 2023	BUILDING COMMITTEE + STAFF Stakeholder Mtg Facility Needs, Operations, & Security	OCT 2023	Board of Trustees Mtg	APR 2024	Building Committee Mtg Sustainability Design Charette	AUG 2024	Community Engagement Teen's Area design activity		

Plan & Scope Review



Proposed Site Plan

KEY FACTS: PARKING

- Existing: 117 spaces
- Proposed: 136 spaces
- ✓ **16.2% increase**
- 6 HC spot



Proposed Floor Plan

KEY FACTS: OVERALL AREA

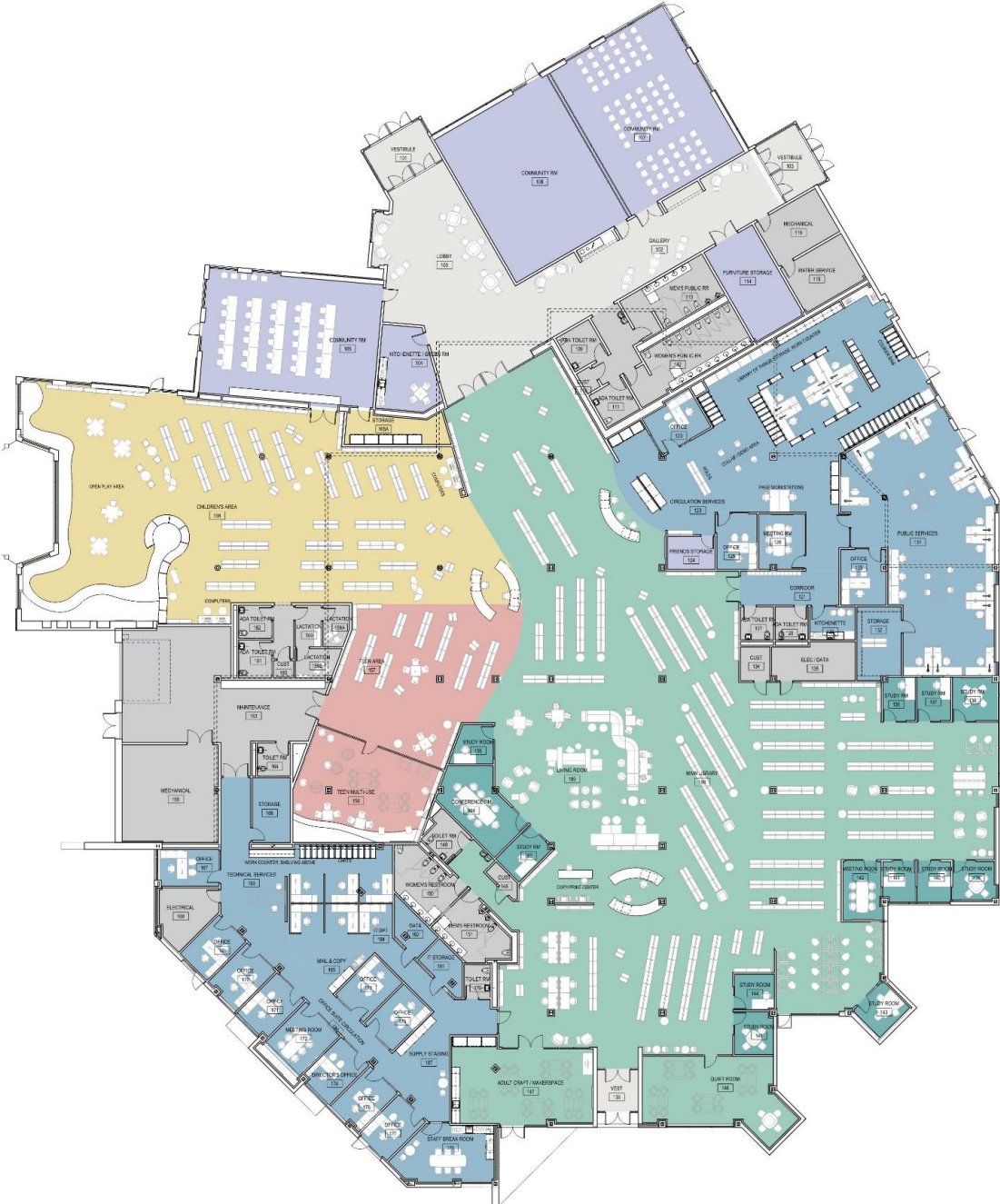
Existing Library Area: 32,710 gsf

- 29,870 gsf ground floor
- 2,840 gsf mezzanine

New Library Area: 46,421 gsf

- Area of new construction: 19,214 gsf
- Area of renovation: 27,207 gsf

✓ **42% increase in overall library area**



Proposed Floor Plan

KEY FACTS: PROGRAM AREAS

Children's Area

- Existing: 4,915 sf
- Proposed: 5,900 sf
- ✓ **20% increase**

Teen Area

- Existing: 855 sf
- Proposed: 2,073 sf
- ✓ **142% increase**

Main Area

- Existing: 6,761 sf
- Proposed: 12,900 sf
- ✓ **90% increase**

Study/Small Meeting Rooms

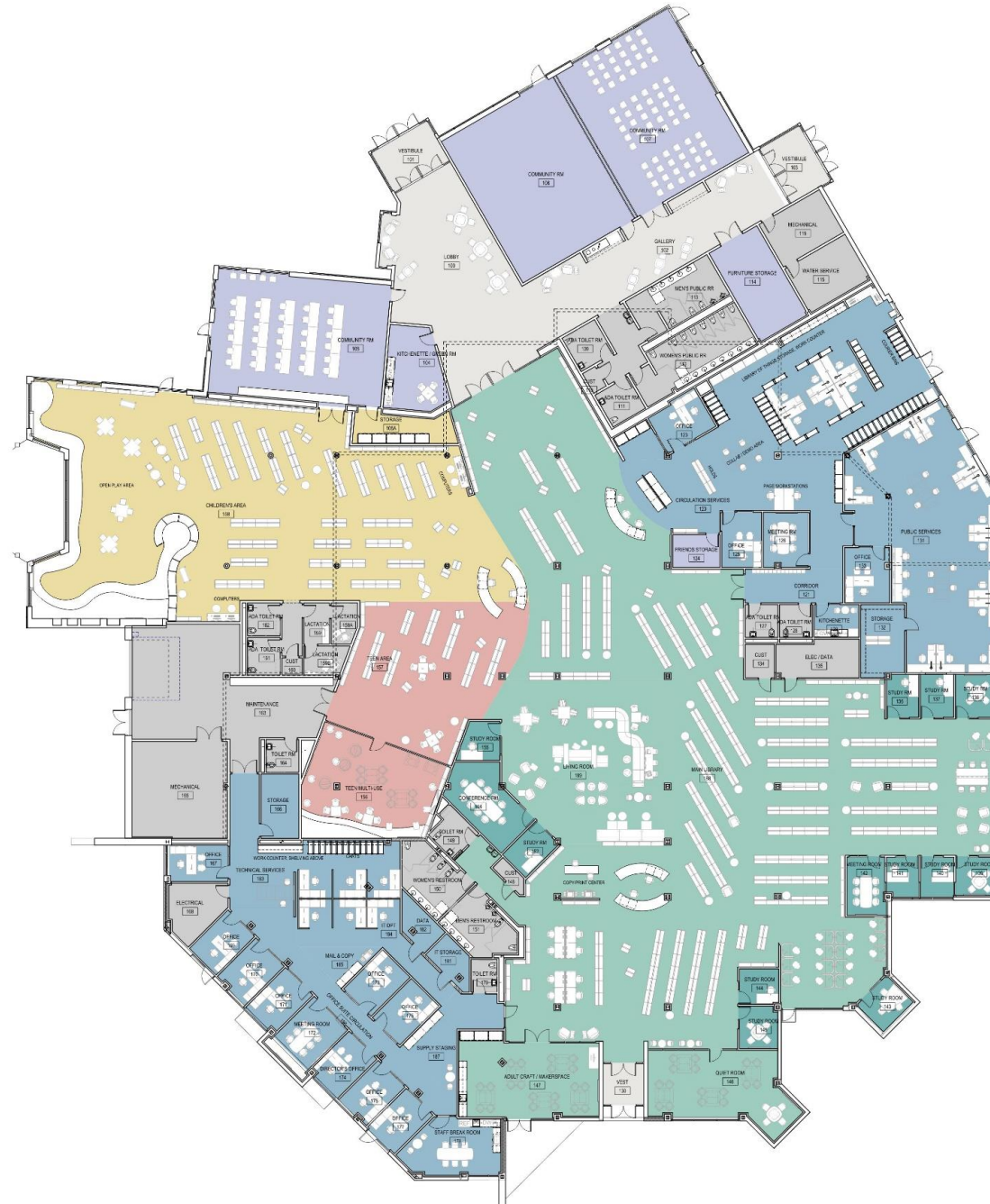
- Existing: 457 sf
- Proposed: 1,366 sf
- ✓ **198% increase**

Staff Space (excludes maintenance)

- Existing: 6,264 sf
- Proposed: 9,877 sf
- ✓ **58% increase**

Community Rooms

- Existing: 1,624 sf
- Proposed: 3,826 sf
- ✓ **136% increase**



MAIN LIBRARY

CHILDREN'S

TEEN'S

COMMUNITY ROOMS

MAIN LOBBY/GALLERY

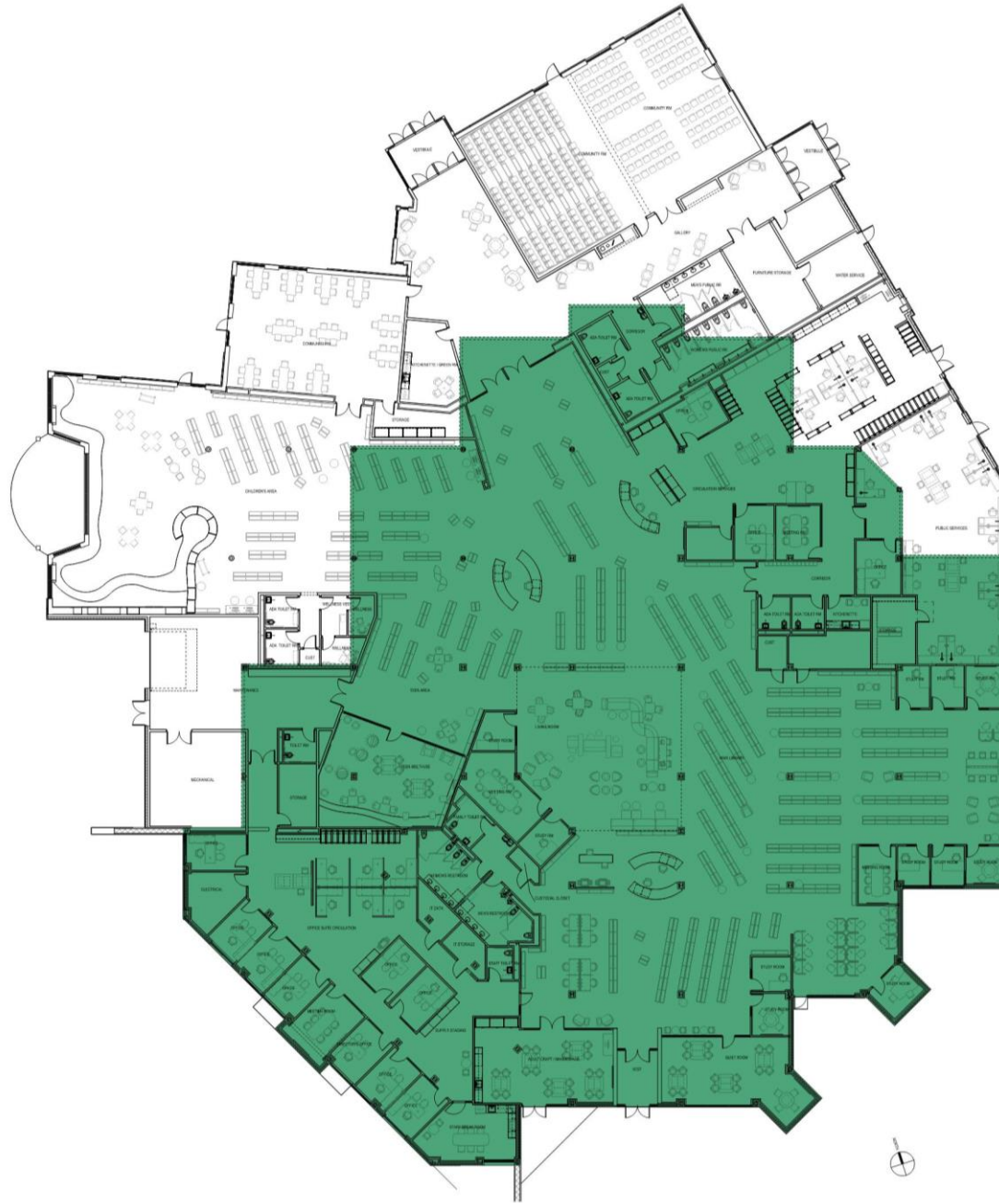
STAFF AREAS

MAINTENANCE

Renovation

Area of renovation

- 27,207 gsf



Renovation

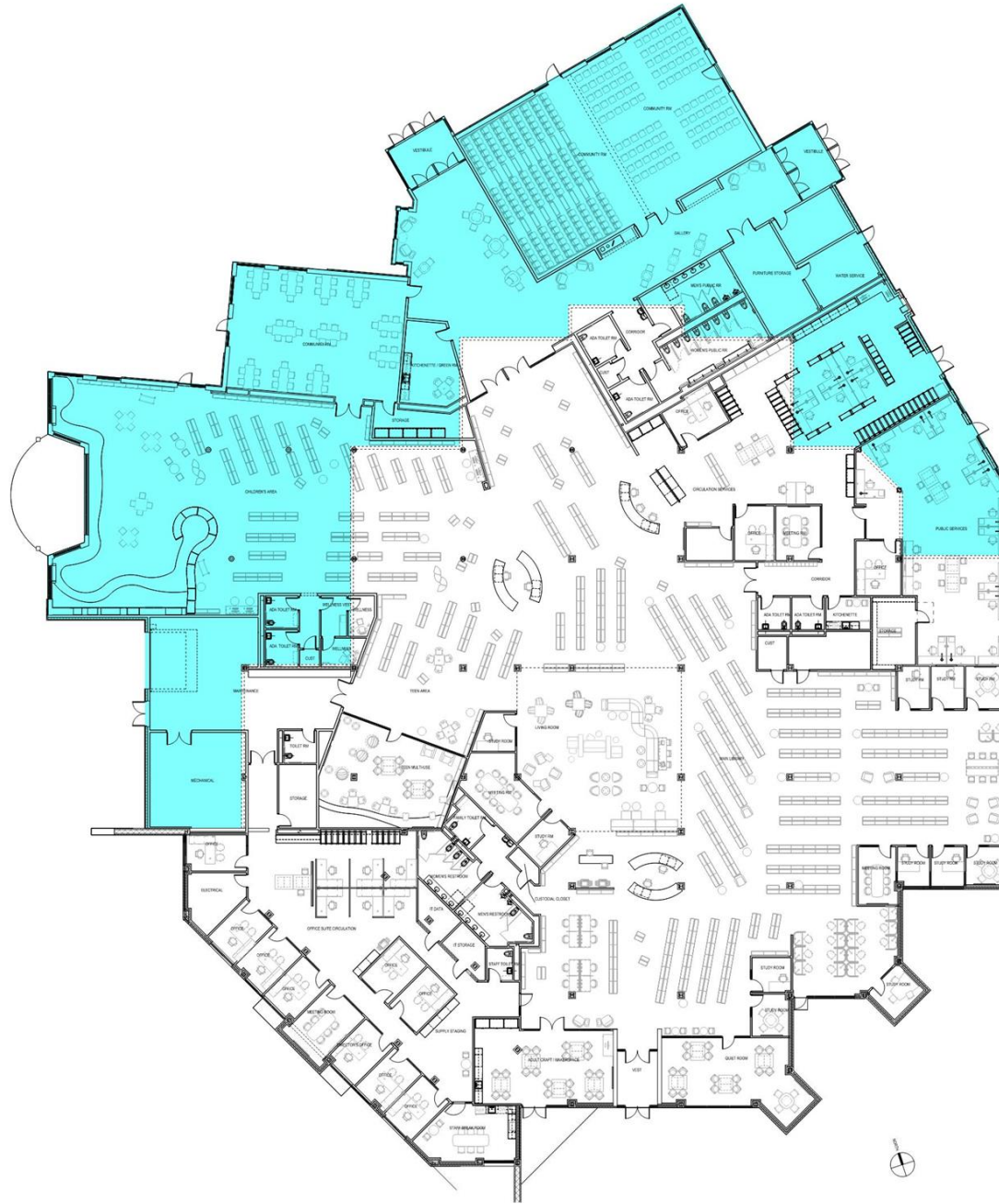
**Original Building was built in
1970's**

- Gut renovation of interior spaces including removal of existing partitions, ceiling systems, flooring, millwork, finishes, etc. Adding of insulation to existing perimeter walls.
- Abatement removal of hazardous material.
- New book stacks and furniture.
- Renovation of toilet rooms and additional family restrooms.
- Removal of mezzanine and reconstruction of roof area
- Removal of existing EPDM Roofing System and installation of new EPDM Roofing System with insulation values and drainage to meet current code
- Installation of new skylight at two locations in the existing building where they had previously been removed
- Re-pointing and replacement of exterior brick masonry as required
- Structural enhancements to upgrade building to meet current building code
- Removal and replacement of HVAC system, including all rooftop equipment, with all electric ground source heat pump system and elimination of fossil fuel
- Installation of fire protection system (existing library does not have one)
- The existing electrical service, panels, and distribution will be replaced.
- A new 1200-amp, 480/277-volt service will be installed with a new transformer.
- All lighting will be upgraded to LED, with automatic and manual controls for energy efficiency.
- The fire alarm system will be replaced with a modern, addressable system including smoke, heat, and carbon monoxide detectors.
- New telephone and data infrastructure will be installed, with Cat 6A cabling and power-over-ethernet systems.
- Security cameras will be added at entry points, connected to a central recording system.
- Site renovations to increase parking capacity and safety, enhance flow and site amenities.

New Construction

Area of new construction

- 19,214 gsf



New Construction

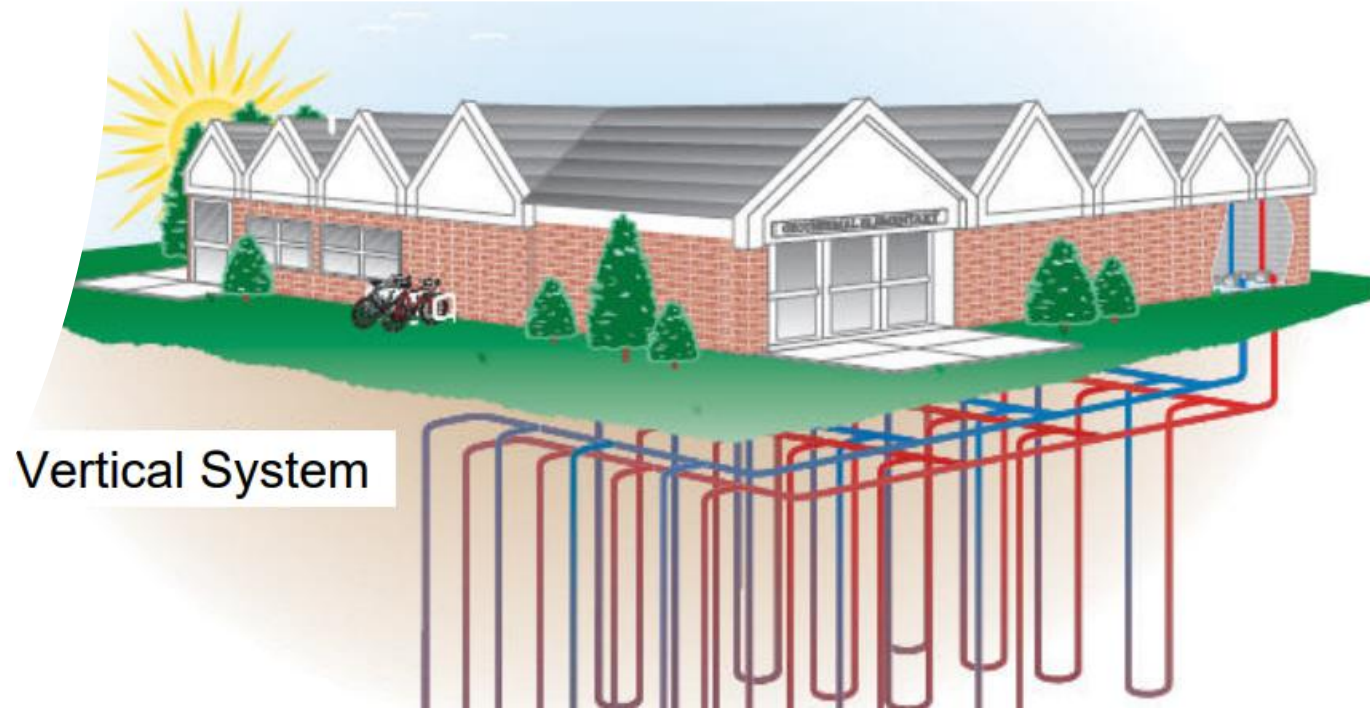
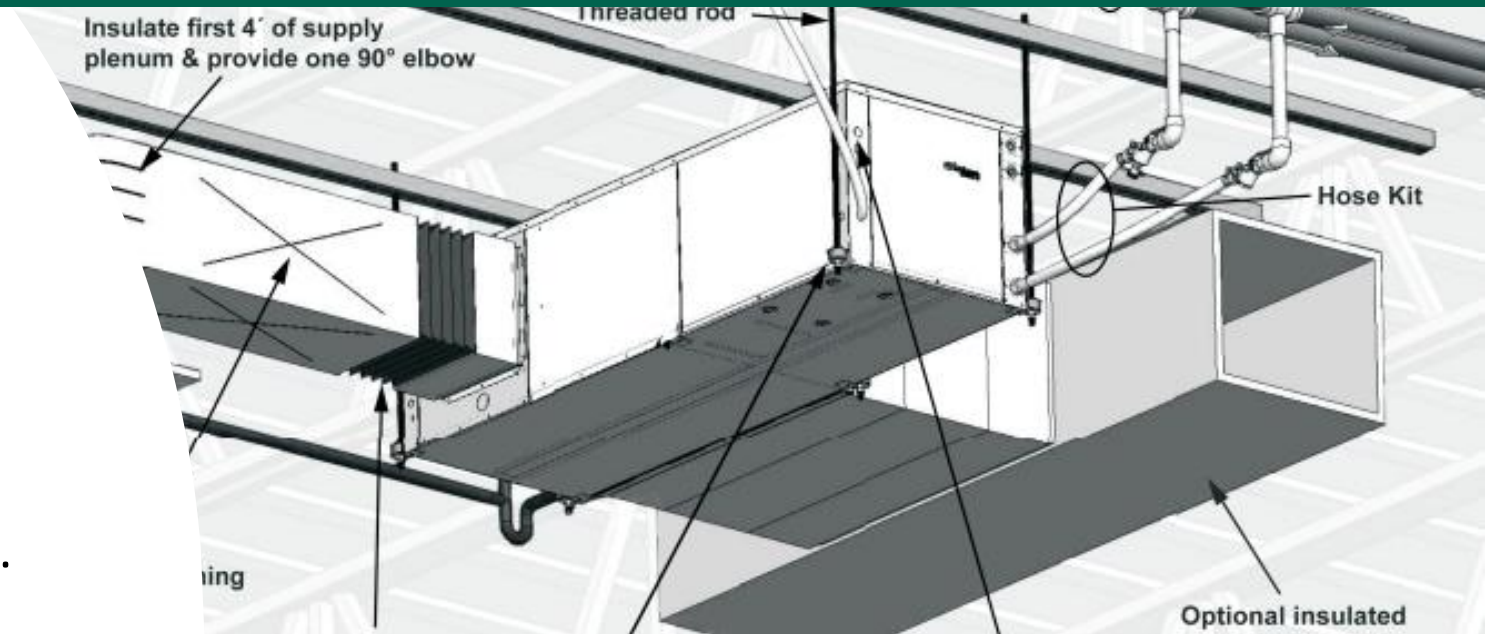
- Increase Teen's and Children's area.
- Increase community room area.
- Repositioning front entry of Library.
- Addition of curbside pickup window & traffic loop.
- Increase staff office area.
- Relocate loading dock and maintenance areas to be positioned as 'back-of-house'.

HVAC System



General Overview of the Geothermal System

- **Geothermal Bore Field:** 24 bores @ 800 ft deep, spaced 25 ft apart under parking lot.
- **Piping runs 5 feet below grade,** routed to mechanical room.
- **Circulation System:** Redundant pumps circulate 25% glycol solution to heat pump units.
- **Heat Pump Units:** Geothermal/Water-Source HP located above ceiling.
- **Ventilation:** Dedicated Outdoor Air Supply (DOAS) Units, 3 units, 4,000 CFM each



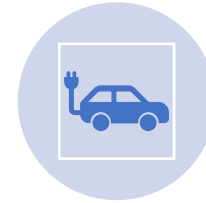
Why Choose a Geothermal Option?



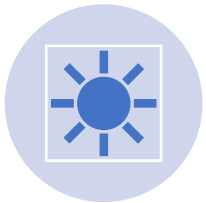
Federal Elective Pay and National Grid rebates make costs comparable.



Initial cost covered by Library; incentives available post-construction.



Building Energy Efficiency: 15% + above Energy Code



Geothermal systems are the most efficient HVAC option; Lowest electric usage & lowest peak demand.



Carbon Footprint Reduction: Fully electric system with no onsite fossil fuel usage.



Long-Term Energy Reliability: Aligns with future energy trends for NY.

Why Choose a Geothermal Option?

Division 23 (HVAC) Cost: \$5,000,000 (rounded)

- **Geothermal Sub-System Cost:** \$1,700,000 (rounded)

Federal GHP Direct Payment: $30\% \times \$5,000,000 = \$1,500,000$

National Grid Rebate: \$180,000 (Estimated)

Total Incentive: $\$1,500,000 + \$180,000 = \$1,680,000$

Net Geothermal Cost After Incentive: $\$1,700,000 - \$1,680,000 = \$20,000$

Negligible Cost Difference 

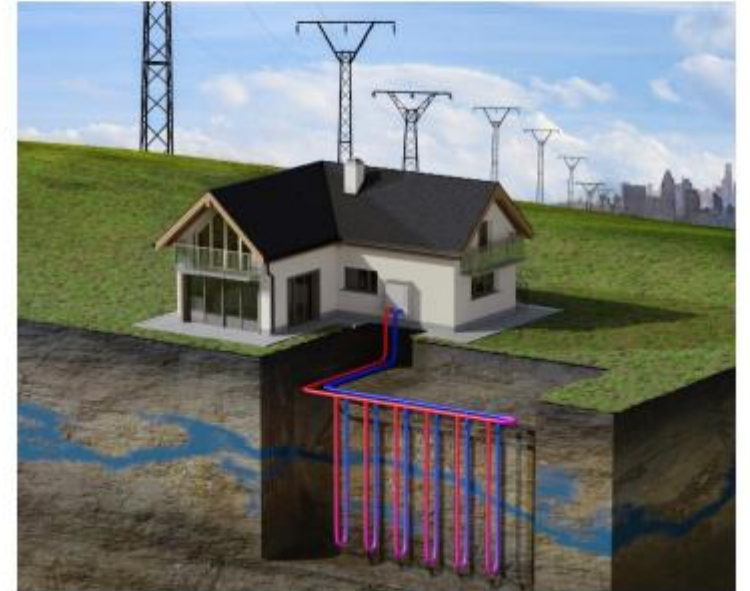
Why Geothermal Outperforms Alternatives

Comparison with Air-Source Heat Pumps (ASHPs):

- GHP Utility & Federal **Incentives level first costs** relative to ASHP installations.
- GHP **efficiency** is nearly **double** ASHP.
 - *Heating: Coefficient of Performance (COP)*
 - *Cooling: Energy Efficiency Ratios (EER)*
 - GSHP's COP 3.5 – 5.0 & EER 15 – 30
 - ASHP's COP 2.0 – 3.0 & EER 10 – 15
- Supporting Analysis: **DOE report** highlights geothermal as the pathway to decarbonization



Reductions Through Mass Deployment of Geothermal Heat Pumps for Building Heating and Cooling Electrification in the United States



Xiaobing Liu
Jonathan Ho
Jeff Winick
Sean Porse
Jamie Lian
Xiaofei Wang
et al.

November 2023

Cost Review

For project cost quick facts and for a tax calculator, please visit

<https://www.bethpl.org/project-cost/> -



Cost Breakdown

Project Cost: \$36,963,179

Includes:

- Construction Cost: \$28,666,146
- Contingencies
- Allowances
- Other soft costs

Renovated Area	=	27,207	SF	=	\$16,801,013	=	60%	
Addition Area	=	19,214	SF	=	\$11,865,133	=	40%	
Total New Building	=	46,421	SF	=	\$28,666,146	=	100%	\$617/sf
Incidentals & Contingency				=	\$8,297,033			
Total Project Cost				=	\$36,963,179			

Cost Breakdown

ADDITIONS, RENOVATIONS AND SITEWORK

12/2/2024

		Base Construction Costs w/ OH&P	Design Contingency	Escalation	General Conditions	Allowances	BID Contingency	Total Construction Budget by Line Item
Reference Item #	WORK DESCRIPTION		5.00%	6.50%	15.00%	5.00%	5.00%	
ADDITIONS & RENOVATIONS								
2	Division 2 - Demolition	\$ 1,186,587	\$ 59,329	\$ 80,985	\$ 199,035	\$ -	\$ -	\$ 1,525,936
	##### Hazardous Material	\$ 251,820	\$ 12,591	\$ 17,187	\$ 42,240	\$ -	\$ -	\$ 323,838
	##### Demolition	\$ 934,767	\$ 46,738	\$ 63,798	\$ 156,795	\$ -	\$ -	\$ 1,202,098
3	Division 3 - Concrete	\$ 1,119,615	\$ 55,981	\$ 76,414	\$ 187,802	\$ -	\$ -	\$ 1,439,812
4	Division 4 - Masonry	\$ 213,705	\$ 10,685	\$ 14,585	\$ 35,846	\$ -	\$ -	\$ 274,821
5	Division 5 - Metals	\$ 1,734,894	\$ 86,745	\$ 118,407	\$ 291,007	\$ -	\$ -	\$ 2,231,053
6	Division 6 - Wood and Plastics	\$ 292,306	\$ 14,615	\$ 19,950	\$ 49,031	\$ -	\$ -	\$ 375,902
7	Division 7 - Thermal & Moisture Protection	\$ 2,627,890	\$ 131,395	\$ 179,354	\$ 440,796	\$ -	\$ -	\$ 3,379,435
8	Division 8 - Openings	\$ 1,439,601	\$ 71,980	\$ 98,253	\$ 241,475	\$ -	\$ -	\$ 1,851,309
9	Division 9 - Finishes	\$ 2,619,999	\$ 131,000	\$ 178,815	\$ 439,472	\$ -	\$ -	\$ 3,369,286
10	Division 10 - Specialties	\$ 120,417	\$ 6,021	\$ 8,218	\$ 20,198	\$ -	\$ -	\$ 154,854
12	Division 12 - Finishings	\$ 145,528	\$ 7,276	\$ 9,932	\$ 24,410	\$ -	\$ -	\$ 187,146
21	Division 21 - Fire Protection	\$ 281,802	\$ 14,090	\$ 19,233	\$ 47,269	\$ -	\$ -	\$ 362,394
22	Division 22 - Plumbing	\$ 626,433	\$ 31,322	\$ 42,754	\$ 105,076	\$ -	\$ -	\$ 805,585
23	Division 23 - HVAC	\$ 3,862,893	\$ 193,145	\$ 263,642	\$ 647,952	\$ -	\$ -	\$ 4,967,632
26	Division 26 - Electrical	\$ 2,075,773	\$ 103,789	\$ 141,672	\$ 348,185	\$ -	\$ -	\$ 2,669,419
ADDITIONS & RENOVATIONS - TOTAL		\$ 18,347,443	\$ 917,373	\$ 1,252,214	\$ 3,077,554	\$ 1,000,000	\$ 1,000,000	\$ 25,594,584
SITework								
31	Division 31 - Earthwork	\$ 338,064	\$ 16,903	\$ 1,099	\$ 53,410	\$ -	\$ -	\$ 409,476
32	Division 32 - Site Improvements	\$ 897,722	\$ 44,886	\$ 2,918	\$ 141,829	\$ -	\$ -	\$ 1,087,355
33	Division 33 - Site Utilities	\$ 804,740	\$ 40,237	\$ 2,615	\$ 127,139	\$ -	\$ -	\$ 974,731
SITE WORK - TOTAL		\$ 2,040,526	\$ 102,026	\$ 6,632	\$ 322,378	\$ 200,000	\$ 200,000	\$ 2,871,562
PROJECT TOTALS		\$ 20,387,969	\$ 1,019,399	\$ 1,258,846	\$ 3,399,932	\$ 1,200,000	\$ 1,200,000	\$ 28,466,146
		CONSTRUCTION COST AT BID TIME						\$ 28,666,146
		Incidental Budget Hold 22.50%						\$ 7,900,000
		Potential Reduction of Incidental Budget by Outside Account						\$ (1,102,967)
		Construction Contingency 5%						\$ 1,500,000
		Capitalized Interest						
		DASNY Financing						
		3rd Party SED Review (Funds in Incidental Budget)						\$ 40,000
		(51,880 SF) TOTAL PROJECT COST						\$ 36,963,179

Cost Comparison

Guilderland Public Library

- Budgeted in 2018 – Construction Finished in 2022
 - Original Project Budget \$9,781,960
 - Final Funds Spent = \$9,068,619
- Total Work Area: 26,729 sf
 - Additions: 6,359 sf
 - Renovation: 20,370 sf
 - Total Building Area (With Additions) = 33,739
- Cost / sf: \$339.28

Bethlehem Public Library

- Total Work Area: 46,421 sf
 - Additions: 19,214 sf = \$6,850,308
 - Renovation: 27,207 sf = \$9,084,312
 - Total Project Cost = \$15,749,723

Things to consider:

- Bid Market at the time of bidding for GPL. There was about a 15-20% savings at that time.
 - Our \$15.75 million original budget today would probably cost 15-20% more.
 - $\$15,750,000 * 17.5\% = \$18,500,000$.
- Schedule of Construction and General Conditions:
 - GPL was able to shut the entire library down and complete the work in one phase. The savings to the contractors for this could be anywhere from 3-5%.
 - $18,500,000 * 4\% = \$19,240,000$
- Escalation for what we were seeing in those years during covid and up to today:
 - Project in 2021 = $\$19,240,000 * 20\% = \$23,088,000$
 - Project in 2022 = $\$23,088,000 * 15\% = \$26,512,200$
 - Project in 2023 = $\$26,512,200 * 7.5\% = \$28,540,000$
 - Project in 2024 = $\$28,540,000 * 5\% = \$29,970,000$
 - Project in 2025 = $\$29,970,000 * 4\% = \$31,170,000$
- Total Project Cost = \$31,170,000.
- Why our project is not the same:
 - 2.5-3 times more Additions than Guilderland
 - 25% more Renovations than Guilderland.
 - We are impacting approximately 23,000 sf more of sitework.
 - The building will be open and occupied throughout construction.
 - We have more square footage of renovations that are more impactful.
 - Guilderland Public Library
 - 60% Level 1 Renovations (Finishes)
 - 40% Level 2 Renovations (Space Reconfiguration).
 - Bethlehem Public Library
 - 10% "Level 1 Renovations (Finishes)
 - 90% "Level 2 Renovations (Space Reconfiguration).

Design Review



DESIGN DRIVERS: CONNECT & BALANCE

- A place to accommodate everyone, individually and as a collection of diverse community members
- Connection to nature
- Connect exterior design to interior design
- Juxtaposition of geometric shape of the library building with and organic forms
- Meandering path of ceiling, interrupted by relief of column recesses and light coves
- Complexity of stacks, furniture, flooring balanced with an organic and refined ceiling
- Ceiling heights and materials to zone elements of loud and quiet, open and closed, enhancing the gradient of the dovetail concept







BETHLEHEM
PUBLIC
LIBRARY





CIRCULATION

CIRCULATION

BETHLEHEM
PUBLIC LIBRARY

BETHLEHEM LIBRARY
B L T

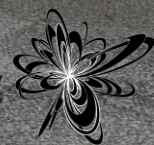
FORMATION IN

LARGE PRINTS

NEW BOOKS

Vaysen Studio

ASHLEY MCGRAW
ARCHITECTS





What's Next?

- **Bond Vote – December 12, 2024**



**Scan
for
more
info!**

Q&A



**Scan
for
more
info!**