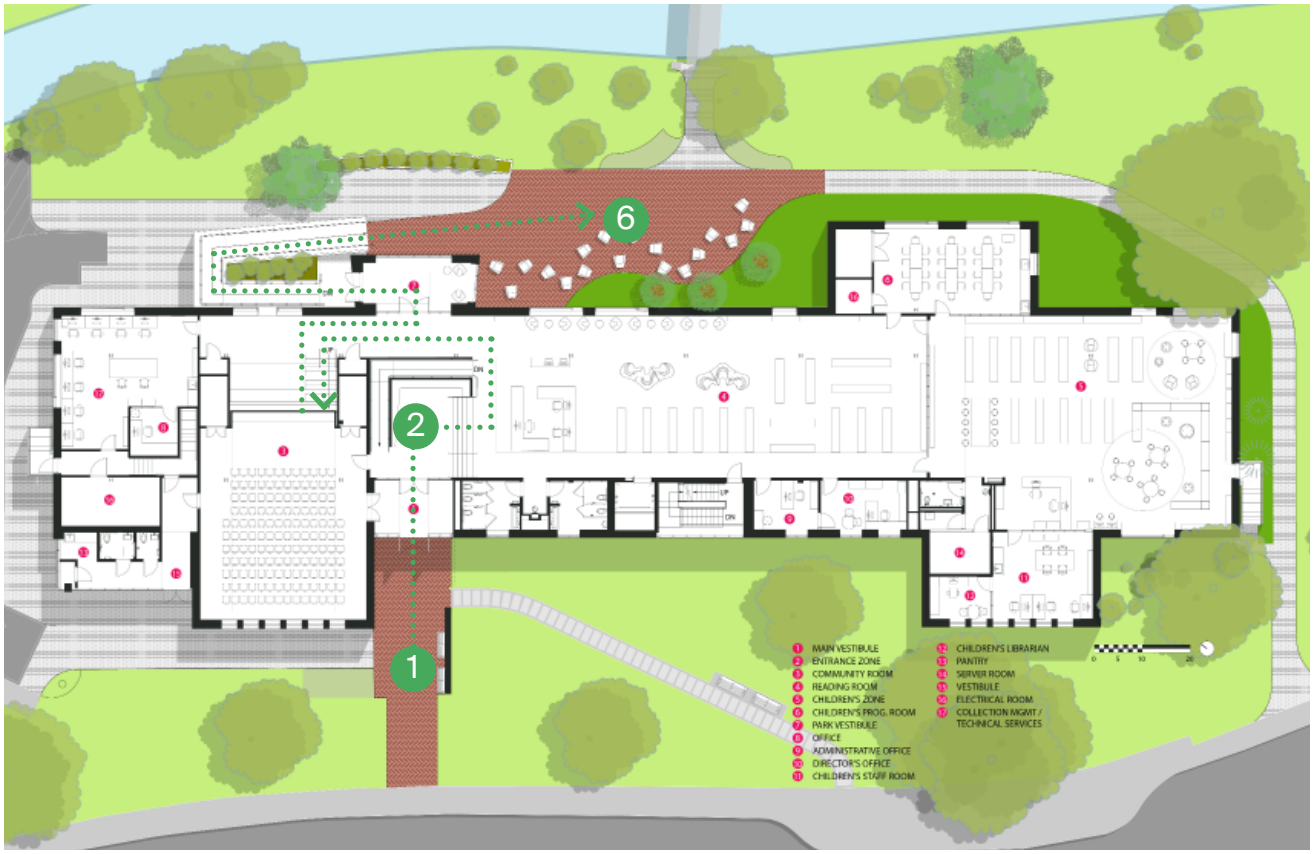
MAPLEWOOD LIBRARY
OPEN FOR ALL

Library for the Future
Green Education Tour



First Floor Plan

1 Tour Stop 1: Baker Street Entrance

Location & Transportation/ Energy and Atmosphere/Sustainable Sites

The project returns the Library entrance to grade level at its original 1956 location, with a visual connection from the entrance to the Park beyond. All patrons can enter the building from the same door and a ramp in the lobby provides access to the first floor. An accessible entrance from the Park side is added.

The Library was expanded within the footprint of the existing building, with the exception of the night vestibule which added a dedicated entrance to the Community Room at grade. It does not increase the amount of impervious surface on site. The project prioritized reusing the exterior masonry walls and foundation of the existing building with modifications to increase daylight and exterior connections.

It's an all electric building! No fossil fuels are used. A DOAS (dedicated outside air system) with air source VRF (variable refrigerant flow) pumps and energy recovery wheel is provided. VRFs include heat recovery and zoning to match space loads. The building is projected to use a maximum of 32kBTU/sq.ft/year and is supported by a photovoltaic system producing at least 169,500 kWh/yr - 55% of the building's annual energy usage. The building is designed to perform at an energy cost savings of 31.4% beyond efficiency levels prescribed for similar buildings by the American Society of Heating, Refrigerating and Air-Conditioning Engineers.

Bicycle Parking is provided outside for the public and downstairs for staff with changing facilities so patrons can reduce their reliance upon cars.

2 Tour Stop 2: Entrance Lobby

Energy and Atmosphere/Materials and Resources

The new Library is fully insulated and includes a “smart interior air barrier” to keep the building airtight. This keeps the building comfortable in all seasons and reduces heat loss in winter and heat gain in summer.

The project prioritized the use of materials with EPDs (Environmental Product Declarations), low-emitting materials and recycled content. The reading room carpet tile is made with 100% recycled nylon.

Wood is FSC (Forest Stewardship Council) or SFI (Sustainable Forest Industry) certified to ensure the wood was sourced from responsibly managed forests . Flooring is ‘edge grain’ ash. Edge grain has a unique appearance and is made from waste offcuts from other hardwood flooring materials.

The project had a construction waste management plan and 98.5% of construction waste was diverted from the landfill!

3 Tour Stop 3: Business Center / top of Forum

Sustainable Sites/ Water Efficiency

The main roof is clad with an aluminum standing seam roof with a high solar reflectance index to reduce heat gain into the building through the roof. Secondary roofs have green roofs, which help reduce heat islands and manage rainwater. Roof plantings include a sedum mix with accents of native species such as Blue False Indigo, Northern Sea Oats, Purple Lovegrass and Foxglove Beardtongue. Green roof and site plantings do not require irrigation beyond the two year establishment period.

The building uses low flow plumbing fixtures and water usage is designed to be 37% below the baseline for similar buildings.

4 Tour Stop 4: Adult Reading Room

Indoor Environmental Quality

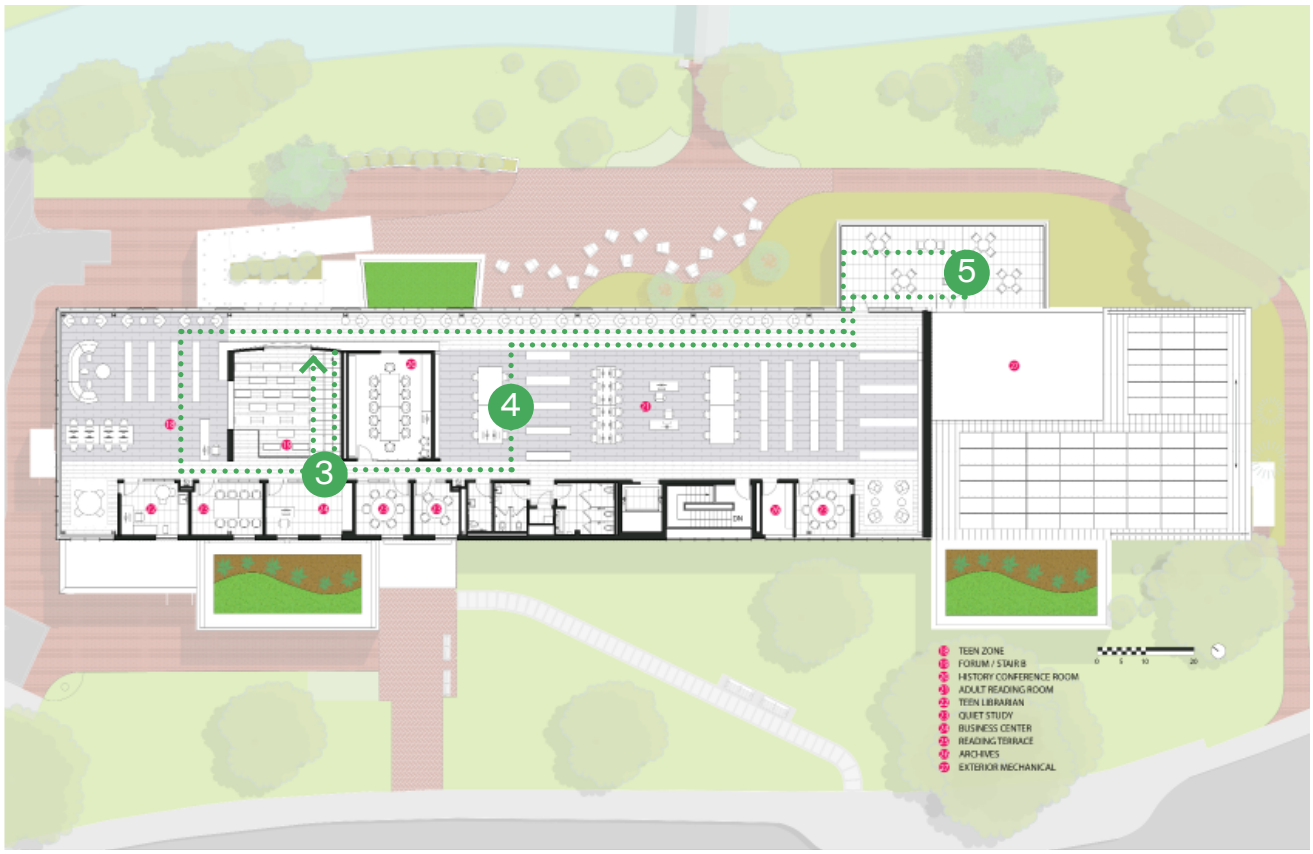
The building design prioritizes daylight and views out to Maplewood Memorial Park. LED lighting is tied to daylight and occupancy sensors and dims in response to available daylight. Motorized window shades at second floor curtain wall are also tied to daylight sensors.

The windows all include a low-e coating to reduce heat gain and solar glare. Operable windows and the Stair A curtain wall have a solar gain reducing custom ceramic frit pattern featuring the flora and fauna of Maplewood. All glass has a ‘bird friendly’ acid etch dot pattern on the exterior (#1) surface of the glass to reduce bird strikes.

Trusses are made from SFI Douglas Fir.

User thermal and acoustical comfort is taken into consideration in all spaces. Offices, Collaborative and Quiet Study rooms all include thermostats. The gypsum ceiling in the reading room is perforated to increase acoustical absorption. Other ceilings are acoustical plaster or acoustical ceiling tiles. Walls and doors are designed to reduce sound transfer.

The building offers demand control ventilation which adjusts airflow based on CO2 levels- more people in the space, more fresh air flow. Prior to opening the building was ‘flushed-out’ for 16 days to remove any lingering dust and VOCs from construction activities.



Second Floor Plan

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Tour Stop 5: Reading Terrace

Location & Transportation/ Energy and Atmosphere

The Library experienced severe flooding as the result of the overflow of the Crooked Brook during Hurricane Ida in 2021. As a result, all critical mechanical and electrical equipment has been placed above grade on the rooftop. A waterproof pressure slab with 3'-0" high waterproof perimeter knee walls and openings (doors, windows) below historic flood levels were closed to prevent future water infiltration. Storm drains were connected into the city storm sewer to draw storm water away from the building. There are connections in the parking lot for a temporary generator to power lighting, heating and cooling systems and hot water during power outages.

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Tour Stop 6: Park Reading Terrace

Sustainable Sites/ Materials and Resources/ Location and Transportation

The Library now has a public, accessible entrance directly from Maplewood Memorial Park. During ramp construction, an old oil tank was discovered and the soil around it remediated.

Concrete pavers on the reading terrace and in the landscaped paths are produced with environmentally friendlier concrete mixes that use 'ground glass pozzolans' which is a post-consumer recycled glass product that replaces almost half of the cement in a design mix.

The Library design team worked with the Maplewood Garden Club, who has historically maintained the site, to select appropriate native plantings to promote wildlife habitats within the park. Given the proximity to the brook, all plant selections are suitable for temporary inundation. Summersweet, Cephalanthus Buttonbush, and Clustered Mountain Mint are all pollinator magnets. Willow Oak is also commonly found in wet areas and is important for fauna as a food source through its acorns and leaves and as habitat for birds and squirrels. The landscape is designed to maintain visual interest throughout the seasons.

One EV charger was donated to the Township and is installed in the parking lot with empty conduit ready to install EV chargers at all of the remaining parking spots!