



Wheaton Library and Community Recreation Center, Silver Spring, Md.

Co-locating a library, park, recreation center and bookstore in one property was a valuable solution to the limited land resources problem. A first in Montgomery County, the 92,000-sq.-ft. multi-use facility offers a variety of services in one location.

by **John Mesenbrink**, contributing writer

How does a 21st-century library engage a diverse population in a meaningful way and provide robust amenities for a county with a shortage of available land on which to build? The challenge was to deliver a facility to help solve the inequities of outdated facilities and, more importantly, help create a community hub

that fosters inclusion, equity and diversity. The solution shaped itself into the co-location of a library, a recreation center, a bookstore and underground parking under one roof—leaving green areas for outdoor recreation.

Flexibility, durability and low maintenance were the key guiding

principles for this project. “The concept celebrates the multiculturalism of the district through the use of vivid colored panels, reminiscent of African, Hispanic and Caribbean art. This direct request from the community is rich in symbolism and meaning, acting as a metaphor for the ‘melting pot’ that is Wheaton,” says

Amy Upton AIA, LEED Fellow, Principal, Grimm + Parker Architects.

This LEED Gold facility fosters mind and body health by the cross-pollination of the various program spaces. Design elements encourage staff to get up and move throughout the day to “walk the talk” of health and wellness initiatives.

Communication and collaboration was critical. “Collaboration started way before a single line was drawn,” says Upton. “Starting with a collaborative spirit in mind gave everyone a chance to be a part of creating the story with the community,” says Upton. Due to COVID, as schools in the area resumed with virtual learning,

the community has taken advantage of the library’s free WIFI and set up tables and chairs in the below-grade parking garage—forming micro pods. “We have seen the building adapt to serve the needs of the community above and beyond what it was originally designed and intended to do,” says Upton.



ONSITE POWER

The building meets the county's goal for resiliency in a couple of ways: 1) a generator provides backup power for two-thirds of the building; 2) the building is photovoltaic-ready for 25,000 sq. ft. of roof set aside for future on-site PV leasing. In preparation for that eventuality, the design team created conduit pathways from the inverter locations on the roof, to the expanded panel locations in the garage electric room. Provisions were also made in the switchgear specs, and rough-ins for a combined heat and power engine system were installed to allow the building to be energized as a microgrid when the PV arrays are put in place. PV will not only save energy daily, it will allow the facility to be 100% functional during times of black out or "islanding" mode.



EXTERIOR SHADING

ThermaShade Air Foil Sunshades are designed to lower energy consumption by decreasing solar heat gain.

COMMUNITY HUB

This solution is the co-location of a library, a recreation center, a used bookstore, a café and underground parking under one roof. Many spaces are combined into flexible and multi-use spaces to integrate recreation and library programs into a lively, co-located community hub.

YKK AP America
www.ykkap.com

CIRCLE 275



A Splash of Color

Through the articulation of volumes and color both on the exterior and interior, the building embraces and celebrates the great diversity of the community. The massing and character of the building helps break down the scale and engage the neighborhood and surrounding context. Brightly-colored phenolic resin panels line the primary façades to add interest and color to the exterior. The exterior materials for this building are durable, low maintenance and vandal resistant. High-density masonry units in Bowie Blend provide a natural feel to the exterior of the library and recreation spaces. On the interior, ground faced masonry units bring this masonry feel inside to the lobby, corridors and into the gymnasium. The variety of hues on the masonry walls helps to break down the scale of the large facility and relate to the residential context surrounding the site. Careful consideration was paid to optimizing acoustics and improving productivity and occupant health.



Amy Upton AIA, LEED Fellow, Principal, Grimm + Parker Architects, designs public projects that balance sustainable, inspiring and healthy environments with budget, maintenance and operation concerns.



LOOKING FORWARD AS A SUSTAINABILITY PARTNER

The compact footprint of the co-located facility offers the community a large green space, playground and park area that successfully conserved several beloved historic trees. In this way, the new library facility is a sustainability partner; it fosters community resilience and a culture of sharing, a true sustainable example of a future to which to look forward.

Water Management

The collection and treatment of stormwater was important, with 95% of precipitation managed onsite. The design team worked with the county to assess and improve downstream storm water management (SWM) facilities. There are 23 environmentally sensitive devices—bioswales, micro-bioretenion facilities, rain gardens and stormwater quality and quantity control devices—surrounding the building and park site to slow down stormwater and rainfall, filter and treat, and slowly recharge the aquifer underground. Ten of these are

constructed SWM quantity devices cast out of concrete adjacent to the building to collect stormwater from internal roof leaders, slow the water down and filter it. They are planted with native and drought-resistant grasses and shrubs and give a soft, natural buffer around the building's south side and along the pedestrian ramp from the park to the plaza. Two, 1,500-sq.-ft. intensive vegetative roofs are planted on a portion of the library and game room roofs. These living quilts are visible from the second floor, giving visitors dynamic views of nature from the central bridge of the building.

PROJECT SPECS

Owner: Montgomery County Dept. of General Services
Architect: Grimm + Parker Architects
Civil Engineer: Adtek Engineers
MEP: Gipe Assocs.
Structural Engineer: Columbia Engineering
General Contractor: Costello Construction
Landscape Architect: Norton Land Design
Playground Design: Annapolis Landscape
Commissioning Agent: Kibart
Cost Estimating: Forella Group
Date of Occupancy: 09/2019
Total Construction Budget: Entire facility, playground and underground parking: \$43.5M
Photography: Sam Kittner; G+P for sketches/diagrams



HVAC

Predicted energy cost savings is 21% over baseline with a predicted energy usage index of 69 kBtu/sf/year. The total predicted annual energy consumption for the project is 1,058,181 kWh/year of electricity and 27,674 therms/year of natural gas. This building is not able to get an Energy Star Target Finder score because the tool does not support the primary building type of the project building. Reduced energy consumption was accomplished by adopting a four-pipe high efficiency variable air volume system with heat recovery and free cooling outdoor air economizer cycle, with the chilled water system utilizing two magnetic bearing, variable speed and water cooled chillers.

Heating and cooling systems and their associated controls were designed and zoned to enable the building to operate at less than full occupancy without conditioning the entire building. The mechanical system is designed to exceed the International Energy Conservation Code-2015 and the ASHRAE Standard 90.1-2013. LED lighting accounts for approximately 95% of the fixtures in this facility and onsite. Low-velocity, high-volume ceiling fans in the gymnasium provide thermal comfort and supplement conditioned air supply. A centralized BAS system manages the HVAC system, and radiant flooring is featured in the children's area, along with snowmelt in the exterior entry plaza.

HVAC PRODUCTS:

Daikin Air Handling Units (Vision, Custom Modular with energy recovery wheels)
Daikin Model WMC Indoor Water Cooled Packaged Centrifugal Chiller with variable speed drive
www.daikin.com

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Aerco Benchmark Platinum 750 Boilers
www.aerco.com

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LIBRARY AND A BASKETBALL COURT

Because this is a shared facility of loud recreation spaces and quiet library spaces, thick walls with acoustical features and acoustical fabric on walls and ceilings were used to separate adjacent spaces.



In the facility's lobby, a central terrazzo stair with glass risers and guardrails maintains visibility between the two main entrances. The stair is highlighted with natural daylighting and a soaring stained-glass sculpture.

LIGHTING

SL1010P and 212 strip lights are integrated in the acoustical ceiling grid in the lobby and game room.

Juno

www.acuitybrands.com

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Library

The library is laid out on one level for ease of use by visitors with disabilities, and to assist the library system to manage the branch with less staff. The customer service desk invites one in with a swooping curve to a path linking the children's, teen and adult areas. Shelving helps give definition to a variety of lounge and reading spaces that are flexible in arrangement due to the abundance of power outlets and modular furniture throughout. A movable glass partition transforms the children's meeting room itself into a variety of uses. Curtainwall glazing brings in ample natural light and connection to the community while increasing wellbeing.



LIGHTING

Ring lights are used in the library ceiling at the circular skylight openings. Viracon is the glazing used for the skylights.

HE Williams
www.hew.com

CIRCLE 271

Pendant and flush mounted strip lights in library are FSM4L, typical in acoustical ceiling panels and metal pan ceiling systems.

Focal Point
www.focalpointlights.com

CIRCLE 270

Daylighting

Optimizing natural daylight and thermal comfort were two fundamental design strategies influencing the process. The southern exposure of the library and tall ceilings of the adult and children's library provide ample natural daylight. Glare is controlled with large horizontal roof overhangs and sunshades on the south, deep vertical fins and angled panels on the west and electrically-operated translucent roller shades on the interior.

Daylight harvesting controls help to dim the interior lights and three, large circular skylights evoke the sun in a playful way in the children's area, and bring daylight deeper into the space. Large expanses of insulated, low-E glazing walls are fritted with ceramic patterns to diffuse the light and in one corner of the children's room a multicolored acrylic panel sculpture creates colorful shadow play. Glassy areas not only provide daylighting, but invite the public in, as well as monitor activities. Through the use of glass, the building will be easier to supervise, secure and provide natural light for the users and staff.



GLAZING/WINDOWS

YKK AP is used in the storefront and curtainwall. Curtainwall is YKK YCW 750; Storefront is YKK EXSF.

YKK AP America
www.ykkap.com

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1-in. thick Insulated Clear SNX 62/27 Tempered Low E Glass; JE Berkowitz is glazing manufacturer for CW and SF—VLT 67%; SHGC 0.27; U-Value 0.29, Shading Coefficient 0.31.

J.E. Berkowitz
www.jeberkowitz.com

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HVAC/RADIANT FLOORING

The hydronic radiant floor heating system is Viega-PEX Barrier Tubing Kit; it is located inside at the children's library floor slab and the exterior under the entry canopy at plaza.

Viega
www.viega.us

CIRCLE 267