

“This is an absolutely breathtaking location. And to maintain the pristine beauty of this site, every saguaro, tree, cactus and bush that could be salvaged before construction started was moved to a nursery and maintained until it could be replanted around the building. Saving every part of the native desert possible, while minimally impacting the area, was foremost in our minds. Rarely do you have the opportunity to build on this type of site.”

- Adam Sprenger, Project Architect and Project Manager for DWL

Environmental Summary

SUSTAINABLE FEATURES LIST

1. Alternate Transportation: Bike racks, interior bike storage, lockers and a shower.
2. Alternate Transportation: Signed preferred parking spaces for low-emitting vehicles, fuel-efficient vehicles, carpool and vanpools.
3. Sustainable Site: Minimized development footprint.
4. Material Reuse and Water Conservation: Salvaged and re-planted native cactus and trees and from the site. Xeroscape landscaping reduces water use.
5. Sustainable site: This project maintained 69% of vegetated open space.
6. Sustainable site: Basins and drywells filter and infiltrates 100% of storm water back into the site. No storm drain utility connections to the public.
7. Heat Island Effect: Highly reflective roof coating on 75% of the roof reduces heat island effect.
8. Light Pollution: Full cut-off site lighting fixtures comply with Dark Sky Ordinance
9. Public Utilities: Wastewater is filtered and infiltrated back into the site through septic system, allowing the project to not be connected to public sewer system.
10. Water Conservation: Low flow toilets, waterless urinal, low flow shower head, occupancy sensors and aerators = water use reduction of 30%. Water used is supplied from an on site well. No water utility connection.
11. Reduce Ozone Depletion: (2) 50 ton Aeon air handlers use R410 refrigerant (not CFC - chlorofluorocarbon based).
12. Energy Conservation: 50% energy savings beyond a code compliant building.
13. Energy Conservation: Viracon VE2-55 Dual Pane Low-E windows – 1" IGU.
14. Energy Conservation: R-30 SWD foam insulated roof with highly reflective roof coating.
15. Energy Conservation: Owens Corning R-19 FSK Foil faced batt insulation over Tremco Exo Air 120R liquid air barrier over 12" thick concrete tilt-up walls.
16. Glare Control and Lighting: Automated Mecho shades raise and lower based on both interior light levels and exterior roof mounted photocells which measure the sun's intensity. Dimmable lighting is controlled thru 'daylight harvesting' software, photocells and occupancy sensors. Reduced lighting = reduced energy consumption.
17. On site Energy Generation: 228 Sharp 235 watt roof mounted photovoltaic panels with Enphase Energy micro-inverters. The 53.5 KW DC / 43.8 KW AC system generates 25% of the building's energy.
18. Green Power: 100% of the power brought to the site via APS is Green-e certified, which verifies it comes from clean energy sources. This combined with the on-site photovoltaic energy generation allows this project to boast it is a net-zero energy pollution building.
19. Recycling Program: Staff collects paper, corrugated cardboard, glass, plastics and metals in exterior recycling area.

20. Construction Waste Recycling: Mortenson Construction separated and recycled over 92% of the construction debris, diverting it from our landfills.
21. Native Materials: Stabilized DG is used for parking spaces and trails.
22. Recycled Content: R50 Richlite recycled paper countertop has 50% recycled Content and is 'GREENGUARD CERTIFIED.'
23. Recycled content: 'Texdeck' Amphitheatre seating contains 100% recycled plastic.
24. Recycled Content: Structural steel in this project contains 69% post consumer recycled content and 23% pre consumer recycled content.
25. Recycled content: Reinforcing steel contains 85% post consumer recycled content and 15% pre consumer recycled content.
26. Recycled Content: Concrete contain 76% post consumer recycled content and 14% pre consumer recycled content.
27. Recycled Content: Gypsum board in this project contains 94% pre consumer recycled content.

“DWL places an emphasis on making designs both esthetically pleasing and environmentally sensitive, regardless of a project’s goals for LEED certification.”

-DWL's Jeremy Jones, Project Principal for the Architect

28. Recycled content: Metal studs by United Metal Products contain 25% post consumer recycled content and 6% pre consumer recycled content.
29. Recycled content: Carpet Tile by Shaw/Patercraft contains 11% post consumer recycled content and 27% pre consumer recycled content.
30. Regional materials: 100% of the concrete used on this project was harvested and manufactured within 500 miles of the project site.
31. Regional materials: 100% of the plant material used on this project was harvested and manufactured within 500 miles of the project site, or was salvaged and replaced from original site.
32. Indoor Air Quality: CO2 monitoring devices regulates the outside air quality.
33. Indoor Air Quality: All sealants and adhesives used were Low VOC.
34. Indoor Air Quality: All paints and coatings used were Low VOC.
35. Indoor Air Quality: This project has used only low VOC stains and sealers as seen on interior and exterior concrete walls and exposed concrete floors; Aquaseal stain and Aquaseal ME by Monochem have only 50 and 100 g/L VOC content.
36. Indoor Air Quality: Eco Worx Carpet Tile by Shaw/Patercraft: low VOC and Green Label Plus certified.
37. Indoor air Quality: Knoll upholstery fabric is 'GREENGUARD CERTIFIED.'
38. Indoor Air Quality: Casework used Aerris and Medite II low VOC composite wood by SierraPine Composite Solutions, which contains no added urea-formaldehyde; SkyPly plywood hybrid panel by Roseburg has no added urea-formaldehyde and is low VOC.
39. Indoor Air Quality: Grahm GDC PC bonded wood doors have no added urea-formaldehyde; SkyPly plywood panel by Roseburg has no added urea-formaldehyde and is low VOC.
40. Dust Control: Pedigrd recessed entry grille system at all buildings entries.
41. Connection with Nature: Abundant views through panoramic windows.



DWL Architects + Planners, Inc.
2333 North Central Avenue
Phoenix, Arizona 85004
tel 602.264.9731 fax 602.264.1928
www.dwlarchitects.com

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White Tank Branch Library & Nature Center

ENVIRONMENTAL FACTORS IN THE DESIGN OF WHITE TANK BRANCH LIBRARY



WRITTEN BY | JEREMY A. JONES, AIA, LEED AP
 PHOTOGRAPHY BY | BILL TIMMERMAN

With a magnificent backdrop of 4,000-foot peaks, the White Tank Branch Library & Nature Center is a desert oasis nestled in a rugged landscape notorious for its severe summer heat and torrential rainstorms. Yet this public library is found just a few miles from the suburbs of Phoenix, at the entrance to the largest regional park in Maricopa County.

It's an environmental statement, complete with Nature Center and amphitheater. Half of the building roof is covered by a 228-panel photovoltaic collector array that provides 25% of the power for the building with a 53.5KW DC system that saves about \$20,000 each year in operating cost. A 200 foot-long monolithic concrete wall, diagonally subdivided into abstract shapes, is colored in three shades of green to match the surrounding desert. The concrete is etched with petroglyphs, inspired by those found on nearby boulders, from Native Americans that lived on the site. High in the tower entry window, suspended in glass, floats the most unique petroglyph from this region. Most think it represents a fishing net, but rumors abound that it may be a depiction of the Earth given to Native Americans by ancient aliens—a legend that adds to the park's mystique. Wrapped within this location's lore is a very flexible and functional 29,000 square foot modern library and nature center that provides a sanctuary from the city and a connection to the natural world. On opening day, November, 12, 2010, 3,000 visitors came to watch the release of two Harris's Hawks at the ribbon cutting.

The rectangular front section of the building encloses the entry, staff activities and the Nature Center. A patio provides views of the Estrella Mountains to the south, Glendale to the east and Downtown Phoenix 30 miles to the southeast. At the back of the building, a semicircular Library Room includes a string of windows that open to the White Tank Mountains and provide daylight to the activity areas. Concrete shade fins radiate out from this window line for increased sun protection, their size calculated by computer analysis of the sun's movement throughout the day and seasons.

Off the central lobby is the Park's Nature Center and Library's Friends space, which raises money through book sales. The Nature Center includes a sales area, an information counter and an animal habitat room

where the public can view live animals native to the park, including rattlesnakes. The Nature Center has an educational display, meeting area and staff offices. T-shirts and other souvenirs are also sold here to support the Maricopa County Library District park system.

The collection of 35,000 items is planned to serve about 49,000 people within a five mile radius of the Library, but any county resident or temporary camper is welcome. The building can also be reached by horseback, hiking trail or bicycle. The activity room accommodates up to 137 children seated on the floor or 38 adults seated at linear tables. There are four quiet study rooms and a separate area for teens. The building is Wi-Fi enabled with 44 public computers available.

Designated parking is provided for carpooling and energy-efficient vehicles. There is also a drive-up bookdrop. The book return includes RF scanning and automatic sorting to reduce the amount of staff time in getting items back onto shelves. Items are shelved by interest areas, much like a bookstore, rather than by the Dewey Decimal System.

This project has achieved LEED® (Leadership in Energy and Environmental Design) Platinum certification. It is the 1st LEED Platinum certified public library in Arizona, and one of only three in the entire United States. It also has the distinction of being the only LEED Platinum certified public library built in a challenging environment.

“The Mortenson/DWL Design-Build team is proud of surpassing the project goal of LEED Gold to achieve LEED Platinum. It is the result of a collaborative and cognizant effort with the Maricopa County Library District and DWL Architects to address each aspect of the project with a commitment to environmental sustainability. We exceeded our goal at no added cost to the project; we set our sights high and the result is beyond satisfying.”

- Adam Hardy, Project Manager, Mortenson Construction

Maricopa County Library District is proud to state that this building's power is generated entirely from clean energy sources on a net-zero pollution basis. There are numerous design features that contribute to the large reduction in energy usage.

LEED® PLATINUM CERTIFIED



LEED Leadership in Energy and Environmental Design
NC 2.2 Platinum 52 points

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WHITE TANK BRANCH LIBRARY & NATURE CENTER

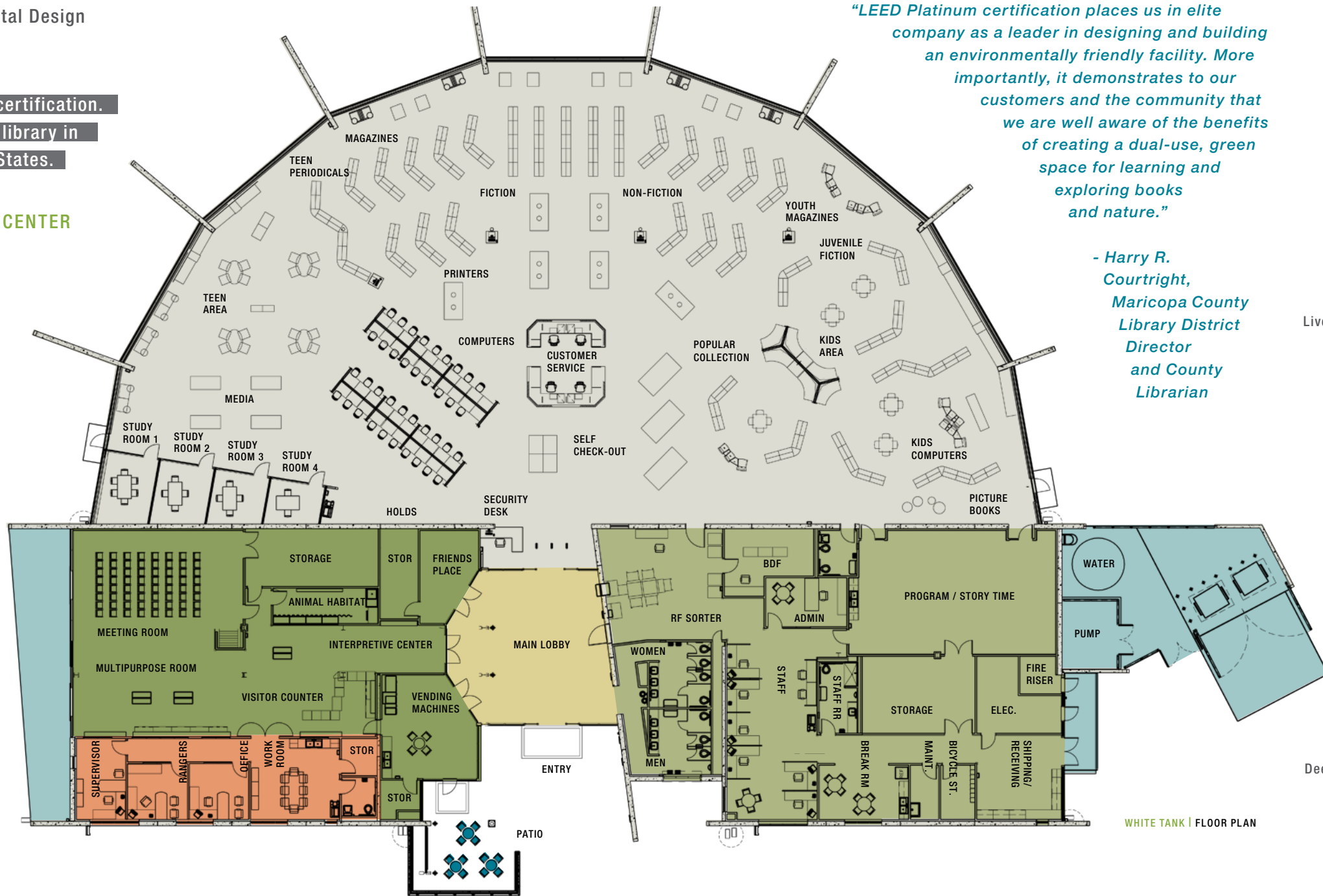
20304 West White Tank Mountain Road
 Waddell, Arizona 85355

DATE PROJECT COMPLETED:
 November 12, 2010 (Grand Opening)

TOTAL SQUARE FOOTAGE OF LIBRARY:
 29,000 SQ. FT.
 Library 25,000 & Nature Center 4,000

WHITE TANK Design-Build Team:

- Mortenson Construction: Contractor
- DWL Architects + Planners, Inc.: Architect
- Evolution Design: Interior Design
- Paragon Structural Design: Structural Engineers
- GRAEF/SCL Consulting: Civil Engineering & Landscape Architecture
- ESD: Mechanical, Electrical & Plumbing Engineer
- Ameresco Solar, LLC: Solar Design & Installation



"LEED Platinum certification places us in elite company as a leader in designing and building an environmentally friendly facility. More importantly, it demonstrates to our customers and the community that we are well aware of the benefits of creating a dual-use, green space for learning and exploring books and nature."

*- Harry R. Courtright,
 Maricopa County
 Library District
 Director
 and County
 Librarian*

WHITE TANK | FLOOR PLAN

LIBRARY HIGHLIGHTS:

- Dewey-Less Bookstore Layout for Easy Location of Materials
- A Collection Capacity of 35,000 Items
- 44 Internet Accessible Wi-Fi Computers
- Public-Use Computers (38 Adult & 6 Kids)
- Adult Area (W/Seating for 38)
- Kids Area (W/Seating for 44)
- Teen Area (W/Seating for 32)
- 4 Study Rooms
- Program/Story Room (W/Seating for 77)
- Friend's Book Store
- Café/Vending Area
- Self-Service Check Out/In

NATURE CENTER HIGHLIGHTS:

- Park Gift Shop
- Live Animal Exhibits & Displays to Educate Visitors
- Native Vegetation Displays
- Meeting Room (W/Seating for 50)
- Regular Program & Events
- Preview to Park Amenities
- Amphitheater (W/Seating for 100)

ENVIRONMENTAL HIGHLIGHTS:

- Leed® Certified Platinum
- Low Flow Plumbing Fixtures
- On-Site Water Treatment
- Native Desert Landscaping
- 228 Rooftop Photovoltaic Panels Produce 25% of the Facilities's Annual Energy Needs
- Automated Lighting Controls for External Brightness & Occupancy
- Deep Overhangs, Fin Walls, Low E Glass, & Interior Shades to Reduce Glare & Heat Gain
- Net Zero Pollution Rating with the Purchase of Renewable Energy Certificates

PHOTO CREDIT | BILL TIMMERMAN

