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McGraw Hill
CONSTRUCTION

| **CASE STUDY**

| LAURANCE S.
ROCKEFELLER PRESERVE

| By JANE KOLLEENY

Moose, Wyoming



WHERE BUFFALO ROAM

The 10,400-square-foot Laurance S. Rockefeller Visitors Center, part of the Grand Teton National Park, prepares visitors to appreciate the vast natural resources and beauty of the place.

Rockefeller wanted every aspect of the building to reinforce a message of conservation and the restorative power of nature.

For a slide show of additional images, go to greensourcemag.com @

KEY PARAMETERS

Location Grand Teton National Park, Moose, WY (shoreline of Phelps Lake)

Gross Square Footage 10,400 ft² (966 m²)

Completed November 2007

Annual purchased energy use (from utility bills, facility open seasonally) 11 kBtu/ft² (127 MJ/m²)

Annual carbon footprint 3 lbs. CO₂/ft² (15 kg CO₂/m²)

Program Welcome and orientation areas, staff and resource space, galleries, 3 restroom outbuildings

TEAM

Owner Grand Teton National Park, Laurance S. Rockefeller Preserve

Architect and interior design Carney Architects

Landscape Hershberger Design

Engineers KL&A (structural); M-E Engineers (MEP); Jorgensen Associates (civil)

Lighting design David Nelson & Associates

Acoustical D.L. Adams Associates

Commissioning agent Engineering Economics

Environmental consultant Pioneer Environmental Services

Sustainability consultant Rocky Mountain Institute (formerly Ensar Group)

General contractor GE Johnson Construction

CASE STUDY

LAURANCE S. ROCKEFELLER PRESERVE



Jackson Hole occupies a 48-mile-long, 13-mile-wide valley between the Teton and Gros Ventre mountain ranges in western Wyoming. In this extravagantly beautiful locale, the jutting peaks of the Grand Tetons tower over glacial lakes, buttes, and the high valley floor. About 97 percent of the land here is federal land, providing domicile for a profusion of native wildlife. While the original preserve consisted of 96,000 acres back in the 1920s, today the Grand Teton National Park includes 310,000 acres of land, portions of it given over in perpetuity by philanthropist John D. Rockefeller, Jr., whose family had summered in Jackson

Hole since the 1920s.

The final chapter in this legacy began in 2001, when Laurance S. Rockefeller, John D. Rockefeller, Jr.'s son, announced his intention to give over a 1,100-acre parcel of land, which had served as the Rockefeller family's retreat, to the Park Service, at his father's behest. The land was conveyed to the National Park Service in 2007, after the visitors center was largely completed. The project's LEED Platinum rating is a first, both for the Park Service and for the state of Wyoming. Opened to the public in 2008, it stands as testimony to the family's long-time stewardship of the land.

The simple program of the Laurance S. Rockefeller (LSR) Interpretative Center consists of a resource center, multimedia

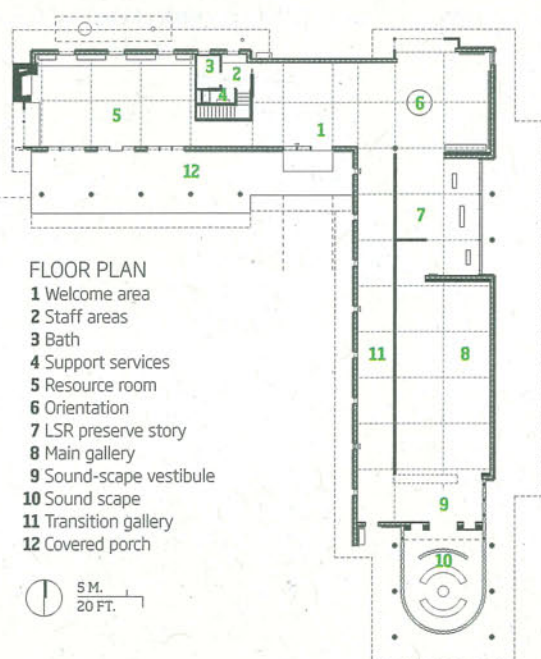
display galleries, and support services in a 7,000-square-foot L-shaped building. The project's modest but elegant exhibitions serve to create an atmosphere for appreciating the vast natural resources and beauty of the property. In addition to the main building, the project includes parking and three restroom outbuildings with composting toilets. A major reclamation effort was undertaken to remove all roads, horse trails, and about 30 buildings that provided accommodation for the Rockefellers at the edge of pristine

Below Carney Architects designed all the furniture in the resource center. Boulders and rocks were assembled from the site and used to design the chimney, while abundant light flows into the space from large operable windows.





NIC LEHOUX, PREVIOUS PAGE; PAUL WARCHOL, THIS PAGE



Phelps Lake, returning it to its original state before occupation. “To minimize impact, the team strove to merge proposed interventions with prior conditions—existing roads became trails and former building sites became lookouts,” explained landscape architect Mark Hershberger.

Though Laurance Rockefeller passed away in 2004 and did not live to see the finished building, he played a significant role in the visioning, planning, and interpreting of the project. He had assembled a board of directors led by Douglas Horne, of D.R. Horne & Company. Horne explained that originally the project was conceived without a building, but once the board decided there would be one, they agreed it “should be an example of sustainability,” in keeping with Rockefeller’s message of stewardship. Still they were not initially committed to LEED certification, only

Left On the entrance side, a wrap-around porch overlooks an aspen grove.

Top right Multimedia displays of the varying sounds of nature and pictures of wildlife occupy the main gallery.

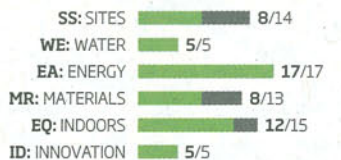
Bottom right Vertical wood slats with gaps between boards bring narrow slits of light into the chapel-like space at the south end of the building.

CASE STUDY

LAURANCE S. ROCKEFELLER PRESERVE

LEED SCORES

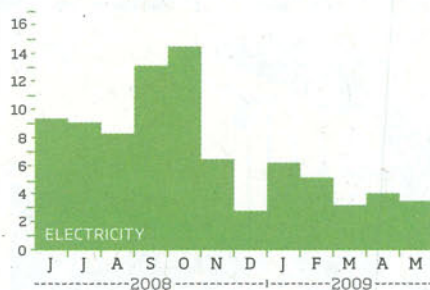
NC VERSION 2 PLATINUM



POINTS/POINTS POSSIBLE

MONTHLY ENERGY USE

MILLION BTUS TOTAL



deciding to go that route in late 2003 to “set a bar for the Park Service and serve as a touchstone for the public,” he continued.

From the get-go, the project team undertook an integrated-delivery model: “No one discipline dominated the evolution of design—it had to work in so many ways,” explained Horne. John Carney, FAIA, of Carney Architects served as architect and interior designer. In hindsight, he said that while “the team rolled its collective eyes at the length to which Horne and the board members went to ensure that we had it right,” in the end the deliberative process and tenacity for perfection was well worth the trouble.

Visitors enter the building from the south. Inside, exhibitions begin at the bend of the L, where visitors are oriented geographically with a 3-D model, photos, and full-scale maps of the property. Progressing through the space, one finds oversized black-and-white historic photos and text telling stories of the history of the site. Multimedia displays, complemented by the poetry of Terry Tempest Williams, guide visitors onward. The building terminates in an apse-like form at its south end. Here, a recorded orchestra of wildlife sounds creates an almost spiritual atmosphere, in keeping

with Laurance Rockefeller’s sensibility.

Since the exhibits are not light-sensitive, daylight is used to illuminate interiors, reducing the need for artificial light. Early in the design process the team undertook daylighting studies, which informed the shape and orientation of the buildings. In the main gallery, clerestory windows and extended overhangs allow daylight in without direct sun. Low-voltage lighting controls, with time clock, daylight, and occupant sensors, optimize energy savings and reduce maintenance. Since the building is closed in winter and only open during the day, there is no site or landscape lighting.

These limited operating hours also made temperature control relatively easy; in fact, completing the maximum number of points for LEED 2.0 energy and atmosphere category was a breeze. The building’s many operable windows provide fresh air and “electronically controlled high windows open at night to allow the building to ‘flush’ out the day’s warm stale air, while bringing in cool fresh air for the next day,” explained project architect Kevin Burke, AIA, of Carney Architects. A variable-mode mechanical system utilizes a ground-source heat pump. A 10 kW photovoltaic system mounted on the restroom buildings is designed to provide 45 percent of the building’s electricity, although efforts are

now underway to investigate recent metering data that indicates far less. According to Burke, the Green-e power agreement with the local utility provides an additional 50 percent; the remaining 5 percent is supplied by nonrenewable power.

So, too, exemplary water conservation is possible in a building with so short a season and with so simple a program. Water in the main building is used for hand-washing and





Above The plan included creating a network of trails, removing all of the family's log-cabin structures, and building a small visitors center, which would be linked to the lake by trails.

cleaning only. Eleven composting toilets use only one to three gallons of water per day, virtually eliminating wastewater. The design team discovered that the abundant bear population necessitated use of a special push-plate exterior bathroom door, since several had gotten into public restrooms nearby, terrifying occupants. Permeable paving in the parking lot allows groundwater filtration while the entry, drop off, and parking access roads direct runoff to a bioswale.

The building itself is poised at the edge

of two eco-systems—a meadow and forest—“a very purposeful division,” says Hershberger. Seeds from around the site were collected and replanted to landscape the building. These interventions reinforce the symbiosis with nature and extend the building seamlessly into its surroundings.

FSC-certified lumber is used for over 69 percent of the wood. Materials with high recycled content include Rastra blocks for walls with recycled post-consumer waste polystyrene, concrete containing fly-ash to replace 50 percent of the portland cement, insulation made with 85-percent recycled denim and cotton fiber, and paneling composed of salvaged hemlock and steel. Low-VOC finishes, adhesives, and sealants

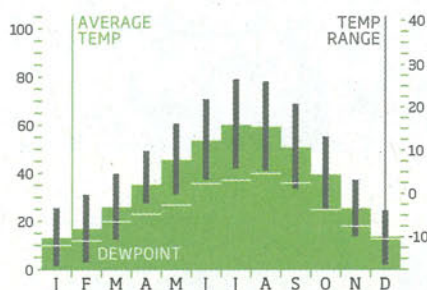
were used throughout and almost 97 percent of site waste was diverted for reuse.

Did the project accomplish what it set out to do? There have been some misunderstandings by the facility managers on how best to operate and maintain the systems. In addition, it took some crafty negotiations to convince the local utility to get themselves accredited as a Green-e Power provider in time for the LEED submittal. “But it all worked out in the end,” says Susanne McDonald of the National Park Service, who serves as the site manager for the LSR Preserve. Aside from some destructive porcupines who discovered how good the cedar siding tasted (they were deterred with an environmentally friendly souring agent), McDonald feels the project is a complete success—the design team “nailed it in terms of how people use the property, move through it, and experience it.” 

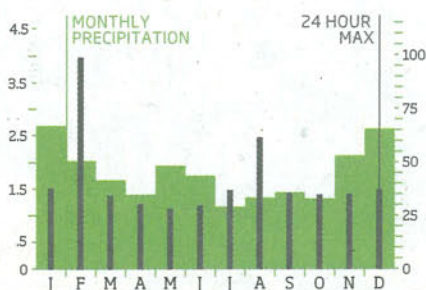
>SOURCES

Foundation and exterior walls Rastra ICF block
Timber frame, cabinetry, and millwork FSC-certified Douglas fir from Spearhead Timberworks
Titanium zinc panel curtainwall and roofing Rheinzink pre-weathered single skin
Aluminum clad windows and doors Albertini
Insulating glass Alpengliss TC88 or SC75, depending on orientation
Paneling John Simms oxidized metal, proprietary local recipe; Soundseal WoodTrends Topline, FSC teak acoustic paneling; Sierra Pine, Medex
Acoustic ceiling Tectum panels
Concrete stained floor Kemiko Stone Tone, with zero VOCs
Carpet Karakul by Invision, 50% recycled nylon content
Custom office furniture Carney Architects design, fabricated by Spearhead Timberworks
Lighting Carney Architects design, manufactured by Neosource
Dimming control Litetouch
Occupancy and light sensors Wattstopper

TEMPERATURES & DEW POINTS
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PRECIPITATION
INCHES/MILLIMETERS



HEATING/COOLING DEGREE DAYS
BASE 65F/BASE 18C

