

2006

Red Rock Desert Learning Center & Wild Horse and Burro Facility: Newsletter

Red Rock Desert Learning Center

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Red Rock Desert Learning Center

Volume 1 Number 1

Winter 2006

What is the Red Rock Desert Learning Center?

The Red Rock Desert Learning Center (RRDLC) and Wild Horse and Burro Facility are planned as outdoor education centers for local elementary students. Architects are designing these facilities on the site of the former Oliver Ranch, in Red Rock Canyon National Conservation Area and north of Blue Diamond on State Route 159. Construction of the project is being funded by the Southern Nevada Public Land Management Act (SNPLMA).

Project Origins

Las Vegas resident Blaine Benedict got the idea for a Mojave Desert science school in 1999 after visiting other science schools in the

West. He began working with the Bureau of Land Management (BLM) to see if the idea was possible. The Outside Las Vegas Foundation and other groups helped expand the vision. BLM ordered a feasibility study and looked at possible sites. Since July 2003, public meetings including interested residents, businesses and government representatives, have been held to help the BLM plan the project.

Science School

RRDLC will inform the valley's fifth-graders about desert ecosystems and the environment. Hands-on activities will help students answer their own questions about nature. The

current plan calls for a 4-day, 3-night experience, but other options will be available.

Why fifth-graders? Education specialists agree that fifth-graders are just the right age to gain from such an experience. Nevada's science curriculum standards focus on environmental science concepts in fifth grade.

Learning activities in regular classroom will help prepare students for their visit to the school. Follow-up lessons will help them remember what they've learned. The Internet and video-conferencing may also allow children and teachers in other states to experience the school's activities.

continued on page 2

A word from BLM Field Office Manager Juan Palma

Over the past two years, the Bureau of Land Management and its community partners have been planning for the Red Rock Desert Learning Center. I know this center can be the premier outdoor education center for the West. However, the real reward comes with the potential to transform Clark County school children into students of nature and stewards of public lands.

The majority of children's time is now spent indoors—learning in classrooms and being entertained in their homes by televisions, video games, and computers. The great outdoors is an increasingly unknown entity, and its wonderful creatures remain unfamiliar. The Red Rock Desert Learning Center presents a

unique opportunity for our community and government to work hand-in-hand for the benefit of future generations and the environment.

In planning and developing the Red Rock Desert Learning Center, we worked with a diverse group of community organizations, residents, and stakeholders who developed the initial concept and have been meeting monthly since the beginning to provide project input.

I acknowledge each person and organization for sharing their knowledge and time to make this exciting project a reality. Collaboration and dedication are the foundation on which the center is being built for the greater knowledge, appreciation, and conservation of our natural resources.



Mission Statement

The mission of the Red Rock Desert Learning Center is to instill stewardship and respect by increasing knowledge and understanding of the Mojave Desert ecosystems and cultures through a unique experiential discovery program.

For more information about RRDLC or the Wild Horse and Burro Facility, visit <http://publiclands.unlv.edu/rrdlc.htm>. You can also contact Michael Reiland, Project Coordinator, Bureau of Land Management, (702) 515-5026, mreiland@nv.blm.gov, or the UNLV Public Lands Institute, (702) 895-4678.

Wild Horse/Burro Facility

The Wild Horse and Burro Facility will be a place where students and invited groups can learn about the National Wild Horse and Burro Program. Exhibits will explain the challenges of managing the herds in balance with the other parts of the desert ecosystem. The facility will include an arena, barn, and pasture. The facility will provide temporary housing for animals available for adoption as well as mascot animals.

Project Funding

Money from the 1998 SNPLMA is funding construction of the school and the horse and burro facility. SNPLMA allows the sale of federally managed land in Clark County. Proceeds from the sales are funding many upgrades

to the valley's conservation and recreation areas. The projected cost of designing and building both facilities is about \$41.5 million. The Secretary of the Interior approved funds for construction of the project.

Who's Involved

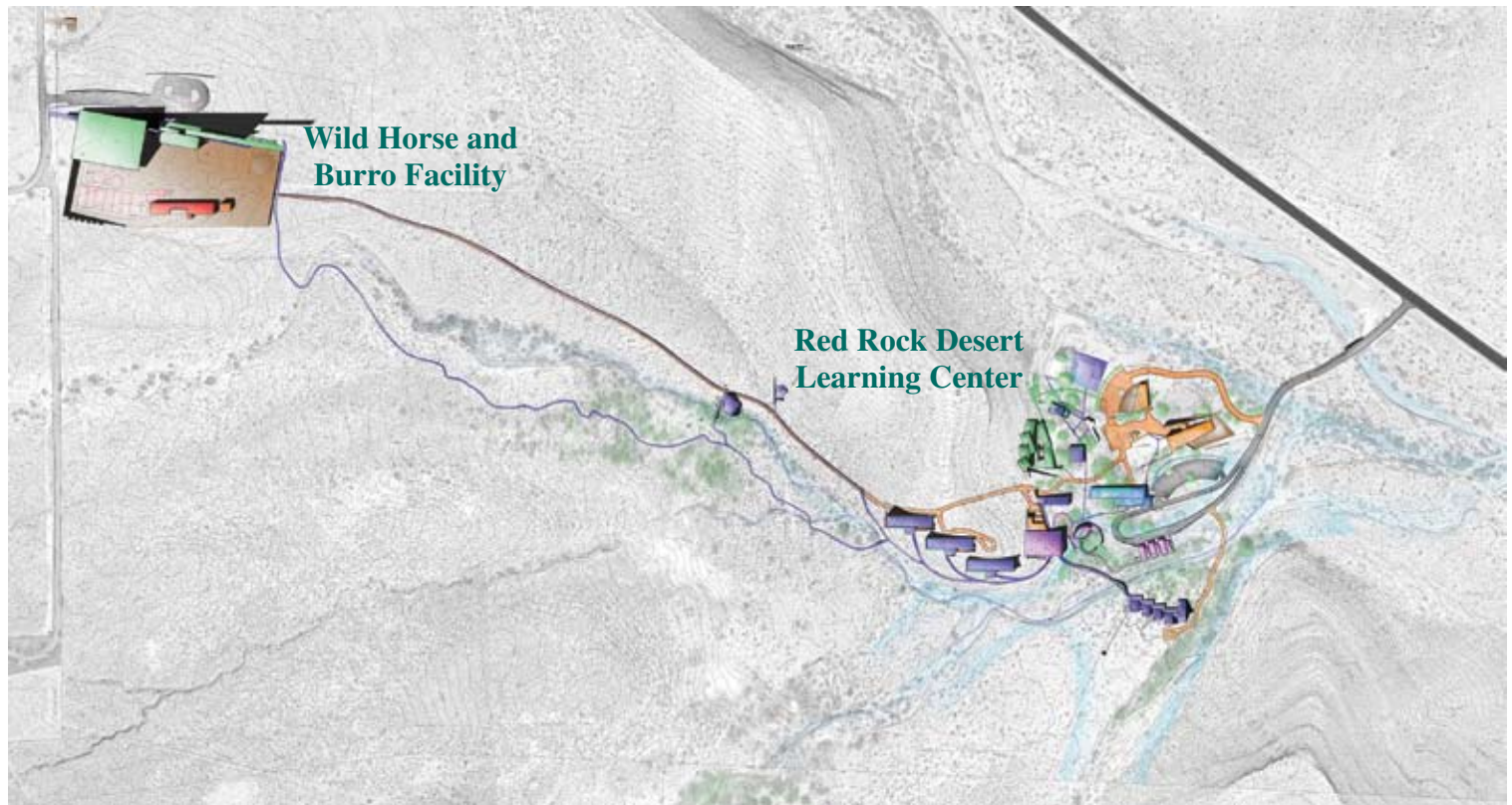
The proposed site is on public land managed by BLM. The University of Nevada, Las Vegas Public Lands Institute is providing coordination of curriculum development and public outreach on behalf of BLM. The Clark County School District, Community College of Southern Nevada, and the Desert Research Institute are integral partners in developing activities at the school. The Outside Las Vegas Foundation, Red Rock Canyon Interpretive Association, Friends of Red Rock Canyon, National Wild Horse Association, and other groups serve as partners.

Facility Operation

The RRDLC will operate independently of the Clark County School District and will not receive school district funds. The BLM will select a professional operator of the school.

Safety and Security

The safety and security of children are of utmost importance in the planning of the RRDLC. A school district risk manager has evaluated the site of the school and a number of security measures are planned. The location will be run by a professional, insured operator and will feature on-site staff. Public access will be controlled. Internal and external security systems will be used. Emergency and first aid plans will be in place.



Red Rock Desert Learning Center: An Immersion Experience at Just the Right Time

Science School Mission

The RRDLC will be one of very few desert study centers in the country. The school will allow students who might not otherwise visit Red Rock Canyon to experience the desert first-hand and begin to understand it. They will begin to apply their new knowledge to the region, the nation, and the world. Whether at the school for several hours or several days, students will grow more comfortable with nature. They will begin to understand the connections among various branches of science and the importance of nature in their world.

Curriculum

Staff of the BLM, Clark County School District, UNLV, and the Desert Research Institute are collaborating on curriculum development. The curriculum will meet state and national science standards. It will focus on interactive experiences in environmental education, earth and physical science, ecology and biology. Students will learn about the area's geology, water resources, air quality, plants, and animals. Other sessions will focus on the night sky, the site's history as a ranch and use by Native Americans, wild horse and burro management, and people's impacts on the desert. Lessons will incorporate art and physical activities. Equipment

will allow students to collect and contribute data to actual scientific research projects.

Audience

Fifth-graders in public, private, charter, and home schools will be eligible to attend the school. Approximately 105 students will attend each session, plus teachers and aides. Students will learn in small groups of 10-12.

Facilities

The school will include indoor and outdoor teaching sites and laboratories; environmental

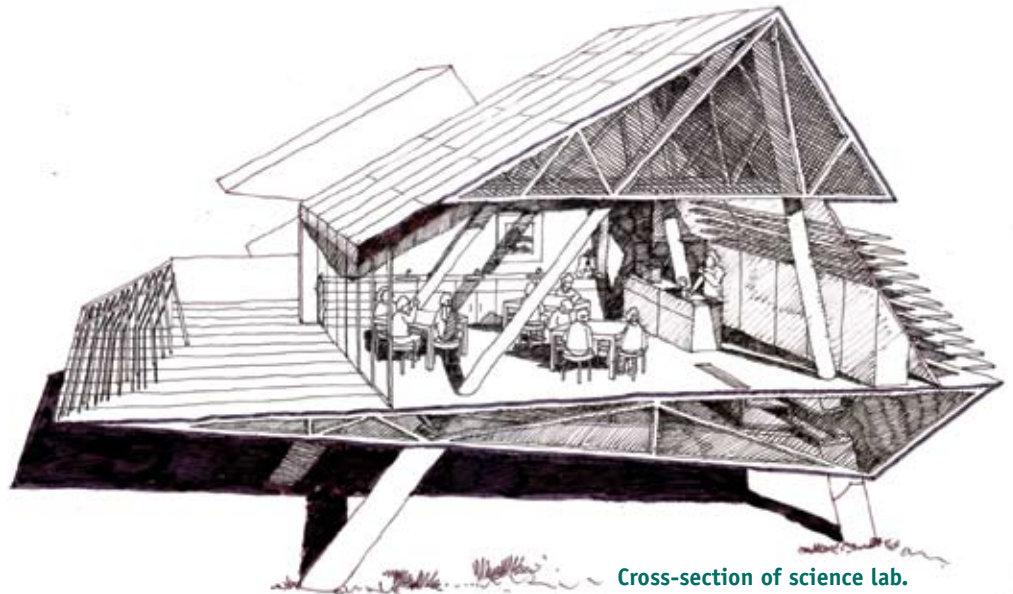
monitoring stations; trails; kitchen, dining, and dormitory space; an infirmary; offices; and a wastewater treatment plant.

Fees and Scholarships

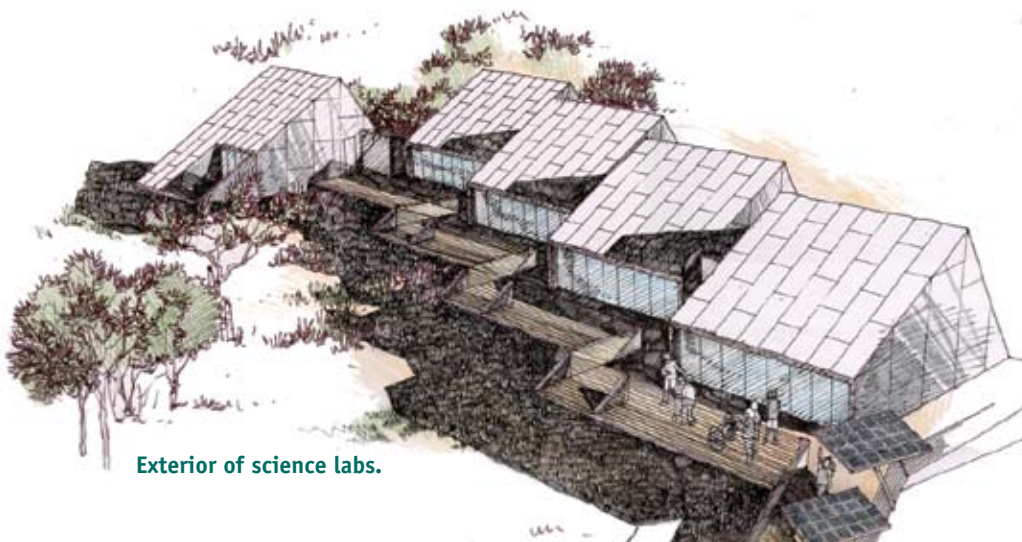
Students will pay a small fee to attend the school. Scholarships will be available to low-income families and those with special needs. SNPLMA proceeds and private donations will fund scholarships.

Distance Education and Teacher Training

The curriculum may be offered to other schools around the state and the country via the Internet and video-conferencing. The school will also offer teacher in-service training.

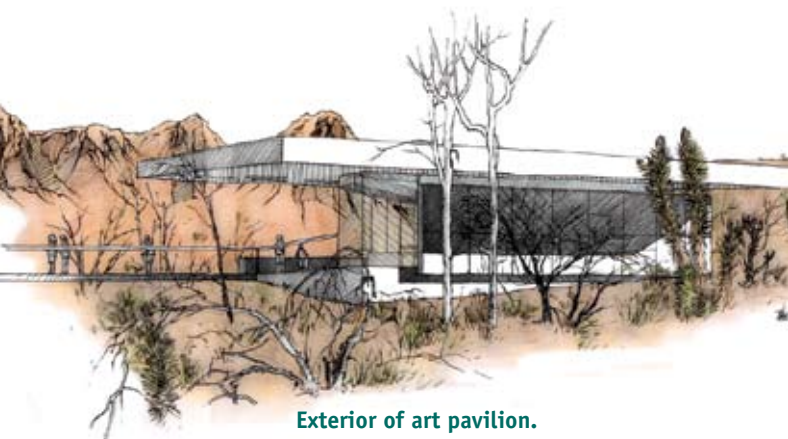


Cross-section of science lab.



Exterior of science labs.

Typical Visit



Exterior of art pavilion.

Day 1

9 a.m.-10 a.m.

Introductions and Orientation

Students arrive at Friendship Circle, get group assignments, go to dormitories, and unpack.

10 a.m.-noon

Green Building Technology

How can technology reduce a building's impact on the environment?

Students will learn how to control the technology in some of the school's buildings.

Lunch

1 p.m.-2:45 p.m.

Wild Horses and Burros

How do the wild horse/burro populations affect plant growth in their environment?

Observe on-site habitat of Wild Horse and Burro Facility. Compare and contrast plant species in and around the wild horse and burro habitat.

Break

3:15 p.m.-5:15 p.m.

Sustaining Healthy Ecosystems-Plants, Part I

How does disturbing the desert change plant and animal communities?

Compare and contrast plants in disturbed and undisturbed upland areas.

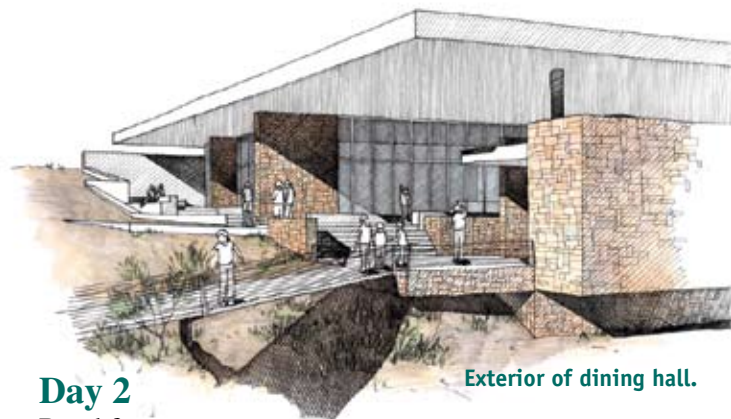
Dinner

6 p.m.-7 p.m.

Historical Figures and Cultural Activity

Who has used this land before us and how? What were their lives like?

Invited guests and storytellers will relate the story of the area.



Exterior of dining hall.

Day 2

Breakfast

8 a.m.-10 a.m.

Sustaining Healthy Ecosystems-Plants, Part II

How does disturbing the desert change plant and animal communities?

Compare and contrast plants in disturbed and undisturbed streamside areas.

10 a.m.-noon

Sustaining Healthy Ecosystems-Plants, Part III

How do aspects of the physical environment control where and when plants and animals grow?

Short hike to examine selected desert plants and how they adapt to the desert.

Lunch

1 p.m.-2:45 p.m.

Geology-Part I

Where should we live to avoid geologic hazards in Las Vegas?

Construct an artificial stream and observe erosion and soil deposits. Examine deposits in dry stream bed.

Break

3 p.m.-5 p.m.

Geology-Part II

Where should we live to avoid geologic hazards in Las Vegas?

Construct a topographic map of Red Rock Hill.

Dinner

6 p.m.-8 p.m.

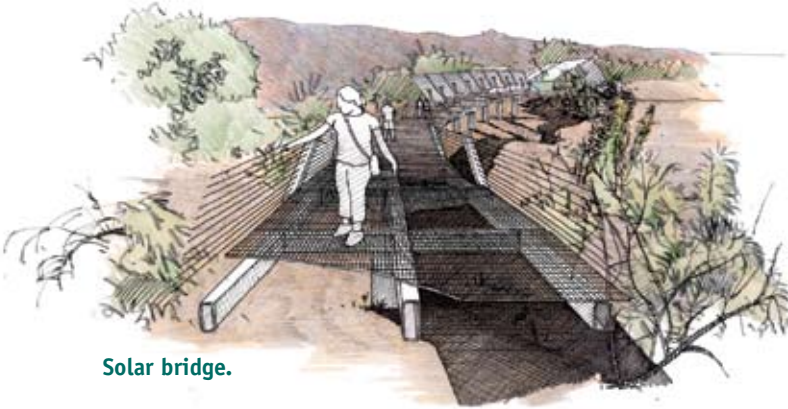
Night Sky

Use mini-telescopes to observe stars and planets.



to RRDLC

about fewer topics in greater depth. Teachers would request the appropriate level of focus for their classes. Students will learn in small groups of 10-12.



Solar bridge.

Day 3

Breakfast

8 a.m.-10 a.m.

Geology-Part III

What happens to water in the desert soil?
Measure water content and temperature of soil. View underground soil to observe differences between soils. Take digital pictures of plant roots.

10 a.m.-noon

Understanding Ecosystems-Air Quality, Part I

What causes air pollution at RRDLC and in Las Vegas?
Set up air quality monitoring cards. Discuss air quality and concepts of gases and particles.

Lunch

1 p.m.-2:45 p.m.

Understanding Ecosystems-Air Quality, Part II

What causes air pollution at RRDLC and in Las Vegas?
Observe air quality monitoring cards. Monitor targets on Blue Diamond Hill. Download pictures to database. Investigate and measure solar radiation.

Break

3 p.m.-5 p.m.

Understanding Ecosystems-Air Quality, Part III

What causes air pollution at RRDLC and in Las Vegas?
Measure visibility with digital camera and software and download pictures for analysis. Compare to previous pictures.

Dinner

6 p.m.-8 p.m.

Nighttime Animal Activity (land and aquatic)



Bus drop off.

Day 4

8 a.m.-10 a.m.

Understanding Ecosystems-Air Quality, Part IV

What causes air pollution at RRDLC and in Las Vegas?
Discuss gases and particles. Survey air quality. Measure and interpret digital photos at various locations of the horizon.

10 a.m.-11 a.m.

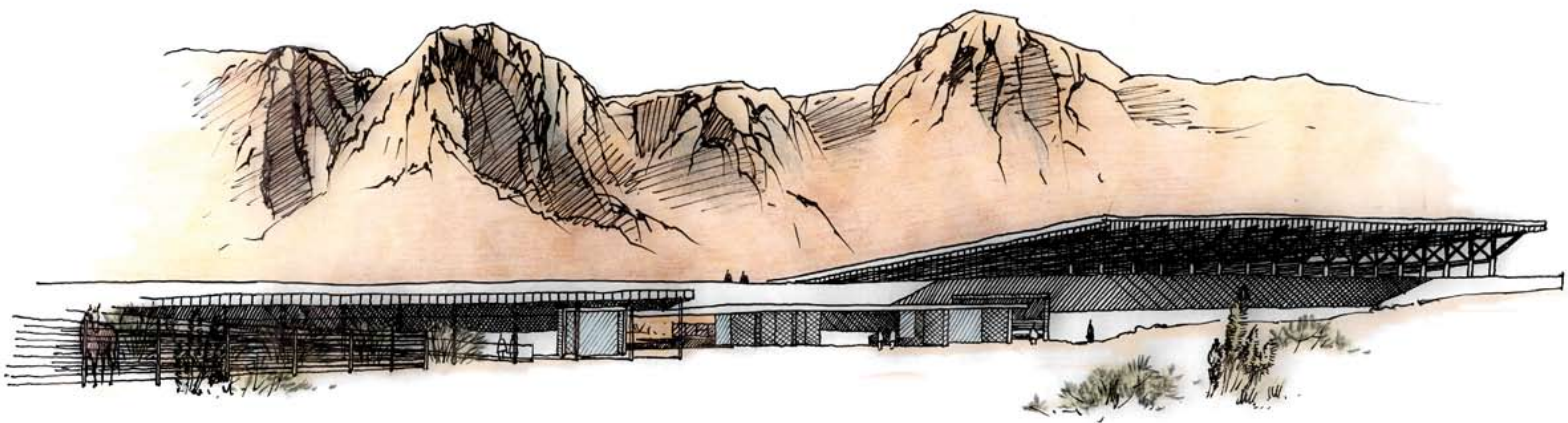
Student Presentations

11 a.m.-noon

Snack. Clean up and Packing. Closing ceremony at Friendship Circle.



Art pavilion.



Wild Horse and Burro Facility: A One-of-a-Kind Education Center

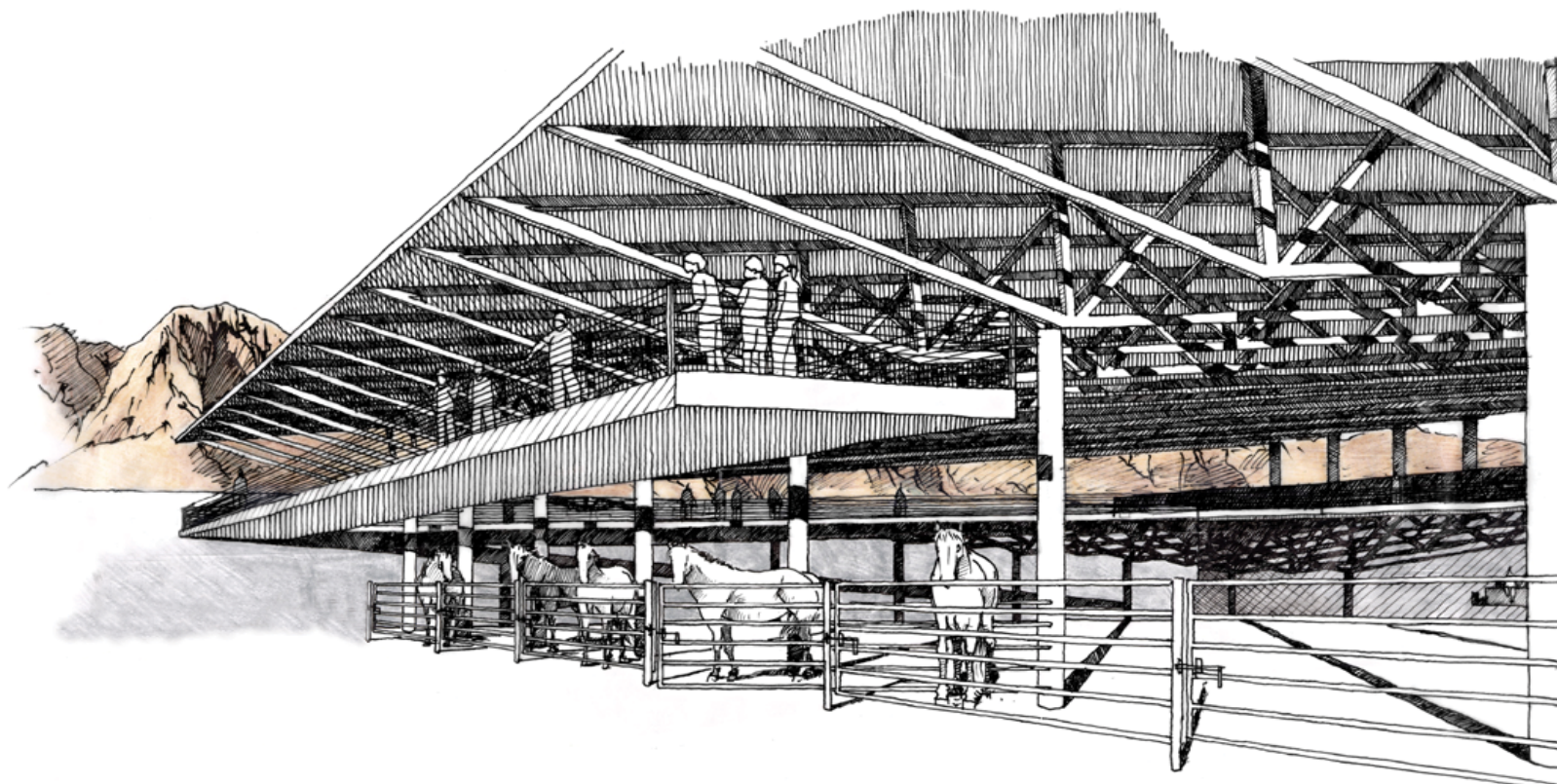
The Wild Horse and Burro Facility will be built near the science school. It will provide a place for the public to learn about the National Wild Horse and Burro Program.

Wild horses and burros live in Red Rock Canyon National Conservation Area. The BLM operates other wild horse and burro facilities in the West. Most serve as preparation centers and

adoption centers. The facility planned for the RRDLC site will be a smaller operation. Its mission is to educate students and to encourage adoptions and educate the public about wild horses and burros. Animals will not live there long term.

Plans for the facility include a barn, holding corral, animal infirmary, pasture, storage, and adoption arena.

The facility will be open to the public only at certain times, such as for adoption events. Students at the science school will visit the center as part of their studies. The Red Rock Canyon Visitor Center will also host educational exhibits about wild horses and burros.



Wild horse and burro facility.

Making the Vision a Reality: Architectural Planning

Building Status

In 2004, BLM selected Line and Space Architects of Tucson, Arizona, to help bring the project to life. The firm specializes in environmentally sensitive architecture. Line and Space completed schematic designs of the facilities' buildings in December 2004. A panel with members from both within and outside BLM conducted a cost analysis of the designs versus the total project budget. Line and Space then modified some of the building designs based on the panel's feedback.

Line and Space is now in the "design development" phase. This involves figuring out how to translate the vision for the center's buildings into reality. The process will address community, resource, and educational concerns. Construction should begin in 2007. Opening is scheduled for 2009.

Green Building

Architects are designing all buildings for environmental sustainability. Current plans call for the center to meet national qualification standards for green

Friendship circle.



buildings. Much of the site's energy will come from on-site solar panels. The architects will maximize energy efficiency and conservation, natural lighting, heating, and cooling. As part of the school curriculum, students will control how the buildings achieve energy efficiency. All facilities will meet requirements of the Americans with Disabilities Act.

Blending into the Landscape

All buildings of the new center will blend into the landscape and use some materials found at the site. This will decrease their visibility from State Route 159 and nearby points. Construction will disturb as small an area as possible. The size of the buildings will be minimized and open space will be maximized.

Respect for the Site's Cultural Uses and History

The architects have incorporated some of the structures from the original ranch into the design. This will serve as a way to introduce

students to the human history of the site. Native American leaders have suggested ways to include appropriate cultural traditions in the curriculum and site development.

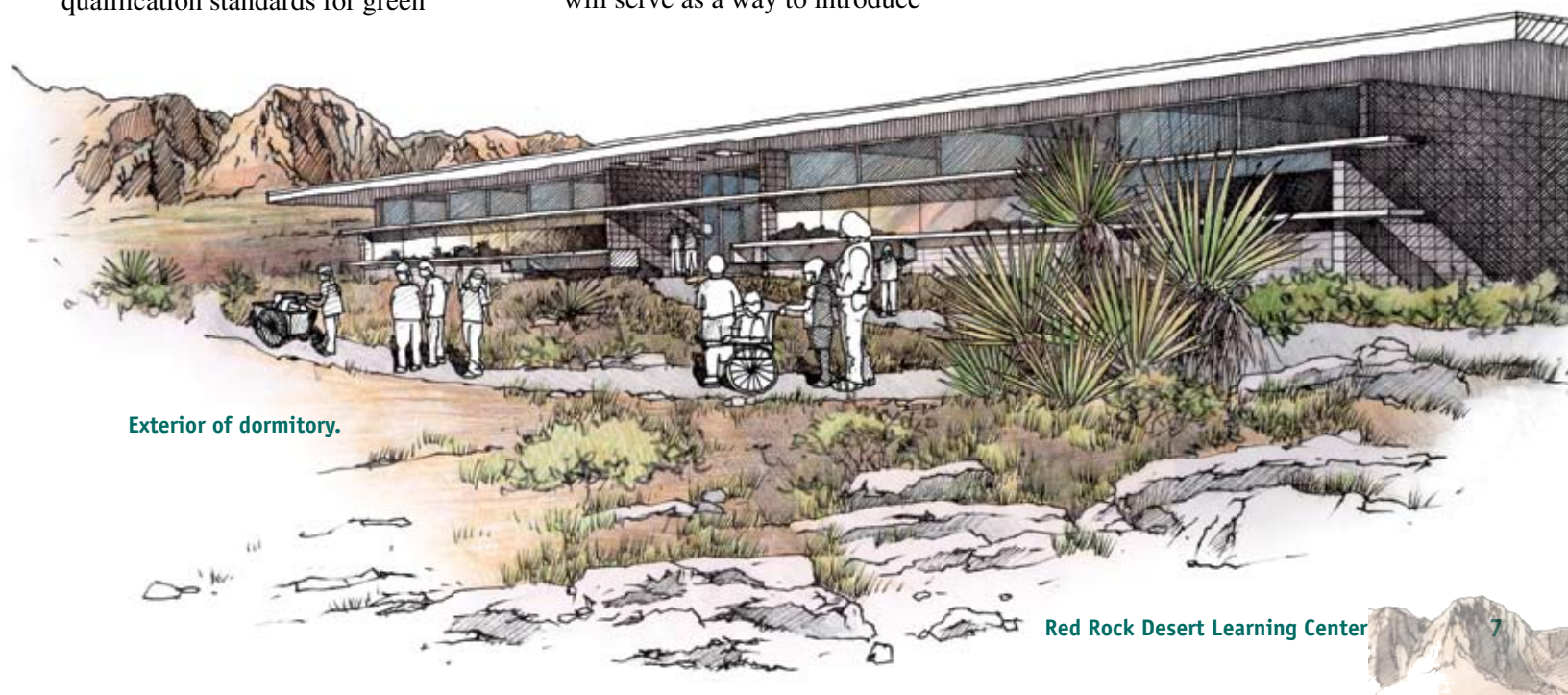
Water

Plans for supplying water to the site are still in development. Several options are being studied. The landscaping will feature native and drought-resistant plants. Water-conserving plumbing fixtures will minimize water use. An on-site wastewater treatment plant will recycle wastewater for reuse in various ways, including irrigation.

Environmental Assessment

Otak, Inc., a planning, design, and engineering company, is conducting an environmental assessment of the site. They are assessing plant, animal, water, cultural, and historic resources. Their findings could result in changes to the site plans.

Exterior of dormitory.



Project Timeline

April 2004	Programming workshops completed
December 2004	Building schematic design phase completed
August 2005	Environmental Assessment phase one draft report completed
December 2005	Building design development completed
2006	Operator selected and curriculum completed
2006	Construction documents phase begins
March 2006	Environmental Assessment final report completed
February 2007	Bidding and construction
2009	Construction complete

BLM/LV/AE-06/007+1120



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