



PRAIRIE HILL Learning Center

Pioneering Energy Education



PRAIRIE HILL Learning Center has initiated a building plan that will demonstrate the use of natural energy resources in an educational environment, preparing children to preserve their future.

Harnessing Prairie Power to produce usable energy, PRAIRIE HILL Learning Center will provide a hands-on model of energy education reaching children and families throughout the Midwest.

Nebraska's First Wind and Solar Powered School



PRAIRIE HILL'S
Mission:
*to offer education
in an atmosphere
that promotes
individual growth
as well as caring
for others and
the Earth. It is
situated in a
unique farm-like
environment that
fosters respect
for self, others,
animals, and
nature.*

Why a "GREEN" BUILDING?

Learning never occurs in isolation. There are many influences, some of which are conscious and others that are more subtle. Educator Dr. Ann Taylor suggests, "There cannot be separation between the learning process and the physical environment—they are integral parts of each other."

Essential education is about the place in which we live, about making

connections—how what is done in one place affects another place. An example comes from Eric Schlosser, author of *Fast Food Nation*, "Hundreds of millions of people buy fast food every day without giving it much thought, unaware of the subtle and not so subtle ramifications of their purchases. They rarely consider where this food came from, how it was made, what it is doing to the community around them."

All places are pedagogical: subways, shopping malls, suburbs,.... What is being taught here without saying a word? Buildings tell stories. A "green" building which is ecologically designed, utilizing renewable energy and recycled materials, engages the users in the beauty of the world. It shows that the world is rich in possibilities, not a world of stuff, but of connections and relationships.

Children and nature together—an idea as old as life on Earth itself.





PRAIRIE HILL Learning Center: A History of Effective Environmental Education

Since its beginning in the historic Charlton Farmhouse 21 years ago, PRAIRIE HILL Learning Center has emphasized closeness to nature and the inter-relatedness of life on Earth.

Through the years, more than 2000 young people have participated in the summer camp and year-long programs which provide hands-on experiences in nature. Professionals in the areas of forestry, gardening, art,

astronomy, wildlife, prairie life, animal care, and natural resources have contributed their expertise.

PRAIRIE HILL Learning Center is a place where a two-year-old can collect eggs, an eight-year-old can search for biology specimens, and fourteen year olds can work together to create a nature trail in the woods.

As we look to the future, we must see the children of today. PRAIRIE HILL Learning Center will provide practical experiences in concert with local community and regional organizations to increase awareness of energy resources and encourage respect for global implications that will affect the future of all children on this planet!

We hope that you will join us in creating a model, prairie powered educational building—the first wind and solar powered school in Nebraska!

EXECUTIVE SUMMARY

In the summer of 1981, PRAIRIE HILL Learning Center began as an environmental day camp for 3 - 9 year olds. The themes for these first sessions included nature study, art in nature, and Native American life. Learning opportunities continued into the fall utilizing the historic farmhouse. Each year more children joined the sessions and more space was needed. A reconstructed, oversized garage was remodeled and enlarged, adding passive solar energy and enabling the addition of two more learning environments, one for younger children and another for the older children.

In 2001, with generous gifts from parents, grandparents, board members, and friends, PRAIRIE HILL Learning Center purchased the 12 acre historic farm property in southern Lancaster County where it was founded twenty years earlier.

We must now take the next step to continue to accommodate and serve these varying age groups, their families, and the greater community. In keeping with the objective of environmental education, this new building will be an environmental education in itself. The earth-friendly design and construction features will include:

- photo voltaic solar generated electricity
- passive solar daylighting and space heating
- rainwater collection for watering of gardens and grey water recycling
- wind generation for additional electrical power
- deep wall insulation (bale construction), a local renewable material

We invite you to participate in this model, state-of-the-art, prairie powered facility. If you wish, your significant contribution will receive permanent recognition in the first wind and solar powered school in Nebraska.

Harnessing Prairie Power



WIND ENERGY: Clean and Abundant

More wind power means less smog, acid rain, and greenhouse gas emissions.

Wind electrical generation will be provided by a 10 kilowatt wind mill power system. This system will work in tandem with the photo voltaic system, with excess generation utilized by other buildings on the campus and stored in a battery storage system. This system will also include gauges to show how much power is being generated at any moment.

*"Human health
is a subsystem
of Earth health.
The grandeur
is finding our
fulfillment in
the other."*

- Thomas Berry

PHOTO VOLTAIC: Capturing Warm Rays for Electricity

Units on the south facing pitched roof will supplement wind energy to provide net 100% of electrical power required for lighting, electrical distribution and the geothermal heat pump system. Although net metering is not available with the local power company, excess generation will be utilized directly by the other buildings on the school campus. Limited battery storage will also be included. Gauges will measure electrical generation and overall electrical usage.



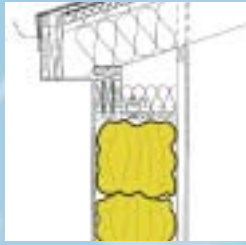
DIRECT PASSIVE SOLAR: Bright and Bountiful

Passive solar is storing the warmth of bright day for a cloudy day.

Direct passive solar will utilize approximately 670 square feet of south facing windows and clear story windows for winter space heating, day lighting, and domestic hot water. Heat storage will be in the twelve inch thick concrete over sand floor and water tube units to balance heat gain and provide needed thermal lag. Light shelf and movable insulation will enhance day lighting and reduce winter night heat loss. Temperature gauges will measure room and water temperature.

RAINWATER COLLECTION: A Precious Element of Life

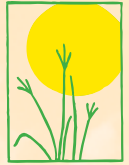
Rain water will be collected and stored in above ground basins north and south of the structure. The basins will be connected underground and gauges will indicate the quantity of water stored and used. The collected water will be used on gardens, fescue grass lawns, other native plantings, animal care, boot washing, and in other non-food applications.



DEEP WALL INSULATION: Straw Bale Construction

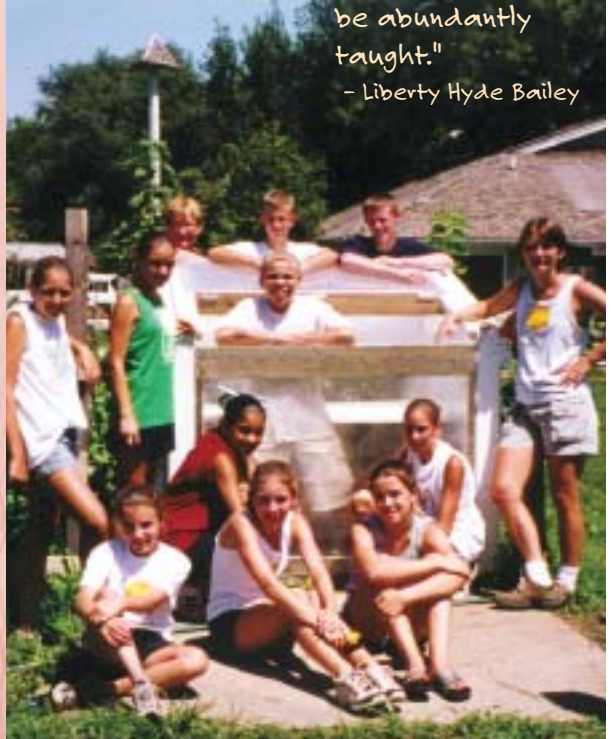
Eighteen-inch thick walls sandwiching locally produced straw bales will provide superior insulation, reducing heating and cooling energy needs by 75%. In addition, this earth-friendly alternative can withstand extremely severe weather, serving also as a storm shelter.

The combination of these systems will result in Net Zero Utility Costs for the 2940 square foot building while creating a comprehensive integrated example of green architecture for the users, their families, surrounding communities, and the Midwest region.



"It is incumbent on us to take special pains... that all the people, or as many of them as possible, shall have contact with the earth and that the earth's righteousness shall be abundantly taught."

- Liberty Hyde Bailey



Uses of the Building

"Education is a natural process spontaneously carried out by the human individual and is acquired not by listening to words, but by experiencing them."

- Maria Montessori

It is exciting to think about the important educational doors opened by this unique, first-of-its kind "green" classroom building.

A primary function will be to accommodate more than 200 children each summer, between the ages of 4 and 15, in PRAIRIE HILL Learning Center's widely - recognized country day camp. The use of wind and solar power for generating electricity and the collection of rain water for selected garden

use strongly support the camp's 20 year history of focusing on Natureworks.

The open community room will also be available year round as a meeting room for up to 100 people. Partnering with the Nebraska Energy Office, this space will be used to show students of all ages how green buildings help take advantage of the renewable energy sources native to our geographic area including passive solar, photo voltaic, wind, geothermal, and rain. Because of the storm resistant characteristics of straw bale construction, this room will also serve as a shelter from violent storms.

Another primary function from September - June will be to support the expanding Montessori elementary program which is based on

global responsibility. The two interactive classrooms will accommodate 50 learners from 6 - 12 years of age. In addition families with very young children from the surrounding communities will be invited for demonstrations and discussions on developmentally stimulating activities in the natural environment which research has shown increase brain growth, improve coordination, and strengthen muscles.

As a physical and functioning educational model, this environmentally thoughtful building has the long range potential to guide humans into an appreciation, rather than an exploitation, of the world around them.



Campaign Goal and Budget

To make this unique building a reality we must raise \$375,000 above our annual operating expenses. As a special partner in this building campaign, you are invited to make a gift now or fulfill a pledge over the next 12 months.

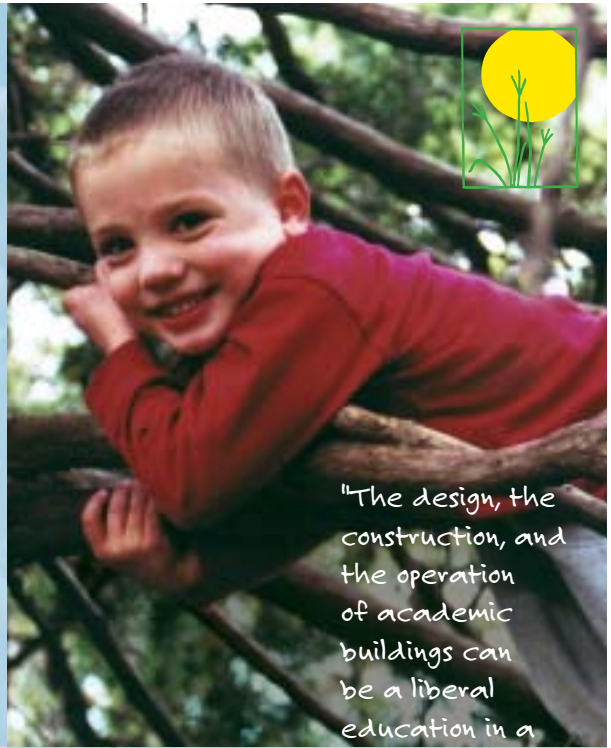
With a gift of \$500 or more, your name will be inscribed on a wall plaque in the entryway of this unique building—the first wind and solar powered school in Nebraska. This acknowledgment will serve as a permanent reminder of your strong support of PRAIRIE HILL Learning Center and its programs.

We are seeking investments from individuals, foundations, businesses, and government agencies. Please join this important educational project by supporting our campaign today!

Leadership Support

PRAIRIE HILL Learning Center would like to acknowledge the following generous donors. Their "trail blazing" support of our building campaign is greatly appreciated.

A to Z Printing
The Architectural Partnership
Dazcot Design
Reynold Peterson,
Graphic Designer



"The design, the construction, and the operation of academic buildings can be a liberal education in a microcosm that includes virtually every discipline."

- David Orr

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