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DICKINSON
RESEARCH EXTENSION CENTER



A Commitment To Continue



A Commitment . . . to Continue . . .

**. . . A Tradition
of Service
& Stewardship**





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... A Partnership With The People Of North Dakota



Leading scientific research
Assisting with production
Providing education
Offering conservation techniques

But . . . Change Is In The Wind



An aerial photograph of a suburban neighborhood. In the foreground, there is a grassy field with a white pickup truck parked on the left and a white shed nearby. A dense line of tall evergreen trees runs across the middle ground. Behind the trees, there are several large, multi-story houses with light-colored siding and dark roofs. In the background, a large brick building, possibly a school or university building, is visible on a hillside. The overall scene is a mix of residential and institutional buildings surrounded by greenery.

**Welcome to this
neighborhood
discussion**

OUR OPTIONS:

1. Do Nothing

2. Sell Out

3. Adapt

4. Expand

**... our commitment to continue
through service to agriculture and energy**

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**We have the best
seat in the house!**

This is Bison Country!

Commitment . . . **Our Future**

The horizon is here!

New, bold approaches that invoke the pioneer spirit call for new collaboration. The DREC is poised to assist stakeholders study and implement technology to monitor resource management, to evaluate impacts of energy development and to encourage rural and statewide economic stability.

The DREC focus involves coexistence in four areas:

- Integrated technology
- Food production
- Energy development
- Teaching and education



Commitment . . . **Our Future**

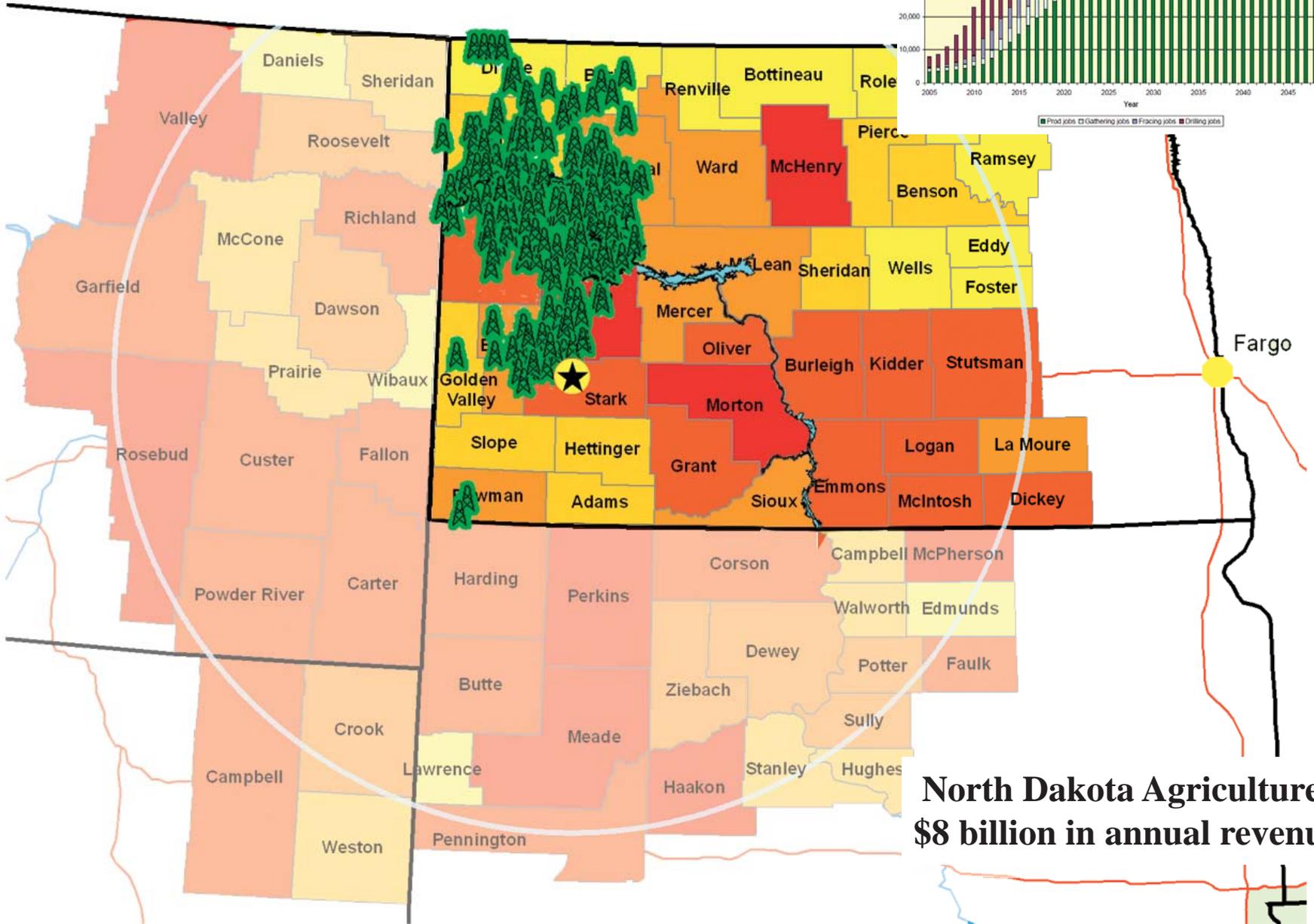
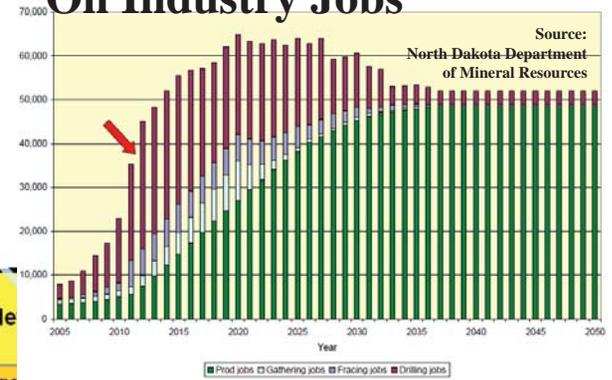
- Dickinson is a gateway to energy development
- The DREC has multiple research sites in SWND and is part of a large network of scientific leaders.
- Agriculture and energy need to engage in science-based research which achieves solutions.
- Land use decisions directly and indirectly affect multiple industries.
- DREC scientists seek solutions that are economically viable.
- Technology enhances timely research and education.
- DREC can continue a tradition of service since 1905.



10 Commitment . . . **Our Future**

Agriculture and Energy: together providing strength and stability.

North Dakota Oil Industry Jobs



North Dakota Agriculture: \$8 billion in annual revenue

- **Resource stewardship is universal, reaching across personal, business and professional attitudes and practices.**
- **Collaborative approaches combine technology, agriculture, education and energy industries**
- **Cooperative use of resources helps develop outcomes which provide solutions for present and future generations.**



**Agriculture and Energy
Co-dependent On The Land**

Response

Prairie Agriculture and Energy Center for Environmental Stewardship

Securing Harmony for the Future

Agriculture and Energy:
Co-dependent Industries

Research & Extension

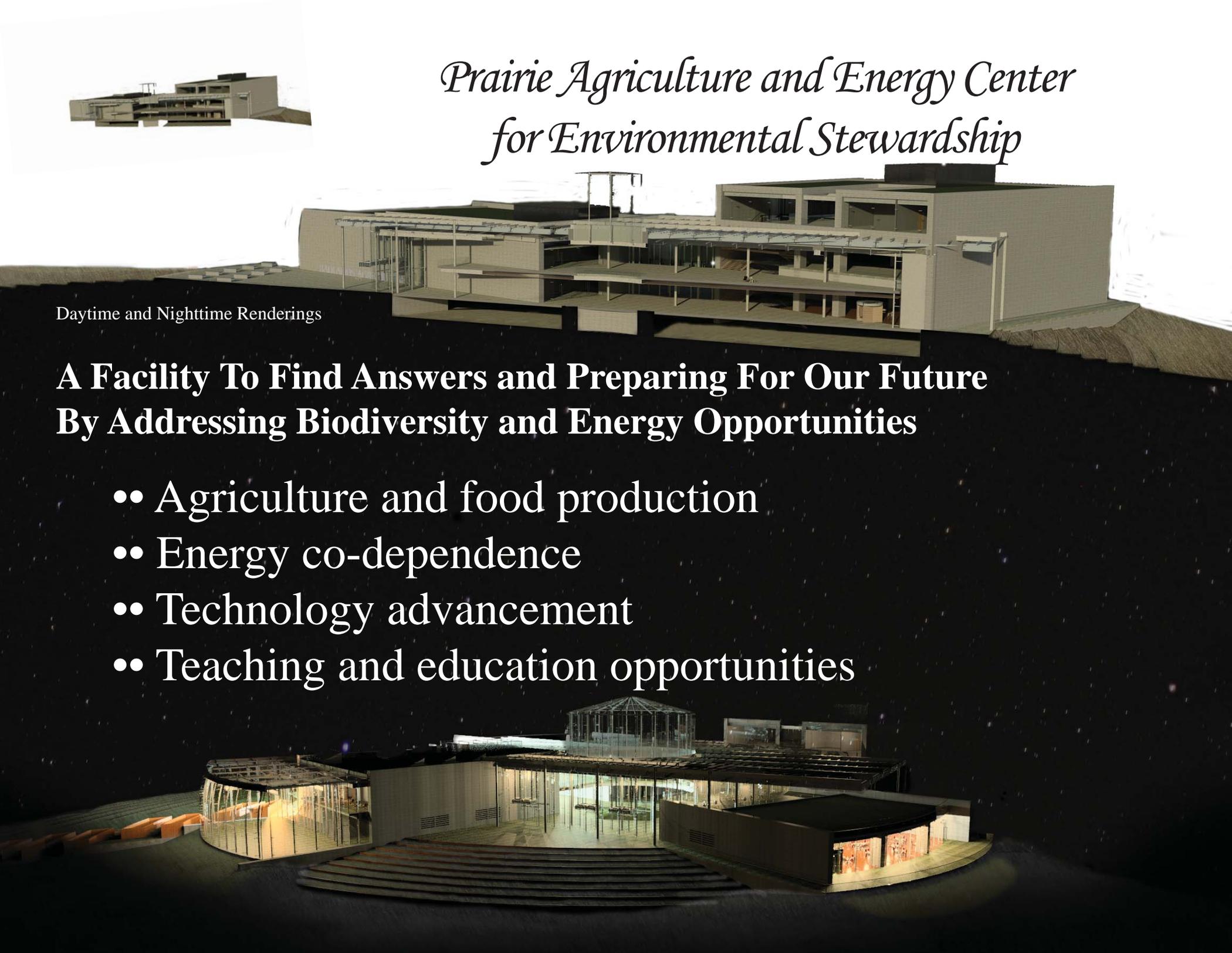
Teaching & Education

Business Partnerships

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Daytime and Nighttime Renderings

**A Facility To Find Answers and Preparing For Our Future
By Addressing Biodiversity and Energy Opportunities**

- Agriculture and food production
- Energy co-dependence
- Technology advancement
- Teaching and education opportunities

Prairie Agriculture and Energy Center for Environmental Stewardship

Needs For The Region



- Multi-faceted agriculture and energy research and education center
- Service component for the agriculture and energy industries
- Program to assist residents with influences of agriculture and energy industries
- Communication system for all stakeholders
- Plan to reconnect consumers with the food production industry
- Influences of changes on agricultural operations resulting from housing expansion, rural development and energy.



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Rendering of Main Entrance

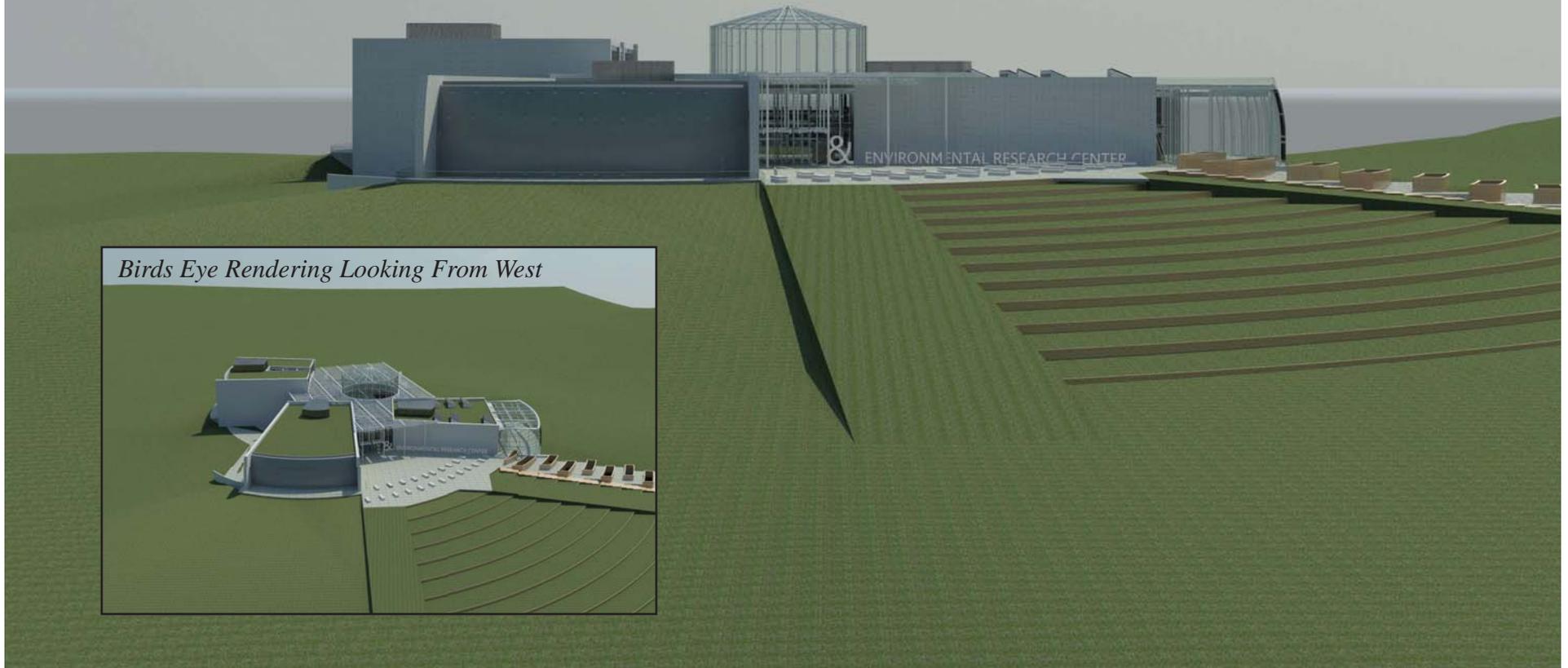
*Prairie Agriculture and Energy Center
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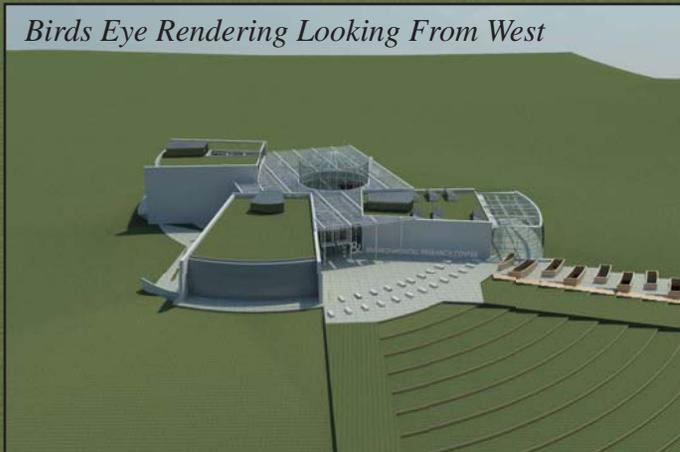
Rendering of Atrium on Bottom Level

Prairie Agriculture and Energy Center for Environmental Stewardship

Ground Level Rendering Looking From West

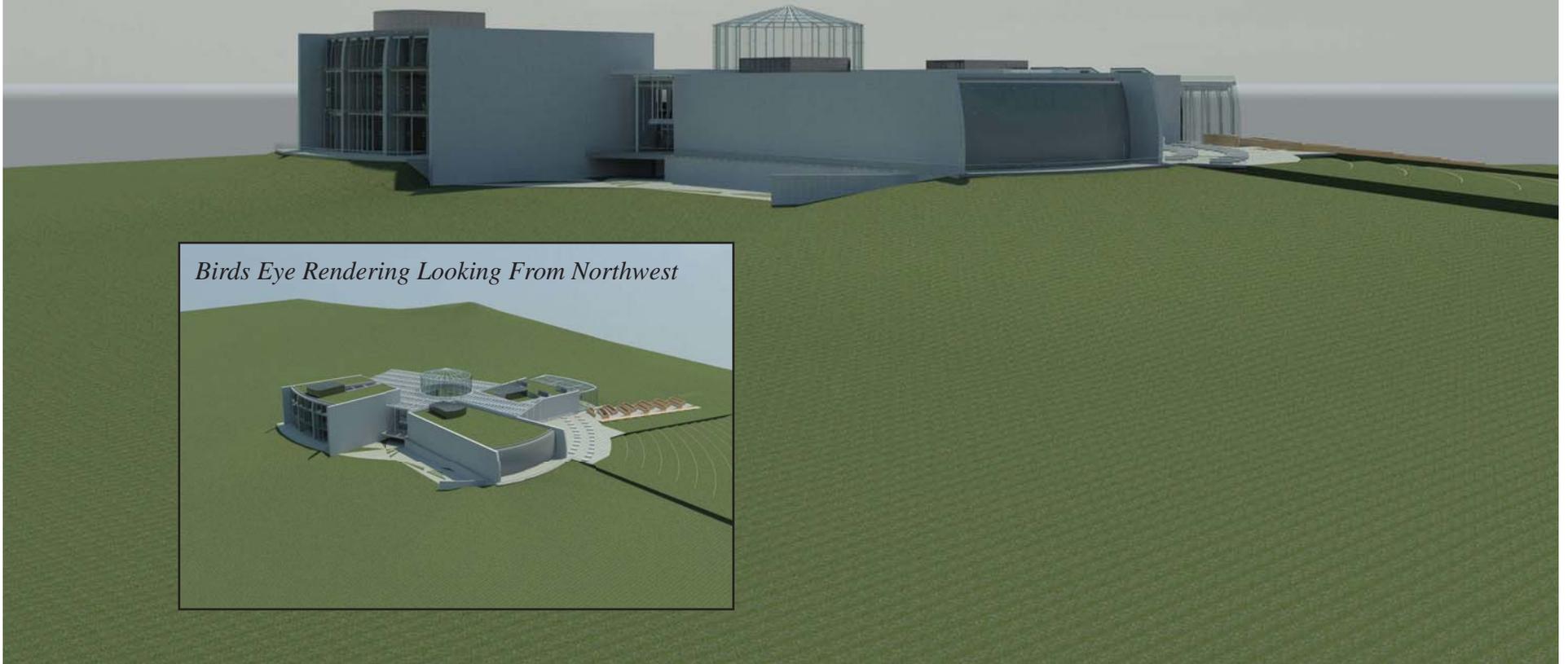


Birds Eye Rendering Looking From West



Prairie Agriculture and Energy Center for Environmental Stewardship

Ground Level Rendering Looking From Northwest

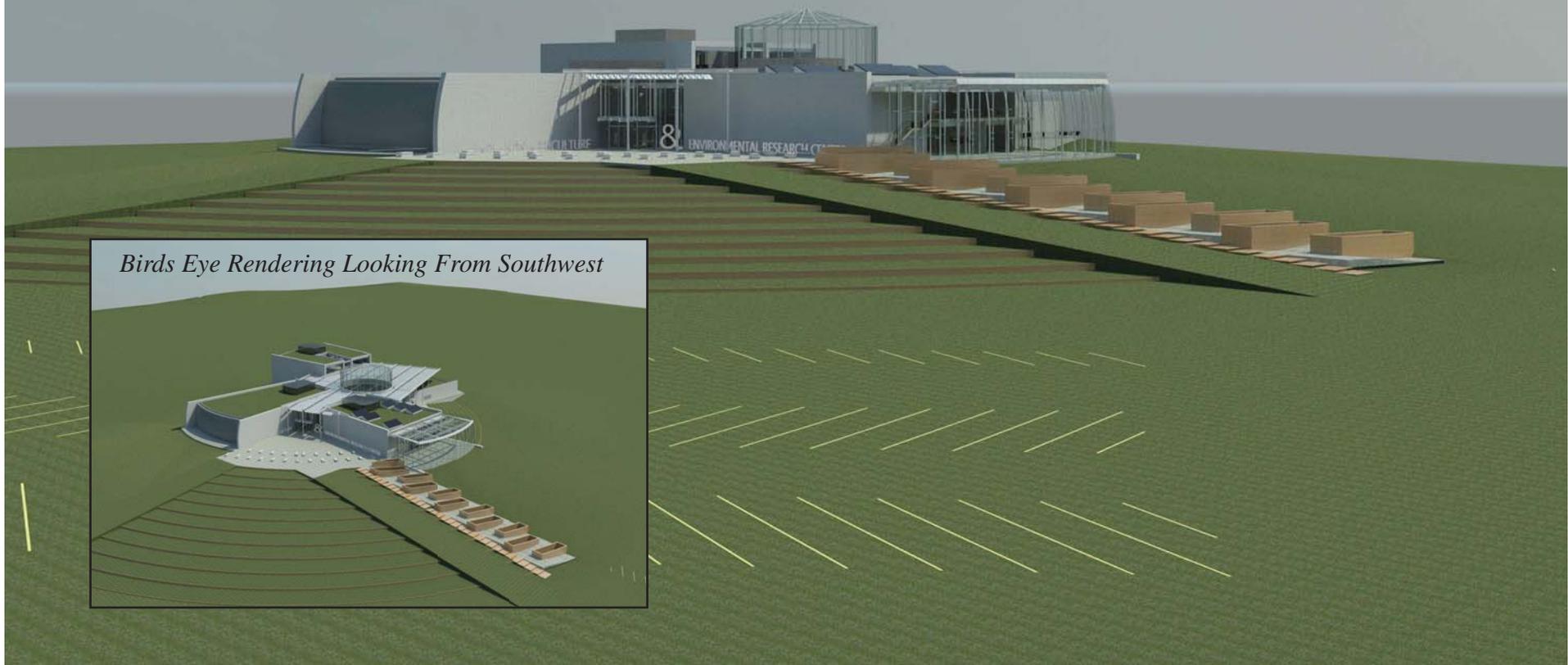


Birds Eye Rendering Looking From Northwest



Prairie Agriculture and Energy Center for Environmental Stewardship

Ground Level Rendering Looking From Southwest



Birds Eye Rendering Looking From Southwest



Commitment . . . to continue . . .



Beef & Grass Management



Crop & Forage Systems

FOOD PRODUCTION

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This facility and accompanying management could achieve the following:

- Develop nutritional plant and animal food systems that meet the needs of population growth.
- Increase land base production capacity while enhancing air, water and soil.
- Develop business entrepreneurs who implement biodiversity in food production to maximize the interaction of air, water and soil within various ecosystems.
- Synchronize plant and animal interactions to protect the quantity and quality of food supply.

Commitment . . . to continue . . .



Energy and food production coexist



Infrastructure and oil development

ENERGY CO-DEPENDENCE

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This facility and accompanying management could achieve the following:

- Develop scientific protocol to enhance agriculture and energy stewardship on the air, water and land infrastructure.
- Initiate restoration and reclamation research and education on land resources impacted by agriculture and energy.
- Coordinate research efforts to enhance health and wellness within urban and rural communities influenced by the agriculture and energy industries
- Continue the time honored ethic that transfers land stewardship traditions into agriculture and energy industries.

Commitment . . . to continue . . .



Beef Health & Performance Measurement



Soil Health & Production Measurement

TECHNOLOGY

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This facility and accompanying management could achieve the following:

- Write and implement plans and protocols to preserve air quality and surface and ground water resources for the region.
- Develop sensors that can be remotely deployed to collect and monitor air and water quality data continuously.
- Monitor the environment and health of livestock with remotely controlled sensors.
- Utilize technology to initiate continuous remote data collection in real-time and transmit data via wireless communication link.

Commitment . . . to continue . . .



Formal and informal classroom



Diagnostic Service



TEACHING & EDUCATION

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This facility and accompanying management could achieve the following:

- Provide efficient collaboration and throughput between all educational institutions.
- Engage and strengthen preschool through adult continuing educational opportunities.
- Facilitate new curriculums for youth through adult to engage new technical and professional opportunities.
- Develop new opportunities to utilize green space that will complement and enhance existing wellness programs.

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A Living Research Laboratory

Improving The Quality of Life

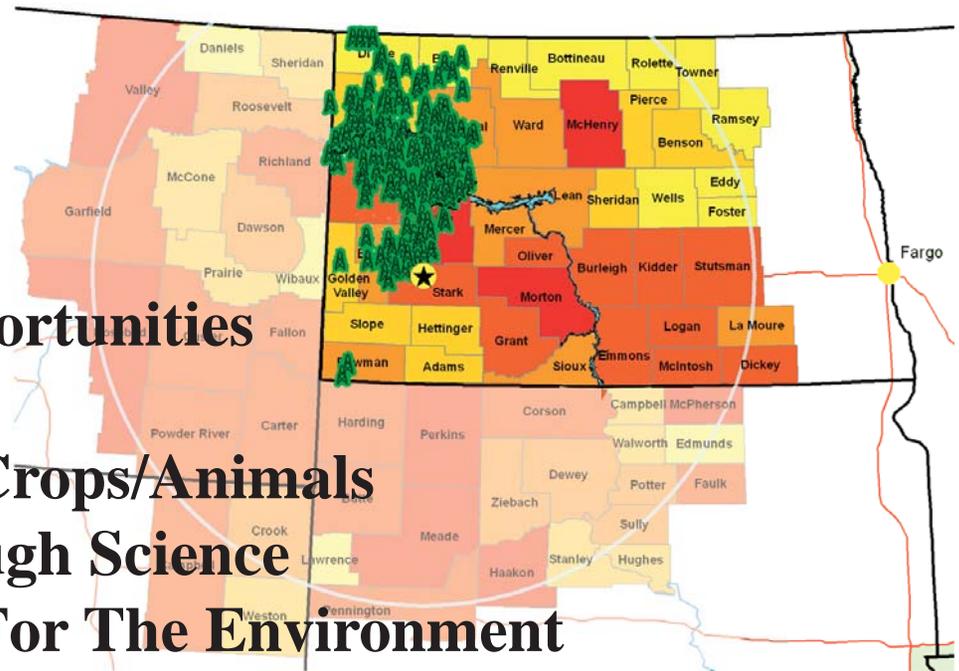
Creating Food Production Opportunities

Engaging Energy Development

Researching Improved Plants/Crops/Animals

Using Natural Resources Through Science

Displaying Good Stewardship For The Environment



QUESTIONS?

OUR OPTIONS:

1. Do Nothing

2. Sell Out

3. Adapt

4. Expand

**... our commitment to continue
through service to agriculture and energy**

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A wide-angle, high-angle shot of a large indoor sports arena. The arena is filled with spectators in the stands. The field is green with white yard lines. A large, stylized bison logo is painted on the field in yellow and white. The arena has a high ceiling with many bright lights. The text "We have the best seat in the house!" is overlaid in the center of the image in a large, white, bold font with a black outline.

**We have the best
seat in the house!**

This is Bison Country!

APPENDIX

LOOKING BACK



Continuing A Tradition

Current Mission as directed by North Dakota Legislature:

“The Dickinson Research Center must be located at or near Dickinson in Stark County. The Center shall conduct research on increasing the carrying capacity of native rangeland, with emphasis on conservation and preservation for future generations. The Center shall conduct research on grass production to determine how to best compensate for the vagaries of the weather as it influences forage production in the dryland agriculture of western North Dakota. The Center shall conduct research at the ranch location in Dunn County with beef cattle and swine breeding, feeding, management and disease control for the benefit of livestock producers of western North Dakota and the entire state. The Center shall conduct research designed to increase productivity of all agricultural products of the soil by maintaining or improving the soil resource base in the dry land agricultural region of southwestern North Dakota by the identification of adapted crop species and superior crop cultivars; propagation and distribution of selected seed stock; and development of profitable cropping systems that achieve the necessary balance between profitability and conservation of all natural resources. The Center shall disseminate research results and information for the benefit of this state.”



Beginning in 1905



... tools were less advanced



... and more labor required.

Commitment . . . **Past & Present**

Since 1905, the Dickinson Research Extension Center has diligently fulfilled its mission as directed by the North Dakota legislature, conducting research in the following areas:

- native rangeland
- beef cattle
- agricultural products of the soil

The DREC emphasis has been research, focusing on conservation and preservation of natural resources to provide a sustainable quality of life for generations!



Production research has benefited all of North Dakota

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May 17, 1905



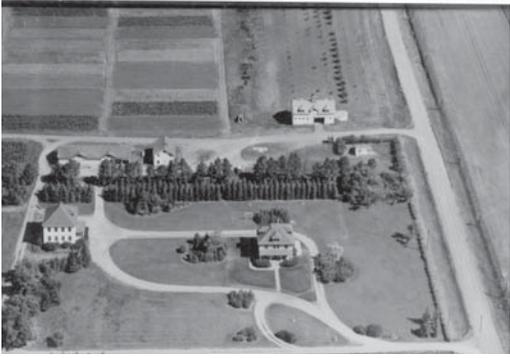
Before I-94, circa early 1960s



After I-94, circa 1970s



June 22, 1923



1952

From a plot on the prairie . . . to a central community location . . .

DREC headquarters today, dissected by Interstate 94



... we continue to serve, adapting to change and growth ...

... from where we have been ...

Section 5 is now State Avenue development



1945, when North Dakota Legislature approved purchased of farm along current day State Avenue for livestock research.



1959, when Dickinson Experiment Station was conducting livestock research along current day State Avenue



2012, housing subdivision today along State Avenue. This land is part of a major development that includes residential, business and industrial enterprises.



DREC Ranch -- 1979



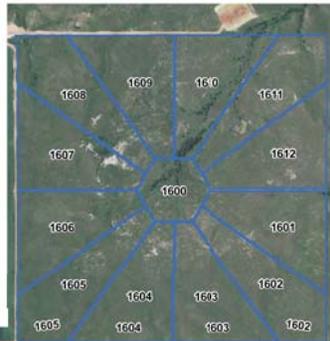
DREC Ranch -- 1990



DREC Ranch -- 2008



...
where
we
were ...



... and what we became ...
working with beef and range
systems in southwest North Dakota



- Agronomy
- Seedstock
- Beef
- Range
- Grass Beef
- Holding Pasture
- Bulls
- Crop/Forage

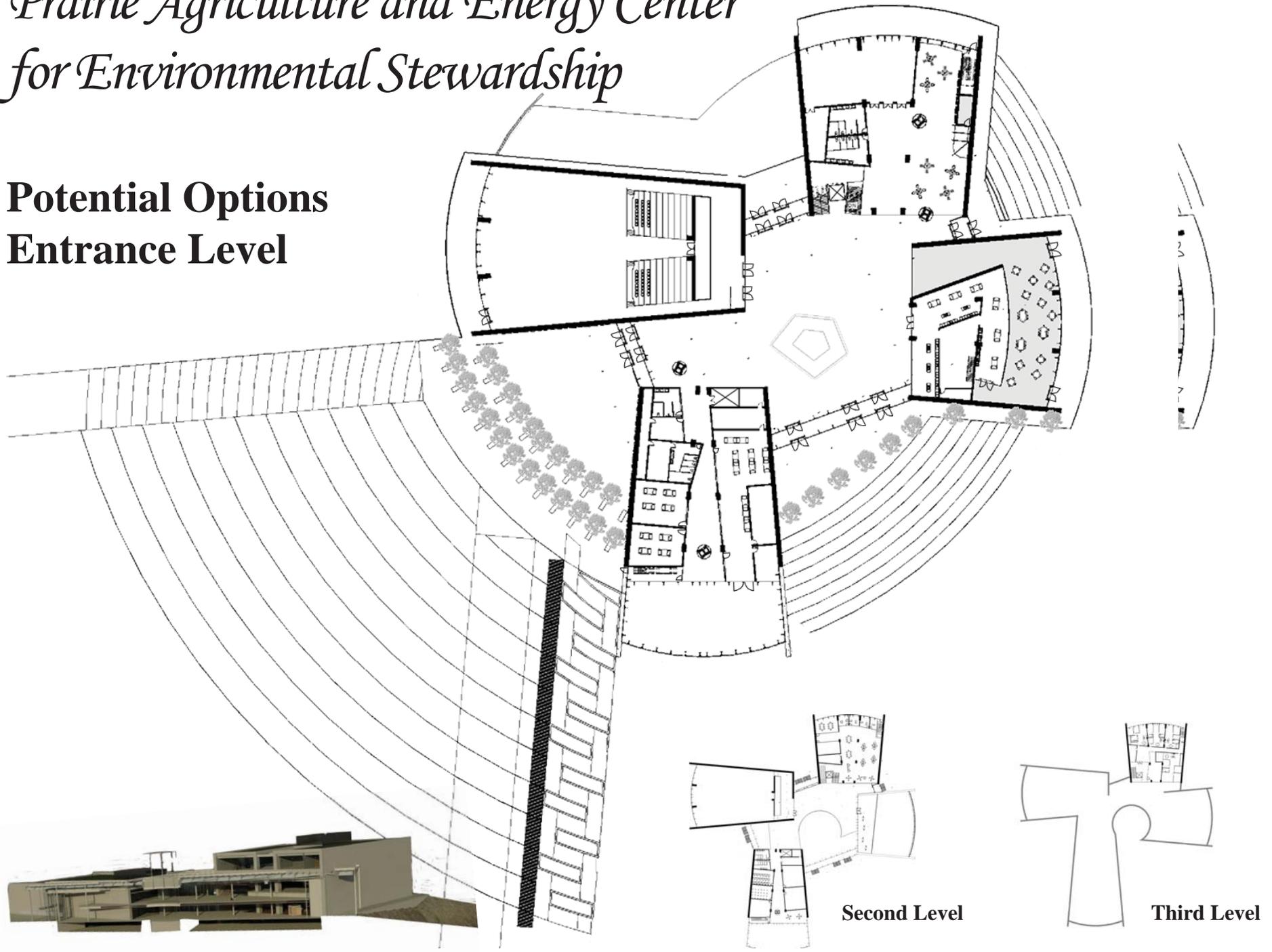
DREC Ranch acres and usage, 2012

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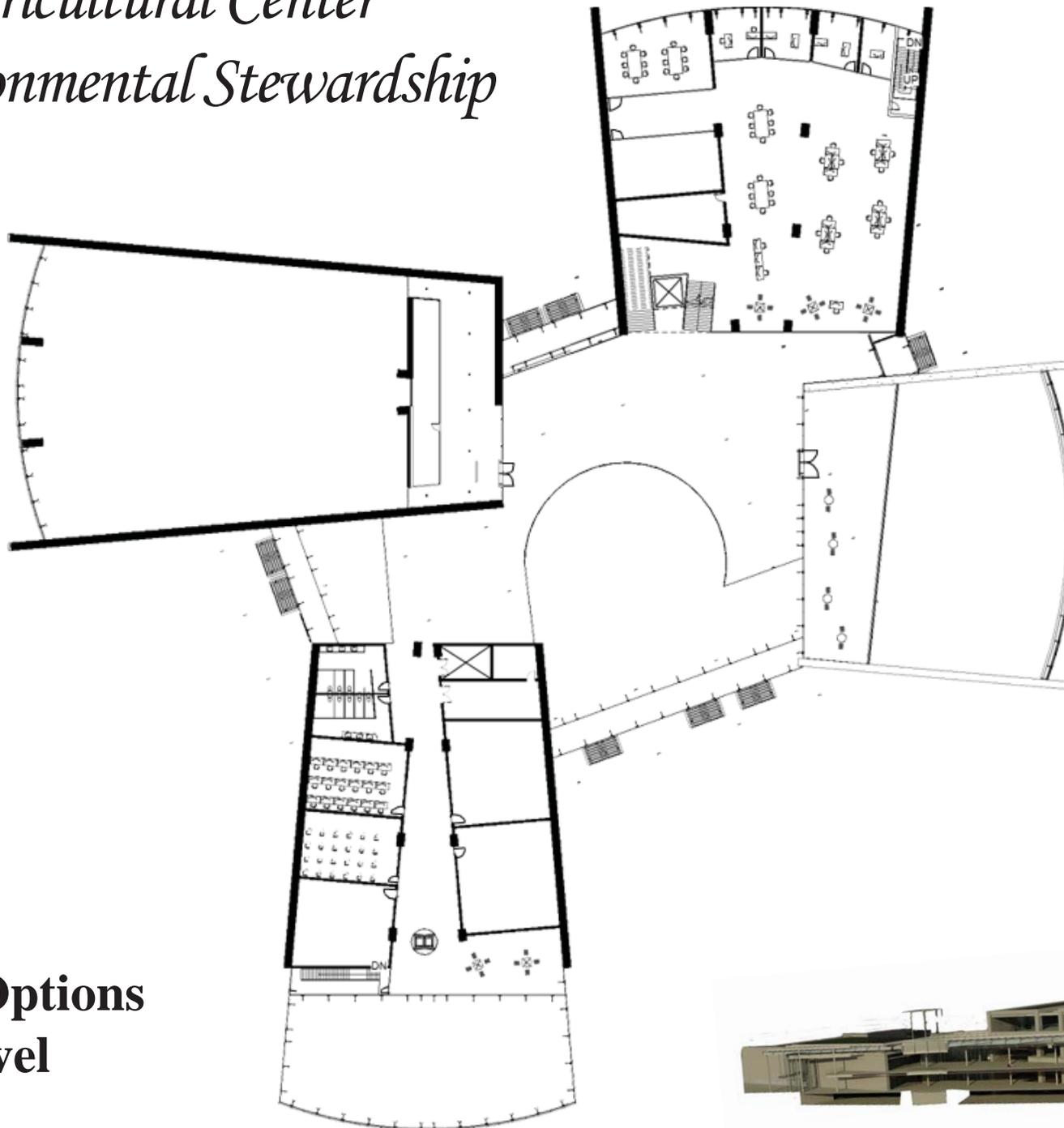
**Potential Options
Entrance Level**



Second Level

Third Level

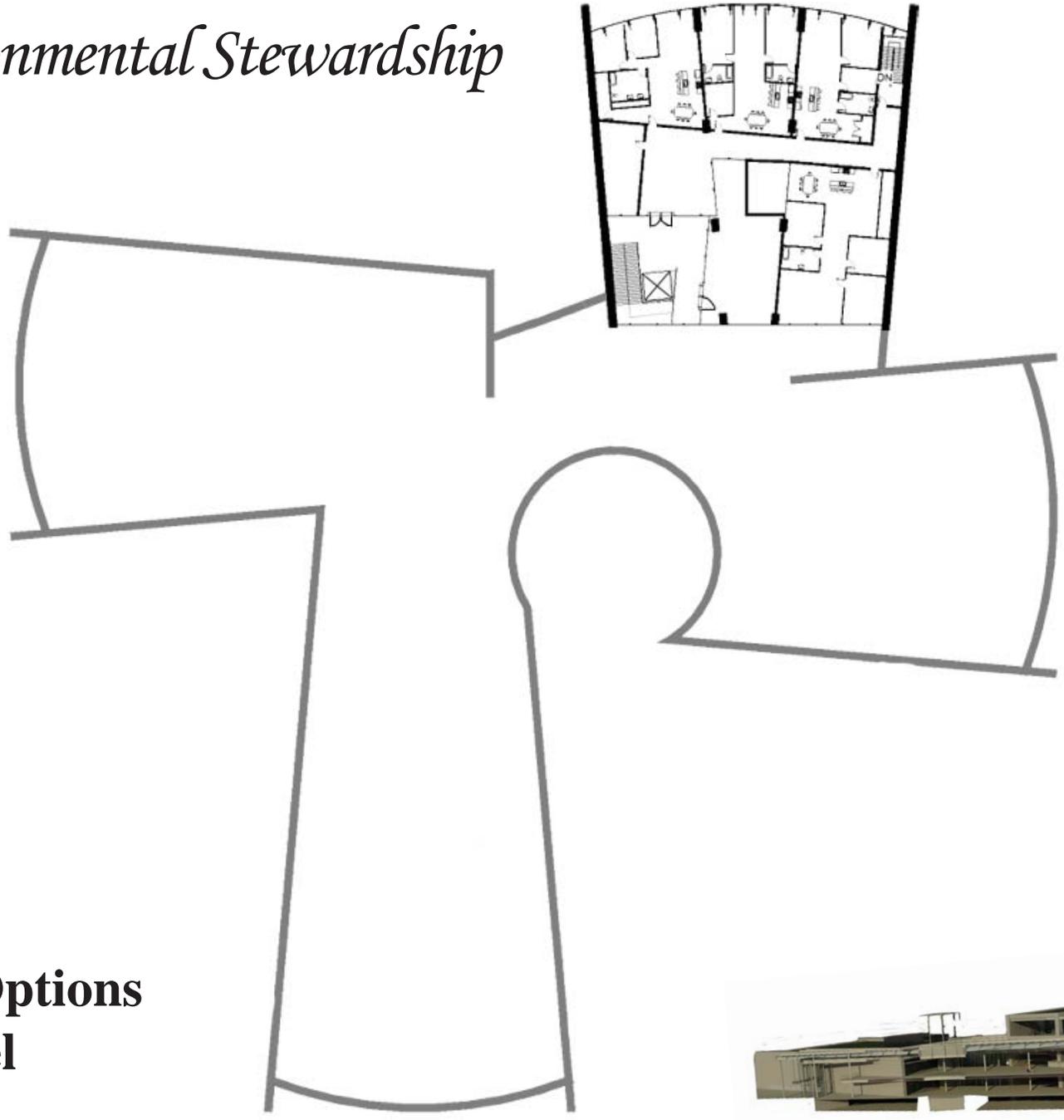
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**Potential Options
Second Level**



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for Environmental Stewardship*

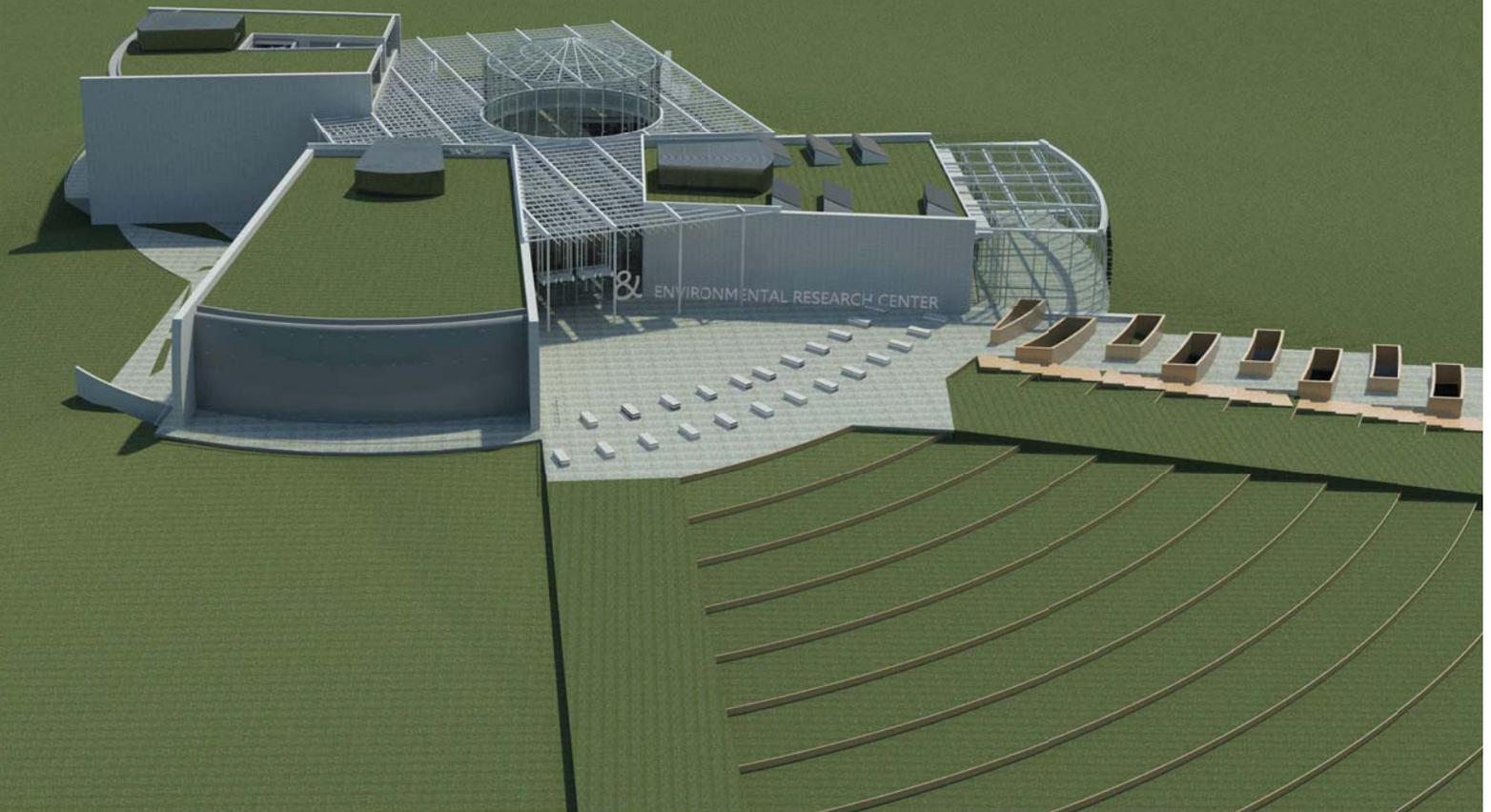


**Potential Options
Third Level**



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Birds Eye Rendering Looking From West



Prairie Agriculture and Energy Center for Environmental Stewardship

Birds Eye Rendering Looking From Southwest



Prairie Agriculture and Energy Center for Environmental Stewardship

Birds Eye Rendering Looking From Northwest



North Dakota Families



Stewards of the Prairie

Using technology while working shoulder to shoulder from dawn to dusk.

Producing high quality food while protecting our air, land and water.