UNIVERSITY OF NORTH DAKOTA

GORECKI ALUMNI CENTER

PROJECT NARRATIVE

The University of North Dakota (UND) Gorecki Alumni Center (GAC) is a gateway to the future and front door to the university; it reaches out to draw people in. As North Dakota's first and only LEED® Platinum certified commercial building, the GAC sets a new standard and is used as a constant teaching tool for sustainability. It makes educational excellence and high-performance design visible with measured results that outperform predictions and exceed several national benchmarks.

The GAC is a destination for experiencing real-life high-performance sustainability in action. Post occupancy studies, with years of measured data, confirm the benefits and show the GAC outperforms early predictions with convincing, substantial cost savings and occupant benefits. This forward-looking example of a living building, shows that high performance design and an elevated human experience can be achieved while lowering total cost of ownership, creating a comprehensive thriving condition.

The GAC connects multi-generational and diverse cultural people, opening doors to future opportunity and growth. The three-story, 38,000 square foot facility is home to regular tours drawing in about 40,500 potential students since opening. Intentional outreach draws in potential students from low socio-economic status and from the partnership with the local tribal college. These and other efforts are intended to facilitate opportunity for higher education, for people that have otherwise not had access to higher education making it a community gathering place and springboard to future prosperity. The brisoleil represents this by forming an inviting outdoor space and creating a welcoming indoor experience that embeds UND's values and honors Native American traditions. While brick elements respect the past; the dramatic, transparent, contemporary design of the GAC represents the future.

The GAC design is net-zero ready (PV installed on roof provides some renewable energy) and uses significantly less energy than predicted, reducing both operational and embodied carbon. GAC smartly integrates passive strategies with innovative active systems, reducing energy use, carbon, and operational cost, while increasing human comfort, productivity and learning. It has a first-of-its-kind ground source heat pump that provides 100% of space heating/cooling with no supplemental systems (no fossil fuel) in the harsh cold and is outperforming predictions. Measured energy use is reduced 54%. See pages 10 and 18 for more information on energy performance and attached measured energy data.

The 112,937 square foot site is designed around restorative biophilia, providing calming outdoor areas connected to the generous indoor common space. The GAC only uses approximately 1/10 of the rainwater falling on the site each year. The surplus of rainwater is managed onsite and cleaned before returning to the watershed – increasing the resilience of the region. Also, pollinator pathways and native plantings provide biophilic elements that create an outdoor classroom. The GAC demonstrates stewardship for the land and resources akin to local Native American cultures, including net neutral tree count.

The GAC has a lower total cost of ownership achieving $227,000 of avoided operational cost to date and a lower than benchmark first cost. Embodied carbon and first cost were reduced by right sizing the building through smaller offices, combined gallery and circulation, a 33% smaller footprint, shortened floor-to-floor heights, and 15% fewer parking stalls. Staff report 15% increased productivity and 20% fewer sicks days.

The GAC design is adaptable, allowing for today's uses and easy reconfiguration for unknown future uses. It is one of the most influential buildings in the region, educating the public on sustainable practices for extreme cold climates. The dashboard's reach is expanded by a public website showing real-time energy data, and the GAC's story has been published and presented to students, professionals and the public.

The GAC design achieves both LEED Platinum and high-performance outcomes in Human Experience, Positive Performance, and Financial Prosperity represented by the design approach diagram following.

ENERGY PERFORMANCE DATA

Measured data shows the building outperforms predicted energy efficiency with 54% less energy use than basleine. See Pages 10 and 18 for more information.

PROJECT COST

Total Construction Cost	**$9,927,000**
Total Project Cost	**$12,700,000**

PROJECT TEAM

Architect of Record	**JLG Architects**
Design Architect	**JLG Architects**
Structural Engineer	**Heyer Engineering**
Mechanical/Electrical Engineer	**Obernel Engineering**
Civil Engineer	**AE2S**

>100,000
People Impacted

FIRST
LEED Platinum in ND

NET POSITIVE
Vegetated Area

90%
Cleaner Runoff

$1MIL +/-
Reduced Cost

53%
Energy Reduction

ZERO
Fossil Fuel Heat/Cool

100%
Ground Source

97%
Daylight & Views

15%
Increased Productivity

97%
Satisfied

98.12%
Waste Diversion

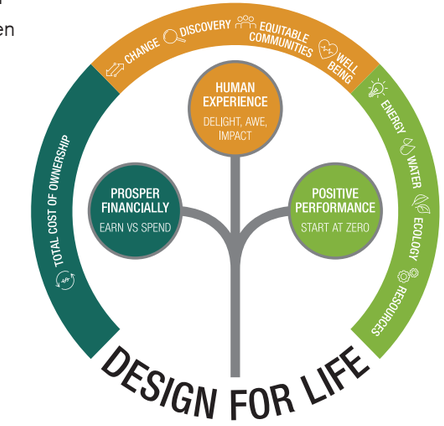
DESIGN FOR INTEGRATION

The GAC was designed following an approach that has since defined the way JLG approaches every project. From the beginning of the GAC, we approached the clients' aspirations, setting stretch goals that started at zero, and identified minimum achievable outcomes in the following three categories.

HUMAN EXPERIENCE

We work closely with our clients to create spaces that are:

- Awe-inspiring, in a way that creates connections between people and place
- Supportive of regenerative health, wellness, and resilience
- Attractive through distinctive, timeless appeal
- Act as an interactive teaching tool in support of user growth
- Develop architectural typologies based on the site and nearby living organisms and land forms
- Capture the impact of fresh air and daylighting



POSITIVE PERFORMANCE

Instead of "doing less bad," JLG starts at zero by selecting:

- Energy systems that produce more than they consume
- Water systems that renew
- Waste systems that are limited, avoided, or used for good
- Material systems that are sourced locally and consider the circular economy

FINANCIAL PROSPERITY

Financial performance is considered concurrent with design using a rigorous process that includes:

- Total cost of ownership that balances first cost and life cycle cost
- Right-sized design that integrates best value, integrated components
- A system that is simple-to-monitor and maintain
- Operations training and service
- A building that is financially self-sustaining

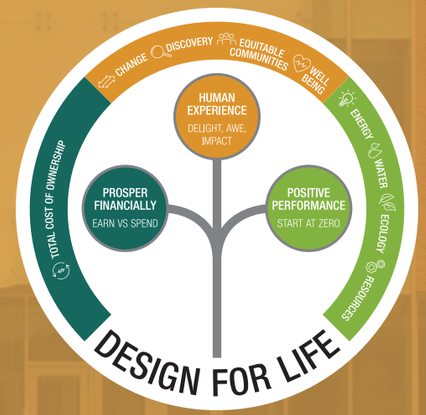
ELEVATING THE HUMAN EXPERIENCE

DESIGN FOR EQUITABLE COMMUNITIES

DESIGN FOR WELL-BEING

DESIGN FOR CHANGE

DESIGN FOR DISCOVERY



Walkable Campus

Community Engagement

33%
Alternative Transport

12%
Transportation Carbon Percent Reduction

17%
Parking Space Reduction

28%
Bicycle Infrastructure Bike Racks

Bicycle Infrastructure Showers

DESIGN FOR EQUITABLE COMMUNITIES

REACHING OUT TO INVITE IN

Designed to be the front door of the campus, the GAC welcomes all.

GAC is a social, cultural, and generational connector. Over 50,000 people of diverse backgrounds – including new student recruiting and outreach (40,500), campus and community events and other private events – have been through the center since opening in 2012, carrying the impact far and wide.

Generous public space demonstrates UND's commitment to engagement and active learning, and ample group areas offer a space to gather not otherwise available in the community, serviced by a full kitchen. The GAC provides education opportunities for future students and people from disadvantaged populations, including architecture students from the region who are regularly trained on design and sustainability at the center, and Capstone students studying innovative sustainable living strategies. A full-time tour guide educates visitors with inquiries regarding the design of the center.

The indoor/outdoor connectivity provides a transition between the campus's traditional collegiate gothic style, and the future-focus of the technology centers located nearby. The site strengthens the campus and community by connecting to the extensive pedestrian, bike, and transit networks. The design process featured user meetings and town hall forums open to students and the community-at-large, resulting in a solution that focused on future students from all backgrounds.

97%
Quality Views

76%
Daylight Autonomy

Individual Thermal Control

90%
Individual Lighting Control

CO_2 Measuring

10
Materials w/Health Certifications

10
Chemicals of Concern Avoided

"Our employees are breathing clean air, enjoying a connection to the outdoors and have truly embraced the 'green' lifestyle by recycling, reusing, and reducing. The benefits of LEED Platinum can be seen, not only in our bottom line, but in the health, productivity, and emotional well-being of our staff – the air quality in this building is just amazing."

GAC Leaders

DESIGN FOR WELLNESS

THRIVING PEOPLE VERIFIED

The GAC delights the senses and helps people thrive. Staff are 15% more productive and have fewer sick days than before.

Connection to the outdoors is critical. 25% more outside air is provided indoors than the typical building, and it uses 60% less energy to do so. Abundant daylight and views are available – giving 97% of occupied spaces views to the outdoors. Indoor common spaces near large glass areas are connected to adjacent outdoor features like a firepit and seating to bring the outside in. These spatial experiences increase brain functioning, reduce stress, and improve eye health.

Inside features an engaging staircase inviting people to walk, access elevator for mobility impaired, and adjustable lights and comfort controls for each person.

15
INCREASE IN EMPLOYEE PRODUCTIVITY

100
INTERIOR DAYLIT MONITORING & CONTROLS

97
OCCUPIED SPACE HAS VIEWS TO OUTDOORS

50
OCCUPANTS CONTROL THEIR OWN THERMOSTAT

25
INCREASED OUTSIDE AIR THAT USES 60% LESS ENERGY TO HEAT AND COOL

Functionality without Power (relative)

8%
Onsite Generation

200
Building Design Lifespan

DESIGN FOR CHANGE

FORESIGHT TO ADAPT AND SURVIVE

The GAC design is focused on the future. It's adaptable for today's uses and the structure allows for easy reconfiguration for unknown future uses. The main conference room accommodates a wide variety of campus, corporate, and public events. The building's layout represents the future of work, with flexible spaces throughout that can be used by staff and visitors for meetings, work sessions, and study.

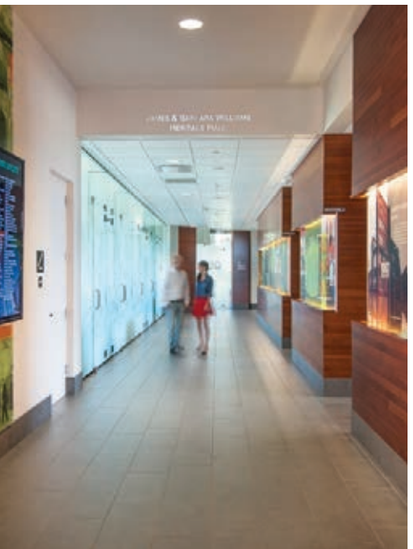
Remarkable resilient, passive survivability features include: a high performance envelope; thermal mass to retain passive solar heat gain and night flush cooling; 97% of occupied spaces have adequate daylight (including all of the basement offices); ground source heat pumps with the rooftop solar array allow the building to remain partially operational during grid power loss.

The GAC thrives in the harsh winter conditions and seasonal temperature swings of North Dakota. The building's design and systems are so well-integrated into the building that they have begun to perform "beyond design" temperatures and accommodate potential extremes resulting from climate change.

On-site water management ensures the project can weather prolonged rain or drought and helps avoid future flooding common to the Red River Valley watershed – thereby having a significant impact on regional resilience.

ADDITIONAL DETAILS

- 100% of the space is adaptable
- Thermally enhanced shell can withstand North Dakota's drastic temperature swings
- Daylighting ensures that the building remains comfortable and operational without the use of artificial lighting
- Ground source heat pumps paired with the rooftop solar array allows the building to remain partially operational in the event of grid power loss



Ongoing POE

100%
Level of Knowledge
(Transparency)

Ongoing Discovery

DESIGN FOR DISCOVERY

BUILDING IS A TEACHING TOOL, BIG IMPACT

The GAC has hosted hundreds of thousands of people at events and tours since it first opened in 2012, making it the most influential building in the region, educating the public on sustainable practices for extreme cold climates. The GAC has led to UND's expanded STEM curriculum, which includes Earth System Science, Public Health and Technology, making this building a powerful educational tool. Plus, architecture students are toured through the building annually to learn about how they can impact their own future work. The dashboard is a popular tool with the full-time tour guide that educates visitors on how the building works. The dashboard's reach is expanded by a public website showing real-time energy data.

The GAC's story has been published and presented to students, professionals, and the public. The design team has stayed engaged with the owner. In November 2020, updated findings were presented to the owner. The information gathered from users helped refine control settings.

An occupant survey showed the GAC outperforms the UC Berkely CBE Database (97% satisfied), which represents thousands of projects across the country. Monitoring continues and new publications, presentations, and improvements are planned for 2021 and beyond.

POST OCCUPANCY EVALUATION

No COIVD adaptations were needed for this survey. The survey was administered in June/July 2020. The building had been occupied for an extended time prior to the survey and was never closed during COVID. Starting at the end of March 2020 occupancy was lower. There were 6 or so occupants who were always working in the building at any given time. When the survey was distributed some occupants were in the building and some were working remotely. Because occupants always had access to the building survey respondents were able to use current experience to respond to the survey. Anyone working remote were instructed to consider their recent experience in the building and respond accordingly. The survey had a high rate of response from occupants.

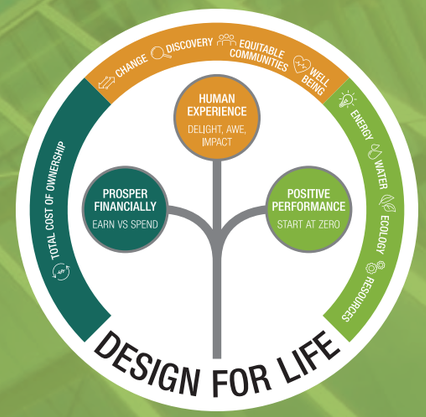
ACHIEVING POSITIVE PERFORMANCE

DESIGN FOR ENERGY

DESIGN FOR WATER

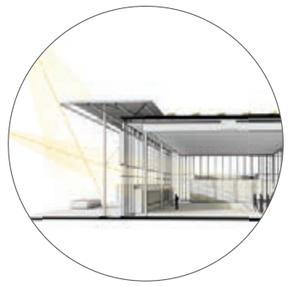
DESIGN FOR ECOSYSTEMS

DESIGN FOR RESOURCES



GEOTHERMAL WELLFIELD

100% of heating and cooling supplied by a 130 well geothermal field located beneath the building parking lot.



PASSIVE STRATEGIES

Passive heating and cooling strategies, such as solar heat gain and thermal mass night flushing, reduce energy needed from active systems

SHADING

Shading techniques such as the Brise Solei, vertical louvers, and operable shades reduce solar gain in the summer while utilizing the low winter sun to heat the interior

SOLAR ARRAY

Over 200 rooftop photovoltaic panels supply the building with 7% of its electricity

WIND ENERGY

70% of the building's electricty is supplied by purchased renewable wind energy

PREDICTED MEASURED

77 | 59
Net Site EUI

82 | 64
Gross Site EUI

31% | 47%
Net Energy Reduction from Benchmark

23.7 | 20.2
Carbon Emissions per SF

6% | 8%
Renewable Energy

12% | 25%
CO_2 Reduction from Benchmark

41%
Lighting Power Density Reduction

0.7
Lighting Power Density

DESIGN FOR ENERGY
FIRST OF ITS KIND IN EXTREME COLD CLIMATE

This GAC's net-zero emerging design is a first of its kind in the region and is outperforming predictions. Measured energy use is reduced 54%. GAC smartly integrates passive strategies with innovative active systems, reducing energy use, carbon, and operational cost while increasing human comfort and productivity amidst the harsh North Dakota climate.

Passive strategies: Thermal mass with solar heat gain and night flush cooling; optimized envelope; airtight construction confirmed by a very demanding pressure test; 97% of occupied spaces have abundant daylight and 16% lower LPD.

Active systems: 100% of space heating and cooling is provided by 130 ground wells and 10 heat pumps that require no supplemental heat (fossil fuel or electric); a smart system which provides heating and cooling concurrently, saving energy, significantly reducing operating cost and avoiding carbon.

Renewable energy: Solar panels cover the roof providing 9% of its measured electricity. At the time of construction North Dakota only had about 100 kw of solar. It was the largest installation and doubled solar stock in the state; 70% of electricity (two-year renewable energy contract).

A dashboard displays live performance data available to the public via web and brochure.

ENERGY

Baseline used: ASHRAE 90.1 / LEED 3.0

NATIVE PLANTINGS

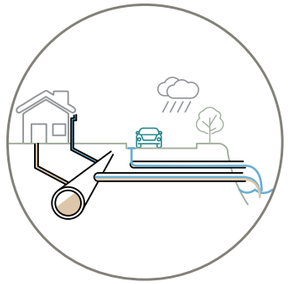
Initial rainfall is mitigated via native plantings and pervious pavement around the building

RUNOFF COLLECTOR

During larger rain events excess runoff is collected and stored in large cicterns which infiltrate into the ground over time

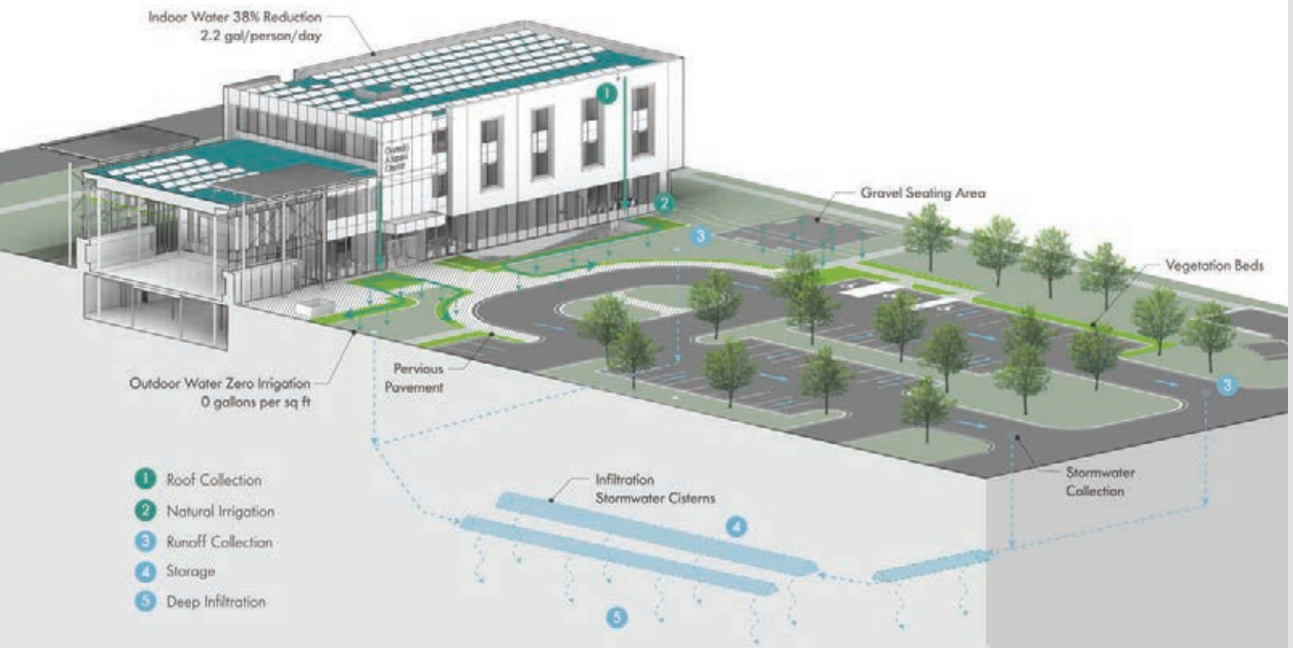
336,260

Gallons per year of city water eliminated through various landscape elements and building water saving methods



90%

Of rainfall is prevented from becoming polluted runoff through the stormwater management system



2.2
Water Use/Occupant Daily

100%
Rain Water Management

72%
Potable Water Reduction for site and building combined

DESIGN FOR WATER

CLEAN, RESILIENT WATER FUTURE

The GAC eliminates the need for over 350,000 gallons of potable water use per year by using less water indoors, requiring limited outdoor irrigation, and cleaning stormwater onsite. The GAC only uses about 1/10 of the approximately 1.1 million gallons of rainwater falling on the site each year. The surplus of rainwater is cleaned before it is returned to the watershed and is managed onsite to reduce the flood hazard common to the Red River Valley – increasing the resilience of the region.

Inside the GAC, predicted water use is 38% lower than baseline, with a very low 2.2 gallons per person per day.

The landscape serves multiple functions: It provides a biophilic experience for people, enhances biodiversity, improves the overall watershed quality, and self-waters plants. Nearly 90% of solids are removed so water returning to the water table is cleaner. During rainfall, water is directed to infiltrate areas. Runoff, if any, is captured in a subsurface cistern before being drawn into the soil.

The water management strategy is a model of local residents, businesses and food producers.

ADDITIONAL DETAILS

- 100% of stormwater runoff is cleaned before leaving the site
- 90% of rainfall is retained, filtering out runoff pollutants before releasing naturally into surrounding soil, irrigating native and adaptive planting (storm water cistern capacity – 8066 gallons)
- 38% less building water from low-flow devices (103,500 gallons per year / 2.2 gallons per day per person)
- Zero potable water for irrigation (except entrances and adjacent areas) reduces the need for 288,296 gallons of city water use annually

Net Neutral
Tree Count Post Development

100%
Native Plantings

33%
Building Footprint Reduction

82.5%
Reduced Exterior LPD

DESIGN FOR ECOLOGY

RESTORING PEOPLE AND PLACE

The site is designed around restorative biophilia, providing calming outdoor areas connected to generous indoor common space.

The site has 100% drought-tolerant native and adaptive plants, shrubs, and trees, using less irrigation to significantly reduce water use. The design provides a net decrease in hardscape and converted vegetated areas from turf grass to 100% native vegetated area, restoring the biodiversity of the place. New trees planted resulted in no net loss of trees. The site design mimics Native American respect for the land and water. Pollinator plants invite pollinators such as bees and butterflies, and provide a habitat for small mammals and birds. The site design significantly improves the local ecosystem for people and place so each thrives together.

By employing a compact and efficient floor plan, a 33% building footprint reduction granted more space to landscaping, and eliminated 15% of required parking, reducing total cost of ownership.

Exterior lighting power density was reduced by 82.5% by strategically planning down lights for walkways and patios, reducing parking lot and accent lighting and eliminating uplights.

31%
Embodied Energy Reduction (Benchmark)

10
Number of EPDs Collected

98%
Construction Waste Diverted

23%
Recycled Content of Building Materials

10%
Regional Materials

67%
Installed Wood that is FSC Certified

DESIGN FOR RESOURCES

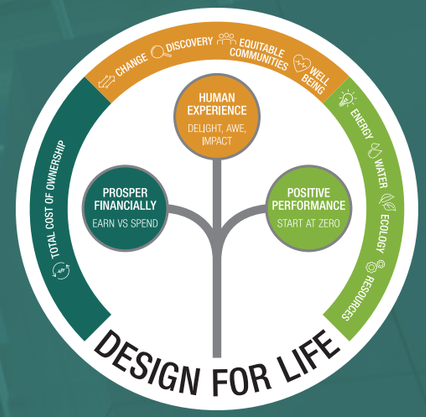
CELEBRATING ABUNDANCE AND STEWARDSHIP

The GAC celebrates earth's abundance and honors Native American values. The material approach shows how simple, natural materials can inform an sustainable lifestyle.

The design emphasizes renewable resources, durability, economy, human health and potential for salvage and re-use. High performance glass and high-efficiency mechanical systems were selected for their superior performance and quality. Embodied carbon and first cost were reduced by right sizing the building through smaller offices, combined gallery and circulation, a 33% smaller footprint, shortened floor-to-floor heights, and 15% fewer parking stalls. Existing trees were harvested and reused to clad a common area fireplace and used as lumber in the building. Much of the construction materials were recycled; 98.12% was diverted from landfill closing the materials loops and reducing disposal costs 51%. The building dashboard shows each days operational recycling. Wood is an important accent and 65% of all of the non-recycled wood in the building is FSC certified. Concrete was used to provide thermal mass for solar heat gain and night flush cooling, making the structure a part of the comfort systems and extending building life.

FINANCIAL PROSPERITY

DESIGN FOR ECONOMY



$227,000 +/-
Measured Cost Reduction Since Opening

$263/ft²
Actual Construction Cost

3%
Lower than Benchmark Construction Cost

$270/ft²
Benchmark Construction Cost

High Efficiency
Floor Plan Uses Circulation as Gallery Space

35%
Efficiency Ratio Improvement

DESIGN FOR ECONOMY

PAY IT FORWARD — INVEST IN THE FUTURE

The GAC's sustainable, welcoming, inclusive message continues to attract donors. One donor even gave $1.5M in support of the building's LEED Platinum goals.

Total cost of ownership is net positive. First cost is 3% less than benchmark, debunking the myth of a 10% LEED Platinum premium. Actual energy has achieved about $227,000 dollars of energy cost savings (2013 to 2020) compared to baseline. The building has potential to be $950,000 net revenue-positive over 30 years. It avoids $38,000 in annual energy cost from the innovative ground source system, combined with onsite renewable energy — and first cost of this system was comparable to a conventional heating and cooling system.

The floor plan is more efficient than similar college buildings for both energy/material/operational efficiency and short- and long-term reduced building costs. Office sizes and floor-to-floor heights were tightened, and gallery space was combined with circulation to lessen footprint square footage by 33%. A 15% reduction in required parking spaces also saved over $30,000 in initial costs.

The GAC shows high performance design can be achieved without increasing costs and can lower total cost of ownership — a game-changer when promoting the positive benefits of sustainable architecture.

ADDITIONAL DETAILS

- Donation towards LEED features by community
- Compact building footprint
- Lower operational costs due to geothermal and natural solar gain/prevention
- Solar array produces over $5,000 per year in produced energy

GENERAL INFORMATION

LOCATION

3501 University Avenue | Grand Forks, ND 58202
Previously developed site
Climate Zone **ASHRAE, Title24, or other: 7**

PROJECT DETAILS

Substantial Completion **December 27, 2012**
Gross Conditional Floor Area **37,787 ft²**
Site Area **112,937 ft²**
Number of Stories **3 + basement**
Annual Hours of Operation **2,916 hours**

BUILDING PROGRAM(S)

(CBECS category if applicable): **commercial office building with an event/community room, reception, library/presentation room, boardroom, and call center**

FIRM INFORMATION

JLG is an AIA 2030 Commitment signatory and current on reporting
JLG has a JUST Label (pending final review by ILFI)

LEED SCORECARD

As North Dakota's first and only LEED® Platinum certified commercial building, the GAC both sets a new standard and is used as a constant teaching tool for sustainability, making visible educational excellence and high-performance best practices. It achieved 83 points compared to 80 required to achieve platinum certification.

The GAC also achieves high performance outcomes on nearly every category in the AIS Framework for Design Excellence shown on the following page. The GAC excels under many measures of sustainability performance.

1000015510, Grand Forks, North Dakota

UND Gorecki Alumni Center

LEED BD+C: New Construction (v2009) — **PLATINUM, AWARDED SEP 2013**

SUSTAINABLE SITES — AWARDED: 25 / 26

SSp1	Construction activity pollution prevention	REQUIRED
SSc1	Site selection	1 / 1
SSc2	Development density and community connectivity	5 / 5
SSc3	Brownfield redevelopment	0 / 1
SSc4.1	Alternative transportation - public transportation access	6 / 6
SSc4.2	Alternative transportation - bicycle storage and changing rooms	1 / 1
SSc4.3	Alternative transportation - low-emitting and fuel-efficient vehicles	3 / 3
SSc4.4	Alternative transportation - parking capacity	2 / 2
SSc5.1	Site development - protect or restore habitat	1 / 1
SSc5.2	Site development - maximize open space	1 / 1
SSc6.1	Stormwater design - quantity control	1 / 1
SSc6.2	Stormwater design - quality control	1 / 1
SSc7.1	Heat island effect - nonroof	1 / 1
SSc7.2	Heat island effect - roof	1 / 1
SSc8	Light pollution reduction	1 / 1

WATER EFFICIENCY — AWARDED: 7 / 10

WEp1	Water use reduction	REQUIRED
WEc1	Water efficient landscaping	4 / 4
WEc2	Innovative wastewater technologies	0 / 2
WEc3	Water use reduction	3 / 4

ENERGY & ATMOSPHERE — AWARDED: 24 / 35

EAp1	Fundamental commissioning of building energy systems	REQUIRED
EAp2	Minimum energy performance	REQUIRED
EAp3	Fundamental refrigerant Mgmt	REQUIRED
EAc1	Optimize energy performance	12 / 19
EAc2	On-site renewable energy	3 / 7
EAc3	Enhanced commissioning	2 / 2
EAc4	Enhanced refrigerant Mgmt	2 / 2
EAc5	Measurement and verification	3 / 3
EAc6	Green power	2 / 2

MATERIAL & RESOURCES — AWARDED: 5 / 14

MRp1	Storage and collection of recyclables	REQUIRED
MRc1.1	Building reuse - maintain existing walls, floors and roof	0 / 3
MRc1.2	Building reuse - maintain interior nonstructural elements	0 / 1
MRc2	Construction waste Mgmt	2 / 2
MRc3	Materials reuse	0 / 2
MRc4	Recycled content	2 / 2

MATERIAL & RESOURCES — CONTINUED

MRc5	Regional materials	0 / 2
MRc6	Rapidly renewable materials	0 / 1
MRc7	Certified wood	1 / 1

INDOOR ENVIRONMENTAL QUALITY — AWARDED: 12 / 15

EQp1	Minimum IAQ performance	REQUIRED
EQp2	Environmental Tobacco Smoke (ETS) control	REQUIRED
EQc1	Outdoor air delivery monitoring	1 / 1
EQc2	Increased ventilation	0 / 1
EQc3.1	Construction IAQ Mgmt plan - during construction	1 / 1
EQc3.2	Construction IAQ Mgmt plan - before occupancy	1 / 1
EQc4.1	Low-emitting materials - adhesives and sealants	1 / 1
EQc4.2	Low-emitting materials - paints and coatings	1 / 1
EQc4.3	Low-emitting materials - flooring systems	1 / 1
EQc4.4	Low-emitting materials - composite wood and agrifiber products	1 / 1
EQc5	Indoor chemical and pollutant source control	1 / 1
EQc6.1	Controllability of systems - lighting	1 / 1
EQc6.2	Controllability of systems - thermal comfort	0 / 1
EQc7.1	Thermal comfort - design	1 / 1
EQc7.2	Thermal comfort - verification	1 / 1
EQc8.1	Daylight and views - daylight	0 / 1
EQc8.2	Daylight and views - views	1 / 1

INNOVATION — AWARDED: 6 / 6

IDc1	Innovation in design	1 / 1
IDc2	LEED Accredited Professional	1 / 1

REGIONAL PRIORITY CREDITS — AWARDED: 4 / 4

MRc2	Construction waste Mgmt	1 / 1
SSc5.2	Site development - maximize open space	1 / 1
SSc6.1	Stormwater design - quantity control	0 / 1
SSc8	Light pollution reduction	1 / 1
WEc3	Water use reduction	1 / 1

TOTAL 83 / 110

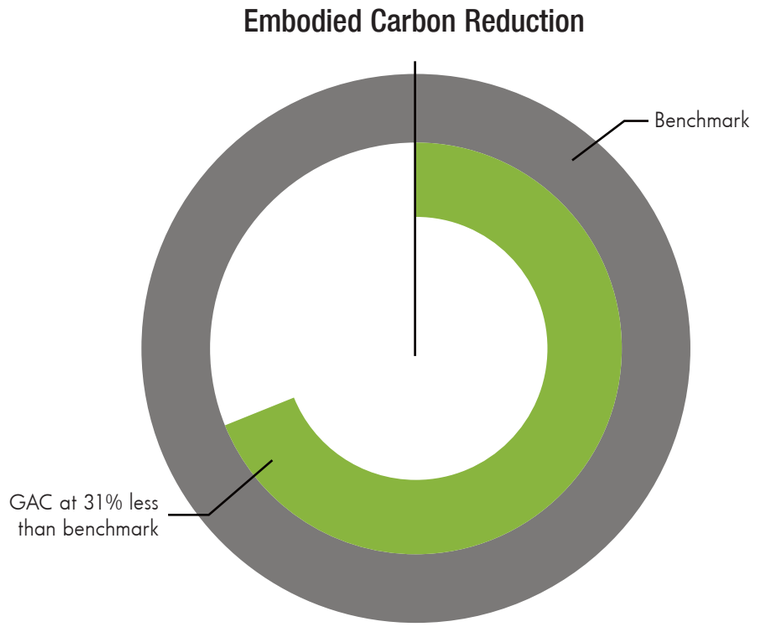
40-49 Points	50-59 Points	60-79 Points	80+ Points
CERTIFIED	SILVER	GOLD	PLATINUM

FRAMEWORK FOR DESIGN EXCELLENCE RESULTS SPREADSHEET

GAC achieves high performance outcomes in every category for the AIA Framework for Design Excellence.

	Baseline	Response	Very High Performance
This page compares metrics against their benchmark along a scale from "Baseline" to "Very High Performance"	Baseline	Best Practice	Very High Performance
Measure 2: Design For Community			
Walk Score	0	46	100
Community Engagement Score	1	6	8
Alternative Transportation Percentage	0%	33%	100%
Transportation carbon - Percent Reduction	0%	12%	100%
Parking Space Reduction	-100%	17%	100%
Bicycle Infrastructure - Bike Racks	0%	28%	50%
Bicycle Infrastructure - Showers	0%	3%	5%
Measure 3: Design For Ecology			
Vegetated site area - Post Development	0%	55%	100%
Native plantings - Percent of vegetation	0%	100%	100%
Measure 4: Design For Water		Predicted / Measured	
Potable water reduction	0%	72%	100%
Potable water used for Irrigation?	Yes (0)	1	No (1)
Rainwater managed onsite	0%	62%	100%
Estimated runoff quality	1	4	5
Measure 5: Design For Economy			
Construction cost reduction from the benchmark	-100%	3%	50%
Efficiency ratio percent improvement	-50%	35%	50%
Measure 6: Design For Energy		Predicted / Measured	
Net energy reduction from Benchmark	0%	31% / 47%	105%
Percent from renewable energy	0%	6% / 8%	100%
CO_2 Percent reduction from Benchmark	0%	12% / 25%	100%
Lighting Power Density % Reduction	0	41%	75%
Measure 7: Design For Wellness			
Quality views	0%	97%	100%
Operable windows	0%	0%	100%
Daylight autonomy	0%	76%	100%
Is CO_2 Measured?	No (0)	1	Yes (1)
Is VOC measured?	No (0)	0	Yes (1)
Materials with health certifications	0	10	10+
Checmicals of concern avoided	0	10	10+

	Baseline	Response	Very High Performance
This page compares metrics against their benchmark along a scale from "Baseline" to "Very High Performance"	Baseline	Best Practice	Very High Performance
Measure 8: Design For Resources			
Embodied energy reduction from benchmark	0%	31%	100%
Life cycle analysis conducted - Y/N	No (0)	0	Yes (1)
Number of EPDs Collected	0	10	10+
% of construction waste diverted	0%	98%	100%
% of recycled content of building materials		23%	
% of regional materials	0%	10%	100%
% of installed wood that is FSC Certified	0%	67%	100%
Measure 9: Design For Change			
% of reused floor area	0%	0%	100%
Functionality without power (relative score)	0	2	4
Percent onsite generation	0%	8%	100%
Building design lifespan	30	200	200
Measure 10: Design For Discovery			
Level of post occupancy evaluation	0%	80%	100%
Level of Knowledge distribution / transparency	0%	100%	100%
Level of Feedback (Ongoing discovery)	0	5	5



MEASURED ENERGY DATA ANALYSIS

2019			Electrical ($)													
FY	Building	Total Building Energy Consumption (kBtu)	Cost/kwh	Total Cost	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2019	GORECKI ALUMNI CENTER	**709,523**	**0.1651**	$51,026.11	$6,008.97	$7,999.64	$2,529.07	$3,888.80	$3,375.06	$2,886.61	$3,072.11	$3,437.84	$3,329.37	$4,504.07	$4,754.87	$5,239.70
2018	GORECKI ALUMNI CENTER	**810,396**	**0.1835**	$61,953.05	$7,948.52	$6,514.52	$6,021.02	$5,513.51	$4,867.67	$3,118.98	$3,417.36	$3,374.90	$5,454.55	$7,182.41	$4,153.62	$4,385.99
2017	GORECKI ALUMNI CENTER	**674,693**	**0.2167**	$50,222.86	$2,248.17	$5,844.42	$6,911.20	$5,363.69	$6,984.85	$4,616.79	$2,684.92	$1,361.07	$4,285.48	$3,323.31	$4,546.37	$2,052.59
2016	GORECKI ALUMNI CENTER	**624,421**	**0.1527**	$44,216.37	$4,207.76	$3,883.92	$3,987.75	$3,357.01	$2,613.82	$3,356.43	$2,531.83	$3,590.10	$4,918.48	$2,870.54	$4,199.23	$4,699.50

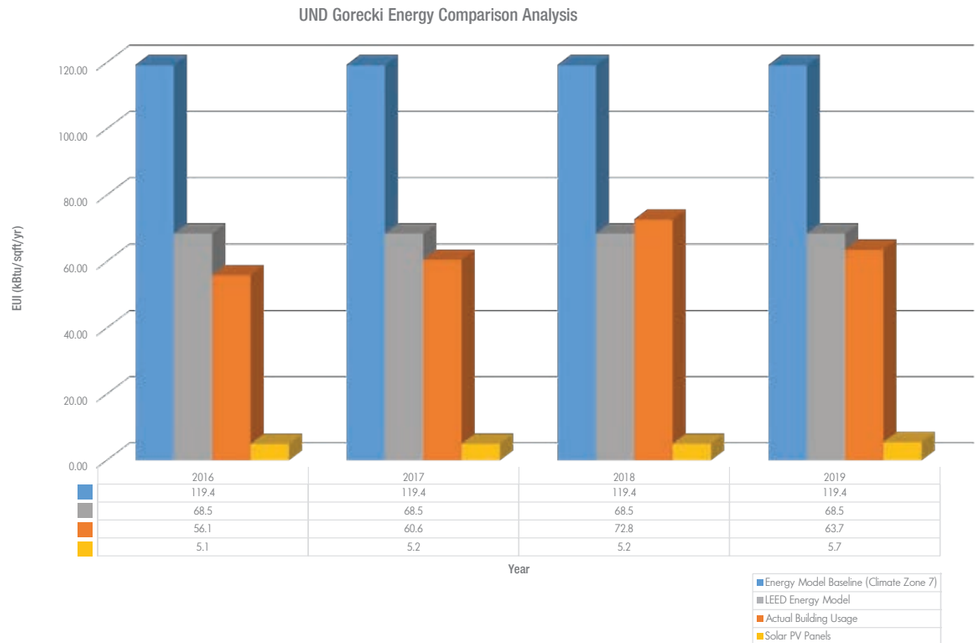
2019			Electrcial (kWh)												
FY	Building	Total Building Energy Consumption (kBtu)	Total kWh	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2019	GORECKI ALUMNI CENTER	**709,523**	687,425	76285	76285	101557	32107	49369	42847	39001	43644	42267	57180	60364	66519
2018	GORECKI ALUMNI CENTER	**810,396**	769,013	100908	82703	76438	69995	61796	39596	36646	42845	58492	91182	52731	55681
2017	GORECKI ALUMNI CENTER	**674,693**	637,589	28541	74196	87739	68093	88674	58611	34086	17279	54405	42190	57717	26058
2016	GORECKI ALUMNI CENTER	**624,421**	582,334	57546	53117	54537	45911	35747	45903	32142	45577	62441	36442	53310	59661

2019				Natural Gas (therm) Domestic Hot Water and Kitchen Only (No fossil fuel for space heating)											
FY	Building	Total Building Energy Consumption (kBtu)	FY18 NG therm	NG kBTU	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2019	GORECKI ALUMNI CENTER	**709,523**	754	75,400	152.00	118.00	102.00	136.00	150.00	96.00						
2018	GORECKI ALUMNI CENTER	**810,396**	1,412	141,200	132.00	118.00	120.00	122.00	132.00	28.00	206.00	92.00	92.00	116.00	106.00	148.00
2017	GORECKI ALUMNI CENTER	**674,693**	1,266	126,600	134.00	126.00	126.00	282.00	-98.00	126.00	90.00	104.00	74.00	122.00	108.00	72.00
2016	GORECKI ALUMNI CENTER	**624,421**	1,436	143,600	160.00	134.00	128.00	124.00	134.00	118.00	104.00	90.00	120.00	92.00	150.00	82.00

2016 Building EUI	56.1	kBtu/ft^2/yr	52.14176199
LEED Energy Model Projections*	68.5	kBtu/ft^2/yr	
National Energy Benchmark*	119.4	kBtu/ft^2/yr	
Improvement from National Benchmark	53%		44%
2016 Solar PV Production	63,000	kWh	
2016 Solar PV Cost Avoidance	$10,404		
2016 Solar PV Building Energy Contribution	9%		
Solar PV Installation Cost (2018 $)	$100,000	(2018 $)	
Solar PV Simple Payback Period	10	yrs	
Simple Payback with FTC	7	yrs	

*Based on typical meteorological year climate conditions

Cost per SF 2019 $1.25



Units	2016	2017	2018	2019
Actual Building Usage	56.1	60.6	72.8	63.7
Energy Model Baseline (Climate Zone 7)	119.4	119.4	119.4	119.4
LEED Energy Model	68.5	68.5	68.5	68.5
Solar PV Panels	5.1	5.2	5.2	5.7
Solar PV Panels	9.1%	8.5%	7.1%	8.9%
Percentage Reduction	53.04%	49.25%	39.05%	46.63%

% of total building consumption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