

# CASE STUDY

## ARDMORE READINESS CENTER

### SUMMARY

Built in 2019, the Ardmore Readiness Center is an 82,000 square foot facility designed to support the Oklahoma Army National Guard. The center is home to administrative offices as well as full-service training and deployment facilities used by the National Guard several times a month. The Readiness Center also supports local community needs and serves as a place of refuge during natural disasters.

Showcased within the Ardmore Readiness Center project, sustainable design has proven to be a priority for the Oklahoma Military Department. The driving goals for the Readiness Center included operational efficiency, energy conservation, and cost effectiveness. The project highlighted those achievements through innovation in sustainability, resiliency, security, durability, and flexibility.

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## CHALLENGES

A few challenges presented themselves when attempting LEED certification for this rural Oklahoma site. LEED rewards projects that are located in dense, urban environments through Sustainable Sites and Materials and Resources credits. Sustainable Sites credits encourage development density, community connectivity, and access to public transportation. Materials and Resources credits reward projects that utilize regional materials and recycle 50-75% of their construction waste. Due to the project's location, earning high points in these categories proved to be difficult.

To overcome the loss of points, the Ardmore Readiness Center design/build team stepped up. The team worked hard to improve water and energy efficiency, increase natural daylight and provide a healthy space for the building users. In addition, the team took advantage of the large site to maximize stormwater control and utilize native vegetation. Using swales, flow control devices, and bioretention ponds, the project was able to receive maximum points on both Stormwater Quantity and Quality Controls. Native grasses and wildflower mixes were installed across the site, which allowed the project to also maximize the points on

Water Efficient Landscaping as no irrigation was required after the vegetation was established. Further solutions from the team resulted in:

Implementing sustainability on this unique and complex project was a challenge. While the initial sustainability goal of the Ardmore Readiness Center was to achieve LEED Silver Certification, the collaborative efforts of the entire team led the project to achieve LEED Gold Certification. While the owner was pleased with the results, the real winners are the building occupants who will have a healthy and energy-efficient space to work and train.



*The Ardmore Readiness Center was designed by GSB Architects & Interiors, constructed by CMSWillowbrook, and provided with mechanical, electrical, and plumbing engineering services by Garver Engineers. Entegry provided sustainability consulting, energy modeling, measurement and verification, building envelope testing, and indoor air quality testing services for this project.*



## SOLUTIONS

- » Low-mercury lighting and high-efficiency HVAC systems, saving 59% in energy costs per year over a comparable building of this size and use.
- » Low-flow fixtures throughout the center, reducing water use by 50% each year.
- » Low-emitting materials during construction to reduce the amount of harmful chemicals encountered by the construction crew and building occupants.
- » 590,000 square feet of open space for training and recreational purposes.



# Ardmore Readiness Center

## LEED 2009 New Construction

Project ID: 1000085297  
Status: Gold Certified  
Certification level: Gold  
Certification date: 09/21/2020

Attempted: 61, Denied: 0, Pending: 0, Awarded: 60 of 110 points

SUSTAINABLE SITES		11 OF 26	MATERIALS AND RESOURCES		4 OF 14
SSp1	Construction Activity Pollution Prevention	Y	MRp1	Storage and Collection of Recyclables	Y
SSc1	Site Selection	0 / 1	MRC1.1	Building Reuse-Maintain Existing Walls, Floors and Roof	0 / 3
SSc2	Development Density and Community Connectivity	0 / 5	MRC1.2	Building Reuse - Maintain 50% of Interior Non-Structural Elements	0 / 1
SSc3	Brownfield Redevelopment	0 / 1	MRC2	Construction Waste Mgmt	1 / 2
SSc4.1	Alternative Transportation-Public Transportation Access	0 / 6	MRC3	Materials Reuse	0 / 2
SSc4.2	Alternative Transportation-Bicycle Storage and Changing Rooms	1 / 1	MRC4	Recycled Content	1 / 2
SSc4.3	Alternative Transportation-Low-Emitting and Fuel-Efficient Vehicles	3 / 3	MRC5	Regional Materials	1 / 2
SSc4.4	Alternative Transportation-Parking Capacity	2 / 2	MRC6	Rapidly Renewable Materials	0 / 1
SSc5.1	Site Development-Protect or Restore Habitat	0 / 1	MRC7	Certified Wood	1 / 1
SSc5.2	Site Development-Maximize Open Space	1 / 1			
SSc6.1	Stormwater Design-Quantity Control	1 / 1	INDOOR ENVIRONMENTAL QUALITY		9 OF 15
SSc6.2	Stormwater Design-Quality Control	1 / 1	IEQp1	Minimum IAQ Performance	Y
SSc7.1	Heat Island Effect, Non-Roof	0 / 1	IEQp2	Environmental Tobacco Smoke (ETS) Control	Y
SSc7.2	Heat Island Effect-Roof	1 / 1	IEQc1	Outdoor Air Delivery Monitoring	1 / 1
SSc8	Light Pollution Reduction	1 / 1	IEQc2	Increased Ventilation	0 / 1
WATER EFFICIENCY		8 OF 10	IEQc3.1	Construction IAQ Mgmt Plan-During Construction	1 / 1
WEp1	Water Use Reduction-20% Reduction	Y	IEQc3.2	Construction IAQ Mgmt Plan-Before Occupancy	0 / 1
WEc1	Water Efficient Landscaping	4 / 4	IEQc4.1	Low-Emitting Materials-Adhesives and Sealants	1 / 1
WEc2	Innovative Wastewater Technologies	0 / 2	IEQc4.2	Low-Emitting Materials-Paints and Coatings	1 / 1
WEc3	Water Use Reduction	4 / 4	IEQc4.3	Low-Emitting Materials-Flooring Systems	1 / 1
ENERGY AND ATMOSPHERE		22 OF 35	IEQc4.4	Low-Emitting Materials-Composite Wood and Agrifiber Products	0 / 1
EAp1	Fundamental Commissioning of the Building Energy Systems	Y	IEQc5	Indoor Chemical and Pollutant Source Control	1 / 1
EAp2	Minimum Energy Performance	Y	IEQc6.1	Controllability of Systems-Lighting	1 / 1
EAp3	Fundamental Refrigerant Mgmt	Y	IEQc6.2	Controllability of Systems-Thermal Comfort	0 / 1
EAc1	Optimize Energy Performance	19 / 19	IEQc7.1	Thermal Comfort-Design	1 / 1
EAc2	On-Site Renewable Energy	0 / 7	IEQc7.2	Thermal Comfort-Verification	1 / 1
EAc3	Enhanced Commissioning	0 / 2	IEQc8.1	Daylight and Views-Daylight	0 / 1
EAc4	Enhanced Refrigerant Mgmt	0 / 2	IEQc8.2	Daylight and Views-Views	0 / 1
EAc5	Measurement and Verification	3 / 3	INNOVATION IN DESIGN		4 OF 6
EAc6	Green Power	0 / 2	IDc1.1	Reduced Mercury in Lighting	1 / 1
			IDc1.1	Innovation in Design	0 / 1
			IDc1.2	Innovation in Design	0 / 1
			IDc1.2	Innovation in Design	0 / 1
			IDc1.3	WEc3 - Water Use Reduction	1 / 1
			IDc1.3	Innovation in Design	0 / 1
			IDc1.4	SSc5.2 Maximize Open Space	1 / 1
			IDc1.4	Innovation in Design	0 / 1
			IDc1.5	Innovation in Design	0 / 1
			IDc1.5	Innovation in Design	0 / 1
			IDc2	LEED® Accredited Professional	1 / 1
REGIONAL PRIORITY CREDITS		2 OF 4	TOTAL		60 OF 110
SSc6.1	Stormwater Design-Quantity Control	1 / 1			
SSc6.2	Stormwater Design-Quality Control	1 / 1			

40-49 Points  
CERTIFIED

50-59 Points  
SILVER

60-79 Points  
GOLD

80+ Points  
PLATINUM

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Entegrity is a sustainability and energy services company specializing in the implementation of energy conservation and renewable energy projects. Entegrity is uniquely qualified to deliver innovative and sustainable solutions to Optimize Building Performance. We help our clients realize long-term energy savings by focusing on their needs: selecting the most cost-effective scope, contract structure, and financing strategy available to them. Our comprehensive service package includes energy savings performance contracting, commissioning, energy modeling, building testing, lighting solutions, renewable energy, water conservation, and sustainability consulting.