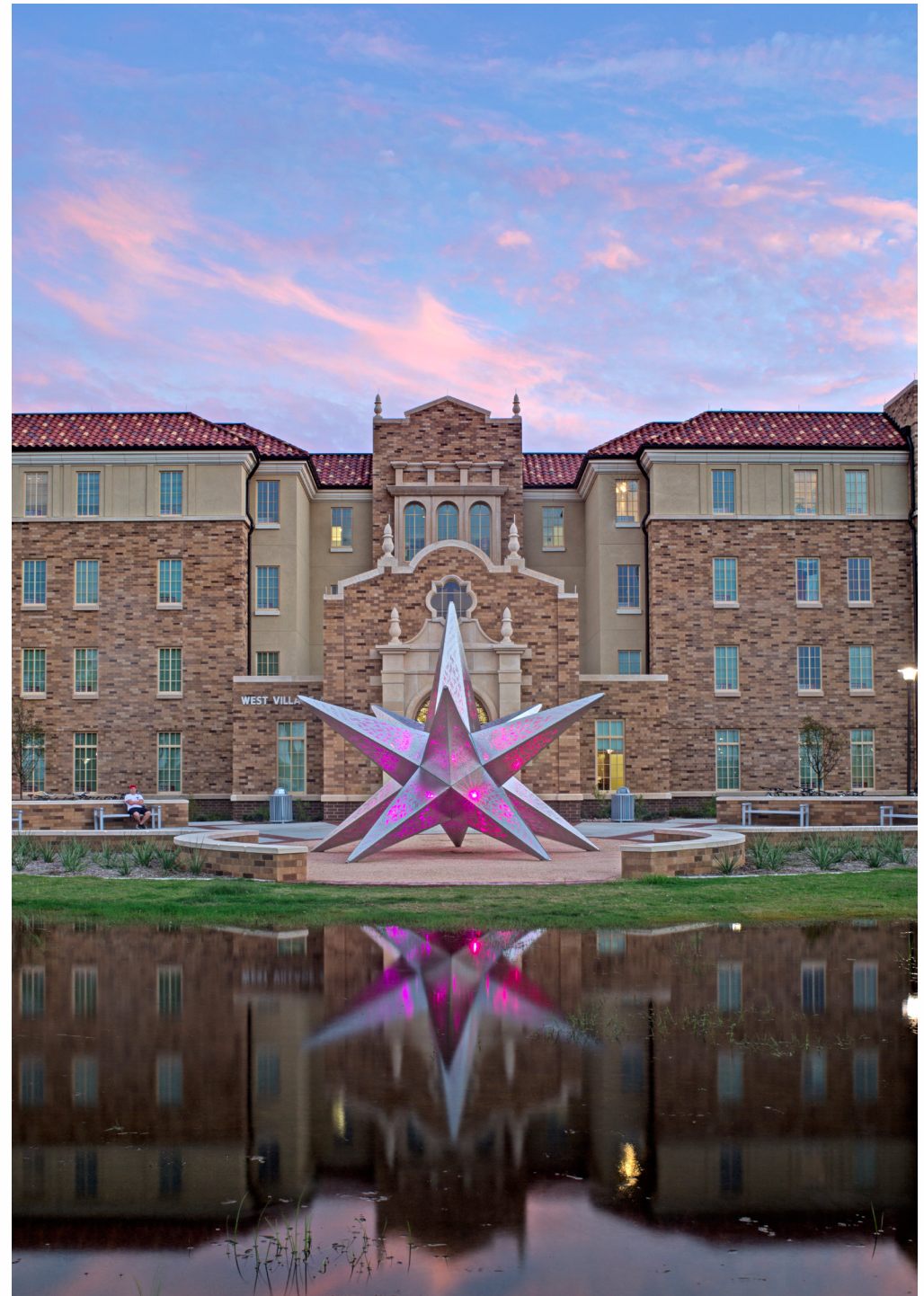


TTU Green Standards

"For our rapidly expanding on-campus student residence halls, Texas Tech University felt strongly that LEED guidelines and practices would be employed. This new 457 bed, 234,500 square foot residence hall will promote a healthy and pleasant environment for our resident students. These design practices also address the university's goals to conserve resources and provide energy efficiency."

-Sean Duggan
Managing Director, Texas Tech Student Housing



Healthy Environment

The University and design team endeavored to provide a healthy environment for the students at this residence hall. Construction activities, practices and materials were carefully considered to prevent construction debris/contamination from being introduced into the building. Ventilation of the building was maintained, and filters were replaced both during construction and prior to occupancy to ensure a clean indoor environment.

Building materials and finishes were selected to avoid introducing harmful or irritating chemicals into the indoor environment. Daylighting was provided at all living spaces and public gathering spaces to provide a bright and lively environment. Ventilation in excess of code requirements provides clean, healthy air, and the mechanical systems were designed to maintain optimal temperature and humidity ranges.

Privacy in a residential environment is critical. To that end, properly designed acoustical walls, including Insulated Concrete Form (ICF) walls at corridors and exterior walls, were utilized to reduce sound transmission.

Diverse outdoor spaces and landscaping were designed for relaxing, recreation and study. A historic tree grove was incorporated into the site planning.

The Housing Department staff has committed to using safe cleaning materials and chemicals in order to provide a safe and healthy environment for all who enter the buildings. Texas Tech University Student Housing has developed Green Cleaning Standards and Procedures for use on all residence halls.



Environmental Impact

Construction waste was recycled, and therefore diverted from landfills. Materials sourced within a 500 mile radius were prioritized to help minimize transportation fuel use and cost.

High efficiency plumbing fixtures help minimize use of water. Native, drought tolerant vegetation was selected to further reduce water use while providing shading for the residents and buildings.

LED fixtures were used for exterior lighting to minimize energy usage and provide a safe, well-lit outdoor environment. Lighting for interior public spaces was provided with occupancy sensors to minimize energy use.



Green Features

1. Diverse landscape spaces for recreation, relaxation and study.
2. High efficiency plumbing.
3. Low VOC finishes and materials.
4. Low VOC furniture.
5. Green housekeeping.
6. Recycled construction materials.
7. Locally sourced materials – 500 mile radius.
8. Light colored pavement to minimize heat island effect.
9. Light colored roofing to maximize heat reflectivity.
10. Construction debris recycling.
11. Existing parking used to minimize paving.
12. Water retention and detention areas.
13. Ozone-friendly refrigerant system
14. Exterior LED lighting.





LEED 2009 for New Construction and Major Renovations
Project Checklist

Texas Tech University New Student Housing Complex
28-Jan-15

15 **11** **Sustainable Sites** **Possible Points: 26**

Y	?	N			
Y			Prereq 1	Construction Activity Pollution Prevention	
1			Credit 1	Site Selection	1
		5	Credit 2	Development Density and Community Connectivity	5
		1	Credit 3	Brownfield Redevelopment	1
6			Credit 4.1	Alternative Transportation-Public Transportation Access	6
		1	Credit 4.2	Alternative Transportation-Bicycle Storage and Changing Rooms	1
		3	Credit 4.3	Alternative Transportation-Low-Emitting and Fuel-Efficient Vehicles	3
2			Credit 4.4	Alternative Transportation-Parking Capacity	2
		1	Credit 5.1	Site Development-Protect or Restore Habitat	1
1			Credit 5.2	Site Development-Maximize Open Space	1
1			Credit 6.1	Stormwater Design-Quantity Control	1
1			Credit 6.2	Stormwater Design-Quality Control	1
1			Credit 7.1	Heat Island Effect-Non-Roof	1
1			Credit 7.2	Heat Island Effect-Roof	1
1			Credit 8	Light Pollution Reduction	1

5 **5** **Water Efficiency** **Possible Points: 10**

Y	?	N			
Y			Prereq 1	Water Use Reduction - 20% Reduction	
2		2	Credit 1	Water Efficient Landscaping	2 to 4
		2	Credit 2	Innovative Wastewater Technologies	2
3		1	Credit 3	Water use Reduction	2 to 4

6 **29** **Energy and Atmosphere** **Possible Points: 35**

Y	?	N			
Y			Prereq 1	Fundamental Commissioning of Building Energy Systems	
Y			Prereq 2	Minimum Energy Performance	
Y			Prereq 3	Fundamental Refrigerant Management	
6		13	Credit 1	Optimize Energy Performance	1 to 19
		7	Credit 2	On-Site Renewable Energy	1 to 7
		2	Credit 3	Enhanced Commissioning	2
		2	Credit 4	Enhanced Refrigerant Management	2
		3	Credit 5	Measurement and Verification	3
		2	Credit 6	Green Power	2

3 **11** **Materials and Resources** **Possible Points: 14**

Y	?	N			
Y			Prereq 1	Storage and Collection of Recyclables	
		3	Credit 1.1	Building Reuse - Maintain Existing Walls, Floors, and Roof	1 to 3
		1	Credit 1.2	Building Reuse - Maintain 50% of Interior Non-Structural Elements	1
		2	Credit 2	Construction Waste Management	1 to 2
		2	Credit 3	Materials Reuse	1 to 2

Materials and Resources, Continued

Y	?	N			
1		1	Credit 4	Recycled Content	1 to 2
2			Credit 5	Regional Materials	1 to 2
		1	Credit 6	Rapidly Renewable Materials	1
		1	Credit 7	Certified Wood	1

8 **7** **Indoor Environmental Quality** **Possible Points: 15**

Y	?	N			
Y			Prereq 1	Minimum Indoor Air Quality Performance	
Y			Prereq 2	Environmental Tobacco Smoke (ETS) Control	
		1	Credit 1	Outdoor Air Delivery Monitoring	1
		1	Credit 2	Increased Ventilation	1
		1	Credit 3.1	Construction IAQ Management Plan - During Construction	1
		1	Credit 3.2	Construction IAQ Management Plan - Before Occupancy	1
1			Credit 4.1	Low-Emitting Materials - Adhesives and Sealants	1
1			Credit 4.2	Low-Emitting Materials - Paints and Coatings	1
1			Credit 4.3	Low-Emitting Materials - Flooring Systems	1
		1	Credit 4.4	Low-Emitting Materials - Composite Wood and Agrifiber Products	1
1			Credit 5	Indoor Chemical and Pollutant Source Control	1
1			Credit 6.1	Controllability of Systems - Lighting	1
		1	Credit 6.2	Controllability of Systems - Thermal Comfort	1
1			Credit 7.1	Thermal Comfort - Design	1
1			Credit 7.2	Thermal Comfort - Verification	1
		1	Credit 8.1	Daylight and Views - Daylight	1
1			Credit 8.2	Daylight and Views - Views	1

6 **6** **Innovation and Design Process** **Possible Points: 6**

Y	?	N			
1			Credit 1.1	Green Housekeeping	1
1			Credit 1.2	Exemplary performance, SSc5.2 Maximize Open Space	1
1			Credit 1.3	Exemplary performance, IEQc8.2 Daylight & Views	1
1			Credit 1.4	Educational Program	1
1			Credit 1.5	Exemplary performance, SSc4.1 Public Transportation Access	1
1			Credit 2	LEED Accredited Professional	1

3 **3** **Regional Priority Credits** **Possible Points: 6**

Y	?	N			
		1	Credit 1.1	Regional Priority: On Site Renewable Energy	1
		1	Credit 1.2	Regional Priority: Protect or Restore Habitat	1
1			Credit 1.3	Regional Priority: Maximize Open Space	1
1			Credit 1.4	Regional Priority: Stormwater Design - Quality Control	1
1			Credit 1.5	Regional Priority: Water Efficient Landscaping	1
		1	Credit 1.6	Regional Priority: Innovative Wastewater Technologies	1

46 **66** **Total** **Possible Points: 112**

Certified 40 to 49 points Silver 50 to 59 points Gold 60 to 79 points Platinum 80 to 110 points

PROJECT PROFILE



**TEXAS TECH UNIVERSITY
NEW STUDENT HOUSING COMPLEX
WEST VILLAGE 'A' & 'B'
LUBBOCK, TX**

30% total water savings

50% construction waste diverted

22% optimized energy performance

LEED® Facts

Texas Tech University
New Student Housing Complex
Lubbock, TX

LEED® for New Construction
Certification award date TBD

Certified 46* TBD

Sustainable Sites 17/26 TBD

Water Efficiency 6/10 TBD

Energy & Atmosphere 6/35 TBD

Materials & Resources 3/14 TBD

Indoor Environmental
Quality 8/15 TBD

Innovation & Design 6/6 TBD

*out of a possible 110 points

The information provided is based on that stated in the LEED® project certification submission. USGBC and Chapters do not warrant or represent the accuracy of this information. Each building's actual performance is based on its unique design, construction, operation, and maintenance. Energy efficiency and sustainable results will vary.

PROJECT PROFILE

**TEXAS TECH UNIVERSITY
NEW STUDENT HOUSING COMPLEX**

Sustainable Living Greet Texas Tech Students

TTU's new student housing showcases university green initiatives

PROJECT BACKGROUND

Texas Tech University's "West Village" student housing complex is slated to open in the fall of 2014. Students will be greeted with a new on-campus housing complex designed to accommodate a total of 455 students and one professional staff member in architecturally innovative and sustainably-focused residence halls. The complex is comprised of two, 4-story halls: "Building A" to the west (147,869 ft²) and "Building B" to the east (86,632 ft²). Both residence halls will provide apartment-style plans for residents in 4-bedroom, 2-bedroom and single occupancy options. The program includes study rooms, laundry facilities, conference rooms, a hospitality area with food service, and gracious common areas that encourage students to interact and collaborate. The design of both buildings bolsters Texas Tech's sustainability initiative of implementing LEED or green building practices for all new construction on campus.

ENHANCING THE STUDENT LIFE EXPERIENCE

Dedicated to the well-being of its residents, the project showcases sustainable initiatives and strategies. Energy-saving measures, stormwater management, and innovative materials are employed throughout the design. The complex is expected to consume 25% less energy than typical residence halls. Potable water use is to be reduced to 70% by including campus standards of low-flow plumbing fixtures, and water for landscaping will be reduced by half.

Additionally, the New Student Housing Complex utilizes ICF (Insulated Concrete Form) construction. ICF technology is a highly energy efficient building system that is structurally tough and delivers a superior fire resistance and improved sound reduction qualities, all of which are ideal for residence hall construction. Manufacturers claim typical ICF structures require approximately 44% less energy to heat and 32% less energy to cool than conventional wall construction.

Providing comfortable, daylit spaces with a high level of indoor environmental quality was key to supporting the academic program and facilitating students' needs. Additionally, the project incorporated low-emitting materials for paints, flooring systems, and sealants throughout each hall. Construction and Pre-Occupancy Indoor Air Quality Management Programs ensure environmental safety for all residents while controllability of lighting and thermal comfort allow students to customize their environments and reduce energy consumption. The complex's prominent location on the edge of the campus center allows connectivity and the utilization of the adjacent open space. Four bus routes and multiple stops serve the immediate area while existing campus parking lots eliminated the need to provide any new parking.

ABOUT TEXAS TECH UNIVERSITY "WEST VILLAGE" STUDENT HOUSING COMPLEX

Texas Tech University "West Village" is located east of Knoxville Avenue in the triangle bounded by 19th Street and Texas Tech Parkway in Lubbock, TX. The two communities are connected by a pedestrian walkway, courtyards and green zones. The complex will serve as the initial catalyst to that area of campus development, and will later be infused with mixed-use to the west of Knoxville Avenue and additional housing (of approximately 500 units) north of the existing grove and west of Building A. The existing parking lot to the north is slated for removal in the next stage of development.

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"We have worked hard to ensure we are more sustainable than ever before . . . Texas Tech is committed to provide a green campus for our current students, faculty and staff as well as for future generations to enjoy this beautiful university."

M. Duane Nellis
Texas Tech University President



Owner: The Texas Tech University System
Architect-of-Record: Barnes Gromatzky Kosarek Architects
Design Architect: Mackey Mitchell Architects
General Contractor: The Whiting-Turning Contracting Company
Structural Engineer: Datum Gojer Engineers
MEP Engineer: Chambers Engineering
Civil Engineer: Hugo Reed & Associates
andscape Design: Coleman & Associates
IT/AV/Acoustics/Security: 4B Technology
Sustainable Design: Barnes Gromatzky Kosarek Architects, Inc.
Commissioning Agent: Campos Engineering
Food Services: Worrell Design Group
Photography: Alain Jaramillo
Project Size: 234,500 square feet
Total Construction Cost: \$54,800,000

ABOUT LEED

The LEED® Green Building Rating System™ is the national benchmark for the design, construction, and operations of high-performance green buildings. Visit the U.S. Green Building Council's web site at www.usgbc.org to learn more about LEED and green building.



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