



Project 2 LEED Platinum Neighborhood Development: Elizabethtown University College of Architecture, Art, and Sustainability

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Project Overview and Outcomes

The purpose of this project is to allow for a branch of the current Elizabethtown College and build an architecture/arts focused campus. This development will bring a thoughtfully designed, sustainable academic and residential community for future students and participants in the Elizabethtown University College of Architecture, Art, and Sustainability. Main prioritizations are built into the layout of the campus as it takes into consideration environmental responsibility and the experiences of students as they need a safe location supporting learning and their overall well-being. The layout of the college took careful and deep thought when designing.

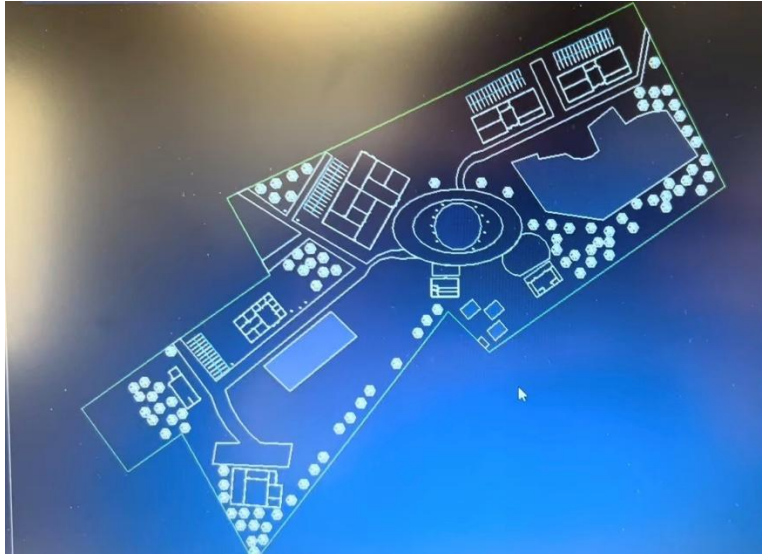


Figure 1: Original full site plan for the college of architecture, art, and sustainability.

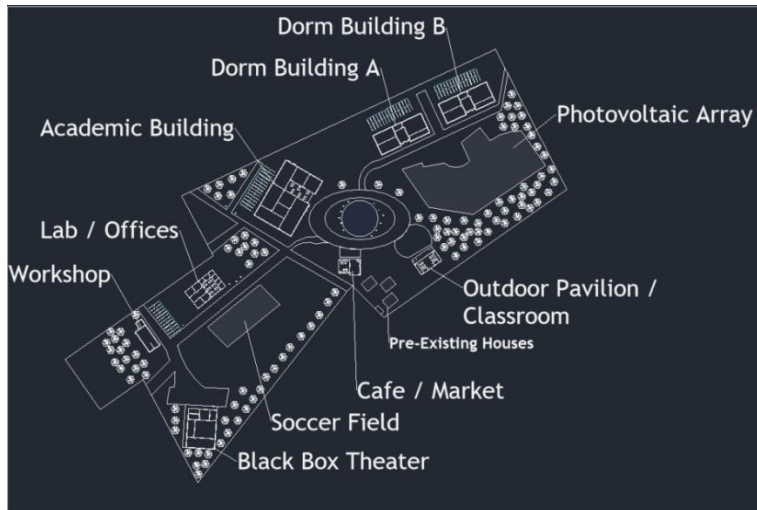


Figure 2: Final (labeled) full site plan for the college of architecture, art, and sustainability.

At the center of the campus, there is a water feature (most likely to be a water fountain) and a pond with benches surrounding it. Having this at the center of the campus will create an outdoor gathering area for the college community to host varying events and even just to relax. Close to the pond is a pavilion, which provides an area for shade coverage on sunny days and possible cover if inclement weather occurs. The pavilion (Appendix A6) faces north so there is minimal sunlight preventing the location from being comfortable during the day.

The rest of the campus surrounds this water feature with each building carefully placed to maximize natural light and energy efficiency. Two dorm facilities (Appendix A4) are on the upper right side of the site, both facing south to take advantage of the daily sunlight. Having

natural light availability eliminates most of the usage of artificial lighting and enhances interior comfort.

To the upper left of the water feature is the academic building (Appendix A2), also facing south. Once again, this placement allows for distributed natural light throughout the classrooms and study spaces. This building placement is seen at the laboratory (Appendix A5) as well because this area needs stable lighting just like the academic building.

On the other hand, the workshop (Appendix A7), located at the bottom left of campus, faces east unlike the prior two learning zones. This building rotation was deemed necessary because minimal glares were needed to ensure safe work conditions. Minimizing glares enhances safety and visibility for hands-on work.

The café (Appendix A3) also faces east, but this was done to allow for early morning sunlight. Having light sunlight in the morning is known to increase people’s moods and create an inviting feeling, which is a good way for the students, faculty, and visitors to start their day. Lastly, the black box theater (Appendix A1) is located at the bottom left corner of campus, and the building is positioned facing northeast. This prevents sunlight from impacting the area, which is a priority for future performances or events held at this location.

Each of the buildings designed for this new campus has been explained and the reasoning for positioning has been provided. Now it’s time to discuss the psychrometric chart based on the different comfort zones on the newly designed campus.

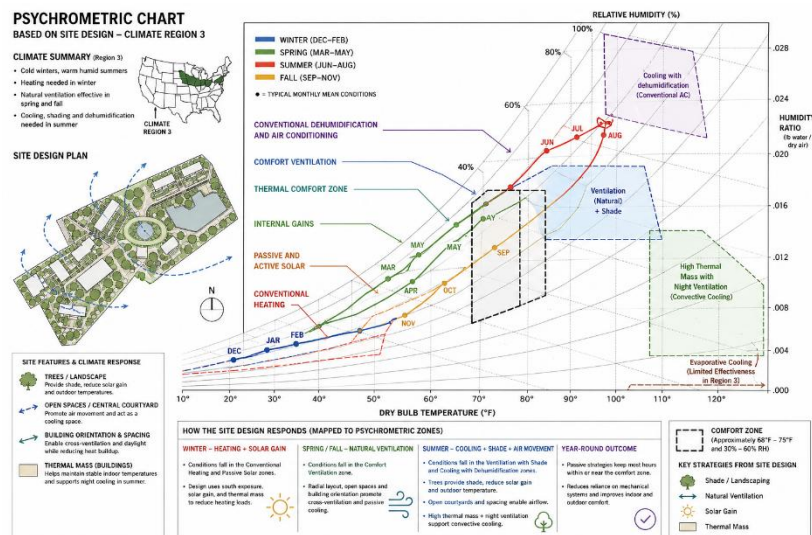


Figure 3: Psychrometric chart for Climate Region 3 showing seasonal climate conditions and how to design strategies like ventilation, shading, thermal mass, and HVAC shift indoor environments toward the thermal comfort zone.

The psychrometric chart shows how temperature and humidity change throughout the year and how that compares to where people feel comfortable. The box in the middle is the typical comfort zone, and the lines show the seasonal conditions. In this region, winter is way too cold, summer is too hot and humid, and spring/fall is the closest to being comfortable naturally.

The main idea is that this comfort zone isn't fixed, it moves depending on the building. The standard zone assumes things like low air movement, normal clothing, and not much impact from surrounding surfaces, but real buildings don't follow those perfectly. For example, if you increase air movement with ventilation or fans, people can stay comfortable at higher temperatures, so the zone shifts to the right. Shading and cooler surfaces do the same thing, while direct sun or hot materials make it feel warmer and shift the zone the other way.

Humidity also plays a big role. In the summer, it's so humid that airflow alone isn't enough, which is why you need dehumidification or AC. Things like thermal mass and night cooling help balance temperature swings, keeping the building closer to comfort without always relying on mechanical systems.

Overall, instead of just trying to hit a fixed comfort zone, buildings change where that zone is based on design choices like airflow, shading, materials, and systems.



Figure 4: Architectural “Detail” Referencing SWEETS Catalog and AIA Graphics Standards.

Sustainability is the driving force behind this campus development. The property the land sits on is slightly sloped so this will allow for proper drainage during inclement weather. The LEED Neighborhood Development Plan for the Elizabethtown University College of Architecture, Art, and Sustainability comes in at 73 points, which places the project firmly in the LEED Gold range. All prerequisites across Smart Location & Linkage, Neighborhood Pattern & Design, and Green Infrastructure & Buildings are met, and the project performs

especially well in areas like walkability, compact development, rainwater management, and renewable energy. The design earned full points in both the Innovation and Regional Priority categories. While there are still a few credits left on the table like mixed-use development and some water and energy optimizations, the overall design demonstrates a strong, well-rounded approach to sustainable neighborhood planning.

LEED v4 for Neighborhood Development Plan Project Checklist				Project Name: Project 1 LEED Platinum Neighborhood Development: Elizabethtown University College of Architecture, Art, and Sustainability Date: May 6th, 2026				
Yes	?	No		Yes	?	No		
Smart Location & Linkage 28				Green Infrastructure & Buildings 31				
Y			Prereq Smart Location Required	Y			Prereq Certified Green Building Required	
Y			Prereq Impaired Species and Ecological Communities Required	Y			Prereq Minimum Building Energy Performance Required	
Y			Prereq Wetland and Water Body Conservation Required	Y			Prereq Indoor Water Use Reduction Required	
Y			Prereq Agricultural Land Conservation Required	Y			Prereq Construction Activity Pollution Prevention Required	
Y			Prereq Floodplain Avoidance Required	U			Credit Certified Green Buildings 5	
1			Credit Preferred Locations 10	2			Credit Optimize Building Energy Performance 2	
1			Credit Brownfield Remediation 2	1			Credit Indoor Water Use Reduction 1	
5			Credit Access to Quality Transit 7	2			Credit Outdoor Water Use Reduction 2	
1			Credit Bicycle Facilities 2	1		0	Credit Building Reuse 1	
2			Credit Housing and Jobs Proximity 3	1			Credit Historic Resource Preservation and Adaptive Reuse 2	
1			Credit Slope Protection 1	1			Credit Minimized Site Disturbance 1	
1			Credit Site Design for Habitat or Wetland and Water Body Conservation 1	3			Credit Rainwater Management 4	
1			Credit Restoration of Habitat or Wetlands and Water Bodies 1	1			Credit Heat Island Reduction 1	
1			Credit Long Term Conservation Management of Habitat or Wetlands and Water Bodies 1	1			Credit Solar Orientation 1	
Neighborhood Pattern & Design 41				Innovation & Design Process 6				
Y			Prereq Walkable Streets Required	1			Credit Innovation 5	
Y			Prereq Compact Development Required	1			Credit LEED Accredited Professional 1	
Y			Prereq Connected and Open Community Required	1			Regional Priority Credits 4	
1			Credit Walkable Streets 9	1			Credit Regional Priority Credit: Region Defined 1	
5			Credit Compact Development 6	1			Credit Regional Priority Credit: Region Defined 1	
2			Credit Mixed Use Neighborhoods 4	1			Credit Regional Priority Credit: Region Defined 1	
1			Credit Housing Types and Affordability 7	1			Credit Regional Priority Credit: Region Defined 1	
1			Credit Reduced Parking Footprint 1	1			Credit Regional Priority Credit: Region Defined 1	
2			Credit Connected and Open Community 1	1				
1			Credit Transit Facilities 2	PROJECT TOTALS (Certification estimates) 110				
1			Credit Transportation Demand Management 1	Certified: 40-49 points, Silver: 50-59 points, Gold: 60-79 points, Platinum: 80+ points				
1			Credit Access to Civic & Public Space 1					
1			Credit Access to Recreation Facilities 1					
1			Credit Visibility and Universal Design 1					
1			Credit Community Outreach and Involvement 2					
1			Credit Local Food Production 1					
2			Credit Tree-Lined and Shaded Streetscapes 2					
1			Credit Neighborhood Schools 1					

Figure 5: LEED scorecard for our development plan.

Overall, this development creates a balanced, forward-thinking campus extension that integrates environmental design, functional planning, and human-centered spaces to enforce a sustainable academic community.

Appendix A – REVIT Building Designs

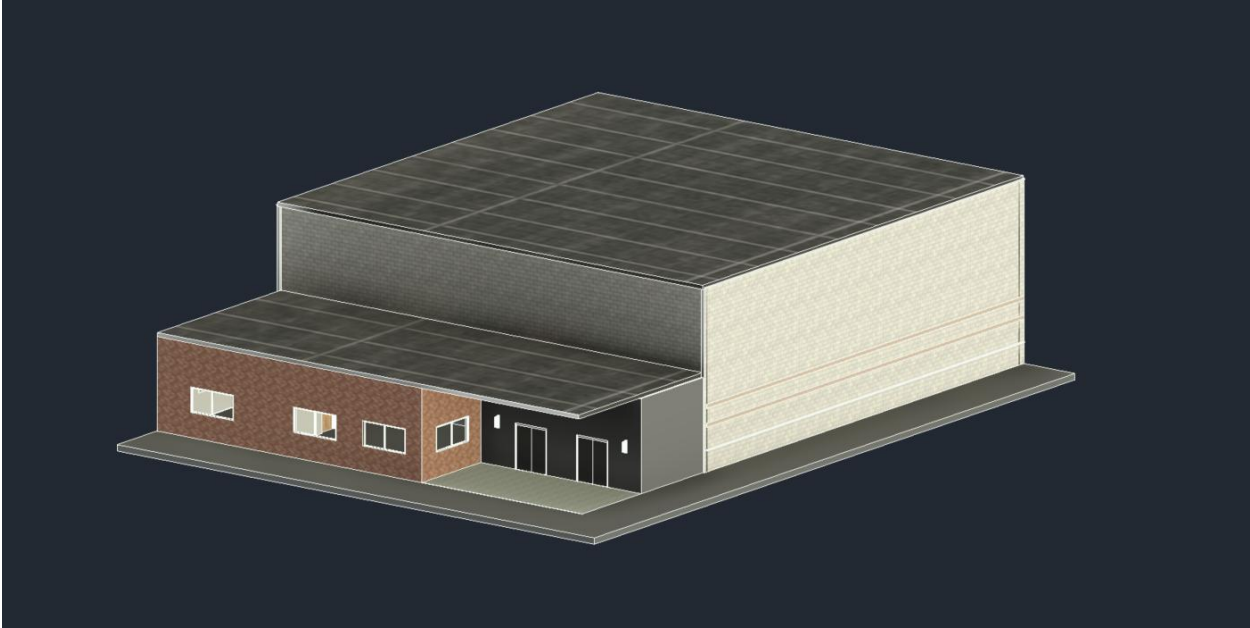


Figure A1: Black Box Theater



Figure A2: Academic Building



Figure A3: Café/Mini-Market

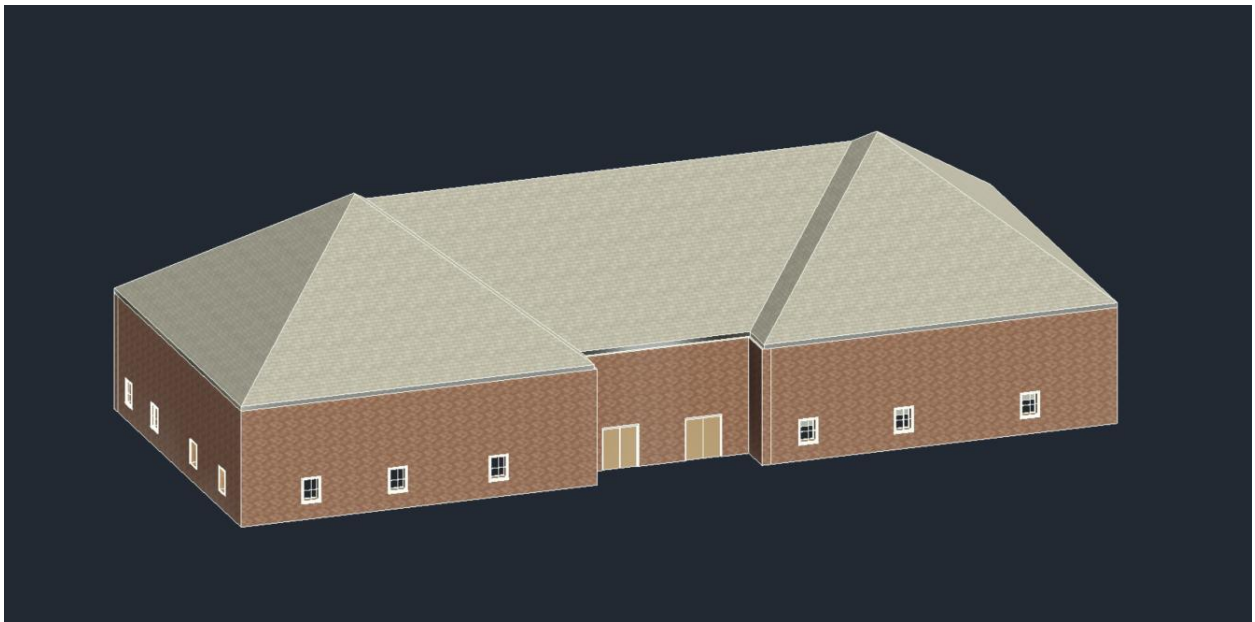


Figure A4: Student Dorm Building



Figure A5: Laboratory/Offices



Figure A6: Outdoor Classroom/Pavilion

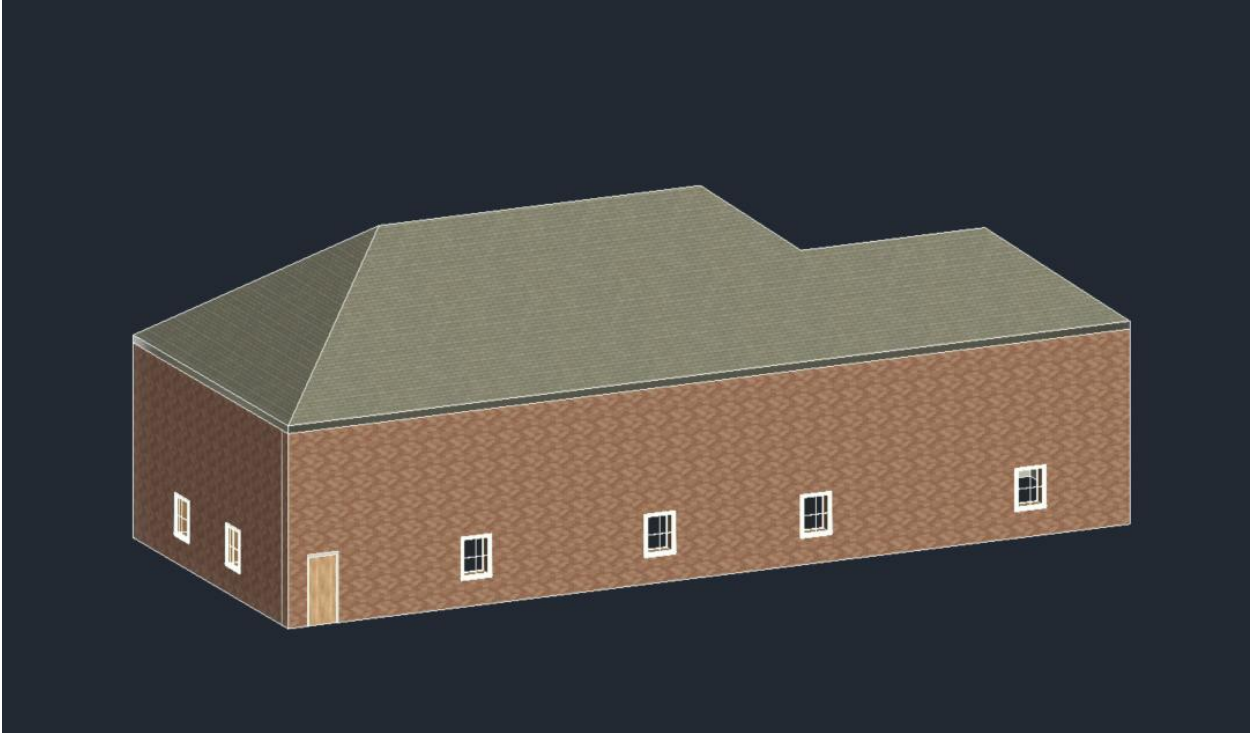


Figure A7: Workshop