

Snapshot

ARCHITECTURAL
ENGINEERING

21

Faculty

4

Disciplinary
Options

Construction
Lighting/Electrical
Mechanical
Structural



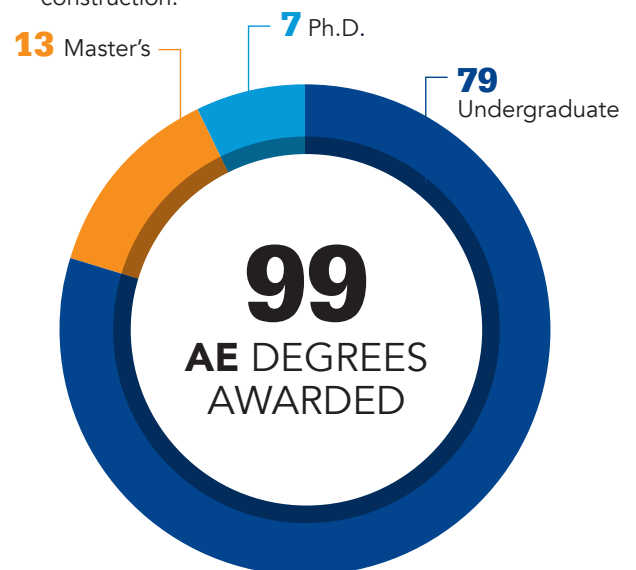
Our Mission

The Penn State Department of Architectural Engineering (AE) unites the scientific principles from structural, mechanical, electrical, lighting, acoustical, and construction engineering in order to equip students to conceptualize, design, construct, operate, and maintain buildings and building systems. This interdisciplinary approach is necessary to respond to the most urgent societal and environmental challenges emerging from urbanization across the globe.

Architectural engineers add value to society by engineering high-performance buildings that are sustainable, resilient, healthy, and economically viable—ensuring the safety, health, comfort, and productivity of building occupants while complementing the architectural design. Both undergraduate and graduate degree programs involve extensive experiences in engineering and architectural design, and graduates of this major are widely considered to be creative systems engineers.

Degrees Awarded [2022-23]

Typically, the department has around **350 undergraduate students** each year, including those in pre-major coursework. Approximate degrees awarded annually, not including 13 minors earned in residential construction:



140

[COMPANIES]

attend the AE Career & Internship Fair, resulting in virtually 100%* job placement by spring graduation.

*Percentage derived from undergraduate students actively seeking employment in the building industry.



\$7

[MILLION]

2022 Research
Expenditures

*Includes externally and internally funded projects, subcontracts, and capital improvements.

Research Labs and Facilities

- Building Components and Envelope Research Laboratory
- Building Structures and Materials Laboratory
- Environmental Chamber
- Immersive Construction Laboratory
- Indoor Aerosol Laboratory
- Indoor Environment Laboratory
- Lighting Laboratory
- MorningStar Solar Home
- Photometric Laboratory
- Visualization, Automation and Robotics in Construction Laboratory

Student Organizations

- Architectural Engineering Graduate Student Association (AE GSA)
- Alpha Rho Chi (APX)
- American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)
- Design-Build Institute of America (DBIA)
- Earthquake Engineering Research Institute (EERI)
- Illuminating Engineering Society (IES)
- Mechanical Contractors Association of America (MCAA)
- National Association of Home Builders (NAHB)
- National Electrical Contracting Association (NECA)
- Structural Engineers Association of Pennsylvania (SEAoP)
- Student Society of Architectural Engineers (SSAE)*
- Student Society of the Partnership for Achieving Construction Excellence (S:PACE)
- Tau Beta Pi
- Theme Park Engineering Group (TPEG)
- United States Green Building Council (USGBC)

*Penn State student chapter of the Architectural Engineering Institute



About **50%** of our undergraduate students study abroad in AE-specific department programs in China, Honduras, and Italy.



Degrees and Minors Offered

Bachelor of Architectural Engineering (B.A.E.)

Integrated Bachelor and Master of Architectural Engineering (B.A.E./M.A.E.)

Integrated Bachelor of Architectural Engineering and Master of Science (B.A.E./M.S.)

Master of Engineering in Architectural Engineering (M.Eng.)

Master of Science in Architectural Engineering (M.S.)

Doctor of Philosophy in Architectural Engineering (Ph.D.)

Minor in Residential Construction



Research Areas

Automation, Robotics, and Digital Twins in Construction

Building Energy Solutions

Engineering Education

High-Performance Building Materials, Structural Systems, and Envelopes

Indoor Environmental Quality, Human Health, and Productivity

Modeling, Simulation, and Diagnostics Under Uncertainty

Smart and Resilient Cities



Architectural Engineering Institute (AEI) Student Design Competition

The AEI Student Design Competition is an annual design competition specifically for architectural engineering programs to highlight and showcase the value of collaboration, competition, and peer review. The competition is sponsored by the Architectural Engineering Institute of American Society of Civil Engineers.

Since the competition's inception in 2010:

- Twenty-two Penn State AE teams have competed
- Penn State AE has earned six first-place finishes and four second-place finishes in the building integration category, the highest honor awarded at the competition.
- Penn State AE has won 66 total awards across the six different competition categories.

ae.psu.edu

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PennState
College of Engineering

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