DREXEL UNIVERSITY

Civil, Architectural, and Environmental Engineering

College of Engineering

Open House
August 16, 2020

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The Drexel Difference

- 4 and 5 year plans of undergraduate study available (1 and 3 co-ops)
- Accelerated degrees and minors possible
- 32 faculty in the department with experience in both research and industry
- Undergraduate research opportunities
- Hands-on experience in dynamic urban environment

The CAEE Difference: How we differ from other engineering fields

- Our solutions must last a long time, often with little maintenance
  - Issues of sustainability and resilience become dominant
- The problems are often public sector, or strongly influenced by public sector entities (e.g., laws, codes, …)
  - Need to be very good at written and verbal interactions with diverse parties
- Our solutions must perform well under highly variable influences of the natural environment
- Our solutions are often “one off” not mass produced

What do they do?

Civil Engineers

Architectural Engineers

Environmental Engineers

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Civil Engineers use technical knowledge to make an infrastructure project work

- Design physical aspects, policies and strategies pertaining to large infrastructure
- Analyze reports, maps, and other data to plan projects
- Test soils and building materials for strength and durability to determine the strength of foundations
- Use design software to plan and design
- Apply economic principles to assess feasibility
- Work with government and the public to get designs and strategies accepted and implemented

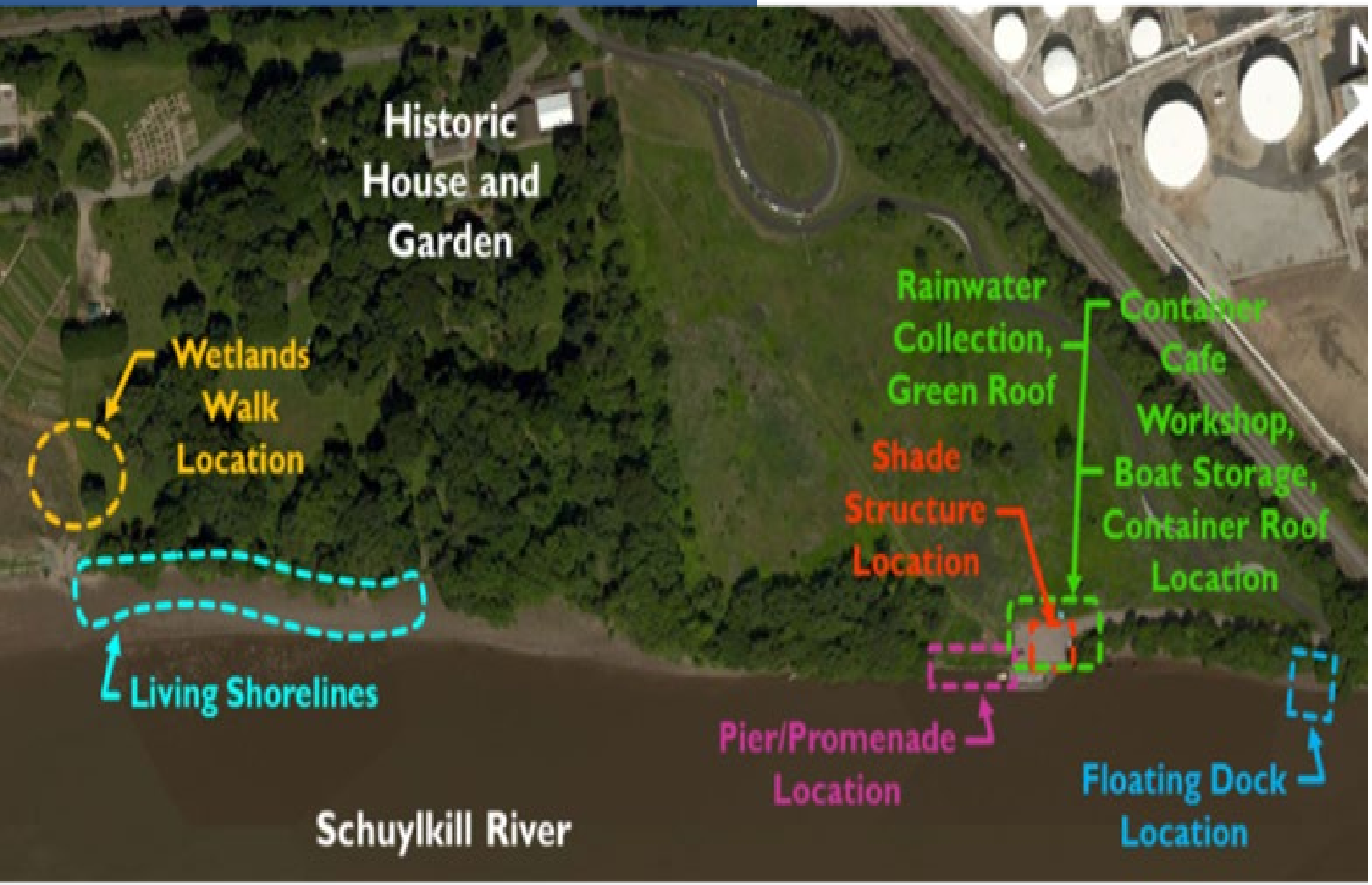
Architectural Engineers design buildings that work

- Specialize in the planning, design, construction, and operation of engineered systems for different kinds of buildings
- Understand building materials, foundations, structural design, environmental systems, building codes, and building operations
- Understand how to keep buildings comfortable and healthful for occupants

Environmental Engineers design systems, processes, and policies that enable humans to co-exist more sustainably with the environment

- Characterize how actions affect environmental and human health
- Design ways to avoid and reduce adverse impacts
- Design facilities to mitigate impacts
- Monitor progress of environmental improvement programs
- Assess industrial and municipal facilities and programs to ensure compliance with environmental regulations

A wide range of academic offerings



BS Program Majors

- **Architectural Engineering**
  - Concentrations in Mechanical (HVAC), Structural, and Digital Building
- **Civil Engineering**
  - Elective sequences in structures, geotechnical, water resources, construction management and transportation
- **Environmental Engineering**
  - Elective sequences in water & waste treatment, air quality and treatment, biological systems

All majors allow students to take electives in Sustainability

Students have the opportunity to pursue a dual degree and do not declare their major until end of freshman year.

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BS/MS Program

- Earn your bachelor's and master's degrees in 5 years
- Students can apply for this option when they are between 90-120 credits

Sample Topics in Sustainability

- Green infrastructure and design
- Indoor and outdoor air quality
- Building energy efficiency and intelligent building design
- Sustainable construction materials and recycled materials in geotechnics
- Sustainable infrastructure design and maintenance
- Renewable energy and biofuels
- Community outreach, environmental systems, and environmental health

Freshman Engineering Experience

- Educate students about engineering departments and facilities
- Exposure to engineering software packages
- Exposure to fundamental engineering concepts

Sample Projects

- Tacony-Palmyra Bridge Replacement
- Green Infrastructure for Stormwater Runoff
- Geosynthetics Reinforced Retaining Structures
- Bioengineering the Built Environment

Senior Design Objectives

- Simulate a professional work environment
- Provide experience with working in a group on an open-ended problem
- Develop information gathering and communication skills

Sample Projects

- Biogas Production in Anaerobic Digestion
- Schuylkill River Hub at Bartram's Garden
- Design for a Community Development Center located in Zambia
- Transportation design for an Amazon Distribution Center

Test drive your career with cooperative education

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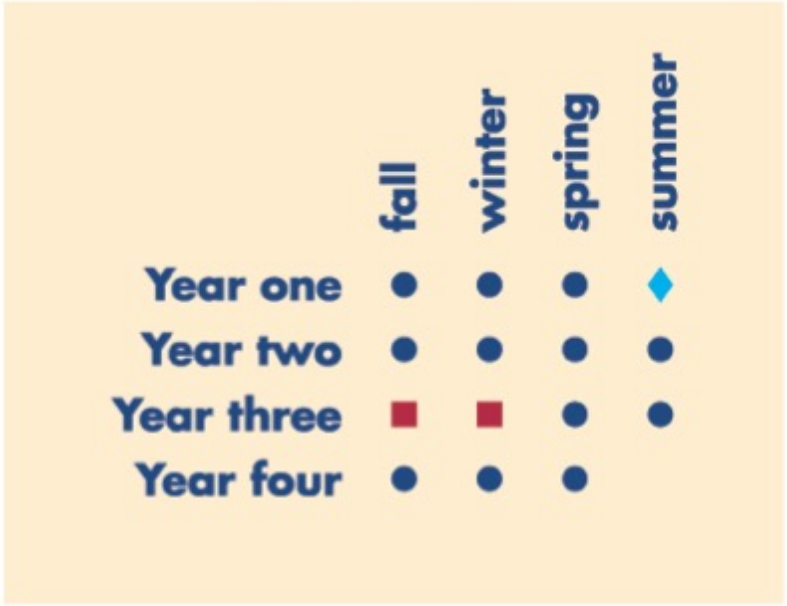
Cooperative Education (Co-op)

- Explore a potential career
- Enhance the academic experience
- Network with world leaders of today
- Create a stand-out résumé
- Refine interview skills
- Many co-op positions are paid
- Steinbright Career Development Center guides students from co-op to career

Co-op Cycles: Four-Year and Five-Year Programs

One Co-op Option (Four Years)



Three Co-op Option (Five Years)

Co-op Cycle Key:

- On-campus study
- Co-op experience
- Vacation

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Where do you want to work today?

EWING COLE

LOCKHEED MARTIN

Exelon.

SUNOCO

INTECH
CONTRACTORS • CONSTRUCTION MANAGERS

AQUA

Pennoni

STREETS PHILADELPHIA

PHILADELPHIA WATER
EST. 1801

Select co-op employers

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Get involved at Drexel

Go global

- Study Abroad
- International co-op

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Join Student Organizations

DREXEL smart HOUSE

Drexel University U.S. Green Building Council Student Group

ASCE DREXEL UNIVERSITY

SWE SOCIETY OF WOMEN ENGINEERS DREXEL UNIVERSITY

ENGINEERS WITHOUT BORDERS-USA
DREXEL UNIVERSITY STUDENT CHAPTER

AEI ASCE
DREXEL UNIVERSITY
ARCHITECTURAL ENGINEERING INSTITUTE

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The value of a Drexel degree

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Drexel Engineers get hired in a range of career options.

- Public and private employment
- Design engineering
- Field engineering
- Engineering infrastructure management
- Construction and land development
- Policy administration
- Academic research and teaching

Recent graduates are also placed in MS and PhD programs at many universities including:

- Stanford
- Princeton
- University of Illinois
- University of Texas
- Vanderbilt
- M.I.T.

Thank you for visiting Drexel University