

ASSIGNMENT BRIEF #3 Ecosystems

Measure 3: DESIGN FOR ECOSYSTEMS

Sustainable design protects and benefits ecosystems, watersheds, and wildlife habitat in the presence of human development.

Narrative: How does the development of the site respond to its ecological context? Consider water, air, plants, and animals at different scales.

Suggested Graphic: Natural systems diagram (on-site, context) and/or Native Landscape Profile (flora, fauna)

Metric: % site area designed to support vegetation



ASSIGNMENT: (Option: research teams)

1. Research ecological systems:
 - a. Native flora and fauna,
 - b. Prehistory,
 - c. Endangered and invasive species,
 - d. Air quality
2. Calculate available open space percentage on site taking into consideration project program, and overlay on a biome map that shows location of native vegetation, non-native vegetation, site disturbance, and made-made artifacts.
3. Create profiles of various jobs in architecture that positively influence ecology and environment.

For Final Presentation:

4. In less than 100 words, describe how the design responds to and preserves surrounding ecology.
 - a. Where does the water supply come from and where does it go? How do you protect nearby bodies of water?

- b. How does this project help fight climate change and reduce greenhouse gas emissions?
- c. How do native plants and low-impact landscape enhance the project?
- d. Does this project protect or teach about wildlife? How did that inform the design of the project?

DELIVERABLES:

- **PDF Slide Deck** illustrating research discoveries with original graphics to relay summary information and job profiles, ready to present (as a group) in class. Minimum of 5 slides / max 10 slides.
- **Biome Map** with conceptual location of proposed structure(s).
- **Narrative on Design for Ecology** (<100 words)

SUBMITTAL:

Submit as PDF via university interface (Blackboard, Canvas, Edmodo, Google...) using the following NAAB file format:

COURSENO_INSTRUCTOR_yourlastname_yourfirstname_ASSIGNMENT03_YEARTERM

DUE:

Resources:

Niemelä Jari. Urban Ecology: Patterns, Processes, and Applications. University Press, 2014.

https://books.google.com/books/about/Urban_Ecology.html?id=0_qtm_GsQt4C

ACSA AIA COTE Top Ten Studio Guide

<https://www.acsa-arch.org/competitions/2021-cote-competition/studio-guide/#tools>

Associated NAAB Content:

Program Criteria

PC.1 Career Paths—How the program ensures that students understand the paths to becoming licensed as an architect in the United States and the range of available career opportunities that utilize the discipline's skills and knowledge.

PC.2 Design—How the program instills in students the role of the design process in shaping the built environment and conveys the methods by which design processes integrate multiple factors, in different settings and scales of development, from buildings to cities.

PC.3 Ecological Knowledge and Responsibility—How the program instills in students a holistic understanding of the dynamic between built and natural environments, enabling future architects to mitigate climate change responsibly by leveraging ecological, advanced building performance, adaptation, and resilience principles in their work and advocacy activities.

PC.5 Research and Innovation—How the program prepares students to engage and participate in architectural research to test and evaluate innovations in the field.

PC.6 Leadership and Collaboration—How the program ensures that students understand approaches to leadership in multidisciplinary teams, diverse stakeholder constituents, and dynamic physical and social contexts, and learn how to apply effective collaboration skills to solve complex problems.

PC.7 Learning and Teaching Culture—How the program fosters and ensures a positive and respectful environment that encourages optimism, respect, sharing, engagement, and innovation among its faculty, students, administration, and staff.

PC.8 Social Equity and Inclusion—How the program furthers and deepens students' understanding of diverse cultural and social contexts and helps them translate that understanding into built environments that equitably support and include people of different backgrounds, resources, and abilities.

Student Criteria

SC.1 Health, Safety, and Welfare in the Built Environment—How the program ensures that students understand the impact of the built environment on human health, safety, and welfare at multiple scales, from buildings to cities.

SC.2 Professional Practice—How the program ensures that students understand professional ethics, the regulatory requirements, the fundamental business processes relevant to architecture practice in the United States, and the forces influencing change in these subjects.

SC.3 Regulatory Context—How the program ensures that students understand the fundamental principles of life safety, land use, and current laws and regulations that apply to buildings and sites in the United States, and the evaluative process architects use to comply with those laws and regulations as part of a project.

SC.4 Technical Knowledge—How the program ensures that students understand the established and emerging systems, technologies, and assemblies of building construction, and

the methods and criteria architects use to assess those technologies against the design, economics, and performance objectives of projects.

Illustration Credit COTE Top Ten Winner 2020

Students: George Sorbara & Hunter Harwell

Faculty: Ulrike Heine, David Franco, & George Schafer

School: Clemson University