

P1-3: Bundling Urban Ecological Services

Bundling ecological services at the site level

Urban development reconfigures abiotic and biotic site elements to provide cultural and information services that inadvertently create ecological liabilities such as waste stream flows in the form of heat, energy, runoff, decreased biological diversity, etc.. Prioritizing these ecological services in the form of conservation reclaims lost services while excluding cultural and information services. To reconcile this dichotomy, you are asked to bundle ecological and cultural or information services in novel ways that make architecture and infrastructure into mutually productive urban ecologies.

Begin by assessing the ecological and cultural services of an existing site (Commercial, Industrial, and Civic) and create a re-design combining three ecological services in a new proposal of the site. The new proposal will "model", or estimate, ecological services performances to determine the ecological productivity of the site. You can redesign all items of landscape, infrastructure and architecture to accomplish these goals. Incorporating distinct forms of green infrastructure and living architecture will be helpful practices for repurposing architecture and infrastructure for ecological productivity. However, the selection and design of the practices should optimize the identified ecological services. These optimizations will drive creativity and novelty of the proposal.

It is recommended that you approach the three ecosystem services through a structure-function relationship and material systems-flow perspective. Understand the potentials of green infrastructure and living architecture to deliver ecological services before you begin optimization of performance. As you and your team mates call attention to these ecological services using simplified diagrammatic imagery and succinct language will assist across the various forms of communication that will be required.

Major Phases

- **Assessment of Ecological Services**
- **Story of the site and proposal**
- **Schematic proposals of Ecological applications (GI and Living Architecture)**
- **Maximizing performance (Novel ecologies and new approaches)**
- **Communication and representation**

Urban Ecology

The service of novel ecosystems

Organization

- **Teams of 3 students** (1 urban designer, 1 landscape architect, 1 architect)
- **All products are TEAM created** meaning that everyone collaborates to develop the materials of the project
- **All products, presentations, and reviews are advanced under a 1 leader and 2 supporters format** i.e. lead author and co-authors where the co-authors contribute key figures and sections of the paper and the lead author contributes equally and also directs and advances the comprehensive material into the end format. In a film a director will create materials and lead the film effort while film co-directors will provide materials, contribute and edit the content but have less responsibility over the packaging and presenting of the final
- **Instructor acts a main reviewer**
- **External review is from someone (expert) outside of class**
- **Communication and representation will be of professional quality in the various stages with external presentation and dissemination quality in the final product.**

Products and Milestones

- **1 paper** draft due March 11th, final due Apr 22nd
- **1 poster** draft due March 18th, final due Apr 29th
- **1 film** draft due Apr 22nd, final due May 6th
- **1 presentation** (Apr 2nd 5-8pm) **and review** (Apr 16th 5-8pm) **on Living architecture** to 3rd Architecture students

Resources

- **Web based calculators shown in class materials and discovered**
- **Web sites for ecosystem services, landscape performance, green infrastructure and living architecture**
- **Books and readings**
- **Base information packets**