

Reflections on Teaching Landscape Performance in an Undergraduate Studio Context

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Studio Background

LA 405 Project Design and Implementation Studio is part of a five studio sequence for third and fourth year students in the 5-year BLA program at California Polytechnic State University, San Luis Obispo. The studio typically focuses on small-scale sites and explores issues of building technology, materiality, and design documentation. Twelve students enrolled in the studio during the grant period: 10 third-year students, and 2 fourth-year students who had just returned from a study abroad program in Italy. The studio met three times per week, in four hour sessions, over a 10-week quarter.

At the request of the University President, the studio focused on the President's on-campus residence, and specifically on re-designing the front yard, which is currently largely a turf grass lawn. The primary goal of the re-design project was reducing lawn areas to demonstrate a more sustainable landscape model, and to reduce water use. As a symbolic landscape within the campus, and the site of many official functions throughout the year, this landscape was envisioned to become a model of a new landscape paradigm on campus, one that is both more sustainable, and better related to the environmental context of the campus. In addition to regular studio meetings with presentations and workshops, the studio hosted a guest lecture by Dr. Rebekah Oulton of the Civil Engineering faculty, a site walk-through with Campus Facilities staff, and a field trip to a private residence designed with on-site stormwater infiltration systems and low-water native plantings.

Process

Activities focused on landscape performance were integrated into the studio schedule consistently throughout the quarter, with the goal of introducing the concept of Landscape Performance, and of creating opportunities for students to carry out their own performance assessments for designed landscapes at varying scales.

- Students were introduced to the Landscape Architecture Foundation (LAF) and the Landscape Performance Series via a webinar hosted by Arianna Koudounas. Directly following the webinar, students completed a short exercise in finding different types of information (case studies, calculators) on the LAF website.
- The first assignment was a precedent study in which half the class researched and presented case studies of built works with a landscape sustainability focus (including case studies from the LAF website); and the other half presented on technologies such as rain barrels or bioswales. All case studies were chosen to be relevant to the scale and program of the studio project.
- As a warm-up design project, students worked in two groups to assess how water conservation could be implemented by reducing lawn areas in the central campus by 10%, 20% and 50%. They presented their suggestions as diagrams at the end of the class period, and came to their conclusions by weighing the usefulness of lawn areas based on their lived experience of the campus.

- Before the midterm presentation all groups analyzed the landscape performance benefit of Water Conservation by estimating and comparing before and after irrigation volumes for the project site.
- Individually, students chose one landscape performance benefit (beyond Water Conservation) by which to assess the performance of their design proposal. The assignment began with a literature review, in which students read peer-reviewed journal articles and LAF case studies, and noted how each source defined and assessed the benefit, including methods used. Following this research, students identified the method they would use to assess their own design, calculated the “value” of the benefit, and documented the steps used in assessment. The goal of this exercise was to engage critical thinking around how designers decide what metric and method to use in assessing a benefit, and to convey the value of documenting the process so that others can later determine the validity of the assessment.
- Finally students were asked to create visual diagrams or infographics to communicate the benefits of their design.

Reflection

Several aspects of the studio were very successful in relation to the goal of teaching landscape performance as part of the studio process. In particular:

- The literature review was successful in that it allowed students to clearly define both the benefit, and the metric for assessing it. In conversation after the literature review, students began to understand that assessing performance benefits is a process, and that there is authorship to it. The way in which the benefit is described, and the methods used to assess it can lead to drastically different outcomes. By performing a literature review students could more confidently articulate their decision-making process, and better stand behind their results.
- The availability of the LAF website as a one-stop source of reliable resources and case studies was a useful tool for students of the digital age, as a starting point in understanding the benefits, and for identifying methods to calculate benefit outcomes.
- Diagramming the results was successful in that it helped communicate the idea to those outside the studio, for whom the concept of landscape performance was less familiar.
- One of the key success factors was returning to the material several times over the course of the quarter. Although the LAF website had been introduced during the first week, through both a presentation and a hands-on exercise, by Week 8 some students did not recall it as a potential resource. Because the Week 8 exercise required students to use the LAF website, its availability as a resource was reinforced, and has for some students become a “go-to” resource for research.
- Precedent studies were useful in creating a vocabulary of solutions for students to draw from.

In addition there were some challenges in integrating landscape performance in the undergraduate design studio. In particular:

- Uneven background knowledge of the natural sciences, and of research methods, became apparent as students pursued individual projects. In some cases, flawed understandings of biology, ecology, or other sciences led to faulty conclusions. Students also struggled with the

idea of picking an appropriate metric to measure benefits, and sometimes defaulted to metrics which were more readily available in online calculators.

- Making a connection between site analysis and performance benefits was also a challenge. This in part may have been because of the scale and characteristics of the site in question, which was both confined and small, and because students are so familiar with the campus that they take many aspects of it for granted, rather than forming new understandings through the analysis. Because it was a “real” project, with planned implementation by the University, students also often tended to default to assumptions about what was “realistic” rather than optimizing performance.

Conclusion

Students in general reported a positive experience with using the lens of Landscape Performance as a design tool. As an instructor, particularly for a construction-focused Implementation Studio, Landscape Performance was a valuable framework for moving students deeper into deliberate decision-making, and for engaging critical thinking around sustainability claims. Finally, Landscape Performance proved to be an effective method to communicate student goals to outside reviewers, which include the University President, faculty members of the Campus Planning Committee, and staff from University Facilities.