

Landscape Architecture Foundation  
2016 Landscape Performance Education Grant

### **Instructor Reflection for LAR 525 - Operative Landscapes, Fall 2016**

Offered by the University of Tennessee, Knoxville, School of Landscape Architecture  
Course Instructor: Assistant Professor Brad Collett, ASLA, PLA, LEED AP

#### **Course Background**

The past decades have witnessed a transformation of the profession landscape architecture. Evolving from its early-and mid-twentieth century focuses in horticulture, aesthetics, and decorative arts at the scale of discrete greenfield sites, the contemporary practice recognizes its capacity to address urgent, emergent social, economic and ecological grand challenges. The profession is leveraging its unique capacity for multi-scalar, synthetic design thinking to meet these challenges through innovative design and planning practices. No longer is the living landscape viewed as the antithetical other to or pastoral escape from the urban condition of the city, but it is increasingly viewed and harnessed as integral infrastructures and performative, productive territories for the communities they support through planning and design. This transition is changing the fundamentals of contemporary professional practice, mandating careful reconsideration and recalibration of landscape architecture education. It is in this context that the curriculum of the University of Tennessee's School of Landscape Architecture continues to evolve, and from which the need to introduce the fundamentals of the performative capacities of landscape emerged. LAR 525 - Operative Landscapes was designed to fulfill that need.

Operative Landscapes was initially developed and taught in the spring of 2016 at the University of Ljubljana, Slovenia's Department of Landscape Architecture while I served as a visiting Fulbright Scholar. It was offered for the first time at the UT School of Landscape Architecture during the fall 2016 semester. Now a required course in our professional MLA curriculum, Operative Landscapes assumes a critical position as the first offering in our Living Systems curriculum sequence. Given its foundational nature and lack of pre-requisite coursework, it is actively promoted as an elective to students in allied departments across the University, including architecture, plant sciences, biosystems engineering, forestry, civil engineering, and sustainability studies. Such strategic deployment will expose non-majors to the performative potential of the designed landscape and help transform their perception of the profession of landscape architecture, one that is handicapped by preconceptions of aesthetic, representational and decorative competencies. It is also our motivation to identify prospective students from these allied departments through this course.

The class composition of this initial offering demonstrated success across these intentions, attracting two students majoring in Environmental Studies, one majoring in Architecture, one in Plant Sciences, and one international exchange student in general university studies. The balance of the courses' 13 enrollees was made up of students in the second and third years of their professional MLA degree. The course met MW 905-1100.

#### **Learning Outcomes**

The following learning outcomes for Operative Landscapes are shaped by my aspiration for young professionals to be prepared to successfully advocate for high-performance landscape practices, to collaborate effectively with allied professionals to implement the same, and to be prepared for a career of landscape performance application and innovation:

1. To understand the arc of design practice and theory as it relates to concepts of nature, mankind's relationship with nature, and the role of natural systems in contemporary urbanism
2. To understand the implications of operative landscapes, landscape performance for the contemporary practice of landscape architecture
3. To be aware of exemplary, contemporary projects and design practices (offices, practitioners) demonstrating operative landscape principles, territories of application, proficiencies, and setting trajectories for the future of the profession
4. To understand biological, botanical and ecological processes and principles fundamental to operative landscapes
5. To demonstrate proficiency in developing landscape performance assessment strategies, researching eco-technology processes, and communicating landscape operations in visual formats
6. To be prepared to advocate for sustainable planning and design strategies, operative landscapes in academic and professional work using quantitative metrics and the lexicon of living systems



## Course Organization

In order to achieve these learning outcomes, the course is organized into three complimentary units that are summarized below. The additional supporting materials submitted with this reflection provide detail as to how these units were constructed and deployed in the classroom.

*Unit One: Landscape Performance Theory (+/- 5 class meetings)* – This unit traces the arc of landscape design history and landscape architectural theory relative to concepts of nature, anthropogenic relationships with the landscape, and the evolution of the meaning and motivation driving landscape design. Class discussions and lectures reinforce concepts first introduced through required readings included in the attached reading list.

*Unit Two: Implications for Professional Practice (+/- 4 class meetings)* – Once a theoretical understanding of the discipline's transition from horticultural and aesthetic traditions towards high-performance public works practice has been established, major themes for how such a shift is impacting the professional practice of landscape architecture are identified and discussed. These implications include novel territories for practice, the science of landscapes and landscape architecture as science, contemporary criteria for plants in design, maintenance as design, the performance of appearance, visualization strategies, and the emergence of performance metrics. These themes serve as lenses through which project case studies are presented in the following unit.

*Unit Three: Performance Themes (+/- 21 class meetings)* – The balance of the class is dedicated to exploring landscape performance themes across economic, social and environmental agendas. Performance themes include RE (restore, regenerate, reclaim, remediate), economic stimulation, social catalyst, public health, and water resource stewardship. Given water resource stewardship as my focused area of expertise within landscape performance, there is an emphasis in this unit on operative landscapes that avoid, minimize and manage stormwater, and contemporary flooding management approaches. This unit concludes with an exploration of the synthetic, comprehensive deployment of operative landscapes for community (re)building.

## Reflection

Organized the aforementioned learning outcomes, I offer the following reflection and critique of the course as offered during the fall 2016 semester.

### Outcome 1: To understand the arc of design practice and theory as it relates to concepts of nature, mankind's relationship with nature, and the role of natural systems in contemporary urbanism

This element of the course was one of the most value-added for me as an instructor and for the enrolled students. I believe it essential that students not only understand the 'how,' but also understand the 'why' behind landscape performance; the theory and history of landscape architecture that has shaped contemporary planning and design practice. The exercise of identifying the readings that would efficiently achieve this goal has been formative in my own teaching in and outside of this course. Unit One's readings gave students a theoretical and historical context within which the balance of the course would reside, and were used to stimulate discussions amongst the students. According to one student's course evaluation, "I thought the reading materials followed by open class room discussions were the times that I learned the most."

Students participating in the course who were not pursuing landscape architecture studies found this outcome especially valuable given their lack of prior exposure to landscape history and theory. Students in landscape architecture studies also found the readings and discussions to be beneficial given that most had not yet been exposed to these seminal readings elsewhere in the curriculum.

The project connected to this outcome titled "Urban Wildness: Ideas of Nature" was designed as an exploration of how nature can be conceptualized through different lenses as it relates to the urban condition. Fundamentally, the course explores this relationship as it has evolved in history and in landscape architecture practice. Feedback suggests that the project was successful to the end of challenging their own preconceptions of this relationship. In the future I plan to revisit their initial musings on this subject as an in-class reflection on the individuals' growth over the course of the semester.

### Outcome 2: To understand the implications of operative landscapes, landscape performance for the contemporary practice of landscape architecture

Though relatively brief in its duration, Unit Two was essential to construct a framework through which we would understand forthcoming performative themes and the lenses through which we would view the project precedents used to demonstrate their application. It is through Unit Two that a case is explicitly made for how performative practice has shaped 1) Territories of Practice: the characteristics and contexts of the physical landscapes in which contemporary projects are implemented, 2) Landscape as Science: the increased importance for designers



to understand the fundamental science of the living landscape and to engage in practice as a mode of critical inquiry and research, 3) Plants in Design: the evolution of the demands we place on living materials in the operative landscape and subsequent new criteria driving plant selection, 4) Maintenance: new territories of practice, temporal characteristics of designs, and performative motivations require new understandings and technical competencies with regards to landscape maintenance strategies, 5) Appearance: the enduring value and performance of a landscape's aesthetic quality to gain social acceptance of new landscape paradigms and to motivate users towards behavior change, 6) Visualization: the evolution of design communication methods best suited to illustrating the performative dynamics of landscape systems, and 7) Performance Metrics: the role of quantifiable landscape benefits in the advocacy for high performance practices.

Introducing these concepts before exploring performance themes and precedent projects, as opposed to situating the unit to the end of the course as a synthesis of preceding content, proved to be a valuable way to build a shared language amongst the course's enrollees and a common ground from which our project-specific studies could be organized.

Project 2 - "Drosscape," originating from the idea that performative practices is engaging landscape fragments in amongst existing urbanized areas as productive practice territories, opened the eyes of our students of the many underutilized landscape types in the Knoxville area, and by extension any community. Though the graphic quality of the student outcomes varied, all demonstrated an understanding of the inevitability of dross, causes of its formation, and its future potential in the built environment.

*Outcome 3: To be aware of exemplary, contemporary projects and design practices (offices, practitioners) demonstrating operative landscape principles, territories of application, proficiencies, and setting trajectories for the future of the profession*

Operative Landscapes was designed to expand students' awareness of exemplary design and planning projects and innovative professional practices through the organizational framework of landscape performance themes. Such investigations are often left to the individual student as precedent support for studio projects. Curating a survey of contemporary landscape architecture projects in the context of this course has proven helpful to demonstrate course concepts and to inculcate habits amongst the students to seek, follow, and pursue innovative offices and practitioners.

The projects featured in Unit Three lectures were selected based on their demonstration of the characteristics discussed under Outcome 2 above, the availability of information about project intentions and outcomes, quality imagery, and to the extent possible their inclusion in the LAF Landscape Performance Series CSI program. A full list of the projects referenced during the course has been provided to LAF for reference purposes. This list will continue to be revisited year over year as new research and documentation of existing projects become available and as new projects are proposed.

Occasionally students would volunteer additional precedents that demonstrate course concepts. In the future, asking students to research and suggest additional exemplary projects that reinforce operative themes would further the intentions of this outcome. Additional feedback received from students suggests that engaging practitioners via web conferences to discuss featured projects would add value to the experience and provide additional depth of understanding of a project's performance objectives, constraints, and design process. Such engagements will be included in future course offerings.

*Outcome 4: To understand biological, botanical and ecological processes and principles fundamental to operative landscapes*

In order for student to effectively apply current landscape performance strategies, to communicate and advocate for the same to collaborators and clients, and to advance landscape performance through innovation, they must understand the fundamental science that powers the performance. This will prevent a designer from compromising the function of these processes as a result of their supporting design intentions and competing project agendas.

Examples of such science explored in the course at a fundamental level include the role of soil microbiology in phytoremediation processes and biological stormwater treatment, the basic physics of evaporative cooling, and plant metabolic processes. During the course's initial offering, these fundamentals were taught by me using available reference materials. Outside experts were not engaged as guest lectures purposefully so as to first gain an understanding of what content was necessary to include in the course and to maintain an explicit connection between design application and the fundamental science in question.



Having taught the course twice, I am comfortable enough with the material and my own intentions that I now feel comfortable approaching experts in these fields as guest lecturers and offering them adequate direction. These may include plant and soil scientists, ecologists, and economists in the University and in practice. Additionally, the science of living landscape systems fundamental to this course's content is informing the development of a new prerequisite course that will be co-taught by faculty members in Landscape Architecture and the University's Department of Earth and Planetary Sciences.

*Outcome 5: To demonstrate proficiency in developing landscape performance assessment strategies, researching eco-technology processes, and communicating landscape operations in visual formats*

Students are introduced to [landscapeperformance.org](http://landscapeperformance.org) throughout Operative Landscapes, including a live WebEx conference with LAF Program directors, during project precedent presentations, and most robustly through research for their final project. This project is conceptually based on LAF's CSI case study method. At the project's outset, students discuss and develop a list of projects in our own community that they feel are multifunctional, high performance landscapes. The list is reduced to three local landscapes based on a number of criteria, including accessibility of the project's leadership, availability of existing research/information about the project's history and impact, and their collective representation of a range of landscape types, scales and contexts.

The project statement included with this reflection offers details regarding the project's requirements and time line. Essentially, three groups of students are charged to develop a performance-driven narrative for a local landscape by identifying probable performance economic, social, and environmental benefits and communicating them in compelling visual formats. This project synthesizes the theories and practice implications discussed earlier in the course, and challenges them to exercise the visualization methods and their understanding of fundamental science that power their performative characteristics.

To assist in the development and application of these understandings, Meg Studer of [siteations.com](http://siteations.com) was hired to conduct a workshop for our course, bringing to campus her extensive experience in quantitative research and the visualization of dynamic landscape systems, their temporal characteristics, and multi-scalar logistics. This two-day workshop exposed students to in-depth explanations of theoretical underpinnings of contemporary visualization methods, a lexicon of graphic diagramming techniques, and time to charette their own visualization approaches to communicate the narrative they had already begun researching. This hands-on experience and web-enabled critiques of their progress over the balance of the project timeline proved to be invaluable accelerators for their research and graphic communication methods, bringing levels of graphic and organizational clarity in their final products that otherwise may not have been achieved.

Though it may not be practical to host a visiting scholar each term to facilitate the workshop, a similar means to introduce graphic theory, methods, and catalyze student progress through focused working sessions will be explored. The timing of the workshop was the subject of much discussion following the conclusion of the project. Many students advocated for it to occur earlier in the project timeline. In fall of 2016, the workshop was offered four weeks into the nine-week project so as to give students suitable time to begin researching their projects and to identify probable performance benefits, giving them the benefit of this information during the workshop.

Student outcomes for project three demonstrate a solid understanding of the story of each project as is supported by their quantifiable performance benefits, an explicit focus of the exercise. Early in the research process, many groups gravitated towards measuring project performance characteristics that could be readily quantified, but that were not necessarily fundamental to the emerging project narrative. Adequate time should be allowed in the course to regularly visit with students to discuss their progress and critique their work. The class' two-hour meeting time generally allowed for an adequate level of engagement to this end. Generally speaking, lecture content was offered for the first hour of the class, allowing the second hour for critiques and group meetings.

*Outcome 6: To be prepared to advocate for sustainable planning and design strategies, operative landscapes in academic and professional work using quantitative metrics and the lexicon of living systems*

It is not possible to measure the preparedness of students to these ends during the time span of a single course. It will be an acute interest of mine to track how the course's concepts may or may not manifest in the students' future academic and professional work. Anecdotal evidence from Slovenian enrollees suggests that the course has already fundamentally changed the way they approach their studio and competition work. UT students who took the course and participated in externships over the holiday break have suggested that their new-found understandings are already being put to work, specifically using [landscapeperformance.org](http://landscapeperformance.org) as a research and advocacy tool.



## Conclusion

Informal and formal feedback collected from students enrolled in Operative Landscapes suggests that the course's organization, content, and format were effective in achieving the intended learning outcomes for the course. While keeping these high-level aspects of the course largely intact, Operative Landscapes will continue to evolve in ways outlined herein, based on new feedback from future cohorts, as well as in response to the ongoing maturation of professional practice. Operative Landscapes has proven to be an effective model to introduce and build conceptual understandings of contemporary sustainable design methods through the theoretical and practical lenses of landscape performance. It will continue to inform other areas of our living systems sequence and the broader MLA curriculum, including the recalibration of our 'Plants in Design' course to more explicitly exercise the application of operative landscape tactics.

I would like to thank the Landscape Architecture Foundation for its support of this course through the 2016 Landscape Performance Education Grant program and for its broader advocacy on behalf of the profession of landscape architecture through research, scholarship, and leadership.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read 'Brad Collett'.

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