

# Reflections on Teaching the Measuring Landscape Performance Seminar: Focus on Temple University Main Campus Landscape

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## Background and Format:

The course was offered Spring semester 2014 and was designed to introduce students to the concept and practice of landscape performance measurement. It was formatted as a seminar with weekly meetings for presentations, discussion or work sessions. The seminar was not a required course but was offered as an elective. Therefore, it was structured flexibly in order to ensure that at least six students (the minimum required by the university) would register. The course was open to both undergraduate and graduate students who could register (and pay for) for 1, 2 or 3 credits.

A total of 9 students completed the course, 5 MLA candidates, 2 BSLA seniors, 1 MS graduate and 1 BS graduate (the current horticultural supervisor at TU-Ambler Campus). Seven students registered for 1 credit; two registered for 3 credits. None registered for 2 credits. The flexible credit option worked well for all. Two students needed a 3 credit elective to graduate. But most students were interested in finding out about the topic without a major commitment of time or tuition cost. The workload was apportioned according to the credits with the two 3-credit students responsible for compiling, editing, presenting and delivering the major course product—a report describing landscape performance tools and the use of those tools to collect baseline measurements on Temple University's Main Campus.

## Goals:

The course was structured to respond to the LAF objective of bringing faculty, practitioners and students together to work collaboratively to enhance the knowledge and practice of landscape architecture. The Temple University Landscape Master Plan is currently being developed by Lager Raabe, Skafte Landscape Architects (LARLA), in close conjunction with the Temple University Architect. The plan is anticipated to be complete in August 2014 so the timing of the seminar in Spring 2014 meant that the landscape performance seminar findings could be useful to the university. The work assisted the University Architect in understanding the benefits of measuring landscape performance and ways to move forward with measuring and monitoring the landscape.

The seminar model is replicable because most departments of landscape architecture are situated at physical campuses. University campuses (or parts of them) are convenient sites from which data can be collected and monitored over the long term by members of various university disciplines. Temple has already engaged hydrologists, biologists and others in a stormwater mitigation plan (funded by a \$1million grant through the TU- Center for

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Sustainable Communities). One of the purposes of the seminar was to demonstrate that landscape architects can also be engaged in this process and have an important role to play in demonstrating that empirical findings influence and can be influenced by design.

The pedagogy involved student research of specific performance metrics/tools and application of those tools to measure baseline conditions on Temple University Main Campus.

#### Process:

##### 1. Learning about the project

Guest lectures and meetings with the Temple University Architect, Consultant Project Architect and Director of the Center for Sustainable Communities provided the background of the campus project and goals of the university. Students began to consider what characteristics could/should be measured. LAF representative, Katharine Burgess, visited the seminar in April to present an overview of the foundation and the purpose of this education initiative. Students were impressed with the scope of LAF and proud to be part of this pioneering work in landscape performance measurement. Several have already begun using it to assess design projects in other courses.

##### 2. Precedents

Students conducted web-based investigation of the LAF (and other websites) to find precedent examples. They looked at universities and corporate campuses that are measuring and monitoring aspects of landscape performance. The findings were organized and presented in a powerpoint to the university architect.

##### 3. Tools

Each student selected a particular tool from the LAF toolkit: eBird; InVEST; i-Tree; Green Roof Energy Calculator; Pedestrian environmental quality index (PEQI); Plant Stewardship Index; Urban Heat Island Mitigation Impact Screening Tool (MIST); The Value of Green Infrastructure; and the Water Harvesting Calculator. They reviewed case studies for which the tool was used and conducted a literature review to assess its validity. They then tried out the tools themselves. Each wrote a brief report describing the purpose of the tool, results of the literature review and personal application, and described its pros and cons. Findings were presented to the class and this made for interesting discussion where students could compare their tools with others. The discussion also allowed the class to make decisions about whether the tool should ultimately be used for the campus project. For example, there was great enthusiasm for the urban heat island tool but it was learned that the methodology was predicated on an entire urban forest and that it could not be validated for a piece of the city, like the Temple Campus. Therefore, we opted to abandon it as a possible tool for our larger project.

##### 4. Measuring baseline conditions

The final half of the semester was spent in developing a major report on baseline conditions for the campus core. Class discussion resulted in establishing the site boundaries and appropriate tools. Students divided into 4 groups to measure base line

conditions for biodiversity (using eBird and PSI); carbon sequestration (using i-Tree); and pedestrian environmental quality (using PEQI). Students visited the campus to collect data. We were fortunate to have a staff horticulturist as a student. She had also been the administrator of the Plant Stewardship Index (PSI) at her previous job and was extremely conversant with its methodology. That person did an extensive onsite inventory of all existing plants (trees, shrubs, groundcovers and herbaceous specie) for the project. The PEQI team conducted on site survey of pedestrian conditions using photography as well as, on site measurements. The i-Tree team evaluated the existing sizes of campus trees for its calculations. The conclusion of the report discusses implications of the findings and ways to move forward in the landscape measurement and monitoring process.

### A few problems

The seminar met only once/week in the early evening which made it “doable” for the students (and faculty). However, several sessions were lost due to university closures for inclement weather. Students were able to continue working on their precedent and tool research and to connect with faculty via electronic blackboard. They were also willing to add extra time to the following classes to make up for lost sessions. I think that the once/week schedule was more advantageous than not and would continue to offer it on this basis.

It would be best to bring the LAF representative into class earlier in the semester because it personalized the content and purpose of the course. I would suggest phasing this in during the first month of class, if possible. (I recognize that many programs are distant from LAF headquarters and that funding doesn’t make it feasible for visiting all programs---but it was a terrific asset to ours!)

Finally, it is important to be flexible when dealing with a “real” project, such as the campus landscape master plan. It turned out that for political and proprietary reasons we were unable to evaluate proposed design scenarios. (This was mainly a timing issue.) Therefore, we needed to abandon that aspect of the course and concentrate instead on measuring baseline conditions. In hindsight, I believe that this was a better use of our time because the results will be helpful in monitoring the results of the improvements over time.

### Future offering

I plan to continue to teach landscape performance over the long term, incorporating it in required studios and undergraduate courses. The seminar is likely to be offered again as there is already interest from students who wish to take it in 2015. A reasonable number of students registered in 2014 indicating that it is a popular topic that is valued by the students.

The knowledge should serve students well in their job searches. The product of the course was designed to become part of each student’s portfolio, demonstrating their conversance with measuring landscape performance and ability to apply tools.