Increasing Ecological Literacy and Environmental Citizenship in Undergraduate Landscape Architecture Programmes

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> Human beings and the natural world are on a collision course. Human activities inflict harsh and often irreversible damage on the environment and on critical resources. If not checked, many of our current practices put at serious risk the future that we wish for human society and the plant and animal kingdoms, and may so alter the living world that it will be unable to sustain life in the manner that we know. Fundamental changes are urgent if we are to avoid the collision our present course will bring about.
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> We the undersigned, senior members of the world's scientific community, hereby warn all humanity of what lies ahead. A great change in our stewardship of the earth and the life on it, is required, if vast human misery is to be avoided and our global home on this planet is not to be irretrievably mutilated.
>
> http://www.worldtrans.org/whole/warning.html.
> Posted 18 November 1992 by the Union of Concerned Scientists.

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IN A RECENT EDITORIAL in *Landscape Architecture Magazine* (Land Matters, September 2003), editor J William Thompson challenged the accuracy of the perennial claim by landscape architects to be a profession that is particularly 'green' and informed by the notion of environmental stewardship. Thompson cited a recent article, "Green World, Gray Heart: The Promise and the Reality of Landscape Architecture in Sustaining Nature" by Robert France (*Harvard Design Magazine*, No 18, 2003), which cogently points out the shortcomings of the field in this area. France leads off with a part of the above 1992 statement from senior members of the world's scientific community. I agree with France's position and suggest that this warning ought to be a call to arms for landscape architecture to make the changes necessary to live up to its claims to 'greenness' and stewardship.

The question is how to effect these changes? I suggest that the educational process and structure is one (but not the only) place that should make changes that would provide landscape architects with the knowledge and capabilities to address more directly and effectively the global environmental crisis. Students, faculty and practitioners in the field must be informed by a deeper knowledge of ecology and ecological structure, function and process at many scales as well as having an unblinking understanding of the impacts and ethics of human culture and patterns of consumption on natural processes. Drawing terminology from the worlds of ecological restoration, ecology and environmental studies, one might call this ecological literacy and environmental citizenship.[1]

This kind of literacy and citizenship is needed for landscape architects to communicate and work with the other disciplines necessary to address fully global and local environmental problems and issues, to change standard practices and strategies of the field, and finally to be able to participate in educating clients and users. Yet, I can hear the groans now from academics about how the curriculum is already over stuffed and we cannot keep adding more courses. Nonetheless, there will need to be changes in how we teach as well as what we teach. (This need goes considerably beyond landscape architectural education but is outside the focus of this short paper.)

A review of the web pages and programmes of study for undergraduate programmes of member schools of the Council of Educators in Landscape Architecture (CELA) in the United States, Canada, Australia and New Zealand shows some small bright spots of a more ecologically oriented education. Unfortunately, too few programmes have sufficient coursework in basic ecological principles, landscape ecology and plant ecology, much less environmental ethics and the cultural dimensions of sustainable life on the planet.[2]

There is a great deal of variation among programmes, but the majority still seem to be pursuing a fairly traditional model that has been around for a long time, although small modifications are creeping in. Two or three programmes list native or bioregional plants courses along with the standard plant materials courses, the term 'ecological design' appears here and there in technical course and design studio titles, and at least two programmes require environmental ethics courses. A handful require a suite of courses in ecology, natural processes and environmental ethics, although quite a few more have at least a course specifically in general ecology. Many of the programmes require a regional level studio in which it appears that natural processes are addressed.

Admittedly, this review of curricula posted on the World Wide Web is a broad-brush, first pass that has its limitations. Without follow-up checking with the programme itself, it is not possible to know if the curriculum posted is the curriculum actually being taught. It is also impossible to tell whether the courses and studios that suggest in their titles that they have some sort of ecological, environmental or sustainable content or approach actually follow through in meaningful ways. Conversely, some curricula and courses listings are quite generic and it is not possible to tell whether their content and approach does address these ideas and strategies meaningfully. Finally, it is not possible to tell whether programmes have changed how studios are taught to incorporate current concepts of ecology and sustainability ... again, in meaningful ways. One of the great problems for landscape architecture practice and education is that some talk the talk of sustainability but continue to do business more or less as usual.

Ultimately, there must be an overhaul of how things are taught and integrated as well as in what is taught. However, change is likely to be more successful if it is gradual rather than revolutionary. There are some existing strategies already in use by programmes that can support this evolution. These include: providing and encouraging the option of a supportive second major, although this clearly adds credit hours,[3]

specialisations, concentrations or option areas that draw from carefully selected lists of courses in various topic areas; certificate programmes and minors. Some programmes seem to have negotiated a way to structure general education courses to their advantage to create a guided set of courses in the natural and social sciences and humanities that provide their students with greater ecological literacy. This takes care of at least half of the equation although it is still incumbent upon faculty to integrate this knowledge explicitly into the design and technical support sequences.

All of these options offer promise for ways to order and encourage the evolution of landscape architecture undergraduate curricula in the direction of increased ecological literacy and environmental citizenship. Environmental studies minor or certificate programmes seem to offer great potential as a means of organising university requirements as well as providing the broadly interdisciplinary exposure necessary for ecological literacy and environmental citizenship. Many of the universities with landscape architecture programmes already have environmental studies minors or certificate programmes in place, most of which are strongly interdisciplinary, drawing faculty and courses from across the university. This is important because the problems of the global environment and long-term sustainable living are complex, requiring the skills and points of view from many disciplines to develop holistic solutions.

Most minor and certificate programmes seem to require from five to six courses, drawing from the natural and social sciences as well as the humanities, along with some kind of capstone or practicum experience or a research effort. Often times, these credits can also be used to satisfy general education requirements, enabling students to put together efficiently meaningful groups of courses related to ecological literacy and environmental citizenship.

It should be possible for individual programmes to negotiate an integration of the knowledge and requirements of the minor with the specific needs of the landscape architecture major. This provides an advantage to the students by creating a richer and more integrated programme of study. There is an additional significant advantage of connecting the landscape architecture programme and faculty with a broad range of faculty and disciplines that are also concerned with various aspects of the environment. This interdisciplinary contact also provides further opportunities for landscape architectural faculty to increase their own ecological literacy as well as to identify colleagues in other disciplines who might provide specific support and input to landscape architectural courses and curricula.

In conclusion, I believe that if the field of landscape architecture and its academic practitioners wish to remain relevant as environmental professionals, the structure and process of landscape architectural education will have to reorient towards increasing the ecological literacy of its students as well as the faculty (and, ultimately, the field). What is taught and how it is taught will have to change, becoming more interdisciplinary and integrative. Curricular change is a difficult process. Strategies, including the environmental studies minor or certificate, already exist in the structure of the present-day university that can make this transformation incrementally possible.

NOTES

1 I owe a great intellectual debt to the writings of David W Orr, chair of the Environmental Studies Program at Oberlin College, Ohio. In particular, his books *Earth In Mind: On Education, and the Human Prospect*, Island Press, 1994, and *Ecological Literacy: Education and the Transition to a Postmodern World*, State University of New York Press, 1992.

2 All research was done online, based upon the listing of member schools on the CELA website. Programme webpages were visited to try to find information on programme philosophy, curricula and courses. The accessibility and readability of websites varied widely, and complete comparable information was not possible. The Commonwealth schools operate on systems that are quite different from the system in the United States. There was considerable variation simply within the US schools. Listed below is some basic information about undergraduate first professional degree programmes in the United States and the Commonwealth. The author was able to glean less detail about the Commonwealth systems as a result of unfamiliarity with their structure.

United States

Forty-one member schools offer professional Bachelor of Landscape Architecture (BLA) or Bachelor of ? and Landscape Architecture (BSLA) degrees. Credit hours range from 120–167 for semester systems, 180–225 for quarter systems. There were 15 four-year degrees, 24 five-year degrees, two were unclear. A few (three to four) are organised such that the student must select a concentration/specialisation that may involve courses relating to ecological literacy and environmental citizenship. A few (three to four) encourage student participation in minor or certificate programmes. The opportunities for ecological/environmental learning tend to be found in three basic areas:

- Through university general education (Gen Ed) requirements, which typically cover natural, physical and social sciences and humanities.
- Through the plants/planting design sequence, which ranges from two courses to as many as five, and sometimes includes soils. Only three programmes have a course specifically oriented to native plants.
- Through additional courses required as part of the major. Ten have a suite of defined courses that address ecological literacy and environmental citizenship. These courses sometimes overlap as directed Gen Ed requirements, and are sometimes directed electives in which the student selects from lists of courses.

Commonwealth–Canada, Australia, New Zealand

Seven programmes offer undergraduate professional degrees that seem to be organised by units or credit points (which do not seem to be comparable) ranging from 32 to 216. Six programmes offer four-year degrees, one offers a three-year Bachelor of Design Studies, which is the prerequisite to a two-year professional Bachelor of Landscape Architecture. Two programmes offer specialisations. All seem to have a basic set of natural and physical science courses, presumably somewhat similar to university requirements.

3 However, given the startling spread of credit hours among the various programmes, the issue of not being able, or not wanting, to add more credit hours may be a sort of straw man.