

Maryland Learning Center for Sustainable Technologies

January 2006

(Proposal for a new educational facility to be hosted by
the **Baltimore Polytechnic Institute**)

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Preamble Among young students throughout America, the greatest challenge to effecting change towards a better world is the difficulty of envisioning ways in which their world could, in fact, be different. Although awareness of contemporary problems may exist widely throughout our society, those issues which lack immediacy will also lack attention, if only due to our distraction by other, more tangible phenomena.

Students need positive examples which can direct their imagination beyond the status quo.

One contemporary issue, among others, has emerged by consensus throughout many technical (and therefore *tangible*) disciplines: Sustainable Design for the Built Environment. An alignment of the best aspects of our society's technological skills, the trend towards sustainable design is informed no less by economic "common sense" than by progressive optimism. Certainly, most disciplines which contribute to our material culture must consistently ask, "How best to make use of our resources?" But the holistic character of Sustainable Design's outlook affords a unique perspective among those technical disciplines.

We propose to build a Case Study of such a holistic environment, so that students from throughout our State might learn, both by theory and through example, how best to integrate their technical education with an awareness of sustainable planning.

Real-life Lessons The **Maryland Learning Center for Sustainable Technologies** is conceived to be a live-in teaching center for high-school students from throughout Maryland. Its setting would include lecture, laboratory, and research facilities for day-long as well as week-long programs, directed towards as many as 80 students per session. Those facilities, developed in Baltimore on an unused area of the existing Poly-Western high school campus, would themselves conform to the highest LEED standards and would incorporate state-of-the-art environmental management techniques. For the duration of their stay, students will experience firsthand those new technologies with which society will better control its resources.

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Campus True to its emphasis on the Sustainable Environment, the Learning Center would be designed to showcase the systemic technologies which have been developed to effect a reciprocal, rather than adversarial, relationship with the world around us. More than merely a shelter for the activities within, the Learning Center facility would itself become a pedagogical tool and an experiential wonder.

Yet besides technological features, the Learning Center will also illustrate the rich *human* use of the built environment. Drawing from the best examples of American collegiate architecture, the Learning Center will complement its formal teaching spaces with informal settings for collaboration and interaction.

Intrinsic to the Learning Center's charter will be the accomodation of future growth and change. The design of the Learning Center campus will account for realistic initial phases, to be supplemented as additional support becomes available.

Facilities may include the following:

LEARNING ROUNDHOUSE and Continuous Building-Resource Display

Reading Room / Mediatheque (Library)

3 Laboratories / Workshops

Lecture Theater / Skywatch observatory

Energy and Resource Management Plant

(“Living Digester” and Active/Passive Collection Center)

Green Terrace/Roof for Food Production and Physical Demonstrations/Experiments

Loading/Receiving/Janitorial

Administration Offices

Faculty Offices/Docks

Dining Room (with multipurpose social functions)

Informal “cafe-style” sitting areas

Food-prep facilities

Dormitory rooms for up to 80 students;

Dormitory apartments for guest instructors and resource guides;

Live-in suite for on-site Administrator.

The Learning Center's location on the Poly-Western campus makes available (pending mutual, cooperative planning) Polytechnic's extensive engineering facilities as well as physical education facilities, including a swimming pool. Its proximity to both highway and to mass transit (including light-rail, and so to MARC trains and air travel) makes its location ideally suited for easy access to all of Maryland's students.

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Program and Curriculum

The primary focus of the Learning Center will be upon four-day, residential programs for high-school students from throughout the State of Maryland. Its residential component will not only allow the regional use of the facility, but will engender an *esprit de corps* among those visiting students, whose excitement for what they have experienced will encourage subsequent learning about (and implementation of) the Sustainable Built Environment.

Nevertheless, the Learning Center's easily-accessible location within Baltimore will facilitate day programs for Baltimore students, including those of K-8 ages. Both types of programs may occur throughout the academic year; and during summer-months, enrichment "camp" programs might make use of the advanced facilities in tandem with local groups such as JHU's *Center for Talented Youth*.

Over the course of the program, lectures and activities might be organized into three parallel tracks:

- * Science / Technology Demonstration
- * Historical Context: Past Examples and Current Trends
- * Learn-by-Design: Case Study Planning

These themes will be enriched by a field visit to a nearby site as well as by cultural activities such as live music concerts and performances.

A typical week-long program for the Learning Center might be as follows:

M	Day One:	Arrival, Room Assignment, Convocation; Team Activities & Demonstrations; Performance.
T	Day Two:	Lectures & Demonstrations; Introduction to Design Problem; Team Activities; Key-Note Lecture and Live-Music Concert; Starwatch
W	Day Three:	Lectures & Demonstrations; Field Visit; Design Problem Development; Performance.
Th	Day Four:	Design Problem Presentation; Commencement; Pick-up and Dispersal.
F		Administration and Staff Meetings

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Affiliation and Liaison

The construction of the Maryland Learning Center would be funded by private, charitable donations. Its operating budget might be drawn from the following sources:

An endowment, built up by donation (and/or special bond issue?); grant funding for education or research from nonprofit agencies; additional private-sector endorsements from commercial sources; subscription funding from individual school districts based on use from each particular district; and State of Maryland education funding, if political climate allows.

Educational programs would be cross registered with Baltimore Polytechnic Institute. Students from Poly would have special, long-term access to Learning Center Facilities and programs, and so might take on “mentoring” roles as guides and assistants for visiting residential and younger day-students at the facilities. The development within the Polytechnic curriculum of a special “concentration” in Sustainable Technologies is also suggested by this proximity.

The Poly-Western Campus’ location also suggests institutional affiliations at the level of higher education. Liaisons to relevant departments at Johns Hopkins, Morgan State, Maryland Institute of Art, and UMBC might include special lecturers, laboratory demonstrations, and as well as cross-registration for students of high achievement. Additional, programmatic affiliation might be possible with educational institutions such as the Maryland Science Center, the National Aquarium in Baltimore, and the Smithsonian Institution.

Governance

The Maryland Learning Center for Sustainable Technologies would be directed by a Managing Director, whose paid appointment and tenure would be established by a Board. The unpaid members of the board would include Professionals, Scientists, and Engineers, as well as educators such as the Director of BPI, a deputy of the Maryland Board of Education, and academics from local universities.

The Managing Director would appoint and organize support staff, as well as the of instructors of the Learning Center and a full-time, on-site Administrator whose residence would be part of the Learning Center Campus.

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Examples of Similar Facilities

Similar educational institutions to the proposed Learning Center for Sustainable Technologies may be described in two categories.

First, and more predominant, are those facilities which provide enrichment for secondary-school students. Several of those listed below provide dormitory facilities for short-term programs similar to those described in this document.

Belmonte Science Center for Youth, Jerusalem, Israel.

<http://www.belmonte.org.il/eng/default.asp>

Islandwood, Bainbridge Island, Washington.

<http://www.islandwood.org>

The second category of examples are those institutional buildings whose design and construction embody to the fullest extent a commitment to the principles of Sustainable Design:

Chesapeake Bay Foundation, Annapolis, Maryland

Chicago Center for Green Technology, Chicago, Illinois

www.cityofchicago.org/Environment/GreenTech

Adam Lewis Joseph Center, Oberlin, Ohio

<http://www.oberlin.edu/ajlc/ajlcHome.html>

Bren School of Environmental Science, Santa Barbara, CA

http://www.bren.ucsb.edu/about/donald_bren_hall.html

Central College Residence Hall, Pella, Iowa.

<http://pods.centralcollege.greentouchscreen.com>

First of Its Kind

In the combination of a State-of-the-Art, LEED-rated facility and a residential education program dedicated to secondary-school age students, the Maryland Learning Center for Sustainable Technologies will provide a unique, first-of-its-kind opportunity for students from throughout the region.

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Sketch of Possible Site Plan

