CHILDREN'S OUTDOOR ENVIRONMENTS NEWSLETTER, SUMMER 2011

Letter from the Chairs

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The Earthplace sanctuary is 62 acres of privately-held land that is the largest open-space area in Westport, Connecticut. Adjacent to this land are 11.8 acres of land owned by the Town of Westport. This property was once a farm and there is still abundant evidence of stone walls, open fields, and old wagon roads through the woods.
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Educative Landscapes: Informal Learning and Landscape Architecture

Modern educators have long recognized the significance of learning in hands-on settings and linking knowledge in the classroom to real life skills (Dewey 1963). Not until recently however, has research begun to quantify the huge impacts of informal experiences outside of school on motivation and achievement for learning in general. Particularly in the area of science education, learning in informal settings not only reinforces what we learn in school, but helps establish lifelong patterns of motivation and curiosity.
more>>

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636 Eye Street, NW
Washington, DC 20001-3736
United States of America
Telephone: 1-202-898-2444
Toll-free Number: 1-888-999-ASLA (2752)
Fax: 1-202-898-1185
Email: info@asla.org

ASLA Home
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CONTENTS

contact

Lisa Horne, ASLA, Co-Chair
(979) 575-2464
lh@kevinsloanstudio.com

Julie Johnson, ASLA, Co-Chair
(206) 685-4006
jmjsama@uw.edu

Chad Kennedy, ASLA, *The Field* Editor
(209) 571-1765, ext.102
ckennedy@odellengineering.com

Ilsa Goldman, ASLA, Webinar Coordinator
(619) 681-0090
igoldman12@gmail.com

Jena Ponti, ASLA, Officer
jenaponti@hotmail.com

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Letter from the Chairs

by Jena Ponti, ASLA and Julie Johnson, ASLA

Much has been going on with our PPN since the ASLA conference in Washington D.C. last fall. For those of you who don't know, Julie Johnson, ASLA has stepped into the Co-Chair position with me. Julie is an Associate Professor in Landscape Architecture and Adjunct Associate Professor in Architecture at the University of Washington. Julie authored a LATIS entitled, "Design for Learning: Values, Qualities, and Processes of Enriching School Landscapes." I look forward to seeing how her contributions will enrich our PPN. Thank you, Julie!

Julie and I want to give a big thanks to Lisa Horne and Shweta Nanekar, our new Communications Team. Lisa and Shweta volunteered their time and effort to help make this newsletter the best one yet.

We also have our LinkedIn group up and running for the PPN. Many of you have signed up and have posted communications, articles, and announcements. The LinkedIn group is our means of frequent communication so please reach out to the rest of your network.

We think you will really enjoy the articles submitted for this newsletter. They offer powerful insights and places for children's learning. We thank each of the authors for their contributions.

We hope to see you in San Diego this fall!

Jena Ponti, ASLA and Julie Johnson, ASLA

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636 Eye Street, NW
Washington, DC 20001-3736
United States of America
Telephone: 1-202-898-2444
Toll-free Number: 1-888-999-ASLA (2752)
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lh@kevinsloanstudio.com

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Chad Kennedy, ASLA, *The Field* Editor
(209) 571-1765, ext.102
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Ilsa Goldman, ASLA, Webinar Coordinator
(619) 681-0090
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CHILDREN'S OUTDOOR ENVIRONMENTS NEWSLETTER, SUMMER 2011

Nature Playground at the Auburn University Louise Kreher Forest Ecology Preserve

by Jennifer Lolley

A nature playground has been constructed at the Louise Kreher Forest Ecology Preserve in Auburn, Alabama by Auburn University students, faculty, and the Auburn community. The Turner family donated 120 acres to the university in 1993 to establish the preserve, which now hosts an outreach program of the Auburn University School of Forestry and Wildlife Sciences. The preserve contains five miles of trail, an amphitheater, a pavilion, and office space. It is open to the public all year from sunrise to sunset, with no admission charge. Various educational programs are offered including summer ecology camps.

Photo courtesy Nick Holler and Jennifer Lolley

To our knowledge, this is the first nature playground in the state of Alabama. Project initiation was by Jennifer Lolley, the administrator of the preserve, and reached completion in November 2010. A beautiful site at the preserve was chosen, with abundant trees and interesting topography left from cotton farming days. This playground is not like the treeless, conventional swing-and-slide playgrounds found in most towns. This area contains rich, naturalistic play spaces full of mounds, ditches, logs, tunnels, fallen trees, boulders, and some creative structures including a beaver lodge and eagles' nest. This space allows children unstructured imaginative play in a "safe" environment. The rocks will be meant for climbing, the tunnels for crawling, the sand pit for digging, and the trees for climbing.

Photo courtesy Nick Holler and Jennifer Lolley

These are all the things that we enjoyed as children, but that the majority of today's children are not experiencing. This generation of children is being labeled with "nature deficit disorder," a term coined by Richard Louv (Louv 2008). An estimated 1% of the average child's day in the United States is spent outdoors (Hofferth and Sandberg 1999). We, as a state and nation, need to encourage more play outside for the sake of our children's health.

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(979) 575-2464
lh@kevinsloanstudio.com

Julie Johnson, ASLA, Co-Chair
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Chad Kennedy, ASLA, *The Field* Editor
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ckennedy@odellengineering.com

Ilsa Goldman, ASLA, Webinar Coordinator
(619) 681-0090
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Jena Ponti, ASLA, Officer
jenaponti@hotmail.com

Photo courtesy Nick Holler and Jennifer Lolley

The preserve would like to help with this critical issue. We feel that the playground will attract children and families to our beautiful site, and that it will become a conduit to explore the great outdoors. We hope to be an example that will encourage other communities to design similar playgrounds. To date, our playground has been built with all donated materials and labor. Auburn University students have provided most of the volunteer labor. County and university workers have helped with big machinery needs. Area contractors donated their labor and materials to build the tree house and eagle's nest. Auburn University Architecture and Building Science students built the beavers' lodge.

Nature playgrounds can be as simple or as complicated as you want them to be, but we noticed that children started playing the minute some big stumps and boulders arrived. We worked hard to go with national playground safety regulations. A six inch layer of woodchips was placed around all structures. The Forest Ecology Preserve would like to be leaders in the movement to "unplug" kids and get them outdoors for a healthier and happier lifestyle. Next time you are in Auburn, come play with us!

Sources:
Hofferth, Sandra & Sandberg, John. (1999) "Changes in American children's time, 1981-1997." University of Michigan Institute for Social Research.
Louv, Richard. Last Child in the Woods. Chapel Hill: Algonquin Paperbacks, 2008. Print.

Jennifer Lolley is the administrator for the Auburn University Louise Kreher Forest Ecology Preserve. She can be reached at forecol@auburn.edu.

636 Eye Street, NW
Washington, DC 20001-3736
United States of America
Telephone: 1-202-898-2444
Toll-free Number: 1-888-999-ASLA (2752)
Fax: 1-202-898-1185
Email: info@asla.org

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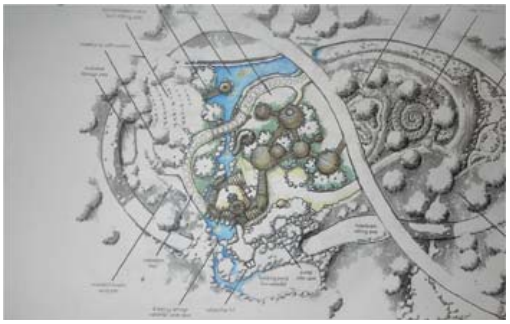
Evans Children's Adventure Garden

by Brent E. Vinson, ASLA

Garvan Woodland Gardens is a 210-acre forested peninsula donated by Verna Cook Garvan in 1985 to the University of Arkansas' Fay Jones School of Architecture. Besides offering natural features such as waterfalls and lake views, the garden features several unique bridges and architectural elements, including a six-story glass and steel chapel. The area, created by long-ago volcanic instability, is now covered with abundant trees, springs, and streams. Deer and squirrel roam freely throughout, along with songbird and waterfowl species.

The Children's Garden project was initiated by the University of Arkansas' Landscape Architecture Department and the Facilities Management Department. It was designed by Brent E. Vinson; development began in 2002 in three phases. The garden offers both educational and leisure opportunities to more than 135,000 visitors annually, ranging from school children and families to older area residents (golf cart tours are available.) Many come to view the floral displays or to explore the woodland; in addition, art exhibits, weddings, and other events are held continuously throughout the year. In December the garden is lit up with Christmas lights and decorations. There is a very popular tulip/daffodil display in early spring, and an annual gala event, including dinner and dancing, in summer.



Photos by Bob Byers, Garden Director at Garvan Woodland Gardens, Hot Springs Arkansas

The main motivation for the creation of the Children's Garden was to generate an atmosphere for exploration and learning within the confines of a rocky wooded hillside and lush green waterway —typical of the region. The goal was to provide the opportunity to experience impromptu and undefined play activities, with the intent of developing cognitive and physical skills in the context of a structured yet natural environment. Here, a child is released to pursue and develop a sense of adventure while stimulating a creative, resourceful imagination without the usual confinements of fences and electronic-powered devices. At the garden, children are given ample opportunity to explore, discover, and imagine among towering oaks and an oversized boulder playground, allowing the uninhibited physical experience and excursion of all the senses that is integral to a child's personal cognitive development. No signs are posted. Instead, participants are encouraged to climb, jump, and play, inventing and engaging in their own games and individual challenges.

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contact

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(979) 575-2464
lh@kevinsloanstudio.com

Julie Johnson, ASLA, Co-Chair
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jmjsama@uw.edu

Chad Kennedy, ASLA, *The Field* Editor
(209) 571-1765, ext.102
ckennedy@odellengineering.com

Ilsa Goldman, ASLA, Webinar Coordinator
(619) 681-0090
igoldman12@gmail.com

Jena Ponti, ASLA, Officer
jenaponti@hotmail.com

Photos by Bob Byers, Garden Director at Garvan Woodland Gardens, Hot Springs Arkansas

Photos by Bob Byers, Garden Director at Garvan Woodland Gardens, Hot Springs Arkansas

Upon entering the garden, a replicated cave is encountered. Similar in appearance to the many caves existing along the limestone bluffs and craggy rock formations of the Ozarks and Ouachita Mountains, the cave is complete with trickling waterfall and lichen growth. Scaling the large rocks and canvassing the nooks and overhead passageways of the cave complex, the imagination is opened, instilling a spirit of exploration and appreciation for the natural world—from the sound and feel of a waterfall to the observation of how a tadpole grows to a toad. The waterfall becomes a creek which descends to a large rock-lined pool at the bottom of the ravine. Shallow waters invite the child to wade in, overturning submerged stones in search of the illusive "crawdad."

Photos by Bob Byers, Garden Director at Garvan Woodland Gardens, Hot Springs Arkansas

Soon, large "tree-pod" playforms will be built among the existing oak and hickory canopy above. These can be entered by ladder, spiral stair, and climbing rope from the forest floor or from the accessible boardwalk bridge encircling the garden. The treehouse complex will allow the child to be free to envelop herself within the outdoor stage of a wood and steel climbing apparatus, constructing endless possibilities for play. Treehouses as well as the other garden activities promote confidence and self-assurance in the child, allowing decision-making and exploration, while simultaneously making him cognizant of his place within the world and his

relationship to it. Time and experience here is invaluable in teaching about the natural processes that occur in the woodland, and encouraging respect for, and understanding of, the importance of preserving them.

Brent E. Vinson, ASLA, is Site and Planning Coordinator for Arvest Bank in Fayetteville, Arkansas. He can be reached bvinson@arvest.com or brentvinson@hotmail.com

636 Eye Street, NW
Washington, DC 20001-3736
United States of America
Telephone: 1-202-898-2444
Toll-free Number: 1-888-999-ASLA (2752)
Fax: 1-202-898-1185
Email: info@asla.org

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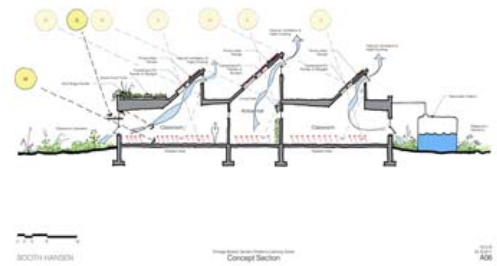
Designing the Chicago Botanic Garden's Children's Campus

by Jennifer Schwarz Ballard

Opened to the public in 1972, the Chicago Botanic Garden in Glencoe, Illinois houses a living collection of more than two million plants from over 9,300 taxa in 24 exhibition gardens and four natural areas—woodlands, wetlands, prairie, and river—on 385 acres. A unique public-private partnership between the Chicago Horticultural Society and the Cook County Forest Preserve District, the garden is free to the public, open 365 days a year, and hosts over 900,000 visitors annually. The garden's mission is to promote the enjoyment, understanding, and conservation of plants and the natural world. As a recognized leader in environmental education, the Chicago Botanic Garden has the imperative to support this mission through exceptional programming along with innovative, ecologically sound, and vibrant building and landscape design.

Booth Hanson Architects

As environmental issues became a central public concern, the garden's children's programming expanded, necessitating the construction of a temporary "H" shaped education building (three connected double-wide trailers) in 2006. From 2007 to 2009, the garden's staff and board developed a new 10-year strategic plan called "Keep Growing," including a new master site plan to guide the direction of future capital projects. The planning process identified important development features including four "campuses"—Science Campus, Entry Campus, Children's Campus, and West Collections Campus. The location, size, and details of each were determined by considering their program requirements, the relationships between their functions, the aesthetic appeal of their siting, and most of all, how they would comfortably serve garden visitors (customers). Creating the overall master plan was an essential step in the development process because it ensures a unified whole as each campus is developed.



Booth Hanson Architects

During this time, the Chicago Botanic Garden benefitted from a seamless leadership transition. While the process was initially led by garden's CEO Barbara Carr, newly named CEO Sophia Siskel, worked directly with Carr on the campus design, first as Vice President of Visitor Programs and Operations, and then as Carr's successor. The

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(979) 575-2464
lh@kevinsloanstudio.com

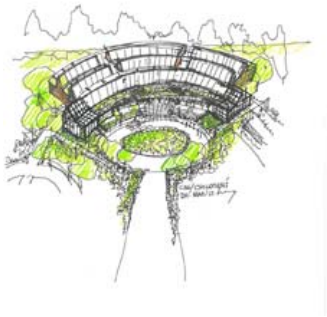
Julie Johnson, ASLA, Co-Chair
(206) 685-4006
jmjsama@uw.edu

Chad Kennedy, ASLA, *The Field* Editor
(209) 571-1765, ext.102
ckennedy@odellengineering.com

Ilsa Goldman, ASLA, Webinar Coordinator
(619) 681-0090
igoldman12@gmail.com

Jena Ponti, ASLA, Officer
jenaponti@hotmail.com

garden's leaders were determined to create a site that was conducive to educational programming, but did not take on a "playground" or stereotypical "child-like" design vernacular. The Children's Campus will support the Garden's larger site and mission, introducing children to the environment and encouraging them to explore the whole institution so they come to know the entire garden as their own. All design elements will reflect the strategic plan, incorporate visibly "sustainable" features, and demonstrate a commitment to the principles of universal design, as determined by world-renowned Chicago Botanic Garden horticultural therapy expert Gene Rothert (Rothert 1994).



Booth Hanson Architects

Five elements of the Children's Campus were identified: an entry drive, a growing garden, an aquatics discovery cove, an education building, and a sensory garden. The first components designed, and first realized, are the entry drive and growing garden (Scott Byron and Associates; funded, opening 2011 and 2012). The Grunsfeld Children's Growing Garden will be an interactive, enclosed space that provides a safe environment for young children to explore nature. Design elements include pathways and water references that are reminiscent of the garden's Skokie River and both prairie and agricultural plantings. The entry drive provides a safe and direct drop-off point with handicapped parking to accommodate increased numbers of special needs children. The campus plan also includes the Kleinman Family Discovery Cove (funded, opening 2012), which will provide opportunities to study aquatic plants and learn about the critical role that fresh water and its conservation plays in all our lives. Due to its physical separation from the main body of the campus and proximity to the West Collections Campus, designed by Oehme, van Sweden, the garden chose OVS as the Kleinman Discovery Cove designer.

The new Children's Center (Booth Hansen; pending funding) will be situated at the turn-around of the entry drive. Responding to the curvilinear form of the growing garden and entry drive, the 22,000-square foot education building will be a beautifully arched structure that fits seamlessly into the architectural vernacular of the Chicago Botanic Garden. The 6-month design process began with workshops facilitated by the Rocky Mountain Institute (RMI) of Boulder, Colorado, a world renowned sustainability design-consulting firm. The completed design is a child-friendly space that allows simultaneous access for public access and private education programming, and also meets the criteria for LEED platinum certification. The building will use natural ventilation, solar panels, radiant geothermal heating and cooling, and rainwater barrels to leverage and conserve natural resources. The saw-tooth roof allows natural light to permeate the building.

All aspects of the Children's Campus have been designed to meet the high aesthetic standards of the garden while maintaining the functional capacity of an exemplary teaching space. The campus illustrates sustainability practices through real-world example, while complementing, not competing with, the main public acres of the garden.

Jennifer Schwarz Ballard, Ph.D. is Director of Education Chicago Botanic Garden in Glencoe, Illinois. She can be reached at jschwarz@chicagobotanic.org.

Source: Rothert, Gene. 1994. The Enabling Garden: Creating Barrier-Free Gardens. Taylor Publishing Co., 1550 W. Mockingbird Ln., Dallas, TX.

636 Eye Street, NW
Washington, DC 20001-3736
United States of America
Telephone: 1-202-898-2444
Toll-free Number: 1-888-999-ASLA (2752)

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Earthplace Nature Center: A Recreational and Educational Trail System within Universal Design Principles

by David Kamp, FASLA

The Earthplace sanctuary is 62 acres of privately-held land that is the largest open-space area in Westport, Connecticut. Adjacent to this land are 11.8 acres of land owned by the Town of Westport. This property was once a farm and there is still abundant evidence of stone walls, open fields, and old wagon roads through the woods.

The mission of Earthplace is to educate the community about nature, the environment, and ways of taking action to preserve, protect, and enjoy nature. Founded in 1958 and accredited by The American Association of Museums, Earthplace maintains and operates a variety of public education, research, and wildlife rehabilitation programs in its wooded sanctuary.

Dirtworks PC was asked to develop a Master Plan for Earthplace, incorporating site-wide landscape enhancements and an educational and recreational trail system based upon the principles of Universal Design.

Image courtesy Dirtworks

Universal Design is a concept that requires all new communication modes, products, and environments be designed with consideration for the needs of all potential users. This concept also recognizes that good inclusive design principles benefit the whole community. There are seven principles to Universal Design, which are drawn from the article referenced below:

- Equitable use
  The design is useful and marketable to people with diverse abilities
- Flexibility in use
  The design accommodates a wide range of individual preferences and abilities....
- Simple, intuitive use
  Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level
- Perceptible information
  The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities
- Tolerance for error
  The design minimizes hazards and the adverse consequences of accidental or unintended actions
- Low physical effort
  The design can be used efficiently and comfortably and with a minimum of fatigue
- Size and space for approach and use
  Appropriate size and space is provided for approach, reach, manipulation, and

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igoldman12@gmail.com

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jenaponti@hotmail.com

use, regardless of user's body size, posture, or mobility.

Ron Mace devised the concept of Universal Design and led a group that created these principles, as described in the article "The Seven Principles of Universal Design," by Rosemarie Rossetti, which is on The Universal Design Living Laboratory web site (see References).

Universally designed trails offer opportunities for different experiences for everyone, regardless of ability, from children or adults with disabilities or limited mobility, to hikers with extensive experience. Universal Design principles take into consideration the physical, cognitive, emotional, and social changes that each person experiences over the course of a lifetime.

People use trails to connect to nature. Trails offer users adventure, exercise, transportation, and leisure. By balancing the desire for access to nature with environmental protection, Dirtworks completed a trail system offering two distinct trail experiences, depending upon the individual user's abilities and interests. Structured as a series of connected loops, the entire trail system is wheelchair-accessible. It has comfortable seating in a variety of different settings, areas for group activities, and special curbing or raised edging and Braille handrails that serve as guides for those who are visually impaired.

Image courtesy Dirtwork

Image courtesy J. Mally

The first loop is called the Discover Trail, which is fully accessible and is the less challenging of the two loops. The trail accommodates a range of individual abilities with attention to user strength and stamina, awareness, orientation, and sunlight sensitivity. The trail provides a level gradient, a secure, smooth surface, and frequent areas for resting.

The Discover Trail is mostly in dappled shade with benches located at convenient spots on which to sit, pause, and enjoy the view. The trail travels through a forest crowned with a mature canopy of trees. Nearby open fields offer abundant sunlight which filters through the trees and contributes to clear sightlines through the forested area. Trees along the trail offer shade and protection from exposure to wind and rain.

The second loop, called the Meadow Grass Trail, winds through a sunny, open meadow where native grasses and abundant birdlife can be found. While wheelchair accessible, with path edging and abundant seating, the trail offers users greater challenges (such as steeper gradients) and a variety of different experiences.

Guidance for the visually impaired is provided along the entire trail system by cues to special features and trail intersections. For example, changes in trail surface material provide tactile information for visitors with visual impairments, which lets them know when they are approaching a particular area such as the end of the trail or prepares them for a turn in the path. An interpretive trail signage system was developed with easily identifiable symbols representing each trail. These symbols (acorns, pine cones,

etc.) are used in a variety of children's activities.

There are many opportunities for having fun while learning about the environment as one walks through the forest, open fields, and wetlands. Along the trail, small ponds attract waterfowl, with the most interesting species appearing during fall and winter migrations. The trails are also excellent places to study wildlife including many native, non-captive yet approachable species. Wild animals, including white-tailed deer and wild turkeys, are often visible along the trails at Earthplace .

The trail system is an integral part of the Earthplace's activity and education programs. Beyond the structured activities, the diversity of experience and moments of delight offered by this natural setting also encourage individual exploration and foster a greater understanding and appreciation of our place in the natural world.

David Kamp, FASLA, President of Dirtworks, PC Landscape Architecture, has been a landscape architect for over 30 years, in private and public practice. He can be reached at info@dirtworks.us.

Sources:
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636 Eye Street, NW
Washington, DC 20001-3736
United States of America
Telephone: 1-202-898-2444
Toll-free Number: 1-888-999-ASLA (2752)
Fax: 1-202-898-1185
Email: info@asla.org

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Educative Landscapes: Informal Learning and Landscape Architecture

by Jason Medeiros, Student ASLA

Modern educators have long recognized the significance of learning in hands-on settings and linking knowledge in the classroom to real life skills (Dewey 1963). Not until recently however, has research begun to quantify the huge impacts of informal experiences outside of school on motivation and achievement for learning in general. Particularly in the area of science education, learning in informal settings not only reinforces what we learn in school, but helps establish lifelong patterns of motivation and curiosity. This informal learning occurs within families and in social groups, at home, on field trips, and in institutions such as zoos and museums. In these places knowledge is often built via collaboration, and people act as learners and teachers alike (Bell et al. 2009). Recognizing that learning occurs across such a wide range of settings can lend new significance to such simple and everyday actions as a walk to the bus stop, a jog in the park, or even a conversation over dinner. Facets in our everyday landscape that promote questioning, experimenting, or simply talking about science are now understood to contribute to all aspects of education (Bell et al. 2009). Given this understanding, landscape architects have a particularly interesting and exciting responsibility to help the public become interested, informed, and fascinated with science and the natural world.

The idea of an educative landscape, one intended to teach, inspire, or otherwise facilitate learning is not new to landscape architecture. These intentions are clear in the designs of zoos, arboreta, and interpretive trails. Opportunities for educative landscapes are now being realized in green urban infrastructure (Echols and Pennypacker 2008), and stressed more heavily in schoolyards and gardens (Johnson 2000). As a student in the MLA program at the University of Washington I began investigating such designs, and asking how a better understanding of learning itself may aid in their success.

Drawing upon experiential education philosophy (Kolb 1984) and the National Research Council's 2009 study Learning Science in Informal Environments (Bell et al.), I distilled learning into five distinct activities. Summarized as the Learning Cycle for Educative Design (Figure 1), each activity represents a function that landscape architects, architects, and planners can support through intentional design of space and infrastructure:

- Inspiring: Experiencing excitement, interest, and motivation to learn about phenomena in the natural and physical world.
- Exploring: Manipulating, testing, experimenting, predicting, questioning, observing, measuring with the intent of making sense of the natural world.
- Reflecting: Deriving general principles, patterns, relationships from observation; the actual act of "making sense o:' such relationships.
- Applying: Retesting ideas in new situations; trying things out.
- Connecting: Making meaning, linking ideas with identity, culture, and prior knowledge.

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Evans Children's Adventure Garden

Designing the Chicago Botanic Garden's Children's Campus

Earthplace Nature Center: A Recreational and Educational Trail System within Universal Design Principles

Educative Landscapes: Informal Learning and Landscape Architecture

contact

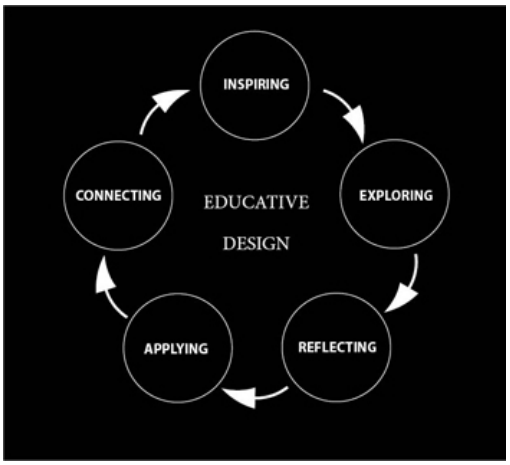
Lisa Horne, ASLA, Co-Chair
(979) 575-2464
lh@kevinsloanstudio.com

Julie Johnson, ASLA, Co-Chair
(206) 685-4006
jmjsama@uw.edu

Chad Kennedy, ASLA, *The Field* Editor
(209) 571-1765, ext.102
ckennedy@odellengineering.com

Ilsa Goldman, ASLA, Webinar Coordinator
(619) 681-0090
igoldman12@gmail.com

Jena Ponti, ASLA, Officer
jenaponti@hotmail.com



Learning Cycle for Educative Design. Learning happens as a series of actions or activities, building knowledge through a cycle of repetition, experience, and experimentation. (Figure by author, informed by Kolb 1984 and Bell et al. 2009)

Though diagramed in a circle (Figure 1), the activities may not necessarily occur in this particular order, nor do they necessarily have to happen on the same site. Importantly, educative landscapes exist less as isolated experiences, and more as pieces of a larger network of learning environments. People can learn in almost any space or place in their lives (Bell et al. 2009), turning the designer into one who helps bridge and make connections between ideas, places, and experiences: between school and home, museum and playground, from formal to informal learning environments. Thought of in this way, the educative landscape becomes both destination and stepping stone in people's larger educational experience.

The activities of Inspiring and Connecting link directly with what motivates us to learn. Often described as affective learning, these aspects deal with our prior feelings about a subject, our expectations, and our interest in continuing to learn more. Informal learning tends to win out in this area over classroom based learning, largely because of the low pressure, open-ended nature of informal learning experiences. Studies in museums show that people are often drawn to areas where they have some prior knowledge, and rank their most powerful experiences as those that strengthen or deepen areas of familiarity (Falk and Dierking 2000). People also learn best when new knowledge or experiences tie in with prior knowledge, family, or cultural values (Bell et al. 2009, Bransford et al. 2000). Informal learning opportunities in open and public places allow visitors to make their own meanings and find cultural connections via experiences with family and friends (Figure 2). Designers of educative landscapes need to be aware of this, and make sure new and inspiring features are balanced with familiar cultural references and amenities.

Figure 2. Rain Drums in the landscape at the Cedar River Watershed Education Center in North Bend, WA create an immediate cultural connection. (Photo by author. Shared with permission by: Dan Corson, www.corsonart.com, artist. Designed in collaboration with Jones & Jones, architects/landscape architects)

Exploring, Reflecting, and Applying represent more of the cognitive aspects of learning. These activities deal more with how we accumulate and test our knowledge —skills often associated with traditional views of education. Exploring, Reflecting, and Applying relate together sequentially, whereas Inspiring and Connecting could happen at any point within or outside of this smaller cognitive cycle. For designs where sequencing of visitor access is possible to control, utilizing the relationship between the activities—Exploring, Reflecting, Applying—could contribute to important design decisions, dictating the pace and order of exposure to new or more complex material. Also significant to note is that cognitive learning will happen best when all three factors are present, something which is a challenge in most public landscapes. Teachers may have students write or present to one another to facilitate reflection, while the designer of a space can only invite reflection by offering comfort through seating or shelter (Figure 3).

Figure 3. Landscapes often provide beautiful places to explore and reflect, like this bird blind at the IslandWood environmental learning center on Bainbridge Island, WA. (Photo by author. Shared with permission by: Mithun, lead architects. Designed in collaboration with Berger Partnership PS, landscape architects and Sahale LCD, construction)

Similarly, the application of ideas to new situations often necessitates rebuilding, tearing down, or somehow manipulating the environment to offer a new experience. Adventure playgrounds, school gardens, and some natural spaces are able to offer "build and rebuild" opportunities that may simply be destructive at other venues. Designs like these that allow for some degree of manipulation and creation meet the cognitive aspects of learning most readily; however, they often require some form of supervision and may not be appropriate for heavy public use. This remains a challenge for designers of educative spaces both in museum settings and more public landscapes as well.

Just as educative landscapes can act as stepping stones, reinforcing ideas across a range of learning environments, they can also create nodes of overlapping social activity, where different social groups can work together in support of learning. A zoo provides a place for both family and school field trips, creating experiences where a student comes in contact with the same material in two different social environments. It is a place where the student can become the teacher, sharing lessons from school, and the family can lend direct social value to these lessons through interest and sharing of their own stories and knowledge. The overlap of different social groups through formal and informal learning at venues such as zoos, aquaria, and museums gives these places particular power in bridging cultural gaps between school and family, science and society (Falk and Dierking 2000, Bell et al. 2009).

There is similar opportunity for the design of educative landscapes in parks, school grounds, waterfronts, and other public spaces that attract a wide range of social groups. Designers of learning spaces need to be aware of the different factors conducive to learning in different social settings and take advantage of places that provide opportunities for these to overlap and combine. Different learning groups will require different design approaches, following continuums of group size, teacher involvement, and formal versus informal education (Moore and Wong 1993, Bell et al 2009, Falk and Dierking 2000).

The implications for the design of learning environments along a teacher vs. student directed continuum depend largely upon the need to control group dynamics (Figure 4). Formal education and teacher-directed activities require—at some point in time—all participants to be focused upon a teacher or a presenter. This type of learning environment benefits from spaces built for presentations, with opportunities for seating and easily defined boundaries. Spatial forms in these cases need to help organize and control the attention of a group. On the opposite end of the gradient, free choice or self-directed learning environments function quite differently in terms of spatial arrangement. In this case, the space needs to allow for freedom of movement, with multiple opportunities to engage and disengage as dictated by the interest of the user (Falk and Dierking 2000). The important implication here is that different learning programs—teacher versus student-directed, and those in between—move through spaces differently, and design can heavily influence their success in a given space.

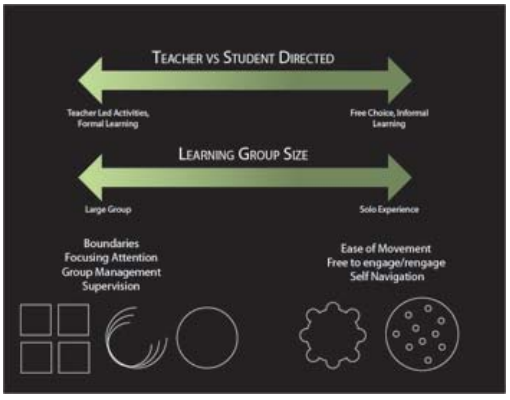


Figure 4. Continuums of Learning. People learn in different ways given the amount of teacher direction, size of peer group and personal control over the learning experience. (Figure by author, informed by Moore and Wong 1997, Falk and Dierking 2000 and Bell et al. 2009)

In the field or in a classroom, teachers like to set up their spaces in a way that affords shifting easily from large to small groups. This allows for different discussion dynamics and hands-on access to equipment or materials that is just not possible in a larger group. Design of all educative landscapes can benefit from this strategy, with or without the guidance of a teacher. Spaces for exploring, reflecting, and applying can be sized for individuals, couples, families, and larger parties. Learning happens in different ways with different levels of friendship, closeness, and familiarity with those around us (Bell et al 2009). These are essential factors to consider when designing educative landscapes, given that learning in general is strongly connected to language and social factors found in group settings (Vygotsky 1978, Bell et al. 2009, Bransford et al. 2000, Falk and Dierking 2000). In the eyes of the designer, other learners should be viewed as part of the educative landscape itself, and the physical form of a space can either encourage or restrict interaction based on the desire for group versus individual reflection and participation.

Testimonials from top-ranked science professionals, and a growing body of research demonstrate the power found in places of informal learning, museums in particular; other research shows that museum experiences increase interest in science careers for young people, especially those at an age when they are defining lifelong interests and aspirations (Satchetello and Sawyer et al. in Bell et al 2009). These powerful experiences do not have to remain within the walls of museum exhibit halls. Indeed they should not. The same research also shows that the impact of museums wanes unless the experience is reinforced within six to eight months. Our learners need more stepping stones. Landscape architects routinely design educative landscapes that cut across social boundaries, expanding inspiration and access to all. But we should not do it alone. Collaboration with teachers, museums, and education professionals will only increase the strength of this network, supporting learners in all formal and informal spaces where we live, work, and play.

Jason Medeiros, Student ASLA, resides in Seattle where he graduated from the University of Washington MLA program in 2011. This piece is an excerpt from larger thesis work on the design of environmental learning centers and the overlap between museum design, education theory, and landscape architecture. Copies are available upon request: spectabolis@yahoo.com.

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636 Eye Street, NW
Washington, DC 20001-3736
United States of America
Telephone: 1-202-898-2444
Toll-free Number: 1-888-999-ASLA (2752)
Fax: 1-202-898-1185
Email: info@asla.org