

Civilizing Ecological Landscape through Assimilation of Urban Parks & Vacancy: A Case Study Baltimore, MD

Elizabeth Carroll

A gap between public support and urban sustainable design is evident through acknowledging the majority of the work done in urban sustainability efforts has been led by architects and has been relatively limited. Leadership in Energy and Environmental Design (LEED) certification for example was a sustainability effort developed by and for architects therefore lacks in identifying sustainable practices beyond the building. Only until recently has there been a system of identifying sustainable practices among our larger infrastructure and territory, the Sustainable Sites Initiative (SITES) which itself has not become fully integrated within city planning and design. Sustainable landscape practices have yet to be frequent in urban cultural norms. A reason for this is may be partly due to the traditional urban parks' 'formal' design specifically with distinct borders separating itself from everyday living thus adding to the disconnected impression of ecological design. A new sensitivity and outlook between ecological design and public perception needs to be examined in order to discover the links between ecological design integrity and ambiguity.

A first step towards filling this gap is to understand the existing assimilation of ecological practices within urban communities, thereafter investigating how successes may be expanded upon, and lastly filling in city-wide issues with innovative strategies to connect with a broader audience than its present. In order to tackle this ambitious assimilation a new perspective on the conceptual framework of urban park design it required. One of the ways to begin to shift the conceptual outlook is to observe city issues as opportunities to change or design accordingly. For example as industrial cities across the United States continue to decrease their populations, in cities such as Cleveland, OH, Detroit MI, and Baltimore, MD, vacancy has become a major concern.

Particularly in Baltimore City currently one in nine properties are vacant 65% of which are in an area without development demand. Further, Baltimore is only the 26th worst vacancy rate in the United States, clearly depicting national concern (Hopkins, 2012). A new outlook addressing vacancy as an opportunity to build or connect with existing landscapes such as urban parks could begin to shift the assimilation.

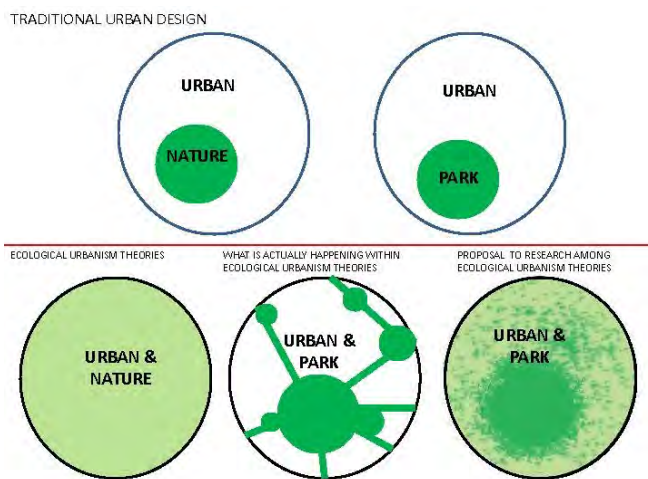


Figure 7. Conceptual Diagram demonstrating the 'blurring of urban park boundaries' and how it may differentiate itself from current theories

This research will focus on a synergistic approach amongst urban park systems and their city structure. It is aimed to discover how to better synthesize ecologically beneficial landscape among community cultural language in order to generate informative influences of ecological

practice throughout the public realm; through design alteration of existing public parks using an existing city-wide concern, vacancy as an opportunity to transform the ecological lens.

Cultural Perception of Ecological Landscapes

Ecological quality is understood through a cultural lens. In the United States this often reverts back to the naturalistic style of urban parks originated back to the 19th century outdated design principles. These American cultural norms have changed the cultural perception of nature. Nature is seen through a secondary lens and often understood as a discrete component rather than understood as a dynamic system (Spirm,1998). This current perception is ultimately what needs to be attended to and shifted and can be through exposure and experiential ecological design in familiar spaces.

Studies have been done on the ecological cultural values of residential design. Research found American cultural values of ecological design norms to conform to what ‘the neighbors appear to prefer’ as stronger than cultural norms that favor particular conventional landscape characteristics, like large areas of mown turf. In other words, residents will become more attracted to ecological design and integrate them in their landscape if others around them do or if they become acquainted through their peers. Cultural values of residential design favor ‘acceptance’ over conventionality, and a sense of pride or sense of neighborliness is integral to the progression of ecological design. (Nassauer, Iverson, Zhifang, Dayrell, 2009). This research exposes the possibility a slow integration into social norms among neighborhoods will ultimately encourage a new ecological perspective.

Biodiversity Concerns in Urban Communities

The generalization that urban vacant land encompasses a large proportion of exotic species classified as agricultural nuisances and garden escapes is apparent in Baltimore City. Researchers in Baltimore, MD measured the spatial heterogeneity of vacant lots surrounding an urban park in the downtown district, Harlem Park. Within this study vacant lots and residential

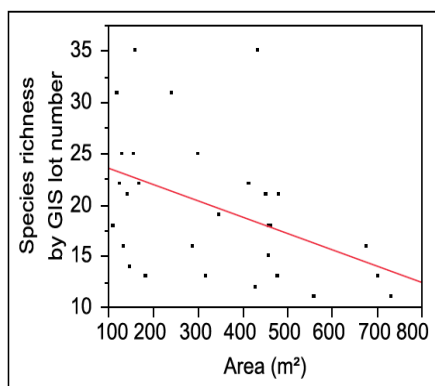


FIGURE 8. HARLEM PARK SPECIES RICHNESS & AREA REGRESSION ANALYSIS

backyards were identified within a nine block square area surrounding Harlem Park. The study identified 117 species, 21% were identified as native, while 47% were identified as invasive.(Tauzer, Pickett 2009). The Harlem Park study also found a significant negative linear regression between species and lot area. This finding indicates backyards size lots typically have higher species richness than larger lots, revealing the fact communities can have a significant influence of the biodiversity of an area, even within even as small of a space as a backyard.

The scientific consequences among community involvement recently have been researched.

Researchers found community characteristics and traits of the landscape can affect urban biodiversity. Research found, “distribution of the species was largely conditioned by the management methods applied to the green spaces: specific management strategies were associated with specific community traits and composition” (Bertoncini, Machon, Pavoine, Muratet, 2012). These research results demonstrate an established relationship between human practices and characteristics of plant communities and how they may positively affect one another. From these results we can assume there is an opportunity to affect plant and animal ecological habitats through community common routine behavior. A synergistic approach to the connection between biodiversity, park systems, vacant land, and backyards (communities) is integral to the ecological perception and urban ecological biodiversity.

Landscape Ecology

Richard Formans’ landscape ecology is based on spatial relationships, changes in species, energy, and materials as key elements of sustainable development. The theory describes a “specific juxtaposition, adjacency, and connection of spatial units has manifold effects on the system, including regulatory processes” (Forman, 1990). Foreman takes a structural approach to landscape ecology and explains the objects, species, energy and materials are distributed in relation to the size, shape, numbers, kinds and configuration of the ecosystems and landscape present. Forman proposes adjacencies will ultimately form a landscape type and shape. The four basic landscape types contain two landscape elements, ecosystems and land uses indicated in black and white (Forman, 1990).

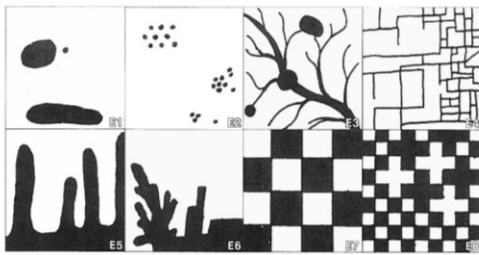


Figure 3. Richard Foreman's landscape types: E1:E2: scattered patch landscape E3:E4: network landscapes E5:E6: interdigitated landscape E7:E8 checkerboard landscape

Forman’s landscape ecology tells us two specific points 1. biodiversity will be affected by the spatial configuration of landscapes and 2. adjacencies will form the landscape type, ecological value and landscape shape. The study of spatial units and spatial configuration is an essential component to the research on a new urban park perspective. The shapes and types of landscapes that may form its adjacencies need to be studied at a scale of an urban park structure itself. Specifically, what should be studied is how boundaries may be transformed to form a new landscape types integrating ecology into new forms. Landscape ecology can be built upon within the urban context by not only looking at existing landscape but opportunities of landscape and how those shapes and adjacencies will affect each other over time.

Landscape Urbanism

Charles Waldheim coined the term Landscape urbanism (Waldheim, 2006; Steiner, 2011) in the mid 1990’s. Landscape urbanism holds the belief landscapes should be the fundamental building

block of city design as opposed to the former, in which city planning designated green space as only the leftovers after buildings, streets, and infrastructure. In other words, the landscape or natural processes within landscape urbanism forms the city planner's decisions.

Although Landscape urbanism remains a relatively new theory there are a few examples of the conceptual workings coming to play. New York City's Fresh Kills Park located in Staten Island is over 2200 acres once a designated landfill has been redesigned with a 30-year plan to be restored and converted into a park including reclaiming toxic wetlands surrounding the landfill (Steiner, 2011). What makes Fresh Kills Park so unique not only is the idea of reclaiming the largest landfill in the world, but the integration of time within design allowing for flexibility through phases of the park design(See figure 1). Often landscape urbanism project designs blur the boundaries between paved or urban design and planted, soft surfaces, while suggesting evolutions in human use (Steiner, 2011). Landscape urbanism projects also often contain a common theme of bringing the people within the natural ecological designs along with reclaiming and restoring neglected or harmed habitats. Bringing the public and nature together to occupy the same space has underlying goals off addressing social, cultural and environmental dynamics playing off one another (Steiner, 2011). Landscape urbanism addresses the cultural and economic influences while intertwining them in landscape design.



Figure 4. Fresh Kills Park Staten Island: Example of Landscape Urbanism stresses the importance of time and phase flexibility integral to cultural and economic influences

Although landscape urbanism focuses on reclaiming space as ecological, it insinuates ecological practices will develop within the public mind set, when not addressing beyond the park. The urban park itself is reinforcing the idea that nature is separate from one's everyday life. Particularly the park used in this example, Fresh Kills Park is beautifully designed ecologically-driven public park which would enhance the lives of many people. A gap in the thought is the park is not fully integral to a city, when designed as destination. Park systems should be integrated within the whole society as part of the ecological shift there will be a greater influence on ecological value throughout the urban context publically and privately, as the cultural language shifts to a more ecological enthusiasm. The proposal becomes to observe existing public parks beyond their perceived boundaries looking further than the parks themselves in order to connect with a broader audience.

Ecological Urbanism

As the population growth increased dramatically after the Industrial Revolution, the housing market boomed and new neighborhoods formed, the conventional methods of city design could not keep up with ecological function. Industrial cities have since shifted as populations have moved out of urban settings leaving a higher supply of housing than current demand. The urban context particularly in these types of cities is essential to be aware of within sustainability studies and design strategies, as they are integral to the urban fabric.

Ecological urbanism embraces the idea our natural resources are depleting and uses it as an opportunity for exploratory design innovations rather than as a form of technical regulations of conventional solutions (Mostafavi, Doherty, 2011). Ultimately this means urban issues faced today should shape our actions and create opportunities to define new approaches to design rather than be seen as detriment or a set of required regulations within to urban design.

Ecological urbanism observes traditional scientific study of ecology which focuses on entities and classification while noting contemporary scientific ecology emphasizes change and process. Current ecological design has begun to but has not fully progressed to emphasize change and process within its theories, as it should to coincide with scientific ecology progression. This shift in thinking Gregory Bateson calls the “economy of flexibility” entails the “dynamic interrelationship between flexibility and formed habits, or habits that must be open to their own conditions of instability and change- that produces the ecology of ideas as an evolutionary process (Bateson, 1989). In other words, it is the combination of traditional knowledge and the flexibility of responding to physical and non-physical variables that create the evolutionary processes that which ecological urbanism addresses. Ecological urbanism analyzes and strategizes design principles using time and flexibility as a vital variable within its structural analysis. Within its flexibility ecological urbanism combines the benefits of both bottom up and top down approaches to urban planning through a multidisciplinary approach that is understood and implied through many cultural facets and fields of education. In this way the conceptual theory is very malleable. It is here where the theory is reputable.

Ecological urbanism is useful in its conceptual framework of flexibility and malleability, its bottom up, top down approaches but lacks to address the question, how do you steer the public in the right direction? Ecological urbanism seems to be quite general its theories and does not specifically address how an ecological shift may happen through public influence. The theory assumes flexibility will allow or insinuate an ecological shift to happen, without any proof. The theory could be strengthened for example by focusing on a catalyst to steer the progression of a project in the ecological direction, with such a variable as community interest.

Goals & Objectives

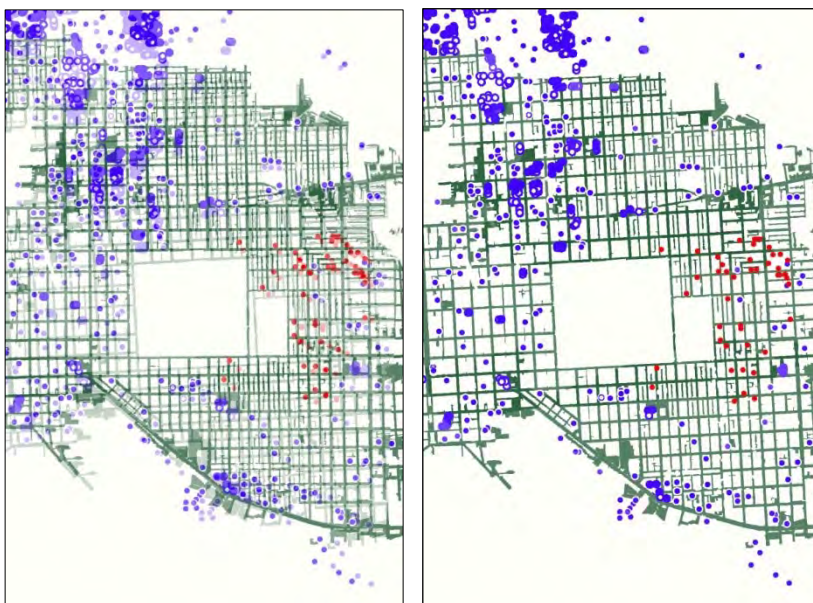
The goal of this project is to ‘blur the boundaries’ of existing urban parks through a slow, flexible strategy of social-ecological integration, ultimately improving an area’s biodiversity. Objectives include increase public interest, address vacancy as an opportunity to improve ecosystems, and establish time and flexibility of a fluctuating urban context within the landscape design principles.

Methods

This project will conduct on a case study on an urban park in Baltimore, MD, Patterson Park, a 155-acre park traditionally designed space containing green space with tennis courts, softball and football fields, walking paths, garden clubs, an ice rink and swimming pool. Patterson Park is located in a neighborhood with a wide range of demographic characteristics and is known as "The Best Backyard in Baltimore." This project will aim to increase plant and animal biodiversity within a five mile radius of Patterson Park, truly into 'Baltimore backyards.'

The project will identify vacant lots within a five mile radius of the park. Using the structure of a similar project conducted in Baltimore City on the biodiversity of vacant lots, these vacant lots will be measured by Area (ft²), length/width, distance from Patterson Park, distance to nearest lot, Area(ft²) of other vacant lots within half a block buffer, and distance to private residential property, all in correspondence to their species richness. The patterns of biodiversity progression will be identified frequently and shape the design process along the way. The success of the project would be determined by the amount of biodiversity increase within the 5 mile radius.

This process will also use landscape ecology as a technique to analyze and discover relationships between landscape types and other existing city conditions. It will identify the matrix, patches, corridors, and interdigitized landscapes. This project identifies landscape types through landscape and vacancy as part of the adjacency identification. The matrix will identify backyards and vacant lots, the streets and alleys as corridors and the existing parks, open lawns and bodies of water as patches. These landscape forms will then be layered and analyzed as to how they may positively affect one another. This analysis will develop a theoretical strategy to "grow" the park itself. It should be noted this strategy does not specifically require vacancy as a variable. The observation of industrial cities and their 'patches' of vacancy could be very beneficial to become part of the theory and gather a more informative argument to the process of ecological landscape planning.



Results

This ongoing project will conduct the analysis and design methods described above.

Figure 5. The start of the identification the matrix, patches, corridors

Discussion

Landscape architecture has progressed in recent years through such theories as landscape urbanism and ecological urbanism both of which claim bringing people into ecological design coupled with a concept based on flexibility and time will ultimately affect the greater social and economic influences in a beneficial way. However these theories have not addressed their theories among a broad enough audience. The theories fail to address public assimilation as integral to their concepts. It has been found that perception of nature is cultural and public perception of ecological design has been found to be strongly influenced by a sense of pride among a neighborhood, revealing an opportunity to adjust perception of nature to have a higher ecological value through 'neighborhood culture.' Landscape urbanism has produced beneficial results within park systems themselves but has failed to address conceptual thinking outside of the park itself, and into cultural neighborhoods. Ecological urbanism has allowed for a flexibility 'timeline' predicting for a greater possible outcome over a longer period of time, although it does not address how to pursue the public interest to advocate an ecological direction. Landscape urbanism and ecological urbanism theories seem to be designing with the outdated traditional existing park design, specifically with distinct borders. The common park system design is outdated and requires a fresh adjustment on existing design in order to improve its connection among the city and its people. A new design outlook is required in which there is a 'blurring of urban park systems' encompassing direct community involvement, an emphasis on urban park adjacencies or borders within the design mechanism and an integration of time and flexibility within city design. If landscape urbanism and ecological urbanism foresee the integration of ecological design within the city, there must first be a collaborative effort among a broader audience by starting with design amendments among existing conditions.

References

- Association, Patterson Park Neighborhood. *PPNA*. Edited by PPNA. 2012. <http://pattersonparkneighbors.org/index.html> (accessed November 6, 2012).
- Bateson, Gregory. *Steps to an Ecology of Mind: Collected Essays in Anthropology, Psychiatry, Evolution, and Epistemology*. Northvale, New Jersey: Jason Aronson Inc, 1972.
- Bertoncini, Alzira Machon, Nathalie, Pavoine, Sandrine, Muratet, Audrey. "Local gardening practices shape urban lawn floristic communities." Edited by Science Director. *Landscape and Urban Planning* (Elsevier), January 2012: 53-61.
- City, Housing Authority of Baltimore. "Vacants to Value ." 2013. http://www.baltimorehousing.org/site_map.
- Czerniak, Julia, and George Hargreaves. *Large Parks*. Edited by Scott Tennent and Packard Lauren. New York, NY: Princeton Architectural Press, 2007.
- Forman, Richard. "The role of spatial configuration." *In: Changing Landscapes: An Ecological Perspective*. New York, NY: Springer-Verlag, 1990.
- Golicnika, Barbara, Thompson, Catherine Ward. "Emerging relationships between design and use of urban park spaces." Edited by Science Direct. *Landscape and Urban Planning* (Elsevier) 94 (September 2009): 38-53.
- Hopkins, Jamie. "Baltimore Sun." *Census Bureau: One in 9 housing units in Baltimore area is vacant*. March 9, 2012. <http://articles.baltimoresun.com/2012-03-09/business/bal-wonk->

census-bureau-one-in-9-housing-units-in-baltimore-area-are-vacant-20120308_1_baltimore-region-metro-areas-vacancy-rate (accessed 2013).

- King, Jason Landscape Architect Principle at Terra, Fluxus, Portland OR. *Landscape + Urbanism* January 22, 2008. http://landscapeandurbanism.blogspot.com/2008_01_01_archive.html (accessed October 9, 2012).
- Mostafavi, Mohsen, and Gareth Doherty. *ECOLOGICAL URBANISM*. Karlsruhe, Germany: Lars Muller Publishers, 2011.
- Nassauer, Joan Iverson, Wang, Zhifang, Dayrell, Erik. "What will the neighbors think? Cultural norms and ecological design." Edited by Science Direct. *Landscape and Urban Planning* (Elsevier) 92 (June 2009): 282-292.
- Pregill, Philip, and Nancy Volkman. *Landscapes in History*. Second Edition. New York, New York: John Wiley & Sons, Inc, 1999.
- Sharma, Archana. "Rethinking greenways design in context of sustainable development: towards landscape synergism." Edited by Julius Gy. Fabos, Robert, Lindhult, Mark Ryan, Peter Kumble, Laszlo Kollanya, Jack Ahern and Sandor Jombach. *Selected Works*, July 2010: 347-364.
- Soini, Katriina, Hanne Vaarala, and Eija Pouta. "Residents' sense of place and landscape perceptions at the rural-urban interface." Edited by SciVerse Science Direct. *Landscape and Urban Planning* (Elsevier) 104 (October 2011): 124-134.
- Spirn, Anne Whiston. *The Language of Landscape*. New Haven and London: Yale University Press, 1998.
- Spirn, Anne Whiston. "ECOLOGICAL URBANISM: A FRAMEWORK FOR THE DESIGN OF RESILIENT CITIES." In *Resilience in Ecology and Urban Design*, by Steward Pickette, Mary Cadenasso and Brian McGrath, look up. look up: Springer Verlag, 2011.
- Steiner, Frederick. "Landscape ecological urbanism: origins and trajectories." Edited by Science Direct. *Landscape and Urban Planning* (Elsevier), no. 100 (2011): 333-337.
- Tauzer, Erica, and Stewart Pickett. "THE PHYTOGEOGRAPHY OF VACANT LOTS IN BALTIMORE, MD, USA:." *Cary Institute of Ecosystem Studies*. 2009. http://www.caryinstitute.org/sites/default/files/public/reprints/Tauzer_2009_REU.pdf (accessed 2013).