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## AN EVALUATION OF OPEN SPACE QUALITY IN A NEO-TRADITIONAL COMMUNITY: A CASE STUDY OF KENTLANDS

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**Using Kentlands as a case study, this paper analyzes the success of a neotraditional development for recreational, habitat, visual and water quality goals. The paper identifies and analyzes open space and green infrastructure protection goals and their outcomes, along with pre-and post-development forest stand and open space protection.**

THE FLIGHT OF homeowners out of cities to relatively inexpensive land and housing in the suburban fringe has placed tremendous pressure on ecosystems, water quality, visual quality and recreation opportunities. For these reasons, the goals for green infrastructure (open space) in many suburban developments over the past two decades have been to provide active and passive recreational areas, to serve as stormwater quality enhancements, wildlife habitat, and as a visual buffer to the hard surfaces of urban areas. This was certainly the case with the neotraditional development of Kentlands in the late 1980's which was simultaneously seen as an antidote to the placeless sprawling suburbs and the environmental degradation that ensued.

However, almost 20 years after its development the question remains: How effective was Kentlands, and by implication, other neotraditional developments, in protecting functioning open space systems? In the literature, post occupancy assessments of suburban forest and open space systems have been few. These have largely focused on the total land area protected (and in some cases patch size) (Brabec 2001), rather than the functionality and condition of the protected area. Specific assessments of Kentlands and other neotraditional communities have focused on the increased real estate values achieved (Tu and Eppli 2001), walkability (Lee and Ahn 2003), and sense of community (Kim and Kaplan 2004) rather than on the open space system.

This paper, therefore, serves as an initial step in the analysis of the success of neotraditional developments for recreational, habitat, visual landscape quality and water quality goals. The paper identifies and analyzes:

1. Open space and green infrastructure protection goals through two methods: a content analysis of public documents filed in connection with development and site plan approvals, and interviews with the developer,

planners and designers.

2. Evaluation of pre-development forest stand protection through the comparison of current and pre-development aerial photographs and site level inventory, resulting in a finding of the amount and quality of existing forest stands that were protected during the development process.

3. Forest stand and open space protection measures and outcomes, using aerial photographs, a detailed site-level inventory of ecosystem, recreational, visual and water quality indicators, and an analysis of local regulatory and homeowners association codes, the outcomes of existing protection tools are defined.

5. Level of compliance and achievement of green infrastructure protection goals through a comparison of current conditions and intended outcomes.

The findings from this analysis are mixed. While the developer and designers of Kentlands had lofty goals and local planners attempted to protect key open space and forest stand areas, the execution contained serious flaws that compromised the ecological system. For example, water quality goals were hampered by direct discharge of stormwater into the stream system, and an inability of the protected stream buffers to absorb levels of site runoff created by new development. In addition, the mix of jurisdictional control of protected areas and the lack of removal of invasive exotics compromised the ability of the areas to serve as native habitat, and attractive, passive recreational areas.

**Keywords: Sustainability, post-occupancy evaluation, open space conservation, urban forest, community planning**

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## **UNDAM IT- IMPACTS ON RIPARIAN WETLANDS FROM THE REMOVAL OF SMALL DAMS**

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**The Pennsylvania Fish and Boat Commission's decision to remove McCoy Dam in central Pennsylvania was not unanimously popular decision. This paper discusses the ecological and cultural resources associated with Spring Creek and what might (will) happen with those resources once the dam is removed in the spring of 2007.**

MANY SMALL DAMS in Pennsylvania are being removed for reasons of public health and safety as well as for ecosystem restoration. Any wetlands associated with a dam will be impacted by its removal. Our goal was to assess the impact of the removal of the McCoy dam on riparian wetlands on Spring Creek, central Pennsylvania. In 2006, we sampled vegetation behind the McCoy dam and (for comparison) also in the old impoundment region of three other dams that had been removed over the past decade. Post-removal dam sites were drier than McCoy Dam relative to the plants that occurred, although some obligate wetland plants remained. All dam removal sites had approximately 10% of their vegetation as non-native, invasive, or introduced. The herbaceous species diversity of the sites increased the longer the dam had been removed. The plant species richness at McCoy Dam was more than twice that of the next most diverse, post-removal site. It is clear that dam removal has an impact on the riparian vegetation and that active human intervention may be used to restore the stream back to more natural conditions.

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## A SURVEY OF COMMUNITY WILDLAND/URBAN FIRE ORDINANCES AND THEIR IMPACTS UPON THE DESIGN PROFESSION

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**The implications of wildland/urban fire prevention on the design profession were assessed by analyzing 154 existing local building ordinances. The results from this research show that landscape architects and planners should have a thorough understanding of several key issues when working within the wildland/urban interface.**

SINCE 2000, THE United States has experienced record wildfire seasons causing significant property damage. In response, communities are increasingly adopting or strengthening wildland fire ordinances to minimize wildfire damage. Numerous issues such as increasing population, changing demographics, economic development, changing land use, and land related policies are propelling heightened development in the wildland-urban interface. The impacts of these developments in conjunction with the increasingly stringent fire codes and ordinances that regulate their design, construction and management have strong implications for designers. The question asked is how are these expanding ordinances affecting the scope of work for landscape architects and planners in design and construction?

This paper examines municipal and county wildland fire codes containing provisions for landscape features in order to evaluate their impacts for new and existing development. Although ordinances may vary widely in their provisions and language, comparative analysis reveals the prevailing trends and the minimum knowledge requirements for design professionals working within fire hazard areas. The local ordinances may incorporate one or even combinations of several reference codes to provide for the structural, landscape, roadways, signage, or other provisions deemed important by the local fire officials and the community. A list of 154 communities in 11 states that have regulatory fire codes with ordinances specific to landscape features were reviewed and analyzed. Results show that categories that affect the landscape include ordinances that apply only to new construction, roadway standards, driveway standards, vegetative clearance within 30 feet of all structures, vegetative clearance within 100 feet of all structures, greenbelt requirements, property fuel modification plans, deck regulations, ongoing

maintenance requirements, ordinances that apply to properties less than one acre in size, hazard assessment reports required, and building setback regulations. The research evaluates the frequency of provisions for individual residential scale as well as larger planning issues. This paper explains each of these categories and provides the range of requirements from the ordinances.

The results reveal that existing ordinances primarily address access for emergency vehicles; regulations on the amount and height of vegetation located near structures; material types and design of attached structures, such as decks; and the placement and locations of structures on properties. The vast majority of ordinances (79.8%) occurred in populations under 300,000. When comparing community code provisions to population size, it became apparent that wildland fire provisions were different for cities exceeding 300,000 in population as compared to smaller cities. Discussion of the research findings focuses on the landscape architecture profession's role in high fire risk areas and concludes that landscape architects are integral in protecting the safety of communities that develop in the wildland-urban interface. Specific examples will be given on the implications of ordinances on design, and the opportunities for further study. This research reveals that at a minimum, landscape architects should have a thorough understanding of vegetative fuel load modification in zones around structures and ensure that designs provide adequate access for large emergency vehicles.

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## **(UNDER)STANDING ASSIGNMENTS: IMPROVING THE EDGE CONDITION OF A MITIGATION WETLAND**

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**Methods of research and communication in landscape architecture and ecology are combined to fulfill a retrofit design for a failing wetland mitigation project. Research findings communicate qualitative and quantitative data through image charts, while the retrofit proposal is based on the ecological concept of micro-topography heterogeneity and edge length to increase plant species richness.**

LANDSCAPE ARCHITECTURE AND ecology continue to intermingle in design projects possessing environmental priorities. Their momentary coalescence, and subsequent success, however, may rely in part on the inclusion of ecological theory and the integration of respective disciplinary methods which can transcend the disciplinary boundaries. This paper provides a demonstration of an integrated research and design method for plant biodiversity in a wetland mitigation project. It uses historical analysis, field survey and a visual design method to evaluate existing conditions and then propose a more specific retrofit design solution based in the structural theory of biodiversity to fulfill the original assignment of high plant species diversity.

The project, known as the “billabong”, is a mitigation wetland located at the Olentangy River Wetlands Research Park at the Ohio State University. It was originally designed with the intent to create high plant species richness through gradual slope edge zonation of 8:1 along the wetland embankment. However, research conducted five years post construction, by the author, through a field transect method, showed a decrease in plant species richness occurring within these edge zones. Although the specific cause for declining plant species richness is unknown one probable cause is the uniform slope created in the wetlands edge during construction.

This paper presents the original design intent and construction, post construction research analysis and findings, and a retrofit design proposal, or design hypothesis, based on the concept of microtopography heterogeneity proposed by Vivian-Smith (1997). Historic photo analysis and secondary publications were used to demonstrate that construction was completed as intended. A post construction field method evaluating the plant species richness, soils and slope was used to examine the success of the design.

Findings regarding the soils, context, and species richness are presented in imagecharts to simultaneously convey qualitative and quantitative data for both landscape architecture and ecology. Imagecharts have been shown to be effective in the field of information architecture by Werman (1999) and previously applied to landscape reclamation by Berger (2002). The retrofit design is based on two theories of increasing biodiversity: 1) microtopography heterogeneity proposed by Vivian-Smith (1997) which explains increases wetland plant diversity can be attributed to greater topographic variation, 2) the landscape ecological concept of the edge to create greater biodiversity by increasing edge length which has been expressed by Forman and Godron (1989). Design hypothesis is intended to complete the original assignment of high plant species richness in the edge by increasing the edge length through topographic variation.

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The use of contemporary ecological theory in wetlands design can direct environmental projects towards potential improvement in design performance. Combining field data gathering and office methods from landscape architecture and ecology may allow for improved project communication. With improved techniques landscape architecture and ecology have a greater potential to successfully combine in design projects with environmental priorities.

**Key words: wetlands, edge, imagechart, microtopographic heterogeneity, microtopography, design and ecology**

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# ECOLOGICAL IMPACTS OF DESIGN- THE EFFECTS OF AN INTERSTATE HIGHWAY CONSTRUCTION PROJECT ON AQUATIC RESOURCES OF THE BALD EAGLE RIDGE, CENTRAL PENNSYLVANIA, USA

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**The Pennsylvania Department of Transportation recently began construction of the final segments of Interstate 99 in central Pennsylvania. This paper discusses the ecological impacts of that design decision on the aquatic resources of the ridge and the valley below.**

CONSTRUCTION OF THE remaining segments of the I-99 corridor began in 2002. The decision to place I-99 on the ridge, as opposed to the valley, brought significant ecological impacts to the region, including the destruction of ridge slope seep wetlands. A small amount (31 acres) of ridge wetlands were destroyed, but these were more than replaced (in acreage) by mitigation wetlands in the valley (50 acres created). A comparison of the structure and function of the impacted and mitigation wetlands shows that the two groups are different. The mitigation wetlands do not replace the type or the function of the lost slope wetlands. Furthermore, the mitigation wetlands do not function like natural wetlands found in the same setting. Much of the reason for these differences lies in the design of the mitigation wetlands themselves - they typically have too much water and have been placed in locations where they do not integrate with the natural hydrodynamics of Bald Eagle Creek. To develop ecologically appropriate mitigation wetlands may be more expensive, depending upon the location chosen. In fact, poor choice of location for mitigation wetlands often forces substantially more construction than might be otherwise necessary. Finally, the construction of the road has led to the spread of an aggressive invasive plant to the region. Different design decisions along the way could have lessened the impact of the highway on the ecological resources of the region.

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# **LANDSCAPE PLANNING, STATISTICS AND TECHNOLOGY: THE DEVELOP- MENT OF A SPATIAL DECISION SUPPORT SYSTEM UTILIZING DATA FROM THE GAP ANALYSIS PROGRAM AND A BAYESIAN BELIEF NETWORK**

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**With increased degradation of natural resources due to land use decisions, a better integration of natural resources into the planning process is needed. This paper addresses how a Bayesian Belief Network and the Gap Analysis Program can be used by planners to assess the impacts of developments on ecosystems.**

THIS PAPER DEMONSTRATES the feasibility of creating a spatial decision support system (SDSS) that integrates data from the Gap Analysis Program (GAP) and a bayesian belief network (BBN) within a geographic information system (GIS). With increased degradation of natural resources due to land use decisions and the subsequent loss of biodiversity across large spatial scales, there is a need for a SDSS that displays biodiversity and the population response of fish after developments. This tool allows planners to understand where not to develop, as well as, see with the reduction of habitats, the effects of a development on indigenous fish, vertebrates, and landcovers. With the integration of these datasets occurring within a GIS, ecological data is processed with traditional planning data sets so that natural resources can become an integral part of the planning process.

BBNs are knowledge-based expert systems that predict the probability of an event occurring, SDSSs utilize the graphical display of a GIS to manage complex resource problems, and GAP is a division of the USGS that sets standards for and helps states develop spatial data that consist of landcover, vertebrate occurrence, biodiversity, and land stewardship.

The pilot study for this SDSS was developed as part of a recreational master planning effort currently underway in Smith County, MS. Landscape architects are working with engineers and scientists to select a lake site that has the least amount of environmental impact, but also provides developers with the tools to identify high quality (profitable) development sites.

It was found through this study that with a GIS, managing and querying GAP data is intuitive and that although a BBN is highly flexible, it requires expert knowledge within the subject matter to operate. This paper will highlight the Smith County, MS project and the steps that were taken

in order to calculate the specific impacts of the lake on current landcovers, habitats, and on fish indigenous to the creek on which the lake is to be built. To accomplish this, examples will be used to introduce educators, landscape architects, and planners to the benefits of integrating these types of data sets within their standard planning process to locate areas high in biodiversity and understand the possible impacts of a specific development on aquatic and terrestrial ecosystems.

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## **OPEN SPACE CONSERVATION IN A DEVELOPING PENNSYLVANIA WATER- SHED: THE IMPORTANCE OF ATTIT- TUDES AND IMPEDIMENTS**

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**Results of a study of the attitudes of elected municipal officials, appointed planning commissioners, and residents towards open space conservation in the 14 municipalities of a developing watershed will be provided. Also, impediments and opportunities for conservation of meaningful open space in this urbanizing landscape will be discussed.**

ALTHOUGH CONCERN ABOUT open space conservation in developing and growing places has been expressed in the land use planning literature since the American subdivision boom of the 1950s and 60s, limited scholarly studies have been completed on the attitudes of both leaders (i.e., elected municipal officials and appointed planning commissioners) and residents towards open space conservation in a rapidly developing watershed. Theories of democratic government suggest that for efficient and competent change to occur there must be a congruence of attitudes between leaders and residents. Thus, when considering the meaningful conservation of open space in an arena of competing development issues and opportunities a number of questions can be posed: 1) Is open space conservation important to leaders and residents living within the multiple municipalities of a developing watershed? 2) Are the attitudes of these groups congruent? and 3) What do these groups identify as impediments and opportunities for open space conservation?

A watershed approach was used as the cumulative impacts of development often occur without respect to the jurisdictional lines of municipalities. Further, this landscape scale of analysis allowed the measurement and comparison of attitudes and policy across geographically connected places concurrently. Using bivariate statistics, as well as factor analysis, reliability testing, and multiple linear regression, analysis of data collected from 104 key informant interviews and multiple wave mail surveys of leaders and residents explored the importance of open space conservation in the developing Spring Creek Watershed of central Pennsylvania. Furthermore, land use planning and regulatory policy and tools existing in the watershed municipalities were reviewed. Findings showed that both leaders and residents considered

open space conservation important. Findings also supported municipal governments' involvement in open space through non-regulatory (e.g., general fund and bond issue) and regulatory (e.g., zoning) techniques, highlighted the negative impacts of poor municipal cooperation, and indicated the need for both increased organizational capacity and a strong citizen voice for meaningful open space conservation. Results of a multiple linear regression showed that open space visitation, living in faster growing places, agreement with a number of common and more obscure open space benefits, and increased environmental concern were all positively related to a person saying open space was important. These findings support a number of past findings in the environmental concern literature. Further, they support education and citizen participation, both important aspects in successful open space conservation across the United States.

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Urbanizing Americans will continue to look to open space for an increasing number of benefits. Importantly, this study through open ended questions also demonstrated that neither leaders or residents had a clear understanding of the economic, environmental, and health benefits that open space provides for people and the places they live.

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## **LANDSCAPE CONTEXT OF GRAZING LANDS IN THE NORTHEASTERN UNITED STATES**

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**In agricultural systems, planned plant diversity provides the primary product, but associated biodiversity contributes additional ecosystem services required for sustainability. Landscape context was related to associated plant diversity, but not to planned plant diversity, suggesting that management for sustainable ecosystem function must incorporate landscape context.**

MUCH ATTENTION HAS been devoted to the most noticeable impacts of the spread of urban and suburban developments into agricultural areas, including pollution, transportation of agricultural products, and aesthetic effects. Alteration of the landscape may have other, more subtle, effects on agricultural activities by changing landscape diversity, thereby altering the abundances of both plant and animal species.

Grazing lands increase landscape diversity in the northeastern United States by providing botanically-diverse grassland areas within a matrix of row crops, forests and development. Between 1998 and 2005, we sampled botanical diversity within 95 pastures on 28 farms from Maryland north to Maine. We used the multiscale modified Whittaker plot to characterize the plant communities in these pastures. The 1992 National Land Cover Dataset was used to characterize the land use within a 1000m radius circle surrounding these farms. Land use ranged from 4-95% agricultural, with the remainder primarily forest. A maximum of 9% of the area surrounding these farms had been developed by 1992, although this is rapidly changing in many areas (2001 NLCD data are not yet available for these sites). Total plant species richness was positively related to the proportion of forest cover, and negatively related to the proportion of row crops in the surrounding landscape. Richness of forage species was related to neither forest cover nor row crop area.

Planned diversity, in this case the richness of forage species, was not related to landscape composition, while total diversity decreased with increasing row crop area. Planned diversity is directly manipulated as part of farm management. Associated diversity consists of species which come in from sources other than direct manipulation. For plants, this requires a source ei-

ther in the soil seed bank or the surrounding region within dispersal distance for that species. A wider range of propagules may be available in pastures that are surrounded by land uses other than row crops, since one of the goals of intensive agriculture is to maintain a monoculture. Associated diversity may support or provide many of the ecosystems services that agriculture relies on, so understanding the role of landscape context and other factors that may impact it is of importance for improving agricultural sustainability.

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## SIACHEN TRANS-FRONTIER RESERVE, KASHMIR: BORDERING BIODIVERSITY, MULTILATERALISM AND CONFLICT

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**This paper examines the development of Siachen transfrontier park in Kashmir as a case study of contemporary landscape change influenced by globalization and political and environmental security. The paper investigates three aspects: evolution of the proposal overtime, influence of multilateral agreement on projected land use, and collaborative management regimes.**

RECENT SCHOLARSHIP CONCERNING globalization in landscape architecture has focused largely on its history and its theoretical implications (Swaffield, 2004). The broader discourse on globalization and its geopolitical processes, however, suggests two broad global trends related to globalization and political and environmental security: the intensification of competition for natural resources between nations and regions, and the increasing influence of multilateralism (Cerny, 1997). A growing body of scholarly literature concerning political and environmental security dimensions of global resource competition and multilateralism cites two fundamental axioms: that resource scarcity, alone, can rapidly reduce regional economic opportunity and prompt enormous political demand for declining croplands, water resources, and forest products; and that if weapons are readily available, and if conflicts already exist, the added political strains associated with a socially and symbolically deteriorating environment can be overwhelming (Matthew, 2001).

Westing identifies approximately one-sixth of the 221 highest-priority terrestrial natural resource areas in 127 sovereign states (Bibby, 1992) as sharing borders that remain ill-defined and contested. Given the particularly sensitive political context of these high priority natural resources, trans-frontier reserves have been proposed to (a) cultivate amicable relations between sovereign states (b) encourage the reduction of conflict over contested resources; and (c) make use of multilateral treaties that can effectively manage both political security and conservation of contested resources (Westing 1993d). International multilateral agreements are considered especially useful in the establishment of such reserves in areas of conflict. Goldblat cites the 1971 Wetlands Convention, the 1992 Convention on Biological Diversity,

the 1977 Protocol on International Armed Conflicts, and the 1949 Geneva Conventions as potentially important means in facilitating the development of trans-frontier reserves (Goldblat, 1993).

Given the significant natural resources present within the Kashmir region between India and Pakistan, trans-frontier reserves have been considered as a means of conflict resolution and natural resource conservation. The 77 km-long and 3 km-wide Siachen Glacier in Kashmir is a potentially valuable reserve because it contains water resources that serve over a million inhabitants in both Pakistan and India, and because the glacier itself is increasingly threatened by spent material from warfare. A primary distribution area for the endangered snow leopard, breeding grounds for brown bears and the threatened ibex as well as important habitat for the regions endemic flora, the Siachen Glacier is also significant in terms of biodiversity (Ahmedullah, 1997).

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This paper examines the development of a trans-frontier park on the site of Siachen glacier in Kashmir as a case study of contemporary landscape change influenced by globalization and political and environmental security. Addressing the conference theme of Border Conflict, the paper investigates the role of international multilateral agreement in the development of trans-frontier parks and reserves, and their influence on the protection of natural resources and ecology in contested regions worldwide. Specifically the paper investigates three aspects of the trans-frontier park: the evolution of the proposal overtime, the influence of multilateral agreement on projected land use, and collaborative management regimes.

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## THE EFFECTS OF SUBDIVISION DESIGN AND DEVELOPMENT REGULATIONS ON LANDSCAPE STRUCTURE: A CASE OF THE WOODLANDS VS. NORTH HOUSTON

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**This study examines the relationship between ecological landscape structure and spatial dimensions of lots and rights-of-way governed by local development regulations in two residential communities. Results indicate that street related factors are more closely correlated with landscape structure than parcel related variables.**

AN ECOLOGICAL APPROACH to land-use planning is essential to maintain the long-term sustainability of ecosystem benefits, services, and resources. Interest about environmental quality and the long-term livability of urban areas is now a driving force in urban planning and design. The interrelated issues of growth management, smart growth, sustainable development, and new urbanism are topics in the most vibrant discussions at all levels of planning and landscape architecture. Within this context, this study starts from an interest in ecological planning and management in urban areas, especially related to the issue of subdivision design described in local development regulation and guidelines. Landscape regulations have come into existence recently in communities across the nation and these regulations vary from one region to another and from one community to another.

Statistical comparison analysis was conducted between two areas that had similar pre-development ecological conditions but were developed under different planning approaches. The Woodlands (an ecological design approach) and the North Houston area (which followed traditional subdivision regulations) were examined at two different developmental time periods: early development (after 10 years) and matured development (after 30 years). Aerial photos of each site from the two time periods were classified into forested and non-forested classes and the landscape structure was quantified with a number of landscape metrics related to fragmentation—an indicator of habitat degradation. Ecological approaches to landscape planning, and subdivision design governed by landscape regulations and guidelines, are discussed on the premise that they exert influence in developing and maintaining the long-term sustainability of ecosystems.

This study quantifies the effects of subdivision design and development

regulations on landscape structure. The ecologically planned community shows a less fragmented forest pattern while street related variables such as street width, the number of intersections, and the lot frontage adjacent to the road show significant effects on the ecological structure of developed residential environments. Understanding how elements of local development regulations affect ecological landscape patterns is important for landscape architects, planners, and public officials and should lead to better strategies for planning and designing sustainable communities.

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## **LANDSCAPES BY FIRE: DESIGN RESPONSES TO AN UNPREDICTABLE ELEMENT**

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**Fire has long been recognized as a force to be acknowledged in the shaping of environments. It is shown here how this natural phenomenon, often neglected in our literature as a design catalyst, influenced the outcomes of numerous American built landscapes, including cities, campuses, roadways, recreational facilities and private gardens.**

FROM THE ARRIVAL of Europeans in North America, observations of landscapes on fire were recorded in numerous explorers' journals. These conflagrations were either agricultural acts of Native Americans seeking to secure food, or lightning strikes, igniting grasslands and forests. Throughout the subsequent development of the continent--in the natural world, in cities, in institutional design and in the planning of residential complexes--the force of fire has been a powerful mechanism in shaping American landscape architecture.

The ecology of fire, its role in sustaining healthy, diverse ecosystems has only recently been recognized as a catalyst to vigorous public forest landscapes. The toll of catastrophic fires, particularly in Western states, ranks with other uncontrollable acts of nature; its management still evokes substantial controversy

I will examine how fire has also been a dynamic stimulus to other aspects of landscape architectural design. Proposals seeking to mitigate its destructive effects have altered the direction and form of early American settlements such as the city of Philadelphia, which William Penn decreed should be a "green country town, which will never be burnt, and always be wholesome."

In the early 19th century Jefferson recognized the danger of fire and, inspired by hospital designs observed in Paris, decided to propose a radical plan for a college in Charlottesville. He wrote of plans for the University of Virginia, "The greatest danger will be overbuilding...large houses...exposed to the accident of fire." His ten separate pavilions engaging a broad lawn directly responded to the threat of fire.

Clearly, the relationship between fire and early architectural codes has

resulted in limitations in materials and building design. In arguing for the generous scale of his boulevards, Frederick Law Olmsted justified their broad widths as potential firebreaks, limiting the spread of urban conflagrations. Just as fire-inspired building codes shaped the architectural environment, Olmsted's arguments have resulted in handsome urban connections, such as his earliest roadway design, Brooklyn's Eastern Parkway

The spectacle "Fighting the Flames" in turn-of-the-century Coney Island was a forerunner of the many simulated-scare entertainments later incorporated into the recreational landscapes of amusement parks. There, in "Dreamland," a hotel was set on fire on a daily basis. Awe struck crowds gathered. Trained actors and animals leapt from windows into safety nets. The crowd, many from fire-threatened slum landscapes, experienced the vicarious experience, thrill and horror of their own potential tragedies.

It will be shown how other icons of modern American landscape architecture, such as Jensen's council rings and Church's Donnell Garden, owe strong measures of their design identities to human "negotiations" with fire. The paper will synthesize evidence of fire's land shaping role from a wide variety of published sources and will argue for a reconsideration of the historical significance of this primal element.

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## LEBENSRAUM(LIVING SPACE): NAZI LAND USE PLANNING AND THE DEVEL- OPMENT OF CENTRAL PLACE THEORY

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**This paper explores the development of nazi space planning which is considered the beginning of applied geography and the basis for modern day systems theory. It is here that Walter Christaller applied and refined “Central Place Theory” while planning the land use and settlement of captured Eastern European territories.**

PRIOR TO THE rise of nationalsozialismus(nazi) little, if any, scientific land use planning was attempted in either Europe or north America. Applied geography, a term used to indicate the use of land and land occupation factors, was practically unknown while systems theory was only a concept being developed by Walter Christaller. In this vein, upon rising to power, Hitler established the reichs office for spatial planning and staffed it with german university geographers Konrad Meyer, Hans Von Gruenberg, Walter Geisler, Walter Christaller and others of this ilk - thus began the scientific application of geographic principles to land use systems. The result was planning for captured eastern european lands, based on geopolitics (the natural landscape, the surface features of the land before it is settled), which would provide lebensraum (living space) for the german people.

Hitler’s sketch for an agrarian utopia was that only by blut und boden (blood and soil) would the purity of the aryan race be secured. Plans were developed which proposed large scale changes in the composition of towns, the building of completely new german cities of 15-20,000 population at important railway and highway junctions, the resettlement of people of aryan descent and the relocation of factories to provide employment. Such cities were to be surrounded by an 8-16 km. Belt of villages with a distinct back-to-the-land flavor. Christaller (1966), having established the concept of central place theory in his ph d dissertation, applied it to various regions in Warthegau, East Prussia and Upper Sileasa where he further refined his model of spatial organization and its “hierarchy of settlements.” With this model it seemed possible to plan the distribution of goods and services in an economically efficient, environmentally sound and culturally satisfactory manner. Spatial order was seen by the nazis as essential for building a rational society.

Good plans make good citizens.

This paper will bring to light original resource maps, conceptual plans and documents internally published by the pre-wwii nazi regime. It will attempt to make the case that this is the first know utilization of systematic and scientific regional scale planning. Of no less importance, although more tenuous, it appears to be the origin of the application of systems theory approach to geographic information. Because of its nazi origins, much of this ground breaking research was largely denigrated after wwii, although it later gained some semblance of academic acceptance, in both europe and north america. Ian Mcharg, Philip Lewis, G. Angus Hills and other regional planners, at least in concept, utilized various adaptations of systems analysis and central place planning theory, especially with regard to land use suitability. It is my intent to shed historical light on this important arena of land use planning and discuss some of the underlying philosophy that gives credence to presently accepted theory and application.

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## RE-BUILDING ECOLOGY: THE 'FOREST SUCCESSION' FINALIST PROPOSAL FOR HALIFAX'S POINT PLEASANT PARK INTERNATIONAL DESIGN COMPETITION

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**The Point Pleasant Park International Design Competition was held in 2005 as a response to a series of natural disasters, including Hurricane Juan, which devastated the park's mature ecology. This paper presents the 'FOREST SUCCESSION' master plan proposal by North Design Office, outlining their approach to rebuilding the park's ecology.**

THE MASTER PLAN for the multi-phased regeneration, restoration, and renewal of Point Pleasant Park is based on a detailed understanding of the site's geographic location, geomorphic characteristics, diverse ecologies, and historic significance and is managed by principles of natural forest succession. The proposal aims to develop a healthy, sustainable, multi-aged forest system whose health and vigor are able to adapt to impacts of disease, insect infestation, weather extremes, and human use. The proposed design concept celebrates, protects and enhances the site's extraordinary physical qualities and historic legacy.

Augmented in the early stages with young plantings as catalyst patches in strategic locations, the proposed managed forest succession process for Point Pleasant Park encourages the forest system to regenerate and evolve with minimal guided intervention. Firstly, to help mitigate soil erosion, the steepest slopes are planted with pioneer species, providing the plantings a place to establish beyond human traffic. Locations for future forest succession boundaries are made by considering soil types and quality, slopes, orientation, exposure, microclimates and programming. Soil building strategies and retaining woody debris ensures adequate amounts of nutrient rich soil for forest growth. As restoration is an ongoing process the proposed design strategy for Point Pleasant Park includes continuous monitoring of the landscape. Engaging the community, with the plan's strong community-based education component, ensures the long term success of the park. The plan is inherently flexible through its promotion of changing forest conditions and park uses. Adapted to suit the micro-sites and soil conditions, the key component to the managed forest succession plan is the development of a diverse multi-aged forest.

Point Pleasant Park has experienced extreme disturbance and disruption in the wake of Hurricane Juan and other natural adversities. Like any healing process it takes time to repair and rebuild. The process of successional evolution, not only for the forest and site ecologies, but for infrastructure and programming as well, will ensure that the future configuration of the park will be well suited to its environment.

Through an examination of landscape architectural precedents and current process theory, the 'FOREST SUCCESSION' master plan proposal will be situated in the discipline's broader discourse. As projects designed by landscape architects, the built works of Bos Park and Parc du Sausset will serve as precedent projects premised on forest succession principles. Two recent and notorious examples of un-built process theory projects, the proposals for Parc Downsview Park and Fresh Kills, will also provide insights on this trajectory in landscape architecture. By outlining specific strategies and strong frameworks, the paper aims to expand the discourse surrounding process theory and help solidify this mode of practice for large scale sites.

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## IN-SITE/OUT: CRITICAL CONTRIBUTIONS OF LAND- SCAPE ARCHITECTURE TO SUSTAINABLE DESIGN

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**This paper presents a framework for landscape architecture as sustainable design through case studies of built work. The framework is centered on a design approach in which sites both draw from and influence the sustainable qualities of their contexts. It proposes a typology for sustainable landscapes that challenges traditional identities.**

THE DUAL NATURE of landscape architecture as both art and science suggests that sustainability within this medium must consider both ecological benefits of design intervention, as well as cultural/social benefits. Sustainability in landscape architecture has long been synonymous with ecological design, viewed as a specialized branch of the field. Important social and cultural dimensions of landscape as suggested by the work of Hester, Hough, Hood and others is not as readily connected to sustainability. Popular movements such as new urbanism and smart growth address cultural sustainability of communities, but lack attention to ecological dimensions of land use.

In emphasizing the synthesis of the cultural and ecological qualities of landscape architectural design, we propose a new design methodology to reflect the growing trend in built work that blurs the once sharp schism between “high design”, land planning, and ecological design. The notion embodied in the term In-site/OUT is that sustainable landscape architecture is, first and foremost, that in which the design subject site is created to both reflect and enrich the sustainable nature or potential of its context. The sensitive integration of a site with its setting - its environmental fitness - has been recognized as a core principle of the profession since Ian McHarg first articulated a theory of design with nature in the 1960's. Since this time, the notion of sustainability has entered public consciousness and landscape architecture has evolved in ways which have further developed its unique role and contributions. Accordingly, our model for sustainability is based on a framework that situates projects in several possible pre-design site/context relationships: disconnected site, sustainable island, sustainable network and sustainable integration. Analysis of this relationship is a critical bridge to defining the problem and developing appropriate design responses.

Sustainable design requires an approach that involves every stage of the design process. Many of the tools currently in use to aid in sustainable design deal primarily with end stages of design (i.e. LEED certification, Thompson & Sorvig's book *Sustainable Landscape Construction*, BMP stormwater treatment methods). While useful, this emphasis does not account for critical decisions that are made much earlier in the design process. Problem definition and program development within landscape architecture tend to be very open-ended in comparison with other fields. Although this freedom is often used to some advantage, it can also lead to confusion as to purpose and identity of the designed landscape. Traditional landscape typologies are often driven by land use labels such as residential, commercial, etc; as such the landscape is viewed as supporting development rather than as a positive entity its own right. We propose a new typology for sustainable place-making that identifies projects through landscape-based goals: contemplative landscapes, civic landscapes, regenerative landscapes, and interpretive landscapes.

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The In-Site/OUT framework and design methodology have been developed through a combination of research on existing theory/design methods and analytical case studies of built work. This paper will illustrate the framework and methodology through a representative pair of case studies that reach beyond their borders in a variety of ways.

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**This paper considers United States military lands from the related but separable perspectives of national security and environmental security. It draws on the literature of security studies and land use investigations funded by the Defense Department to examine several consequences of urbanization on both kinds of security.**

## **U.S. MILITARY LANDSCAPES: BALANCING NATIONAL SECURITY AND ENVIRONMENTAL SECURITY**

ALLAN W. SHEARER

INVOKING THE RHETORIC of security is often problematic. On the one hand, securitizing any issue (energy, food, health, etc.) raises the level of debate to what might be called “high politics.” Doing so can rouse public interest and motivate public action. On the other hand, invoking the notion of security can restrict thinking on the nature of a given problem and on the kinds of solutions that might be considered. Security may also trump other societal values such as justice. In the practices of environmental planning and management, military landscapes foreground issues of security and can therefore serve as grounds for theoretical clarification and sites for applied study.

The United States Department of Defense (DoD) controls roughly 24 million acres of land. These large and largely un-built areas provide space to prepare troops for combat and to test weapons systems. Developed areas within installation fence lines provide housing, offices, schools, airports, docks, roads, and other facilities that contribute to the primary training mission of the military. From this perspective, military lands contribute to national security—the defense of nation-state sovereignty and of territorial boundaries.

These lands also contribute to our society in other ways. Because installations are relatively restricted (as opposed to, say, national parks), they often have high native biodiversity. Indeed, DoD properties support more endangered species per acre than those of any other federal agency. In some areas, such as Southern California, the natural vegetation helps to improve regional air quality. From this perspective, military lands contribute to environmental security—the bio-physical conditions and processes that support life and enable societies to flourish.

Conceptually, national and environmental security are distinguishable in terms of ends (what things might be secured) and means (how things might be secured). Operationally, they can be intertwined. Both national and environmental security are affected by some kinds of urban development. New residents sometimes complain about the noise, dust, and smoke generated by training and testing activities. As a result, the location, timing, frequency, and duration of training operations can be curtailed. Additionally, the loss, degradation, and fragmentation of regional vegetation from development incrementally and cumulatively erodes environmental security. Further, these regional losses make on-base habitat ever the more important for species conservation and other environmental security concerns. This situation can also result in more stringent controls of on-base land use. As urbanization continues, policy makers, planners, designers and stakeholders must ask how we might understand relationships between national and environmental dimensions of security and how we might set priorities.

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Towards addressing this challenge, this paper will: (1) Draw from the literature of security studies to articulate the theoretical commonalities and differences between national security and environmental security. (2) Relate these principles to an understanding of land and land use. (3) Draw on several regional land use change investigations funded by DoD to understand the pragmatic implications of these perspectives on land stewardship and security. (4) Identify further research questions.

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## **REVEALING EXURBANITES' OPEN SPACE PREFERENCE FROM MAPPED DATA FOR PLANNING PURPOSES**

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**This paper attempts to understand values associated with living in proximity to exurban open spaces. Different landscape characteristics nearby have varied relationships with open space preferences with deciduous forest, agricultural land or shrub as positive, water and wetland as neutral and coniferous land or herbaceous openland as negative.**

PREFERENCE FOR LIVING nearby open spaces has been identified as a driving factor for people moving to exurban areas. Yet, both the ecological health of exurban areas and the long term availability of open space experiences there depend on planning exurban development to maintain open space patterns even as more development occurs. We investigated the link between exurban residents' preferences for open spaces and the physical landscape character of their surroundings, as measured from mapped data, to understand values associated with living in proximity to exurban open spaces. This could be a basis for managers to incorporate both open space aesthetics and ecological concerns into planning. Our data about open space preferences were drawn from our web survey of 494 exurban home owners in southeast Michigan. We measured links between their open space preferences and two aspects of nearby physical landscape character: the amount of certain landscape features within comfortable walking distance and shortest distance to certain landscape features. To measure preference on a seven-point Likert scale, respondents indicated about how much they would value open space directly adjacent to their property. To measure nearby open space character, we used the home addresses of respondents who volunteered this information, and these were physically located in a GIS data layer. Physical landscape character was generated from 2001 landcover data at 30 Meter resolution (State of Michigan). The amount of each landscape type was generated from a circle with a radius of 400 meter and a center at each respondent's home location. A set of correlations and t tests were executed. Our research found that people living in areas dominated by urban built-up landcover have significantly lower preferences for open space near their home than do those living in less built up areas. Those who living nearby deciduous forest, agri-

cultural land or shrub land have significantly higher preferences for nearby open space. However, coniferous woodland within walking distance is linked negatively with exurbanites' open space preference, and those living near water do not have significantly different preferences than others for adjacent open space. We conclude that landscape character of nearby open spaces is strongly linked with nearby residents' landscape preferences – in particular to that people who do not live in heavily built up areas prefer the woodland and agricultural landscape surroundings. Maintaining woodland character and agricultural land as a part of exurban landscapes can be planned to satisfy residents' preferences and to enhance ecological quality.

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## **A REFLECTION OF SHIFTING-MOSAIC LANDSCAPE ON PARK MANAGEMENT**

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**An equilibrium status that landscape mosaics converted over time was detected, suggesting reflections on the conventional park management about landscape pattern and process.**

IT IS GENERALLY perceived that landscape patterns and texture in a protected area are geographically stationary. The findings of this search suggest that this common perception was in part not true. Although patches were under varied phase of a seral sequence, the landscape development as a whole seemed in equilibrium over time, called a shifting mosaic steady state (Sprugel, 1976; Remmert, 1991). That is, although average landscape composition remained constant, through time the patches experience continuously changing throughout the landscape that represented various spatial conversion mosaics (Forman, 1995).

The study site is located in the Lassen Volcanic Park, covering 2100 hectares. Aerial photo images were conjoined and overlapped to measure the landscape shifting behavior over a 52-year period. The vertical aerial photographs taken in 1941 (scale of 1:24000) were geo-referenced with the digital orthophoto quarter-quadrangles (DOQQs) of the same area in 1993. After identifying the landscape components, six land-cover types was categorized and assigned with one-hectare resolution in a Geographic Information System (GIS). Spatial information techniques, such as cluster analysis, Kernel Density Estimation (KDE), and landscape metrics were used to quantify and detect the movement of landscape patches between two observation times (Elkie, et. al., 1999; O'Sullivan & Unwin, 2002).

Based on the analyses, spatial shifting behavior was observed accompanying with a steady state on the area proportion of landscape component. The finding suggests a reflection on the conventional policy and treatment of park management. If a healthy ecosystem is desired, how do managers gauge the success of landscape management? Using this study site as an example, the landscape mosaic had been shifting. If the policy aims to freeze

and preserve the landscape pattern, it would alter the direction of ecological processes. If the goal tends to maintain the ecosystem process, the landscape configuration is likely to transform throughout over time.

With respect to the ecological integrity in a protected area, this study accentuates the importance of ecological processes beyond landscape pattern restoration and preservation. If a shifting-mosaic steady state exists in a landscape, an effort to maintain the process of successional development or nutrient cycling would be an alternative attempt. Negotiating the landscape pattern and process on park management may also serve an example for the environmental education.

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## RECREATION AS DESTINATION: THE ROLE OF RECREATION SPACE IN A LOW-INCOME COMMUNITY IN A SMALL MISSISSIPPI TOWN

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**This study examines the contribution of a neighborhood park in a low-income community in a Mississippi small town to recreation based physical activity, as measured through behavior observation.**

THE PREVALENCE OF obesity in the United States has received much attention from researchers in planning, design and health disciplines seeking to understand relationships between the built environment, physical activity and health. Many cross-disciplinary studies have given rise to a growing body of literature associated with Active Living agendas, and researchers are increasingly emphasizing the ability of the built environment to influence levels of physical activity and subsequently, the overall effects this may have on physical health. In the United States, the state of Mississippi consistently ranks among the top two states in the nation exhibiting the highest rates of obesity and research shows that the minority and low-income demographics account for the majority of the overweight and obese segments of the population.

While the scope of Active Living-oriented research is expanding, the majority of studies thus far have focused on communities in metropolitan settings, where physical activity can be measured through utilitarian or destination based physical activity, as well as recreation-based physical activity. As Mississippi is composed primarily of small towns and rural communities lacking the population density and land-use mix necessary to make destination-oriented physical activity practical on a day-to-day basis, it is especially important to understand the role of neighborhood recreation spaces as outlets for physical activity, particularly in low-income communities. This study uses behavior observation, based on the SOPARC method created by McKenzie and colleagues, to examine the physical activity occurring in a small park located in a low-income neighborhood in West Point, MS (pop. 13,500).

This method allows us to verify how the park is being used, by whom, and with what frequency. Data indicate that the park plays an important

role within the community as a venue for recreation based physical activity as observed for both frequency of use and diversity of use. Such results indicate a desire within the community to engage in recreation based physical activity. As this park offers the only practical venue for physical activity in the neighborhood it is important to understand how the space may better accommodate the recreation needs of the community as well as offering additional insight into the role of recreation space in low-income communities in small town settings.

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## HEALTHY EATING AND THE ENVIRONMENT: FEMALE PUBLIC HOUSING RESIDENTS IN HARRISBURG, PA

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**The relationship between built environment variables and healthy eating practices is explored by comparing the nutrition status of adult women living in three public housing sites in Harrisburg, PA with their neighborhood nutrition environment. The study reveals that this population lives in neighborhoods that pose challenges to healthy eating.**

OBESITY IS A major public health issue in the United States with the problem being greatest among minority women. Consequently, minority women are a special at risk community with respect to obesity and obesity related chronic diseases. Given the inadequacy of individual level diet and physical activity behavior to explain the prevalence of obesity, researchers have begun to focus on social/built environment features. In this study we investigate the relationship between nutrition and the built environment at the neighborhood scale with respect to adult female residents of three public housing sites (Hall Manor - HM, Hoverter Homes - HM, Smith Homes - SH) in Harrisburg, PA. In Harrisburg, 81% of public housing residents are female-headed with about 60% being African-American and 30% non-white Hispanic – making this population an important target group for obesity research.

The three major objectives of this study are to:

1. explore the role of healthy nutrition in the lives of female public housing residents, establish nutritional status of participants, and identify perceived barriers to healthy nutrition practices;
2. determine the community and consumer nutrition environments of public housing neighborhoods (Hall Manor, Hoverter Homes, and Smith Homes) in Harrisburg, PA; and
3. compare the nutrition related environmental data with the nutrition status of the study participants.

Study participants were recruited through kick-off meetings at each site, and through food banks at HH and SH. Base line nutrition data was collected through reliable and validated food screeners, and basic demographic information was collected through face-to-face surveys. Focus group

meetings were held with residents at each community to identify food outlets used, mode of transportation for food shopping, and knowledge of and barriers to healthy eating.

Neighborhood boundaries were determined using GIS data to map a half-mile networked walking distance around the periphery of each of the three public housing communities. The type and location of all food outlets within the neighborhoods was compiled using publicly available data sources, and then cross-checked with neighborhood walk-throughs. Accessibility was assessed by noting hours of operation of identified food outlets and the local transportation infrastructure. The consumer nutrition environment was assessed by measuring the availability and affordability of food items through the use of modified existing instruments.

The findings from this study corroborate larger-scale studies that report low SES and minority communities have access to fewer supermarkets, but larger numbers of fast-food restaurants and convenience stores. Participants confirmed the use of supermarkets located outside their neighborhoods, and reliance on public transportation, cabs or rides. Distance to stores and transportation issues related to low auto-ownership were the most commonly identified barriers to healthy eating. This combined with the availability of unhealthy food choices at the neighborhood level creates a community nutrition environment that challenges their ability to sustain a healthy diet. Although residents are knowledgeable of the components of a healthy diet, food screener results indicate an overall poor nutritional status. The results from the consumer nutrition environment surveys will add the much-needed in-depth information regarding the quality and type of food available in different neighborhoods.

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## “THE CREEK? THAT’S NASTY!” EXPLORING YOUNG PEOPLE’S EXPERIENCE OF HEALTH AND PLACE

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**This study involves young people in collecting, analyzing and interpreting data aimed at better understanding their experiences of health and place. Results demonstrate the way experiences and perceptions vary in both space and time, with important implications for community design.**

AMID GROWING CONCERN over decreasing physical activity levels and growing obesity rates among children, scholars are increasingly calling for more research on the relationship between children’s active play and the outdoor environment. This paper reports on an ongoing research project aimed at improving our understanding of how young people experience health and place in the neighborhoods in which they live. In this case-study we focus particularly on the network of formal and informal open spaces in which children spend much of their out of school time. Researchers employed a wide variety of participatory methods to include young people in collecting and interpreting data, including photo-elicitation, focus group workshops, participatory data coding and multiple informant check-in sessions. In addition, both text and images were analyzed using a ground-theory approach to qualitative data interpretation. Phase one resulted in ten broad themes and phase two focused more specifically on four of these: healthy/unhealthy places, people in the neighborhood, crime/safety, and food/nutrition. Not surprisingly, young people’s understanding of neighborhood open spaces varied both spatially and temporally. For example, their ideas about the health of place depended as much on when a place is visited as where it is located in the neighborhood. More surprisingly, when compared with neighborhood adults, perception of crime and risk did not prevent young people from being physically active in neighborhood open spaces. This finding contradicts some other studies showing fear of crime as a primary barrier to active living. More broadly, the results have wide ranging community design implications for several initiatives just beginning in the neighborhood, including city park redesign, traffic redirection, street and sidewalk improvements and urban infill development efforts.

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## HEALTH AND BEAUTY: EARLY TWENTIETH-CENTURY AMERICAN PSYCHOLOGY AND THE GARDEN CITY

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**The paper examines the influence of American psychologist William James' functionalist psychology on F L Olmsted Jr.'s, Henry Vincent Hubbard's and Theodora Kimball's landscape architecture. The paper specifically addresses the relationship between period psychological notions of beauty and health and similar notions exhibited in F L Olmsted Jr.'s writings and early garden city proposals.**

THE GARDEN CITY Movement, proposed by Ebenezer Howard in 1898 offered an alternative approach to the sprawling, unhealthy, English industrial cities. Inspired by physician and public health advocate Sir Benjamin Richardson's essay *Hygiea, or the City of Health*, Howard published *To-morrow: a Peaceful Path to Real Reform*. In 1899 he organized the Garden City Association, and founded two satellite cities in England: Letchworth Garden City in 1903, and Welwyn Garden City in 1920. Howard's Garden Cities were designed to combine the best of both urban and rural (low rent, high wages, the beauty of nature, social opportunity), and to attract people to a new, more healthy, and self-fulfilling way of life. While the garden cities were originally intended as self-contained towns sheltered by greenbelts, many elements of the garden city were applied to metropolitan garden suburbs, including: Hans Kampffmeyer's Hellerau near Dresden (1908), Unwin and Parker's Hampstead Garden Suburb in London (1909), Hendrick Berlage's Amstel District in Amsterdam (1917), Ernst May's city extensions for Breslau, Germany (1921), and Stein and Wright's Chatham Village in Pittsburgh (1932).

Atterbury and F. L. Olmsted Jr.'s Forest Hills Gardens (1909) represents the first American iteration of the metropolitan garden suburb. Olmsted Jr. designed Forest Hills during the time that he was teaching town planning at Harvard University's new School of Landscape Architecture, and practicing town planning and landscape architecture. During this time William James (1842-1919) was teaching experimental psychology at Harvard. James had established America's first laboratory for experimental psychology in 1886 modeled after his mentor Wilhelm Wundt's (1832-1920) laboratory at Leipzig University in Germany. Following the publication of *Principles of Psychology*

gy (1890) he was considered one of the leading psychologists in America and the leading American advocate of functionalist psychological theory. James had considerable contact with F L Olmsted and other landscape architects at Harvard, including Henry Vincent Hubbard and Theodora Kimball; and the influence of James' functionalist psychology is clearly evident in Olmsted Jr's, as well as, Hubbard's and Kimball's work and proposals. (Hubbard, 1917)

Considerable scholarly literature addresses the influence of 19th-century medicine and public health ideology on F. L. Olmsted Sr. (Beveridge, 1997; Szczygiel & Hewitt, 2000). Yet much less research has addressed the influence of 18th or 19th-century philosophical psychology on Olmsted Sr, (Beveridge, 1997) and no scholarship to date has addressed the influence of early 20th-century scientific psychology on F L Olmsted Jr. The paper examines the influence of James' functionalist psychology on F L Olmsted Jr's Hubbard's and Kimball's landscape architecture, and its influence on Olmsted Jr's conception of the garden city. The paper specifically addresses the relationship between period psychological notions of beauty and health and those associated with the Olmsted Jr's writings and early garden city proposals.

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## CHILDREN AND SCHOOL WALK ZONE: FACTORS THAT INFLUENCE WALKING AND BIKING TO SCHOOL

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**Children are encouraged to walk or bike to school within a 2-mile school walk zone. This study found that physical environments including, distance, sidewalks, greenery, street patterns as well as land use mix have significant impacts on children's walking and biking to school.**

FEW CHILDREN WALK or bike to school. In fact, less than 13% of children in the U.S. walk or bike to school and 85% of trips to school are made by car or school bus (United States Department of Health and Human Services 2004). Almost 50% of children walked or biked to school in 1969 (United States Environmental Protection Agency 2003). What changes should be made in pedestrian infrastructure today to reverse this trend and provide a greater likelihood that children will walk or bike to school?

Although there is very limited understanding of how pedestrian environments influence children's walking and biking to school, previous research shows that physical environments can foster non-automobile mode choices to school. Landscape buffers and trees add to parents' perceptions of their children's safety and increase their willingness to let their children walk to school (Kweon et al. 2004). Ewing (2004) also found that more children walked to school where there were sidewalks. In addition, Safe Routes to School programs increase children's walking to school (Staunton et al. 2003).

Physical environments can also be a barrier to children walking and biking to school. The CDC (2002) found that distance was the number one barrier to children walking to school. Texas established 2-mile walk zones; however, why distance is the dominant factor in determining walk zone policies and what an appropriate distance might be for walking to school have yet to be documented.

In this research we investigated how additional physical attributes (e.g., street pattern, land use, housing density, and environmental content) in the pedestrian environment influence children's walking and biking to school. We also measured what school children consider walking and biking distances to school.

About 190 parents from four school walk zones in College Station, TX participated in this study. They reported their children's commute modes, routes to school and perceived walking and biking environments to school. Satellite imagery and spatial data from the city Geographic Information Services were used to further investigate distances to school, environmental content, land use, and street patterns.

Preliminary results indicate that children walk more in older neighborhoods with mature trees while they bike more in newer neighborhoods with more sidewalks. Also children who live on cul-de-sacs walk to school less than those who live on grid streets. Children who live in an area with higher land use mix walk to school more than those with low land use mix. Contrary to the popular 2-mile walk zone guidelines, the mean distance for walking in this study is .71 miles while the mean distance of biking is .92 miles. On average, children who live beyond 1 mile from their school either ride in a car, car-pool, or pay a transportation fee to ride a school bus. These findings may help to shape better school walk zone guidelines in support of active and healthy communities.

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**The department of transportation views landscape buffers as a maintenance problem where the solution is to begin a sidewalk at the back of the curb. This paper examines the effects of landscape buffers on walking behavior as well as walking anxiety.**

## THE EFFECTS OF LANDSCAPE BUFFERS ON WALKING AND ANXIETY

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A LANDSCAPE BUFFER or tree lawn is a long planted strip area between sidewalks and street curbs. In general, the department of transportation views landscape buffers as a maintenance problem where the solution is to begin a sidewalk at the back of the curb (Texas Department of Transportation 2001). However, landscape buffers can be beneficial to pedestrians. Landis et al. (2001) found that buffering increases the pedestrian's comfort or sense of safety. Giles-Corti and Donovan (2003) found that people who live on tree lined streets are more likely walk than those who live on streets without trees. Still, there is little understanding of how landscape buffers influence people's walking behavior or psychological well-being while engaged in walking activities. In this study we examine the effects of landscape buffers on parents' willingness to let their children walk and on college students' feelings of anxiety.

Two pilot studies were conducted. The first study was a simulation experiment that investigated the effects of landscape buffers of various sizes on parents' perception of safety for their children. The parents also indicated their willingness to let their children walk or bike to school. The second study was a real world quasi-experiment that compared college students' state anxiety levels while walking on sidewalks with or without landscape buffers.

In the simulation study, parents with elementary school children reported that sidewalks with buffers are much safer for their children than sidewalks with no buffer at all ( $F(2, 25) = 28.72, p < .0001$ ). They are also more likely let their children walk to school on sidewalks with buffers than with no buffer ( $F(2, 25) = 35.82, p < .0001$ ). In the field study, we found that college students who walked on sidewalks with a landscape buffer experience significantly lower anxiety that those without a landscape buffer ( $F(1,$

47) = 7.21,  $p = .01$ ). A previous study found that the most frequently used physical activity facility was streets (45.6%) (Giles-Corti & Donovan, 2002). Including landscape buffers in street design may play an important role in improving people's health by increasing their walking activity and decreasing their anxiety levels while walking. Creating supportive physical environments that facilitate physical activity behaviors should be a priority in the design of pedestrian environments.

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## DESIGN FOR HEALTH: CREATING 'NEW REALITIES' THROUGH OPTIMAL PEDESTRIAN DESIGN FOR AT RISK POPULATIONS IN THE UNFIT DEEP SOUTH

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**The Deep South faces challenges in retrofitting communities for healthy living. Ethnic minorities and low-income populations have the highest risk for heart disease, and demonstrate the lowest levels of recreational physical activity. Connectivity, network design to incorporate desirable destinations, and aesthetics are major factors influencing use/non-use of utilitarian trails.**

RECENT STUDIES SUGGEST that the design of many of our residential communities contributes to inactivity, and as a result leads to obesity and other health problems (Abildso 2007, Alfonzo 2005, Gordon 2003). Urban pedestrian networks may be the recreational focus of the future. The aging population in North America is likely to need lower impact, less physically intensive sport and recreational activities in the future (Flink, Olka and Searns 2001), and demographic analysis indicates that activities such as walking, cycling and bird watching are some of the most significant recreational growth activities (Foot and Stoffman 2000). Pedestrian networks offer significant other benefits which appeal to the North American population: they provide economic benefits to the local community; long term environmental benefits; and reduce health care costs (Wang et al 2004, Milburn et al 2001). One of the lowest cost solutions to recreational facility provision for municipalities is the construction of pedestrian and cycling networks which incorporate the urban fabric and new trail development. The assumption seems to be, "If we build it, they will come." However, a complex set of factors influence pedestrian and cyclist use: location, design, material, safety, amenities, wayfinding, and aesthetics among others (Alfonzo 2005, Spangler-Murphy et al 2005, Leyden 2003, King et al 2000, Kaplan, Kaplan and Ryan 1998). How well do pedestrian networks encourage walking and cycling? Does design influence the likelihood that individuals with health problems such as obesity will use it? How effective are the states of the Deep south in providing pedestrian and cycling connections for their demonstrably unfit populations?

Popular literature on user preferences in terms of design and amenities, especially in the area of obese users, is commonly speculative. No rigorous examination of the relationship between network planning and design fac-

tors and individual health among obese adults has been reported. At the same time, recent research suggests that ethnic minorities and low income populations are at the highest risk for heart disease, and demonstrate the lowest levels of recreational physical activity (Eyler et al 2002). According to a recent medical study, women and people from lower socioeconomic groups are significantly impacted by the development of local pedestrian and cycling paths (Henderson 2000).

This research study shows that connectivity issues, network design to incorporate desirable destinations, and aesthetics are all major factors influencing use/non-use of these amenities. These barriers may result in pedestrian designs which do not effectively address the need of inactive individuals. In addition, pedestrian use can be divided into two categories: utilitarian and recreational. While recreational facility users have certain needs, such as aesthetics and education, utilitarian trail users have other concerns. A distinguishing factor of users with health concerns is a primarily recreational focus, and one of the areas for improvement in design is in utilitarian trail use in order to allow users to incorporate pedestrian activity into their everyday activities. This study examined the relationship between planning and design of pedestrian networks (or the lack thereof), and their use by adults in Mississippi. Users were asked to self-identify between users with health concerns and those not concerned with their health and were surveyed to gain insight into their preference in terms of design. Non-users were also surveyed to elicit insight into under-served populations. The study provides insight into the factors which influence use of pedestrian corridors, and provides initial recommendations for strategic improvements to pedestrian planning, design, construction, and amenities which will enable a more effective use of resources, and will improve health in the local community.

Current design for health focuses on trail design and development, and tends to a consideration of location and construction rather than strategic assessment of user needs and an attempt to create a specific user experience. This study attempted to identify specific criteria which need to be addressed to encourage use by people who are otherwise inactive and those with health problems. In addition, this study examined what differences existed between the health conditions of utilitarian users, and suggests potential strategies for increasing utilitarian pedestrian use by the study population.

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## URBAN NATURE AND THREE DIMENSIONS OF WELLNESS

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**This paper presents evidence from three studies, conducted in Chicago public housing neighborhoods, showing that urban green spaces have a variety of positive impacts on human wellness. The findings have implications for design and management of urban neighborhoods.**

CHICAGO'S MID-AND LATE- 20th Century public housing neighborhoods were infamous for the widespread fear they fostered and the violence that took place within their boundaries. Within these neighborhoods, however, fear, incivilities, and crime were not evenly distributed. There were pockets that promoted not only a sense of safety, but also actual safety. One thing these pockets shared was a characteristic of the landscape that drew neighbors together, and in doing so, helped strengthen social ties that in turn, created safer places and enhanced wellness. This landscape feature was the presence of natural elements such as a few trees and some grass.

This paper explores the impact of natural elements on wellness in two Chicago Public Housing neighborhoods: Ida B. Wells, a neighborhood of low-rise buildings constructed just after World War II; and Robert Taylor Homes, a community of high-rise buildings constructed in the early 1960s.

At first glance, the suggestion that a few trees and some grass might promote increased safety in notoriously dangerous neighborhoods seems laughable. But in a series of studies that my colleagues and I conducted over a ten-year period using a variety of research methods (i.e., participant observation and mapping, surveys, in-depth interviews, analysis of archival data), the causal patterns have become clear.

In otherwise barren urban neighborhoods, the presence of nature attracts residents to outdoor common spaces (Coley, Kuo, & Sullivan; 1997). Greater use of these green spaces leads to increased informal surveillance of those spaces by nearby neighbors, thus reducing crime. In addition to surveillance, there is another mechanism at work. Green spaces draw people from their homes, encourage them to linger together outdoors, and engage with their neighbors (Sullivan, Kuo, & DePooter; 2004). By spending more

time in green spaces, residents get to know their neighbors better and end up spending more time socializing with them than do their counterparts who live in more barren settings. More socializing leads to stronger social ties among neighbors, which in turn has been shown to increase the capacity of neighbors to deter crime.

This paper provides evidence that a few trees and grass contribute to the social cohesion (Kweon, Sullivan, & Wiley; 1998), safety, and vitality (Kuo & Sullivan; 2001a; 2001b) of an otherwise barren neighborhood. This research may help us better understand historic patterns of crime and cohesion in other urban, public housing settings. That an act so simple as planting a few trees could have such pervasive consequences has implications for current day design and management of urban neighborhoods.

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## BUILDING SUSTAINABLE AND HEALTHY OUTDOOR ENVIRONMENTS FOR CHILDREN

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**This paper assesses the integration of environmental education that allows for the development of children. It unites three major subjects: landscape design, educational and sustainable landscapes for children, and service learning. It uses case studies to illustrate the process and reveals the significance of bringing environmental awareness to children.**

PROBLEMS WITH AIR and water pollution, climate change, soil erosion, resource depletion, waste management, urban sprawl, and loss of species is shifting towards a generation of our children. Educators have a responsibility to integrate ecological education across K-16 curriculum to establish the “new norm” of sustainability for our future generations. David Orr presents a persuasive argument for rethinking education which include environmental education that allow for the development of healers, storytellers and others willing to help make the world habitable and humane through responsible citizenship (Orr, 1994). Edward Wilson in *The Future of Life* notes that a global land ethic is urgently needed and that we must act with rational intention and all the tools we can gather to better understand ourselves and the world around us (Wilson, 2000).

To address this need, educators at multiple institutions have partnered to develop a new book published by McGraw-Hill entitled, *Designing Outdoor Environments for Children: Landscaping Schoolyards, Gardens, and Playgrounds*. The book illustrates how to (1) improve the environmental performance of the K-16 campus and community, (2) incorporate environmental sustainability concepts into classes that do not normally address environmental issues and (3) integrate sustainable design principles into landscape designs of children’s gardens. Example case studies expand on the importance of bringing environmental awareness to children. To conduct the research outlined in the book, the authors used a method of inquiry involving a literature review, case studies, and descriptive data collected through personal interviews.

Nature-based childhood was once the natural condition, but that is not the case today. There is a need for the creation of these natural spaces

for children which was first recognized during the Industrial Revolution (Dannenmaier, 1998). Today, more children lack daily contact with natural environments than ever before (Nabhan and Trimble, 1994). As educators, we recognize the need to attune our students to sustainability, aid them in understanding economic, environmental and social performance as a cohesive whole, and foster change as we help them understand how to meet fundamental human needs without destroying the planet's ability to support us. Our work is based on integrating service-learning principles in the curriculum. Our intent is to reinvent the organization of learning and academic architecture by incorporating ecological literacy into the K-16 curriculum in a non-traditional manner thereby educating students to be stewards of the biotic community. This paper will focus on building sustainable and healthy outdoor environments for children through example projects including a schoolyard as well as several garden case studies. Essential elements to incorporate in a children's garden design will also be addressed. Our findings indicate that children benefit in many ways from well-designed outdoor environments. It is supported by studies that suggest it is through an early bond with nature, as well as through nurturing adults that children develop a sense of environmental stewardship.

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**Key Words: sustainability, children, curriculum design, writing**

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## NEGOTIATING THE 'HEALING' COMPONENT OF GARDEN AREAS: A CASE STUDY OF THE CLINICAL CENTER GARDEN SITE

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**This paper examines a post-occupancy evaluation process, intended to document the health benefits of a garden area adjacent to a hospital facility. Data from the study suggests that all gardens, irrespective of a title and/or intent to be "therapeutic", will have some restorative and healing capacity on users.**

THE RECENT EMERGENCE of contemporary Therapeutic Site Design as a specialty area among landscape architects has generated considerable interest and dialogue within the profession. One of the central issues in this evolving specialty field is "what characteristics make a therapeutic garden, therapeutic?" More importantly, do gardens designed for non-therapeutic purposes, provide users with different benefits than the health benefits being sought in a therapeutic garden area.

In this case study, the authors initiated a post-occupancy evaluation of a garden area that they had assumed was designed specifically for therapeutic purposes due to location (i.e., adjacent to a large clinical center and magnetic resonance imaging facility.) Through a series of interviews with the garden's designer and sponsor, the authors discovered that this assumption had no basis in fact; the interviews revealed that garden had been designed solely for the personal enjoyment of the sponsor (a clinician whose undergraduate degree was in Horticulture and whose office resided immediately adjacent to the garden area). This discovery relating to garden purpose had not occurred before the authors had unobtrusively observed and subsequently surveyed a host of user groups at the site. Data from the users indicated that they visited and returned to the garden for a variety of "health purposes" including stress reduction, opportunities to refocus, and improvements in one's sense of self-control/determination. This serendipitous discovery of the cross-purposes between users and the sponsor, reinforces many of the hypotheses put forth by earlier authors relating to the health benefits of nature and gardens (Kaplan and Kaplan, 1989; Cooper-Marcus and Barnes, 1999; Gerlach-Spriggs, et al 1998). And the research activity provides additional evidence that most garden areas have at least some inherent capacity to address human health,

irrespective on whether the garden was initially envisioned for therapeutic purposes or not. The authors will present the results of the study, along with the experimental design, and the health assessment instrument as a means of opening greater dialogue on the value of post-occupancy evaluations

**Keywords: Consumption or Care: Health Promotion and Community Design**

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## THERAPEUTIC GARDENS FOR CHILDREN WITH AUTISM SPECTRUM DISORDERS

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LAURI JOHNSON

**Research at The University of Arizona on Autism Spectrum Disorder (ASD) generated design guidelines for therapeutic outdoor environments. Characteristics of children with ASD fall in two categories: hypersensitive reactions with indications that calm spaces provide benefits and hyposensitive reactions with indications that more stimulating multi-sensory spaces offer positive impacts.**

MANY FACILITIES ARE being developed to provide diagnostic and therapeutic treatments for children with Autism Spectrum Disorder (ASD). As it is estimated that one of every 166 children born today will be diagnosed with ASD (Health and Human Services, Center for Disease Control 2006) architects and landscape architects could find roles in the design of facilities that address the therapeutic needs of children with this condition.

In this session the authors will discuss the neurological and behavioral characteristics of children with ASD as the condition affects the functioning of the brain in areas of social interaction, communication skills, and aberrant behaviors (Gillberg and Coleman 2000). While symptoms and behaviors are often confusing there is evidence that indicates that sensory processing issues or the ability to feel, understand, and organize sensory information from the environment may be one key to further understanding of the disorder (Ayers 1979, Gerlach 2000). Therefore research on ways outdoor therapeutic gardens could specifically address the varying behaviors of children with ASD should be addressed.

This study included a review and analysis of issues surrounding sensory integration of children with ASD through a review of medical literature, interviews with health care experts, and case studies on environmental treatments. This information was used to develop design guidelines for outdoor spaces within the context of diagnostic and treatment facilities for children with ASD. The application of these guidelines was used in the design of an outdoor therapy garden for a newly planned facility for the Tucson Alliance for Autism Center.

Study results indicate two primary behavioral categories among children with ASD; defined as hyposensitive and hypersensitive reactions with impacts

on the vestibular, proprioception, visual, audio, tactile, and olfactory senses. Children with ASD reacting with hyposensitive behaviors, for example, often seek movements such as spinning and swinging to stimulate sensory experience and they seem to crave noisy crowded places while children with hypersensitive reactions will often reject these kinds of stimulations in favor of calmer activities and related environments. The guidelines and resulting outdoor therapy garden therefore included two zones—one aimed at providing a calming effect for hypersensitive reactions and the other designed to invigorate and heighten senses for hyposensitive reactions through multiple sensory stimulation.

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**This paper presents and evaluates new tools and methods in community-based research and practice for acquiring 'invisible' social and cultural site knowledge and linking this knowledge to action through design.**

## IN\_VISIBLE CULTURES: ADVANCES IN GAINING SOCIAL AND CULTURAL SITE KNOWLEDGE

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SINCE THE 1960S, participatory processes, inclusive methods, and locally-based decision making has increasingly brought landscape architects into contact with communities whose cultures, values and practices may be unfamiliar and opaque to them. This is particularly true for those practicing community design or addressing public space. Most conventional methods of site analysis are well-suited to describing physical characteristics such as ecological systems and topography, but are inadequate for discerning and evaluating the 'invisible' systems of social and cultural patterns within communities. Furthermore, normative practice favors an expert practitioner situated within a 'caretaker' or 'provider' model. Independent actors and groups who lay claim to the creation of their own spaces of identity further complicate the issue. Emergent and insurgent forms of engaged citizenship require landscape architects to develop appropriate frameworks for research and practice.

This paper will present a set of new tools and methods for practitioners and students to utilize when undertaking community-based research and practice. These tools and methods were developed and tested via a university-based, immersive action-research project in a context foreign in place, language and culture to the research team. The outcomes were developed in response to the central question of 'how do we develop effective methods for site research that are effective and appropriate for community-based situations'? A number of hypotheses directed the research: first, shifting the view towards defining the actual site of analysis would allow the 'invisible' to be addressed alongside the 'visible'; second, any methods developed must be also be considered as viable and solid research inquiries; third, that benefit would be gained by an interdisciplinary approach; and finally, that agency towards design is critical. The project encouraged a critical inquiry of the prac-

tice and principles underlying the field of landscape architecture. It utilized the site experience for assessment of actual knowledge gained towards an understanding of place and a goal of appropriate design and development. The project was structured around a framework of four guiding questions: 'how do we define a site?'; 'how do we gain site knowledge?'; 'how do we represent site knowledge?'; and 'how does site knowledge affect design?'.

These questions relate directly to a discourse of 'site matters' which values site knowledge and regards sites as both locations and vessels of information. Four primary benefits to the field are exhibited by the new tools and methods presented: the value of critical inquiry to examine and possibly restructure conventional modes of practice; the positive impacts that multiple disciplines could bring to the application of community-based fieldwork; the development of visual methodologies as a form of arts-based research whose reflective investigations can strengthen design practice ; and, the value of representation of knowledge as a revelatory and operative mechanism for design. Issues also addressed in the paper will include a discussion of the value of transferable knowledge, the role of public scholarship, and the challenge of providing relevant and significant agency to design.

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**Cultural landscapes are buried in our parks. This paper discusses these hidden landscapes and suggests how designers can incorporate “landscapes of memory” into our public parks.**

## CONCEALED CULTURAL LANDSCAPES IN OUR NATIONAL, STATE, AND MUNICIPAL PARKS

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OUR NATIONAL AND State Parks preserve “rugged wilderness” and “pristine environments”, while municipal parks create green spaces from “underdeveloped” or “wasted” spaces. National, State, and Municipal parks have different : (1) administrative systems, (2) funding, 3) public mandates, 4) goals, and 5) functions. However, they do have one thing in common – their lands contain historic cultural landscapes. These diverse parks had a prior history of land-use and a rich past that has been purposefully concealed from contemporary visitors. Park administrators have separated parks into two categories “natural” and “historic”. The historic parks commemorate important national, regional, or local events. In parks that are categorized as “natural” the visitors can partake in active outdoor recreation and enjoy breath-taking scenery. Because parks have been placed in these two either/or categories, the historic cultural landscapes in “natural” parks have been overlooked. These buried cultural landscapes are often associated with minorities, and the poor. While the visible history of these places has been concealed by the transformation of communities into parks, the memory of these places resides with displaced descendants. Dolores Hayden would call this the “power of place.” How can these “landscapes of memory” be incorporated into our public parks? The challenge for designers, park interpreters, and archaeologists is how to reveal these cultural landscapes while still maintaining the active recreation use of the park.

In our National Parks these are many Native American cultural landscapes including sacred sites and burial grounds. In some cases reservation land was taken to create the park. During the 1930s, the Civilian Conservation Corps created new State and National Parks. Sites of American Indian and other ethnic groups were destroyed. For example, the building of

Shenandoah National Park displaced poor white Appalachian families; their homes were razed to bring the landscape back to its “natural” state. In New York State a whole community, Enfield Falls, was purchased by a philanthropist, Robert Treman, and given to the state to create a majestic park. While the homes and shops were dismantled, the foundations of those buildings remained buried only one foot below grade.

Buried within city parks are the archaeological remains of communities and cemeteries. Two examples come from New York City. Washington Square Park in Greenwich Village is built over a pauper cemetery. Whenever the ground is disturbed, human bones are unearthed. In Central Park, a community of African-Americans and Irish immigrants was destroyed – buildings razed and 1600 people evicted—to create the park. The destruction of cultural landscapes is not just a thing of the past. Today, landscape architects transform “lost landscapes and vacant places” into urban vest pocket parks. But are these places without a history?

This paper provides both examples of: 1) national, state and city parks concealing cultural landscapes and 2) successful park integration of past and present cultural landscapes. An additional example from Ithaca, New York demonstrates how a new town park can incorporate both active recreation zones and commemorative areas. Designers should reveal not conceal landscapes of memory.

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## BURYING DIFFERENCES: AFRICAN AMERICAN AND ANGLO-AMERICAN CEMETERY LANDSCAPES OF THE MID-NINETEENTH CENTURY

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**An investigation of African-American and Anglo-American cemeteries of the late 1800's shows similarities in cemetery location, grave orientation and decoration, grave marker typology. Differences observed in these two cemetery landscapes are likely due to social, legal and economic status rather than dichotomous archetypes.**

BETWEEN 1830 AND 1920, the American cemetery emerged as a distinctive landscape form. The picturesque rural cemetery movement, which began in the early 1800's, evolved into the more practical lawn cemetery trend of the early 1900's. During this period, African-American and Anglo-American cemeteries were most often constructed as segregated landscapes, on adjacent property, or in segregated communities. Scholarship on African-American cemeteries and burial customs has focused on differences between African-American and Anglo-American cemeteries. Scholars have posited African cultural retention to explain these differences. However, this scholarship has often overlooked more obvious explanations that can be found by looking at the social, legal and economic status of African-Americans during this time. For example, scholars have posited that African-American cemeteries are intentionally "wild" because certain African cultural values have been retained. However, these same features can be found in Appalachian cemeteries and other poor rural communities, suggesting that economic factors, more than African custom, determine whether cemeteries are neglected. In 2001, the National Park Service held a conference titled "Places of Cultural Memory: African Reflections on the American Landscape." The subject of burial customs was touched upon by several speakers, though most references made pertained to the New York African Burial Ground Mortuary Complex created in the late seventeenth/early eighteenth centuries. Research on African cultural retention, either as a free society in the north, or as slaves on southern plantations, has focused on this earlier period. This paper discusses the results of a study comparing African-American and Anglo-American cemeteries established in the southeast during the period from 1830 to 1920. Landscape features, including cemetery location, grave orientation

and decoration, grave marker typology, and cemetery maintenance of both African-American and Anglo-American cemeteries in Georgia, South Carolina and North Carolina were analyzed as a means of determining the extent of African cultural retention in cemetery landscapes. Evidence suggests more similarities than differences in these features, though identifiable differences do exist that cannot be explained solely by the economic and political barriers of the time.

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## HOMELAND INSECURITY: CAN AGRITOURISM AND LANDSCAPE ARCHITECTURE WORK TOGETHER TO PRESERVE RURAL HERITAGE AND FOSTER ECONOMIC DEVELOPMENT?

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**This case study presents a collaboration between two university programs, landscape architecture and tourism management, for the development of a heritage tourism plan for a small, impoverished community. Tourism planning provides important economic development opportunities and employing collaborative expertise can empower local people as well as enhance the visitor experience.**

MANY RURAL TOWNS across the nation are facing the challenges of declining populations and shrinking economic growth. Many communities, rich in natural resources, cultural interest and agricultural heritage, are embracing tourism as a viable economic development tool. Heritage tourism and agritourism are two of the fastest growing tourism niches in rural America, and North Carolina has maintained its position as one of the most visited states in the nation, bringing in 14 billion dollars annually. In addition to serving as an economic engine, tourism planning can provide a framework for identifying key elements representing a community's heritage, and link those to approaches for preserving land, culture and the shared memory of a place.

The purpose of this presentation is two-fold: first, to inform professionals in landscape architecture, community planning and tourism disciplines of the benefits of collaboration and second, to provide planning guidelines for other communities interested in developing heritage and agritourism.

Tourism planners and landscape architects can play a key role in facilitating the community development process. Both professional realms provide essential skills and techniques that encourage local residents to develop broad visions as well as incremental strategies, and focus efforts on empowering the community through tourism. The process of coalescing the rich stories of a place into strategies preserves their meaning and empowers the "story tellers" (politically, economically, socially). And this empowerment is reinforced by strategic design decisions impacting the physical world at multiple scales. The Rural Sociological Society and National Coalition for Rural Entrepreneurship refers to homegrown initiatives such as this as "catalytic development," mobilizing the local talent and resources to create community-economic development from within.

These broad concepts were enacted through work with the Sandhills Family Heritage Association, an emerging community development organization in central North Carolina. Through collaboration between North Carolina State University's departments of Parks Recreation and Tourism Management, and Landscape Architecture, and with the help of The Conservation Fund of North Carolina, the association gathered oral histories, conducted an assets inventory, self-identified heritage sites and developed a tourism master plan. During this planning process, the authors witnessed how communicating the value of a place through the development of meaningful experiences for visitors empowered the local residents to celebrate their past and present. And by activating local history with contemporary programs, the authors watched heritage and traditions manifest as part of a new economy.

Particular to site design and area planning, a driving route connecting the community's heritage sites was developed into a Heritage Trail. The "hub" of the trail is the restoration of a cultural center, whose interior and exterior programs would serve to orient visitors to the rich traditions and history of the area. Cultural center site concepts were developed through graduate student studio work, a pilot heritage tour was tested, and the first phases of the plan are currently being implemented.

Methods for project planning and collaborative implementation, as well as outcomes and evaluation (of both the agritourism project and collaborative process) will be included in the presentation.

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## DETERMINING HISTORICAL FOREST PATTERNS FROM GENERAL LAND OFFICE RECORDS

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**Vegetation data collected during the nation's first township surveys were evaluated for usefulness to establish historic forest types using multivariate statistics. The results from this research show that survey records used with environmental data and multivariate analysis that determine species-environment correlations can help to reconstruct historic forest communities.**

THE VALUE OF using General Land Office (GLO) records for assessing pre-settlement landscapes in North America are well documented, as are the problems associated with interpreting the data (Bragg 2003, Leahy, 2003). The GLO files were produced as part of the original land survey of new states and territories in the early 19th century. For the case study in this research, Mississippi's land plat records were created primarily during the period of 1832 and 1840 (Muhn, 1996).

The General Land Office (now the Bureau of Land Management) had the responsibility of surveying land for the purpose of public disposition. Offices were created throughout the state of Mississippi, and were active between the periods of 1807 and 1861. The records obtained from these offices include field notes and surveys of the districts, tract books, land sales records, official monthly abstracts and various entry records.

To conduct the land plats, deputy surveyors and their teams established rectangular section lines (one mile square) through the districts. Distances were measured along the section lines, and corner locations were established for each section. In addition to establishing locations, surveyors recorded information by hand in field books. The recorded information listed data about the land and its natural resources; including existing vegetation types, the locations of riparian features and other waterbodies, soil types and suitability classes, various landforms, and evidence of cultural features. Marker trees were established at the intersection of each section line and at the mid-point along the section lines between intersection points. The species and size of each of these trees was recorded in the original surveyor notes. These original manuscripts were converted to microfilm in the 1970's.

The GLO data for a central Mississippi site within the Noxubee Nation-

al Wildlife Refuge were used to evaluate a method for recreating historic forest types with greater accuracy than previous research. Our method includes the transcription of the GLO surveyor notes leading to the construction of a site x species matrix, the construction of a site x environmental variable matrix using modern GIS techniques, and the ordination of these matrices using Redundancy Analysis (RDA). The result is a direct gradient analysis describing associations between environmental variables and dominant forest species in 1830s central Mississippi. When combined with other historical references of an area, including archaeological and forest composition data, evaluations may be ascertained for the appropriateness of pre-settlement communities to current environmental conditions.

These descriptions are potentially useful in the formulation of management and restoration plans. When combined with the intuition of the designer, the gradient analyses provide the means to effectively define which plant communities are appropriate for a given landscape position and description.

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## THE ICONOGRAPHY OF SAN JUAN US NATIONAL HISTORIC SITE

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**This paper will investigate the meaning and symbolism of San Juan Historic Sites through the collective views of the residents of Puerto Rico, the National Park Services, and the United Nations World Heritage Commission. It will strive to decode and place symbolism under a postcolonial and neocolonialism theoretical framework.**

ON OCTOBER 12 of 1992 tall ships from all over the world came to celebrate the Christopher Columbus Grand Regatta in Old San Juan as part of the festivities of the Fifth Centenary of the Discovery of the New World. This magnum event took place along the walls of the magnificent masonry fortification of San Felipe del Morro, the most important Spanish colonial era military outpost in the Americas. This massive fortress designed to protect the city and the bay of San Juan is part of the United States National Park System. With the United Nations designation of San Juan National Historic Zone as a World Heritage Site for its exceptional cultural value, El Morro fortress has joined the ranks of renowned places like Australia's Great Barrier Reef, Egypt's Pyramids of Giza, Nepal's Kathmandu Valley, and India's Taj Mahal Historic Park. This along with the flourishing heritage tourism industry in Old San Juan has turned El Morro into one of the most visited monuments of the city.

The Puerto Rican Tourism Company's consciousness about the global iconography of the El Morro sentry boxes encouraged them to take it as the official corporate logo. This was in response to an aggressive media campaign to promote a new form of industry known as heritage tourism. This symbol has been associated not only with the proud and strong Spanish heritage of the city and its residents, but with the entire Island. Puerto Rico was among the first and the last Spanish colonies in the Americas. El Morro has become an icon that symbolized the "vernacular" Puerto Rican postcolonial culture. This neocolonialism perspective is in sharp contrast with the views of the US Park Service and the World Heritage Commission in which the old and beloved city represents the Spanish conquest and dominion of the Americas through the systematic extermination-forceful assimilation of the native

cultures (civilizations). In addition to the current American political identity of the residents of the US Commonwealth of Puerto Rico, the district of Old San Juan - El Morro, has become an icon that affirms the existence of a Puerto Rican culture that struggle to survive under the unequal socio-economical and political pressures of their new mother country (USA). Through a more thorough examination of scholastic research and peer review data, this paper will strive to decode and place the symbolism-iconography of this World Heritage Site within the context of a postcolonial and neocolonialism theoretical framework.

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## KEY CITATIONS

"The Spanish crown granted Puerto Rico with the Real Cedula de Gracia (Decree of Royal Grace). The royal decree increasingly favored the idea of the Crown to turn it into the "forefront and vanguard" of the colonial empire in the Americas, a stronghold for the expansion of the Roman Catholic Faith, and of least importance the economic development of the Island. The select policy took steps further to attract nobility and aristocracy, natural defenders of the Monarchy; exclusion of admission of foreigners, Spanish enemies, commerce competitors, opposers of the Catholic Faith and propagandist of Protestantism (Hostos)."

"A law approved by the United States Congress authorized the Secretary of the Marine to cede the Fort over and its adjacent land, for a term of 999 years, to a U.S. Marine retires officer (Alegria)."

"Heritage tourism is now big business. In economic and entrepreneurial terms it is one of the major success stories of recent years. At a time of declining industrial activity and rising unemployment in Western society, heritage tourism has provided an alternative form of enterprise, creating jobs and generating wealth for local economies (Herbert)."

"Much emphasis is placed on the sites and monuments dimension of culture. This is, in a way, inevitable. It

is, after all, the easy route out. Felix Vazquez of Puerto Rico reminded us that Old San Juan, as we have named the historical zone of our city, is not just the remnant of the Spanish Colonial era with its architecture, fortifications and monuments. It is a living museum. People live there. Merchants trade and work there. Businessmen and bankers hold court there, and governmental affairs are conducted there among and within the centuries' old buildings and walls (Gayle)."

"The year 1955 marks a date of great importance for the national Puerto Rican culture. That year, the governor of Puerto Rico created the Institute of Puerto Rican Culture. The commonwealth government compromised for the first time, making use of this new instrument, to preserve and encourage in all its forms the Puerto Rican culture. One of the first priorities of this new program was to launch in a novel and dynamic program the conservation and restoration of the national monuments and historic zones in the country, especially the ones in San Juan. Programs of this nature were not popular at the time, and few cities promoted. In San Juan there was a vast majority of people convinced that if we preserved the old buildings we are indeed stopping the progress, and destroying the evolution of architecture. The commercial banks were rejecting any loan designated to restore an old brick structure of more than 200 years. The owners were encouraged by the banking industry to sell the structures at a lower taxable rate (Mendez)."

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## UNDERSTANDING PLACE AS DISCURSIVE SPACE: A POSSIBLE ROLE FOR DISCOURSE ANALYSIS IN THE PUBLIC DESIGN PROCESS

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**This paper presents results of a discourse analysis of published citizen comments on a controversial proposal to locate a Social Security office building in a historically African American neighborhood in Roanoke, Virginia. The study suggests that discourse analysis can be a useful analytical tool for designers on public projects.**

SINCE THE LINGUISTIC turn altered the trajectory of the social sciences and humanities more than three decades ago, many scholars have acknowledged the role of discourse or narrative not only in describing reality but also in actively constructing it. In the context of landscape, the idea that reality is discursively constructed suggests that how people talk about the places they inhabit not only describes their understanding of that place but also actively constructs the reality of place as they experience it. Place meaning, then, is shaped by both what is under our feet and what is in our heads. Since the beginning of our profession, landscape architecture has excelled at the analysis of place as it exists under the feet—those physically observable components of site such as topography, viewsheds, and existing uses. In more recent years, landscape architects have also adopted techniques such as charrettes, surveys, and public meetings in order to collect information that exists only in peoples' heads. These latter efforts, however, have tended to focus on gathering explicit information, such as public preferences for future site amenities or feedback on proposed design options. Often missing from such efforts is focused analysis of the implicit conceptualizations of place that inform such preferences and opinions. In other words, designers have tended to focus on what citizens say rather than asking why they are saying it. Yet it is precisely these underlying conceptualizations of place that can ultimately sabotage or facilitate the public design process.

The purpose of the research presented here is to explore the use of discourse analysis as a possible method for uncovering and understanding these underlying conceptualizations of reality as they relate to place. Specifically, it discusses the results of a discourse analysis of published citizen comments on a controversial proposal to site a Social Security office complex in the

historically African American community of Gainsboro in Roanoke, Virginia. Planned for a site on the corner of Henry Street, the cultural and economic heart of the city's African American community from the 1920s through integration, the office building and parking garage would force the closure of the street for security purposes at a time when several of the historic buildings on the street have been saved and renovated as cultural and educational destinations. Discourse analysis of documents such as newspaper opinion pieces and City Council meeting minutes reveals radically different discursive constructions of Henry Street between the supporters and opponents of the development proposal. The study concludes that an understanding of the discursive realities of place that motivate citizen responses to public design projects can help designers—especially those involved in potentially contentious projects—create successful spaces while minimizing community discord. For this reason, discourse analysis should be considered an important part of the landscape architect's repertoire of site analysis tools.

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## A CONCEPTUAL FRAMEWORK FOR LANDSCAPE AESTHETICS: TOWARD BEING WITH-IN A PLACE

HYEJUNG CHANG

**The paper articulates the theoretical discrepancy between public and private, between aesthetic and ethical, and between psychological and ecological values in the studies of landscape aesthetics, and suggests a four-faceted schema of being with-in a place to integrate both experiential and aesthetic qualities in landscape evaluation.**

LANDSCAPE IS A public property that is intrinsically experiential and potentially aesthetic. These two aspects of landscape have often been examined by an empirical approach to “perceptual or visual preference” studies, under the conceptual premise that the aesthetic quality of landscape determines one’s preference for certain landscape features over others and that visual preference therefore is sufficient to judge the aesthetic quality of landscape. However, over the past decades, such landscape perception or preference research tended to focus not so much on the nature of aesthetic quality in landscape as on cultural or personal variables that determine one’s preferences for the perceived landscape, or on ecological variables that point to the preferred value of sustainable resources, both of which seem to be based on inconsistent value criteria between public and private, between aesthetic and ethical, and between psychological and ecological realms.

The paper will first address the significance of the two aspects of landscape, experiential and aesthetic, by arguing that the cause of the discrepancy in landscape evaluation research lies in our long-lasting conception of the “framed” experience of landscape as a visual stimulus, rather than as experience of being with-in a place, as well as in the absence of a convincing theoretical underpinning to explain the nature and the value of landscape aesthetics as a common public phenomenon (Appleton 1975; Carlson 1984,1993). Current landscape studies that have failed to explain what makes one prefer certain landscape features over others and what value criteria justify the preference as an indicator of aesthetic quality of landscape will be comparatively discussed in terms of the above value discrepancies.

In order to bridge between private and public, between aesthetic and ethical, and between psychological and ecological value conflicts identified

from the review, the paper will suggest an alternative conceptual framework for landscape aesthetics with a four-faceted schema of “being with-in a place,” derived from the four Jungian schema of being, such as sense, mind, intuition, and heart (Jung 1928; Porteous 1996). As an experiential and transactional framework, the schema will postulate such conceptual positions of value statements as aesthetic satisfaction, perception, appreciation, and evaluation in the interchangeable relationships among affective, sensible, comprehensible, and sustainable qualities as a link between aesthetic and ethical values. For the bridge between the private and the public and between the psychological and the ecological discrepancy of valuation, the transactional schema will explain the overlapping structure of variables among the biological (natural), social (cultural), and individual (personal) modes of evolutionary development as a process of landscape evaluation (Bourassa 1991; Berleant 1992, 2000).

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Lastly, the paper will assert that the suggested four-faceted schema of being with-in a place of landscape aesthetics can serve as a coherent ground for both interpretive and normative criteria of landscape evaluation as well as a sustainable landscape principle, and will discuss its applicability to future empirical investigations in seeking such qualities as sense of identity, sense of place, and sense of well-being on the basis of the transactional relationships between people and the environment.

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## DESIGNING PUBLIC LANDSCAPES FOR ALL INTELLIGENCES: CAN MULTIPLE INTELLIGENCE THEORY AND FLOW THEORY HELP CREATE OPPORTUNITIES FOR BETTER LANDSCAPE EXPERIENCES?

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**Places that engage individual perceptual and cognitive abilities with comparable levels of challenge provide opportunities for meaningful landscape experiences. A framework developed from Gardner's theory of multiple intelligences and Csikszentmihalyi's flow theory relates intelligence traits to challenges from landscape characteristics and qualities. Case studies demonstrate their use in built works.**

SINCE THE SIXTIES, landscape architects have claimed a responsibility to manage, plan, and design places that promote human interaction and involvement, enrich human experience, maximize quality of life and promote ecological, physiological and psychological health (Simonds, Laurie, Motloch). The means to do this are neither clear nor universally accepted. However, it is expected that places will be created that engage their users. Simonds went so far as to state that “what must count then is not primarily the designed shape, spaces and forms [of all great planning and design]. What counts is the experience.” But how does one design for “the experience” when different people experience the same places differently?

This research project explores the hypothesis that places that engage our individual perceptual and cognitive abilities with comparable levels of challenge provide opportunities for meaningful landscape experiences.

Gardner's theory of multiple intelligences posits that individuals have eight areas of intelligence, and together they influence an individual's perception and experience of their environment (Gardner 1983, 1999). Csikszentmihalyi's theory of flow (1990) relates levels an individual's skill to levels of challenge, positing that when the two are matched, a state of flow is achieved. This suggests that places with a variety of challenge levels in each of the intelligence areas provide the most opportunities for people to have meaningful landscape experiences.

This project does not examine the quality of experiences had by landscape users, rather it: proposes a framework relating traits of each intelligence area to characteristics and qualities of design components used in the built environment, and uses a comparative case study of four built public urban landscapes to demonstrate how these qualities and characteristics can be

incorporated in landscapes to create a variety of challenge levels for visitors.

The framework expands upon Gardner's descriptions of traits in each intelligence area and identifies related landscape qualities. For example: the logical/mathematical intelligence includes such traits as abstract pattern recognition and discerning relationships and connections. Associated qualities might include incorporation of geometric forms and mathematic patterns, and logical sequences of elements or events.

The four built projects were selected because they are distinct landscapes, not part of a larger landscape park or plaza, and their underlying design concepts consciously incorporated a variety of perceptual and cognitive issues. For example, the Toronto Music Garden (by Yo Yo Ma and Julie Messervy) was based on the music of Bach, and the Green in Charlotte North Carolina (by Cole Jenest and Stone) incorporates a number of literary references.

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The comparative case study reveals that landscapes intended to engage particular perceptual and cognitive intelligence traits can be created through design, programming and management. It also revealed that those landscapes consciously designed to have particular qualities and challenges were most successful in creating challenges for those traits, however not all intelligences or intelligence traits were addressed in every landscape. This suggests that the proposed framework could be useful in helping designers create landscapes that provide a wider set of opportunities for meaningful landscape experiences.

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## LANDSCHAFT UND GARTENKUNST: THE GERMAN CONTRIBUTION TO THE DEVELOPMENT OF LANDSCAPE ARCHI- TECTURE IN AMERICA

KURT D. CULBERTSON

**German-Americans had a tremendous impact on landscape architecture in America. This paper will explore the influence of German design thought on Olmsted. An overview of the work of over 100 major practitioners will be provided. The impact of Prohibition and two world wars on their legacy is also considered.**

THIS PAPER REVIEWS the differing perceptions of public open space between Americans of English and German descent during the first centuries of the country's development. The contribution of German landscape design and thought on the work of Olmsted and his contemporaries will also be considered. An overview of the work of over 100 German-American practitioners will be reviewed. The impact of prohibition and two world wars on their legacy is also examined.

Americans of German descent comprise the largest component of our population. It is logical, therefore, that their contribution to the development of landscape architecture is to some degree in proportion to their numbers. A school of landscape gardening in Germany pre-dates its counterpart in the United States by sixty years, and provided training professionals to the new country. It may be argued that the design of Central Park has its origins in German landscape design tradition. Olmsted was greatly influenced by the work of Puckler-Muskau and the writing of Zimmermann. Pilat, Fischer, Baumann, Ulrich, Rawolle, and Demcker provided the professional training needed to realize the plan. Indeed almost every major Olmsted commission had a German as superintendent. In addition to influencing Olmsted and his contemporaries, German-American practitioners, such as Wiedenmann, Wirth, Nussbaumer, Kessler, Beck, Schwagerl, Bischoff, Thiene, Jensen, Schuetze, and Reinisch, had a profound effect upon the designed landscape. Due to the effects of chain migration, their influence was felt greatest in those cities with large German populations such as New York, Philadelphia, Chicago, St. Louis, Cleveland, Cincinnati, Indianapolis, Columbus, Kansas City, San Antonio, New Orleans, San Francisco, and Portland. Germans such as George Husmann created the wine industry in America. Foresters such as

Carl Schenk created the profession of forestry. The great horticulture school at Cornell was populated by German professors. The German gymnasium and turnverien were the birthplace of the playground movement in this country. This study argues that the contribution of these professionals has been largely overlooked in part due to a “culture war” between the Germans and their English contemporaries. This culture war was rooted in differing views on the use of the Sabbath, on the consumption of alcohol, and on the use of public open space. Boosterism on the part of Olmsted and his English contemporaries excluded German-Americans from membership in the ASLA for decades. Prohibition and two World Wars led to the general suppression of German culture as well. This analysis suggests that the development of landscape architecture in this country was much more diverse and complex than understood to date. It is my hope that this work will lead to examination of the contribution of other immigrant groups such as the Dutch, Swedes, Japanese, and Spanish.

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Kischner, Franziska, *Der Central Park in New York*, Worms: Wernersche Verlagsgesellschaft, 2005.

**This paper will explore how the decline of the urban industrial environment has played a role in the creation of extreme forms of music over the last thirty years, namely the genres of industrial, power electronics, experimental noise, no wave and grindcore.**

## EXTREME MUSIC EXTREME LANDSCAPES

M. K. FOX

ONE PARTICULAR FORM of vernacular that has been under increasing scrutiny over the past several decades is that of the modern industrial vernacular. It has been presented as both villain and hero, as a single element that drives both capitalism with industry's product and environmentalism with industry's byproduct. Industry's influence has ranged from its impacts on economics, commerce and politics to its impacts on architecture, art and literature. Those impacted by industrial movements in the arts range from authors such as Dickens and Sinclair to artists such as Warhol and the architects of the Bauhaus. While the former group captured aspects of the dire aesthetic and environment created by the industrial landscape (Bergeron 2000) and the later groups captured the process of reproduction (albeit a romanticized one) (Venturi 1977), neither captured the process of industry and the dire aesthetic as well as those in what became the early 'industrial' music scene (Vale 1983).

The roots of industrial music come from the industrial centers of London, Sheffield and Birmingham in England. Industrial music was as much a product of the late 1970's as the punk movement, but it captured more dramatically the decaying English urban environment. Shortly after its creation in England industrial music spread to New York City, San Francisco, Berlin and Tokyo all of which embodied similar aspects of the industrial landscape and aspects of urban decay (Neal 1987). In similar fashion to the industrial music genre, the genres of power electronics, experimental noise, no wave and grindcore grew out of the same environments (Vale 1983, Neal 1987). Many of the artists extended the influence of industry on their music by releasing as many albums in as short a period as possible (mass-production) (Vale 1982) and mechanizing the ways of creating sounds.

The goal of this paper is to examine the influence of the physical environment on the music of these artists. Although the music and the process of its creation is the focus of the texts, little mention is made of the impact of environment, whether it is the subconscious effects of living in an urban industrial environment or the commitment to live and work in such an environment that has had the greatest influence on their products and methodologies (Vale 1983, Neal 1987). Early modern architecture revolved around adaptations of the factory aesthetic much the same as the initial phases of the industrial music scene, but the nature of both movements has changed dramatically. Both movements have transitioned from that of the mechanical factory aesthetic to that of an electronic-based factory aesthetic (Venturi 1977). The first part of the paper will investigate the impact that the environment had on the music of the artists in these genres of extreme music. The second part will address the question of whether or not the music of these genres is following aspects of architecture and the environmental movement by dealing with such themes as byproduct, reclamation and a more organic nature.

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## LANDSCAPE PRESERVATION EDUCATION: PRELIMINARY SURVEY FINDINGS AND OVERVIEW OF 4 UNI- VERSITY APPROACHES

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**From the 1970s-1990s landscape preservation became a popular subdiscipline of landscape architecture. Yet landscape preservation education occurs primarily through mentoring by interested faculty or apprenticeships in agencies or firms. This panel will discuss preliminary findings from landscape architecture and historic preservation program interviews along with teaching methods at three universities.**

DURING THE 1970S, 1980s, and 1990s the field of landscape preservation evolved as a popular subdiscipline of landscape architecture. Throughout those years professionals and academics worked together to develop a methodology for historic landscape research, analysis and treatment. Although the process combines the research and treatment skills traditionally taught in a historic preservation program with the analysis and evaluation skills traditionally taught in a landscape architecture program, no formal landscape preservation curriculum was thoroughly developed or implemented. The primary forms of landscape preservation education have been under an academic mentor interested in the topics of landscape history or preservation, or through apprenticeships at agencies or firms that have a reputation for doing landscape preservation work. Even within the National Park Service, the leading federal agency that has a record number of Historical Landscape Architects employed to undertake cultural landscape work, there is no formal landscape preservation training program. As such, there is a lack of appropriately trained professionals available to undertake landscape preservation work.

While the combination of academics, professionals and even not-for-profit and private cooperators have filled the landscape preservation education void on an as-needed basis, education opportunities in this arena are thin. Today, landscape preservation philosophy, methodology and treatment continue to be taught as an individual lecture or sometimes a course within the curriculums of landscape architecture and historic preservation programs. Thirty years into the subdiscipline, those academics and professionals who historically acted as both mentors and leaders defining the direction for the field have already or will shortly retire leaving a void in knowledge and

leadership.

Pondering all these factors lead to the desire to answer three broad questions: “How is landscape preservation being taught today?”, “Who is doing that educating?”, and “Has there been or is there a need to identify a course of study?” In an effort to begin to find answers to these questions, a pilot survey of United States landscape architecture and historic preservation programs has begun.

The approach to attaining these answers is twofold: First, contacts were identified in 161 landscape architecture and historic preservation graduate and undergraduate programs across the United States and Canada. Telephone surveys were developed and conducted, tailored to the typical courses taught within each discipline. Second, discussions have been occurring with academics that are currently teaching landscape preservation courses at four universities; each university representing a different stage of development in landscape preservation education. The University of Georgia, Oklahoma State University, and the University of Wisconsin have long been teaching landscape preservation yet are currently undergoing change in faculty due to retirements, while Clemson University has just begun to teach historic preservation and landscape preservation.

Preliminary results of the telephone surveys have identified there is a great difference in discipline approach to teaching landscape preservation, yet overall there appears to be a desire by students to be exposed to the topic more broadly. This panel will discuss the preliminary survey findings, as well as the landscape preservation education approaches at Clemson University, University of Wisconsin-Madison, Oklahoma State University, and University of Georgia.

In a fairly comprehensive review of preservation education articles, it was found that the articles tended to broadly focus on historic preservation programs and their curricula or trade skills education; they rarely, if ever, addressed landscape preservation education specifically.

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## THE FIRST JAPANESE GARDEN IN THE WESTERN WORLD: THE GARDEN IN THE LOUISIANA PURCHASE EXPOSITION

SEIKO GOTO

**This paper introduces the first Japanese Garden created in America using the original documents from the Meiji Government. It reveals that the early Japanese gardens created in America were “authentic” ones which were planned by the government sending to demonstrate its aesthetic traditions to America through its gardens.**

SINCE THE WORLD’S Fair in London held in 1851, there were many world expositions in the West. The Louisiana Purchase Exposition was held in St. Louis, Missouri in 1904 to commemorate the centennial of the 1803 purchase of the Louisiana Territory, the America’s “largest land deal”. Twelve million people visited the fair which was clearly the largest and most spectacular of American World’s Fairs up to that time. During their visit to the Fair many visitors saw the first Japanese garden in America, which ultimately influenced subsequent work throughout the Western world.

Japan started to participate in the Paris World’s Fair in 1867 and significant exhibitions were carried out by Japanese government subsequently. They provided gardens in the exhibition at the Vienna World Exposition in 1873. The garden made for the Japanese pavilion in the Louisiana Purchase Exposition was the first “stroll garden,” which was by far the largest and the most influential Japanese garden made in the western world by then. According to the official history of the Louisiana Purchase exposition and to the Japanese produced catalogue the Japanese exhibits, covering about seven acres, were the largest space allotted a single foreign participant in the fair. Although the Japanese garden in the Louisiana Exposition played an important role in giving Americans the first impression of Japanese garden design and led to a boom of Japanese plants in America, the design and the construction of the garden were never revealed to America.

The garden made in the Japanese pavilion was called the Imperial Japanese Garden. The government chose Hayato Fukuba, Director of Gardens in the Imperial Household Agency, to design the garden. Fukuba was one of the leading landscape gardeners in Japan and supervised the reconstruction of Shinjuku Imperial Garden. He also took part in the World Exposition in

Paris in 1889, the All-Russia industrial and art exhibition in 1896, and many other expositions held in Japan. The garden he designed for the Louisiana Purchase exposition was an eclectic collection with three buildings in different styles. The garden attracted more commentary from American press and visitors than the exhibits of any other nation represented at the Fair and was chosen as the best garden in the fair.

In this presentation, using the original documents of the Meiji Government and the notes of Fukuba, I introduce the decisions of the government on this exposition, process of the construction, and methods of transportation and maintenance of the introduced plants. Finally, I assess the impacts of this garden on the landscape design and the adoption of Japanese plants in America.

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**This multimedia presentation introduces the audio transect as an alternative way of assembling and representing territories: not according to their visual and scenic qualities, but according to their more fugitive and ephemeral events, including cultural narratives, ambiances, and social uses.**

## LISTENING TO UPSTATE: AUDIO TRANSECTS OF CENTRAL NEW YORK

A. G. HAMMER  
Cornell University

STUDENTS APPROACH CULTURAL landscape studies with an understandable bias toward visual analysis and representation; they're often unprepared to engage the landscape's auditory dimensions, from its keynote sounds to the powerful stories people tell about place. These more fugitive events—memories, histories, narratives, social practices, uses, meanings—are more likely to remain hidden, ephemeral. Yet these events are possibly better indexes of change than the visual and material environment.

In my presentation I introduce the audio transect as a pedagogical tool for documenting, representing, and making sense of what I'm calling the auditory landscape. My case study is an audio transect of Endicott, New York. The project foregrounds place as something anthropologist Patricia Price calls "a layered, shifting reality that is constituted, lived, and contested, in part, through narrative," a complex, fraught, and fragile tapestry conjured into being and sustained by multiple narrative threads. The project engages students in learning to listen to, collect, and edit the stories and soundscapes of places. And it enables them to publish their findings in an interactive, ongoing (cumulative), Web-based public database of significant audio transects throughout central New York.

I will present elements of an audio transect that begins on the banks of the Susquehanna and follows a straight line north: across the adjacent football field and buildings of Union-Endicott High School; across the edge conditions of Main Street and the surrounding low-income neighborhood. It cuts through the Salvation Army and the St. Paul's Community Hunger Outreach Warehouse before moving up Washington Avenue, the once-vibrant commercial district now struggling to redefine itself after the withdrawal of the town's key industries. It crosses the railroad tracks that older residents

say long divided the town between “the Americans” and “the Italians,” who, along with African Americans were actively prevented from living south of the tracks. The transect cuts through a heavily polluted industrial zone still belching smoke, the former site of Endicott-Johnson’s tanneries and shoe factories and of IBM’s printed circuit board manufacturing, now an EPA Superfund Site that affects some 660 residential homes and businesses. It then climbs upward, following the slope of the hill into Little Italy and the surrounding immigrant neighborhoods of Lithuanians, Poles, Ukrainians, and Russians.

This project has engaged students in the narrative dimensions of places. It has meant listening to people’s stories—of the changing nature of work, of neighborhoods in transition, of industrial zones turning to post-industrial wastelands, of changing values, meanings, practices, and usages. And it’s engaged students in “deep listening” to the soundscape itself, to the ambient sounds that create a community’s spatial and temporal environment (its keynotes, signals, and soundmarks), for these are not only indexes of a landscape’s general health and distinctive character, but also mediators of memory and place-based identity.

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**This paper discusses the trans-disciplinary planning process leading up to the creation of an archeological park in Sevastopol, Ukraine. The premise for the archeological park forces a re-consideration of park typologies in Ukraine and a reframing of cultural relationships to the land.**

## “AREA 10”: REVEALING A COMPLEX CULTURAL LANDSCAPE THROUGH A MODERN PARK

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THE CHORA OF Chersonesos in Sevastopol, Ukraine, is a unique archaeological area. The Chora in Chersonesos was inhabited in all three of the historic periods, overrun by the Mongols in the 13th century, and never seriously disturbed until the last decades of the 20th century, as Sevastopol expanded from its harbor area into the Herakleian Peninsula. The presence of military installations during the Cold War and before was a positive factor in preserving the archeology; so was Soviet law. Neither of these is sufficient now, and the risk is that the remaining untouched areas of the Chersonesan Chora—approximately 800 hectares (some 1,000 acres) of the original 10,000 hectares where the ancient population of Chersonesos worked and lived for 2,500 years—will be “developed” as tourist establishments and residential tracts. As the momentum of commercial development expands, however, there is a growing effort by archaeologists and historians, supported by the government of Ukraine, to preserve what remains of the ancient chora.

For the last five years the Center for the Study of Ancient Territories (CSAT), the institute for Classical Archeology (ICA), and Packard Humanities Institute (PHI), working in concert with National Preserve of Ukraine (NPTC) and the Ukrainian Ministry of Culture have focused their efforts on one area of 146 hectares of the unique ancient chora, known as “Area 10”. This is the most extensive remaining part of the chora, and within its bounds are no less than nine country estates – impressive stone dwellings and production centers, of which four, have been excavated and conserved by the coordinated efforts of Ukrainian and U.S. based teams.

In Spring and Summer of 2006, a trans-disciplinary team of faculty from the School of Architecture at the University of Texas at Austin, commenced work on a feasibility and management plan for “Area 10.” The

design team is charged with the design of a sustainable modern park that foregrounds the conservation and cultural interpretation of this ancient landscape, while rehabilitating the ecological systems of the site and its context. Central to the parks success are the simultaneous activities of preserving an ancient cultural landscape and the design of a modern archeological park that can be constructed over time. The creation of the park is the sole means of preserving and maintaining the territorial limits of this significant territorial fragment. The design phase signals the conclusion of over twenty five years of research and scholarly activity in the region, and the desire to leave a legacy and methodology for joining cultural preservation and modern communities. .

The discussion put forward in the paper will include the complex negotiations of communal land ownership and the creation of boundaries; the legibility of the cultural landscape and archeological interpretation; and the nuanced relationship between a modern park and a World Heritage designation.

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**Since 1965 Meiji-mura has served as a museum landscape of relocated historic buildings and infrastructure projects. Through site visits, textual analyses, and mapping, I demonstrate how Meiji-mura negotiates time, politics, and location by appropriating the ideological function of museums, the cultural devices of theme parks, and shifting paradigms of landscape planning.**

## MEIJI-MURA, JAPAN: NEGOTIATING TIME, POLITICS, AND LOCATION

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BY THE 1960S Japan witnessed an unbridled transformation of its pre-World War II cities, which failed to capture either the scale or verve of its modern imagination. Like other countries, the fine texture of Japan's older urban fabric was rapidly replaced with massive infrastructure projects and daring high-rise construction. Yet, Japan's approach to preserving some of its most prized pre-World War II artifacts was at once unique and clever. In 1965 architect Yoshiro Taniguchi with railroad baron Moto-o Tsuchikawa created on the outskirts of Nagoya, Meiji-mura, a museum landscape of relocated Meiji-era (1867-1912) and early Showa Era (1925-1989) buildings and infrastructure projects. Now over forty years in progress, Meiji-mura is a sprawling landscape of sixty-seven relocated artifacts from not only Japan, but the West.

Through site visits, textual analyses, and mapping, I demonstrate how Meiji-mura negotiates issues of time, politics, and location by appropriating the ideological function of museums, the cultural devices of theme parks, and shifting paradigms of landscape planning. First, Meiji-mura appropriates the ideological function of museums, which historically sought to depoliticize or secularize works of art. The invention of the museum in the eighteenth century is considered a key point when art was severed from the daily life of society, religion, and politics. Quatremère de Quincey criticized both this new environment for viewing works and the aesthetic responses it signaled. Considering the plundered objects on display at the new Louvre, he declares them "purposeless in their attitudes...what do these effigies, now mere matter, mean to me?"<sup>1</sup> Indeed, removed from their sites and relocated at Meiji-mura, these buildings and infrastructure projects are severed from both their utility and their ability to assert political or religious power. The relocation of these

signs of former political regimes (when the Emperor held executive powers) to the context of the museum, devolves their symbolic power so they can now be appreciated for the sake of history.<sup>2</sup>

Second, the cultural consumption of history at Meiji-mura is stimulated by the use of theme park elements. Contained and framed within the museum landscape and replete with cafes, wagon rides, and souvenirs, the consumption of culture capital becomes the art. Anticipating consumer society's love of recreated historic districts, theme parks, and malls,<sup>3</sup> historical artifacts at Meijimura are transformed as sites for entertainment. The former glass factory hosts a sweet shop and the former Anglican Episcopal Church of Japan can be rented for parties. Interestingly, Meijimura's expanding roster of acquisitions have distorted space and time with ironic effects. For example, the main gateway to Kanazawa Prison leads to Frank Lloyd Wright's Imperial Hotel. Lastly, the continual deposits of buildings and infrastructure projects invoke a topos of the various paradigms that have shaped the way we plan landscapes. Early contributions in the mid-

1960s and early 1970s distributed artifacts on large lots with ample space, reflecting the suburban development of the times. Later spatial arrangements grouped artifacts around open spaces suggesting the influence of cluster planning. By the 1990s and 2000, artifacts were densely relocated along streets echoing new urbanist trends.

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**Extreme landscapes such as former airports, mining pits, dumps, and so forth represent some of the present-day challenges to landscape architecture. The evoked aesthetic perception of the sublime offers fruitful inspiration for the design process.**

## APPROACHING EXTREME LANDSCAPES

WOLFRAM HOEFER, PHD

FORMER AIRPORTS, MINING pits, dumps, and so forth represent some of the present-day challenges and opportunities for landscape architecture. In the course of technological and economical development, many such places have become obsolete and are available for conversion. There are sites whose spatial dimensions often defy comprehension. The development of design concepts for such “extreme landscapes” is a branch of landscape architecture that will become more significant in the future. This paper will address the question of how far the development of appropriate design can fall back on the familiar “pastoral” model of perception, or as the case may be, which other levels of perception might offer fruitful inspiration for the gestalt. The method is a hermeneutic discourse based on a reflection on aesthetic theory. The goal is to link elements of landscape history with recent developments in order to understand future challenges for landscape architecture.

The “pastoral” affection for a beautiful landscape—the good feeling of being in the landscape—corresponds to the sensed understanding of the culturally internalized mythos of the pastoral. Landscape, therefore, becomes a code in a semiotic system. It is in this occurrence that one finds the essential difference between a vernacular landscape and an extreme landscape.

Looking at an extreme landscape, there is no concurrence with familiar, comforting pictures. And therefore the semantic process of pastoral landscape cannot take place. The overwhelming impression makes the place itself impossible to interpret. In that impossibility, one finds the hallmark of an aesthetic perception that triggers strong feelings in the observer. Kant described this feeling of being overwhelmed as the sublime. “We call sublime that which is absolutely great” (KU, § 25, B 131). With this statement, Kant

refers primarily to natural phenomena. The stark grandeur of high mountains or the infinitude of the ocean defies the scope of imagination; they are unfit for our powers of representation. Objects created by man are then perceived as sublime when their magnitude exceeds the limits of the comprehensible, just as in the case of an object of nature.

An example of a design that offers the visitor both levels of aesthetic affection is the landscape park Riem in eastern Munich on the premises of the former Munich Riem airport. The blueprint by the French landscape architect Gilles Vexlard appears to be inspired by the extreme landscape of the former airport and the broad dimensions of the Munich gravel plain. The sense of infinity about an airfield—thus an extreme landscape—has been creatively interpreted as an extreme.

The aesthetic-cultural phenomenon of the vernacular landscape, especially in its post-industrial development, will in the future continue to belong to the iconography of landscape architecture. With the extreme landscapes of the technical infrastructure, left open as it is, comes another interesting opportunity for innovative design.

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## PRESERVATION OR DEVELOPMENT? NEIGHBORS NEGOTIATING A COMMON VISION FOR THEIR HISTORIC RURAL COMMUNITY

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**This paper describes successes and failures of facilitation techniques used to assist members of a historic rural community reach consensus on a community vision. It reveals mechanisms used to build trust among individuals as well as lay a foundation for long-term negotiations between the community and the rapidly encroaching adjacent municipality.**

GREEN LEVEL, NC is a largely undeveloped, unincorporated community located the Town of Cary's extraterritorial jurisdiction. As one of the last expansive rural landscapes in the vicinity of Research Triangle Park it is under considerable development pressure. Green Level is exemplary of late 19th century agricultural communities of the central Piedmont region of North Carolina. It is a designated historic district and is on the National Register of Historic Places.

Almost a decade after Green Level community members successfully fought off Cary's annexation attempt the town approached the community with a second initiative, this time to develop an Open Space and Historic Resources Plan to preserve Green Level's historic landscapes. This second effort was initially meet by community member with angry based in years of mistrust. In an effort to reapproach, community members were asked to develop a vision for what they would like their community to look like in 20 years.

This paper describes successes and failures of facilitation techniques used to assist members of the historic rural community reach consensus on their community vision. It reveals mechanisms to build trust among individuals as well as lay the foundation for long-term negotiations between the resulting Green Level Community Association and Cary.

Through a series of facilitated community workshops, over 100 members of the Green Level community participated in the development a community vision. This vision addresses issues related to future development, farmland/rural areas, historic districts and landmarks, parks & open space, property rights, traffic, watershed protection and environmental resources. Additionally, this effort identified historic places and landscape settings / ele-

ments important to Green Level community members, provided educational information to assist individuals and the community with conservation initiatives, and improved communication between the Green Level community and the encroaching adjacent municipality.

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## CRITICAL REGIONALISM AND THE INDUSTRIAL PICTURESQUE: MEDIATING PAST AND FUTURE

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**This presentation explores the aesthetics and ecology of two urban parks that exhibit characteristics of both Critical Regionalism and the industrial picturesque. Critical regionalism is shown as a viable methodology for creating new landscapes that embrace the cultural memory of industrial infrastructure and the new creative vision of the designer.**

SINCE 1970 WHEN Richard Haag was first commissioned to design Gas Works Park in Seattle, there has been an increasing acceptance and understanding of the inherent beauty and cultural importance of derelict industrial infrastructure. This presentation will use two celebrated landscape architecture projects to show contrasting approaches for adaptive reuse of industrial artifacts in urban parks. The projects are Gas Works Park in Seattle, Washington, by Richard Haag, and Northside Park in Denver, Colorado, by William Wenk Associates. Both projects address the issues of preservation, creativity, and environmental remediation. Harrington (2006) has drawn on writings ranging from contemporary texts to eighteenth century aesthetic treatises to place the aesthetic appreciation of industrial infrastructure into the realm of picturesque aesthetics. She lists three principal elements of the industrial picturesque: 1. “the primacy of the role of the imaginative spectator; 2. the use of artifacts that would be unsightly or even ugly without picturesque aesthetics; and 3. content in these works that is typically unfamiliar to a twenty-first century, service oriented culture” (Harrington 2006, 26) Harrington describes this aesthetic as potentially evoking “feelings of nostalgia, feelings of melancholy, and thoughts on the mortification and the brevity of life”. (Harrington 2006, 26) These descriptors are backward, rather than forward looking. Wurster, by contrast, urges designers to “see with eyes to the front” when describing his approach to Critical Regionalism (quoted in Welch, 1989). Critical Regionalism grew out of attempts to find a way for rooted, regional cultures in developing countries to adapt to rapid economic progress and the resulting foreign, social, and technological influences without dissipating “the cultural resources which have made the great civilizations of the past” (Ricoeur, quoted in Frampton, 1982). The focus of

Critical Regionalism is on the sensibility of the architect and the end user as they both react to an interpretation of the regional context. This is “.what results when architects, responding to that which is most innate within themselves, correlate with that which is inherent in site, climate and client” (Welch, 1989). This presentation will illustrate how Northside Park has transformed a former sewage treatment plant on which it is located by subtracting enough infrastructure to create both new expressive abstract forms and large areas for passive and active recreation. The link to the past becomes more of a hushed reverberation, rather than the literal preservation of larger pieces of industrial infrastructure as in Gas Works Park. The ongoing ecological processes to mitigate pollution in both parks will also be discussed as they relate to the form of the spaces and a new urban ecology. The methodology for this research included a literature review, visits to both parks, and interviews with the designers and other key informants.

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**The landscape's history, inscribed in its forms and materials, is a commonly explored archival record. This paper identifies a second, simultaneous archive as a site for creative inquiry into memory, identity, and place: the writings, photographs, oral histories, and art that capture a landscape in time and circumstance.**

## ARCHIVING THE LANDSCAPE: A NEW SITE OF INTERVENTION

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LANDSCAPE AS ARCHIVE has captured the attention and imagination of landscape architects, artists, and theoreticians across a range of disciplines. “Collecting, classifying, and controlling,” the traditional roles of the archivist (Connarty, 2006), give way to more creative endeavors in the landscape where the archival “original,” is a site of invention and discovery focused on questions of history, memory, identity, and place. As Jane Connarty has noted “the themes of history and memory have been central to cultural production and discourse through much of the 20th and into the 21st centuries” (Connarty, 2006) “Modern memory,” according to Pierre Nora, “is above all archival.” (Orlow, 2006) The landscape’s archival record is embedded and inscribed in its forms, structures and materials (Connarty, 2006).

This paper presents two on-going, collaborative archival projects conceived as explorations into the everyday Virginia landscape. These explorations, in collaboration with the Harrison Museum of African American History in Roanoke, Virginia and the Newman Library at Virginia Tech focus on two important but unrecognized twentieth century vernacular Virginia landscapes, the Commonwealth’s African American landscape and its landscape of automobile racing, each an “original” archival record of its identity, history, memory, and evolution. The documentary evidence of these landscapes, including, private journals, photograph collections, oral histories, period newspapers, literature, and music constitutes a second, simultaneous archive. Like the archival original, this simultaneous archive resides outside of traditional institutions. Scattered, and fragmentary, it exists without a curator as well. The archival project is constructing a digital record of this documentary evidence. This digital record, an archive of the archive, neither “fixed in meaning or material” (Connarty, 2006), is a rich “ground” where improvisa-

tional, inventive, and subversive explorations can serve to “extend the lineage of memory and time into the present” (Hood, 2001).

The role of the archive, to collect, record, preserve, and to offer witness and evidence, resonates most strongly in those everyday landscapes that collectively form the nuanced “ground” of place. A ground of the kind suggested by Robin Dripps where “single, uncomplicated meanings are rare” where “relationships...are multiple, shifting, and inclusive” and where “the various patterns of physical, intellectual, poetic, and political structure” are evident (Dripps, 2005). Evident too is the “material evidence of specific histories that have been misrepresented or ignored” (Connarty, 2006) Creative explorations in the simultaneous archive of the ground are revealing deeper understandings of the ordinary, the everyday, self-sufficiency, collective memory, and culturally distinct conceptions of “place.” Explorations here can transform landscape architects from archive makers and users to what Uriel Orlow characterizes as “archive thinkers “who are above all engaged in deconstructing the notion of archival itself” (Orlow, 2006).

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**Early landscape architecture fellows at the American Academy in Rome generated a methodology of site measurement and graphic representation that became an important element in the emerging disciplines of landscape preservation and historic documentation in this country.**

## AN AMERICAN ACADEMY LEGACY: A MODEL FOR THE STUDY AND DOCUMENTATION OF HISTORIC GARDENS

DANIEL W. KRALL  
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WITH THE CREATION of the Fellowship in Landscape Architecture at the American Academy in 1915, the profession realized an invaluable resource for articulating a methodology for documenting and restoring historic gardens. Although the stated intention of the Academy was the study of Renaissance art forms and collaboration among design professionals, an important byproduct became the onsite measurements and documentation of many Italian villas. Highlighted in published works by authors such as Charles Adams Platt and Edith Wharton, these historic properties were becoming important models for landscape architects throughout the United States in the early years of the twentieth century. Technical documentation, beyond personal narratives and black and white photographs, however, was nonexistent. Platt discussed the need for such documentation in his 1894 publication. Noting that other Italian Renaissance arts had been extensively studied, he bemoaned the lack of any “existing work of any great latitude treating the subject of gardens.” Similarly in 1915 Harvard professor Henry Hubbard called for greater documentation of these sites. In an article appearing in *Landscape Architecture* and entitled “Note-Taking in Italian Gardens,” Hubbard observed that “where it is possible to get an accurate plan, there is a tremendous amount to be learned which cannot be learned in any other way.” He continued, “The careful study and accurate record of these examples of Italian garden design are well worth the time of the modern landscape architect.” By the late 1920s these measured drawings by landscape architecture fellows were being hailed as critical to the renewed interest in and preservation of these sites. Art historian Claudia Lazzaro has identified these as part of a “culture of restoration” that appeared in Italy at this time, including “graphic” as well as “actual” restorations. How these young

men should undertake this documentation was also debated in the early years of the fellowship. Academy advisors and faculty of various institutions argued as to what was appropriate documentation for a young landscape architect during his stay in Rome. What defined garden documentation, what was architectural, and what should the landscape architecture fellow highlight as his focus? The resolution of this discussion established the documentation format for the fellows for the next three decades. For the profession of landscape architecture in this country, these efforts in field records and graphic representation established a model for recording historic sites in this country as a growing interest in landscape preservation and historic documentation was emerging. Using recent scholarship exploring the Italian villa garden and documents from the Kroch Library's Rare and Manuscript collection at Cornell University, the author will discuss how these early Rome fellows established a methodology for garden documentation that remained a major element of the landscape architecture profession for the first half of the twentieth century.

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**Neighborhood satisfaction is an important component of life satisfaction. This paper examines how land content (e.g., trees, structures, and pavement) and land use (e.g., commercial, residential, and open space) influence residents' satisfaction with their neighborhoods.**

## THE EFFECTS OF TREES, STRUCTURES, AND LAND USE ON NEIGHBORHOOD SATISFACTION

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NEIGHBORHOOD SATISFACTION IS an important component of life satisfaction (Fried 1984; Sirgy & Cornwell 2002). As a contributor to life satisfaction, neighborhood satisfaction is influenced by individual and household background variables (Galster & Hesser 1981). Previous research found that nearby trees and natural areas were the most important positive factors in neighborhood satisfaction (Kaplan, 1985). However, there is a limited understanding of how other environmental content and land use influence neighborhood satisfaction. This paper examines the effect of land content (e.g., trees, structures, and pavement) and land use (e.g., residential, commercial, and open space) on neighborhood satisfaction. A survey of 276 respondents in College Station, Texas was geo-coded and analyzed with land content and land use GIS data. A structural equation model examines the relationships among background variables, land use, land content, and neighborhood satisfaction simultaneously. While land content appears to play a more important role in neighborhood satisfaction than land use, both were found to be important. Trees were found to have a positive effect on neighborhood satisfaction while structures were negative. A negative correlation between pavement and neighborhood satisfaction disappears in the SEM model. In fact, the effects of pavement that are not accounted for by structures and commercial land use show a positive relationship. Paved areas that are not in commercial areas and are away from larger structures—such as neighborhood streets and sidewalks—might actually contribute to an improved sense of neighborhood satisfaction. Commercial land use was also found to have a negative effect on neighborhood satisfaction while background variables have no significant impact. It is reasonable to conclude that the amount and arrangement of land use and land content in and around

neighborhoods—if carefully planned and designed—may improve the well-being of residents by increasing their neighborhood satisfaction.

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**Since its beginnings, the medium of film has engaged issues and conflicts intrinsic to the urban condition, employing diverse ideological, political and social positions, The paper explores through numerous films how conflict and contestation are represented and negotiated within the cinematic frame and suggests design and planning strategies based in a cinematic understanding of urbanity.**

## NEGOTIATING THE CITY: THE CINEMATIC (RE-)PRESENTATION OF URBAN CONFLICT

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THROUGHOUT HISTORY, CONFLICT and contestation have been one of the mainstays of conditions of urbanity. Urban space and its patterns of configurations and inhabitation have developed as location of, framework for, catalyst for and response to conflicts and their negotiation. The underlying causes of urban conflict comprise social, economic, ethnic, ecological, spatial and political issues – often overlaid and compounding each other.

Very early on, the medium of film engaged issues and conflicts intrinsic to the urban condition, employing a variety of ideological, political and social positions, as e.g. evident in Dziga Vertov's "Man with a Movie Camera" (1929) or Fritz Lang's "Metropolis" (1927), the film noirs of the 1940ies and 50ies, or the apocalyptic visions of "Stalker" (Tarkovsky, 1979), "Blade Runner (Scott, 1982)", or the disillusionment of "City of God" (Meirelles, 2002)

If the spatial and cultural form of "city" is a result, however dynamic and ephemeral, of how the aforementioned conflicts and differentials play themselves out spatially and socially, how they "take place", then film is uniquely suited to understand and analyze these processes.

Film as a medium is at least three-dimensional – it adds the dimension of time to the two-dimensional screen, creating a more and more perfect illusion of a four-dimensional – real - space. Parts of actual experience can be provided by film, such as movement, activity, temporal and spatial change. The medium can even create more than perfect illusions of place, it is able to go beyond and change the temporal and spatial context of reality, thus creating a "heightened reality". Its "unique and specific possibilities can be defined as dynamization of space and, accordingly, spatialization of time" (Panofsky, 1934:18), it is "free of the limits of time and space" (Vertov, 1984:15-17). Cinematic place (and its constituting processes and conditions)

can then be interpreted as subject, setting, character and symbol (Helphand 1985).

The change in the ways urban conflicts and their “places” are represented in cinema is not only a portrait of their actual qualities, properties and conditions, but also indicative of different perspectives, readings, attitudes, and interpretations, and hence can be analyzed to understand the relationship between society and the processes it employs to resolve conflicts and their manifestation in places.

Analyzing a cross-section of films engaging the topic of urban conflict, the paper investigates the manners in which urban conflicts are negotiated and the urban condition is represented and present inside and outside of the cinematic frame, and to what degree the cinematic frame allows for a projection back onto the frames and conditions of the actual urban situations and conflicts. The cinematic understanding of urban conflicts opens opportunities to strategically engage and negotiate the conflicts and their underlying forces and factors within the processes of landscape architectural and urban design.

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## LEARNING ABOUT URBAN DESIGN THROUGH LANDSCAPE: A CASE STUDY FROM THE SECOND-HOME SETTINGS OF CENTRAL CANADA

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**Focusing on the reciprocity of landscape and urban design, especially in dealing with seemingly intractable problems of urban growth and change, the intent of this presentation is to provoke further discussion roles that both 'landscape' as a concept and urban design as a preoccupation can play in everyday life settings.**

THE RECENT SURGE of interest in urban design as a specialized area of practice is reflected in post-secondary curriculum across the US and Canada. Indeed, urban design initiatives often engage landscape architecture in a creative and fruitful dialogue with other environmental design professions, specifically architecture and urban planning. This paper explores two familiar and interrelated questions, using as its case study an ongoing in-depth study of waterfront second-home settings in central Canada. First, how does urban design enrich the study of landscape? Second, and more vitally, how should its future practitioners be 'taught' given the complexity inherent to this area of professional endeavor (both intellectually and practically)? 'Teaching' is perhaps not the operative concept, however; as dancer and historian Joe Nash said about teaching jazz, it is really a mindset, an approach, or an attitude. Similarly, urban design is an area of specialization in which several concepts and methods from several professions and/or disciplines are synthesized. Preparing future practitioners entails vigilance in pooling ideas and techniques from multiple disciplinary perspectives.

In this talk, I focus on two key themes. The first is that 'teaching urban design' might better be expressed as 'learning about landscape'—where landscape denotes the culture/nature nexus of built environments and natural process. In other words, the increasingly rich discursive space represented by the term 'landscape' is a crucial epistemological frame for urban design (and perhaps vice-versa). This theme is then applied through a case study in the geographical and methodological context of the 'cottage' / 'camp' / 'cabin' settings of Ontario and Québec (as found also in the northeast and Great Lakes states as well as Sweden, Norway, and Finland). These offer enriching opportunities to understand landscape in temporal perspective as

the weave of settlement form and pattern with ecosystems and geomorphology. Of particular interest is their marked (though malleable) combination of characteristic abiotic, biotic, and cultural attributes; important lessons of process, method, and analytic rigor therefore stand to be learned by students. Moreover, these ecologically-rich, meaning-filled, and ubiquitous places hover at the nexus of several ‘hot topics’—debates over sprawl, a growing interest in the future of metropolitan landscapes (e.g., concern for long-term ecological, social, and economic viability), and discourses on the ‘métapolis’ and ‘landscape urbanism’—which take stock of the modern city-region as a hybrid, fluid, and created landscape (Ascher, 1995; Corner, 2003; Sudjić, 1992; Waldheim, 2006).

To provoke discussion, the paper will highlight insights for learning about landscape and the role of urban design in contemporary practice. By getting away from stereotypical ‘hard’ urban contexts (e.g., squares and ‘downtown’ streets) of urban design, possibilities are opened up for learning by thinking outside the ‘urban’ box. The case study presented here offers students and educators with important if somewhat unconventional sites in which urban design techniques or strategies are appropriate and useful, and where there is a vital interface with landscape architecture. In what analogous ways might we enable future practitioners to engage more substantively with the many professions involved with environmental design?

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## HUMANIZED NATURALISM: THE LANDSCAPE DESIGN OF RICHARD NEUTRA

KEN MCCOWN

**This paper examines Richard Neutra's conception of landscape. Neutra integrated landscape design into architectural design for the purposes of ameliorating the impact of the urban condition on the physiology of man. For Neutra, the environment evolved faster than man's own physiology; design resolved this schism for human comfort.**

CONTEXT: THIS PAPER examines Richard Neutra's landscape architectural work. He held a particular modernist viewpoint that expands the field of landscape architecture by examining the integration of technology, physiology, architecture and landscape. For Neutra, our physiology was tuned to Nature, as it was where our neurological systems evolved. Our new (in evolutionary time-scale) environments of cities and man-made landscapes were foreign and irritated our neurology. Neutra used design to ameliorate negative perceptual conditions and augment stimuli that would heighten our native evolutionary sensibilities through the arrangement of materials and systems on sites and in city planning. He considered climate, light, movement, color, texture and form as they related to the conscious perceptions and unconscious awareness of individuals.

This paper will detail the evolution of Neutra's experiences from growing up in Vienna with Sigmund Freud and the influence of the Vienna circle to his own home in Los Angeles, where he researched ideas on the design and planning of landscape. His forgotten and unnoticed contributions in planning and landscape architecture offer solutions to contemporary issues facing the profession and society, from the scale of the residential lot, up to the regional scale. His attention and understanding of integrated design of architecture and landscape as they relate to psychology and physiology offer opportunities to expand our discussion of relevant issues in landscape design.

Central Theme: This paper examines Richard Neutra's conception of landscape. Neutra integrated landscape design into architectural design for the purposes of ameliorating the impact of the urban condition on the physiology of man. For Neutra, the environment evolved faster than man's own

physiology; design resolved this schism for human comfort.

**Method of Inquiry:** The method of inquiry is immersion. The author lives in an environment designed by Neutra with access to his house, library and archives. This method includes extensive literature reviews from first-hand and secondary resources, interviews with family members and scholars, and extensive perceptual experiences over years within the Neutra residence to examine the practical implications of his theoretical writings. The Neutra house will be a case study to explicate these ideas through a presentation of diagrams, movies, photographs and drawings as they relate to season, movement, perception, color and climate.

**Findings and Conclusions:** This paper expands the discussion upon the realm of design by examining Richard Neutra's landscape design work. Most literature upon this until 2004 discusses Neutra's landscape in decorative or visual terms, neglecting his attention to integrated design between people and their environment, and from outside to inside. No substantial scholarship exists upon Richard Neutra's landscape design at this time. This paper will discuss his landscape ideas as he referred to them in terms of 'humanized naturalism.' Neutra's theoretical platform for design was human health and happiness. Neutra stages all of his design actions upon this tenet. Neutra's work marries what we now consider to be social justice issues with sustainability issues leaving him as a relevant contemporary landscape theorist that anticipates works yet to come for our profession.

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## CONTEMPORARY INHABITATION OF THE CHIHUAHUAN DESERT: A BINATIONAL CULTURAL AND NATURAL LANDSCAPE

GABRIEL DIAZ-MONTEMAYOR

**This paper contrasts the inhabitation of the Chihuahuan desert Landscape in the exemplary metropolitan area of Ciudad Juarez, Chihuahua and El Paso, Texas. A place where cultural and economical diversity maintain a conflictive inhabitation laboratory analogical to the complex relationship between Mexico and the US.**

THE US AND México historically have developed socio-economic strengths stretching away from the central border region, leaving the Chihuahuan Desert landscape found at their geographical center not only as a clearly defined natural ecosystem, but also as an isolated culture. These cities are capable of apparently living unaware of its neighbor, while borrowing a vast array of its dwelling patterns. For the culture of local society the border has proven as useless as the fence. Today, a developing identity sharing elements of both nations learns to shape itself into an unexpected container: a rather difficult natural environment as a spared area.

The Chihuahuan is the least documented desert of North America. The bi-national metropolis of Ciudad Juárez in México and El Paso in the US conform up the largest urban realm in the area and display the vital space where contrast and coincidence permanently coexist expressing the singular cultural inhabitation this city has to offer. Both cities become one often contradicting the available cartography that hides or simplifies the other side. Maps displaying the whole choose a minimal street hierarchy that attempts to assume as one both the low densities and sprawl of the subdivided formal flat areas and the crowded steep informal neighborhoods composed by migrant communities.

This paper contrasts the dreamed landscape of grassy meadows, tall and green trees forced into Ciudad Juarez, while sustainable landscape practices slowly emerge on El Paso, contradicting the prevailing pattern of the traditional American suburb. In a time where Mexico's alienated suburbia developments are forced into narrower and smaller lots, in a futile, but locally effective, attempt to relate to the American dream. Built landscapes of foreign types are often found mixed with the traditional architectural roots of

the site sensible massive expression of adobe arid construction methods. The outcome is a non-native urban realm departing from much needed sustainable practices in an area where the cities need to face the lack of water and various natural resources.

The situation of the Hispanic and traditional paradigms mixing with the American dream struggles to evolve in a permanent contradiction especially visible in the use of public space. Contrast is evidenced in formal analysis of urban contexts expressed in architecture and in the confrontation of inhabitation patterns on both sides of the bi-national city. However, the positive conclusions of this confrontational exercise is the potential of a cultural and urban adaptation exhibiting local response and awareness of its societies that often are overlooked by the mainstream agenda as a peripheral reality detached from the economical centers of the US and Mexico.

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## NEGOTIATING HISTORY: ATTITUDES AND BELIEFS OF HISTORIC PILGRIMAGE PARTICIPANTS IN MISSISSIPPI

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**Preservation of a fragile past increasingly threatened by development pressures and natural disasters, and imminent loss of the historic fabric of the Old South were of major concern to owners of historic pilgrimage homes. Understanding the motivations/concerns of private historic tourism participants aids landscape planners in negotiating the landscape of historic preservation**

THIS STUDY SURVEYED the homeowners and managers of historic properties and landscapes who participated in three Historic pilgrimages in Mississippi - Columbus, Aberdeen and Natchez. Participants were asked a series of open ended, short answer and Likert scale questions designed to understand their motivation for participation in the events, their perceptions of the rewards and difficulties, and their commitment to the historical authenticity of their houses and landscapes.

Results of the study indicate that participants in the pilgrimages are overwhelming white, upper-income and highly educated. While Mississippi pilgrimages have incorporated vernacular housing in recent years, the emphasis of respondents to this survey was overwhelmingly that of grand antebellum homes designed to showcase the wealth and power of the Old South.

Many of the respondents indicated a lack of knowledge, but significant interest in restoring the landscapes surrounding their houses to a period appearance, within the bounds of practicality and use. Concerns expressed included extensive maintenance concerns as homeowners believed that historical patterns of waged and unwaged labor may have allowed for more complex and maintenance extensive landscapes than might be practical in their historic landscapes today. In addition, concern was expressed for the practicality of use to current owners of a historically accurate landscape. However, a surprising percentage of owners indicated a willingness to restore their landscapes as closely as possible to a period appearance. Several respondents mentioned the potential for hosting weddings and other events as possible motivations for the restoration.

Pride in their heritage, their architecture and their community was most often cited as the motivation for participation in the pilgrimages. In addition,

preservation of a past seen to be increasingly threatened by development pressures, imminent loss of the historic fabric of the Old South, economic concerns and unsympathetic/unsupportive governmental programs was of major concern for survey respondents. Implications of the impact of natural disasters such as Hurricane Katrina lurked close to the surface of many stakeholders.

This study appears to be the first of its kind to survey participants engaged in organized, time limited historic tourism events in the South, and as such the results have resonance for understanding the motivations and concerns of private property owners for historic and garden tourism throughout North America.

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## ENGLISH LANDSCAPE AESTHETICS AND COUNTER POINTS IN THE HISTORY OF LANDSCAPE ARCHITECTURE

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**The naturalistic style of design that emerged during the English Landscape School period has often been presented as though it were nature itself. Over the years landscape architectural theorists and practitioners have repeatedly challenged that attitude.**

IN THE “AMERICAN Society of Landscape Architects Handbook” are numerous statements about landscape architecture’s privileged position as “keepers of nature.” While that calling is canonized in the profession’s “Declaration on Environment,” the “Code of Professional Conduct,” and “Policies” in the handbook. Through multiple works and written manuscripts since the profession’s early development in the United States during the middle of the 19th century, the profession has proudly broadcasted a “stewards of the land” image. While that image has been a bulwark of the profession, the underlying design strategy has often been an abstract and simplified version of the English Landscape School approach first developed during the Romantic period.

Over the years a few within profession have closely examined that approach and have stood up to offer counter arguments. Elbert Peets’s polemical articles published in the *American Mercury* during the mid-1920s suggested that projects driven by a nature romanticized view are “irremediably toxic to good taste . . . [and] “nature-imitative.” By the 1930s early modernists in landscape architecture also criticized the overly romanticized vantage on nature and its implications for design. In a 1938 article for *Pencil Points*, James Rose argued that natural elements are part of the designer’s palette and should not lead us to “a preconceived ground pattern.” After McHarg and an emerging environmental movement propelled the profession to embrace “ecological systems planning” during the late 1960s and 1970s, a 1981 on article by Steven Krog in *Landscape Architecture* asked “Is it Art?” Others carried the torch forward. Catherine Howett in her 1987 *Landscape Journal* article, “Systems, Signs, Sensibilities: Sources for a New Landscape Aesthetic” upheld the importance of design as well as the useful example

established by earth artists.

In total, the challenges raised against the profession's consistent use of an abstract version of the English Landscape Style has led to a couple problem: many landscape architects apply the forms but have little grounding in the original theories that led to the approach; and others talk as though the naturalistic style of design is nature itself.

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## AL-AZHAR URBAN PARK, CAIRO, EGYPT: NEGOTIATING GLOBALIZATION AND ECOLOGICAL MODERNIZATION

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**Globalization and ecological modernization theory are used to examine the development of Al-Azhar Urban Park, Cairo on a centuries-old urban landfill site. The paper traces the relationship between changes in Egyptian environmental consciousness and formation of related institutions as a model for describing ecological modernization in Egypt.**

RECENT SCHOLARSHIP CONCERNING globalization, addresses three broad areas of research: geopolitical processes (Bertelson, 2000), systems-level processes (Cerny, 1997), and phenomenology (Scholte, 1997). Reactions to globalization have been addressed in the literature in terms of “deglobalization” (Serrano, 2005), “precautionary principle,” (Lee 2001, Stirling 2003), “risk theory” (Wynne, 1996), and in aspects of ecological modernization theory. Since the 1980’s, contributors to ecological modernization theory have examined the role of technological innovation in environmental reform (Huber, 1982; 1985), and the role of the state and market economics in ecological transformation, particularly institutional and cultural dynamics (Spaagaren, 1992). Recent trends in ecological modernization scholarship have broadened the discourse theoretically and geographically beyond its western European origins to include studies of non-European countries and of global processes. Perhaps most relevant to landscape architecture are the aspects of ecological modernization theory that address “reflexive modernization,” which focuses on the social and environmental changes that occur in reaction to modernization.

Van Koppen’s examination of the relationship between nature conservation ideology and the formation of nature-related Dutch institutions during the 20th century provides a useful model for examining the “reflexive” aspects of ecological modernization and its effect on landscape change (Van Koppen, 2000). According to Van Koppen’s analysis of Holland, Western Europe and North America, during the period following the 1990’s, the rise of more aggressive concepts of nature in reaction to globalization processes prompted the development of institutional alliances for “nature development,” “new nature,” and the incorporation of wider social and natural

values in landscapes such as urban landfill parks.

Al-Azhar Urban Park, a recently inaugurated international project designed by both Western and Egyptian landscape architects at the edge of the historic fabric of Islamic Cairo on a centuries-old urban landfill site clearly reflects these wider social and natural landscape values noted by Van Koppen. The park was donated to the citizens of Cairo through the Aga Khan Development Network. Begun in the mid 1980's, the project grew into a broader vision of urban revitalization to include: the rehabilitation of the adjacent Darb al-Ahmar neighborhood, the restoration of historic Islamic monuments, including several mosques and minarets, and the excavation and restoration of Cairo's medieval Ayyubid Walls which were uncovered during site grading.

This paper examines the development of Al-Azhar Urban Park on the site of Cairo's oldest urban landfill as a case study of contemporary landscape change related to "reflexive modernization" and globalization. Addressing the conference theme of Discursive Spaces, the paper traces the relationship between changes in Egyptian environmental consciousness and the formation of related Egyptian institutions in the 20th century as a model for describing the "reflexive" aspects of ecological modernization in contemporary Egyptian society related to urban landscape change.

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## “THE TYRANNY OF GOOD TASTE”: ADDRESSING HISTORIC PRESERVA- TION ISSUES IN THE LANDSCAPE RENOVATIONS AT NEMOURS

CHAD W. NELSON

**This paper investigates the current and future interpretation of the estate gardens of Nemours, the 225 acre estate of Alfred I. du Pont near Wilmington, Delaware. It assesses how documentation of the historic gardens presents a complex challenge to maintaining gardens in their intended spirit while respecting their evolution over time.**

GARDENS AND LANDSCAPES challenge the basic premise of historic preservation. Inherently dynamic and evolving, landscapes cannot remain precisely as initially created and therefore must be constantly adapted and returned to balance between original intent and evolving context. The gardens and landscape of the Nemours estate near Wilmington, Delaware illustrate how complicated the ownership and interpretation of a landscape is, even in cases that initially appear straightforward. Although the core garden areas of Nemours are largely intact and preserve an outstanding American Beaux-Arts garden inspired by the royal gardens of eighteenth century France, the concepts of ownership and authorship of the gardens are subject to interpretation. Traditionally attributed to the patronage of Alfred Irene du Pont, the gardens evolved through a significant period of development from 1909 through the mid-1930's with continued modifications thereafter and reflect the multiple influences of the owner (Alfred I.), Alicia Bradford du Pont (his second wife), Jessie Ball du Pont (his third wife, and the longest-associated resident of the estate), the firm of Carrere and Hastings (the original architects), the firm of Messena and du Pont (Alfred's son and his architectural partner's firm) along with numerous contractors and estate maintenance staff. This paper reflects research into the documentary and photographic record of the creation of the Nemours gardens, combined with assessment of the current conditions of the gardens. Evidence reveals that as the gardens have been maintained over time, certain aspects and details of the gardens have been consciously and unconsciously altered, often in the apparent spirit of making the gardens as they might have been, although this is sometimes in conflict with documented historic details. Some of these changes reflect materials choices that failed or were not sustainable over time, while others

were the result of evolving tastes or the maturing of landscape plantings. This study recommends strategies for the current and ongoing restoration and care of the Nemours gardens as a valuable resource in preserving a piece of garden history which helps to bring alive to the public the important characters responsible for creating this distinctive landscape. Recognizing that some components of the original gardens cannot feasibly be restored to their earlier conditions, this study seeks methods to preserve the character and story of the gardens with integrity while adapting to changing environmental and contextual circumstances.

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## CULTURAL PERSPECTIVES AND URBAN LANDSCAPES IN THE 16TH CENTURY: LEARNING FROM THE ILLUSTRATIONS OF NASUH AND DANTI

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**Illustrative plans and maps, often referred to as topographical views, can be useful tools in the study of historic urban landscapes. The results of a comparative study of two sets of such maps drawn in the 16th century illustrates how they can be used in tandem to improve our understanding of the historic appearance of cities.**

MUCH OF THE history of urban landscapes has been visualized in historic illustrative maps and plans. But in these views, as artistic illustrations, there may have been license taken to emphasize certain aspects of the city and its context for social, political, or philosophical reasons. It is, thus, often difficult to conclude how reliably the historic cities have been depicted. One method to overcome the limitations and prejudices found in any one drawing or group of drawings is to compare views of the same place produced by two different individuals or groups, especially if those groups held different cultural perspectives or produced the images for different purposes.

This presentation will use a comparative approach to examine selected historic city plans, and related drawings and paintings, from European cities produced in the 16th century using the plans and maps produced by two different groups of cartographers—those working for Vatican in the famous Gallery of Maps (1580-1583) and those working for the Ottoman emperors as a record of their travels and conquests (1519-1543). The comparison first evaluates plans for those cities depicted in both sets of illustrations, such as Genoa, Lepanto and Venice, all then in Italy, and then compares other unpaired places, including Modon, Greece, and Nice and Toulon, France, drawing images from a number of sources. In particular, the comparison focuses upon four factors—how each city is depicted as fitting into its topographic context, what natural landscape components are emphasized, which types of buildings are emphasized, and which types of urban landscape spaces are depicted.

We chose to compare the Vatican's Gallery of Maps to the Ottoman maps because of the large number of similarities in their production: creation within the same forty year time span in the 16th century; similarities

between the powerful sponsors who commissioned them (Pope Gregory XIII for the Vatican and the Sultans Suleyman the Magnificent and his predecessors for the Ottoman Empire); similarities in professional background and experience between the cartographers who drew them (Egnazio Danti assisted by Matthäus and Paul Bril for the Pope, and Piri Reis and Matrakçı Nasuh and their assistants for the Sultan); and, of course, similarities in the choice of subject matter, although not necessarily for the same purposes. Although both sets of maps served political and military purposes, those produced by the Ottomans were directly linked to naval expeditions, while those for the Vatican were for reference and decorative purposes.

We found that although the views were stylistically different they depicted some characteristics in surprisingly similar ways: that topography within cities was minimized, that natural water features were emphasized, and open spaces such as plazas, walled gardens and streets were clearly depicted, although each gives different types of information. The Ottoman maps differ from those in the Vatican in their use of color to distinguish various buildings and landscape artifacts. These findings confirmed our hypothesis that comparing illustrative maps and plans created by different cultural groups can provide a better understanding of the appearance of historic urban landscapes. Our discussion of findings will focus upon the roles of culture and political perspective in the invention of topographical urban representations.

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**This paper examines the social context for the emergence of a new paradigm for the design of public parks in post-Mao China. It utilizes ideas of modernity and alternative modernities as a method for interpretation. Preliminary analysis of recently developed urban parks begin to reveal how the interplay of economic, political and socio-cultural factors have yielded a new approach to contemporary Chinese open space design.**

## HYBRID MODERNITY: FRAMING THE PUBLIC PARK IN POST-MAO CHINA

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DURING THE LAST decade, a movement to create new landmark public parks has emerged among mid-sized Chinese cities. These parks represent an important departure from prior approaches to the design of public space. There are indications a new design aesthetic may be developing that incorporates traditional elements of Chinese garden design, concepts from international park design, and distinctive features of the local environment.

The process that has created the public park in the post-Mao period grows out of the 20th century history of the nation. Parks were built widely in the period that began with the establishment of the Republic of China, circa 1911, as a symbol of modernity and as a response to international movements. That era ended when Mao's communist revolution created a radical shift away from the earlier modernizing, international approach to open space. Under Maoism, parks acquired a distinctly utilitarian identity. This resulted in a thirty year period of discontinuity when neither traditional nor international influences were ideologically palatable.

The hiatus in park design ended in the 1980's during a period known as the New Era when reforms were instituted under Deng Xiaopeng. Key reforms that affected park development were the shift of power from central government planning to local municipal authorities and the shift from socialism to a market-based economy. Important changes in attitudes toward leisure occurred in this period. The Maoist principle that leisure must serve to promote political harmony and social hygiene was relaxed and spare time became the property of individuals. Urban parks were transformed from purely utilitarian spaces to places that served as emblems of local identity and destinations for outsiders.

This paper reveals the context within which this new paradigm for

contemporary park design is emerging. The discourse is built around an overview of Chinese modernism and modernization ideology (Wang 2003). It asks what have been the tenets for modernism in 20th century China, what does modernization and alternative modernity (Appadurai 1990) mean for China, and what ways have the dynamic socio-cultural and political changes within China at both local and national levels influenced park design. This study provides a basis for understanding the multifaceted context that has yielded a new approach to contemporary Chinese open space design. This approach is inter-disciplinary and emphasizes interpretation of the designed landscape or place as a cultural product formed by the social, economic and political circumstances of a particular society and period. Fundamentally, however, ideologies of modernity (Wang 2003) and alternative modernity (Appadurai 1990) are utilized as an analytical framework to investigate globalization and local identity and its impacts on designed landscapes in the public realm.

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The study provides an unusual opportunity to understand the park as a phenomenon that relates to China's urban transition (Friedman 2006) in the late 20th century. It includes preliminary analysis of a few recently built parks. Preliminary findings are intended to provide a basis for understanding the interplay of traditional elements of Chinese garden design, globalization and influences of international park design, and features of the local environment that has yielded distinctive results seen on the ground.

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## STRATEGIES FOR SUSTAINING CONTINUITY IN A HERITAGE AREA: THE KUKS-BETLEM CULTURAL LANDSCAPE

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**Using the Kuks region in the Czech Republic as a focus for discussion, this paper examines models for cultural landscape assessment and management practices that adhere to principles of the European Landscape Convention while satisfying the unique needs of Czech planning and development processes.**

UNDER THE HAPSBURG Regime of the Baroque and subsequent periods, the landscape of central Europe was extensively marked with the design intentions of royalty and nobles. Vestiges of this development are readily apparent throughout the region now defined as the Czech Republic. While field patterns underwent significant change through consolidation under Communism, the countryside nonetheless exhibits a rich heritage in its land use, circulation and settlement patterns, architecture, and landscape details.

Wanting to maintain historical qualities, yet pressed to accommodate growth, and especially, heritage tourism, the Czechs are challenged to adhere to the European Landscape Convention (ELC), which was developed primarily in the democratic countries of Western Europe where citizen participation in governance has a history. The ELC stresses involvement of the public in order to ensure that widely held values are protected. The many years of centralized planning under Communist rule have led to an environment where few have the skills to organize collaborative planning, and there is uncertainty about how to systematically achieve planning goals. As a result, planning, design, and management professionals in this new European state struggle to balance the need to abide by the ELC with the realities of current social and economic situations.

Czech preservation professionals invited the authors to participate in a cultural landscape study being undertaken for a heritage region in the northeastern part of the Republic, centering around the village of Kuks and the Betlem forest. Once the landholdings of F. A. Spork, an individual of great wealth but without rank, the landscape features significant Baroque architecture and sculpture, axial road patterns, and planned farm settlements dating from the 1700s.

Targeted to have an expanded scope as a tourist destination, the Kuks-Betlem landscape is subject to assessment and management studies according to acceptable guidelines. Difficulties with the process included understaffing, discretionary rather than cooperative professional procedures, and a lack of local precedents to help guide public participation.

The authors were asked to help frame the problems encountered and suggest steps to achieve a satisfactory process as the landscape analysis and planning proceeded. Several focus areas were identified, including landscape assessment, participatory practices, and partnering. Sites with parallel characteristics within the U. S. National Park System and the Heritage Areas program were identified as case studies. At these selected locations, site managers were interviewed, and participatory activities and management plans were analyzed.

The authors concluded their examination with examples of “best practices” derived from the case studies. These were then interpreted for application to the Kuks-Betlem landscape study.

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## THE PAST AS WE SHOW IT: TRENDS IN DELIVERY OF LANDSCAPE ARCHITECTURE HISTORY

MICHAEL SEAN, PHD

**This paper presents findings from a survey pertaining to the pedagogy of landscape architecture history. Through interviews nearly two-dozen active instructors shared experiences in course delivery and pedagogy. Results include contemporary trends, emerging issues, course structuring options, and instructional resources currently in use.**

HOW THE HISTORY of landscape architecture is conceptualized, packaged and delivered has been the topic of frequent debate over the latter decades of the 20th century (e.g., Harris 1997; Riley 1995). Contemporary issues of concern frequently emphasize how social and environmental design responses have been shaped in light of past dominant cultural perspectives. Postmodern theorists have framed anew through various theoretical lenses the same events, advancing the discipline's understanding of design and culture in the process (e.g., Dee and Fine 2005; Nadenicek and Pennypacker, 1994). Despite these advances, the literature is largely devoid of information pertaining to trends within landscape architectural history instruction. This paper explores how the topic is being addressed across North America; seeks to identify trends of significance; and presents choices that future instruction must address. Findings are drawn from a survey of nearly two-dozen active instructors in undergraduate and graduate programs charged with the delivery of one or more such courses. Results are couched within the following categories: instructor's training, course structuring, technology/tools, content and periodization, theory, design application, and emerging issues. Particular emphasis is placed on the means by which students are prepared for design practice in an increasingly globalized culture. Means by which instructors convey the past through traditional and digital strategies are highlighted. Emphasis is also given to trends in remote delivery of history courses, either in part or in their entirety. Conclusions portray an array of options for instructors, raise key issues for consideration, and present a compilation of rich resources for developing a new course or revising an existing offering.

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**An examination of the relationship between ephemeral conditions in urban landscapes and the development of a city's operational culture. Part of a larger comparative initiative on capital cities, this study focuses on Buenos Aires through an assemblage of evidence identifying specific phenomena attributable to the Portenos's sensibilities about landscape.**

## TOWARDS AN ARGENTINE SENSIBILITY OF LANDSCAPE - SPECULATIONS BY A NEWCOMER TO BUENOS AIRES

STEPHEN SEARS

THIS PAPER EXAMINES the relationship between ephemeral conditions in the urban landscape and the development of a city's operational culture. Part of a larger comparative initiative on capital cities, this case study focuses on Buenos Aires. Using assemblages of evidence found in South American artists' photographs and paintings and fictional excerpts, foreign diarists' accounts and a newcomer's first-hand observations, this study identifies specific phenomena that might influence the Buenos Aires inhabitants', or Portenos', sensibilities about landscape. These sensibilities, constituting a collective landscape consciousness, significantly influence the habits of citizens in a given city.

Portenos have adapted to a landscape subject to strong winds, intense sun, regular flooding and that is surrounded by open land to the north and west, and water to the east and south. While the capital of Argentina appears similar to European capital cities it seems to operate under its own idiosyncrasies. Due to its geographic isolation, surging tides of European immigration through the 19th century and being forced to cope with a seemingly infinite landscape, Buenos Aires followed its own path into modernity. "Buenos Aires doesn't look like Europe; it looks like pictures of Europe – like a Spain or Italy a homesick immigrant might see in a dream"<sup>1</sup> The harshness of the interior and the long-dominant idealism of urban modernity, have engendered a lesser reverence or sentimentality about the land – quite unusual in a broadly agrarian landscape.

There is no definitive evidence suggesting these behavioral phenomena reflect a direct response to gracefully bearing these forces. It is more likely that the city has been adapted to suit geographic and meteorological conditions. However, there are recurring ephemeral elements that are legitimate

and influential factors in the built environment – existing in an urban layer somewhat related to, but distinct from, vernacular elements as described by J.B. Jackson and the way-finding elements as outlined by Kevin Lynch. And while these factors are often the result of careful planning and design measures, their contributions to the urban landscape, in the form of functional and experiential characteristics, were not necessarily anticipated during the design process. Much of the design, planning and analysis of urban development focus on the concrete city and the dynamics implied in its forms. However this paper will argue that the influence of ephemeral factors must be included as one analytical lens when establishing criteria that inform a citizenry's landscape consciousness.

Each place, each culture, has its own particular sensibilities that allow ephemeral phenomena to proliferate – usually when a circumstance of benign neglect catalyzes those conditions. Buenos Aires offers many compelling examples, some of which will be catalogued in this paper in the interest of establishing a methodological framework underscoring the importance of a historically neglected spectrum of the urban landscape.

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**The town square has played a vital role in establishing community identity in small towns throughout the United States. This presentation will explore the history of the town squares of Mississippi, revealing lessons valuable in the preservation of cultural landscapes and the creation of new and vital civic spaces.**

## OLD RURALISM: THE HISTORIC TOWN SQUARES OF MISSISSIPPI

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THE TOWN SQUARE has long played a central role in the life of small towns in the United States. In Mississippi, the role of the square has been especially significant as it has provided a focal point for the social, economic and political life of many small rural communities. These town squares have survived over a century of cultural change, but still remain the predominant distinguishing civic feature of most of the towns they serve. While the most famous of these--the Oxford square--is a well known and vital urban space, numerous other examples exist throughout the state in little recognized towns such as Canton, Calhoun City and Hernando. Many but not all of these are "courthouse squares" located in the county seat following Price's description: "a rectangular block surrounded by streets, with the courthouse...standing alone in the middle of the square and the town's leading business houses enclosing the square symmetrically on all four sides" (Price 1968, 29). However, there are subtle differences in scale, form and context which make each square unique. This paper, which will present the results of a study that has for the first time catalogued and categorized the Mississippi squares, will examine these important cultural landscapes in an effort to reveal aspects of our history and further our understanding of the relationship between land and community.

The examination of the town squares has followed the Secretary of the Interior's Standards for the Treatment of Historic Properties which includes guidelines for the documentation of cultural landscapes. Primary and secondary sources have been used to explore the squares with an emphasis on vintage photographs and period maps. Items addressed in the presentation will include the various forms and characteristics of the squares, the major events that influenced their proliferation and an in-depth analysis of

the evolution of several of the most significant sites. The objectives of this study are furthering the understanding of this important civic design element and placing the squares within the context of others throughout the world. This presentation will raise issues relevant to both the preservation of existing town squares and reveal lessons valuable in the creation of contemporary civic spaces.

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**How is it that a place highly-visited, never forgotten, actively-used, and under no pressures from external development became one of the most threatened historic places? The presentation will explore the restoration master planning process for a place that is a cultural landmark, a school, a residence, a place for fellowship and apprenticeship, a place in crisis.**

## DESIGN INTENT AND CONFLICTS OF OWNERSHIP: CAN A NEW VISION RESCUE TALIESIN EAST?

BEN SHIRTCLIFF

THE PROGRESSION OF Frank Lloyd Wright's Taliesin East from an evolving experiment to a decaying relic provides an example of a discursive space and insight into the concept of ownership. A recently-submitted master plan for Taliesin's buildings and landscape intends to preserve the architect's home in the remote bluffs above the Wisconsin River near Spring Green, WI. Its current state reflects how tensions which underlie the challenge of interpreting design intent can threaten the only thing capable of representing the architect's work. The presentation will explore this discursive relationship between a cultural landmark and an occupied, living landscape through historic notes, drawings, and photographs. The goal is to question how to interpret the role of design intent in the cultural representation of Taliesin.

Noted by Anne Spirn as "Architect of Landscape", Taliesin once represented Wright's interpretation of Nature as something cultivated by the culture which possessed it. During his life, Taliesin's landscape represented an evolving cultural understanding of the interplay of domesticity with Nature, of contemporary architectural ingenuity with indigenous materials. Taliesin constantly changed. It survived two major fires, and additions were often made. Upon Frank Lloyd Wright's death, an entirely different cultural view—that of his widow Olgivanna—transformed the estate from a representative landscape into an idyllic landscape. Upon Olgivanna's death, no one remained so bold as to submit the site to another cultural view; its evolution ceased. Since then, Taliesin has been falling into a state of disrepair. Now, after an anonymous generous donation, a preservation master plan began to solidify actions needed to stabilize one of America's greatest cultural landmarks, preserving the vision of Frank Lloyd Wright. This plan is not without

its opponents. Its acceptance and implementation will be dependent upon how sensitive it is to the contested role Taliesin plays: as a national treasure, as a school, as a place for fellowship, families, and apprenticeship.

Taliesin's historical significance has not been overlooked. It remains a critical element of architectural inspiration, serving as the center point of study in the roots of organic architecture. Taliesin has been open for tours, operates as an architectural school, and is home to the families of fellows and apprentices who follow Wright's unique tradition of architecture. Nonetheless, after its 1976 dedication as a National Historic Landmark, Taliesin was placed on the most endangered places by the National Trust for Historic Preservation in 1999. How is it that a place highly-visited, never forgotten, actively-used, and under no pressures from external development became one of the most threatened historic places? Loss of ownership has threatened Taliesin to a critical condition and preservation is dependent upon the establishment of a vision to guide changes of this living, historic site. The presentation will review how the master plan attempts to capture the goals of historic preservation by being sensitive to the cultural representation of Frank Lloyd Wright's vision of Taliesin as can be found through historic photographs, text, and existing traces on site that remain from the past.

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## CONSERVATION PLAN FOR THE DELHI RIDGE, INDIA: INTEGRATION OF NATURAL AND CULTURAL HERITAGE

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**Our proposed conservation plan for Ridge in Delhi integrates its natural and cultural heritage to enhance Ridge's imageability and legibility. By doing so its environmental resources can be protected through community participation**

THE RIDGE IN Delhi, a broken rocky escarpment of once continuous Aravalli hilly range, is a diverse ecosystem. Located in the heart of the city, as is Central Park in New York, it acts as the city's lungs and recharges the ground water supply. But unlike Central Park, Delhi Ridge is not a loved icon or indeed much in the public eye. This lack of visibility has caused repeated encroachments due to rapid urbanization, splintering it into discontinuous smaller fragments. Conversion of parts of its natural forest into manicured green parks has disturbed its functioning as a natural ecosystem resulting in a loss of its biodiversity. The Ridge has been shrinking steadily also because of road building, squatter encroachment, and grazing (WWF, 1988).

The triangular valley between the Ridge and the river Yamuna has been a cradle of many cities of Delhi in the last millennia. Four out of the seven historic cities had flourished on the slopes of the Ridge, using it as a source of building materials, and surviving on its natural water catchments (Frykenberg, 1993; Gupta, 1981; Spear, Gupta, Sykes, 1994). Their remains, especially the monumental structures, are protected heritage sites, but also isolated from their surrounding urban context. Public recognition of the Ridge, as a repository of cultural heritage, is absent because of lack of understanding of heritage sites as a part of a larger historic and cultural landscape. Parts of the Ridge, protected in fenced off institutional or tourist enclaves, are perceived to be of no benefits to the citizenry.

Even New Delhi had relied upon the Ridge, clearing parts of the Central Ridge for building the Viceroy's Palace and later the diplomatic enclave (Volvahsen, 2003). Partition brought with it resettlement of refugees in housing colonies built by clearing parts of the Ridge forests. A couple of decades later the historic Siri forests were axed to build the Asiad Games village

(Khosla, 2005). Our presentation will trace the shrinking of the Ridge over time in historic maps and analyze why efforts, going as far back as 1913 when the northern and central section of the Ridge were declared as protected natural forest, have been ineffective (Singh, 1991).

We document the natural and cultural heritage of the Southern Ridge in a series of map overlays, including its topography and geological structure, green cover and land uses, macro- and micro-catchments, streams and channels, wildlife and heritage sites. This exercise not only highlights the unique contribution of the Ridge to environmental and built history of Delhi but also focuses attention on problem areas that are at risk from further development. Our conservation plan for the Southern Ridge is based upon an urban forestry model (Kowanik and Korner, 2004) that emphasizes public engagement through educational programs and recreational use. The plan proposes green corridors to link fragmented sections, new open space typology in the interstices between forested and urban areas, and restoration of historic landscapes of the heritage sites. It integrates natural and cultural heritage in a seamless pattern that will enhance Ridge's image and lead to public participation in its environmental protection and conservation.

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**This essay considers design as a means of fostering local identity, and proposes tools to connect projects to their specific sites. Through artist case studies, it describes four constructs of site – as a physical presence, as ephemeral experience, as landscape process, and as a source of cultural identity and narrative.**

## MATERIAL, TIME AND CULTURE: DESIGN POTENTIALS OF SITE

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IN A GLOBALIZED design culture, characterized by international standards and sources of form, materials and production, how can designers embed local identity in their work? Authors such as Yi-Fu Tuan and Karsten Harries have discussed the loss of a sense of ‘home’ or ‘place’ in the modern world. Drawing on the theories of Martin Heidegger, Gaston Bachelard and Gottfried Semper (among others), they discuss the potential of physical design to provide a locus of identity and a psychological rootedness. But while there is much descriptive writing in the design fields, there is little that is prescriptive: the question of how design connects identity and place is asked, but not answered.

Placeful (as opposed to placeless) projects contain embedded references to and resonances with the regional landscape, as well as embedded cultural narratives. Design that engages a full range of experience, from the material to the social, is one method of fostering a contingent identity, and of creating places that are meaningful both for the layperson and the local.

Method of Inquiry and Findings:

Through art case studies, this essay considers site as a multivalent cultural construct. It describes a method of analysis intended to imbue projects with a deep sense of place. Examples are primarily Icelandic, as the landscape is an explicit element of Icelandic cultural identity.

This essay proposes four lenses for analysis, each of which describes a category of site content as a source of cultural meaning. These site contents range from the easily accessible to the more elusive, from the singular to the temporal, and together provide a layered set of references that fosters a variety of experiences.

Material – The physical site is immediately comprehensible. The earth

and stone, water and plants that characterize a place are accessible to outsiders as markers of regional identity, and are familiar to locals.

Phenomenal – The sensual and ephemeral site is accessible in a single visit, in the play of shadow, the patterns of frost. But seasonal and diurnal rhythms are more apparent through repeat visits.

Systemic – The large-scale, temporal site (geologic motion, ecological patterns) is comprehensible with multiple visits, or through didactic design. It is more accessible to educated experts than to laypeople, although it can be explained.

Social – The cultural site is often the hardest to understand or express. Embedded narratives are critical to local identity, but their design expression needs careful treatment, as there is a risk of oversimplifying and commodifying complex histories.

#### Applicability:

This essay looks at site through the eyes of a designer. It proposes the landscape as an active voice in the design process, and the various cultural interpretations of site – as a physical presence, as part of geologic and ecological systems, as climatic and phenomenal experience -- as sources of cultural identity and narrative. For designers, it provides a transferable process for embedding multiple layers of identity in projects. For educators, it is a useful tool for teaching students to analyze site as a cultural construct.

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## THE 'GARDEN OF ALLAH'\* AND THE DEVELOPMENT OF THE MODERN THEME PARK

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**“The Garden of Allah”, a unique thematic park proposed in the 1930s, was an early form of the type of amusement park that would emerge after World War II. As such it represents both the synthesis of earlier recreational models and an important for-bearer of those popular today.**

FOUNDATIONS OF THE modern theme park are diverse in origin and inspiration. They include antecedents in the public gardens and large public parks of the nineteenth century, in the World’s Columbian Exposition, especially its popular-culture area, the Midway, at the turn of the century, and, finally, in the amusement parks, carnivals and state fairs of the early twentieth century. This paper will discuss another, more far-reaching, prototype for the theme park that was proposed for development in Natchez, Mississippi in the late 1930s. This site, first called the “Garden of Allah” and later the “Garden of Gardens Dedicated to God”, embodied the site scale, thematic variety, complex spatial organization, and design variety today found in theme parks like Disney World or Busch Gardens.

Although never built, due to the start of World War II, the Garden of Allah\* was vividly depicted by its designer Douglas Robert Smith, who was educated as an architect, in two published brochures. These and other historical, archival documents were used to study both the design and its significance for Natchez and southern Mississippi. The paper will first discuss the precedents leading to theme parks. It will then present the design of the Garden and discuss how Smith’s ideas, although somewhat fantastic and quirky, foreshadowed later planning and design strategies of theme parks. These strategies included location on a newly developed regional roadway (Route 61 and the Natchez Trace Parkway), linkage to other area nearby tourist facilities (the plantation homes of Natchez and the Natchez Pilgrimage), use of a series of themed areas (Medieval Castle, Vale of Kashmir Garden, Hanging Gardens of Babylon and others), and use of cultural icons, such as Mount Vernon, as key features. The potential influence of the Garden of Allah on later parks will then be discussed.

\* Although the Garden of Allah was to contain spaces inspired by Middle Eastern precedent, the idea for its name appears to have been taken from a popular book of the early twentieth century (first published 1907) authored by Robert Symthe Hichens, which had been made into a popular film in the 1930s. These works were set in Morocco. Other than this there is no specific Islamic connection with the name.

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## LATIN-AMERICAN CULTURE IN THE HISTORIC CORE OF ALLENTOWN, PA: THE INFLUENCE OF SOCIOCULTURAL AND ECONOMIC VALUES ON PHYSICAL INTERVENTIONS

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**This paper examines the economic and sociocultural values used by the Latin-American community in central Allentown, Pennsylvania to guide interventions in their community's historical fabric. The preliminary results of this study indicate that there is complex system of values that favor a combination of historicity, culture, and economic factors.**

THE HISTORIC CORE of Allentown, Pennsylvania, like many former industrial centers in the Northeast, has undergone a significant decline since the death of the steel industry. Since the 1970s, concerned citizens have made an effort to catalyze a revival, beginning with the establishment of the Old Allentown and Old Fairgrounds local historic districts in 1978 and 1981 respectively, and culminating with the recent arrival of "Elm Street" and "Main Street" programs. In the past couple of decades the area has experienced a rapid increase in the Latin-American population, which now comprises over half the local population. The Latin-American community does not participate to a significant degree in the preservation activity in the neighborhood, leading to anecdotal claims that this culturally diverse group does not value their built environment.

This project is a single case study supplemented by photo elicitation techniques that is designed to answer the following two questions: 1) In what ways do Latin-American building owners and renters perceive the older (pre-WWII) built environment? 2) How are decisions made that result in physical changes to these buildings? Semi-structured interviews of ten Latin-American property owners and renters in the North Seventh Street corridor between Linden Street and Tilghman Street (an area declared eligible for the National Register of Historic Places) provide qualitative data that is analyzed through a pattern-matching process to identify important domains and categories. This data is interpreted in light of the socioeconomic and historical contexts of the area.

The preliminary conclusions of this research are that 1) Latin-American

building owners and renters make decisions that respect the historic qualities in their buildings; 2) Latin-American building owners and renters are more likely to preserve the historic qualities of their buildings if funding is not an issue; and 3) there is a desire to make changes to buildings to reflect certain Latin-American cultural practices. Landscape architects can use this information to help plan interventions that balance historicity and urban fabric with the need to express cultural traditions.

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**This paper investigates the impacts of the assertion of the private in one of the most distinctive public places, Istanbul's ferry landing squares where two different landscapes embrace each other, the sea and the land, in a city which served three empires as their capital.**

## TIDE BETWEEN PUBLIC AND PRIVATE AT URBAN SQUARES BY THE SEA

UMIT YILMAZ  
NURAN ZEREN GULEROY

ONE OF THE dominant factors influencing the principles in public life is the dynamic concept of the public and the private. The dynamism of the concept is evident particularly in the distinction between public and private spaces as well as in the intertwining of the two, such as privately owned public places and publicly owned private places. Although the public and private realms have been expanding and contracting interactively, the negotiation in the urban landscape is in favor of private space as a result of recent trends such as globalization, privatization, and the rapid advancements in communication technology. As Bailey (2002) points out that private has usually been quietly asserted as a reaction to what is loudly enforced as public, there is an equally loud assertion of the private.

This paper investigates the impacts of the assertion of the private in one of the most distinctive public places, the ferry landing squares (*iskele meydanlari*), which are located along Istanbul's 18-mile long Bosphorus, a strait that connects the Black Sea with the Sea of Marmara and separates Europe from the Anatolian peninsula of western Asia, where two different landscape embrace each other, the sea and the land, in a city served three empires as their capital. It will also present an analysis of the ferry landing squares visited by hundreds of thousands each day as they have survived the impacts of change over centuries in a socially, culturally, and economically diverse society and continue to flourish as lively public spaces.

The study was conducted in 2006 as a collaborative research project between Clemson and Istanbul Technical University and aims to develop and evaluation framework that can be used in the assessment of transformation that occurs in public places. Undergraduate students in landscape architecture and planning programs worked on the mapping of current uses, vegetation,

buildings, urban furniture through field surveys, and conducted photographic documentation and user analyses. The data collected was compared with previous uses and studies to identify spatial transformation in accord with the changes in public life and significant social, cultural and economic shifts in Istanbul. The squares were explored as a microcosm reflecting the dynamics between public and private spaces, social, cultural and economic forces, and land use transformations. The paper also examines the underlying causes of the shift from public to private spaces in the urban realm and how these urban spaces maintained their public character within a new spatial structure.

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## PARTNERING FOR SMART GROWTH IN THE SUSQUEHANNA RIVER VALLEY AND RURAL PENNSYLVANIA

CARU BOWNS  
TOM GREBENICK  
GARY DAVID BLOSS  
JERRY S. WALLS  
METTA BARBOUR

**This panel represents public, private and institutional groups working independently and collaboratively on smart growth/planning issues in the Susquehanna Valley and rural Pennsylvania. Long plagued by economic deindustrialization, the “Americana” character of many rural Pennsylvania locales and their connectivity to urban centers now situate them for sensible population growth and development.**

IN A FORUM of Pennsylvania planning officials, planners, and university faculty with similar interests in sustainable regional development, the panel will collaboratively explore issues of planning, sustainable development and authenticity pertinent to the Susquehanna region and Pennsylvania’s unique, rural landscapes.

The cultural and economic landscape of the Susquehanna River Valley is both unique and representative of Pennsylvania’s larger rural landscapes. The region is defined by its exceptional physiography and discrete resources associated with the Susquehanna River. From its early history, distinct European cultural groups imprinted their material culture and agricultural economy on Pennsylvania’s rural landscape. “River towns” that developed along the confluence of the Susquehanna were successful way stations and processing sites for rural surplus and bulk resources. Railroads later shifted commerce inland to connect the region’s mining and agricultural depots to larger commercial centers. Since the end of the 19th century the Valley and other rural areas of Pennsylvania have incurred economic setbacks, i.e. the demise of rail transportation, deindustrialization, coal mine closures, etc. which in turn acerbated population emigration from the area. (Stranahan 1993, Marsh 1978)

Today, locations within rural Pennsylvania with stable economies are those capitalizing on specialized services with a regional or national market, i.e., education, research, medicine, etc. Potential new development trends include expansion of existing universities, research and medical facilities; baby boomers relocating for small-town, independent living; and “Americana” agricultural tourism typified by a unique cultural landscape.

In the context of the above and other issues, regional concerns are coalescing around questions of how to encourage and support local and region-

al growth based on economic needs, assets for development, local carrying capacities and the fit of development within regional initiatives that preserve town and rural character. The multi-county, regional development agency SEDA Council of Governments and other panel participants are proactive in bringing these issues to the CELA conference to explore existing and future models for collaboratively planning sustainable growth in rural Pennsylvania.

The panelists will present on aspects of the following topics:

1. Current research, planning, and development projects that advance smart growth and sustainable development, and preserve the cultural authenticity of rural Pennsylvania.

- The Susquehanna Valley and other rural sub-regions
- Sub-Region Community Characterization  
(i.e., similar cultural/physical geography and development issues)
- Regional Needs Assessment
- Examples of Innovations in Regional Planning
- Potential Collaborative Research Opportunities

2. Principles and goals to guide economic and physical development in sustainable rural development.

- Regionally Applicable Smart Growth Principles
- Regionally Appropriate Planning/Development Tools and Practices
- Education and Civic Involvement Programs

3. Private, public and academic collaborations disseminating principles and facilitating studies and projects for sustainable regional development.

- Education and Outreach Programs
- Project Implementation Case Studies
- Potential Collaborative Projects
- A Prescriptive Network for Information Dissemination

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## THE FIVE ACRE FOOTPRINT: RURAL SPRAWL AND ITS EFFECT ON CULTURAL LANDSCAPES IN NELSON COUNTY, KENTUCKY

N. M. CRANKSHAW

K. L. SCHNEIDER

**Large lot rural sprawl is transforming rural landscapes in many parts of the United States. Large lots in Nelson County, Kentucky were evaluated for the qualitative impact that they have on locally-valued rural cultural landscapes. The assessment method is applicable to planning for tourism, historic preservation, and agricultural conservation.**

THE RURAL LANDSCAPE of Nelson County, Kentucky is being transformed by the rapid creation of lots of five acres or greater. Agricultural zoning in Kentucky enables counties to allow parcel subdivision as small as five acres without review if they use existing road frontage. These tracts by law qualify as agricultural land use but are, in fact, rural sprawl. Rural sprawl has been defined as development at exurban densities (1.7 – 20 acres per housing unit) within areas that have an overall rural density (> 20 acres per housing unit). The purpose of this study was to describe, at a localized level, the types and extent of changes to cultural landscapes caused by large-lot rural development.

Nelson County was evaluated by the authors and a colleague at the University of Kentucky in 2001 to identify potential National Register rural historic districts. Potential districts included concentrations of traditional (earlier than mid-twentieth century) farmsteads within areas of contiguous agricultural land. Traditional farmstead design patterns were documented and five essential landscape patterns were found significant: (1) domestic yards typically under 2 acres in size, (2) continuity of foreground landscapes, (3) the visual complexity and layering of landscapes, (4) strong visual connections between farmsteads and background landscape features, and (5) the simplicity of domestic plant material and landscape design.

We also documented properties converted to residential land use between 1987 and 1998. Several areas of concentrated large-lot rural development coincided with potential register districts. This was generalized to be significant in its impact on both agriculture and cultural landscape character, but was not evaluated at a site-specific level.

A follow-up study in 2006 and 2007 more carefully evaluated the impact

of residential development on cultural landscape character. The study area was centered in the agriculturally-productive bluegrass area of the county, included large parts of two potential national register districts, was entirely agriculturally-zoned, and included no development that varied from the minimum of five acres per lot. Information sources included orthophoto quadrangles, aerial reconnaissance from a small airplane, county tax maps, and field reconnaissance.

Property-level landscape pattern differences are significant. Yard sizes are larger on contemporary lots and are usually entirely managed as lawn. House placement, site design, and the relationship of domestic yards to fence rows, naturalized areas, agricultural fields and other rural landscape elements are significantly different between farmsteads and contemporary house sites. The increase in residential road frontage and edges between residential properties and farms is significantly greater than the increase in land area converted to residential use with resultant impacts on roads, farm operations, and cumulative visual character.

Large lots are already understood in aggregate to reduce the acreage available to agriculture and forestry. Localized assessment is essential, however, to understand the degree of impact they have on remaining farm operations and cultural landscapes, and to make land use and landscape management decisions that support community goals. This study aids that effort with an assessment method that allows qualitative impacts of rural sprawl to be visually understood.

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## ARTFUL RAINWATER DESIGN: THE AMENITY POTENTIAL OF STORMWATER MANAGEMENT

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**“Artful rainwater design” or design addressing stormwater runoff while celebrating it, presents a timely opportunity for landscape architects to “negotiate” between hydrological stewardship and amenity-rich design. Through case study of twenty projects nationwide, this paper identifies amenity types and presents specific design means to transform stormwater management into experientially rich artful rainwater design.**

“ARTFUL RAINWATER DESIGN” describes an approach to landscape design that effectively addresses stormwater runoff quality and quantity through expressive designs that call attention to the use and management of rainwater. In other words, artful rainwater design fulfills the utilitarian function of addressing hydrological quality and quantity, but goes beyond that intent to address what might be called “experiential function”: rich placemaking that, in this case, celebrates rainwater in ways that educate and/or delight those who visit. In sum, one might proclaim that this strategy effectively “negotiates” a fruitful accord between utilitarian and amenity issues of stormwater design.

The concept of artful rainwater design is based on the premise that new stormwater management techniques focusing on non-point source pollution, water balance, and small storm hydrology can be used to create site amenities that result in significant user satisfaction and perceived value. Indeed, these new stormwater requirements actually present designers a noteworthy means to intertwine hydrological stewardship with significant placemaking. To that end we propose that systematic study of exemplary artful rainwater designs may provide useful knowledge to guide designers interested in intertwining stormwater management with amenity-rich landscape design.

This belief resulted in a grounded case study that cross-analyzed selected examples of artful rainwater design within the US. Designs were chosen through identification by experts (ASLA and AIA award-winning projects, plus query of leading educators, publishers, and designers engaged in creative approaches to stormwater design); these designs were then culled to make the final list include diversity of project types, runoff treatment method, and geographic locale.

Qualitative analysis of the resulting twenty exemplary artful rainwater designs was based on published literature, websites, telephone and live conversations with the designers, and data gathered during site visits. We coded our findings to derive four key categories of amenity type found in the selected projects: Education, Recreation, Aesthetic Richness, and Message/PR. We further scrutinized the projects to determine sub-categories of each amenity, then specific design means by which the landscape architects provided these amenities. Through this strategy we derived not only what amenity can be provided through an artful rainwater design approach, but also how a designer might accomplish it.

This paper presents our findings. First it identifies four amenity objectives addressed in the case study projects; then it explains specific design means used by the case study designers to accomplish those amenities—all explained and illustrated using notable examples found in the case study projects.

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## BRINGING THE VISION INTO CLEAR FOCUS: FORMER LANDFILL, FUTURE LEARNING CENTER

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**The Phase II (Final) Master Plan for this project is reported (Phase I reported at CELA 2006). The discussion illustrates preliminary and final master plans for an Environmental Education Center end-use for the current Logan City/Cache County, Utah landfill, sewage lagoons, constructed wetlands, mitigation and effluent polishing wetlands, and surroundings.**

THE LOGAN CITY/CACHE County, Utah landfill will reach full capacity by 2023 (HDR, Inc. and Zimmerman and Associates 2003). The nearly 300-acre site has serious environmental impact implications yet offers positive opportunities for consideration of alternative end-uses, including provision of open space (Johnson 1996), passive and active recreation (Logsdon 1989), wildlife habitat conservation and observation (Meade 1992), and community resource and environmental education centers (Logsdon 1989; Krinke 2002). In addition to the landfill proper, the study area includes the nearby sewage lagoons, constructed wetlands, proposed mitigation wetlands, and newly constructed effluent polishing wetlands along with associated vehicular, pedestrian, and rail travel corridors. This presentation reports the results of the Phase II (Final) Master Planning effort (Phase I reported at CELA 2006).

This work addresses the body of knowledge related to a number of issues, including environmental protection, site and master planning for environmental education, disturbed land and “brownfield” reclamation and rehabilitation, the wildland/urban interface as well as urban sprawl, university/public/private partnerships, alternative energy development and energy conservation.

The goal of this research is to discover, discuss, and address the opportunities and constraints for alternative end-use development of drastically disturbed landscapes, in particular small community landfills. Traditionally in the intermountain west, landscapes of this type have been considered primarily the province of civil engineering, with the approach to end-use one of function in terms of solid waste sequestration. In most cases, these landscapes have been “out of sight, out of mind” physically, visually, and psychologically. With the rapidly expanding populations of communities in

the intermountain west, the urban edge is encroaching on wildlands as well as rural residential neighborhoods and commercial industrial districts. Landfills and related facilities that were once far-removed physically and visually are now on the fringe or in some cases in the midst of these communities. This research employs methods of literature and case-study review, community involvement, university/public/private partnerships, and professional master planning with stakeholder involvement to address these issues. This resulted in the discovery of an innovative master planning process, with ad hoc adjustments for broad applicability, involving discussion and interaction with citizens, advisory committees, and practicing professionals in civil engineering and landscape architecture. This brought about a focused yet flexible master plan that involves innovative and novel approaches to environmental education, environmental restoration and re-use, and community involvement and partnering.

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The discussion will illustrate in detail the EEC facilities and activities. These include education about, and interpretation of natural systems and related human management; active and passive recreation; wildlife habitat establishment, conservation, and observation opportunities; temporary art installations; methane gas monitoring and demonstration harvesting; and others. Careful placement of pavilion structures for observation and interpretation reinforce the visual and physical link between the various facilities. “Discovery” educational experiences are provided for visitors of all ages, such as revealing/concealing features along trails, spontaneous experience of wildlife and habitat, and “cut-away” views of the deposition and decomposition of decades of solid waste.

HDR, Inc. and Zimmerman and Associates. 2003. City of Logan Landfill Siting Study Phase III -- Site Analysis & Waster

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## ENABLING RURAL LANDOWNER STEWARDSHIP IN THE LAKE HURON WATERSHED

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**This paper presents the results of a year-long effort to develop the Rural Landowner Stewardship Guide (RLSG) for the Lake Huron Watershed, which is intended to assist rural landowners in landscape stewardship for the purposes of improved water quality and soil conservation.**

IN 1991, ONTARIO farmers recognized the need to proactively respond to environmental concerns related to agricultural production. The Environmental Farm Plan (EFP) was developed by an environmental coalition of farm groups to assist farmers in identifying environmental issues on their properties, and to provide the knowledge to improve conditions through peer-to-peer workshops. Based on the EFP, the Ontario Ministry of Agriculture identified the need for a rural, non-farming landowner guide.

Government agencies and NGO organizations with concern for the Lake Huron watershed health worked in conjunction with the University of Guelph's School of Environmental Design and Rural Development to develop the RLSG for the Lake Huron Watershed.

Extensive research was undertaken for the development of a series of worksheets on best practices, from Buying a Rural Property, to The Value of a Tree, to Managing for Biodiversity. The RLSG helps participants assess their properties and identify areas where they are adversely affecting local environmental quality. The individual property was considered within the context of a watershed, with the individual person's activities seen as having a cumulative effect on the water quality of Lake Huron. An Advisory Committee of persons with varied expertise was established to critique the content. The RLSG was tested through a community-based workshop, and was then used as the foundation for a series of summer-long workshops throughout the landscape.

The guiding agenda in the development of the RLSG was to save the landowner time and money, with the parallel benefit of improving the quality of the environment. It became clear through the workshops that aesthetics was a primary driving force for non-farming landowner practices, unlike the

EFP, and that tying aesthetics to positive landscape practices can contribute to ecosystem health.

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## ASSESSING NUTRIENT REDUCTION IN A RAIN GARDEN WITH AN INTERNAL WATER STORAGE (IWS) LAYER

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**This paper evaluates and compares nutrient removal rates from two different rain gardens used to collect and treat campus runoff. One rain garden has an internal water storage (IWS) layer. This project is a pilot for other stormwater management research and provides technology transfer for local, state, and regional programming.**

STORMWATER RUNOFF HAS been identified as a major source of pollution in urban and suburban streams. Pollutants commonly found in stormwater include bacteria, nutrients, and sediment. There are several innovative stormwater practices that integrate stormwater infiltration and storage to improve the quality of runoff. Examples of these techniques include stormwater ponds, sand filters, bioretention areas (rain gardens), constructed wetlands, and pervious pavements.

A rain garden is a man-made depression in the ground that is used as a landscape tool to improve water quality. The first flush of rainwater collected in the depression typically contains the highest concentration of materials washed off impervious surfaces. The planting mixture of organic sandy loam soil provides a source of water and nutrients for the plants, while clay particles adsorb heavy metals, hydrocarbons and other pollutants.

The use of bioretention devices is poised to expand because their use appears to improve water quality, and they can be designed to be aesthetically pleasing. The project includes one conventionally built rain garden that is approximately 1.2 m deep while the other will incorporate an additional 0.45 m zone for IWS. The purpose of the IWS is to increase denitrification of nitrate-nitrogen in a saturated zone. Impact sprinklers are used for controlled water application from a wet well and pump at an existing retention pond on site. The pump transfers nutrient-rich urban runoff from the existing pond to the research bioretention areas. Pre-test water samples were captured by hand as discrete grab samples during controlled, simulated storm events. Monitoring equipment was used for further sampling. Samples were collected at periodic intervals during the simulated events to describe quality and quantity of outflow throughout the drain event. Nutrients measured include

nitrate-nitrogen, ammonium-nitrogen, and ortho-phosphate.

Results have shown significant removal of particulate phosphorus and total phosphorus constituents. Hydrologic benefits shown include drastically reduced outflow hydrograph peaks and total outflow volumes, effects which act to reduce total contaminant flux released to adjacent waterways.

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## EXAMINING ROADSIDE VEGETATION: AN IMPLICATION ON LANDSCAPE AND ENVIRONMENTAL PLANNING

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**The purpose of this study is to introduce critical issues of roadside vegetation management to the field of landscape and environmental planning, and generate discussions on the benefit and impact of roadside vegetation on environmental quality.**

HIGHWAYS ARE A major focus of transportation. However, very little of the roadside vegetation is considered when the landscape/environmental planning and analysis is conducted in a transportation planning project. Typical rural and urban highway profiles include a substantial amount of grassy areas. These grassy areas are a result of the re-vegetation effort after the construction, and are intensively maintained through mowing and herbicide application. Over the past few decades, the importance of roadside vegetation and its many functions have been recognized. These functions include slope stabilization, stormwater runoff filtration, wildflower aesthetics, emergency needs, and so on. However, many issues remain unsolved, in particular the recent environmental movement that advocates the use of native plants.

During the design phase of a highway construction project, a re-vegetation plan is developed primarily for the purpose of soil erosion control. State departments of transportation (DOTs) follow their standard specifications to re-vegetate the roadsides, typically containing both native and non-native plants. Such practice has been scrutinized because the Executive Order of 13122 signed on February 3, 1999 (Federal Register, 1999) is intended to prevent the introduction of invasive species and provide for their control, as well as minimizing the economic, ecological, and human health impacts that invasive species cause. This presents a challenge for DOTs. Highways are not only built with imported backfill materials but are also applied with unnatural soil compaction techniques. With post-construction maintenance activities such as mowing and herbicide applications, roadsides are no longer virgin land and may exacerbate the establishment of native grasses (Forman et al., 2003).

This study examines the successional change of roadside vegetation. There are two components in this study. The first consists of a literature review that addresses the following issues:

- The definition of native plant
- The nature of the roadside
- The environmental quality benefit of roadside vegetation
- Factors for vegetation culture
- Impact of mowing

The second component is a field survey of several Texas highway roadsides. Candidate highway roadsides were selected based on the following criteria:

- Rural highways
- A minimum of five years after the completion of the highway construction
- Availability of original roadway construction document
- Availability of roadside soil types
- Species of seed mix originally used for roadside slope stabilization
- Mowing schedules of the past five years.

Seven Texas highway roadsides representing three geographical locations were selected for vegetation documentation. Two highway roadsides were examined in details. The results show that for frequently mowed rights-of-way adjacent to the pavement, very few natives were found, but short sod-forming non-natives dominated. Rights-of-way away from the pavement that are subject to less mowing had a greater variety of different species, and natives were usually observed. The original soil type appears to have no obvious effect on the roadside grasses in terms of the dominating species.

This study is intended to raise the attention of roadside vegetation management issues, and generate discussions on the benefit and impact of roadside vegetation on environmental quality.

**Keywords: roadside vegetation, native plant, succession, mowing**

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## GIVING HIGH IMPACT TO LOW IMPACT: EMPOWERING LOW IMPACT DESIGN AND DEVELOPMENT

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**A summary of the barriers to wider Low Impact Development (LID) adoption as identified through a survey of building professionals, consultants, and government staff. The study demonstrates the importance of post-construction and post-occupancy evaluations, more flexible design standards, and effective education and reference materials.**

THERE IS A growing interest in Low Impact Development (LID) as an alternate, environmental-friendly approach to conventional site development (Williams, 2003). LID is an approach to development which minimizes impact on the natural environment through reduced ecological footprint and site disturbance, and retained vegetation (Prince Georges County, 2000). While LID has numerous benefits, many communities are slow to implement this approach due to lack of knowledge; lack of detailed guidance on site design, stormwater BMP design, construction, maintenance and effectiveness; lack of credit assigned to LID design and BMPS for stormwater quantity and quality control to meet state regulations; and conflicts with existing municipal codes and ordinances which prohibit the implementation of LID (Hinman, 2005).

This study explored the barriers to wider LID adoption as identified through a survey of building professionals, consultants, and government staff. Survey recipients were chosen to provide a range of levels of interest, knowledge and experience with LID. A total of 56 building professionals, consultants such as landscape architects, and government staff were contacted, and 36 individuals responded to the survey (64%).

While respondents identified themselves as having a “working knowledge” of LID, their experience predominantly resulted from direct work experience. When asked about their information needs, respondents identified best management practices, precedents and case study examples, design specifications, checklists, and guidelines, costing information, and information on and templates for regulations and ordinances. The majority of respondents had experienced local planning and development ordinances that prevented LID concepts from being implemented. Identified barriers included system

requirements (curb and gutter, drainage to street); time required for approvals; design standards; and problematic ordinances with restrictive regulations or requirements.

Building professionals and consultants such as landscape architects identified the most significant barriers as local planning guidelines and ordinances, higher costs or limited information on costs, and the limited number of successful local examples.

Encouraging the implementation of LID principles by building professionals, consultants, and government staff requires post construction and post occupancy evaluations, more flexible design standards, and effective education and reference materials.

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## SUSTAINABLE REGIONALISM: DOES IT MAKE A DIFFERENCE IN MANAGING METROPOLITAN EXPANSION?

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**This paper proposes sustainable regionalism as a way to manage metropolitan growth and to think about urban issues and life from a regionally-based sustainable perspective. It fuses ideas from Geddes-Mackaye-Mumford-McHarg notion of “natural regionalism,” (Talen 2005; McHarg and Steiner 1998) Kenneth Frampton’s notion of critical regionalism, and the sustainable development paradigm, but adapted to contemporary social, cultural, political, and environmental forces shaping the metropolitan landscape. What sustainable regionalism is, how it evolved, its key features, and promise for managing growth in metropolitan areas, comprise the subjects of this paper.**

DEVELOPING EFFECTIVE SPATIAL structures for mitigating the negative effects of expansion of metropolitan areas continues to be problematic. This problem exacerbates as metropolitan areas in the United States---the city and its suburbs---continue to grow rapidly, especially over the past several decades. This growth has exacerbated urban sprawl, fragmentation of landscapes, environmental degradation, dislocation of viable neighborhoods, social and economic inequities, and homogeneity of regional cultural values. These effects of metropolitan growth continue to intensify, despite an impressive array of urban spatial forms and structures such as new urbanism, smart growth, and sustainable development that have been proposed to mitigate the effects (Down 2005; Congress for New Urbanism 2001).

This paper advances sustainable regionalism as a way to manage metropolitan growth. Sustainable regionalism seeks to create, revitalize, and restore the ecological region in metropolitan areas through the physical design and planning of neighborhoods, villages, and cities within a region from a regionally-based sustainable perspective. It is a fusion of ideas from Geddes-Mackaye-Mumford-McHarg notion of “natural regionalism,” (Talen 2005; McHarg and Steiner 1998) Kenneth Frampton’s notion of critical regionalism, and the sustainable development paradigm but adapted to contemporary social, cultural, political, and environmental forces shaping the metropolitan landscape.

Sustainable regionalism involves re-formulating the ecological region through regional design. It is lodged in an ethical framework that emphasizes fitness, conservation, and sustainability of social, economic, and ecological systems. It employs physical design to restore, rehabilitate, and regenerate (3 Rs) built-up urban centers, and to locate new settlements---compact centers,

villages, and neighborhoods outside of the built-up areas. It also emphasizes connectivity between the built-up areas and new settlements.

Sustainable regionalism seeks commitment to the particulars of a place rather than the universal, through maintenance of a regional sense of place adapted to local situations. It also emphasizes collaborative engagement, visualization, and scenario-building to articulate desired futures. This paper examines sustainable regionalism in a greater detail ---how it evolved, its key features, and promise for managing growth in metropolitan areas.

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## WHOLE TO PART, PART TO WHOLE: UNIVERSITY ROLES IN NEGOTIATING GREEN URBAN INFRASTRUCTURE

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**This paper outlines potentials and obstacles to implementing integrated green infrastructure concepts and practices. It tells the story of how some barriers are being transcended through university-affiliated activism in the City of Seattle and describes a design study to identify potential building blocks in an urban green infrastructure system.**

CALLS FOR EMPLOYING green infrastructure in urban and regional design are multiplying in landscape architecture literature (Benedict and McMahon 2006, Girling and Kellett 2005, Condon and Isaak 2003). While landscape architects readily embrace this notion, what implementation paths are required to propel the concept into mainstream perception and common municipal practice, and what are potential roles of the university?

In 2006, the University of Washington convened professionals, students, citizens and City staff in a 2-day charrette to design Seattle's open space network for the next century. (Rottle 2006, Rottle and Maryman 2006). Outcomes of the "Green Futures" event and follow-up work were spatial plans and strategies to build the city's green infrastructure, encompassing proposals for natural drainage, low-impact transportation networks, civic space, greenbelts, stream and shoreline restoration, and self-sufficient neighborhoods. The work was immortalized in a thick document that might sit on a shelf-- but instead, has begun to catalyze new ways that the City bureaucracy might perceive and harness its green infrastructure potential.

This paper describes efforts to institutionalize the principles and strategies suggested through the charrette and its university-initiated coalition, Open Space Seattle 2100. The process has included documentation, dissemination, political advocacy, non-profit promotion, negotiation for continued planning via City Council, and testing of concepts in the design studio. A critical tool has been the project's strategy framework, used by the City post-charrette to identify gaps in current environmental programs and to set new municipal targets.

One key result is formation of a City interdepartmental asset management task force to identify potential collaborative green infrastructure proj-

ects and to co-initiate demonstration projects to test an integrated approach. City departments typically work in “silos” which inhibit comprehensive development of projects; in contrast, this whole-system approach recognizes city design as a negotiated process between departments with overlapping and sometimes conflicting goals for public space.

A second outcome was a City-sponsored studio project exploring small but complex components in the public space system: parking strips. These discrete, typically mown residential buffers between the street and sidewalk easily comprise ten percent of a city’s land mass, jointly owned and ignored by both residents and the City. When treated as parts in a whole, these parcels hold potential as spines in a decentralized green infrastructure system. The studio has shown how they may form stretches of continuous rain gardens that capture and store roof water and cleanse polluted street water; encourage travel on foot, bike, and bus; create neighborhood gathering spaces; and supply quasi-public art gardens that can provide both habitat and community identity.

These multi-jurisdictional spaces may be the trial grounds for the City’s new integrated asset management process around green infrastructure, testing both the part and the whole. The paper will reflect on the ability of the university to catalyze conceptual and structural change through grassroots political advocacy, use of the design studio to explore formal possibilities for street edges, and potential for university involvement to help negotiate shared implementation of these green infrastructure units.

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## COMPARISON OF PERCEIVED EFFECTIVENESS OF STORM WATER BEST MANAGEMENT PRACTICES (BMP) IN NORTHERN UTAH TO STORM WATER BMP POLLUTANT REMOVAL AND FLOW REDUCTION PERFORMANCE STUDIES

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**This paper uses results of two recent comprehensive analysis studies of evaluated BMP effectiveness as the basis for a comparison of a third study of perceived BMP effectiveness conducted in northern Utah. The results summarize the prevalent perception of BMP effectiveness, and clarify dissociations between perceptions and evaluated BMP effectiveness.**

ALTHOUGH THE INCLUSION of storm water BMPs into site designs has become standard practice around the country, studies evaluating their effectiveness in filtering pollutants and delaying average peak flow have lagged behind their implementation. As a result, BMPs are selected and used, in many cases, based on their perceived effectiveness.

Two recent studies that provide a comprehensive analysis of BMP effectiveness are GeoSyntec Consultants and Wright Water Engineers, Inc.'s "Analysis of Treatment System Performance" (2006) and the University of New Hampshire (UNH) Stormwater Center's Side by Side Comparisons of BMPs (2006). These studies are particularly significant since they evaluate the performance of various BMPs – the GeoSyntec study through a review of current literature and the New Hampshire study through side by side comparisons. The GeoSyntec study (prepared for the Water Environment Research Foundation (WERF), the American Society of Civil Engineers, the U.S. Environmental Protection Agency (EPA), the Federal Highway Administration and the American Public Works Association) summarizes existing data from over 100 BMP studies in the International Stormwater Best Management Practices Database managed by WERF. The study summarized differences in treatment performance found in the literature (by BMP category) with regards to the removal of solids and other pollutants. The UNH Stormwater Center's study evaluated the actual performance of nine types of BMPs' ability to remove percentages of pollutants, peak flow reduction, and lag time by testing BMPs at the same site and under the same storm conditions.

In many cases, the general perception of a BMP's effectiveness does not match that BMP's actual ability to remove pollutants and reduce flow rates.

This results in particular BMPs being specified in situations where a different type of BMP could result in a more effective desired outcome. This paper will use the results of the GeoSynthec and UNH studies to provide a basis for comparison in a study of perceived BMP effectiveness. The perception study (Rycewicz-Borecki, 2006) used a representative sample of BMPs located on municipal sites in northern Utah affected by EPA's Phase II requirements. A total of eighty-five (85) BMPs located throughout four counties were surveyed in this study. Public employees (i.e. storm water managers/engineers) responsible for installation and/or maintenance of the BMP were interviewed in the field and given a survey regarding their perception of that BMP's performance. By using an analytic comparison method (Neuman 2003) this paper illustrates how particular BMP categories are perceived as either more or less effective than the performance data evaluated in the GeoSynthec and UNH studies. The results illustrate the extent to which less appropriate BMPs are potentially being specified on the merit of their perceived rather than actual effectiveness. The paper summarizes prevalent perceptions of BMP effectiveness within northern Utah's municipalities, and clarifies dissociations between the perception of and evaluated BMP effectiveness. Specifications in local codes based on perceived effectiveness can increase cost of installation and/or maintenance, may produce less-than-optimal aesthetic landscapes, and decrease the amount of pollutant removal and flow rate reduction.

**Key words: Storm water, Best Management Practices, Analysis, Effectiveness Comparison, Perceived and Actual Effectiveness**

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# RHODE ISLAND COASTAL BUFFER DESIGN: CASE STUDY OF COLLABORATION AMONG SCIENTISTS, DESIGNERS, OFFICIALS AND CITIZENS RESULTING IN A COASTAL BUFFER THAT BALANCES FUNCTION AND AESTHETICS

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**This paper presents a new business model of collaboration among scientists, designers, regulatory officials and townspeople to create aesthetically pleasing coastal buffers, using publicly owned land as a case study. Initial evaluation by State Coastal regulators indicates that the restored buffer is ecologically functional and conforms to state regulations.**

COASTAL BUFFERS PLAY an important role in the transition between coastal waters and upland developments. While buffers vary widely in appearance their function is to protect water quality, provide erosion and flood control, protect coastal habitats and provide aesthetic enhancement. Existing buffers are often comprised of plant materials, made up of invasive species and exotic ornamentals with native species mixed in or are landforms used for retention, sedimentation and filtration. Because of the complexity of coastal regulations, the influx of new scientific data and the need to balance protection of resources with property rights, regulators in Rhode Island have a difficult time protecting existing buffers and providing guidance for the restoration of buffers.

The purpose of this paper is to present a new business model for creating buffers and to use a case study project for illustration. The project, which was initiated, by the Director of the Cooperative Extension Center within the College of Environmental and Life Sciences at the University of Rhode Island, grew out of a question as to whether a collaborative approach could create appealing and functional buffer designs that would result in the actual implementation of such buffers. The project was also a partnership that included the Coastal Regulatory Management Council (CRMC) of Rhode Island and a team of natural resource scientists, biologists, soils scientists, entomologists, hydrologists, botanists, plant physiologists and landscape architects. A public parcel of land, which some townspeople referred to as the “Node” or “Gateway” into Warwick Neck RI, was chosen as one of the properties to test this model. The 2.42 acre site, characterized as a degraded buffer was covered by invasive species and was the location of an informal dumpsite. The authors will describe how the collaboration was initiated

through the use of cross-functional meetings and how it was maintained. They will explain how the initial buffer design was conceived and how it changed as a result of information provided by scientists, regulatory standards, aesthetic concerns, and user requirements. It will further show how this collaborative model was expanded to include local citizens and members of a statewide environmental organization during the building and installation phase of the project.

Initial evaluation from the CRMC indicates that the collaboration was successful. The new buffer is functioning, conforms to state regulations, and appears to satisfy the aesthetic concerns of the local residents. While there are questions that remain pertaining to its applicability elsewhere and the lengthy application and review process, this case study demonstrates that the methodology of collaboration can work, to the benefit of multiple stakeholders.

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## PERMEABLE PAVEMENTS AND STRUCTURAL SOILS: PARTNER TECHNOLOGIES FOR URBAN STORM WATER MANAGEMENT

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**Two materials/environmental technologies, permeable pavements and structural soils, when used together, simultaneously make trees more long-lived and viable as well as remediate storm water.**

PERMEABLE PAVEMENTS AND structural soils, when used together can accommodate intense urban use, allow for long-lived trees and restore urban watersheds. Both of these technologies have been field-tested in all regions of the country. The availability of these contemporary technologies allow designers to create structurally durable pavements, below pavement reservoirs for storm water attenuation, improve water quality as well as provide a viable medium for urban tree establishment and growth. Constructing permeable pavements under-layed with structural soil (a patented tree growing media and a base course for pavements) provides the promise of cleaner water, long-lived trees and reduced storm water management costs. This field-tested research combined with on-street experiences represents the essentials for site scaled urban design, environmentally restorative pavements and expanded rooting zones for urban vegetation. This fundament of research by faculty and students from Cornell University will be highlighted with project installation case studies. Years of research have resulted in innovative details and protocols for using permeable pavements in conjunction with structural soils. Data will be provided for the specific use of porous asphalt and turf parking lots that use structural soil as a base. In-situ test plots as well as specific installations in urban settings were used for field data collection.

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## COALITIONS, COOPERATION, AND INSTITUTIONAL CHANGE: THE URBAN WATERSHED PARK

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**This paper examines how different constituencies and management capacities are enrolled and mobilized in the creation of “watershed parks”: urban open spaces combining recreational amenities with ecological remediation. Drawing on research in four Western cities, the role of stakeholder planning documents is presented from a practice-based and historical perspective.**

THIS PAPER IS drawn from a dissertation project considering current governance and development practices in the creation of “watershed parks” in four metropolitan areas: Denver, Colorado; Los Angeles, California; Phoenix, Arizona; and San Jose, California. I define an urban watershed park as a waterfront open space that has been ecologically engineered to replenish and conserve groundwater, restore regional biodiversity, manage stormwater, reduce pollution and improve water quality.

This qualitative, interpretive study was conducted on-site in each of four cities. The research looks at coalitions in each city, policy actors who mobilize people and resources to implement a new social-ecological hybrid in urban park design. I used a multi-method research design to investigate and characterize the process of creating a watershed park. Three sites involved projects that are completed or near completion. As a result data collection for these sites relied upon archival sources and retrospective, semi-structured interviews. By contrast, the Los Angeles park projects are in the process of negotiation and implementation. This provided the opportunity for in-depth ethnographic field study, including meetings, workshops, site visits, and interviews.

Findings emphasized the informal and contingent nature of watershed park coalitions, and a process of project implementation and institutional change that is gradual and iterative. This is consistent with recent scholarship on the new institutionalism and collaborative planning (see for instance) (Healey 1997, Booher and Innes 2002).

In seeking to contribute to this literature, I rely heavily on both my fieldwork experience, and the tenets of Actor-Network Theory (Latour 2005). I find that coalitions are not discrete or stable entities, they reach beyond those

initially identified as policy actors, and the collaboration that gets things done rarely takes place in stakeholder planning meetings. I replace the construct of the coalition with that of the actor-network in order to account for the powerful but prosaic associations I find between people, as well as the pivotal role of non-human actants (for instance, steelhead trout, planning images, local tax laws, the rivers themselves) in the trajectory of watershed park developments. The ways in which these actants are connected is the most telling story in each city, one that calls into question any real divide between culture and nature (Cronon 1995, Latour 2004).

I connect this understanding of the actor-network to the pragmatic question of how better outcomes in watershed development can be achieved. This is essentially a challenge of broadening and altering established expectations, knowledge, routines and patterns – the actor-network. In each city, various stakeholder planning documents serve as an analytical window not only on what the design possibilities are and who was involved in developing them, but also on the relative ability of the actor-network to take the next steps toward implementation. Can the plan be “costed”? Financed? Promoted in the media? Engineered while retaining the collaborative vision? Integrated into adaptive management benchmarks for the regional ecology? In short, Does it speak the languages of the relevant governance institutions, effectively enough to enroll and mobilize them?

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## LATIS: TECHNOLOGY AS A TOOL FOR ASSESSING WATER QUALITY AND LOW IMPACT SITE DEVELOPMENT STRATEGIES

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**The lack of a standardized tool integrating GIS, BMP information, and a public domain water quality model has been a limiting factor for improved water quality planning. The research project described in this paper attempted to develop such a model and test it on multiple sites.**

IN ORDER TO meet federal and state water quality standards, design guidelines for many municipal and regional planning agencies are requiring the implementation of best management practices (BMP's) that will reduce water contaminants such as total suspended solids, phosphorus, nitrogen, and bacteria. Low Impact Development (LID) is a concept that parallels and partially overlaps with BMP's. It approaches stormwater management from the perspective of landscape features at the site level. It includes open green spaces and rooftops, parking lots, sidewalks and other features that infiltrate, store, evaporate, and detain some stormwater runoff close to its source rather than sending it rapidly downstream. Significant advances have been made in the use of spatial and hydrologic models to quantify the impact of BMP/LID practices on water quality within watersheds, but little research has focused on calculating the implementation costs associated with these BMP's when integrated with a spatial decision support system (SDSS).

This research project had three phases. The first was a review and selection of a public domain water quality model. Hydrologic Simulation Program in FORTRAN (HSPF), an unsteady flow model, was selected as the hydrologic and water quality program. HSPF is currently supported by the EPA and distributed as a bundled software package along with BASINS. Efforts are ongoing to develop a public domain GUI for HSPF. The second phase involved assessing the potential for linking the model to a desktop GIS. All commercial desktop GIS systems were reviewed based on a set of characteristics including cost, function, and availability. The third phase focused on identification of BMP's that are often included in low impact development strategies, including their cost. This information was collected from several national sites and loaded into a database, which was later linked to the site's

individual BMP's housed in the GIS. Development costs for different combinations or configurations of BMP's could then be calculated in real time.

The final version of the research activity, called Latis, is a public domain Windows GUI and Microsoft Office based BMP selection and simulation program running on ESRI Arcview that can demonstrate the impact of different BMP implementation strategies on water quality, as well as implementation and maintenance cost.

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## THE POST-MATERIALIST PARADIGM: A MULTI-METHOD APPROACH TO STUDYING STUDENT VALUES

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**This study addresses the question, “Are the values of landscape architecture students consistent with the post-materialist paradigm?” Post-materialism is a worldview opposite that of materialism. Through content analyses of narratives, survey responses, and visual methodologies, student values are extracted to answer the research question.**

POST-MATERIALISM IS A controversial paradigm developed by Ronald Inglehart in the 1970's. It is based on the idea that the opposite pole of materialism is a worldview which encompasses self-expression, sense of community, social equity, and concern over quality of life (De Graff & Evans, 1996). The controversial aspect of this paradigm lies in Inglehart's position that industrialized cultures with advanced democracies hold more postmaterialist values than developing countries with relatively young democratic cultures (Inglehart, 1977). Why is this debate relevant to landscape architecture? Landscape architecture is a field that promotes stewardship of our built and natural environments and research has shown that post-materialism is consistent with environmental preservation values (Kidd and Lee, 1997). Furthermore, environmental concern has been found to be highly correlated with wealthy nations (Franzen, 2003). The general research question for this paper is, “Are the values of landscape architecture students consistent with the post-materialistic paradigm?” This is important to ask because, as future stewards of the land, students ought to have basic values that support concern over our environment. But do they hold such values?

The paper is based on a three-year longitudinal study of students in a required landscape architecture theory class that I have taught for the last 10 years (LAND 3540 Dwelling and Community). The project was a multi-phase assignment that required students to reflect on their childhood homes, current living situations, ideal residential locations, dream homes and their dream outdoor landscapes. Students submitted projects that included written narratives, magazine pictures, personal sketches, and quantitative surveys. To extract post-materialist values from these assignments, I conducted content analyses of their narratives, statistical tests on value measures, and visual

examination of their magazine entries.

The results show that undergraduate students generally have a combination of materialistic and post-materialistic values. They place importance on family and social life but also desire larger homes that have little regard for conservation. To place these research findings in context, a brief scan of environmental values from the 1970's will explain how undergraduate student values have changed over time.

As landscape architecture educators, we need to provide educational opportunities for students to understand why it is essential to think long-term and live sustainably in the present. Classroom lectures may not be the only way to achieve this. We have to design learning opportunities so they develop deeper environmental values that guide future personal and professional decisions.

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## INTEGRATING CROSS-CULTURAL AND INTERDISCIPLINARY EDUCATION IN THE DESIGN FIELDS: THE INTERDISCIPLINARY DESIGN EDUCATION ASSESSMENT PROJECT

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**This paper discusses issues related to the integration and interaction of cross-cultural and interdisciplinary educational components in design education. The Interdisciplinary Design Education Assessment (IDEA) project, conducted on the Design in Italy 2006 summer program, will be illustrated. Results from the surveys suggest enhanced approaches to Design curricula.**

INCREASING ATTENTION HAS recently been directed to investigating outcomes of cross-cultural education and interdisciplinary education. In contrast, literature review reveals a lack of research focused on the integration of the two educational opportunities. Increased awareness of the interconnectedness of the contemporary world (Hill, 2005) and recognition of the need for internationalization and multiculturalism of academia (Hewitt and Nassar, 2004) are the basis of research focused on cross-cultural approaches to education. Recent pedagogy-related theories, and the general awareness of inescapable collaboration among professionals from distinct disciplines in real world complex challenges (Stiles, 1998), indicate the need for interdisciplinary approaches in education and in the professional world.

This paper will investigate theoretical approaches of cross-cultural education and interdisciplinary education, and will illustrate the results of a pilot study, Interdisciplinary Design Education Assessment (IDEA), conducted on a West Virginia University interdisciplinary design study abroad program, Design in Italy 2006. The study illustrates how cross-cultural-interdisciplinary learning is an essential key towards the transformation of professionally-derived curricula that focus on the development of employment-related skills into new integrated curricula driven by what Hill (2005) has defined as a necessary “pedagogy that strives to develop the whole person” (p.120). This paper will argue that cross-cultural and interdisciplinary education are particularly relevant for better learning in the design field and will discuss specific outcomes resulting from the combination of the two learning opportunities.

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## NEGOTIATING LANDSCAPE ARCHITECTURE: TODAY'S STUDENT DESIGN TEAM MEMBER, TOMORROW'S PROFESSIONAL COLLABORATOR

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**Current research in higher education about the role team projects play in learning can direct how landscape architecture faculty might equitably evaluate design studio projects. This paper presents current thinking about cooperative learning and uses a pilot case study. Instruments for evaluation and resultant findings will be presented.**

DESIGN INSTRUCTORS STRAIN to include larger information sets and to reinforce increasing professional skills in their studio projects. Teachers must employ a variety of means to seal and measure cognitive learning situations while providing a venue for simultaneously developing affective learning. Using the team project as a learning tool is often perceived as peripheral learning. Faculty may admire the possibility of promoting leadership and collaborative finesse through this kind of project, but the administration of these situations can seem formidable.

The rationale for using team projects in learning has been studied extensively and much of the mystery has been removed. Administration of a team project requires sequenced learning situations and uniform evaluations. Faculty members who do not know about these strategies are less prone to have successful results in their cooperative learning studios.

This paper provides particular guidelines and evaluative means for administrating a team project and cites a pilot, case study that demonstrates the theory in action. Building problem-solving skills in a structured, cooperative environment can include such goals as anchoring activities to larger tasks, supporting the learner in responsible ownership of tasks, designing understandable tasks, and providing a learning environment that challenges thinking. (Millis and Cottell, 1998) Measuring individual effort in group participation, preparation and attitude can achieve a greater degree of parity among parties in the cooperative learning groups.

A successful evaluation instrument for team projects should employ a democratic process. One such instrument, developed and validated for such results, was used in this study. The evaluation contains items scored on a subjective, rational scale, and correlated, open ended questions that require

minimal time to complete. An evaluation that provides divergent methods for analysis may produce convergent findings. Collaborative projects reinforce a productive way to develop leadership, build confidence and create dialogue and agreement in a trusted, studio setting. Students who learn how to resolve conflict and achieve consensus early in their career development can more easily transfer this kind of learning into the post-graduate world.

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## THE POWER OF PLACE: TEACHING SPATIAL DESIGN THEORY ABROAD

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**This study examines the effectiveness of utilizing the built environment while teaching spatial design theory abroad. By implementing a 'scaffolding' teaching framework within this context, the paper suggests that greater theoretical understanding can be achieved.**

STUDY ABROAD PROGRAMS offer students a specialized setting to learn and experience spatial design ideology that is different from the typical classroom. Traditional lecture classes rely on two-dimensional tools such as written theory, scaled drawings, and photographic images to communicate spatial design ideas. Study abroad programs instead offer tangible, three dimensional learning opportunities by allowing students to visit 'successful' spaces. Standing in a space speaks volumes (literally) and helps students understand theoretical ideas through built form. Thus, teaching abroad translates spatial theory into learning by taking advantage of physical places.

Discovering ways to most effectively take advantage of the physical environment, while teaching abroad, is the objective of this paper. A review of the literature on teaching spatial design theory overseas points to gaps in pedagogical models and precedent. This paper attempts to fill this gap by offering an approach, which documents a process and its apparent effectiveness, while teaching twelve University of Georgia students abroad in Cortona, Italy. The teaching process is based on the 'scaffolding' teaching model of Lev Vygotsky.

Vygotsky's scaffolding teaching strategy, also called Zone of Proximal Development (ZPD), is described as the area between what a learner can do independently and what can be accomplished with further instructional assistance (Ellis, 2002). Each scaffold or step facilitates a student's ability to build on existing knowledge in order to synthesize new information (Raymond, 2000). In this study, a five-step scaffold process is utilized. The information learned through (1) theoretical readings, (2) on-site lecturing, (3) on-site sketching and (4) supplemental site visits were subsequently implemented in (5) studio design problems.

## Method of inquiry and findings

Following the implementation of the five step process, students unaware of the scaffolding methodology, were issued a survey to rank the effectiveness of each step. Two types of data were collected. Numerical ‘effectiveness’ rankings constitute the quantitative data and descriptive written responses comprise the qualitative data. Both data sets were analyzed for their significance. The quantitative results indicate positive correlations between the scaffolds and effective teaching and learning. Specifically, on-site lecturing, on-site sketching, and supplemental site visits, scaffolds two, three, and four respectively, had the highest ranking. The qualitative results also show support for the effectiveness of on-site learning and reinforce the quantitative data as it relates to the scaffolding framework.

## Conclusions

The power of places has tremendous educational potential. Study abroad programs offer the opportunity to take advantage of this circumstance. By utilizing on-site three-dimensional learning and traditional two-dimensional techniques, the overall teaching strategy proves to be an effective way to learn. The findings in this study support this fact and suggest that when implemented in a scaffolding framework, the level and complexity of a student’s theoretical understanding increases.

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- § Point out how standing in spaces influences design. Use Will McDonald’s and Clare Thompson’s urban projects to convey the Campodoglio and Piazza Navona
- § Point out how using Pattern Language (reading, lecturing, seeing, and designing) reinforces ideas. Try to find relevant theory on “layering” or whatever it is called.
- § Point out that knowing relevant theory and visiting documented sites aids in learning. Use Great Streets by Allen Jacobs to show off Via Guibbonari and Via Pio in Rome. Get Slide from Curtis showing this.
- § Point out that knowing relevant theory and visiting impromptu sites to illustrate its point aids in learning. Use A Pattern Language and show slide of existing Venice photo in book with own photo.
- § List sources used. A Pattern Language, Fundamentals of Urban Design, Allen Jacobs and Zucker? Show examples of their theory in paper.
- § Use Williams photo from Pienza of me teaching and photo of site without us in it. This image is in second cortona book.
- § Process
- o Identify Relevant Theory
- o Find sites
- o Visit

## RETROSPECT AND FORECAST: A PANEL DISCUSSION OF THE FIRST QUARTER-CENTURY OF LANDSCAPE JOURNAL

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**A panel of editors and advisors report on the status of Landscape Journal, analyze publishing patterns observed over the past quarter century, and speculate on recent trends. The objective of the session is to gain perspective on the relevance and challenges of academic publication in landscape architecture.**

THE YEAR 2007 marks the twenty-fifth anniversary of the publication of volume 1:1 (1982) of Landscape Journal—the premier peer-reviewed journal in the field of landscape architecture, published by the University of Wisconsin Press and sponsored by the Council of Educators in Landscape Architecture. Past and present, the editors, staff, and peer reviewers of Landscape Journal have maintained a significant responsibility to foster and facilitate the development of scholarship within the discipline of landscape architecture. This panel session will celebrate the occasion by looking backward and forward, assessing the formation, impact, content, trends, and possible futures of the publication. The objective of the session is to gain perspective on the relevance and challenges of academic publication in landscape architecture.

The current editor reports briefly on the status of Landscape Journal and describes recent initiatives, strategies, and trends. Founding editors of Landscape Journal reflect on the initial formation, motives and goals of the publication, as well as long-term changes in its “signature” style and content. Editorial advisory board members comment on the reception, increasing variety of competing venues in scholarly publishing, and the market for Landscape Journal. Other panelists are invited to analyze publishing patterns from the past quarter century (e.g. topics, research types, author profiles, readership, and competing venues), and evaluate the impact of the Journal since its founding. Following the roundtable reports of the panelists, formal respon-

dents and audience members are invited to engage the panel in discussion of the utility and value of Landscape Journal in teaching and other practices. We hope to identify or improve strategies for pursuing relevant content, evaluating quality of scholarship, finding and serving new (and younger) readers, and meeting other challenges of academic publishing in Landscape Journal for the next twenty-five years.

**Keywords: Landscape Journal; academic publishing; peer review; impact factor**

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Walker, JB and MN Powers. 2007. Twenty-five years of Landscape Journal: Analysis of its impact and content (unpublished research report)

## EVALUATING THE EFFECTIVENESS OF A SEQUENCE OF VIDEOS TO DEMONSTRATE THE PRINCIPLES OF SUSTAINABILITY IN THE DESIGN STUDIO

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**This paper investigates integrating videos in the design studio to further student's conceptual understanding of issues relating to sustainability. Findings reveal the effectiveness of incorporating digital media in the design studio.**

BOYER AND MITGANG (1996) recognized the potential of studio in furthering scholarly inquiry as a viable educational model, however, the question of how to teach sustainability in design education is paramount. This study implements and assesses the educational value of integrating a sequence of videos in teaching sustainability in the design studio. In design education there is growing concern about the effectiveness of 'green' or sustainable education within design curricula (Calkins, 2004). In 2005, Metropolis' annual education survey of practitioners and educators placed sustainability as the number one area needing extensive research by the design disciplines (Manfra, 2005). The research hypothesizes that videos can play an integral role in engaging students with the basic tenets of sustainability, i.e. social, economic, and environmental issues, interdisciplinary collaboration (via video media), and holistic systems thinking. This also promotes a more cyclical learning process via experiential learning and further development of a reservoir or experience and knowledge for the student to draw from (Lawson, 2004). Once students have acquired a sufficient reservoir of precedent or reference, "the ability to generate or initiate ideas" (Lawson, 2004, Pg. 454) will evolve as students "develop the skills of critical evaluation and discrimination of these ideas and then interpret them into new contexts" (Pg. 454). Research indicates that using videos are 'powerful teaching tools' if there is an active learning component that accompanies the video (Houston, 2000). Directed questions, discussion, concepts, and reflection that relate video concepts to general experiences enhance the learning process (Moon, 1999). If these concepts are not organized within an existing experience framework and made durable, the concepts will not be transferred to long term memory. If concepts are not transferred to long term memory they are un-organized

and will not be integrated into future design (Mayer, 1984). This study evaluates undergraduate and graduate landscape architecture students' knowledge of environmental, social, and economic concepts in relation to design and sustainability. To evaluate this hypothesis, the integration of selected videos that compliment class lectures, readings, exercises, and projects offers an alternative learning medium in the design studio. A 'learning inventory scale' that requires the students to rank the importance of various teaching approaches, i.e. lecture, readings, projects, exercises, digital media, or classmates with 0=none and 10=exceptionally effective, begins to reveal how students learn various design concepts in studio. Along with students ranking the importance of how a concept is learned, the study utilizes concept mapping as a learning assessment method. Concept mapping requires each student to map one's knowledge of a concept as a beginning design student. Comparative analyses of the Pre- and Post-concept maps reveal the knowledge gain of students through diagramming concepts and their relationships. The concept map scoring assesses concepts and their relationships individually and collectively, with relationships having greater value. Recognizing the importance and current limitations of sustainability in education requires formulation of educational approaches and assessments to validate teaching and learning effectiveness. The study reveals the value of integrating design concept through digital media in the design studio.

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## GOOD INTENTIONS IN PARTICIPATORY DESIGN STUDIOS: HOW DESIGN WORKSHOPS ARE USED TO TEACH SKILLS AND MAKE VITAL CONNECTIONS THAT REACH ACROSS THE TABLE

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**The community design workshop is an invaluable tool for teaching about information gathering, communication, participatory practices and methods for assessing community preferences. By involving the public and landscape architecture students in this interactive process its benefits extend far beyond the classroom.**

**BACKGROUND:**THE VALUE OF community design studios has long been recognized for the important role it plays in landscape architecture education. In these service learning environments where theory and practice converge, local communities benefit through the low cost, high energy design and planning services they receive. Students benefit through their opportunities to engage in real world problem-solving. Not only do they develop design, technical and communication skills, but they see democracy in action and are often exposed to unfamiliar people and places. While much has been written about service learning in landscape architecture, the focus in many journal articles is on student experiences, teaching methods, studio products and political realities, and not on student-community interactions, which can influence designs and serve to validate the ultimate studio outcomes.

**Theme and Method:**The purpose of this paper is to explore methods of student-community engagement, in particular, to examine the role the community design workshop may play in service learning studios. The author will examine the goals, objectives and methods used for planning and running a public workshop as part of a community design studio. Drawing from the literature on service learning and referring to three case studies conducted at one university, the author will explain the importance of community engagement, describe various activities and techniques used for gathering information about neighborhoods and stakeholder preferences, and illustrate how students summarize and use their workshop findings. Each of the activities and procedures will be described and evaluated based upon their overall objectives and outcomes. A discussion of their usefulness to stakeholders will also be included.

**Findings:**Community design workshops, like other activities often associ-

ated with service learning studios, can be stressful to undertake for students and faculty, particularly, when considering the context in which they occur. There are faculty expectations and curricular requirements, diverse communities and municipal expectations; there are time constraints and academic calendars; and there is the need to prepare students so that they can effectively engage a heterogeneous public. While these factors may constrain the process, they typically combine to create an atmosphere of excitement and anticipation where considerable learning by all participants can occur. However, even when presentations, activities, and communications go according to plan, there is no guarantee that the workshop will be deemed a success either by the clients and their stakeholders or by the instructor. Despite this and other challenges, the community design workshop is an invaluable tool for teaching about information gathering, participatory practices and methods for assessing community preferences.

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## CREATING CREATIVITY IN THE DESIGN STUDIO: ASSESSING THE IMPACT OF METACOGNITIVE SKILL DEVELOPMENT ON CREATIVE ABILITIES

RYAN A. HARGROVE

A. R. RICE

**This study statistically tests the introduction of structured metacognitive skills on the development of creative thinking ability for a diverse population of undergraduate design students. It lays the groundwork for future structured techniques to determine the impact of a self-regulated metacognitive approach on design.**

DESIGN IS A discipline of innovation. The very essence of design is the creation of something new and unique. An assumption has been that, as in the case of native intelligence, the inclination and ability of a person to respond in novel and useful ways is largely inherited. Present research refutes this view, and it is now believed by many that, however creativity is defined, it is a form of behavior that can be taught.

If as Dr. Daniel Pesut suggests, most creativity training programs are successful in that they encourage the development of metacognitive abilities, then the study of creativity as a self-regulatory metacognitive process is timely and important to design education.

Metacognitive knowledge guides people to select, evaluate, revise, or abandon cognitive tasks, goals, and strategies in light of their own abilities and interests. Acknowledging this point leads to questioning our understanding of the creative design process. Therefore, we must return to the issue of cognition and recognize how little we really know about designers' creative processes, and seriously question how such an immensely important component of problem solving remains absent from design education.

This study statistically tests the introduction of structured metacognitive skills on the development of creative thinking ability for a diverse population of undergraduate design students. In measuring the extent that a treatment (educational intervention) caused a clearly measured outcome (level of creativity) the study used different educational experiences (educational intervention / no educational intervention) as treatments, and student's level of creativity as the output. Two of the most highly regarded standardized tests for convergent and divergent thinking (Remote Associates Test, Mednick; Similarities Test, Wallach and Kogan), structured faculty assessment,

and a comprehensive semester exercise constructing a personal philosophy of design were used to assess the impact of the introduction of metacognitive skills in the design studio environment. Students reflected on their own thinking in an effort to enhance self-regulation and ultimately creative thinking.

The study involved over 120 freshman undergraduate design students. Half of the group participated in a semester long intervention that introduced metacognitive skills as a part of creative thinking. The intervention was realized in the form of a two-credit course, Design Thinking Explorations. Each student's creative skills were then evaluated multiple times over the course of an academic year. Results from creativity tests as well as faculty and exercise assessments were analyzed to determine the impact of this intervention. Test results were compared with faculty assessments of creative ability across categories of gender, age, design discipline and academic performance. In addition, student's metacognitive awareness was measured using the Metacognitive Awareness Inventory (Schraw & Dennison, 1994) and compared to creative thinking scores.

This study lays the groundwork for future structured techniques to determine the impact of a self-regulated metacognitive approach on design. Future research will address the increased role of metacognition in design education. Currently there are plans to follow this cohort of design students throughout their education in order to assess the long-term impact of metacognitive skills on creativity.

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## BRIDGING THE GAP BETWEEN RE- SEARCH AND PRACTICE: “TOWARDS A THEORETICAL FRAMEWORK OF INTEGRATED EVIDENCE-BASED DESIGN APPROACH”

C.Y. HSIAO  
T.P. CHENG  
C.S. HUANG

**In this study the integrated Evidence-Based Design approach will be precisely defined through literature reviews. In addition, the proposed EBD framework will be formed to bridge the gap between research and practice to promote a new design philosophy to balance science and art in design.**

IN PRACTICE, DESIGNERS are dealing with increasingly complex issues and challenges. It is no longer sufficient for designers to make critical decisions only based on common sense intuitions and personal interpretations. The need to bring research component into current design practice is evident and emergent.

In the 1980s and 1990s, Council of Educators in Landscape Architecture (CELA) and Environmental Design Research Association (EDRA) called for special attention to address the research-practice gap problem. A series of ideas, evolving from research-based design to knowledge-informed design to informed design decisions, were developed to resolve this problem. Moreover, drawn inspirations from the successful ‘Evidence-Based Practice’ (EBP) movement in UK’s Medical field (Wampold and Bhati, 2004), Evidence-Based Design (EBD) has emerged as the current effort to bridge the research-practice gap.

Different from traditional design practice, EBD asks designers to base their decisions upon credible evidence. Utilizing EBD in practice can ultimately result in better design decision-making, achieving higher design quality and better user satisfaction (Martin and Guerin, 2006).

Commonly used sources of evidence include manufacturer’s literature, product specifications, and previous project experience (Martin and Guerin 2006). Another important source of evidence comes from rigorous research findings through systematic scientific inquiry. Ideally these research findings can contribute and enrich the design knowledge base. For example, our knowledge of health-care facility design, sustainable development, and landscape ecology have expanded significantly in recent years thanks to research on these fronts. However, these research findings are not well utilized

in practice due to the research-practice gap. Additionally, Martin and Guerin (2006) identified few reasons why the gap between research and practice is formed. First, findings published in peer-reviewed academic journals are not easily accessible to designers. Second, in many occasions researchers do not develop their research findings into design criteria for immediate application in practice. Third, the vocabulary and terms used in academic journal articles are not user-friendly.

In this study, the researchers try to answer basic questions associated with EBD: What does count as evidence? And what is EBD? How could EBD be used to bridge research and practice? And how could EBD be approached/implemented? A theoretical framework will be developed to clarify sources of evidence and the relationships among theoretical and practical issues.

Research objectives of this study are:

(1) To determine related terminology of EBD based on broad literature reviews. This specific task is to document potential components of EBD approach and to facilitate further systematic analysis; and,

(2) To develop a framework for EBD. This includes two dimensions: the process of EBD, and the relationship between research and practice. The proposed framework will be used to promote validity of EBD and to close the gap between research and practice.

The proposed framework will bridge the gap between research and practice in three levels: It promotes a new design philosophy to balance science and art in design; it transforms design as a form of research inquiry; and it will help generate a new specialized research-design practice if EBD is well perceived. Finally, a detailed comparison between traditional practice and EBD will be presented at the conference to stimulate further discussions.

Keywords: evidence-based design, design decision-making

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## THE NATURE OF SERVICE-LEARNING IN LANDSCAPE ARCHITECTURE

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**According to the national Service-Learning community, service projects in landscape architecture lack one significant component of service-learning, that of structured reflective activities. In this study of studio courses, the importance and necessity of reflection is examined in the comparison of control group and test group perceptions and products.**

LANDSCAPE ARCHITECTURE PROGRAMS have a tradition of using communities and community service projects to incorporate “real world” experience in design studio education. In today’s academic setting, this notion of community service or outreach is being transformed by legislators and university administrators into a “Service-Learning” mandate. Service-Learning is defined by Barbara Jacoby as “...a form of experiential education in which students engage in activities that address human and community needs together with structure opportunities intentionally designed to promote student learning and development.” (Jacoby, 1996)

Interest in Service-Learning has intensified since its initial conceptualization throughout the 1990’s. (Eyler, 2000.) In the course of this growth, it has been studied, hypothesized, and codified to extend well beyond landscape architecture programs’ traditional use of a community service design project to integrate cognitive content, critical thinking abilities and professional processes and skills. Early in the development of Service-Learning philosophies, the tenet that “Reflection and reciprocity are key concepts of service-learning” (Jacoby, 1996) was adopted. Indeed, most, if not all, service-learning advocates now deem reflective activities critical components of service-learning.

If the single most significant and most frequently identified component of Service-Learning course work is a structured reflection of the service experience, (Hatcher et al. 2004) indeed, it would appear to service-learning experts that since our landscape studio community service projects lack this introspective component, we do not offer Service-Learning courses. The logical extension of this viewpoint suggests that to convert a landscape architecture community service project into a Service-Learning opportunity we

need only add that reflection part.

As state and municipal budgets decrease, increased pressure is being placed on state-funded universities to provide services for municipalities and agencies within the general population. Service-Learning is a way of meeting these public mandates while maintaining and improving academic rigor in the landscape architecture curriculum. This paper will introduce service-learning as an important variant of studio learning. It will examine the design, conduct, and effects of reflective components on students in spring 2007 design studios taught by one instructor.

In this study, the reflective studio activities are based upon Kolb's premise that reflection "...follows direct and concrete experience and precedes abstract conceptualization and generalization." (Kolb, 1984) Drawing from Kolb's experiential learning model (1) reflective activities designed in three studio courses will be explained, (2) the differing activities and outcomes in the studios will be evaluated and compared, and (3) recommendations for future efforts at service learning in landscape architecture design studios will be offered.

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## DEVELOPMENT OF REFLECTION ACTIVITIES FOR A STUDY ABROAD PROGRAM THAT INCORPORATES A SERVICE-LEARNING COMPONENT

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**This paper describes the development of reflection activities for a Service-Learning program in a study-abroad setting. The study suggests that reflective journaling activities enhances student learning and personal growth in the affective learning realm and can be documented through the use of qualitative assessment techniques.**

THE BENEFITS OF study abroad programs in the curriculum of higher education are well documented. These include experiencing personal growth, developing valuable career skills and “Becoming a ‘Global Citizen’ in today’s interconnected world” (Northwestern University). A long term study by Dwyer and Peters (2004) of study abroad participants over the last 50 years provides indications of extremely positive, personal, educational and career growth among the participants. Lewis and Niesenbaum (2005) concluded that a short-term study abroad programs can be greatly enhanced and approximate the goals of long-term programs by incorporating a Service-Learning component.

This paper documents the preliminary results from an investigation into the development of Service-Learning reflection activities for students participating in an on-going study abroad program for landscape architecture students. The program includes three weeks of travel to historic, cultural and environmental venues as well as lectures and presentations by local dignitaries and scholars. During the last week of the programs students completed several Service-Learning design studio projects for a total of three rural Mayan villages. The residents are subsistence farmers who hope to supplement their income with low impact tourism activities while preserving their heritage, culture and natural resources.

Various reflection activities were tested in the earliest study abroad trips to determine which activity or activities would provide the students with the greatest opportunity to enhance the learning experience. The activities included questionnaires, discussions, group projects such as posters, sketching and other traditional reflection activities. Students appeared to react more enthusiastically to journaling activities both on a daily basis and in response

to specific prompts. Their responses were similar to those reported by Forsyth (1999) in that they were able to reflect more freely and openly about a variety of topics and issues. Almost all expressed an element of personal growth.

The journals from the second and third programs were analyzed utilizing the qualitative techniques described by Boyd, Dooley and Felton (2006) to determine patterns or themes that indicated the students' greatest area of reflective interest or concern. Their research utilizes The Taxonomy of the Affective Domain (Krathwohl, 1964) to document the level at which the students were reflecting on their experience. These levels include, in increasing order of affective learning; receiving, responding, valuing, organization and characterization. Perhaps the most memorable quote was from a student in 2005 who wrote:

“‘Poor’ is a rich man’s word, and getting to interact with these communities helped me see that. The places we visited are “rich” in their culture, family values, history, etc. and are far from poor.”

Results indicate that, although time consuming for the reviewers, reflective journaling can be an appropriate method for assessing the level of affective learning among students. Additionally, journaling activities suggest that the benefits from incorporating a Service-Learning component in a study abroad program include; a greater or broadened understanding of the field of landscape architecture; how the profession can affect people’s lives; increased levels of self confidence; and greater cultural awareness. Many students also express gratitude for the life they take for granted.

**Key Words: Service-Learning, Study Abroad, Affective Learning**

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## REFLECTIONS ON THE BENEFIT OF A SERVICE-LEARNING PROJECT THAT INCLUDED THE OPPORTUNITY TO MENTOR YOUNGER AT-RISK STUDENTS

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**This paper describes a Service-Learning experience for landscape architecture students that included the opportunity to mentor younger, at-risk students. It analyses responses from a survey of landscape architecture graduates who participated in the program while in school. The study results suggest that mentoring can enhance the Service-Learning experience.**

IN ALMOST EVERY aspect of a landscape architect's professional practice, their designs ultimately serve to enhance the surrounding community. Rogers (1997) notes that "landscape architects are expected more and more to involve the user in the design process." Sharkey (1994) goes on to say that "Landscape architects are committed to improving the condition of the community and society while maintaining the intrinsic values of environmental resources" (p. 20)

Landscape architecture students need to develop civic responsibility, in conjunction with their environmental stewardship to better serve the public at large. Broan and Jennings (2003) point to the importance of curriculum that "instills critical social consciousness and principled thinking." Service-Learning is an ideal vehicle to promote civic responsibility and social consciousness and has been used with great success in the past. Forsyth, (1999) documents the successes and lessons learned from two design studios in Massachusetts. However, in Texas, the opportunity to mentor younger, at-risk students provided an opportunity to enhance the Service-Learning experience.

In 2003, landscape architecture students in a Materials and Details class were recruited by a local alternative school for juvenile delinquent teens known as JJAEP (Juvenile Justice Alternative Education Program) to design the layout and details for a nature trail. The school had a Service-Learning grant to construct the Liberty Nature Trail with their students, but needed help designing the trail in an area behind the school that was environmentally sensitive. Three Graduate and thirteen undergraduate landscape architecture students were teamed with JJAEP students for a site visit in early November. After a brief introduction and orientation teams of students toured the

site and discussed possibilities for the location and various elements of the nature trail. The landscape architecture students then developed a group layout and individually developed details, materials lists and cost estimate. A rendered plan, representative pictures of proposed features and the construction details were presented to JJAEP students a few weeks later.

The project provided an additional benefit not usually found in most Service-Learning projects. Along with the “real-world” project with “actual clients” the LA students had the added benefit of becoming mentors to the JJAEP students. In addition to offering their design services, the landscape architecture students were able to explain what the professional involves, the importance of the natural setting they were working with and other aspects that interested the JJAEP students.

The professor, who at the time of the project was unfamiliar with the Service-Learning pedagogy and the need for structured reflection activities, decided to conduct a survey of the original participants. The survey offered the opportunity to determine both their initial and subsequent attitudes about the project. The response rate was exceptional, and overwhelming, the students agreed that the project was one of the most valuable studio experiences they had undertaken while in college. Conclusions regarding opportunities and pitfalls echoed those of Forsyth (1999) from their survey of student participants. Additionally, a great majority of the JJAEP participants felt that the opportunity to mentor the younger, at-risk students enhanced the experience.

**Key Citations: Service-Learning, Mentor, Survey, Civic Responsibility**

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## AT THE INTERSECTION: RESEARCH AND PRACTICE IN LANDSCAPE ARCHITECTURE

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**This paper is intended to document and clarify the evolving nature of the relationship between research and practice, reveal reasons behind these trends and the implications they might have on the education and practice of landscape architecture.**

THE PROSPECT OF progress in our discipline lies in our academic and professional institutions and organizations as primary venues for research and practice. The premise of this paper is that the relevance and expansion of landscape architecture depends on developing new theories and ideas through research and their applications to practice and advancing new approaches in practice that feeds research. The relationship between research and practice in the field of landscape architecture is critical to advancing our field as a whole.

The authors, representing both the academy and practice, have experienced that the academic and professional communities have established separate roles and goals with minimal interaction. Collaborative research occurs mainly at the individual level, through the work of practicing academics or teaching professionals.

To quantify this phenomenon, the paper will review last three to five years of Landscape Journal as the primary indicator of research and scholarship, and Landscape Architecture Magazine as the primary indicator of practice, to develop a database of appropriately categorized subjects and topics covered in these publications. Included will be an analysis of awards categories, projects and subjects selected for professional recognitions. This database will measure current trends in research and practice. The paper will also include interviews with editors of these publications to gain further insights.

While research that is purely academic or professional should be encouraged, in order to expand and “situate” (Meyer, 1992) the field, an expansion of direct collaboration would allow landscape architecture to strengthen the discipline and act as an agent of positive change in society. This view is

echoed by Simon Swaffield in an article on the role of the profession in the future. He concludes "... landscape architecture will only survive as a profession over the next 100 years if it can retain a significant degree of shared purpose and experience amongst its members." (Swaffield, 2002, p. 183)

Intended to document and clarify the evolving nature of the relationship between research and practice, this paper will reveal reasons behind these trends and the implications they might have on the education and practice of landscape architecture. This will also provide a basis for further work in developing a more comprehensive understanding surrounding the value of practice and research in higher education, especially in the context of changing policies surrounding promotion.

The paper will help us understand the nature of current state of research and practice in our profession and suggest some ways of increased level of interaction in order to respond to important challenges, such as establishing measures of sustainability for landscape projects for LEED certification, which will require developing ways and means of designing, setting bench marks as well as providing mean of measurement and evaluation, as an example of areas that is at the intersection of research and practice.

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## TEAM AND INDIVIDUAL CHALLENGE COURSE EXPERIENCE - EFFECTS IN A SERVICE-LEARNING STUDIO

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**Enhancing team cohesion, team effectiveness, and individual effectiveness are important aspects of being a design professional. Teaching those skills in the academic design studio is evaluated using a series of physical/mental challenges that complement an experiential learning course.**

TEAMWORK IS IMPORTANT from a learning perspective as well as for future employment since most employees do not work in isolation. Many students who enter a university setting have not necessarily been encouraged to be productive as part of a workgroup. Our society as well as much of the educational system emphasizes individual performance. However, one of the skills employers value the most is the ability of an individual to contribute productively to a design team. As part of the requirements for completion of a degree in landscape architecture, students are required to undertake a service-learning studio. This studio involves individual work that contributes to a larger group effort for three presentations in a community. An aspect of this study in contrast to similar studies is that the participants have been studio mates in most cases for seven semesters; therefore, most team members have worked on class projects together prior to this course. One opportunity, outside of the traditional studio environment, to learn about small group dynamics and strategies for increasing team cohesion is through participation in a challenge course. A challenge course is defined by the Association for Challenge Course Technology as a series of activities, sometimes on or close to the ground (usually referred to as a low course) and sometimes built on utility poles or trees, or in the rafters of a building (a high course). This semester-long study documented the effects of multiple team building interventions, including participation in an off-campus low- and high-element challenge course. Studio members completed standardized assessments of individual effectiveness, team effectiveness, and team cohesion. The assessment instrument was utilized repeatedly during the semester in a pre- and post-test technique surrounding team-building interventions. In addition, immediately at the start and conclusion of scheduled class meetings

assessments were performed. A baseline assessment was performed on the first day of class and a subsequent assessment every two weeks thereafter during the semester to document perceived team changes. Using a Wilcoxon signed-rank test, there have not been any measurable perceived statistically significant differences by team members on any of the four reliable measures ( $\alpha = .76 - .97$ ). One measure has not been shown to be reliable ( $\alpha = .27 - .61$ ). The preliminary results from seven questionnaire administrations have implications for incorporating team-based productivity/learning at the end of a course of study.

**Key Words: Challenge Course, Group Cohesion, Experiential Service-Learning**

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## TOWARD AN ETHICAL FRAMEWORK FOR PARTICIPATORY RESEARCH

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**This paper examines the unique ethical dimensions of participatory research and design that go beyond the traditional principles addressed by Institutional Review Boards, and outlines a framework for ethical decision-making in the participatory process.**

ENGAGING IN PARTICIPATORY research raises critical ethical issues, which emerge in two ways. First, participation pre-supposes a commitment to a set of values that more traditional research does not necessarily require or embrace – e.g. dismantling of power differences, transparency and flexibility in the research process. These values have distinct ethical implications. Second, the unique and complex characteristics of participatory work raise ethical questions and practical challenges not typically encountered when working within more traditional paradigms. For example, participant anonymity is difficult to protect in community based work on local concerns, and shared control over the research creates ethical conundrums that emerge throughout the process and are not easily predicted at the outset. In contrast, Institutional Review Boards (IRBs) require researchers to design research in its entirety before a single participant is recruited. This assumes that research can be fully pre-planned and will progress in a predictable and linear fashion. However, participatory projects can shift unpredictably in response to the social dynamics and changing needs of participants, making it difficult, even impossible, to declare every ethical issue to a review board before research begins. For these reasons, advocates of participatory research must call for reform of existing IRB procedures so that they can accommodate the ethical practice of participatory research.

While a considerable body of literature has amassed on what constitutes participation and how it is best practiced (see especially Kemmis and McTaggart, 2005; Hester, 1999; Sanoff, 2000), the ethical issues and principles related to participatory research has been less examined. Yet, a systematic assessment of ethical principles for participatory research is necessary because existing guidance, in the form of IRB requirements, is insufficient to guide

participatory work effectively. For example, the ethical principle of Respect for Persons is expressed primarily in terms of voluntary informed consent and privacy. Voluntary informed consent stipulates that research participants understand the risks and benefits of participating and that they are involved voluntarily. Respect for privacy is expressed through procedures to protect confidentiality and the signing of consent forms. But what can rules of voluntary consent and confidentiality tell us about negotiating relationships among multiple stakeholders, or about how to handle our own positionality in relation to other participants? How do we ethically address power differentials and conflict among participants? Certainly, requirements and rules are necessary for appropriate conduct in research, but broader interpretations of the foundational ethical principles are needed to effectively inform participatory processes.

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This paper begins with a systematic examination of the ethical principles at the foundation of the IRB requirements and analyzes these guidelines in light of the key characteristics of participatory work identified by Kemmis and McTaggart (2005) – i.e. work that is collaborative, transparent, iterative, reflexive and critical. Based on this comparative analysis, the distinctive ethical dimensions of participatory work are outlined in an effort to augment and extend current interpretations of research ethics.

Building upon Habermas' (1984, 1987) theory of communicative action, a framework of ethical principles for participatory research is offered to help move toward a participatory ethic.

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## ROLE OF BEHAVIORAL MODELS IN DEVELOPING RESEARCH-BASED STUDIO EXPERIENCE

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**This paper discusses integrating environmental-behavior models into research-based practices in landscape design studio. It is assumed that environmental-behavior models will enlighten the potential structure of research-based design studio course.**

IT IS EVIDENT in both architectural and landscape design projects that designers give less attention to user needs and social aspects than to formal considerations. Although human behavior and the perception of the natural and built environment are the important concepts in the study of landscape, “human” as a primary focus of design has not been widely accepted by the landscape community. The existing research is focused more on structures than on human behavior. In this context, the study of environment-behavior models can be integrated into basic research practices in landscape design studio to promote more attention to human factors in design.

This paper discusses integrating environmental-behavior models into research-based practices in landscape design studio. It is assumed that environmental-behavior models will enlighten the potential structure of research-based design studio course. These models have already influenced the study of landscape architecture, and several design schools in North America included research-based design courses in their curriculum. Since the landscape architecture discipline in Turkey has not yet accepted a common theoretical knowledge and still discusses the role of research in the profession, the current discussion will be a contribution to the advancement of the field. The process of integration will enhance interaction between researchers as lecturers and their students during studio courses; the results of the research will be evaluated as course materials.

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## TEACHING STUDENTS TO BECOME DESIGNERS

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**To teach students to design, we may be wise to help them understand how designers really design, then methodically develop their skills in “designerly ways of knowing and doing” of effective designers. This paper clarifies the premises of this stance, presents a resulting studio model, and reports on its first offering.**

WHEN WE TEACH students how to undertake the complex act of design, we traditionally confront them with a virtual hydra of a design problem, then trot out the neatly segmented, sequential problem-solving model of analysis/synthesis/evaluation (or some facsimile), with most of us acknowledging that “it’s not really quite so linear and methodical . . .” In fact, this rational, linear problem-solving model dramatically oversimplifies and over-regularizes—even misrepresents—the way that designers actually address the ill-structured “wicked problem” of design (Dorst 2004). Indeed, design researchers from Schön to Lawson have suggested that the act of design is quite opportunistic, exploratory, emergent, ambiguous, and difficult (Cross 1999), beginning with a flash of insight or extra-rational idea based on an existing repertoire of reference designs (Gelernter 1988) and undertaken through “reflection in action” (Schön 1985). Rowe has described the design process as having “. . . a distinctly episodic structure which we might characterize as a series of related skirmishes with various aspects of the problem at hand” (1987), while Lawson sums up the design kit-and-kaboodle as “a moment of inspiration leading to a central or big idea combined with dogged determination and singlemindedness” (2006). Simply put, addressing that hydra of design isn’t simple at all.

In our design studios, we obviously strive to teach students how to design. But is the traditional method—throwing students into the intellectual maelstrom of a complex design problem—the best means to provide them the tools they need to tackle the “wicked problem”? The authors propose that an alternative model may prove useful: a teaching/learning strategy based on the skills, actions and perspectives that effective designers employ as identified by design researchers over the last 20+ years; a model that seeks

to methodically develop those skills in students before confronting them with a complex design problem, in order to give them both confidence and ability to tackle the “wicked problem”. Through this means we can help our students self-consciously develop what Cross has called “designerly ways of knowing and doing” (1982).

Based on their research the authors pose a studio model based on four key features of “designerly ways of knowing and doing”:

- Developing the design “mental storage cabinet” (Gelernter 1988);
- Learning to effectively “file” the storage cabinet contents in retrievable categories by recognizing the relationship between abstract idea and concrete form (Gelernter 1988, Cross 2004, Oxmann 1999);
- Developing the ability to link and transition between abstract idea and concrete form in the act of design (Cross 2004, Oxmann 1999);
- Learning to effectively deploy the cache of episodic knowledge within the mental filing cabinet (Lawson 2006, Oxmann 1999, Gelernter 1988, Darke 1979);

The model is further grounded in some fundamental educational strategies:

- Start where they are the students are, then build
- Sequentially develop awareness, then understanding, then ability
- Make the teaching/learning strategy transparent

This paper clarifies the premises of this approach, presents the resulting studio model, and briefly reports on its first offering.

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## IMPROVING STUDENT LEARNING AND ACHIEVEMENT: THE ROLE OF SELF-REGULATED LEARNING IN LANDSCAPE ARCHITECTURE STUDIOS

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**This study examines the relationship between self-regulated learning and problem-based learning in landscape architecture studios. The study sheds light on how students learn, engage, and self-regulate their learning in design studios and provides design educators with a basis for effective design teaching strategies.**

ONE OF THE central features of the landscape architecture studio and its primary teaching and learning vehicle is the design project. In *The Design Studio* (1985) and *Educating the Reflective Practitioner* (1987), Donald Schön contends that learning how to design involves learning how to solve complex, ill-structured problems, like those faced by professionals. Schön suggests that effective professional education should emphasize process over product; utilize real-world problems; embed problem solving in professional settings; and most importantly, encourage active participation and reflection.

Within the lexicon of education, Schön's characterization of design learning strongly resembles the pedagogic approach known as problem-based learning. While definitions vary, problem-based learning is most often defined as the learning that results from the process of working toward the understanding or resolution of a problem. Current research suggests that the effectiveness of a problem-based approach to teaching and learning can fluctuate based upon the degree to which a student meets a set of six learning conditions including: (1) active engagement, (2) social interaction, (3) knowledge synthesis and development, (4) multiple products, (5) authentic problems, and (6) project ownership. By meeting these conditions, problem-based learning is enhanced, thus improving student achievement and learning (Savery & Duffy, 1995).

One way for students to meet the conditions for effective problem-based learning is through the process of self-regulation. In education, self-regulation or self-regulated learning refers to the learning that occurs largely from a student's self-generated thoughts, feelings, strategies, and behaviors oriented toward the attainment of goals (Schunk & Zimmerman, 1998). A growing body of research suggests that self-regulation is a key factor in the

effectiveness of problem-based learning, and a characteristic that is common among expert problem-solvers. This paper uses the six conditions for effective problem-based learning as a framework for examining the role of student self-regulation in landscape architecture studios.

This study explores student learning in landscape architecture design studios in order to find out how self-regulation influences their learning and achievement. Two key questions guide this study: how do students self-regulate their learning and behavior in design studios, and how does self-regulation influence the six key components of problem-based learning? This study uses interviews with twenty-one landscape architecture students of different achievement levels to examine the relationship between self-regulated learning and problem-based learning in landscape architecture studios. The interviews were analyzed using content analysis and open-coding techniques.

Study findings indicate that a student's ability to self-regulate their learning and behavior is based upon his or her understanding of design as a complex set of behaviors and activities. The findings also indicate several key differences between high achieving and low achieving students in terms of their self-regulation. Together, the findings shed light on how students learn, engage, and self-regulate their learning in design studios while providing design educators with a basis for developing effective design teaching strategies.

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## MATRIX, PATCH AND CORRIDOR: EXPLORING THE MANIPULATION OF LANDSCAPE STRUCTURE AND FUNCTION THROUGH GAMES

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**Games are used as a pedagogic tool to facilitate the understanding and interpretation of landscape ecology principles for designing human spaces. These principles are applied to the design of paintball game fields with speculation about application to other spaces and to security design.**

THE STRUCTURAL CHARACTER of any given landscape can be defined by its specific matrix of patches and corridors. The functional aspects of these landscape structures are essential to successful conservation efforts and biodiversity protection. Relationships between the components directly affect landscape use by non-human species, including population size, genetic viability, and predator-prey balance. Landscape ecology principles are applied to urban planning, landscape conservation for biodiversity and landscape restoration. Connecting the design of human use landscapes with these principles is less clear. Do these same principles apply to the design of human spaces at the site level, and if so, how can they be used to inform the design process? Steps to achieving a reliable experiment include first identifying and interpreting landscape ecology principles applicable to human scale spaces and second, developing a format for predicting human use over time. Various games are explored as tools for achieving both steps.

Games have been shown to be an effective classroom heuristic tool and have a long history of application in strategic and tactical planning, sociology and economics. Games are “iconic descriptions of patterns in the world” (Koster, 2005) and would therefore appear to easily represent landscapes. As abstractions, games may be useful for identifying relationships between landscape pattern and use. Games are usually goal oriented and often predator-prey in concept, enabling a comparison between human and animal activities in a landscape. Games also tend to provide a clear set of rules delimiting player actions within a specified playing field for a given period of time. For landscape architecture, studying spatial planning through games may facilitate design evaluation; a series of sequential events can be tracked and decision making opportunities within an environment can be identified.

Finally, games can be selected or modified in such a way as to limit the range of probable actions to a manageable level for predictive purposes.

Within the context of a fourth-year recreation design studio, a series of simple games such as tag and checkers were employed to explore movement within relatively simple landscape structures. Game board landscape matrix modifications were proposed and analyzed to determine the impacts upon movement and playability. Boundaries, boundary form, corridor length, interconnections, patch size, patch distribution, and the interrelationship of these characteristics with the game rules were all studied. Based on class findings, these principles were applied to the design of paintball fields. Paintball was chosen because the predator-prey relationship is clearly established, making a reasonably direct application of natural landscape structure to human activity. It also tended to be a game that few students had previously participated in, making the exploration of game requirements a fresh endeavor. The potential for application of these exercises to other spaces and security design are discussed.

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## “A WHOLE LOT OF WORK PACKED INTO JUST ONE WEEK”: THE ROLE OF THE CHARRETTE IN DESIGN EDUCATION

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**The dynamic, interdisciplinary nature of the charrette format would seem to hold great potential for design education. This presentation will explore its role in design curriculums through student survey results and the authors' experiences with a department-wide charrette held in the spring of 2006.**

CHARRETTES HAVE BECOME an immensely popular tool for designers and planners. A French term, charrette literally means “cart” and refers to the feverish work done the moments before a project is to be submitted (or placed on the cart). Described as a “combination of a barn raising and New England town meeting (Lennertz and Lutzenhiser 2006 44),” the charrette format has been embraced by many for its dynamic studio environment, interdisciplinary nature and ability to promote quick, informed and collective decisions. While these characteristics have been used to great effect in the profession (by New Urbanists in particular) the format would also seem to hold great potential as a supplement to existing design curriculums. Potential benefits include the ability to explore contemporary issues and study topics that are not otherwise addressed in the program; charrettes also afford the opportunity for students to work extensively with guest educators and professionals outside of their institution, and they promote connections between students and professionals, classes and departments.

This presentation will explore the benefits of the charrette format through a chronicling of the authors' experiences in a design charrette held in the first full week of the Spring 2006 semester at Mississippi State University. The five-day Design Week charrette was conceived by the landscape architecture and planning firm Design Workshop, Inc. and the Landscape Architecture faculty of Mississippi State University as an opportunity for students to contribute to the recovery efforts following Hurricane Katrina. The charrette involved over 150 landscape architecture, architecture, engineering, business and natural resource students (from freshman to graduate students), three invited guest lecturers, approximately twenty faculty members, many staff of Design Workshop and a number of guest professionals and stake-

holders from the coast of Mississippi.

The effectiveness of the Design Week charrette will be examined through presentation of the results of a pre- and post-event survey of students and a post-charrette survey of faculty. The surveys included a series of Likert scaled and open-ended questions which were intended to evaluate perceptions of the project's value as an educational tool and its success in fostering interdisciplinary ties. Results of the study (and anecdotal evidence) indicate respondents' concurrence with the approach and educational objectives of the charrette while suggesting areas for improvement in the organization and format of the event. Suggestions for including a charrette in the design curriculum will be discussed in the context of the lessons learned (both positive and negative) from the project and survey.

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## EMBODIED KNOWLEDGE: RESEARCH STRATEGIES IN LANDSCAPE ARCHITECTURE

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**This panel presentation critically reviews the strategies used in research within the discipline and the criteria by which outcomes are peer reviewed. It proposes a preliminary typology of research designs for landscape architecture, and an agenda for knowledge validation.**

THERE IS INCREASING pressure to formalize the way we validate knowledge in our discipline. Universities and funding agencies demand metrics of performance and productivity that indicate the quantity and quality of research activity and dissemination, and are frequently ranked on this basis. PhD programs are expanding, and candidates and examiners require clarity and consistency of expectations for research methodology. Practitioners and clients increasingly seek a valid evidential knowledge base for design proposals and for public policy formation. Peer review is widely used in all these realms, but frequently begs the question, by what conceptual framework should new knowledge be validated? This question is neither new nor trivial. There have been intense debates in recent years as to the legitimacy or otherwise of different research paradigms, each of which carry their own pre-suppositions [Chenoweth 1992; McAvin 1992; Benson 1998]. However the tensions remain and if anything are intensified under the external pressures.

Part of this presentation critically reviews the research strategies that build knowledge in landscape architecture. It asks three questions: What strategies are available? What strategies do we tend to use? What strategies should we use to construct and enrich the knowledge base of our discipline? We briefly map the established terrain of published knowledge, identifying significant gaps as well as points of particular tension over legitimacy. Drawing upon a recent heuristic proposal to reconcile the seemingly incompatible traditions of objectivist science and subjectivist arts [Swaffield 2006], we then develop a typology of current and possible research strategies from which researchers can choose, and compare and contrast the criteria upon which the methods and outcomes may be evaluated.

We then turn to the politics of such evaluation. Practical resolution of

tensions over validation relies most heavily upon the judgment of journal editors, commissioning editors, and PhD committees. But how do these gatekeepers make the decisions that shape the discipline? What becomes legitimate and what is excluded? And what guidance is available for the new generation of aspiring scholars, whose task it will be to shape the discipline in years to come? We draw upon our own experience and other key informants to discuss these questions and to articulate goals and objectives for the validation of knowledge within our discipline, expressed as a set of principles that may be used to frame peer reviews. The intent of this agenda is to be inclusive rather than exclusive, and to achieve a greater measure of consistency in both the practice and logic of evaluation.

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## ASSESSMENT AND THE DESIGN STUDIO: AN INTRODUCTORY WORKSHOP ON CONCEPT MAPPING

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**This workshop uses findings from two recent studies of concept mapping completed by the workshop leaders as a basis for providing design instructors with the knowledge and skills to use concept mapping as a pedagogic tool for assessing teaching and learning in their landscape architecture studios.**

IN STUDIOS, THE predominate methods of assessing a student's design project are the desk and juried critiques. These critiques offer the opportunity to assess a student's product and/or process, but perhaps may not be indicative of what the student has really learned from a project. Therefore, supplementing critiques with assessment methods that evaluate a student's cognitive growth is an integral component in evaluating student learning. One promising supplemental technique for assessing student learning in design studios is concept mapping. Recent studies indicate that concept mapping is a valid assessment technique for evaluating cognitive growth in education, science, engineering, and the design disciplines (Ruiz-Primo et. al., 2001; Yin et. al., 2005). This workshop uses findings from two recent studies of concept mapping in landscape architecture studios as a basis for providing design instructors with the knowledge and skills to use concept mapping as a pedagogic tool for assessing teaching and learning in their studios.

Concept mapping is an assessment technique that documents the ability of students to organize and represent their understanding of a specific concept through the creation of a diagrammatic representation of knowledge. Recent studies suggest that concept mapping is particularly appropriate for design studios where project-based learning is common and students and faculty are familiar with creating and analyzing graphic representations. Concept maps are essentially tools for organizing and representing knowledge (Novak & Musonda, 1991). They are diagrammatic and hierarchical in their construction. Concept mapping begins with a central concept or a particular chosen domain of knowledge. This central concept, represented by one or two words, is usually enclosed within a circle or box and typically placed at the top or center of one's map. What follows is the placement of related

concepts below or around the central concept. Cross-links connect concepts and make propositions that show interrelationships between concepts. The result is a graphic representation of an individual's unique construction of knowledge. When combined with typical studio assessments such as juries, desk critiques, and pin-ups, concept maps provide instructors with another layer of evaluative data that they can use to see what their students have and have not learned. In addition, concept mapping allows a student's misunderstandings to emerge, indicating the need for instructional interventions or a reevaluation of teaching methods.

Workshop leaders will present essential concept mapping theory, basic procedures for utilizing concept maps in studio, and the benefits of using both qualitative and quantitative scoring techniques. In addition, workshop leaders will discuss the opportunities and limitations of concept mapping as an assessment methodology in design education. Design educators that participate in this workshop will learn more about concept maps and their many teaching and learning benefits. Participants will learn the procedures for using concept maps in their studios including basic instructions for collecting and analyzing data. The workshop will conclude with a discussion about the implications of concept mapping, including its capabilities for improving assessment in design studios.

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## THE HOUMA NATION IN BAYOU LOUISIANA: SOCIAL, CULTURAL, AND ECOLOGICAL FRAGMENTATION

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**The United Houma Nation of southeastern Louisiana has experienced social, cultural, and ecological fragmentation following hurricanes Katrina and Rita. This presentation provides an analysis and overview of recent changes to the Houma as current Mississippi River management proposals are surfacing; and design responses from landscape architecture students and faculty.**

BACKGROUND: UNRECOGNIZED BY THE federal government for reasons including the lack of a centralized community, the mixture of races inherent in the tribal population, and lack of a treaty with the United States of America at the time of the Louisiana Purchase; the Houma people have recently experienced dramatic changes to their landscape that threaten to further fragment the tribe. Land and water management decisions forwarded by industrial and political forces at the federal, state, and local level have caused much of the landscape disruption, and thus, the tribe's disruption. Faculty members and students at Iowa State University recently addressed the tribe's situation through research, planning, relief and design work.

Central Theme: This paper addresses issues of the marginalized and fragmented population of the United Houma Nation of southeastern Louisiana, the mechanisms that create and reinforce this marginalization, and the difficulties in planning and design in the dynamic landscapes of the Atchafalaya Basin. An overview of visible social, environmental, economic, and ecological change is answered through design intervention.

Causes and Expressions of Fragmentation: Environmental Change- Because of the management practices of the Corps of Engineers and local levee districts, natural processes of flood and deposition have damaged wetlands and caused subsidence of the landscape. The former settlement areas of the Houma Nation have subsided to the extent that they have been abandoned. The subsequent migration has caused fragmentation of traditional community centers.

Economic Change- The subsistence economic base of the region has shifted in the twentieth century to fisheries, boat-building, and now the gas and oil industry. Development patterns of the industry, and the necessary

flood control devices facilitating development, have impacted Houma settlement patterns. Current projects in Golden Meadow, including transportation and levee improvements, have left populations marginalized and susceptible to intensified flood events.

**Ecological Change-** The regulation of water flow in the area has caused the salinization of fresh water estuaries, a monoculture of Water Hyacinth and depletion and shifting of shellfish and fish populations. These ecological expressions are clearly expressed in the landscapes of Pointe de Chene where the culturally imposed landscape and water behavior has caused the demise of live oak groves and migration of shellfish populations.

**Social Change-** The Houma tribal government has identified current trends and issues in their community. At the forefront of those issues is the connection of their people to the landscape, and its resources, as it deteriorates with unsustainable management practices. The continued fragmentation of the population because of subsiding terrain, and the lack of strong connection to historic settlement patterns has made quantifying and organizing of members difficult; and may lead to the demise of the tribe.

#### Conclusions and Responses to Fragmentation:

Developing longitudinal research and curriculum addressing the many types of fragmentation of the Houma, faculty facilitated personal engagement with tribal members, narrative experiences, exploration of former settlements and landscapes of visible fragmentation and dissolution, and traditional culinary and cultural experiences. Design and relief responses address the multitude of complex relationships inherent in the people and the landscape.

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## ON COMMON GROUND: MODERN CONSERVATION STRATEGIES FOR 18TH CENTURY ESTATES IN SCOTLAND, ENGLAND, AND THE UNITED STATES

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**Country estates in Britain and the United States are searching for a balance of land use that works without sacrificing the evidence of the past and viability of the future for present day gains. This research explores historic preservation and natural conservation strategies that may help these estates endure.**

IN 18TH CENTURY England, country living was celebrated by writers like Stephen Switzer, who, in *Iconographica Rustica* (1718), proposed a way for mixing both the useful and pleasurable aspects of gardening. As a result, landscape designers such as William Shenstone and Capability Brown developed an expansive approach to landscape design, drew people out into the parkland, and cultivated an understanding and appreciation for the picturesque qualities of wilderness. In the American colonies, many plantation owners adopted this English principle of ‘in utile dulci,’ or ornamental farm, and developed designed landscapes in agricultural settings for both utility and delight. The farm and the garden seemed to work together in the cultivation of husbandry and decoration.

The 20th century conservation of these historic landscapes traditionally focused on formal, aesthetic, and cultural values, seeking to restore the visual landscape to its historic form at a minimal economic cost. In recent years, however, sustainability principles and changing farm policy have suggested a new rubric for land management and conservation. Driven by unrest due to declining farm incomes, overproduction, and failing subsidy measures, agricultural policy has been changing to promote new incentives to diversify farms. Biodiversity values of aging and under-managed landscapes, conservation of heritage assets, and a desire for a broader mix of recreation in the countryside have encouraged farm policy and landowners to embrace the economic, cultural, and environmental benefits of agri-environmental schemes.

This research examines how modern conservation strategies are being applied to 18th century country estates in Scotland, England, and America. Anchored by an overview of landscape design trends in the 18th century

and conservation policies in the 20th century, the research surveys the most pressing concerns facing British and American country estates today. Methodology for this research involved examining perceptions and attitudes among two diverse sample groups: men and women who manage agricultural policy or conservation programmes, and men and women who own or manage private country estates. Additionally, the research explored two related countries, comparing the impacts of changing motivations and policies on British estates with the parallel impacts on American estates. The research gathered primary data using both qualitative and quantitative methods, specifically personal interviews with research participants (including both estate owners and agricultural policy makers) and questionnaires completed by each participant following the interview.

Research conclusions have been developed into strategies for how historic estates can become successful models for natural and cultural balance in the rural landscape. The research reveals that conservation today can gain from adapting the balance of the 18th century utilitarian idea of “*utile dulci*”. An imbalance towards either profit (heavy farming) or pleasure (aesthetics at the expense of economy) can make an estate vulnerable and place it at risk. The conclusions prescribe principles for conservation that are grounded in 21st century ideals of sustainability but true to the 18th century heritage that is being conserved.

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## FERTILE GROUND FOR LANDSCAPE ARCHITECTURE? SUSTAINABLE AGRICULTURE AND COMMUNITY DESIGN

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**This paper explores the paradigm shift toward sustainable agriculture and the historical foundations of our profession for understanding the relationship of agriculture to community. Several contemporary models of sustainable agriculture are analyzed in relation to building community and a vision for the future that conserves/reintegrates productive farm and forest landscapes while reclaiming the town commons.**

THE INCREASING MECHANIZATION and consolidation of agriculture that escalated through the 1940's to the present has resulted in a great loss of rural communities with less than 2% of today's U.S. population being connected to food production in America. The current global agribusiness paradigm, wholly dependent on cheap energy and virtually free water, is being questioned by concerned scientists and policymakers, while a movement has emerged in sustainable community design that supports an integrated lifeway ethic sustained through optimal systems design of food production and alternative energy and materials cycling. (Mollison, 1997)

A perspective on several pivotal American design movements informed by the contributions of F.L. Olmstead and Jens Jensen who both had strong agricultural educations, and traditional agricultural landscapes yields practical lessons important to the planning and integration of community with agricultural environments today. Early American farm villages, are compared with early 20th-Century U.S. government-planned communities including Greendale, Wisconsin, and John Nolen's Penderlea, North Carolina. (Conkin, 1959) Characteristics and principles of several contemporary efforts that respond to/integrate sustainable agriculture and mitigate several of the shortcomings of earlier U.S. government-funded community design efforts are also examined. The goals of this on-going community-design research project are:

1. To examine the paradigm shift toward sustainable agriculture principles and their impact on community design and farmland preservation
2. To examine the site-planning and design-structure of a typical colonial farm community and several New Deal farm communities to reveal valuable lessons for contemporary sustainable community design.

3. To create a vision and strategies for re-integrating local agricultural and forestry pursuits in communities (especially those threatened by suburbanization) through adaptation of historic precedents. (Donahue, 1999)

4. To identify major sustainable agricultural models and their basic principles that landscape architects can use in reintegrating agriculture into community design and education of landscape architecture students (Ikerd, 2002)

In conclusion, this vision will require students to have a better understanding and use of sophisticated predictive models that consider energy input and output costs, transportation costs, and the structure, function, and location of integrated systems as defined by John Lyle; these models consider viable ecological, agricultural, socio-economic, and aesthetic goals in planning sustainable communities (Lyle, 1999). In an ongoing research effort, students are investigating viable, sustainable farming models while applying this more holistic template in the design studio.

Sustainable large-scale agricultural grain-production system is addressed through an appropriate system of permaculture developed at the Land Institute (a research and demonstration center), which has shifted demonstration fields from monocultured annual grains (like wheat) to inter-mixed (polycultured) perennial grains, a production scheme that strives to mimic multi-storied, multi-dimensional, biodiverse, regenerative, and highly productive prairie ecosystems. (Jackson, 1994)

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## THE IBA EMSCHER PARK: STRATEGIES FOR ENVIRONMENTAL AND ECONOMIC RECOVERY IN GERMANY'S RUST BELT

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**This paper is a critical evaluation of the IBA Emscher Park in Germany through an examination of the planning and design strategies for revitalizing an economically and environmentally devastated region. The innovative strategies employed are presented as relevant for change and development in other regions suffering post-industrial abandonment.**

THE OCCASIONAL LANDSCAPE architectural project takes on ideological importance well beyond the scope of its physical importance. The Duisburg-Nord Landscape Park is a contemporary project that has engendered such excitement and discourse in the design disciplines. The park restores ecological health to a landscape devastated by coal mining and steel production and economic health to a region devastated by the closing of these industries. As such, it is an exemplary project worthy of the importance it has been awarded. What is not as well known about Duisburg-Nord Landscape Park is that it is part of a comprehensive plan to restore economic, cultural and environmental vitality to a depressed industrial region.

This paper focuses on three major aspects of the IBA (International Building Exhibition) Initiative—structural change, economic strategies, and historical narrative—and suggests how this approach might be applicable in other post-industrial regions. The IBA Initiative, a ten-year plan (1989-1999) and implementation of design aimed at socio-economic growth and environmental recovery in Germany's rust belt, established a program for “structural change” of the Emscher valley at the regional scale. Structural change includes creating new employment opportunities, renewing ecological health to the region, encouraging innovative cultural and social activities, balancing economic and ecological restoration, and providing additional housing. Resources were equitably distributed throughout an 800 square kilometer region. Former mining lands were restored to ecological function and integrated into a regional recreational corridor that highlights the narrative of industrial heritage. The 17 towns form an inter-connected metropolis known as the IBA Emscher Park.

The IBA Emscher Park is presented as a case study for design strategies

that might be used in other degraded and abandoned industrial landscapes. Architectural and planning principles employed will be evaluated in terms of effectiveness at reaching stated goals of re-use of existing industrial buildings and infrastructure for social and cultural uses, as well as contributing to the narrative of the industrial heritage of the region. Ecological principles employed will be evaluated in terms of effectiveness at renewing ecological health to the River Emscher, re-utilizing brownfield sites and integrating previously undeveloped land. Innovative planning identified significant structures, possible new uses, and relationships between towns, and implemented economic strategies for “change without growth” (Sasayama, 2000). Economic principles employed will be evaluated in terms of effectiveness at creating new employment opportunities through partnership-oriented public works. The broad thinking and innovative strategies used in the IBA Emscher Park are relevant to change and development in industrial areas around the world if they are understood within their particular context. The IBA Initiatives’ effectiveness at creating the economic benefits of jobs and tourism, new uses for abandoned buildings, extensive environmental clean-up, and providing new cultural and recreational opportunities makes it a relevant precedent for similar situations.

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## BROWNSCAPE REDEVELOPMENT: APPLYING KNOWLEDGE OF URBAN CORRIDORS TO PLANNING AND DESIGN

K.M. FORD

**Contemporary brownfields policy focuses on the economic side of the redevelopment equation, while de-emphasizing underlying ecological systems and human use patterns. More responsive planning and design interventions are necessary for sites that are concentrated within a larger corridor system.**

BROWNFIELDS ARE ABANDONED or underutilized sites that contain some degree of real or perceived contamination. Rather than posing a serious human health or environmental threat, the key concern regarding brownfield properties is the persistence of vacancy and neglect arising from the presumed contamination. But not all brownfields face the same conditions. Some brownfields, like abandoned gas stations, are scattered throughout the landscape. Others are concentrated in industrialized river and rail corridors as part of a brownscape. Brownfields policy of the last decade has favored the economic needs of the development community in addressing redevelopment on a particular isolated site over the clean up of contamination and long-term environmental sustainability on a larger scale. These policies were designed to promote the infusion of private development dollars to individual sites, often at the expense of cleanup of contamination and the overall ecological and social functioning of the larger brownscape. Critics have described this scenario as ‘environmental apartheid’ where cities or areas of a city with a disproportionate share of brownfields are subjected to a permanent loosening of environmental standards.

In this study, I review research on natural corridors in the landscape as the starting point for addressing these overlooked concerns. This information becomes the basis for answering the question: How can the unique conditions associated with the brownscape be addressed through corridor-based planning and design interventions? Literature from landscape urbanism and the associated fields of urban ecology, landscape ecology and cultural geography will be used as the theoretical basis for the study. In addition, the planning and design strategies employed in the Emscher District in Duisburg, Germany will be assessed for their ability to address the concerns of brown-

fields corridors.

Preliminary analysis of the literature reveals that a corridor-based approach to redevelopment will stress the integration of large and small scale interventions that seek to restore ecological processes and cultural patterns. Examples of strategies representing these objectives include site-specific design solutions that address the infiltration of stormwater and ecologically-based remediation of contamination, as well as large-scale interventions, including land use allocation decisions. By allowing these interventions to serve as the framework through which planning decisions are made, the landscape becomes the basis for future economic development of the corridor.

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## DESIGN AS CRITICAL INQUIRY: THE RESTORATION OF BRANCUSI'S MEMORIAL ENSEMBLE AT TARGU-JIU

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**How can memorials retain their original meaning after those affected by the event are gone and the physical context has changed? A critical inquiry into the recent restoration of Constantin Brancusi's 65 year old Targu-Jiu memorial suggests elements that can contribute to the continuity of meaning.**

THE PROCESS OF analysis and design can be viewed as an act of critical inquiry within the profession that, not only informs the current work, but all subsequent design efforts (McAvin et al. 1991, 155-161). The results of these inquiries can be especially beneficial to specific project typologies that evoke strong cultural meanings.

Of all built work, memorials contain some of the strongest cultural significance to a society. Whether personal, vernacular responses or commissioned, civic gestures, memorials are designed to continue the meaning of an event beyond a typical societal timeframe, reminding and instructing viewers of the significance of a past event in a particular location (Spirn 1998, 47-62).

Over time a society's cultural responses can change. How do memorials retain their meaning after those affected by the event are gone and the physical landscape has changed? How do memorials integrated within an urban fabric resist or adapt to changes in their physical context? Is there a point where a memorial loses the connection to its precipitating event and transforms into merely a contextual landscape element?

The recent restoration of Constantin Brancusi's memorial ensemble in Targu-Jiu, Romania offers a unique opportunity to investigate these issues through critical inquiry. The memorial, commissioned in the late 1930's, honors Romanian soldiers that died repulsing a German invasion at Targu-Jiu in World War I. The memorial includes three major sculptural pieces, the Table of Silence, the Gate of the Kiss, and the Endless Column, but it is the sequential organization that is the critical design element. Beginning at the Jiu River, the sculptures are carefully placed along a mile-long axis that presents a narrative of death, love, and ultimately, infinity (Faerna, 1997 48-54).

This magnificent work is Brancusi's only public sculpture and stands as

one of the great achievements of modern art. After more than 60 years the town has adapted his sculptural sequence into an urban organizational element. Physical, political, and cultural changes have obscured or diluted the original meanings.

The paper will begin with an overview of the meaning and process of critical inquiry within the profession and follow with a discussion of the role of memorials and “anti-memorials” in society. It will then examine the basis of the original Brancusi design and its relationship to the physical context.

The paper will then explore the restoration process in detail including:

- Interaction of the sacred and profane throughout an urban condition
- Memorial as public space and long-term planning to retain its context
- Design by “editing” to restore hidden artistic intent

Can one design for the future effects of cultural and physical change?

For objects that are focused on remembrance this is an interesting question for critical inquiry. The paper will conclude that the restoration of Brancusi’s complex provides suggestions about the nature of designed elements that contribute to the continuity of meaning. These observations will be reviewed against other case studies. The author hopes this can inform the discussion of memorials and the act of remembrance in the public realm.

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## RETHINKING A POST-INDUSTRIAL FUTURE: THE ROLE OF LANDSCAPE IN REVITALIZING SOUTHWEST VIRGINIA MANUFACTURING TOWNS

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**This paper describes potential for natural and cultural landscapes to impact revitalization strategies in manufacturing towns that are in economic decline.**

MANY OF SOUTHWEST Virginia's small manufacturing towns share commonalities in landscape character, settlement history, and concern for the viability of their local economies in a post-industrial era. Historically the terrain of the region limited urban settlement to the narrow valleys and lower slopes of mountain ranges, while industry demanded proximity to a watercourse. The small towns that grew out of these conditions typically boast a consolidated, imageable urban fabric, a well-developed, accessible transportation infrastructure aligned along a river or stream corridor, and an immediate visual relationship with the mountainous landscape beyond.

In recent years many of the manufacturing industries that fuelled local economies have migrated to offshore labor markets, leaving behind vacant storefronts, high rates of unemployment, deteriorating infrastructure, and uncertainty about the future. It is clear that new strategies are needed to revitalize these towns; most have already cycled through one or more unsuccessful economic revitalization scenarios. Decisions on these strategies have typically been based on assessments of resources such as regional markets, the local labor force, building stock, transportation and utility infrastructure. Urban landscape is not perceived as a critical building block of the post-industrial economy; its role is relegated to cosmetic streetscape improvements and façade facelifts that address the symptoms of economic atrophy, rather than the causes.

Using a case study approach, this paper examines several southwest Virginia manufacturing towns to consider how the natural and cultural landscape can be instrumental in key economic revitalization strategies such as reconceiving the resource base, forging regional relationships, and reconnecting with natural infrastructure. It regards landscape as an active agent, with

potential to engage ecological, cultural, and economic change. This definition presumes that the urban landscape encompasses both the natural structure of landform, watercourses, and vegetation, and the infrastructure of streets and public spaces that support social and economic activity and embody the public face of a community. The study reveals potential for urban landscape to be a critical component in providing spatial supports for the development of alternative, sustainable local economic resources, such as culture, education, and recreation, as well as regional cultural and recreational networks. The paper also concludes that natural and cultural landscape infrastructure can be a key contributor to and indicator of quality of life, a salient factor in attracting and retaining economic investment in small towns.

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## SPACE RACE: HOW RAPID POPULATION GROWTH AND RENEWABLE ENERGY RESOURCES ARE BATTLING TO RESTRUCTURE THE AMERICAN LANDSCAPE

JASON KENTNER

**This paper explores the implications of population growth and demands for renewable energy resources on the formation of attitudes about and approaches to landscape. Comparative data from economic, ecological, demographic, and sociological sources are utilized to speculate about how the role of landscape is being and will be restructured in the face of rapid growth and depleted resources.**

IN 1967 AS the U.S. population eclipsed 200 million people, we were getting our first complete images of earth from space. In his award winning film *An Inconvenient Truth*, Al Gore suggests that it was those first images of our planet that changed the perspective many had of our place in nature and sparked the modern environmental movement. Just thirty-nine years later, in October of 2006 the population passed another milestone – eclipsing 300 million people. But what new perspective did this event provide? In the days and weeks surrounding the landmark occasion large amounts of media attention were paid to how different our lives are today from back in 1967; life expectancy had increased by 7.3 years to 77.8 years of age, the number of registered vehicles went from just under 100 million to more than 230 million vehicles, and most poignantly and politically the price of a gallon of gas had gone from 33¢ to \$2.42. But how had these changes impacted our lives and how would the trends they suggest shape our future? This paper looks at the current and future condition of landscape to provide a focused perspective about how issues of population growth and renewable energy production will significantly restructure the way we think about land-use and view the landscape as a resource.

While much of our current land-use policy was born out of a desire to conserve the native landscape and protect ecological function, the present state of growth is such that development demands, motivated by population shifts and changing economies, have out-paced much of policy's ability to effectively structure growth. Presently those development demands are consuming land at a rate of 48 acres per hour and projections speculate that on average an additional 1.2 acres of land will be developed for each child born in the United States. In response to this condition, growth policies such as

Smart Growth and development models like New Urbanism and Transit Oriented Development have been advocated for as alternatives; suggesting that conservation and urban growth can co-exist. However, these strategies have done little to curb growth on a significant scale or offer alternative perspectives on the role of landscape. If wider scale change is to be stimulated than landscape strategies must be considered that can work within established social, political, economic, and ecological trends. By studying the formation of our contemporary landscape this paper reveals the potential of a landscape that is defying traditional definitions of being city or suburb, functional or aesthetic, livable or productive.

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## ADAPTING THE COHOUSING CONCEPT TO THE URBAN ENVIRONMENT FOR USE IN COMMUNITY REVITALIZATION

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**This paper explores the potential for the use of the traditionally rural Cohousing concept in the revitalization of inner city, deteriorating communities. It combines Cohousing concepts with the urban theories and concepts of CPTED (Crowe 1991) and Design in Familiar Places (Brower 1988) and determines the required adaptations.**

THE DECLINE OF American cities represents a horrific waste of land, infrastructure and urban resources. According to the Maryland Office of Planning, Baltimore City's population declined by over 18% from 1970 to 1990. The USA Today (2001) reported the decline continued from 1990 to 200 and included Philadelphia, Detroit and Milwaukee.

In 1961 Jane Jacobs noted that failed and misguided urban renewal programs have plagued urban revitalization efforts for decades. This sentiment is echoed decades later in 1998 by Preservation Magazine, along with the need for a coherent and supportive physical framework. A report on urban revitalization strategies by the Johns Hopkins University emphasizes the importance of strong neighborhoods to revitalization efforts.

The community is a complex entity that includes housing, commercial/business activity, transportation, public spaces and civic facilities and activities. Furthermore, this complexity represents a relationship between the built environment and the people who live, work and play in that environment. Efforts to restore the community must recognize these complexities in attempting to develop an effective approach to community revitalization that is realistic and sustainable.

The Cohousing Concept is an approach to residential community design that emphasizes the development of a vital, active community and the active participation of residents in the design, development and operation of the community. It also emphasizes the design and development of a community with a physical form that supports social interaction and economic viability.

Traditionally, the Cohousing concept has been applied to new construction in primarily rural situations. A few urban communities exist or are planned and a few still involve renovation of existing buildings. However,

Cohousing offers interesting opportunities to revitalize entire neighborhoods as well. These opportunities will require careful adaptation to the urban environment and interpretation of its social and economic values. The ways in which the values of the Cohousing concept could be expressed in the urban environment requires research into the complexities of the urban community and a re-ordering of the Cohousing concept's methods and techniques for the design of the physical form.

This study investigates the potential for the use of the Cohousing concept as a model for urban community revitalization. This is accomplished by comparing and contrasting the underlying values and physical elements of the Cohousing concept with those of Sidney Brower (*Design in Familiar Places*, 1988) and Timothy Crowe (*Crime Prevention Through Environmental Design*, 1991). These authors provide the research necessary to understand the physical and social order of urban neighborhoods. They also provide guidelines that can help reorder Cohousing's traditional physical arrangement to fit the urban social and physical environment.

Landscape Architects are uniquely situated to become the leaders in the revitalization of urban communities. They are professionals with a broad-base of knowledge of both the physical environment and an understanding of the relationship between that environment and the behaviors and values of its user. The adaptation of the Cohousing concept to the urban environment provides the profession with a new and unique approach to combating the decline of our urban communities.

Key Words: Cohousing, Urban, Community, Revitalization

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## THE FALLACY OF COMMUNITY IN NEW URBANIST DISCOURSE: THE CASE OF BILOXI

MICHAEL RIOS, PH.D

**New Urbanism has been described as a neo-traditional ideology and approach to design. However, little consideration has been given to New Urbanism as a contemporary social movement. This paper presents an empirical case of Biloxi to exposes the fallacy of community in New Urbanist discourse despite the movement's success.**

NEW URBANISM HAS been described as both a design ideology and neo-traditional approach to town planning and urban design. However, little consideration has been given to New Urbanism as a social movement. Conceptually some of the consistent themes in social movements include mobilization of individuals and organizations, a set of core beliefs and values that challenge some element of the existing social structure (political, economic, cultural, etc.), and change-oriented goals. At the most fundamental level, social movements are defined as mobilized efforts to pursue changes in society. For the Congress for New Urbanism (CNU), the organizational arm of the movement, this includes mobilizing different professional and industry interests across sectors and regions, a shared identity that aims to address the ills of suburban landscapes and automobile-dominated environments, and identifying targets of opportunity in policy and regulatory arenas. A key to the movement's success has been its ability to frame issues across different scales ranging from federal policy to neighborhood form. While the CNU has clearly demonstrated success and has entered into the public's consciousness, there are several paradoxes that expose weaknesses in the movement. One area that has received criticism is the concept of community. This includes a critique of New Urbanism and its emphasis of community form over community process; the use of a communitarian imagery as a strategy of spatial exclusion; and the privileging of cultural and class elites. However, while philosophically cogent arguments have been made; past criticism has failed to offer much empirical evidence. As a response, this paper presents an empirical case of Biloxi, a city located on the Mississippi Gulf Coast, to exposes the fallacy of community in New Urbanist discourse. Using data from archival documents and key informant interviews, content analysis is

used to answer the question, how do planning and design discourses shape definitions of community revitalization and reconstruction in post-disaster cities such as Biloxi? From a social scientific perspective, the paper substantiates the claim that community in New Urbanist discourse is a problematic concept and ultimately rests on some sort of exclusion. Thus, community becomes a code word for real estate speculation and gentrification, not cultural and socio-economic diversity. Demographic data are used as further evidence to paint a different picture of community in East Biloxi, a section of the city that has experienced the most damage from Hurricane Katrina. In East Biloxi, the social landscape is defined by economic hardship, poverty, and discrimination as this low-income African American and Vietnamese neighborhood struggles to rebuild itself while increasing pressure mounts to re-imagine the neighborhood as a regional gambling and condominium destination. Returning to the discussion of social movements, the paper concludes that the CNU will lose its grip of the public's imagination unless it re-engineers itself to reflect the realities of a plural society and increasingly diverse public.

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**This paper examines the issues of resistance and resiliency to disaster events that occur with increasing frequency and intensity along the southern coast of the Gulf of Mexico in the United States.**

## RESILIENT FUTURES: THE POTENTIAL OF HUMAN AGENCY IN THE AGE OF ECOLOGICS

MICHAEL ROBINSON, ASLA

FROST ROLLINS

HURRICANE KATRINA DEALT the Gulf Coast a devastating blow as it whirled across Louisiana, Mississippi, and Alabama's barrier islands and coastal plains. The major trajectory of recovery and reconstruction efforts in these disaster areas has been focused on emergency responses to temporary housing, clean-up, restoration of damaged infrastructure, and functional replacement of lost physical capital. (Hass, 1977) As recovery and reconstruction progresses, "property owners and local officials often make decisions to rebuild homes, businesses, and public facilities in the same style, place, and design as the originals... These early decisions can foreclose many opportunities to reshape the patterns of development in a community so as to make it better and safer by reducing vulnerability to future disasters. (Schwab, 1998, 7)

One of the opportunities missed in the current post-Katrina reconstruction efforts has been the strategic deployment of our growing capacities to build high-performance buildings, develop low impact and low maintenance landscapes, integrate off-grid sustainable energy resources, and utilize renewable fuels. Lawrence Vale and Thomas Campanella, in their recent book on resilient cities suggests that "even though particular urban patterns and building practices are often deeply implicated in the causes of destruction, we often perceive of these calamities to result from non-human agency." (Vale and Campanella, 2005, 8)

The paper will illustrate examples of off-grid energy production from solar, wind, tidal, and wave sources; rainwater harvesting; and sewage treatment and potable water production through "living machine" technologies. The green practices can help communities adapt their current settlement patterns and building practices in order to create greater environmental security and sustainability. This distributive approach to the development of essential

infrastructure could turn potentially disastrous conditions into more survivable situations. These sustainable practices would create fewer disaster refugees, disrupting less social capital, than mass migration; maintain essential services on a distributive basis after disaster events; and continue the city as a place of inhabitation while emergency response, recovery, and reconstruction activities continue.

To date, little attention has been given to these issues. But, a new horizon is emerging along the Gulf Coast, and it is focusing on more than community stabilization. Issues of environmental security and the sustainable performance of buildings and sites are inevitably coming to the forefront. As Vale and Campanella conclude, “in most cases, even substantial destruction has not led to visionary new plans aimed at correcting long-endured deficiencies or limiting the risk of future destruction in the event of a recurrence. The post-disaster era typically inherits the institutional structure and planning practices of the pre-disaster establishment. (Vale and Campanella, 2005, 345)

In the book *Collapse*, author Jared Diamond explores the delicate relationship between human settlement and environmental conditions. Diamond states that the fragility (susceptibility to damage) of the built environment or its resilience (potential for recovery from damage), along with the society’s response to environmental threats, ultimately determines its triumph or failure. He believes that a society chooses to fail or succeed. (Diamond, 2005) Little more than a year after Katrina, we see that Gulf coastal communities are following an inevitable path to recovery. They seem to be seeking the “old normalcy” of pre-disaster economic conditions. Are they choosing a strategy for future success or failure in the face of increasing environmental hazards?

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## HIDDEN WASTELANDS: CULTURAL MEANING IN CONTEMPORARY LANDFILL RECLAMATION

L.K. SMITH

**This paper examines the cultural significance of urban landfills through a case study analysis of landfill park design. The presentation focuses on contemporary design strategies and outlines a conceptual approach towards landfill sites, rooted in landfill process and public participation.**

BACKGROUND WHAT IS the significance of landfills in the urban landscape? Should they be restored into vast nature reserves or revealed through inquiry and art? This paper examines contemporary design strategies in urban landfill reclamation, within the larger context of park design theory. The concept of civic infrastructure provides inspiration and context for understanding an emerging approach towards landfill parks (Morrish, 1993). Growing numbers of landscape architects are engaged in landfill reclamation, creating dynamic spaces which serve as hubs for recreation, displays of public art, wildlife habitat, and scientific research. Through a better understanding of how landfill parks have evolved, design professionals will be better poised to address these sites in more culturally-significant ways. Three conceptual themes guide the analysis of landfill meaning: social function (the site's civic purpose), content (the physical matter comprising the site), and process (what occurs on or within the site). These themes provide an opportunity to connect future visitors with the unseen, hidden potential of landfills, both through symbolic and informative gestures. Diagrams and photographs illustrate how these concepts operate on multiple scales of interaction. Research Question Given the trend towards reclaiming solid waste landfills as open space parks, what types of design strategies make visible the cultural meanings of landfills, and what is the opportunity for application of such strategies in the design of a San Francisco Bay Area landfill park? Methodology Three case studies are analyzed: Hargreaves Associates' design of Byxbee Park, Mira Engler's conceptual proposal for Hiriya Refuse Mountain, and Mathur/da Cunha + Tom Leader Studio's proposal for Fresh Kills Landfill. Together these three designs span two decades of critical inquiry and innovation in landfill reclamation, thus reflecting the trajectory of contemporary

landfill park design. The case studies are synthesized and applied in a series of schematic designs for The Albany Bulb, a former landfill on the San Francisco Bay. This presentation will emphasize a conceptual approach towards landfill sites, which draws on a deeper cultural perspective of waste in the landscape. Findings Contemporary landfill reclamation practice contradicts old assumptions about waste and its role in the natural and cultural environment. It also suggests the changing role of the public park, progressing from an aesthetic ideal towards a more dynamic, participatory setting. This newly-emerging paradigm of the landfill park holds great promise for the urban landscape, both as a way of challenging cultural norms, as well as its potential to elicit artistic and scientific inquiry. Ultimately, the landfill park should be envisioned as a dialectical space, prompting meaningful dialogue about waste and consumption in the landscape. As the recent history of the Albany Bulb Landfill illustrates, artists and community activists can offer a novel perspective of landfill sites. Such creative vision will define the future of landfill reclamation. In the end, it is the role of design professionals to foster innovation through experimental and collaborative work. In doing so, landfill parks can become places which engage and enrich the urban landscape.

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## DIGITAL PULP: TOWER AUTOMOTIVE SITE, MILWAUKEE, WI

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**Landscape driven strategies that employ an industrial ecological framework permit the transformation of the Tower Automotive Site in Milwaukee, Wisconsin as a post-industrial territory into a viable urban amenity; paper industry waste streams then become materials that recast landscape processes as an operational index for a new eco-industrial park.**

THE SHIFT OF industrial sectors from concentrated urban centers to either outlying suburban areas or international labor markets has resulted in abandoned manufacturing zones and seldom utilized, if not decommissioned, infrastructural corridors. The resultant voids, both physically and economically, contribute to community fragmentation and social depression, as the neighborhoods adjacent to these zones witness the evacuation of jobs and the vacancy of large sectors of built fabric.

The reassimilation of these post-industrial sites remains challenged by the increasing dissolution of urban environments, the site's large scale, and the reluctance of investors to assume the clean-up costs often associated with the previous industrial activity. Eschewing singular, architectural based solutions, landscape driven strategies- which are able to confront large territories and prolonged time schedules- have arisen to provide development with both a model and a medium by which to initiate clean-up; shift perception from one of decay to one of potential; suggest provisional programs that inject social and economic stimuli; and redirect the site's role within its given community.

Located along Milwaukee's 30th Street Industrial Corridor, Tower Automotive's 148 acre site provides a useful case study for how landscape could be employed as an effective development agent for industrial zones stripped of capital and labor by global outsourcing. The site, bisected by a rail line, is one of 60 facilities on four continents dedicated to the manufacture and supply of automotive parts and structural subassemblies. The company's decision to transfer the production of lower body frames for Dodge Ram and Ford Ranger to its Mexican subsidiary has been preceded by a steady decline in employment and occupation. Surrounded by a dense residential fabric that

is home to a predominate lower middle class African-American community, the site has decreased in value, due to unknown levels of toxicity and Tower Automotive's wish to sell the site without obligation for clean-up costs.

An industrial ecological framework was devised as a means of remediating the site and implementing programs that provide revenue, employment, and community recreational space. Two factors are critical to the scenario: Wisconsin is the nation's largest paper producing state; and the increased proliferation of digital information requires an ever-expanding need for paper based document storage and destruction. Tapping into the byproducts of the paper industry, and directing waste stream loops as agents for remediation enabled waste products from the paper industry to serve as raw materials for the post-industrial transformation of the Tower Automotive Site. The coordination of these agents on site permitted landscape processes to be recast as an operational index for a new eco-industrial park.

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## NEW URBANIST COMMUNITIES, WHERE IS THE POPULATION DENSITY? WHERE IS THE OPEN SPACE?

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**This study measured the environmental consequences of new urbanism and comparing the results with traditional suburban development. Using field investigations, satellite imagery for land cover and impervious surfaces as well as census data, key new urbanist developments such as I'On and the Kentlands were evaluated for their consequences to sprawl.**

SPRAWL HAS BEEN identified as a process where the development spread outpaces population growth. It results in low density suburbs. New urbanism has been seen as an answer for sprawl. It has been promoted to offer solutions to the problems that plague our expanding suburban development – traffic congestion, leaping frogging developments, environmental degradation, and isolated communities. New urbanists have resurrected some old, well-tested principles of town planning and architectural design to address the issues of sprawl. However, do they really address those issues? New urbanism has been touted as a more environmentally sustainable form of development than conventional low-density sprawl. It stresses higher density alternative to traditional suburban developments. The objective of the study was to measure the environmental consequences of new urbanism and comparing the results with traditional suburban development. Using field investigations, satellite imagery for land cover and impervious surfaces as well as census data, key new urbanist developments such as I'On and the Kentlands were evaluated for their consequences to sprawl. The primary research questions are: 1) Are new urbanist developments affordable for families? 2) Are there a greater percentage of impervious surfaces in new urbanist developments than traditional subdivisions? 3) Do new urbanist communities work with drainage patterns and the environment to protect biodiversity? The findings indicate that new urban development practices result in significantly higher housing cost than adjacent suburban developments. The family sizes are smaller than the surrounding developments. New urban developments are more likely to have less impervious surface per housing unit, but lower population density because of the smaller family size. The result is a less population in the new urbanist communities than the adjacent traditional

suburban developments. The study offers new a measure of sprawl based on population density and green space.

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## NEIGHBORHOOD LIFE IN A SOUTHERN CITY: MEASURES OF URBAN FORM AND QUALITY OF LIFE

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M. AKERS, PH.D.

**Drawing from various urban theories, this paper examines relationships between urban form and quality of life issues at different scales (i.e., block, street, district, city). Using Athens, Georgia, as a case study, data was collected through a telephone survey, field assessment, census information and from a GIS data set.**

WHAT IS QUALITY of life? Urbanists often single out specific constructs to describe what people consider as factors of the “good life”. For example, Jane Jacobs emphasizes neighborhood diversity (i.e., mixed uses, age of buildings) while Jacobs and Appleyard address cultural spaces for people to meet and interact. Kevin Lynch’s perspective of good city life lies in the characteristics of districts. More recent urbanists examine quantifiable measures of urban form such as Talen’s notion of access, Brower’s concepts of physical ambiance and engagement, and Ewing’s measures of non-sprawl (Talen, 2003; Brower, 1996; Ewing, et.al., n.d.). Other features like walkability, natural settings, and place attachment are factors associated with quality neighborhoods as well. Many of these perspectives, however, have used large metropolitan cities as the bases for their ideas. Furthermore, these studies have restricted their scope to one particular scale, either at the metropolitan level, district, or residential block and have not comprehensively considered how these scales are connected in one study.

Drawing from various perspectives of urban life, this paper demonstrates the importance of studying urban form and quality of life issues at different scales (i.e., block, street, district, city). Using a medium-sized city, Athens, Georgia, as a case study, the paper provides an analytical framework for environmental design researchers interested in linking physical form and quality of life issues. Data was collected through a telephone survey of more than 300 residents, field assessments of their block and street, census information and the city’s GIS data set. The quality of life measures were, among many, a place attachment index, preferences for neighborhood features, neighborhood engagement, income diversity in their census tract, housing characteristics, and economic stability. In addition, urban form was measured

using GIS data that calculated neighborhood density, distance to the nearest public park, street connectivity in a half-mile radius from their homes, link-node ratio within this district, and distance to a public transit stop. Statistical analyses were then conducted to find significant correlations among these variables.

The study reveals that a comprehensive approach to examining urban form and quality of life is needed for designers, planners and policy makers to make decisions about urban environments. Successful and livable cities are places that give high regard to quality of life issues. The framework resulting from this study provides cities with methodologies that capture how residents assess their neighborhood settings.

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## READING THE CONTESTED TOPOS: A BALTIMORE CASE STUDY

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**The evaluation of Baltimore's contested topos, both qualitatively and quantitatively, can yield 'valued' landscapes with high visual quality (perception), strong development potential (conception), and higher standards of livability (social and economic quality). Through visual and physical recording, layering, and analysis, the ambiguous urban landscape is redefined.**

THIS PAPER PRESENTS a methodology that visually and physically records, layers, and analyzes ambiguous landscape spatial networks within an underserved urban community test site. These are spaces of the contested topos within the city of Baltimore, Maryland (Olwig 2001). In particular, the strength of spatial integration (street, housing unit, rear yard) that was part of the original Baltimore urban rowhouse neighborhood landscape structure has disintegrated causing numerous landscape contradictions in perception, conception, and livability (Lefebvre 1991). Lack of perceptual spatial networks and integration of these networks yields a devalued landscape that is poorly defined and confused.

As a case study, Baltimore's east side has undergone significant depopulation and urban decay of the spatial network through active (structural razing) and passive (boarding-up) attrition over the past fifty years. This has resulted in an ever-increasing dead and/or absent spatial network. Tuan (1971) asserts that livability requires the reconstitution and redevelopment of these spaces to accommodate the human need for privileged location and boundaries. To this end, spatial networking methods, as a means of urban landscape stewardship, are necessary to prevent further inappropriate patching, filling, and destruction of the remaining spatial structure. Through the use of historic mapping, study of existing conditions, and the proposition of future redevelopment strategies, this study illustrates the need for a spatially integrated approach to reorganizing the shrinking urban environment.

Baltimore's inner-city neighborhoods in transition need a resurgence of spatial systems and order to revitalize spatial clarity (or classical structure) as a basis of community physical reorganization and visual strength. The urban rowhouse environment can thus be methodologically analyzed through a

layered schemata set:

1. the horizontal topos (e.g., yards, sidewalks, building fenestration, streets, curbs, tree pits, and block structure) (Tuan 1971),
2. the vertical topos (e.g., rowhouse stoops, facades, trees, sky) (Tuan 1971) and,
3. the polyscopic topos (e.g., traces of time, teleology, sky) (Lefebvre 1991).

It is important to note that this methodology is not a post-occupation survey; rather, it correlates the perception of existing neighborhood articulation with an analysis of overall spatial cohesion. This paper presents the argument that the redevelopment/reorganization of cities through identifying and plying various levels of spatial perception, conception, and livability result in a stronger role for the landscape as part of a systematic contextual theory. Interaction between form, space, and landscape culture takes shape as Hillier's seminal Spatial Syntax Theory (1984) is adapted and levied against the evolving spatial environment of the inner-city neighborhood context.

The evaluation of the contested topos, both qualitatively and quantitatively, can yield 'valued' landscapes with high visual quality/perception, strong development potential/conception, and higher standards of livability/social and economic quality.

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## FROM RUINS TO A NEW HORIZON: THE CASE OF HAI-AN ROAD

CHI-YING YU

PO-CHING WANG

**The story of Hai-Ann Road offers a critique of modernization and an example of the possibilities of postmodern discourses on urban development, landscape design, and aesthetic education. The case is examined within the framework of sense of space, place, and homeland attachment.**

THE STORY OF Hai-Ann Road in Tainan, Taiwan gives a current example of the possibilities of postmodern discourses on urban development, landscape design, and aesthetic education. In this proposed paper, the case will be studied within the framework of sense of space, place, and homeland attachment.

A city development plan proposed in 1995 created the Hai-An Road, crosscutting five streets in a highly dense neighborhood that had been one of the most commercially prosperous areas in Taiwan. The plan involved the building of an underground shopping mall. It failed due to critical mistakes on geologic assessment and had disastrous results. Years of construction/destruction cost not only the government budget but also the energy of the neighborhood. Businesses were closed and residents began to move out. In December 2002, the mayor decided to make the road re-commutable, but irregular parcels of land, the collapse of surface stratum, and peculiar frontages all challenged the recovery of the cityscape. The Bureau for City Development decided to adopt an artistic approach to regenerate the area, and a project called “Beautiful New Horizon” was set in place. Through the act of art intervention, Hai-Ann Road has become one of the “must see” areas for tourists. New businesses have started to rise, and the Hai-Ann Street Museum of Art was opened in July 2005. The neighborhood is currently coming back to life.

To write the story of Hai-Ann Road, this study aims to answer the following questions: How do the transitions of a space affect its residents? Whose narratives are written in the shaping of the landscape? Qualitative inquiry, in-depth interviews, and document analysis will be used to answer these questions, and each work of art will be studied for a more thorough

understanding of the new landscape.

My preliminary analysis finds that, from ruins to art museum, a sense of place has been restored, and yet Hai-Ann's past may serve as a negative example of modernization. In addition, the birth of the museum demonstrates the possibility of postmodern pedagogy in museum practice, as audiences have access not only to exhibited works of art but to the art-making process itself. Furthermore, the development of the project involved the actual participation of residents; as a result, local narratives were not lost. Most importantly, the project does not try to efface the history of the area. People will be reminded of the past through the collage of the ruins and other works of art. Finally, the landscaping in this project can be regarded as a social act that has healed the living environment, aesthetic experience, and local economy of the area.

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## WILD CARTOGRAPHIES: INVESTIGATING A PHENOMENOLOGICAL MAPPING OF WILDERNESS LANDSCAPES

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**An investigation of how cartography works as an active agent in formulating contemporary conceptions of wilderness. In particular topographical representations render invisible practices whose basis lies in a dwelling perspective. It reveals that alternate mappings have the potential to suggest innovative, forward-looking, participatory and temporal relationships with wilderness.**

THIS PAPER ARGUES, from an Aotearoa New Zealand perspective, that both cultural perceptions of wilderness and management approaches to wilderness are heavily influenced by the agency of topographic cartography. If, as Harley (2001) asserts, such cartographic representations should be analysed according to their rhetorical attributes then what qualities of wilderness might such mappings silence?

This paper investigates the different understandings of wilderness embodied in the official cartography of New Zealand's Southern Fiordland from 1851 to the present day. It then, following the imperatives of Turnbull (1993, 2000), Corner (1999) and Pickles (2004) among others, attempts to explore alternative cartographic representations of wilderness with a particular emphasis on a phenomenological practice and temporal experience of landscape. In particular terrain is described according to the temporal dimensions of a series of journeys undertaken. Instead of tracing a route followed, which is made up of varying travel speeds, onto a uniform spatial scale the reverse is attempted. Intervals of time taken along a route are described according to a uniform scale made up of minutes rather than metres. Then a three-dimensional topographic representation is subsequently morphed to match these varying rates of travel. The resulting cartographic representation, particularly as subsequent journeys are overlaid, suggests a temporal dimension that is as folded, refolded and contorted as the physically undulating terrain upon which such travel is undertaken.

These approaches are then compared to the cartography adopted by governmental agencies with responsibility for national parks and also those adopted by researchers presenting findings related to user participation in such places. Particularly problematic is the application of experiential param-

eters onto strictly spatial formats. The paper finds that certain cartographic tropes privilege the construction of the contemporary wilderness idea as unspoilt, remote, contained, threatened and culturally empty at the expense of other cultural qualities relating to participation and performance.

Corner (1999:156) critiques wild landscapes as “nothing more than an empty sign, a dead event, a deeply aestheticized experience that holds neither portent nor promise of a future.” The paper concludes that a richer cartography of such landscapes may open up, through a broader understanding of its eidetic qualities and temporal values, wilderness’ strategic and creative potential as a landscape able to be formulated, not through picturesque aesthetics, but instead through multiple and iterative practices of engagement.

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## GREEN MAP EXERCISES AS AN AVENUE FOR PROJECT-BASED LEARNING AND INCLUSIVE COMMUNITY INVOLVEMENT

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**This paper describes a series of data-based Green Map learning exercises positioned within a project-based framework and examines the appropriateness of projects like these as a form of geography education and as a tool for citizen input while increasing awareness of issues pertaining to the built environment.**

PROJECT-BASED LEARNING (PBL) is an educational technique that engages students and mentors in learning through ‘real world’ activities that require creative problem solving, applied knowledge, and participant-driven approach development other than conventional lecture and recitation. The exercises described herein speak to the specifics of Green Map use in the classroom but also demonstrate other learning experiences with the anticipated goals of strengthening understanding of place and motivating cooperative action within communities. Green Mapping has become an increasingly popular community-based technique for describing the opportunities for sustainable living and showing existing patterns of green infrastructure and open space. Building on the well-developed techniques of the Green Map System (GMS), the authors have taken advantage of working in a data-rich environment by using Green Map as a rapid introduction to understanding place and as a project-based learning tool to conduct inventory, frame analysis, and communicate environmental assets of a community. The GMS promotes a level of participation similar to traditional grass-roots environmental movements. The case studies described in the paper are grouped in two based on their general context: K-12 and higher education. Focus will be on the first case study: Green Mapping as a K-12 exploration of geography and site planning. Working with two distinct groups of youth in the urban City of Elizabeth, NJ during the summer of 2006, the GMS provided a framework to increase awareness and communicate feedback regarding open space, land use, and environmental concerns from a commonly underrepresented segment of the population. Consisting predominantly of middle school-aged Hispanic and high school-aged African-American respectively, the groups were introduced to a month-long series of one-half day per week

neighborhood Green Mapping workshops. The participants were introduced to the project via Green Map examples, aerial photographs, and GoogleEarth which quickly facilitated communication and a sense of trust among the participants and facilitators through discussion of places of common interest and observations about the environment-development interface. The process continued with a Lynchian “Walk Around the Block” and documentation development in a quasi-design studio environment. In the process of generating a neighborhood Green Map in the GMS spirit to “Think Global, Map Local,” the participants developed their own palette of opportunity icons. Icons that initially meant little to the participants gained meaning as they transformed into opportunities for potential greening and improvement of open space. Initially, organization of these workshops served as an attempt to create a forum for this often untapped segment of the population to be heard in their perceptions and dreams for the quality of the built environment and their place in it. Continuing activities resulting directly from the workshops included involvement of several participants in the creation and production of a local public service announcement on water and air quality and participation on an environmental awareness panel at an educational conference. Thus, providing evidence that this exercise helped to promote knowledge, motivation, and confidence in the participants to integrate their voice, raise their visibility and demonstrate their potential within their community.

**Keywords Visualizing Change: Consensus or Compromise?**

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## AN EMERGING PEDAGOGY FOR DESIGN VISUALIZATION: CASE STUDIES OF HISTORIC AND CULTURAL PRESERVATION THROUGH 3D LASER SCANNING

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**This paper describes the methods of how laser scanning is currently being used for the collection of spatial data with an emphasis on the inventory of historic structures as well as the ability to analysis its overall environment. Showing examples of how the gathered data can be integrated into survey, analysis, visualization, and preservation of such sites.**

3D LASER SCANNER is a device that analyzes a real-world object or environment to collect data on its shape and possibly color through the use of lasers. The collected data can then be used to construct digital, three dimensional models that are used in a wide variety of applications. Applications include industrial design and prototyping, automotive engineering, and the documentation of various built environments. Utilizing a laser to scan a 3D object is not a new technology but one that is seldom used by landscape architects.

The world wide, there are countless cultural and historic site and structures that are being protected and preserved as well as maintained. Increased visitation too many of these sites require appropriate designs of additional amenities as well as the need for increased security. While working with such sites, careful attention to details is required as attempts to preserve and protect the current condition of such sites become priority. While addressing such issues, the accurate data needed for construction or restoration can be scarce or inaccurate. Most work is accomplished through the use of old drawings and images that can make construction difficult and restoration a mere attempt at replication.

Through the use of laser scanning technologies we have the ability to collect extremely accurate data that that can be used during the design process or archived for future restoration and maintenance. This paper describes the methods of how laser scanning is currently being used for the collection of spatial data with an emphasis on the inventory of historic structures as well as the ability to analysis its overall environment. Showing examples of how the gathered data can be integrated into survey, analysis, visualization, and preservation of such sites.

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## YOU'RE VIEW OR MINE? VIEWSHED CONFLICTS AND NEW DEVELOPMENT IN THE NEW RIVER GORGE

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**This paper assesses the visualizations issues arising from recent legal proceeding addressing viewshed analysis of a proposed 1200 unit housing development adjoining the New River Gorge National Park. Issues addressed are the methodology and applications used to assist in viewshed analysis (on site, 2D, 3D, GIS, Computer Simulations) and the questions concerning accuracy of these viewshed simulations.**

THIS PAPER ASSESSES the visualizations issues arising from recent legal proceeding addressing viewshed analysis of a proposed 1200 unit housing development adjoining the New River Gorge National Park. Issues addressed are the methodology and applications used to assist in viewshed analysis (on site, 2D, 3D, GIS, Computer Simulations) and the questions concerning accuracy of these viewshed simulations.

Public lands such as National Parks were created to protect and preserve the natural environments. Private lands that lie alongside the park offer ample opportunities and benefits for land owners, for what makes the park a place to protect is what makes the adjacent lands an idealistic natural setting for development as well.

This case study assesses the issues arising from recent legal litigation and testimony addressing viewshed analysis of a new 1200 unit housing development being built by the Land Resource Company (LRC) on 2000 acres adjoining the New River Gorge National Park, WV. Local activist group, Plan Action Network (PAN) and the National Park Conservation Association (NPCA) along with the National Park Service (NPS) have been working to preserve and protect the natural viewshed from within the park boundaries. Based on the out come of the case, questioning of reliability and readability of the viewshed analysis material played a defining role in the outcome of the litigation decision. Many methods of viewshed analysis were produced by both sides. Onsite ballon testing was conducted by the developer. 2D imagery consisting of GIS mapping was presented by the National Park Service to offset the findings of the developer. As a last resort the an 3D environmental visualization was created to back up the 2D GIS mapping.

The primary issues grew from questions concerning accuracy and valid-

ity of the various viewshed analyses used by both parties to educate the planning commission as to the eventual effects of the development. This paper will describe and analysis the various viewshed methods used during litigation, as well as the effect each hand on the public opinion. Other issues that evolved from the litigation to be addressed was the use 2D and 3D computer simulations and the general perception in regards to realistic environmental simulation, and the need for design review guidelines and tools that reviewers can request to assist in an accurate viewshed analysis.

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**This session highlights the design and effectiveness of a multimedia e-Learning tool that demonstrates a comprehensive collection of common site engineering and design vocabularies (landforms, roadways, sidewalks, walls, steps, etc.). A typical commercial site is the context, interactive two-dimensional and three-dimensional media is the content, and Authorware is the vehicle.**

## COMPREHENSIVE LANDFORM VISUALIZATION

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THIS PAPER CONTINUES the dialogue related to the design and effectiveness of an e-Learning tool for landform visualization. This computer tool first emerged several years ago as the non-written portion of my Master's Thesis. It has since been transformed from a simple multimedia collection of common landforms, into a more comprehensive & interactive visualization tool illustrating common site engineering and design vocabularies.

The premise of the written portion of the Thesis was to identify whether the completed landform visualization tool would be effective at helping students visualize a simple vocabulary of landforms in two and three dimensions. In addition to describing the design process used to create the tool, the written thesis reflected the format of a traditional research thesis. Several t-test results (matched pairs, two-tailed,  $n=31$ ) from before-and-after paper-and-pencil pre- and post-tests revealed extremely strong evidence (0.00008, 0.00018, and 0.000003, all significant at  $\alpha=0.01$ ) that the tool indeed appeared to improve students' abilities to understand landforms in two and three dimensions. These results provided compelling reason to continue developing the tool to make an even bigger, positive impact on landscape architecture education. Although it appeared quite effective, the limitations (lack of diversity, detail, context, interactivity, and other engaging qualities) of this original work demanded further development.

### Goals, Content, and Approaches

There were two primary goals for this project. One was to create an interactive multimedia computer tool that illustrated and explained common site design and engineering processes and forms, from on-site building placement and vehicular circulation, to site grading and storm water management. This tool is meant to help students understand how to visually synthesize

conceptual and formula-derived two-dimensional (2-D, plans and sections) solutions with their three-dimensional (3-D, models) counterparts. Several effective CAD and modeling applications were used to create 2-D plans and corresponding 3-D models of a small residential site and a larger commercial site, both of which include roadways, sidewalks, parking lots, curbs, walls, ramps, steps, and landforms. All combine to create comprehensive sites expressing form and function. A hypermedia site plan serves as the “table of contents” exploration hub, where plan elements are hyperlinked to their modeled counterparts. Models are dynamic, facilitating immersive learning. For example, a water level interaction allows moving virtual water levels to see the relationship between landforms and flooding. All media (text narrative, plans, models, movies, and other imagery) were compiled using Macromedia Authorware.

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The second goal of the project was to determine, through before-and-after testing, the effectiveness of this visualization tool. Testing is set to happen during session one of the Summer 2007 semester. Test subjects will be first-year design students – ideal subjects, as most will have had no prior formal design or visualization training. This session will demonstrate the tool, explain how it was created, discuss its effectiveness (as revealed in results from a statistical analysis of collected data), and identify its limitations. Concluding discussions will address how such e-Learning tools can be incorporated into Landscape Architecture curricula, and other implications for designing and visualizing landforms & site structures.

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## EVALUATIVE RESPONSES TO ENVIRONMENTAL SURPRISE

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**This presentation demonstrates the use of low-cost desktop virtual reality simulation to dynamically test and communicate human responses to their surroundings. It reports a test of the validity of such simulations to experience in real environments, and a test of the effect of surprise on preference.**

WE DESCRIBE AND demonstrate the use of a low cost desktop virtual environment (using Quake and GTKBuild) to simulate, communicate, and test design principles that involve movement through the landscape; and describe two studies using VRS.

We first discuss a test of the accuracy of a large-scale virtual reality simulation (VRS) in relation to human behavior in real places. This study of perceived distance tested two design features--segmentation (number of intersections, turns, and buildings) and destination visibility—that affect perceived distance and spatial behavior (Nasar, Valencia, et al, 1983; Sadalla and Staplin, 1980). We show the VRS of a real environment, in which a study had tested the effects of those two features on spatial behavior; and we describe that study, and findings: In the real world situation, people tended to use routes that put their destination in sight sooner and that had less segmentation than the shortest alternative route (Nasar, 1983). The VRS follow-up study had 59 people learn the virtual environment, and then navigate from the origin to the destination. Behavior in the VRS paralleled the behavior found in the real environment.

We then briefly discuss and demonstrate a VRS study of wayfinding in relation to plan complexity and differentiation. Extending findings inside at a smaller scale to the urban scale, we found that differentiation (in landmarks or paths) and simple plans improved spatial knowledge and wayfinding.

Next we present a VRS test of preference in relation to dynamic experience in the environment. For this study, we argue that people should experience “surprise” in the landscape as interesting and pleasant. Environmental surprise is as an ordered exception within an urban pattern (Lozanno, 1988)

or as a mismatch between an expected environment and what one actually encounters (Nasar, 1994). If you walked along several blocks which were short, straight, narrow, and lined with town-houses, and turned a corner onto the same urban pattern, it would offer no surprise. If you turned the corner onto a wide curved tree-lined street, it would offer surprise.

The test of surprise involved the creation of 15 large-scale VRSs. Each VRS had a three-block long urban landscape to set an urban pattern, and then a turn onto a street that varied in its surprise—the degree of mismatch with the previous three blocks. Streets varied in form—either straight or curved—and in complexity—simple (same building facades, heights, vegetation), moderate complexity (some variation in building height and landscape); and highest complexity (variation in façades, heights, setbacks, and landscape). We show the VR simulations and describe the study, outlined below.

After a learning phase on navigating a VRS, each of 34 participants walked through each VRS, assigned in random order. After seeing each pre-test street, they rated their preference and interest for it; and after turning the corner, they rated their preference and interest for the test street. We present and discuss the findings: As surprise increased preference and interest increased.

The presentation concludes with a discussion of the value and limitations of using VRS for research and practice, and design guidelines from the tests to make landscapes more legible and appealing.

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## ANOTHER LOOK AT HIGH DEFINITION SYNCHRONOUS TELEPRESENCE, RICH MEDIA AND 24/7 DIGITAL DESIGN DISTANCE EDUCATION

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**An international multi-university panel discussing the experiences of synchronous and asynchronous distance education. Case studies will include a Spring 2007 six-week segment of an existing course between The University of Adelaide and Penn State with a high definition (1920x1080 and 2560x1600) video window, and two years of an ASLA sponsored Digital Office web class (2000-2002).**

FOR FIVE YEARS from 1995 to 2000, just as the design arts significance of the Internet was beginning to be understood, videoconference based Virtual Design Studios (VDS) were initiated first at Harvard GSD and then the MIT School of Architecture with universities in Australia, Canada, Switzerland and Singapore. <http://archrecord.construction.com/features/digital/archives/0201da.asp> The many web pages, which were created, to facilitate and document the distant web based video connections end their live presence in 2000. <http://darkwing.uoregon.edu/~design/nywc/vds99/HTML/v02.html>

The difficulties of overcoming space and time may have taken their toll on the faculty and students who pioneered this web based video conferencing experiment. The many time zones create problems of synchronization. The literature does not discuss why these virtual design studios stopped being offered or why there is no web record of any current web based video conferencing. Our current Australia/US partnership is more modest with only a six-week commitment within a digital design elective course and will use new HDTV 1080p technology and two four million pixel LCD monitors. Four million pixels is the current highest resolution of a single monitor. As with many technological advances there is a tendency to over promise the value of new technology. The greatest impediment to synchronous video conferencing is human and not technological. It is the impact of different time zones and institutional scheduling. In our six-week Spring 2007 video teleconferencing effort this requires that the US east coast partners teach their course in the evening and on a Tuesday/Thursday sequence. In Australia this translates to a Wednesday/Friday morning session. In addition to the time differences the different academic terms only allow a six to seven week

possible course overlap. The reversal of the seasons and crossing the date-line also adds an interesting communication twist. To maximize the student contact a simple video system, (iChat/AIM) which requires little technical support is used to allow 24/7 student access. Essentially the system is always on.

The faculty knows each other and each faculty has visited the other faculty's location. The importance of previous personal contact and knowledge of the virtual physical space cannot be over stressed. There seems to be an innate desire to communicate with whatever new technology appears. There is also an opposite reaction to resist technology or a sort of stage fright and a fear of "big brother", of being watched or a significant desire for privacy. There are two technical issues that feed some of this paranoia. The slight lag between speech and video on the commodity Internet leads to a visible lack of trust. Also eye contact with some video conferencing systems is difficult because the camera and screen are not in the same location. IChat solves some of this issue by having the camera immediately on top of the screen. However this is also slightly off and not quite the eye contact you get from face to face conversation. Communication theory tells us that the majority of communication occurs non-verbally. "Nonverbal communication includes facial expressions, tones of voice, gestures, eye contact, spatial arrangements, patterns of touch, expressive movement, cultural differences, and other "nonverbal" acts. <http://zzyx.ucsc.edu/~archer/intro.html>

Interestingly the students did not engage in significant contact other than the arranged class times. One student stated that the You Tube phenomena of watching video was far more interesting than taking the time to video communicate with someone 14,000 miles (22,530 kilometers) away in a place that they have never visited. In an ideal world a short pre-course visit would allow students to develop authentic connections which than could be nurtured with later distant video contact.

When the student-to-student interactions did take place there seemed to be real learning taking place. This sort of peer to peer sharing of computer modeling information seemed to help the students empathize with each other over their successes and challenges.

The lack of life size resolution continues to be a problem. Only when the student or professor moved very close to the camera did a life size image of the persons face appear. Even with these issues of resolution there remains tremendous opportunity for synchronous telepresence in professional education.

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## DEVELOPING A VISUAL ASSESSMENT METHODOLOGY IN AN URBAN LANDSCAPE: A CASE STUDY IN THE BOSTON HARBOR ISLANDS NATIONAL PARK AREA

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**This study in the Boston Harbor Islands National Park Area compared expert-panel visual assessment methodology to landscape preference methodology. The study results provide insights for perceptions of wind turbines and other cultural modifications in urban waterfronts, as methodological advancement of visual assessment techniques.**

THE MAJORITY OF viewshed impact assessment methods have been developed for natural settings, such as national forests and other more remote public lands (USDA Forest Service, 1995; US Department of the Interior, 1980). The application of existing impact assessments to urban settings has been particularly problematic, since the landscape is dominated by cultural influence rather than nature. Another challenge is that many viewshed impact assessment methods rely on experts, such as landscape architects to judge the scenic beauty of a particular scene. Unfortunately, design experts' landscape preference can differ from those of the general public (Kaplan and Kaplan, 1989). Landscape preference rating systems that use public evaluation of landscape scenes have been found to be reliable in a variety of settings from urban parks to national forests. The current study provides a venue for comparing the visual assessment approach using an expert-panel approach to the landscape preference approach using a more general audience.

The Boston Harbor Islands National Park Area is a unique geologic, natural, cultural, and historic resource in the heart of one of the nation's most densely populated urban areas. The 34 glacially-formed islands and peninsulas are the only submerged drumlin formation in the country and include a range of terrestrial and marine ecosystems. The human impacts on the islands include Native American use, lighthouses, coastal defense, resorts, agriculture, landfills and sewer treatment facilities. The premier position of the islands, visible from a variety of mainland and harbor areas, required a sensitive approach to identifying and assessing existing visual quality and a methodology to evaluate the visual impacts of future management and development alternatives. Current proposals to site energy generating facilities including wind turbines and a liquid natural gas facility within the National

Park area created the immediate need for a viewshed assessment study.

This pilot study conducted as part of a graduate landscape planning studio began with documenting the important viewsheds of the study area using GPS. An expert-panel assessment method was developed that modified the Bureau of Land Management's Visual Resource Program for the particular study area. After incorporating cultural elements within this modified rating system, it was tested with a panel of approximately 20 stakeholders from the region. Initial comparison of these two methods found that historic-cultural elements were generally rated slightly higher by the expert-panel than the general public, as were other more industrial land uses. The final assessment tool was modified to incorporate these findings and 66 key viewsheds were evaluated including existing wind turbines. The second phase of the study involved had 80 college students, who were less familiar with the study area; rate the same scenes using landscape preference methodology. The study results showed similarity in the highest and lowest rated scenes between the two groups, but there were significant differences with regard to familiarity, residential setting of participants, and level of expertise. This study provides new insights into perceptions of urban harbors, including new technologies such as wind turbines, which have received little study to date (Bishop and Miller, 2007).

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**Each year, international tourism increases at formidable rates. As destination populations adapt to accommodate rising demands, the cultural bonds that connect humans to earth fall to risk. This paper explores the potential for documentary filmmaking to repatriate a quiet knowledge that could help preserve the integrity of significant cultural landscapes.**

## REPATRIATING A QUIET KNOWLEDGE: REINSTATING IDEAS OF PLACE THROUGH THE CONSTRUCTED NARRATIVES OF DOCUMENTARY

KEVIN THOMPSON

EACH DAY, BALINESE villagers practice rituals they believe strengthen their connection to the Gods of the land. When they are asked to elaborate on how these rituals reinforce such relationships or asked about the very origins of these practices, they can only suggest that they are part of a tradition that has been handed down for as long as can be remembered. On the surface, it seems that the knowledge behind these rituals has disappeared. But deep within the vast collections of Dutch Colonial record and American ethnographies lies the simple answers to many of these questions.

The United Nations World Tourism Organization estimates that international tourist arrivals will rise to exceed 850 million by August 2007. In Bali, development pressures are mounting. As traditional land uses give way to tourist accommodations and unsustainable agricultural practices, the island's sacred landscapes and the integrity of Balinese heritage is at risk. Meanwhile, the records that reveal the significance behind many of the Balinese prayer rituals sits quietly in off-shore archives, inaccessible to those who stand to benefit most from its meaning. What methods can landscape architects employ to negotiate a repatriation of this quiet knowledge?

This paper explores the potential for intercultural collaborative filmmaking to serve as a means of negotiating the repatriation of a quiet but significant knowledge. Drawing example from a landscape documentary co-produced by the author, this paper offers insight into methods for using documentary filmmaking as a means to negotiate exchange across cultural boundaries.

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**This paper is an analysis of Cullen's book *Townscape* and its application to 3D modeling and animation for urban design and landscape architecture. The theoretical ideas are tested in an urban design project of the small downtown of Hartwell, Georgia.**

## THE “ART OF RELATIONSHIPS” IN DIGITAL MEDIA: GORDON CULLEN AND CONTEMPORARY 3D ANIMATION

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GORDON CULLEN WROTE the seminal work *Townscape* in 1961. This paved the way for a new vision of understanding urban experience. He was a proponent of experiential simulations of place. The city vision evolved from Sitte's analytical figure grounds towards a closer approximation of experience. To accomplish this using static media (drawings and photographs) he created a series of images of sequential experience. He admitted the limitations of this 2D format while describing his portrayal of three movement sequences: Oxford, Ipswich and Westminster. He stated that he was trying to:

...recapture in the limited and static medium of the printed page a little of the sense of discovery and drama that we experience in moving through towns (Cullen, 19).

Cullen's driving goal was to create an “awareness of space (Bosselman, 41)”. Like many people with vision, he always felt this dream alluded him.

This project is an answer to his frustration – a look at simulation as he might have done it. Certainly there has been a large body of literature on 3D modeling and simulation recently published, however Cullen's work *Townscape* is a classic, thus worthy of another look.

Cullen pushed concepts of relationships of urban elements, serial experiences, and elements of surprise. He selected viewpoints that were the most dramatic, heightening ones awareness of space and place. He juxtaposed highly contrasting spaces to visually articulate the unique qualities of each.

Had he drawn enough of these perspectives in a series, and moved them quickly past the viewers eye, he could approximate an animated vision of spatial experience. Through static tools, he was able to represent the highlights of those experiences.

Interestingly, one of the first video games, *Myst*, uses just this technique.

You are presented with an image, and through clicking on a distant object you are “moved” towards that object through being presented with a new image of a close-up vision of what you just clicked on. In this way, it is highly effective.

Were he alive today, Cullen would most likely delight in the 3D modeling and animation programs now available to designers. But sadly, while these programs hold tremendous potential to simulate the life and drama of urban experience, the output of many professional fly-through’s are static and lifeless. They become a series of 2D views, with the perfunctory movement to get from one place to the next. The journey, in other words, is not celebrated and enhanced. This is a direct inverse to what Cullen accomplished: Using 2D techniques to portray enlivened journeys through space.

This project is a theoretical exploration and practical demonstration of Cullen’s ideas as applied to a 3D animated sequence and movie in the small town of Hartwell, Georgia. Through using his elements of urban experience, a representational movie was created – in essence a contemporary application to the work of Gordon Cullen.

Ideas of relationships, contrast and drama were designed into the movement sequence. Abstract images and sounds were also embedded into the movie to tell a richer story of place; furthering Cullen’s delight in the drama of the everyday.

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