LANDSCAPE AND LONGEVITY: PURSUING INTEGRATED AESTHETICS AND FUNCTION AT MULTIPLE SCALES IN NEW ORLEANS

SHELLEY, ELISE
University of Toronto, 230 College Street, Toronto ON M5T 1R2 Canada, elise.shelley@daniels.utoronto.ca

1 ABSTRACT
It is important to educate students that landscapes need to be beautiful as well as useful. These are attributes that should be considered integrally and holistically in the design of contemporary urban landscapes. Contemporary landscape architecture is appropriately concerned with the degradation of our urban environments, yet within the current economic climate the discipline is often relegated to a discussion of functional ecosystem services. But the true value of landscape architecture extends beyond performance criteria in the engagement of the unique conditions and specificity of a place. Unless urban landscape design projects are seen and experienced as cultural amenities, they won’t be valued, loved, or taken care of by the citizens they are meant to serve. For landscapes in the city to last through inevitable change, they must adapt and evolve to meet the needs of their local community, ensuring ongoing involvement and appreciation. In addition to providing larger scale environmental value, they must integrally engage people in their everyday experiences. The collaborative Gutter to Gulf research/design studio exemplifies this approach of mobilizing technical performance to create engaging experiences. Student work in New Orleans over the past six years illustrates resilient landscape strategies that operate at multiple scales and demonstrate the holistic integration of aesthetics and function. Landscape projects function simultaneously at the scales of regional ecology, urban morphology and individual experience.

1.1 Keywords
aesthetics, utility, stormwater, resilience

2 DEFINING VALUE
In the world of design, aesthetics should not be seen as superfluous or superficial. Students need to learn the necessary value of both beauty and utility in the landscape. These attributes should be considered integrally and holistically in the design of contemporary urban landscapes in order for them to be sustained in the public realm. This is not a new concept, but one that needs to be remembered and reinforced in our landscape architecture design programs. In her 1995 essay, Messy Ecosystems, Orderly Frames, Joan Nassauer posits, “Novel landscape designs that improve ecological quality may not be appreciated or maintained if recognizable landscape language that communicates human intention is not part of the landscape. Similarly, ecologically valuable remnant landscapes may not be protected or maintained if the human intention to care for the landscape is not apparent.” The role of care and intention in the landscape is clear, however twenty years later this concept needs to be expanded to include aesthetics and beauty as defining characteristics of the “recognizable landscape language” in contemporary culture. Discourse in landscape architecture programs often focuses on issues of ecology and the environment. Students of landscape architecture rightfully need to be prepared as experts in these technical issues and the functional requirements necessary to design and build in urban contexts. But it has long been discussed in the academic context that “…design creativity has all too frequently been reduced to dimensions of environmental problem solving…” as stated by James Corner in his 1997 essay, Ecology and Landscape as Agents of Creativity. Landscape architectural education must ensure that “…the landscape architectural project becomes more about the invention of new forms and programs than the merely corrective measures of restoration.” (Corner, 1997).

Landscape Architects are in a unique position to ensure that practical concerns can also
be the means to incredible design ends. Contemporary landscape architecture is appropriately concerned with the degradation of our urban environments, yet within the current economic climate the discipline is often relegated to a discussion of functional ecosystem services. But the true value of landscape architecture extends beyond performance criteria in the celebration of the unique conditions and specificity of a place. It is imperative that contemporary landscape architecture engages the community and fosters stewardship in addition to providing measurable functionality. Landscape architects must use their technical expertise and visualization skills to enact projects that operate on many scales, ranging from regional systems, civic infrastructure, neighborhood amenity, and citizen engagement. Landscape value needs to be legible to a wide variety of audiences. The historic role of aesthetics in the discipline can reinforce, enhance and transcend meaning derived from utilitarian performance. Unless urban landscape design projects are seen and experienced as cultural amenities, they won’t be valued, loved, or taken care of by the citizens they are meant to serve. For landscapes in the city to last through inevitable change, they must adapt and evolve to meet the needs of their local community, ensuring ongoing involvement and appreciation. In addition to providing larger scale environmental value, they must integrally engage people in their everyday experiences. Local advocacy and support are important in the initiation of a project, but even more critical in maintaining long-term success. For contemporary landscapes to flourish over time, they must engage multiple audiences and provide value across a multitude of scales. Functionality is not enough to engender value and ensure longevity. For urban landscapes to succeed and thrive, they need to be legible as beautiful amenities enriching everyday civic life. “For new forms of ecologically rich landscapes to be sustained, the forms must be recognized and perpetuated by people in everyday situations, maintaining the landscape and creating their own landscapes.” (Nassauer, 1995).

3 SYNTHESIZING PERFORMANCE AND EXPERIENCE

In her manifesto titled, “Sustaining Beauty: The Performance of Appearance”, Elizabeth Meyer asks, “Can landscape architects insert aesthetics into our discussions of sustainability?” The collaborative Gutter to Gulf research/design studio exemplifies this approach of mobilizing technical performance to create engaging experiences. A teaching and research initiative begun in 2008 by Elise Shelley and Jane Wolff at the Daniels Faculty of Architecture, Landscape, and Design at the University of Toronto and Derek Hoeferlin at the Sam Fox School of Design and Visual Arts at Washington University in St. Louis, the project began as a means to address the urgency that persisted in the region’s landscape, infrastructure and urban circumstances post-Hurricane Katrina. From the outset, the interest with Gutter to Gulf was to work with local designers and institutions to engage in cross-discipline discussions of long-term landscape resiliency in this context that was primarily focused on emergency response. It became quickly apparent that the stormwater challenges in New Orleans pre-dated the storm. The issue was not only catastrophic events, but also everyday rain activity that posed a problem for this watery landscape in the Mississippi River Delta. The circumstances after catastrophic events often evoke the urgent desire to instigate beneficial change through design. Extreme conditions also provide rich grounds for innovative thinking and creative discourse. But the challenge in enacting any of these proposals comes in gaining local support and mobilizing community resources. Projects promoting landscape resiliency require quantifiable and meaningful measures of performance, but they also must communicate vision, beauty and amenity, enabling citizens to understand their value in both environmental and experiential terms. For the last six years, the Gutter to Gulf initiative has been undertaken as the fourth and last core studio in the Masters of Landscape Architecture sequence at the University of Toronto, and it deals with cities as compendia of landscape systems. The studio has used water as a catalyst for the design of urban landscapes. Water raises design issues that are rhetorical—what, for instance, should the image of water be in urban environments, and how can that image help citizens understand the ecological conditions they inhabit?—and practical—how does rainwater hit the ground, travel through the city, and make its way to an open body of water? These issues cross disciplines and arenas: they engage planning, urban and landscape design, architecture, engineering, economics, and politics. They involve landscape types from public infrastructure to civic space to private gardens. They demand reckoning with ecological systems from regional to residential scales.

In New Orleans, hydrological dilemmas are both extreme and apparent. The issues of sea level rise, climate change and aging infrastructure in the
city provide a datum and point of departure for design challenges present in cities all over North America. However the vulnerability of these urban systems may not be apparent until they are illuminated by extreme events like Hurricane Katrina along the Gulf Coast, Super Storm Sandy along the Atlantic Seaboard, and even in Toronto, with 2013 rainstorms of record-setting intensity, which dramatically disrupted everyday life and surprised a city known for sixty years of thoughtful watershed management and planning. The Gutter to Gulf studio has continued and evolved due to the effective design strategies that have emerged and proved useful in the local New Orleans context, and as powerful precedents for work throughout the United States and Canada.

4 IMAGINING ALTERNATIVE FUTURES

As a design/research studio initiative, Gutter to Gulf involves students in real-world design, that has the potential to be instrumental and useful beyond the student’s individual portfolio, and through this attempts to facilitate the realization of projects and efforts that have little or no traction in a fractured, reactionary, post-disaster design climate. Helping students learn how their work can be a tool for advocacy and education was facilitated through local partnerships with sympathetic designers and organizations.

The studio work has ambitious goals: That the projects be able to demonstrate what landscape-scale stormwater management really looks like and why it is a desirable alternative to dependence on closed-system engineering; that functional performance and operation of these landscapes can be calculated and quantified with a level of accuracy that demonstrates a meaningful and legitimate strategy for landscape resilience; and lastly, that these spaces designed to address water management can also have inherent aesthetic value, serving greater community needs and fostering unique experiences.

In our initial efforts, students worked to help illuminate the critical issues by first establishing accurate base data that clarified the existing situation. Only in knowing how the systems operated, could realistic changes be proposed. The design proposals that emerged served to clarify what resilient landscape strategies might look like in the New Orleans context. Site research, field work, lectures by expert consultants, policymakers, practitioners and community members all served to influence the knowledge of the place and the design strategies. These student designs describe a new, ecologically resilient vocabulary for architectural, landscape, infrastructure, and urban conditions that enable communities to understand how spaces designed to help combat water issues, can also become powerful and meaningful places in everyday life. This material became the basis of an instructor-authored advocacy website that helped explain the reality of the situation to all interested parties: residents, designers and policy-makers from all disciplines. The website is a dissemination tool for the students’ designs, making alternative futures visible and accessible to the citizens of New Orleans. The Gutter to Gulf website, designed, written, and curated by Shelley, Wolff, and Hoeferlin from their studio teaching work was launched in 2011. It includes documentation of the region’s historical evolution and present circumstances; a taxonomy of water infrastructure; interactive tools to allow the comparison of physical and policy structures; field guides and reports; and design proposals that offer visions for future New Orleans. This website was used as education and outreach material for the recent Water Management Strategy for metropolitan New Orleans, demonstrating that design research undertaken by students can act as a tool for critical agency.

The website is a venue for viewing the extensive work produced by the students. It emphasizes the need to fully understand the conditions of a place, in order to made considered proposals. It links historic relationships, technical operations, and cultural meaning to future visions for the city. It makes student work accessible and gives it legitimacy in a larger discussion about the evolution of a place, the performance of landscape, and the role of beauty in engaging everyday experience.

5 PROPOSING CHANGE

The projects to be discussed are grouped according to the scale of the issues they raise: individual lots and blocks; neighborhoods; districts; and the city as a whole. Each project (and each scale) asks a unique set of questions about the definition of infrastructure in twenty-first century New Orleans and the role these functional systems play in the identity and aesthetics of a place. From the smallest elements of building — the individual lot and garden — to the largest — canals, levees, and waterways — the projects propose constructed and organic systems to manage water. They address regional systems at an incremental scale. Together these proposals begin to define a new vocabulary for urban water infrastructure. Each deals with a familiar landscape problem or type and
transforms it according to the specifics of the place and the dilemmas of the moment. These projects become tools to visualize of a new future for the inhabitants of this city. They offer alternative strategies for resilience, and illustrate what these types of landscapes could actually look like and the role they could play in civic life. They propose landscapes of performance and beauty.

5.1 Block/Lot
Water management in small quantities — house by house, lot by lot, and block by block — has the power to effect significant change in the city’s drainage regime in aggregation. Individual citizens or small groups can execute projects at the scale of the block (or its smaller components). They provide a means to remake the city’s drainage system incrementally: every house and garden that retains its own runoff sends less water into the storm sewer system.

At this scale it is critical to illustrate to the individual homeowner that methods undertaken to reduce risk for their property, can also create aesthetic value and engaging experiences.

Figure 1. Gutter to Gulf Website (2012). www.guttertogulf.com

Figure 2. Scales of Project Influence (2012). www.guttertogulf.com
In *Tree Farm* (Figure 3), an urban forestry project is proposed to fill vacant lots in the Lakeview neighborhood. Like many of the residential areas located near Lake Pontchartrain, Lakeview suffers from low elevations (as low as eight feet below sea level), unstable organic soils, and a high water table that restricts infiltration. As a result, the area is subject to significant flooding and vacancy remains high.

The same conditions that make Lakeview less than ideal for rebuilding provide an excellent environment for cypress farming. These hydrophilic trees absorb large quantities of water, and they also tolerate flooding, so the forest lots could serve as a water storage basin for the rest of the neighborhood. Keeping the forested lots wet would ameliorate the forces that cause ground elevations...
to drop, and tree harvesting would provide new economic resources for the city. Reintroducing cypress trees to the area is appropriate, as the site previously existed as a cypress swamp. In addition to integrated stormwater management, and the financial benefits of cypress farming, these lush woodlands, proposed to infill the many derelict lots, would provide a new image, aesthetic and habitat value to individual sites, the streetscapes and the overall neighborhood.

5.2 Neighborhood

New Orleans culture is strongly defined by neighborhoods, and since Hurricane Katrina, neighborhood groups have had tremendous success at mobilizing resources for rehabilitation. Projects at the neighborhood scale expand beyond the efforts of individual citizens to involve community groups and public entities. Collaboration and coordination among these groups can be complex, but it enables comprehensive action. Rice Farm (Figures 4 and 5) combines water conveyance and storage with small-scale cooperative agriculture. Channels along the neutral grounds transport storm water to rice paddies cultivated on adjudicated properties. The paddies are built on concrete slabs to avoid soil contaminants, and the cultivation cycle is calibrated to seasonal rainfall patterns. The crop is not labor-intensive, and even small areas can produce enough rice to generate profit. The project creates an opportunity for economic growth, community activity, education and employment through an agricultural process that introduces dramatic seasonal registration. The plant material itself provides an image of regrowth and regeneration for the area. The challenge of this type of project is mobilizing neighborhood interest, creating sustainable maintenance practices and engaging the community with ongoing operations and events. The success of projects like "Grow Dat Youth Farm", an initiative instigated by the Tulane City Center, provide inspiration for the future opportunities Rice Farm could enable.

Figure 4. Rice Farm. Adam Bobbette and Karen May, University of Toronto, (2010). www.guttertogulf.com
5.3 District
New Orleans is divided into eight subsidiary districts based on pump location and capacity. The Sewerage and Water Board refers to these districts as Drainage Pump Service Areas and numbers them according to the specific pumps by which they are drained. Districts are defined by physical structures: levees, canals, pipes, and drainage ways.
Landscape-based stormwater management strategies engage surface hydrology and alleviate pressures on aging closed sub-grade systems. New programs that detain water provide opportunities to create a new image for water management, fostering education and support for a resilient landscape vocabulary.
Corridor (Figure 6) makes a public link between the French Quarter and Bayou Saint John along the Lafitte Corridor, a publicly owned but underused no man’s land that cuts across the city and divides neighborhoods. Recreational spaces are designed to withstand flooding during storms, and a surface channel that supplements existing water infrastructure increases the corridor’s drainage capacity. The corridor is planted with Moso bamboo, a wetland plant with economic value: its rapid growth rate means that 20% of the bamboo forest can be harvested each year.
The project transforms this neglected site over the buried Carondelet Canal, into a functional amenity for the area. Increasing the opportunity for drainage enabled a new recreation corridor, linking habitats and park spaces. The future vision for the site is vibrant and dynamic. This type of project emulates the need for multi-functioning spaces. Water management cannot be the only design objective in areas that are desperate for community spaces and amenities.
Figure 6. Corridor. Juan Robles, University of Toronto, (2010). www.guttertogulf.com
5.4 City

City systems can be singular entities that serve all of New Orleans’s citizens (for example, City Park) or they can be repetitive systems that extend throughout town (for example, the highway system). They are administered by municipal agencies, and their scale is expansive enough to address drainage in substantial volumes.

*Fish Farm* (Figure 7) fills in a defunct industrial channel and reconfigures it for aquaculture. Many of New Orleans’s industrial waterways have lost their economic value as the city’s port moved downstream, out of the city’s center. These industrial channels are polluted and hazardous, and their large scale makes them dangerous sites for destructive wave action during storm surges.

Closing the channel and filling it with aquaculture eliminates the threat of storm surges. The dimensions of the new landscape are scaled to optimize production of catfish, crawfish, and rice. A wetland at the downstream end of the system absorbs the nutrients produced by fish farming and releases clean water into the main channel of the Mississippi River.

The immense size of this post-industrial landscape is reimagined with sublime beauty, power and presence. The scale of proposed activity and productivity on the site imbue the place with new meaning and function, in terms of economics, ecology, opportunity and aesthetics.
Figure 8. Fish Farm. Fadi Masoud, University of Toronto, (2009). www.guttertogulf.com
6 ENSURING LONGEVITY

These projects all introduce measurable and quantifiable function to the sites they serve. They go beyond utility, however, by engaging the medium of the discipline to its best effect. Topography, hydrology, vegetation, and seasonality are employed to enrich the landscape spaces and enhance experience.

While this work is focused on New Orleans, the intent is to help students discern the issues that make the work relevant to its specific context, and the fundamentals that have more universal application. New Orleans is a unique environment, and in-depth research, analysis, site visits, field work, interviews, expert consultations, work with practitioners and community groups all served to assist the students’ understanding of how designs operate in their specific contexts – how they come to be, how they are funded, how they are built, how they operate within site circumstances, and how they are sustained through community life.

Stormwater management is an issue facing all contemporary urban environments, but how it is integrated into the unique circumstances of each location is the key to how successful it will be in the long-term. Operating in the rich aesthetic and cultural history of a place is critical for design projects – for their initiation, execution and for their evolution in changing urban circumstances. The "recognizable landscape language" (Nassauer, 1995) of New Orleans is defined by rich cultural references and solutions for everyday and catastrophic stormwater management must embrace this unique context. While these projects are obviously conceptual, and the notion of resilience and longevity is speculative, the studio mandated the visualization and projection of design futures as a critical component of the studio design process. These projects pose alternatives to infrastructural water management solutions by embracing the New Orleans landscape, and endeavor to illustrate that utilitarian function can be used as a means to celebrate the inherent beauty and wonder of landscape in the civic realm, now and in New Orleans’s future.

Aesthetics in landscape architecture is not simply decoration or a superficial veneer to civil engineering. Resilient landscapes, by definition, address functional performance within the rich aesthetic history of our discipline.

7 REFERENCES
