RETROFITTING CITIES: ENHANCING SYNERGY BY EXPLORING NEW TRENDS IN URBAN GREENWAYS

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1   ABSTRACT

Urban fragmentation reflects the lack of synergy between the built and unbuilt environments, between culture and nature, and between people and people. Greenways present themselves as a reasonable resolution to fragmentation. Then why are greewnays not a prevalent practice in city design? This article examines the causes of urban fragmentation and examines contemporary landscape design responses, looking at thier positions on addresing urban fragmentation and synergy. The article begins with a review of synergy and greenways before moving on to explore responses to urban form. The ability of legacy cities to offer insight into how urabn spaces and infrastuctures are viewed is also discussed. The article closes with the potential examination of urban greenways as a strategy to integrate Baltimore City by acting on exisitng vacant land, public infrastructure, open space, and cultural amenities. The underlying intent is to project synergism through productive relationships between human and ecological systems at every scale of landscape design and public decision making. The research is the groundwork for a design solution for which the built environment between greenways can be adapted to create a meaningful sense of place and synergy to an emerging greenway network. Can landscape architecture provide new relationships for the city and its inhabitants to expereince distance, time, and place?

1.1   Keywords

greenways, urban fragmentation, landscape, Baltimore, synergy, city planning

2   GREENWAYS AND SYNERGY

Synergy, broadly defined, is the interaction of multiple entities to produce a combined greater entity. It can be the combination of a number of phenomena working in unison to create improved or enhanced condition. It can also be viewed as a series of systems functioning at their maximum potential working to increase efficiency and making each system stronger in the process. This paper in the format of a literature review, outlines current trends in landscape architecture when interfaced with contemporary urban form, and with an intetnion on framing a view on the role of greenway networks in addressing urban fragmentation. Greenways in American cities are either ecologically significant corridors and natural systems,recreational Greenways, often near water, trails, and scenery, or, greenways with Historic Heritage and cultural values (Fabos, 2003).

Randal Arendt notes that greenways broadly conceived "can encompass extensive areas comprising natural and cultural landscapes such as prime farmland and upland habitat, in addition to linear elements such as stream valleys or environmentally sensitive lands which are unfit for development due to wetness floodability or steepness" (Arendt, 2004, p.241). This macro scale definition seems to concern itself with primarily non urban areas, and rural or peripheral zones. Multiple returns on investment such as job creation and retention, improved value of adjacent land uses, improved quality of life and health of citizensand the opportunity of revenue generation-improving the tax base and providing a growing source of income for communities are noted by Flink (2012).This argument when tied with socio-economic antrhopological status starts getting attention of community groups, local governments, and even the federal government. Cities struggling with a decreasing tax base, an increasingly fragmented population, and an abundance of underused land are in positions to take a look at historical greenway approaches and merge them with emerging landscape architecture theories to redefine greenways, urban form, and urban ecology.

Critical writing with explicit focus on urban greenway is still quite thin. While examples of urban greenways exist, there is little research or documentation on the strategies involved in planning an urban greenway or in literature talking about using new greenways to retrofit urban areas. While Arendt's discussion primarily deals with how to develop new greenways outside of the city, he discusses the pertinent reality of community-wide participation. Arendt suggests the re- zoning of land which proposed routes will transect, density incentives for developers, land trusts to acquire and maintain land, and incentives to grant public access in subdivisions and other private developments (Arendt 2004, 247). As we continue to investigate urban form and potential greenway solutions Arendt's zoning and land use suggestions might prove relevant to any design considerations we arrive at.

In one of the few texts dedicated to urban greenways- *Greenways and the Making of Urban Form,* Anthony Walmsley lists five categories of greenways: Urban Riversides,Recreational Paths and Trails, Ecologically Significant Corridors, Scenic and Historic RoutesComprehensive regional 'green' infrastructure plans (often encompassing aspects of 1-4).

These categories are not entirely independent of Arendt's and Fabos' classifications, but Walmsley approaches the subject from a distinctly urban point of view, articulating that there is no 'kit of parts' for green infrastructure, and that urban theorists often overlook streets as available public space to be incorporated into green infrastructure (Walmsley,1995, p.81). It could be argued that contemporary green infrastructure advocates have taken the public street into consideration with the growing prominence of complete streets, walkable communities, and New Urbanism, but his concern holds true today in that we don't see much in the systems wide theory of the street gird becoming part of green infrastructure on a large scale. Walmsley refers to the premise that "a better understanding and application of natural processes (climate, water, plants, soils, wildlife, and food growing) could shape a more productive and sustainable design form for the modern city (1995, p.82). Walmsley goes on to talk about how the majority of greenways come from "residual leftovers after development, natural corridors, abandoned railroads, canals, and other rights of way and how these neglected lands could prove ecologically rich due to their due to their not being overlaid with "biologically sterile manmade landscapes" (Walmsley,1995, p.82).

These ideals and strategies are further articulated through various design phases, mainly ecological urbanism, and sustainability movements nearly 20 years later. They are resurgent indeed, but there are still gaps in contemporary practice as urban greenways are few and far between, and are not often used in the same discussions of synergy.

3   URBAN FRAGMENTATION

Many urban greenway networks were built around left over "green" in certain environmental corridors or stream valleys, and as the environmental movement gained influence these greenways were programmed into multi-functioning transportation paths, recreational parks, and environmental buffers. Is this sufficient to address urban fragmentation -to green the left-over spaces in between building blocks? Also, such an approach does not address the spaces in between the greenways?

In "City Sense and City Design" Kevin Lynch talks about the four major general models for urban form. In order they are: The Linear System, the Linkage System, the Radial System, and the Grid System (Lynch, 1991, p.76-81). Most U.S. cities followed some sort of sequencing through these four stages or were built on top of a grid system with various adaptations for local interest and importantly topography. All most all of these forms were designed in response to transpiration technologies of the day, be it boat, horse, streetcar, or automobile. Lynch talks about the hybridization of these forms, but there is room for current designers to discuss further the role that existing greenways play and proposed adaptive open space networks on reimaging what a future urban form can look like. The popular grid form seen in most cites has its value, but might be ready to progress into the next stages of being more responsive to existing urban conditions of underused space, social and environmental fragmentation, topography, organic clusters of open space and the very real prospect that the personal automobile might not be the dominate mode of transport as cities evolve into the 21st century.

While Lynch highlights the patterns of urban form, Marco Venturi talks about the paradigm transformations of theorists and landscape architects having been successful using metaphors of networks. He says, "..network language manages to take into account not only the layout of the individual 'links' but also old urban centers, including both in a schema which in some ways transcends them. What emerges as a result is not a new type of city or non-city, but rather many types of coexistent cities. The great phases of technological innovation also upset the time-space relations within the city. The speed of movement of goods, people and information, once similar in the various sectors, is gradually being differentiated: people are relatively stable compared to the information transmitted. This raises new problems in renewing infrastructures and of the perception and appropriation of spaces, as well as the bonds in communities or social and political groupings (Venturi, 2012, p.264). Venturi articulates the fact that urban form is based on antiquated land uses and systems and for purposes of modernity may be more of barriers than of connectors. His discussion of networks opens the door for the logical question: what type of networks do cities need and why? Landscape architects are required to look at two phenomenon for the answer; the physical conditions of a site (the city), and the wants and needs as inputted by the local community. Doing so will take landscape architects from being the theorists to the design practitioners introducing sustainable, responsive, and adaptable networks to our urban public realms. To Reinforce the idea, planner and architect Ali Madanipour notes "the modern city has gone through spatial and temporal dispersion of its functions and a de-spatialization of some of its activities which have created multiple, non converging networks against the cohesive, nodal role which the urban public space could play in the past" (Madanipour, 2003, p.214). The role of the public sphere is being diminished as transportation and communication technologies have undermined public spaces. Sociability has been diminished and barriers have been set up along these physical and cultural divides.

Venturi goes on to argue that "the city is socially and physically fragmented…. people identify more with a social group than a place." And 'the city has become an obstacle to the various interests of individual social groupings as well as a hindrance to the most important form of freedom recognized today – freedom of movement" (Venturi ibid). So what can be done about it? In the same essay Venturi suggests that attention be paid to the quality, rather than the quantity of new urban expansions, with particular thought paid to the site (the existing physical conditions) rather than a market driven approach to what can be built. This very thinking and acknowledgment of fragmentation lends itself to my approach to looking at undeveloped land (vacant, abandoned, brownfield etc.) to see how it can be repurposed to act as a connector as part of a broader network incorporating ecological significance, historical value, and contemporary circulation and livability issues. Systems can be made more fluid by persevering with old stretches of continuity. Can these greenways counter the increasing fragmentation of our cities?

The contemporary form of our cities has given us the post industrial or even post modern city in which cities are becoming increasingly chaotic in their structure. The term "fragmentation" comes into the conversation. Carmona and others describe the arrival at the post industrial city as a "complex patchwork of growth and decline, concentration and decentralization, poverty and extreme wealth are juxtaposed.

Whilst downtowns may maintain their dominance of some high level service functions, back offices, and corporate plazas, research and development and university campuses, malls, airports, and logistics zones, and retail, leisure and residential spaces spread further and further around the metropolitan core" (Carmona et al., 2003, p.29). Much of this city form has to with the growing popularity and perceived practicality of the car, as various features can be located at any automobile navigable distance. And as a result the physical geography of our cities has been developed around the car. Leading to what Soja calls "carceral architecture" in which city form becomes based on protection, surveillance and exclusion as a result of the car dominating the direction of form, but also as a result of the combination of deindustrialization, internationalization of production modes and markets, and the development of new spatial trends in segregation and polarization (Soja, 1996, p.125-37). As much of the modern city has been built and formed around transportation structures which most recently have been the car, we are seeing that the public spaces of legacy cities of today are becoming increasingly fragmented as a direct result of a reliance on and designed response to the prevalence of the car.

Walter Hood offers a tangible idea of fragmentation in his history of Oakland, California. Like other cities, Oakland's physical form evolved out of a growing railroad industry in the mid 1800s, but was drastically reshaped in the middle of the 1900s as highways and other forms of transit became popular. "Competition for land, particularly freeways and housing was greater than ever before" (Hood, 1997, 10). He discusses land use re-zoning tactics used to evict disenfranchised residents, wealthier residents fleeing to the suburbs (bankrupting the wealth and diversity needed to sustain a thriving community), home ownership declining – and public housing increasing. As disparate communities became less empowered and decreasingly economically relevant, the city became socially and physically fragmented. He speaks of the how systematic introduction of transportation infrastructure to community's edges has led to further isolation. "Neighborhoods are dramatically isolated from Oakland's CBD by the elevated eight-lane freeway and the elevated tracks of the Bay Area Rapid Transit,"(Hood,1997, p.9). As arterial roads morphed into 'fortress wall' isolating neighborhoods from downtown and the greater community, the city began to experience a fragmentation that was not always the case. This phenomenon is similar in many cities emerging from the post industrial age. As transportation infrastructure gained significance in planning strategies, marginalized populations and the space they used became increasingly less relevant to the systems theories guiding transportation planning. U.S. cities formed on the heels of transportation evolution, and that continued evolution had led to their fragmentation.

In their discussions of urban form Carmona, et al talk about the social dimension of fragmentation, and how spatial morphology can change the character of space and lead to social fragmentation as a response to the form of a city. In these instances various form of segregation take shape responding to demographic changes, or more importantly lack of access (Carmona, 2003, p.127-129). This lack of access is often the direct result of cities becoming fragmented due to de-industrialization, declining economic activity, or unequal access to the public and private transportation. This type of urban fragmentation is seen in legacy cities across the northeast as rustbelt towns become smaller in population yet retain their geographical size. Outdated and overworked infrastructure systems are subsequently insufficient to serve the needs of an increasingly segregated, fragmented, and marginalized population.

Let us approach fragmentation as a growth stage in which certain post industrial cities go through as their economies transition from production to service, their population declines, and the amount of underutilized space increases. As a result of the increasing amount of underutilized, vacant, or unproductive land, gaps are formed in the landscape which creates physical and social fragmentation in which there are breaks in the synergy of cities. Essentially cities were built on modes of transportation and human interaction based on trade. As those modes of transportation have evolved, and the markets have declined over time, our contemporary cities are situated atop a system of networks from a previous era. This has resulted in the situation in which land areas of cities are spread out, with outdated infrastructure, disconnected populations, and deteriorating public service.

3.1   Urban Fragmentation and Counter-strategies

In "Recovering Landscape" Marc Treib talks about in *Nature Recalled* how the designed landscape has changed over time, from public green spaces relying almost entirely on a vocabulary of naturalism(Treib, 1999, p.29), of a sort of bringing nature into the city. The argument can be made now that the passage of time has shifted the role of landscape architect from large park designer to recognizing that a new form of nature exists in cities. This nature has grown up in between the build form

of the grid, and as a result of human care, or neglect. Contemporary landscape architects are therefore now responsible for responding to time by designing for the temporal urban surface and ourselves learning how to articulate the relationship between urban nature, natural nature, the built city, and our designers' desire for networks and green infrastructures. In his discussion of what nature is, he concludes with "While nature may be an inspiration to some, it is a burden to others, as our regard for nature is essentially a product of our culture" (Trieb ibid p.39). This is a very relevant thought for the landscape architect looking to create a network with ecology in mind which will transect diverse communities with different perspectives on how humans are to interrelate with "nature." Christophe Girot offers *Four Trace Concepts in Landscape Architecture* to help guide a landscape architect in their search for recovering landscapes to become active places again. They are: Landing, Grounding, Finding, and Founding (Girot, 1999, p.60-65).

For anyone entertaining the idea of repurposing land for a modern network, but wanting to react favorable to locality, history, and place, the above mentioned concepts can help lay the framework for an extended legacy of place, and in turn a well functioning asset which has real meaning, is adaptive, and yet responsive to real phenomena. Walter Hood offers a similar set of criteria for the designer to consider when working in transformed urban areas or cities that have morphed from one point of reference and identity to another. He notes that "change and transposition are guided by individual expression, combined with social environmental and political multidisciplinary analysis, traditional design strategies, and un understanding of common, everyday objects and practices" (Hood ,1997, p.6). He calls this process 'improvisation', which generates a new series of goals for the designer:

In *Effects of habitat and landscape fragmentation on human and biodiversity in densely populated landscapes* Manuela Di Giulio et al, discuss the social impacts of fragmentation on society and how people's relationship with their landscapes relates to their sense of identify and place (Digiulio et al 2009). Their article notes that people prefer to have a relationship with outdoor places and prefer their public spaces to have natural features which can result in restorative experiences. The authors also talk of how historical significance is important in creating that sense of place with well planned natural features. They mention the combination of historical buildings, local culture and a few well placed trees or water features as a more effective means of creating a sense of place and therefore identity in the urban realm rather than an urban forest. This nod to preferences is key to understanding how creating while retrofitting urban areas can include ecological design, but must be responsive to community concerns about the built environment. Personal mobility and social activity across roads and other new barriersmust be asddressed (Di Giulio ibid). In fragmented cities these condition exist, with strong senses of identify from neighborhood to neighborhood, but landscapes and land uses acting as barriers to mobility and access across the city. Their conclusion asserts that densely populated areas require planning and management to provide access to semi-natural areas for recreation, providing populations with the benefits of access to nature, but also address how the quality of these places is more important than the quantity (Di Giulio et al., 2009). They argue that future research should be directed at how to design these places that meet the needs local human population. I would argue that a systemic network of these places as productive landscapes will address the needs of local communities while simultaneously improving the connectivity issues of fragmented cities.

In the essay *Landscape Architecture and the Changing City* Michael Laurie talks of the need to restore our cities' degraded landscapes and to conserve or ecological and economic resources through healing the dichotomy between art, science, research, and intuition. He says "only then will landscape architecture and planning be capable of contributing to new, sustainable, regionally and culturally appropriate forms and to ecologically and socially sound land-use policies and plans. The result will be a new aesthetic with popular appeal (Laurie, 1997, p.159). The popular appeal he talks about is the notion that locality will resound in these new places so that they have meaning within the local community. The notion gives a nod to Richard Florida who notes that "place is becoming the central organizing unit of our economy and society" (2000). In terms of urban greenways though Laurie goes on to say that sustainable landscape design and planning seek to reduce the impacts of energy and natural resource consumption through techniques such as urban forestry, creating micro climates, and "planning communities that facilitate and encourage walking and bicycling rather than the use of automobiles" continuing on to note, "Ecological expressionism emphasizes the importance of a sense of place and it reveals the natural process of a site "(Laurie, 1997). This thinking supports the idea that retrofitting urban areas to expose some of the natural processes will help to create one layer of identity to an area, and can be done in

conjunction with greenway planning, and adaptive land reuse. It is providing a cultural connection the natural greenway, and the opportunity to experience multiple identities of the social city and ecological community. Laurie is aware that retrofitting urban areas this way will be more difficult than planning new suburbs, but he writes that these natural processes do exist no matter how altered, and they can help define the place.

As Laurie continues on about livability, sense of place, and urban ecology, he talk s about the livable city which he defines as " a city of distinct neighborhoods that possess a sense of pride, place, history, safety, good housing, friendly playgrounds, parks, and open spaces" (Laurie, 1997). He goes on to describe a hierarchy of public spaces in which many do not contribute to livability because they were designed for one use, which brings us to the design challenge of looking at these in between urban spaces in the voids of disparate greenway networks of how to design an open space network which is able to be used by multiple diverse users, at different times, at the same time, and is economically viable. While acknowledging that pastoral parks do not make sense for many large urban cities today he suggests that urban ecology and open space will serve new environmental roles such as urban forestry, community gardens, microclimate modification, and contemporary forms of recreation (Laurie, 1997, p.165). I believe that in today's terms of a legacy city and their abundance of spaces that these very community and ecological services can be the backbone of open space networks which can expand upon existing and future greenway networks, breaking down barriers to access, and increasing the synergy of systems in our urban fabric.

In *Planning and Design of Ecological Networks in Urban Areas,* Ignatieva, et al talk of the ecological significance of providing greenway systems in urban areas for biodiversity and habitat conservation, as well as the historical idea that cites were built around green networks of transportation from rivers and valleys, but how that has largely disappeared today in our urban form. They spend an equal amount of time talking about the essential social benefits and services provided by green areas including "improved climate, hygiene, aesthetics, recreational opportunities…while meeting the social and psychological needs of the urban population"(2011, p.18). They mention that landscape architecture language refers to urban open space as an integral part of urban frameworks and networks, while also mentioning affiliated research which address the "potential ecological, cultural, and social benefits of open space networks and their contribution to a democratic society" (Ignatieva, 2011, p.18).

Ignatieva et al argue that, "A new multidisciplinary approach to planning and designing ecological networks in contemporary cities requires the integration between ecologists, landscape architects, urban planners, politicians, ethnic or cultural- especially indigenous representatives. They will improve biodiversity, aesthetics, cultural identity, and be an important part of the framework for creating sustainable cities" (Ignatieva, 2011, p.23). This again reinforces ideas of landscape architects being leaders who will emerge to synthesis the ecological and cultural data to and organize the relevant stakeholders and actors to bring about new types of networks or productive, and appropriate landscapes to urban areas in need or responsible, pragmatic, and forward thinking scenarios of the new public realm.

Modern greenways theories are all encompassing cross-disciplines with an increased attention to ecological services and infrastructure, thus acknowledging the city as set of inter-dependent physical,cultural and ecological systems.There have been a number of theories related to planning and landscape architecture discussing the dilemma of urban areas' ecological and social impact. While they don't all address the questions of 'How can greenways be used to retrofit underused space in cities and provide new aspects of synergy?' They have brought relevant topics to the table about city form, systems, land ethos, and landscape planning techniques. It could be argued that the modern progression of these theories stem from Ian McHarg's publication of his book "Design With Nature" (1969) in which he was critical of the previous design movements as 'subjugations of nature,' and began to promote his environmental determinism in which designers responded more soundly to what the ecology of a site is telling us. McHarg was writing at a seminal time in American history. The environmental and civil rights movements were gaining significance in national dialogue, and there was awareness that there needed to be more scrutiny placed on how land was developed and space was planned. McHarg hoped that landscape architects would take the helm on these initiatives. Most recently, Transportation Oriented Development and New Urbanism emerged as and acknowledgment of increasingly automotive society. Landscape Urbanism came to fore almost simultaneously. This may be a result of the re-emergence of a different kind of landscape architecture redefining professional responsibility to overlap the realm of urban design and planning . Chris Reed defined this evolution as, "Contemporary landscape practices are

witnessing a revival of sorts, a recovery of the broader social, cultural, and ecological agendas. No longer a product of pure art history and horticulture, landscape is re-engaging issues of site and ecological succession and is playing a part in the formative roles of projects, rather than simply giving form to already defined projects" (Reed, 2006, p.269). Frederick Steiner credits the relatively new concept to integration of Ian McHarg's ecological advocacy with James Corner's urban design vision. He writes, "The basic premise of landscape urbanism holds that landscape should be the fundamental building block for city design. In traditional urbanism, some structure, - a wall, roads, or buildings- led development. Green spaces were relegated to left over areas, unsuited for building, or were just used for ornament. Through landscape urbanism, cultural and natural processes help the designer to organize form" (Steiner, 2011, p.333). The approach is to understand large scale systems and to have meaningful design responses to them. However critics of landscape urbanism suggest that few projects have been built within this school of thought, and that it remains largely a theory. James Corner and Chris Reed are advancing the prospects through projects such as the High Line, Fresh Kills, and the Lower Don Lands, but critics suggest there is not enough research into the ecological realm for these projects to provide any real environmental services.

The ecological urbanism approach "has the capacity to incorporate the inherent conflictual conditions between ecology and urbanism" is the later addition to urbanism (Mostafavi, 2010, p.17). Steiner is critical of these early approaches to ecological urbanism in that he feels there is value in the theorists' foundation in landscape urbanism, but room for significant expansion in terms of ecological research. He believes these urbanist projects can be improved by enhancing ecosystem services which he defines as "the benefits we receive from nature: resource services such as food, water, and energy; regulatory services such as purification of water, carbon sequestration and climate regulation, waste detoxification, crop pollination, and pest and disease control; support services such as nutrient dispersal and cycling, and seed dispersal; and cultural services including cultural, intellectual, and spiritual inspiration, recreational experiences, ecotourism, and scientific discovery" (Steiner, 2011, p.336). Steiner therefore argues in favor of a more in-depth understanding of urban ecological systems will yield a more responsible practice based field of landscape architecture and urbanism and advoctes for landscpae ecological urbanism.

In a nod to Ecological Urbanism, Derya Oktay promotes Human Sustainable Urbanism as the culmination of previous schools of thought stretching back to McHarg. He strengthens the bridge between physical and cultural by noting that "we live in environments that have been very damaged, in ecological, social, and cultural terms, there is an urgent need for a radical shift towards a holistic approach to sustainable urban planning/design combining ecological and social-cultural sustainability. This calls for sensitivity to traditional urbanism and impact of global ideas, practices and technologies on local social and cultural practices" (Oktay, 2012, p.25). This is essentially a reinforcing summary of the evolution of thought pertaining to the city as an ecosystem. In terms of the social side, the notion of sustainability comes into play, as the human component of synergy, but in affirms the growing trend of designers looking at cities as more than a collection of buildings, but as a multifaceted system which requires in depth analysis to provide rational and responsive design solutions.

The division in thought comes from landscape urbanists wanting to create a sense of place with a response and acknowledgment of natural systems and the landscape ecological urbanist camp wanting to doubly create place but also serve a productive ecological function in the process. This presents an interesting scene when we talk about new types of greenways in retrofitting fragmented cities. If we assume that these cities have an abundance of land, we are afforded the opportunity to create regenerative landscapes or productive land uses through in fill and design along our greenway networks. Ecological urbanism requires more astute research but offers the designer a chance to become proactive in building sustainable landscapes and planning cities which are adaptable to future challenges.

In concluding our discussion I would like to note that city forms seem to have been predominantly imposed on the land, engineered or planned on top of ecological and cultural phenomena rather than as a response. Therefore today, we are left with cities in which physical form and the resulting responses of culture are leftover remnants of land planning which lacked acknowledgement of (a) underlying geographical and ecological systems; (b) the value of an activated public realm as an actor in a systems wide approach to urban synergy and connectivity; and (c) the relationship between humans and nature. This project looks to acknowledge these three prospects and will seek to identify landscape architecture theories which address the fact that there is a need to use landscape design to use a variety of urban and

ecological systems to create a more cohesive and productive urban realm responsive and adaptive to ecology, economics, culture, and place.

4   UNIFIED CITIES AND SYNERGISM

In many urban areas there may be an acknowledgement of the natural world, but there is often little recognition of the valuable interdependency that human systems, urban systems, and the natural world have in shaping a synergistic realm.. The above review of theory and practice offers sporadic strategies and promises to address fragmentation and stitch the surface of the city through green network. The emergent urban construct is possibly synergistic, "a hybrid that is not entirely one or the other" (Beardsley, 2007, p.202). Meyer's articulation expresses our intentions"replacing this binary way of thinking with other conceptual strategies, landscape architecture can foster a land ethic and an aesthetic predicated upon a continuum between human nature and nonhuman nature, upon a recognition that the land is a cultural and physical product and that people are living organisms" (Meyer, 1997, p.51). Green networks purposely designed as part of a larger green infrastructure can beging to effect synergism and dismantle the disconnect between nature and culture

In *Programming the Urban Surface* Alex Wall talks about the contemporary metropolis and how peripheral sites are often overlooked by designers as the core downtown areas are heavily programmed for tourists, or visitors, or day time workers, he observes that" The grafting of new instruments and equipment onto strategically staged surfaces allows for a transformation of the ground-plane into a living connective tissue between increasingly disparate and unforeseen programs" (Wall, 1999, p.234).

New greenways or adaptive networks can act as infrastructure – as the basis for future growth or current connection, and that previously built on sites can be reactivated both as places of their own and as parts of a larger network as instruments unfolding the new urban realities. This also enables the landscape architect to become more intrinsically engaged in "programming the urban surface." The physical connections which will activate peripheral zones by infilling blighted cities through realizing new greenway networks based on a recognition of the interaction between the public and private realms, and the built and natural environments as all interconnected parts of one larger system of urban synergy.

5   CONCLUSIONS: ONGOING PROCESS

While many of the contemporary theories hold significant value and perhaps bring very relevant topics to the dialogue of urban planning and landscape architecture, we have yet to see the culmination of a cohesive theory which is more than just a theory, that is, which can be applied to U.S. cities, to bring a sense of synergy to the post industrial city. Additionally we have not seen the synthesis of urban greenways theories with regenerative urban design theories. We have seen theories which propose parks, and which propose ecological planning, and which propose greenways, urban farms, regenerative landscapes but there is little which has combined these programs as part of a city-wide, or even regional network, or system of synergy. Whether synergism should be approached as an attitude or ethic, or a designed effect is the question that will be further researched in continuum.

Baltimore city is noted as one of the former industrial urban centers that is losing population either to other cities or to suburbs. Such exodus,, leaves behind fragmented urban surface and a deprived serveg the local population. Baltimore offers us the opportunity to re-evaluate our practices on spatial design and the role of greenway networks in unifying the urban grid at multiple levels and generate synergy.

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