

Creating Added Value in Working Landscapes – The Development of the Atlanta BeltLine

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1 ABSTRACT

This paper investigates hybrid working landscapes along the life cycle of the BeltLine in Atlanta, Georgia, USA. Atlanta is a rapidly growing metropolitan area. At the same time large areas along a historic 22-mile railroad corridor are abandoned. The long term development of the BeltLine Project aims at reusing this land to improve the quality of life by providing a network of parks, multi-use trails, various real estate projects and a new transit ring.

Based on this example and scholarly literature, the paper explores the relationship between infrastructure and public space in a broader context. Designing the urban landscape as a multi-layered system is discussed by focusing on a park located at the BeltLine, Old Fourth Ward Park. This project's combined goals of water detention for a neighborhood and traditional park functions raise important programmatic and aesthetic questions. It is concluded that finding synergies between design and engineering provide a rich source of innovation for new urban landscapes.

2 INTRODUCTION

Infrastructure plays and has always played an important role in shaping cities. Atlanta, Georgia is a very typical example of this, as its development patterns have mainly been driven by infrastructure.

Founded as the terminus of the Western and Atlantic Railroad in 1837, it is a relatively young city. Initially railroads, in combination with early industrial development, shaped the city. Later, particularly in the post-World War II 20th century, highways became most influential. Today Atlanta is one of the booming “sunbelt cities” and often serves as a “poster child” of extensive urban sprawl and its resulting effects like traffic congestions and poor air quality.

A ring of four historic railroad lines has the potential to initiate a turn around in urban development and offers a great opportunity to redefine the cityscape, which is said to be formless, “its basic formlessness is generated by the highway system, a stretched X surrounded by an O” (Koolhaas, 1995: 836).

3 AIM OF THE PAPER AND METHODS

The paper examines the development of the existing belt line corridors from a monofunctional infrastructure into a complex *working landscape*. The concept of working landscapes is based on the relationship between infrastructure and public open space. It has the potential to make a substantial contribution to enhance the quality of life in the city. We investigate the potentials of the concept of working landscapes to create an added value in the design of public space.

The investigation is based on a basic discussion of the concept of working landscapes. It touches the issues of infrastructure as well as public space. To address this, scholarly literature is analyzed. The BeltLine serves as a case study. It is examined by analyzing scholarly literature, project related publications and the official website of the project. Site visits and photo documentation provide insight into the construction of Old Fourth Ward Park.

4 RESULTS

4.1 Working Landscapes

The term working landscape is used in various contexts and has differing meanings. For example, in some cases it is used synonymously for rural countryside¹ or in the context of agricultural production². The

¹ <http://smartgrowthvermont.org/toolbox/issues/theworkinglandscape>) [02/15/2011]

definition used in this paper is based on Elissa Rosenberg's understanding. She defines working landscapes as a hybrid of infrastructure and public space³ (Rosenberg 1996). Such an urban landscape is seen as infrastructure and at the same time infrastructure is seen as landscape.

Infrastructure is a broad term. It includes gray infrastructure (e.g., roads, sewers and utility lines), social infrastructure (e.g., schools and hospitals), and green infrastructure (e.g. parks). More generally speaking infrastructure is, "the basic physical and organizational structures and facilities needed for the operation of a society" (New Oxford American Dictionary, 2005).

Rosenberg prefers to use the term "public works" for infrastructure because it is "more strongly associated with an architectural character capable of contributing to civic imagery and identity (...)" (Rosenberg 1996: 90). For easier reading, this study uses the more commonly used term "infrastructure".

One of the key requirements for a landscape to be considered a working landscape is that it produces an "output". In the case of rainwater collection, for example, the outcome is treated water. This is also true for infrastructure which is supposed to fulfill a specific function. But as Rosenberg points out, the concept of working landscapes goes beyond such a monofunctional approach. It is about multiple uses and added value. Besides being an infrastructural element, working landscapes can also provide important physical structures in the urban environment. Additionally, they might offer a unique recreational experience or improve the conditions for flora and fauna. A working landscape can also create an impact at different scales. For example, simultaneously creating neighborhood amenities on a site scale while also satisfying citywide needs. An example could be a neighborhood underserved with open spaces, where schoolyards are not just used as gathering and play areas, but also serve functionally as a rainwater retention utility. This approach upgrades the open space for the students by combining social needs with technical necessities and, on a city scale, relieves the combined sewer system of a city (e.g. this is being developed in Philadelphia).

Discussing "landscape as infrastructure" and "infrastructure as landscape" gained interest within the last decade (especially in the context of "landscape urbanism", e.g. Mossop 2006), but it is not a completely new idea. A well known and often cited project is the design of Boston's Back Bay Fens in 1878 by legendary landscape architect Frederick Law Olmsted. Boston's Emerald Necklace is a 2,000-acre system of six parks ('jewels') linked together with tree-lined boulevards. It extends for 6 miles. A research project undertaken by Kathy Poole and the University of Virginia in 2002 demonstrates the broad range of roles that the Fens landscape has served throughout its life as a working (urban) landscape: "(to list only a few) sewage treatment, storm water control and filtration, recreational grounds, municipal landfill, civic grounds, real estate engine, and conceptual substance. And the Fens' evolutionary ability to change in response to shifting cultural needs demonstrates how landscapes are special infrastructures in the continuous projects of making cities" (Poole 2002)⁴.

The example of the fens also shows how a working landscape creates the conditions to create a (more) liveable urban setting and by doing so promotes urban development. "It is an infrastructure, a basic component of urban living, something necessary to enable congregated living. And in all of these roles, the Fens has served not only its local neighbourhood but also the entire city of Boston. This historic landscape was a major part of building the city" (Poole, 2002)⁵

Rosenberg also uses a historic example - irrigation systems in arid climates – to illustrate the potentials of a working landscape as a hybrid of infrastructure and public space. This example further demonstrates the importance of understanding and addressing natural systems as part of a working landscape. "Natural systems have been used and modified as the basis of ever more sophisticated and complex infrastructures to support urban life" (Rosenberg 1996: 89).

The qualities Olmstead achieved more than one hundred years ago with the Boston fens, and those described by Rosenberg in the example of the historic irrigation structures, somehow got lost during the 20th century.

² "The Working Landscapes Certificate (WLC) program is being offered in 2010 by the Institute of Agriculture and Trade Policy (IATPA) and Green Harvest Technology (GHT) to promote more sustainable agricultural production for emerging biomaterials sectors, including the bioplastics industry."

(http://www.iatp.org/ruralcommunities/project_workinglandscapes.cfm) [02/15/2011]

³ Productive Park design study in NewYork and Garrison Creek Demonstration Project in Toronto

⁴ <http://www2.iath.virginia.edu/backbay/fenssite/html/header/landscp.html> [08062009]

⁵ <http://www2.iath.virginia.edu/backbay/demo/html/story02.html> [08062009]



The structural potentials and the relevance for civic meaning when integrated in a working landscape tended to be increasingly ignored. Gradually the functional aspects became separated from other roles of the landscape and disappeared visually. This is especially true for water related infrastructures, like drinking water supply, irrigation systems, sewers and even creeks and small rivers. As Rosenberg argues, the problem is not so much the ‘invisibility’ of infrastructure itself, but the loss of legibility of natural systems in the city. What would be needed, she concludes, is the creation of working landscapes which are able to connect natural systems and infrastructure. “When infrastructure becomes visible, natural systems can again be legible in the city – not by way of symbolic representation in the landscape through the use of metaphor or miniaturization, but via actual engagement in a working system” (Rosenberg 1996: 89). She sees this approach also as a possibility to promote a reintegration of engineering, landscape architecture, and urban design. The increasing specialization and autonomous operation of these professions has undermined the interrelationship of civic and environmental concerns (Rosenberg 1996: 91).

The reintegration of the different functions and of different disciplines is especially relevant and obvious in the context of brownfield reclamation. The understanding of infrastructure needs to go beyond purely technical solutions. It requires cleansing strategies and built structures which integrate natural systems or processes (e.g., hydrological cycle, microbiology) to be functioning. This should also include strategies and design solutions for toxic soils, rainwater collection and flood control. In this context it becomes obvious that a systems approach is essential and that natural systems have to be understood and used as part of the urban infrastructure, which ultimately will create working landscapes.

Making these landscapes of cleansing part of the urban fabric is one example for working landscapes. It shows the multi-scale and multi-layered approach. “[...] we are coming to see these linearly conceived structures dissolve into interactive ecologies or multiply into networks that behave in a very different way, dispersing and combining rather than collecting and separating energies, movements, resources and information” (Lyndon 1996: 3).

Understanding urban landscapes generally more as working landscapes allows one to see the landscape from a different perspective. By doing so, it becomes possible to perceive and assess the landscapes differently. Michael Hough’s argument for a redefinition of a park as a “multi-functional, productive and working landscape” goes in this direction (Hough 1995: 31).

Working landscapes are hybrid landscapes, are integrated in a wider system, provide an added value and question the conventional typology of open spaces. “These hybrid working landscapes also reflect a different attitude to recreation and to the meaning of public life in the city. Implicit to such a hybrid space is a more diverse and complex understanding of urban life” (Rosenberg 1996: 102).

The broad approach of working landscapes enables us to discuss public space and infrastructure as integrated solutions which respond to more than one issue. Furthermore, thinking about hybrid landscapes opens up possibilities to look for design solutions which intermingle the different functions so that they engage and promote each other – in short: design solutions which provide an added value.

4.2 Infrastructure and Urban Development of Atlanta - From “belt lines” to “Belt Line” to “BeltLine”

„Infrastructure has always played a significant role in shaping the city and giving rise to new landscape types“ (Rosenberg 1996: 89). This is especially true for Atlanta. The development of the city and metropolitan area is closely related to the development of transportation infrastructure. In the following section, an overview is given on major transport related infrastructures and their impact on urban development in Atlanta.

4.2.1 Railroads and belt lines

The first infrastructure initiating a settlement of what would become Atlanta was a railroad to access north Georgia and Tennessee. It was founded as the terminus of the Western and Atlantic Railroad in 1837 and therefore was first named “Terminus”. Other railroads soon extended to it and a regional hub evolved. Soon after the Civil War several belt lines were constructed around the periphery to serve an expanding industry. The system of railroad rights-of-ways developed over a period of five decades beginning in the 1880s (Garvin 2004:6). These belt lines were critical to Atlanta’s rise as a prominent hub in the Southeast (Gravel 1999: 5).

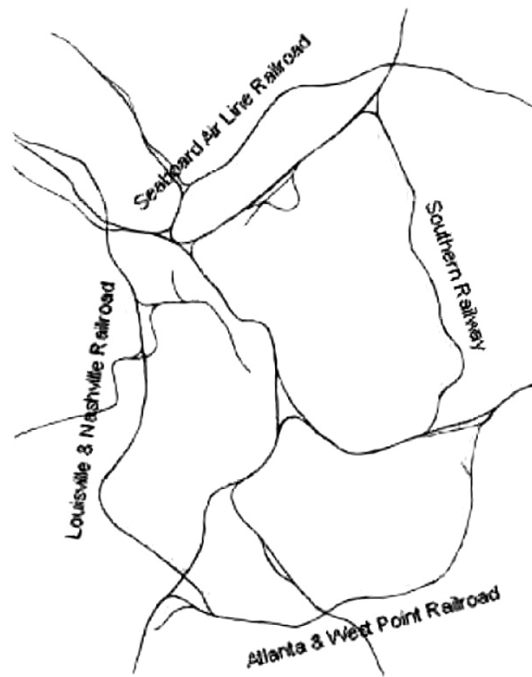


Fig. 1: Historic belt lines (Source: Gravel 1999: 39)

4.2.2 Streetcar lines influenced direction of growth

Beside the belt lines around the periphery, early urban development was also directed by the Atlanta Street Railroad Company, which was run by George Adair and Richard Peters since the 1860s (initially offering horsecar service). Adair and Peters quickly learned that streetcar lines had a significant impact on urban growth (Klima 1982, cit. in Gravel 1999: 2) and that the direction of growth could be channeled by the location of new lines. They also learned that by controlling property along those lines, real estate business could be quite lucrative. In the late 19th century further streetcar suburbs evolved.

4.2.3 Development of gray infrastructure and raising automobile mobility

Other infrastructure beside mass transportation influenced urban development. Around WWI the establishment of other gray infrastructure (such as electricity, gas, water, and sewer lines) promoted a new ring of bungalow suburbs. This was supported by a growing automobile based mobility. Streetcar suburbs, “were soon overshadowed by a new kind of suburb in the 1920s, one devoted almost exclusively to automobile ownership and usage” (Bernick & Cervero 1997: 29 in Gravel 1999: 25).

4.2.4 The Federal highway act of 1921

The strongest and longest lasting impact was the Federal Highway Act of 1921. It initiated the interstate highway system which massively shaped the metropolitan area of Atlanta and other large American cities throughout the 20th century. The Interstates and other highways enabled, “unprecedented vehicular access to the central business districts of large American cities, they, along with FHA loans and other subsidies also permitted the mass exodus of predominantly middle and upper class whites from the central city” (Chudacoff & Smith 1988: 266 in Gravel 1999: 3). Soon business followed residential development to the suburbs, “further drying the central city’s economy and tax base“ (Gravel 1999: 3).

“After WW II, the Interstate Highway system allowed for industrial growth in green field sites at the city’s periphery. Railroad companies and industry abandoned many of their sites on the Beltline and many adjacent neighborhoods fell into decline” (Garvin 2004: 6).

4.2.5 Abandonment of belt lines through change in freight system

A change in the freight system had major influence on the belt lines. Almost all industries shifted to truck-based freight systems and the belt lines became more and more abandoned. This shift in transportation also



had a massive impact on the adjacent neighborhoods. The massive truck traffic damaged street infrastructure and street trees, and pollution and noise emissions from the trucks were great (Gravel 1999: 56).

By the end of the 20th century the Beltline became a series of often neglected green spaces. “The Beltline itself is a compilation of rail rights-of-way that are owned by different parties who have maintained their property and their tracks to varying degrees, from active freight lines to inactive tracks to abandoned property that serves as an illegal garbage dump”(Garvin 1999: 32).



Fig. 2: Abandoned rail corridor (2010)



Fig. 3: Footpath on former rail track (2010)

4.2.6 An idea called “The Belt Line”

In 1999 Ryan Gravel was among the first to articulate the enormous potential of these linear spaces. In his master’s thesis (“Belt Line – Atlanta. Design of Infrastructure as a Reflection of Public Policy”) at the Georgia Institute of Technology, Gravel elaborated the potentials of these spaces to transform the city on various scales. It was obvious to him that the restructuring of the belt lines and their associated territories will impact redevelopment of the city in the early 21st century. Gravel proposed the establishment of a circle light rail on the historic 22-mile rail corridor. This would connect 45 neighborhoods and expand the mass transportation network by connecting the light rail to stations of MARTA, the existing metropolitan subway system. The additionally proposed stations were intended to initiate new hubs of higher density urban

development, with retail spaces, parks or new mixed-use neighborhoods. The abandoned land available for this new development was supposed to offer accommodation for large portions of Atlanta's increasing population. But Gravel was also sensitive to the social and cultural meaning of the belt lines in the context of the different neighborhoods. In the Belt Line project he saw the potential to change the way, "we look at Atlanta, how we understand our space within the city and within the region" (Gravel 1999: 19).

4.2.7 The BeltLine Project

Supported by a 2002 founded grassroots organization, Gravel's ideas for the Belt Line were developed further. Additionally, the Trust for Public Land commissioned a study to Alexander Garvin & Associates. The study, published in 2004, outlines the opportunities of actively shaping, "a city-wide system of parks and transit, to create stronger, more attractive communities, and to actively shape a new and improved public realm framework" (Garvin 2004, executive summary). Garvin chose the title, "The Beltline Emerald necklace: Atlanta's New Public Realm" for the study, referring to Olmsted's Boston Emerald Necklace. Garvin based the Beltline study not just on the title of the historic project but also followed Olmsted's philosophy to start a project by examining the, "capabilities and the limitations of the site" (Garvin 2004). The BeltLine study also highlights a possible major impact on the quality of life.

In 2005 a financial feasibility study and the creation of the BeltLine Partnership paved the way for the approval of the BeltLine Redevelopment Plan and the BeltLine TAD (Tax Allocation District) by the Atlanta City Council, Fulton County Board of Commissioners, and the Atlanta Public School Board. Over the next 25 years, the historic 22-mile railroad corridor which runs around downtown Atlanta, will be transformed into a network of new multiuse trails, parks, new developments and a transit system. The development plan defines 10 subareas. The further implementation, as well as the further detailing of the various projects, will be developed in reaction to market forces as well as citizen involvement. The Atlanta BeltLine Inc. (ABI), formed by the Atlanta Development Authority, is the entity assigned to plan and execute the implementation of the Atlanta BeltLine in partnership with the BeltLine team including the City of Atlanta. The Atlanta BeltLine Partnership (ABLP) is a non-profit organization committed to raising funds from private and philanthropic sources to support the BeltLine.⁶

Within this dynamic overall concept, the park projects take over a key role. They are not just meant to combat existing open space deficits throughout the city. They also have the important function to promote new developments along the BeltLine, which is itself key to the viability of the planned transit system.

4.3 Old Fourth Ward Park

Old Fourth Ward Park is an integral part of the large scale development project, the Atlanta BeltLine Redevelopment Plan. It is located in Old Fourth Ward, a commercially active neighborhood Northeast Atlanta. It is one of 13 planned park projects along the BeltLine and the first one being implemented. Atlanta BeltLine, Inc has been authorized by the Department of Watershed Management to design and oversee construction of the Clear Creek Combined Sewer Basic Relief Project that will include a pond and various park amenities on five acres (appr. 20.000 m²) in the first phase. After completion the park will be approximately 30 acres.

The goal for the park is to combine stormwater detention with traditional park functions. Furthermore it incorporates the dynamics of stormwater runoff management as an essential aspect in its design (park designer: Wood + Partners Inc.). The pond will receive the stormwater and provide a controlled release function for the wider surrounding area. The process of changing waterlevels will create various changing appearances of the park. During storm events the pond is designed to fill up and inundate walking paths. During that time access will be limited. At all other times, a feeling of being next to the water is encouraged by minimizing railings and maximizing the views within the park.

⁶ <http://beltline.org/>





Fig. 4: Detention pond in Old Fourth Ward Park (2010)



Fig. 5: Initiated wetland vegetation (2010)

5 DISCUSSION

Since the origins of Atlanta, development was mainly driven by infrastructure. The belt lines had a dominant influence on the determination of spatial relationships in the city. This will continue with the BeltLine project – but in a more complex way, by intentionally intermingling social, economic and ecological spheres. It is too early to foresee all dimensions of change initiated by the project. However, the development so far is promising.

Urban landscapes are subject to constant reinterpretation. Over decades the belt lines were understood as monofunctional lines serving industry and splitting neighborhoods. The reconfiguration of this space opens up many opportunities. Garvin refers to Olmsted's Emerald Necklace in the title of his study. This hints at an understanding of the BeltLine project as a working landscape. Gravel also sees the great chance to combine various functions in the open spaces and to initiate processes on the project site scale and in adjacent areas.

The interconnectedness of infrastructure and public space in the BeltLine Project creates a strong foundation to create a hybrid working landscape on various scales. It is and it will be a strongly recognizable urban form through its cuts, embankments and bridges. The circular form increases the connectivity between

neighborhoods and city parts. The BeltLine will become a very significant figure in the city of Atlanta – spatially as well as based on its various functions and meanings. Because of the interconnectedness of public transportation, new and upgraded public parks, trails, and the new mixed-use, pedestrian friendly neighborhood, it will definitely broaden the understanding of public space and contribute to a new interpretation of the city.

The first realized park – Old Fourth Ward Park – is a hybrid place. It provides open space for a neighborhood which was underserved with public open spaces. At the same time it contributes to citywide needs by retaining stormwater. The fluctuating water level can raise the resident’s awareness of water resources and make the hydrologic cycle visible.

The park is a working landscape by combining infrastructure and natural systems. The main water body is not a citation of “water” but actually serves as a working system. This design solution makes the infrastructure site specific and therefore contributes to the legibility of the city. The design does not try to hide the constructedness of the landscape, which becomes especially visible in the dimension of the huge retaining wall. In the design proposal, the retaining wall is suggested to be used as a bouldering wall for rock climbers. This option will attract further groups of people to spend time in the park and use public space for recreation. The park design is an interesting example for a multi-use approach beyond purely recreational programming. It has the potential to strengthen the understanding that a working landscape is a basic component of urban living and recreation takes part *in* it. The understanding of the open space type ‘park’ is transformed from a kind of ‘background’ for recreation to a working landscape supporting a new civic meaning of urban space.

6 CONCLUSION

The BeltLine project has the potential to become a future field for urban experimentation on various scales by considering ecological, economic, and social conditions of the contemporary city.

On a city scale it has the potential to shape a new public realm and have an important impact on the quality of life of the inhabitants. Thinking of and working with hybrid working landscapes also asks for a redefinition and extension of traditional open space typology. A hybrid must be more than a design fulfilling several functions. The components of a hybrid must condition and influence each other which leads to added value.

On the scale of designing sites or neighborhoods, the combination of stormwater detention and public space is particularly compelling and open for new design solutions. This aspect is also relevant for brownfield reclamation and the remediation of toxic soils. Further research is necessary for cleansing landscapes, especially in the field of phyto-remediation as part of working landscapes. These could provide a new understanding of urban landscapes. It is also obvious that a new design language must be developed. Discussing process orientation, hybridity or change must ultimately influence design processes and design language.

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