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Implementing the Vision: The Atlanta BeltLine Corridor, Georgia, USA

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Introduction

The Atlanta BeltLine is a 22-mile transformative corridor project that will connect 45 neighborhoods through transit, open space and trails. As a repurposed series of abandoned railroad segments that run across the valleys and ridges of the Piedmont plateau region, the physical design of the corridor actively responds to both the physiographic and cultural diversity of its context. It is a comprehensive example of landscape infrastructure that will serve to organize, engage and guide future development in one of America's fastest growing metropolitan areas (Figure 1).

Background/Literature Review

The original concept for the Atlanta BeltLine was proposed in the seminal Master's thesis by Ryan Gravel at the Georgia Institute of Technology (1999). Following a sustained grass-roots community effort and endorsement by the City of Atlanta, numerous planning studies were conducted to address specific programmatic elements of the plan and to assess the feasibility and potential impacts of the project. Among the earliest of these efforts was *The Beltline Emerald Necklace: Atlanta's New Public Realm*, a report prepared by Alex Garvin & Associates for the Trust for Public Land (2004). Other significant studies followed, including *The Atlanta Beltline: Transit Feasibility White Paper* (Ross, Meyer, Dobbins, Jackson, & Millar, 2005), the *Atlanta BeltLine Health Impact Assessment* (Ross & West, 2007), and *The Atlanta BeltLine Arboretum Conceptual Plan* prepared by The Portico Group for Trees Atlanta, a local non-profit (2007). The watershed moment came in 2006, when Invest Atlanta (formerly the Atlanta Development Authority) formed Atlanta BeltLine, Inc. to manage the implementation of the Atlanta BeltLine project. A series of ten Subarea Master Plans was soon commissioned, followed by construction documents for the first corridor segment – the Eastside Trail.

As the project progressed, further studies focused on the anticipated health benefits and recreational opportunities of the multi-use trail (Ross, et.al, 2012; Cardoni, 2013). Following completion of the Eastside Trail in 2012, the environmental, social and economic benefits of the project were documented in a Landscape Architecture Foundation (LAF) Case Study Investigation that was published online as part of the LAF's Landscape Performance Series (Atlanta BeltLine Eastside Trail, 2014). Unlike New York City's High Line, a

21st Century urban promenade, or Chicago's Bloomingdale Trail, an elevated multi-use trail and park (Sinha, 2013), the Atlanta BeltLine Corridor will consist of both a multi-use trail and light-rail transit, capitalizing on the social and environmental benefits of a linear open space system and the economic benefits of Transit-Oriented Development (TOD).



Figure 1. The Atlanta BeltLine – Overall Map

Goals and Objectives

The Atlanta BeltLine is an ambitious, 25-year project that will transform a series of abandoned railroad corridors into a central organizing feature in the City of Atlanta, Georgia. It is rare example of landscape infrastructure driving the redevelopment of a major urban center, bringing not only much needed transit services but recreational opportunities and commuting options. Implementation of the project consists of three major efforts: development of a Design Framework in response to the physiographic and cultural characteristics of the corridor; design of an Integrated Urban Landscape from Repurposed Grey Infrastructure; and Community Engagement and Awareness.

Methods: Physiographic and Cultural Analysis

The Atlanta BeltLine is no simple line on a map: a systems analysis map is representative of dozens of individual conditions that define the corridor (Figure 2). The analysis makes clear that the route is physically complex and

spatially rich, and that the new program of mobility and public open space will provide a strong presence in the corridor. In order for the expanse of the Atlanta BeltLine to hold together physically as a cohesive idea, and in order to engage the exciting variety of communities and opportunities along the way, the project must have a strong Design Framework within which many different things can happen, where ideas can multiply and where a robust public life can flourish.

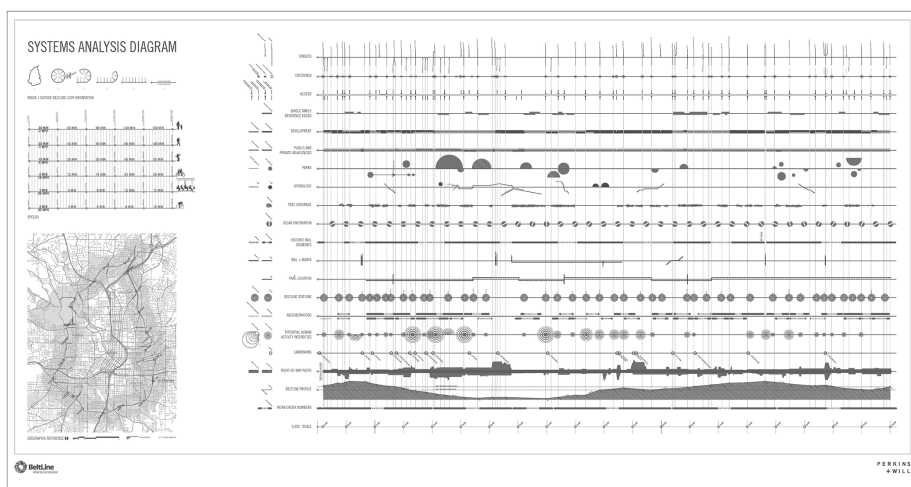


Figure 2. Physiographic and Cultural Systems Analysis Diagram

Results

Design Framework

As a result of this analysis, the design team identified two core characteristics of the existing Atlanta BeltLine: Continuity and Variety. Unlike Atlanta's mainline railroads that have a relatively uniform experience following the ridge lines into downtown, the "belt lines" bypass the city center and slice across the hills and valleys of the Georgia Piedmont plateau, engaging a rich variety of spatial environments. These varying conditions define a recognizable sequence of spatial segments that offer a sound basis for design variety.

Maintaining continuity is essential as the Atlanta BeltLine is transformed into its new public purpose, creating an overarching identity and helping users navigate through the city and along the route. This new continuity is expressed in a small set of design elements that take their cue from the corridor's historic identity: the transit guideway and stations, the multi-use trail, and the elements required for this new landscape infrastructure to function – pedestrian ramps,

stairs, signs, railings, walls and site furnishings. Design continuity will define an overall physical identity so that the Atlanta BeltLine becomes a recognizable public space and a coherent urban form that it is legible within the surrounding city.

As a general design premise, the continuity elements defer to the experiential variety, allowing the landscape and cityscape to express the excitement of the corridor. This framework sets the stage for the development of a fully integrated urban landscape, one that displays its own design hierarchy, achieves environmental performance, and successfully integrates the materials, structures and built forms of the corridor as part of a cohesive whole.

Landscape Design Hierarchy

The landscape design for the Atlanta BeltLine has been conceived on four distinct, but interrelated layers: the Open Space Network and New Parks, Urban Forestry Principles, Arboretum Concept, and Character Rooms. Together, this hierarchy of civic, environmental and cultural considerations gives expression to the richness and variety of the landscape (Figure 3).

The Atlanta BeltLine provides a unique and historic opportunity for the city to address its deficiency in open space and new parks. With a goal of increasing Atlanta's total greenspace by 40%, the Atlanta BeltLine will add nearly 1,300 acres of new parks and greenspace over the course of the project's 25-year implementation. These new parks will be connected via 33 miles of continuous multi-use trails, which will ultimately link 40 parks.

The second layer in the landscape design hierarchy applies urban forestry principles to divide the corridor into five canopy reforestation segments based on the prevailing conditions in the corridor. Restoration represents the most advanced approach whereby the full structure and function of a plant community is restored. Rehabilitation aims to repair ecosystem processes, productivity and services, but does not recreate a full plant community. Reclamation involves re-vegetation of degraded areas to begin the healing process for the land, but with lower biodiversity than the other two approaches.

The third layer of landscape development will be an unprecedented 22-mile arboretum—an elaborately curated, city-scale mix of existing and cultivated tree species that is at once an urban forest, an ecological connector, a corridor for scientific research, a collection of remarkable public spaces, and a plant-based cultural narrative of the City's rich history and diverse communities. The Atlanta BeltLine Arboretum will be a defining characteristic of the project.

Finally, in the fourth layer of the landscape hierarchy, proposed canopy forms, planting techniques and tree arrangements respond to the existing site character, conditions and features to shape a variety of new "character rooms." These landscapes will serve as site-specific settings where the quality, character and arrangement of plantings play a defining role in creating a diversity of experiences. Given the narrow average width of the Atlanta BeltLine corridor - and the clearance requirements of the transit guideway - the space available for tree plantings is often limited. Careful selection of tree specimens, mixing of trees with varied canopy size, and adjusting typical tree spacing dimensions are some of the techniques that are being employed to create rich and varied spatial experiences along the Atlanta BeltLine.

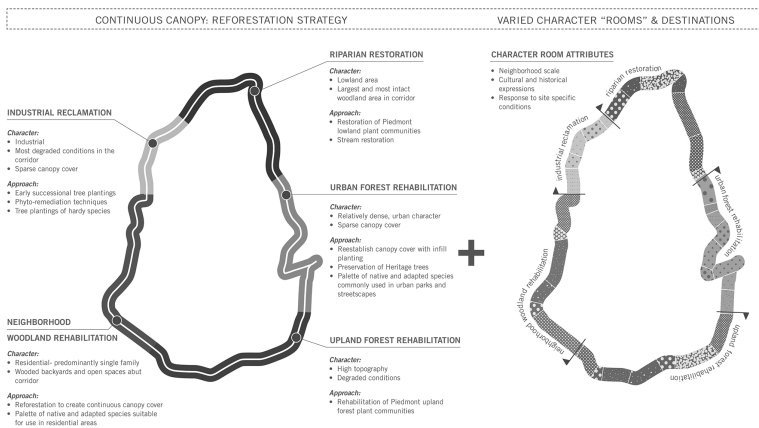


Figure 3. Urban Forestry Principles and Character Rooms

Landscape Performance Strategies

In addition to its designed landscape expression, the Atlanta BeltLine will significantly improve environmental performance, particularly as it relates to stormwater management and urban heat island mitigation. Achieving these environmental objectives is an integral part of the project's development and a critical component in creating a fully integrated urban landscape.

To support the new multi-use trail and transit guideway, strategic and efficient swales and drainage features will be necessary for effective stormwater management. Efforts are made to infiltrate, evapotranspirate (uptake of water by plants), or reuse stormwater onsite using techniques including bioswales, rain gardens, subsurface storage systems.

The largest single consideration in mitigating the urban heat island effect in an urban, multi-use transit corridor is elimination of the stone ballast or pavement

that is typically used for rail beds. Based on international precedents which are adapted to local climatological and environmental conditions, the Atlanta BeltLine will utilize a turf track or “green guideway” rather than conventional rail bedding. This one landscape design feature will substitute 3.8 million square feet (35 ha) of crushed stone or concrete with a vegetative surface. The turf track will also contribute to improved stormwater management, noise reduction, and dust mitigation, in addition to the obvious benefits of a green, uninterrupted ground plane surface.

Materials, Structures and Built Form

The hardscape materials and their expression in the built environment are the final component of a fully integrated urban landscape. Serving as the continuity elements throughout the corridor, they provide the Atlanta BeltLine with a consistent and recognizable character.

The materials palette was selected based on four criteria: appearance, durability, honesty of materials, and ease of maintenance. Consequently, painted and finished surfaces are avoided wherever possible. Instead, the palette relies on a simple but elegant family of materials consisting of granite, stainless steel, anodized aluminum, wood, and custom mixes of exposed aggregate concrete. Together, these materials appear and reappear throughout the corridor, assuming different forms and expressions based on the programmatic needs and local conditions.

The Atlanta BeltLine Trail is a particularly strong identity element, providing a continuous ribbon of movement that is consistent in both dimension and material. The trail itself consists of a custom aggregate concrete mix, treated with retardant and sandblasted on one half of the trail to create a distinctive, two-tone finish. The contrasting finishes on each side of the trail are reinforced by a single saw cut centerline, which further informs the direction of travel. Other hardscapes like public plazas, access routes, secondary and connecting trails also utilize a consistent palette of materials including granite, concrete and crushed stone surfacing.

Retaining walls are faced in Elberton granite, a local stone used often in the vernacular landscape and architecture of the Piedmont region. For the Atlanta BeltLine, it is expressed once again using two different finishes. Long horizontal bands of split-face stone are arrayed on a background of honed-finished granite to create a striking, contemporary expression that evokes movement and references the transit use of the corridor. Fences, railings and screens are executed in stainless steel, and the custom site signage consists of black anodized aluminum with corten steel accent panels (Figure 4).



Figure 4. Eastside Trail Bridge with Elberton Granite and Stainless Steel Railing

This family of materials meets its fullest expression in the transit stations and platforms, where granite pavement meets steel structures finished in black anodized aluminum. The ceilings of the shelters are finished in wood, adding a critical sense of warmth, as are the benches and other seating arrangements on the platforms. The railings, fences and signage all rely on the same palette of stainless steel, anodized aluminum, and corten steel.

Discussion: Community Engagement and Awareness

Beyond changing the form of the city, perhaps one of the most profound impacts of the Atlanta BeltLine is the way it spans the diverse social terrain of the city, creating physical and symbolic connections between rich and poor neighborhoods, former industrial dead zones and dense forests, linking homes, markets, churches and schools that were previously accessible only by car. Though it is a welcome route for recreational cyclists, joggers, strollers and dog-walkers, commuters also take advantage of this safe, pedestrian-friendly space on a daily basis.

In fact, in a city thoroughly shaped by its auto-centric orientation, the Atlanta BeltLine provides a rare opportunity to commute on foot and to experience the city in an unexpected and more intimate way. Both a pleasant route and a destination in itself, the Atlanta BeltLine is quickly becoming a signature public meeting ground for the city, a space to enjoy the sights and textures of the city at a leisurely pace and human scale. How appropriate that in a city defined by rings of sprawl, Atlanta's "Times Square" or "Central Park" is neither square nor central, but a green perimeter that inspires a sense of civic pride, ownership, and unity as it circles the city (Figure 5).



Figure 5. Atlanta BeltLine Eastside Trail

Among the many community engagement initiatives contributing to the project's phenomenal grassroots support is "Art on the Atlanta BeltLine." Now in its fourth year, this is the largest temporary public art installation in Atlanta's history, and it draws thousands of people into the corridor. The intent of the program is not only to make the Atlanta BeltLine a space for the arts but also to realize its value as a public space.

Whether running a 5K race along the Eastside Trail, volunteering for a Saturday planting with Trees Atlanta (a local non-profit organization), or participating in a corporate-sponsored cleanup, community members are actively fueling the success of the Atlanta BeltLine. This broad range of volunteer programs increases the level of community awareness and fosters a sense of ownership to ensure that the project becomes a truly public amenity.

Conclusion

By becoming fully integrated in the communities it touches and inspiring this kind of civic engagement, the Atlanta BeltLine is a model for how landscape

infrastructure can create positive long-term environmental, economic, and social change, and set new paradigms for the future of the city.

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