

Brownfields and urban design: learning from Atlantic Station

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Abstract

Only a decade ago, large brownfield sites were valued only for parks and open space in Europe and for replacement industry or jobs in the U.S. Today, these sites are becoming valued real estate development opportunities for high density, commercial and housing mixed use projects, reflecting the changing form of the contemporary city. If these central city developments are to gain approvals from a myriad of local, regional and national stakeholders, they must be designed to become part of the surrounding city and neighbourhoods instead of continuing their former roles as stand-alone sites. Landscape designs for recent brownfield parks offer some clear directions for understanding urban design for brownfield redevelopment. We relate this landscape experience, such as from Westergasfabriek Culture Park in Amsterdam, to the master planning of Atlantic Station, a high-profile mixed use brownfield project in Atlanta, Georgia. We conclude with three urban design lessons for future brownfield work: subdivide first, design streets as public space, and replace buffers with boundaries to bind the parts of project together to create communities.

Keywords: urban design, landscape urbanism, brownfield redevelopment, Atlantic Station.

1 The new city

For much of the 20th Century, the spatial pattern of American cities was easily understood. Central cores contained downtown commercial districts and dense residential neighbourhoods primarily occupied by the very wealthy and the very poor. Suburbs, containing single-family residences for the middle class, had densities that declined as they extended into the hinterlands. This pattern began changing after WWII, with urban populations decanting to suburban locations



followed by commerce and industry that created a multi-ring polycentric structure [1]. Central cities were left with the remains of the former city, especially the brownfields that are now the focus of renewed redevelopment. Change has accelerated since the 1980's with many describing this new American city form as a splintered metropolitan network of nodes and links extending across entire metropolitan areas, into exurban territories, and reaching out globally [2].

Density gradients, a simple method of representing population density across urbanized areas, reveal clearly reveal this changed form. Instead of population densities dropping rapidly from urban core to fringe, America's suburbs are becoming denser, while central cities, after a long period of decline, are re-populating [3]. Clusters of apartment communities, office towers, and shopping districts are being developed across entire metropolitan areas at densities that were unheard of even a decade ago. These are mixed with ever-expanding subdivisions of single-family houses in suburban and exurban locations. High density housing, retail and offices, not industry, are now the dominant consumers of available land in central cities. These shifts involve more than just the centre and the far periphery – they also include the older suburban rings which are losing post-war manufacturing to exurban locations, while often gaining new higher density residential developments.

Atlanta, Georgia, widely regarded as the worst example of "sprawl," and one of the best examples of the new form of the 21st Century city, illustrates America's changing urban form. In 1980, downtown Atlanta contained almost 70% of the office space and office jobs in the metropolitan area. By 1990 downtown had less than 30% and is outranked by multiple "edge cities" combining office, retail and high density housing [4, 5]. Today, the downtown share is even less. Manufacturing near Atlanta's central core has vanished and is now disappearing from the older suburban rings. Ford and General Motors recently announced closure of their automobile assembly plants in Atlanta, both of which are located in early Post-War suburbs. Kia, the South Korean automaker, recently announced a new assembly plant in Atlanta's exurban territory, 75 miles from the central core. The City of Atlanta itself, comprising only 10% of the metropolitan population, is now growing after declining for more than 50 years. Atlanta's Beltline, an abandoned railroad ring with adjacent former industrial properties, is now being redeveloped, with estimates of at least 50,000 new residents in the next 20 years [6]. The Beltline alone would increase Atlanta's population by almost 15%, an unimaginable prospect only a decade ago. Atlanta is just one example among dozens of growing cities across the country. The densest American urban areas are now in the West and Southwest – Los Angeles, Phoenix, San Diego – not New York, Boston or Chicago. Even the great 19th and early 20th Century industrial cities, like Pittsburgh, Detroit and Cleveland, are re-forming themselves even though their economies are stagnant and populations still declining [7].



2 Brownfields and the new city

This emerging contemporary city has changed perceptions of brownfield redevelopment. A combination of public political pressure and weak real estate markets directed early brownfield developments in Europe and Canada toward public parks and open space, while in the U.S., the emphasis was focused on industrial reuse and job creation [8, 9]. More recently, the strongest markets and most favoured uses for brownfield redevelopment are housing, retail and office, often in mixed-use formats on large sites. Instead of challenges to be avoided or delayed, brownfield sites are becoming aggressively sought after real estate opportunities. Developers and economic development agencies have gained considerable experience with brownfield developments, and institutional and other barriers to their redevelopment have receded. But it is the changing city form and accompanying real estate markets that are stimulating the search for more sites for new central city and older suburban ring developments. With conventional sites increasingly scarce, brownfield redevelopment are eagerly sought.

Contemporary real estate developments on the urban fringe are understandably designed to stand alone within the ever-expanding node and link form of the new city. They are usually internally focused, surrounded by buffers, and minimally connected to their surroundings. Any positive externalities are closely guarded to minimize market or finance benefits to surrounding properties.

This same design strategy is too often applied to central area real estate developments, especially large brownfield sites, where planning is narrowly focused on site-specific engineering, remediation technologies, immediate marketability of recovered land, and the frequently defensive postures of surrounding communities. The development complexities of large brownfield sites, however, must be balanced in central areas with the necessity for numerous stakeholder partnerships. Multiple local government agencies, public development corporations, adjacent communities, and myriad interest groups are demanding that new developments focus externally, bind themselves to surrounding communities, and provide a dense network of connections to the larger city. Brownfield planning and design must respond to both of these internal and external conditions and to the unpredictable conditions that accompanying them during the planning, design and development process.

3 Brownfields and landscape design

Design has played an important role in brownfield development since the 1980s, but the emphasis has been primarily on parks and open space [10]. When one thinks of design and brownfields, large park proposals immediately come to mind. The well-known park projects in Paris – Parc de la Villette and Parc de Citroen – were both developed on brownfield sites. Others include Landscape Park Duisburg-Nord in the Nord/Ruhr District, Westergasfabriek Culture Park in Amsterdam, the Sydney Olympic Park, and a long list of others, most of them in



Europe and Canada [11]. The Fresh Kills Landfill on Staten Island is one of the few U.S. examples, and it has only recently begun [12].

Design of reclaimed land for parks has played a key role spawning a design approach called Landscape Urbanism [13]. Instead of setting out a visual image of a proposed park or open space, the focus is instead on process. Derived from ecological concepts, Landscape Urbanism focuses on defining a precise organization of territory as a framework to relate the expected changes – in infrastructure design, remediation processes, park programs, financing sources, etc. – during the entire process of development. This organizing framework consists of three major parts: defining boundary conditions, connecting the site and its surroundings, and internally organizing the site itself, especially circulation channels and major site features.

Amsterdam's Westergasfabriek Culture Park illustrates this Landscape Urbanism design strategy [14]. The park framework design was negotiated with the adjacent neighbourhood, the municipal planning bureau, the developer, and other regulatory agencies and interest groups. It included four key parts: (1) definition of each of the park's boundaries; (2) locations of connections to the adjacent Westerpark, the adjacent street grid and the polder on the opposite side; (3) the location of a central circulation axis linking the remaining buildings together; and (4) a large green space to be used as a multi-use event field. This agreed upon framework – a simple diagram – allowed detailed planning and development of the park to include typical unforeseen changes, such as altered remediation requirements and technologies, changing uses and programs, and altered infrastructure financing and design. In short, designing the Westergasfabriek Culture Park, like the other brownfield parks mentioned above, was like designing part of a city with participation of its many stakeholders, clients, technicians, regulators and finance agencies. The design framework was both specific and flexible. It allowed changes to occur over a ten-year development period and will continue to do so as the park is fully occupied and matures in the future.

4 Brownfields and urban design

Urban design can be approached in many different ways. Too often, it is simply a land use plan – a diagram showing the locations of different project zones and the streets that link them together. At other times, the focus is a visual theme, branding a development with a particular architectural style. And still others, it may focus on building arrangements creating a picturesque scene, a small-town ensemble, a campus-like setting and so on.

When brownfield redevelopment aims for housing and commercial uses, rather than parks or industry, urban design is best understood as a corollary of Landscape Urbanism. Just as Landscape Urbanism adopts an ecological metaphor for designing parks and other large public spaces, urban design adopts the metaphor of traditional city development processes, especially the American process of subdividing land into lots, blocks and streets to make a subdivision plat or city plan. Eighteenth Century Savannah, 19th Century Manhattan, and



early 20th Century suburban subdivisions across America follow that process. The image or style of their streets and public spaces change, buildings are built and re-built, and uses change, too, but within the established subdivision framework. It is a very simple idea, but too often ignored in the face of complex political, market, finance and technological pressures. Urban design, then, can best be understood as a two-part process.

First, urban design is about organizing territory – creating a subdivision plat of lots, blocks and streets – to establish a framework for development. This subdivision process, like the landscape urbanism frameworks, consists of three major parts: defining each boundary, connecting the site to the surrounding city, and organizing the site itself into lots, blocks and streets. This subdivision plat must be designed collaboratively with the full complement of stakeholders.

The plat is then the template for multiple design, finance, construction and leasing/sales decisions. This includes infrastructure design, development approvals, development programs, changing development partnerships, and remediation technologies. It also includes long-term changes as uses change, as buildings are demolished and rebuilt, and as streets and public spaces are redesigned to fit new circumstances. The subdivision plat serves as both a compressed version of traditional city building processes in the short term and a parallel to traditional cities in the long term.

5 Brownfields and urban context

Brownfield sites are both small and large – the gasoline station or dry cleaners as well as the large former industrial sites. However, more important than size is their urban context. Some brownfield sites are small parcels located within an existing urban framework of lots, blocks and streets. Developers of these urban sites now anticipate some level of remediation as part of a normal development process. Often these small sites are part of a former industrial or warehouse zones that have created brownfield districts. In these situations, the redevelopment process is clear – the prior lot, street and block urban subdivision plat exists and provides the framework for incremental redevelopment, including incremental remediation, infrastructure improvement, marketing, and so on. The well-known South CBD District in Chattanooga, Tennessee is a brownfield redevelopment district of this type [15].

Many of the most sought after brownfield sites, given the changing structure of the new city, are the larger sites once occupied by large industries. These sites were usually located for railroad access, with only tenuous connections to the surrounding lot, block and street framework, although they may be adjacent to residential neighbourhoods. Redevelopment of these large sites requires large-scale land acquisition, extensive remediation, major front-end infrastructure investments, and complex dealings with local governments, regulatory agencies and neighbouring residents and property owners. If these projects are simply returned to industrial uses with continued rail access, then development can usually move ahead quickly. However, in the newly developing city, where housing, retail and office are preferred, these railroad territories must be made to



be “urban.” Atlantic Station in Atlanta, Georgia, developed on the site of a former steel mill, is a well-known and high-profile brownfield development of this type [16].

6 Atlantic Station – urban design and brownfield development

Atlantic Station, a 138 acre (56 ha.) site, located at the intersection of Interstates 75 and 85 on the north edge of central Atlanta, was formerly occupied by the Atlantic Steel Mill. With an investment of more than \$2 billion, Atlantic Station is cited as the largest brownfield redevelopment project in the U.S. A joint venture of Jacoby Development of Atlanta and AIG Global Real Estate, the final build out of the development will include 6 million square feet (550,000 square meters) of office space, 10,000 new dwelling units, 1.5 million square feet (140,000 square meters) of retail space and 1000 hotel rooms. Begun in 1997 and opened in the fall of 2005, Atlantic Station is praised as a model of the U.S. Smart Growth movement, receiving the Phoenix Award from the U.S. Environmental Protection Agency (EPA) as the nation’s best brownfield redevelopment. Atlantic Station has won praise from a combination of unlikely sources, including the Urban Land Institute and The Sierra Club. As real estate investment, Atlantic Station is highly successful to date, which is a substantial accomplishment for such a large scale and complex brownfield development.

Much of the praise for Atlantic Station is for its master planning, which began in 1997 and continued for six years through negotiating and gaining approvals from stakeholders. Although laudable for its moving a complex project ahead, the master planning process at Atlantic Station offers important and cautionary urban design lessons that to apply to other large-scale brownfield redevelopments. The planning process involved Jacoby Development’s original plan, two subsequent revisions, and a final one that was approved for construction with minor changes [17].

The First Jacoby Plan, fig. 1, was a conventional, suburban-oriented land use based master plan. Three areas were designated for large single use developments by separate developers. Each of these projects – a horizontal shopping mall, apartment complexes and an office park were automobile oriented, internally focused, surrounded by surface parking lots, and separated from each other and the surroundings by green space buffers. The three areas were linked together by a new 17th Street connecting Northside Drive on the west and on the east across a new bridge spanning I-75/85.

The First Revised Jacoby Plan, fig. 2, followed the developer’s realization that rezoning, site remediation and bridge construction over the Interstate Highway required collaboration with numerous stakeholders. Satisfying these stakeholders led to adoption of Smart Growth principles to redirect the project to higher densities, mixed uses and increased pedestrian and transit accessibility. This plan formed the basis of City of Atlanta zoning approvals, approval of tax allocation district to finance site remediation, and a proposal to EPA for Project XL status that gives the developer flexibility in meeting EPA requirements in



exchange for adopting innovative ways to protect environmental and public health. The proposal to EPA was critical, not only to speed environmental approvals but also to gain permission and allow U.S. Department of Transportation (DOT) funding for the 17th Street Bridge. At the time, Atlanta was under an EPA moratorium for highway construction funding due to non-compliance with the Federal Clean Air Act. Although the appearance of the Jacoby plan changed, the initial land use based diagram remained. Modest mixed use developments were included, and minimal street connections were made to the Home Park neighbourhood to the south. The major change was placement of an 8000 car parking deck under the entire retail district. Although claimed as a logical step to cap part of the contaminated soil on the site, it appears that the parking deck was suggested first and foremost as a plinth for a traditional town-like retail district on top.

The Duany Plater-Zyberk (DPZ) Plan, fig. 3, resulted from EPA requiring Jacoby to bring in additional consultants who had more experience with Smart Growth projects than Jacoby's architects. The DPZ Plan discarded the land-use oriented plan and created a lot, block and street subdivision, with fine-grained mixed use across the site. This subdivision structure continued the Home Park neighbourhood street and block format into the Atlantic Station site. The DPZ plan also minimized the underground parking decks by incorporating parking into the centre of blocks and locating underground decks only where necessary for capping contaminated soil. All stakeholders applauded the DPZ Plan, especially for its reduced automobile dependence, connections to the surrounding neighbourhoods, and the framework extending across the whole site instead of three separate parts.

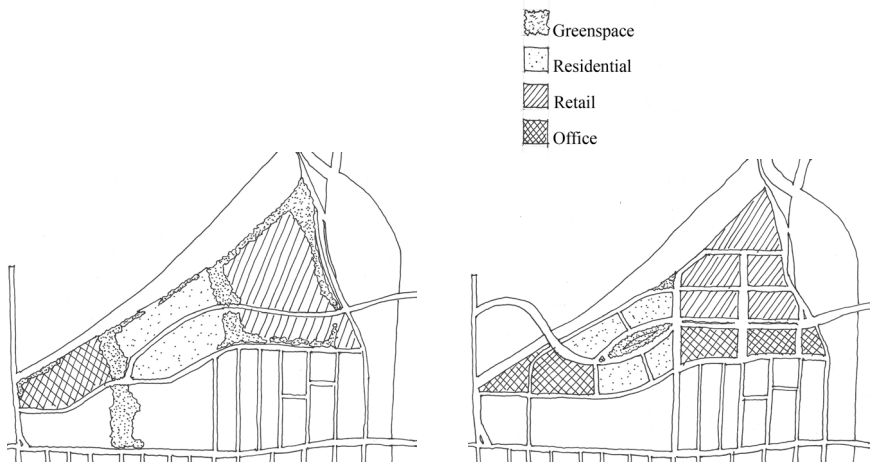


Figure 1: First Jacoby Plan.

Figure 2: Revised Jacoby Plan.

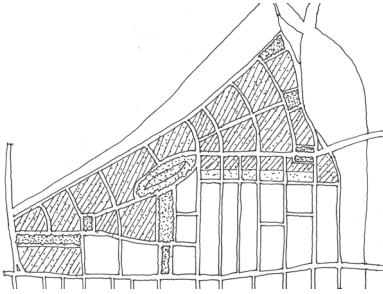


Figure 3: Duany Plater-Zyberk Plan.

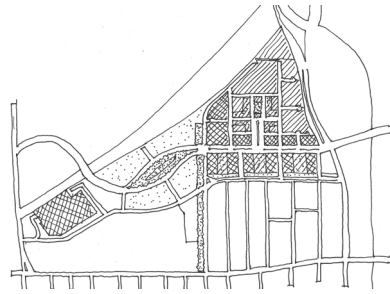


Figure 4: Final Jacoby Plan.

The Second Revised Jacoby Plan, fig. 4, was the response to DPZ's recommendations. It claimed to incorporate many of the recommendations, but did so modestly. The massive two-level parking deck under the retail district remained. Smaller dimensioned blocks were introduced to produce a network of local streets, although their connections to the surroundings were minimal. A more fine grained mix of uses was introduced on a few block frontages. Home Park streets were shown, but only with minor connections to the site. Importantly, the Jacoby's original land use based organizing diagram remained with the new 17th Street and bridge remaining the dominant feature of the development.

Since its opening, Atlantic Station has been praised for its real estate development prowess, but criticized for its urban design shortcomings. These criticisms are focused primarily on three aspects of the project and linked directly to the master planning process.

First, the internal subdivision is based on three primary land-use zones, remaining from the First Jacoby Plan, fig. 1. Even the buffers remain between the three zones, such that it is difficult to walk rather than drive between the apartment complexes in the central area to the commercial district of the IKEA store that replaced the office park on the east. The small block structure in the commercial district is designed primarily for its image as a urban place, not its primary structure that occurred in traditional cities. The streets lead nowhere; access to the massive parking structure below the whole district, are not part of the gridiron of streets. The blocks are also dimensioned, according to building types, essentially sized for one building per block. This is the opposite of the DPZ Plan and traditions of urban design where block dimensions are not detailed for specific uses and, instead, can easily accommodate building and land use changes over time.

Second, the internal connections are poorly designed as part of an urban, mixed-use environment. The bridges and 17th Street were designed according to DOT standards, not according to urban design or context sensitive design standards. Originally four traffic lanes with a wide median, 17th Street was expanded with dedicated bus lanes, dedicated bike lanes, and dedicated left turn lanes that practically eliminate pedestrian waiting space at crossings. It is so oriented to automobile flow that trees are set back eight feet from the curb to

eliminate hazards to automobiles, while on-street parking eliminated, putting pedestrians next to fast moving traffic. Sixteenth Street at the boundary of Home Park is designed similarly. Instead of being a central feature of Atlantic Station, it is a barrier slicing it the development in half.

Third, Atlantic station does not bind to its surroundings. This is especially true on the south boundary where it joins the Home Park neighbourhood, a historic neighbourhood of modest houses where steelworkers once lived. The continuity of streets, proposed in the DPA plan, are disjointed. Although presumably protecting the neighbourhood from cut-through traffic, residents find it almost impossible to walk to the supermarket, restaurants, or offices in Atlantic Station. Thus, the Smart Growth features of Atlantic Station that qualified it for significant public subsidy only benefit newcomers and not the historic residential community adjacent to the former steel mill. And from a design perspective, Atlantic Station presents barriers on each side. Buildings turn their backs to the Interstate Highway and to the railroad and Loring Heights to the north. The auto-oriented IKEA store that replaced the office park on the west side eliminated any connection other than for private automobiles accessing loading zones or the underground parking deck. The 16th Street boundary with Home Park presents a long row of townhouses, effectively making a visual barrier between the neighbourhood and Atlantic Station.

7 Conclusions

Definitive conclusions regarding the ultimate success of Atlantic Station are premature. It will take 10 years to complete, according to current forecasts, and many more years to mature and begin the processes of changing tenants, new uses, new buildings and new designs for streets and open spaces. However, there are three lessons that are useful for other large brownfield projects of the scale and complexity of Atlantic Station.

First, the pedestrian unfriendliness of Atlantic Station reinforces the wisdom of traditional urban design practice where the large scale development site is subdivided first. In this practice, the structure of lots, blocks and streets is not determined by land uses but is, instead, governed by knowledge of cities and districts that have proven themselves through time.

Second, streets should be designed as the most important public spaces because they are, indeed, precisely that. Although streets must accommodate automobiles, pedestrians, public transit, and bicycles, their design should always have an objective of creating public space, as structured within the subdivision framework. When designing streets, it is always valuable to measure and observe great streets that work from their history.

The third lesson is actually a warning, and one that is especially warranted for the complex undertaking of brownfields. It is important to understand that the first diagram developed for a project will be resistant to change, because even if preliminary, it has already had commitments built into it. Thus, from the beginning, the design process must be collaborative and completed without haste; it will change only with colossal effort and will probably, like Atlantic



Station, appear strongly at the end of the planning process. In the maturing of the practice of large scale brownfield redevelopment, developers have come to expect significant public assistance such as that received by Atlantic Station. But without a commitment to the collaborative planning and design process from the beginning, the extraordinary public assistance for a private development project may not be justified, and the potential to be a model urban redevelopment project that has positive externalities on the broader community will not be realized.

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