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The Site Intact: Engaging Site Historical Identity as Impetus for New Transit-Oriented Development

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The Site Intact
Engaging Site Historical Identity as Impetus For New Transit-Oriented Development

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ABSTRACT

Transit-oriented development, or “TOD,” is an exciting planning trend aimed at combating sprawl by promoting high density mixed-use neighborhoods along public transit stations in otherwise suburban locations. Early TOD-based communities, while more successful than conventional, homogeneous suburbs, have nonetheless shown to be limited in their capacity to deliver their intended goal: creating vibrant, pedestrian-friendly neighborhoods efficiently linked to greater urbanized areas. Shortcomings are attributed to municipal governments and developers adhering exclusively to early form-based strategies which overemphasize simple land-use adjacencies, an endeavor based solely on financial gain via increased property values rather than on creating meaningful places to live and work. TODs have thus come short of revealing their potential benefits: decreased automobile usage, maximized public transit, and improved public health, to name a few. By avoiding pursuits toward a generic “ideal” physical composition, a new methodology focusing on establishing memorable, site-specific neighborhoods which marry long-held TOD adjacency strategies is better suited toward achieving the critically important outcomes of transit-oriented design.

One particular addendum to conventional theory proves advantageous to this thesis: a broadened application of transit-oriented strategies to neighborhood types beyond suburbs. Downtowns and inner-city neighborhoods, for instance, are perhaps most in need of an intervention, having been crippled by dwindling populations and commerce. Regional centers bring with them an abundance of different challenges and opportunities not granted by suburbs, including the opportunity to capitalize on multiple converging existing transit routes and their infrastructures. Downtowns might therefore already be designated as operating transit hubs, inviting the potential for more streamlined commuter access throughout the greater area.

Perhaps the most notable characteristics of these central districts is their historic character; qualities accredited to their city's founding (having often been the first places settled in the urbanized area). American downtowns serve as the harbor and source of architectural and social identity for their respective metropolitan regions. It is therefore critical to remain sympathetic and reactionary to these highly-individualized neighborhoods – for they truly serve as the cultural epicenters of cities.

The aim of this thesis is not simply to yield a new TOD-based community (or “transit village”) based upon traditional transit-oriented strategies, but rather to consider them in a new way within an untested, richly historic context. This exercise is therefore a revitalization initiative: the establishment of a dynamic new mixed-use community based on TOD principles within an explicitly urban condition, one made feasible through a concentrated responsiveness to historically-generated character. By responding to the history of central cores – those compelling tangible properties and the intangible historic layers contributing to their identity – this thesis will yield a community which bolsters existing transit, complements the long-established built environment, and implements local history as a cumulative generative force.

As traditional development patterns play a considerable role in TOD discourse, so too should history inform its outcomes in an appropriately explicit way. This neighborhood (through architecture, circulation, and visual/experiential allusion) will thereby reinforce rather than deny the site’s historic character and attributes; an ambition conventional suburban development, like suburban transit-oriented development, has come to neglect.
TABLE OF CONTENTS

About .............................................................................................................. 11

Preface: THE TWENTIETH CENTURY CITY.............................................. 13

Part I: TRANSIT-ORIENTED DEVELOPMENT ........................................... 21
   O1 An Introduction to Transit-Oriented Development .............................. 22
   O2 The 3 D’s of Transit-Oriented Development ...................................... 28
   O3 A Performance-Based Definition ..................................................... 39
   O4 The Rosslyn-Ballston Corridor ......................................................... 46

Part II: THESIS INVESTIGATION ............................................................ 51
   O1 Inquiry ................................................................................................... 52
   O2 The Enduring Role of the Past .......................................................... 56
   O3 St. Louis and Competitive Spirit ....................................................... 66
   O4 Design Approach .............................................................................. 86
LIST OF ILLUSTRATIONS

Fig. 1  Wright’s Plan for Broadacre City.  1932, Frank Lloyd Wright.  Retrieved Feb. 19, 2013, from: http://www.mediaarchitecture.at/architekturtheorie/broadacre_city/
Fig. 2  Municipal Parking Lot.  1955, General Motors.  Retrieved Feb. 19, 2013, from: http://www.youtube.com/watch?v=CElngLAjMaA
Fig. 3  Judge Harry Pregerson Interchange.  1993, California Department of Transportation.  Retrieved Feb. 19, 2013, from: http://jampur.com/test/amazing.html
Fig. 4  Vehicle Miles Traveled per Year.  1993, Peter Calthorpe, *The Next American Metropolis* (New York: Princeton, 1993) 35.
Fig. 5  “Suburban Nation:” 10 Things to Hate About Suburban Sprawl.  2010, Jeff Speck.  Retrieved Feb. 19, 2013, from: http://www.huffingtonpost.com/jeff-speck/
Fig. 7  St. Louis, MO Streetcar System Pre-World War II.  2012, Derek Sommers.
Fig. 8  TOD Community Diagram.  2012, Derek Sommers.
Fig. 9  Vehicle-Miles Traveled Per Capita Peaked in 2004.  2012, Benjamin Davis and Tony Dutzik, *Transportation and the New Generation* (Santa Barbara, CA: Frontier Group, 2012) 1.
Fig. 10  The Disappearing City.  1932, Frank Lloyd Wright and Fairchild Aerial Surveys, *The Disappearing City* (New York: Payson, 1932) ix.
Fig. 15  TOD Strategies - All with Average Residential Density of 18 du/ac.  1993, Peter Calthorpe, *The Next American Metropolis* (New York: Princeton, 1993) 58.
Fig. 17  Preferred Street and Circulation System.  1993, Peter Calthorpe, *The Next American Metropolis* (New York: Princeton, 1993) 64.
Fig. 19  Regional Boundaries.  1993, Peter Calthorpe, *The Next American Metropolis* (New York: Princeton, 1993) 70.
Fig. 20  Contra Costa Centre.  2012, Derek Sommers.
Fig. 22  Notable Benefits.  2013, Derek Sommers.
Fig. 23  Measuring Success.  2013, Derek Sommers.
Fig. 24  Arlington General Land Use Plan and Station Character.  2013, Derek Sommers.
Fig. 25  Suburban TOD Application.  2013, Derek Sommers.
Fig. 26  Washington, D.C. TOD Application.  2013, Derek Sommers.
Fig. 27  Urban TOD Application.  2013, Derek Sommers.
Fig. 28  Washington Avenue, St. Louis in 1930 and 2013.  2013, The Old Motor and Derek Sommers.  Retrieved Feb. 19, 2013, from: http://theoldmotor.com/?tag=st-louis-missouri
Fig. 29  The Pleasurability of Ruins.  2013, Derek Sommers.
Fig. 30  Character Elimination and Expression.  2012, Derek Sommers.
Fig. 31  Palio, Piazza del Campo.  1972, Yoshinobu Ashihara, *What Time is this Place?* (Cambridge, MA: MIT Press, 1972) 175.
Fig. 32  Space Versus Place.  2012, Derek Sommers.
Fig. 33  MIT Weekend Memorial to Martin Luther King, Jr. Post-Assassination.  1972, Yanni Pyriotis, What Time is this Place? (Cambridge, MA: MIT Press, 1972) 85.
Fig. 34  Old Burial Ground Milestone, Cambridge.  1972, Paul Hagan, What Time is this Place? (Cambridge, MA: MIT Press, 1972) 135.
Fig. 35  Identity Crisis.  2012, Derek Sommers.
Fig. 36  Postcard.  1904, Louisiana Purchase Exposition.  Retrieved Feb. 19, 2013, from: http://vintageprintable.com/wordpress/vintage-printable-geopolitical/
Fig. 37  Postcard.  1904, H. Roger Grant, Don L. Hosfommer and Osmund Overby, Union Station (St. Louis, MO: Mercantile Library, 1994) 24.
Fig. 38  The Bridge at St. Louis.  1874, F. Welcker.  Retrieved Dec. 08, 2012, from: http://www.loc.gov/pictures/item/96516488/.
Fig. 41  The Trainshed.  Albert Montesi and Richard Deposki, Images of America: St. Louis Union Station (Mount Pleasant, SC: Arcadia, 2002) 18.
Fig. 42  The Headhouse.  H. Roger Grant, Don L. Hosfommer and Osmund Overby, Union Station (St. Louis, MO: Mercantile Library, 1994) 58.
Fig. 43  Entry from Market Street.  H. Roger Grant, Don L. Hosfommer and Osmund Overby, Union Station (St. Louis, MO: Mercantile Library, 1994) 72.
Fig. 44  The Envy of the Nation's Rail Centers.  2012, Derek Sommers.
Fig. 47  St. Louis Population Loss, 1950-2010.  2012, Derek Sommers.
Fig. 48  Population Change in St. Louis.  1947, City Plan Commission.  Retrieved Feb. 21, 2013, from: http://dip9.aaschool.ac.uk/?p=603.
Fig. 51  The City of Kansas City Departing Union Station.  1959, Vince Andrzejewski.  Retrieved Feb. 22, 2013, from: http://wabashrhs.org/pics.html.
Fig. 54  St. Louis Union Station, Missouri.  2010, szeko.  Retrieved Feb. 22, 2013, from: http://www.flickr.com/photos/pedrosz/5073874126/.
Fig. 55  Downtown St. Louis.  2013, Derek Sommers.
Fig. 56  Metrolink Redundancy.  2013, Derek Sommers.
Fig. 57  New Amtrak Intermodal Center.  2013, Derek Sommers.
Fig. 59  Aerial - Downtown St. Louis.  2013, Derek Sommers.
Fig. 60  Union Station Existing Conditions.  2013, Derek Sommers.
Fig. 61  Gateway Mall and Civic Corridor.  2013, Derek Sommers.
Fig. 62  Gateway Intermodal Transit Center.  2012, Zachary Ziegler.  Retrieved Apr. 02, 2013, from: http://transitzac.wordpress.com/2012/09/05/85-hours-on-the-bus/
Fig. 63-70  Design Concept Imagery.  2013, Derek Sommers.
ABOUT

This thesis addresses the topic of transit-oriented development, a fast-growing body of knowledge which has begun to reveal real-world solutions to an issue which has plagued American cities for more than half a century: suburban sprawl. Transit-oriented development, or “TOD,” is centered on demonstrable planning methods which effectively increase population and commercial densities adjacent to the stations of larger, regional mass transit systems. By concentrating new development specifically along transit centers, entire metropolitan regions can better connect residents to their jobs, shopping destinations, and various civic amenities. The result is a mass reduction in regional automobile usage, leading to improvements in traffic congestion, air quality, commute times, overall health, and the resurrection of dynamic and meaningful urban environments.

The fundamental difference between transit-oriented strategies and conventional suburban development is a commitment to the needs of the pedestrian rather than those of the motor vehicle. One only needs to allude to the soaring expanses of the contemporary stack highway interchange in order to comprehend the true scale of the automotive preoccupation which has characterized this country’s stance on urban development since the Mid-Twentieth Century. While suburbs are homogeneous and uniform in their composition – often in fact purely residential – individual transit-oriented developments, or “transit villages,” combine a great multitude of land-use types amidst a truly walkable pedestrian environment.

When residents of a transit village require access to other neighborhoods or communities within the greater region, an immediately adjacent transit station stands conveniently nearby, eager to assist them with their transportation needs.

Part I of this thesis presents the fundamental theory behind transit-oriented development, its intended efforts to redefine our banal expanses of suburban areas, and the means with which to begin quantifying these gains. An understanding of the basis of knowledge is crucial in order to establish a comprehensive appreciation of both its advantages and limitations. Transit-oriented development is, after all, a relatively infantile concept in respect to the larger context of planning design. Indeed, while the culmination of TOD principles might in fact resemble many traditional neighborhoods of dense urban centers, its application within an almost purely auto-centric urban region is very much a new idea.

Part II of this document constitutes the thesis investigation, a response to what is perhaps TOD’s predominantly limiting factor: the concept’s virtually exclusive application to fringe suburban communities. The thesis contends that central core districts, the historical hearts of all metropolitan regions, are the most in need of a major planning intervention as they have been blighted by the mass exodus of populations outward and the minuscule tax bases left in their wake. Could transit-oriented development not serve as a catalyst for the rebirth of urban cores, as well?

What impact might these districts’ historic character have upon TOD design and application? Through an application of specific site-responsive design initiatives rather than an exclusive application of form-based strategies, new communities might better address the challenges associated with sprawl by focusing on the core of the urban region, as opposed to its extents.

This investigation begins by prefacing the contemporary low-density condition which has come to define American cities as of late, as well as the circumstances responsible for this condition and why it so critically warrants a response in the form of transit-oriented development.
[PREFACE:]

The Twentieth Century City
“Democracy…we have started toward a new integration—to an integration along the horizontal line which we call the great highway.”

THE CONTEMPORARY STANDARD OF SPACE MANAGEMENT

In 1928, a sixty-one year old American architect had an idea—a sweeping vision which prescribed a radical transformation to the way we populated and moved about our world. The call was for the complete decentralization of the modern urban city; and while that idea now seems appropriately radical, it was nonetheless an idea of that rare and historically precarious variety which opportunistically marries an alluring, untested utopian vision with the burgeoning social conditions conveniently suited to attempt it. Championed by its author as the absolute answer to the filth, congestion, and diseased values he associated with dense urban environments in twentieth century American cities, the concept was self-proclaimed as the crowning work of a man who for almost a century would be considered the greatest, most pioneering architect in the history of the United States: Frank Lloyd Wright. His vision for “Broadacre City” first appeared in his enthusiastically-titled 1932 book, The Disappearing City.

On its surface, this new development concept was characterized by two immediately apparent conditions: the depopulation (and therefore, destruction) of the modern industrial city and the reallocation of its citizens to extremely low-density settlements (a full acre designated to each unit, to be exact) where individuals could presumably enjoy the cleanliness and health associated with the significant expansion of personalized space. Rather than having residents live dispersed among other functioning typological components, Wright’s plan instead preferred the creation of large expanses of exclusively residential plots which were explicitly separated from other social and cultural activities in the new community. Each of these communities was to be located many miles away from the next. They could be accessed by civilians, visitors, and tourists via an expansive new network of superhighways.

Broadacre City would never be realized, at least to the architect’s exact specifications. Nonetheless, it remains as a prophetic foreshadowing to the low density approach which has characterized the outward expansion of so many American urban centers throughout the decades following its release. The concept’s peculiar strategy transcends the mere demonstration of contemporary planning principles set forth specifically by Wright, as evident through its effective illustration of the morphing social attitudes already at play in the early twentieth century—powerful changes exemplified by an increasing fixation with the needs of the individual over those of the community as a whole.

In keeping with this preoccupation toward individualism, Wright suggested a brand new standard of space management for all developments of the future, an obsession he would soon come to share with the majority of the Americans. In his own words, that standardized unit should become “the man seated in his motor car.” Indeed, Wright (like 92 percent of Americans would one day come to agree) thought that every person should own a car. And to accommodate these millions of automobiles, the architect envisioned a system that serves as a remarkably accurate prototype for the preferred means of travel in the United States to this day: the Interstate Highway System.

In perhaps the most memorable passage of The Disappearing City, the author beseeches the reader:

1 Frank Lloyd Wright, The Disappearing City (New York: Payson, 1932) 54.
Imagine spacious landscaped highways… giant roads, themselves great architecture, passing public service stations, no longer eyesores, expanded to include all kinds of service and comfort. They unite and separate - separate and unite the series of diversified units, the farm units, the factory units, the roadside markets, the garden schools, the dwelling places (each on its acre of individually adorned and cultivated ground), the places for pleasure and leisure. All of these units so arranged and so integrated that each citizen of the future will have all forms of production, distribution, self-improvement, enjoyment, within a radius of a hundred and fifty miles of his home now easily and speedily available by means of his car or plane.1

In the above description of Broadacre City, it is possible to decipher the origins of a momentous, comprehensive shift in planning methodology. Taking into account our present reality as a nation preoccupied by high-speed automobile travel, we begin to understand the driving force behind contemporary development strategies in the United States – not simply a predisposition toward lower densities, but rather an unyielding sympathy to the demands of the automobile (not to mention the extensive infrastructure they insatiably crave). It was, in fact, the automobile which Frank Lloyd Wright so optimistically predicted would be the true executioner of the dense industrial city. In 1928, even he might have been surprised at the startling accuracy of his foresight and the adverse reality it imposed. More than 80 years later, countless American cities are now dealing with the consequences of our automobile obsession.

Like Wright, the vast majority of urban centers throughout the United States have assumed a reactionary stance toward the demands of people driving automobiles. In this sense, the resemblance of our now primarily suburban nation2 to Broadacre City has painted Wright’s proposal in a much different light – certainly not as an alluring visionary utopia, but rather a gridlocked and sprawling dystopia. It may be true that Broadacre City was never fully implemented to full fruition, but its ghost is prevalent in the automotive-dependent developments which envelop our once thriving urban centers. The historical significance in Wright’s proposal is not in the particulars of the design itself, but rather how it so symbolically captured the growing love affair with the automobile shared with the rest of the nation. By 1958, Wright would acknowledge urbanity’s unstoppable dispersal outward: “America needs no help to Broadacre City. It will haphazardly build itself.”5 Wright’s vision endures today as the ultimate apotheosis of a newly born suburbia. Meanwhile, urban sprawl has become America’s architectural legacy to the rest of the world.

The Catalysts of Decentralization

Broadacre City was most certainly not the cause of the rapid suburbanization of our landscape; rather, it accurately embodied changing attitudes in the enormous American middle class in the mid – Twentieth Century. A complicated mix of social factors at play during this time led to new preferences in residential patterns. Revolutions in modern industry, public policy, consumer preferences, and communication all played roles in the desire for residents to escape dense city centers, with the personal automobile serving as the means to which this outward growth was actually feasible.

By the mid-1940s, American middle-class families were privileged with newly disposable incomes, the welcome products of a roaring post-war economy. For the first time, many ordinary families could afford cheap cars for both business and pleasure. Large cities, their streets already brimming with countless numbers of pedestrians, street cars, delivery trucks, and the occasional bicycle, became severely strained under the added pressure of thousands of new automobiles. Vehicular traffic filled city streets which were ill-equipped to handle the new congestion.

Around this same time, large numbers of troops returning home brought with them the desire to start new families. Larger houses in perimeter suburbs (often equipped with multiple bedrooms and ample yard space) provided them with more affordable housing options than those found in the crowded and expensive

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1 Frank Lloyd Wright, *The Disappearing City* (New York: Payson, 1932) 44.
inner urban cores. Many received loans financed by the federal Veterans Administration to aid in the construction of an endless landscape of new single family homes. In the suburbs, residents welcomed the fresh air, added space, and perceived access to nature. These consumer preferences, while difficult to quantify, have existed since the inception of many cities. Affordable personal automobiles simply contributed to the realization of these long-inherent desires.

Meanwhile, cities began to address their traffic problems through the establishment of monetary policies which would hasten their outward expansion. Public money which would have before been allocated to the maintenance of existing infrastructure was instead designated to new municipal subsidies incentivizing new road construction, much of which was directed to previously undeveloped areas. These actions further catalyzed the creation of communities outside urban city centers. In cases like Los Angeles, St. Louis, and Baltimore, the reallocation of funds meant the slow death of extensive streetcar networks and other public transit systems.

Other important factors which ushered in the suburban era involved major changes to industry and communication systems. The steady movement of employment from manufacturing to serviced-based industries, as well as the general economic shift from the processing of goods to the processing of information allowed for an increased number of isolated new regional hubs accessible only by car. Contemporary communication even played a role, as cultural outlets previously served by urban playhouses, operas, concert halls, and film theatres were conceivably accessible by the television screen.

The combination of the new economic structure, large-scale financial freedom, and the availability of automobiles as primary means of transport left young families with the one financially rational choice they could make: to make a new life in an affordable home in the suburbs. Cities which had grown organically over time as a direct response to human needs were abandoned in favor of largely artificial, homogenous “neighborhoods” built from the ground up. In his book, *The City After the Automobile*, Moshe Safdie notes:

> Every physical premise of the traditional city disappeared: continuous pedestrian circulation; a well-defined and habitable public domain; and the entire array of architectural details on buildings and streets — door frames, entry moldings, window sills, stoops, lamps, benches, trees, and all. The new form addressed the issue of vehicular access and parking, but did not replace or reinvent other aspects of urban life that had been inscribed into the older city grid over its history.

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7 Ibid, 9.
THE PITFALLS OF SUBURBIA

Over time, of course, the inadequacies of this unsustainable model have evolved past the realm of mere skepticism and into that of full-fledged dilemma. Even at the lowest of population densities, suburban developments tend not to pay for themselves, all while continuing to consume land and resources at a troubling rate. Residents of suburban neighborhoods consume more goods and utilities while producing more pollution than dense cities.\(^8\) Traffic problems have not been alleviated; rather, intensified (a result of the single access, non-circulatory thoroughfares which link these communities). In fact, suburban neighborhoods are home to more traffic fatalities than any other land-use type in American metropolitan areas.\(^9\) Perhaps most troubling, social inequity and class isolation have risen along with the congestion.\(^10\)


INCOME DISPARITY

“Turn right if you’ve made it.” Never has our national geography been so precisely organized by income.

INACCESSIBILITY

When nearby is still far away: Thanks to code requirements for walls and ditches, even adjacent shopping is not reachable on foot.

CROWDED SCHOOLS

Schools, sports facilities, and other public institutions, ever larger, become ever farther apart, and can be reached only by car. Fewer than 15 percent of American children walk or bike to school, down from over 50 percent in the 1970.

ILLUSION OF SAFETY

Are suburbs safer? In one three-city study, suburban residents were 18 percent more likely to be killed or injured by traffic accidents or crime. If the entire U.S. shared New York’s traffic death rate, we would save more than 25,000 lives per year.

EXPENSE

And building suburbs is expensive. A 2008 study by Arthur C. Nelson, a professor of city and metropolitan planning at the University of Utah, estimated that it costs as much as $13,426 per resident when a new suburban development is built.

MUNICIPAL INEFFICIENCY

Suburbia’s municipal fragmentation also makes government inefficient. New Jersey is rife with corruption in part because of the expense and complexity of maintaining 566 separate municipalities, each with its own city government, school districts and police force.

Fig. 5 “Suburban Nation:” 10 Things to Hate About Suburban Sprawl
Jeff Speck
THE TRANSFORMING AMERICAN DREAM

The time has come to redefine the American Dream, or to at least make it more accessible to our increasingly diverse population: singles, the ever-growing working minority population, and the lower-income families who cannot afford cars nor their own little slice of the suburbs. We now know that the contemporary model for development has failed, at the particular expense of pedestrians, our crowded roadways, students, and urban municipalities left with dwindling tax bases and therefore little to no revenues for which to provide maintenance of basic civic amenities. The answer may come in the form of a model based on tradition, as certain timeless values like diversity, responsible spending, and designing for the human scale have been somewhat ignored in recent decades. A model which combines these forsaken values might very well lead to a dramatic increase in quality of life for urban and suburban dwellers, alike. Such new neighborhoods would be more affordable for lower-income families, environmentally responsible, and even appealing to the most cost-conscious of businesses and employers. At the core of this new model would be a fortified dedication to the needs of the pedestrian, as pedestrians are not only the antithesis of an auto-centric mindset, but also embody all the profound qualities which together construct rich, authentic communities.
PART I:

Transit-Oriented Development
CHAPTER 1: An Introduction to Transit-Oriented Development

In very recent years, the United States has witnessed a compelling shift in development trends away from the status-quo suburbanization of metropolitan population centers. Perhaps most notable is the resurgence of financial investment in American downtowns. In Cincinnati, for instance, over a quarter billion dollars in private and public development funding has sponsored an emerging Renaissance of the city’s urban center and inner-ring neighborhoods. Similar investment throughout the country is directly responsible for a rate of re-population of American urban cores that has not been seen since prior to the Second World War.

CHANGING ATTITUDES

According to 2011 United States Census estimates, the growing resurgence of urban populations can primarily be attributed to young adults who are choosing to postpone home-buying and having children until later in life – opting instead to live within close proximity to available jobs amid persistently bleak employment markets. Today, single adults and single parent households make up 41 percent of the population of the United States. This condition leads to a growing market for smaller homes, and therefore a general increase in the popularity of cities. “Echo Boomers,” a term applied to the children of the baby boomer generation, have shown a particular propensity toward urban dwelling. Recent reports show that 57 percent prefer small lot housing while 53 percent state that being within walking distance to retail is “an extremely important determinant in housing and neighborhood choice.”

Echo boomers will soon make up 34 percent of the entire American population.

Large numbers of young adults have also been encouraged by improvements to quality-of-life within cities. Cities are once again beginning to be perceived as dynamic places to live and work and as up-and-coming centers for the intellectual community and creative arts. Crime rates have fallen in large cities nationwide, and their once thick, smoky air has migrated to the suburbs along with factories and other heavy industries. In 2012, census data confirms population increases for more than half of the nation’s 51 largest urban centers. In contrast, from 2000 to 2010 only five metro areas saw their cores grow faster than their surrounding suburbs.

Another powerful development trend is the ongoing maturation of suburbs, many of which have now grown into genuine municipalities in their own right. In order to build more solid revenue bases, it will be necessary to shed their purely residential identity. Developing new land uses like commercial centers would help suburban cities to combat their own traffic congestion, and to cater to those young residents who have chosen not to relocate to city centers, but who nonetheless still desire traditionally urban amenities like transit options and entertainment districts.

One final trend is equally noteworthy: the broad and renewed investment in rail transportation in the United States. Even in the American Mountain West – where cities have only become major population centers since the dawn of the personal automobile – light rail systems now course through Denver, Sacramento, and Salt Lake City. Interest in rail transcends mere local jurisdictions, as entire multi-state regions have come together to plan and build extensive high-speed rail networks, aided by generous federal funds to catalyze their construction.

These three powerful trends (urban resurgence, the diversification of suburbs, and a renewed interest in rail travel) are converging at an opportune time to reveal the potential for a new form of development – one which combines the walkability, mixed-use character, and public transit of a major urban center with the enormous residential capacities of existing

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suburbs. When located strategically along new or existing passenger rail lines, these “transit towns” or transit-oriented developments satisfy the need for the diversification of real estate within suburbs and, according to Hank Dittmar and his book *The New Transit Town*:

...have the potential to provide residents with improved quality of life and reduced household transportation expenses, while providing the region with stable mixed-income neighborhoods that reduce environmental impacts and provide real alternatives to traffic congestion.8

THE NEW BUILDING BLOCK

Transit-oriented development is a new pattern for growth in suburban environments that promotes high-density housing in close proximity to a public transit station, retail, and a diverse number of other community amenities and land uses. When viewed against a historical context (particularly when juxtaposed alongside the dense urban centers of pre-automobile cities), it becomes apparent that the coexistence of these conditions can be found in a great number of many older neighborhoods. In fact, many of the principles championed by transit-oriented development were commonly implemented in urban centers prior to the mass adoption of the automobile – for the sole reason that those

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8 Ibid.
cities featured development patterns which arose spontaneously out of sensitivity to pedestrians – not cars. It can therefore be debated whether or not transit-oriented development is truly a new concept. Nonetheless, while the favorable consolidation of these urban conditions might be prevalent in a number of established cities, the challenge of applying them to the post-war auto-centric metropolitan region is an idea hatched only in the last two decades.

There are definite signs that the trend toward contemporary suburban development has been a temporary modern condition. After all, automobile transport was not always the preferred means of travel in America, and living in distant suburbs was most certainly not always the lifestyle of choice. Already it is becoming clear that government investments have begun to shift from auto-centric policies to those more focused on the pedestrian – walking, biking, and light rail transit systems. As social trends continue to progress, it is likely that a transit-oriented strategy will yield neighborhoods that will only become increasingly attractive to residents in the very near future. In this light, transit-oriented development has the potential to provide real Twenty-First Century solutions to our development ills, transcending post-suburbanization’s social and environmental problems by also offering valuable alternatives to commercial and real estate markets.

Fig. 7 St. Louis, MO Streetcar System, Pre - World War II
Original Image
DEFINING TRANSIT-ORIENTED DEVELOPMENT

Imagine an entire metropolitan region encompassing a network of functioning, synergetic neighborhoods; each neighborhood a diverse community in its own right where residents of various backgrounds, incomes, and ages live in a truly pedestrian environment. There, people can easily walk to nearby stores, parks, schools, and libraries. Streets are not overburdened with speedy automobiles and are safe for walking. Public spaces are located strategically nearby elegant civic buildings containing necessary public amenities. In open plazas, people enjoy their leisure time and take short breaks from work in the outdoors. The neighborhood functions dually as a hub for jobs, affording ample commercial office space occupied near the center of the community.

A train station which serves as a civic focal point is located centrally, a short, walkable distance away, thus affording efficient commutes for residents who choose to work in other similarly vibrant destinations throughout the larger metropolitan area. This vision takes place not in the historic central business district of the region. On the contrary, this place is located miles away from the traditional urban core – in what was formally an endlessly redundant suburbia. A vibrant, revitalized central business district thrives at the center of the greater region, which now consists of a collection of numerous, truly mixed-use neighborhoods. This is not an unrealistic utopia, but rather the emergence of a city which has reinvented itself through the application of transit-oriented development. Achieving this vision requires a new way of planning our communities and their associated transportation systems; the key aspect toward realizing the concept being an unremitting commitment to the needs of the pedestrian – a dedication to a truly walkable environment. In his 1993 book *The Next American Metropolis*, Peter Calthorpe provides us with perhaps the first formal definition of transit-oriented development, or “TOD:”

A Transit-Oriented Development is a mixed-use community within an average 2,500-foot walking distance of a transit stop and core commercial area. TODs mix residential, retail, office, open space, and public uses in a walkable environment, making it convenient for residents and employees to travel by transit, bicycle, foot, or car.10

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The TOD concept was created specifically as an alternative to suburban development patterns, and therefore intended to occupy similar locations within larger metropolitan regions. Specifically targeted are underdeveloped locations within new urban growth areas. It is imperative that sites will offer immediate access to a primary regional transit line, centering (when possible) the half-mile pedestrian shed on that station, itself. By utilizing existing and new transportation infrastructure (preferably rail), an extensive network of TODs could flourish, each serving to strengthen the overall system’s performance and thus effectively generating the realistic option of reducing automobile usage. The overall scheme is therefore reminiscent of the early railroad suburbs of Nineteenth Century America, mimicking the development of New York’s Tarrytown and New Rochelle at the advent of the steam locomotive.11 Like these early suburban towns, each TOD is not self-sufficient in its own right. However, a network of them throughout an entire region is.

One of the clear advantages of the TOD strategy is that rail is the most efficient means of public transit. It is also, however, the most expensive – an attribute which the TOD model tends to justify via high population densities within the pedestrian catchments of each station.12 While the size of a TOD should be determined on an individual basis, the half-mile radial distance to the centroid consisting of both transit station and commercial core should serve as a generally uniting determinate. The 2,000 ft. measurement has for some time been seen as the maximum comfortable walking distance people are willing to travel in order to access public transit, a walk correlating to a roughly 10 minute duration.13 There are, of course, many other factors which should be considered on a site-to-site basis: topography and obstructing highway infrastructure, to name a few. But the diversity created between neighborhoods will only serve to contribute to the stable, diversified nature of the entire region.

The true benefit to this new scheme is not just in its remedial qualities toward ailing post-auto era cities, exhausted and depleted by their decades-long expanse outward along the highway. What this vision truly delivers is freedom—new choices for people who could benefit from the extra savings of leaving their car behind. An emerging intellectual and creative class, one which craves a vibrant street life and an alternative cultural scene, suddenly has more options than the only one available to them before—the mass relocation to the one remaining, overpriced neighborhood currently offering such an atmosphere. Local employers would be (by default) locating their facilities nearby efficient transit, allowing them the option of extending operating hours deeper into the evening, or even offering around-the-clock business if they so choose.

THE AMERICAN “PUSH-BUTTON” MENTALITY

Our contemporary society has literally made it possible to attain the equivalent of personal rapid transit machines in the form of the household car. Their marginal up-front costs and versatility have resulted in a system that planners like to call “On-Demand,” or “Push-Button” transport, and its application has dominated the sphere of urban development for decades. That true level of “affordability,” however, has recently come into question. While American cities were decentralizing at a rate thirteen times that of population growth from 1970 to 1990, the cost of transportation for a household rose from one dollar out of ten to one dollar out of five.14 Collectively, Americans spend roughly a trillion dollars per year on vehicle ownership and its associated costs. Of that gargantuan total, $100 billion per year is spent on both highways and mass transit.15 It is therefore painfully clear that the effort to keep Americans driving motor vehicles is consuming 90 percent of the financial resources we allocate to transport. And why shouldn’t it? After all, it is far easier to put a couple thousand dollars toward financing a new family car than what it is to organize an effective city-wide public transit system.

14 Scott Bernstein and Ryan Mooney Bullock, Driven to Debt (Chicago: Center for Neighborhood Technology, 2003) 1.
Yet, public interest toward new transit systems and the neighborhoods around them has never been so high – so high, in fact, that the current estimated backlog for appropriating the funds to satisfy the demand for mass transit stands at 50 years. In response to the absence of funding sources, residents in pre and post-auto era cities are voting to tax themselves so that these agendas can be advanced. Even though transit-oriented development elevates the principles of traditional planning patterns, new communities are nonetheless striving to implement them. As Scott Bernstein states in his essay *The New Transit Town: Great Places and Great Nodes that Work for Everyone*,

[Transit-oriented development] is a method of achieving location efficiency and community livability, and a potential major contributor to metropolitan environmental quality. Because transportation expenditures for automobiles now constitute the second largest household expenditure in America, TOD also represents a pathway to lower expenditures, increased household savings, and increased household, community, and national wealth.

Our nation is truly at crossroads. Studies show we are driving less than we did only ten years ago. In fact, the average annual number of vehicle miles traveled by young people (16 to 34-year-olds) in the United States decreased by 23 percent between only 2001 and 2009. While obtaining an automobile used to be seen as a rite of passage, it is often seen by younger generations as a burden. How then, in response to this tectonic shift in consumer preferences, shall we go about planning our cities? The answer will probably come in the way cities were organized prior to the mass-adoption of the personal automobile – when cities were designed for people and not cars; a strategy which embodies that of transit-oriented development.

16 Ibid, 233.
17 Ibid.

**Fig. 9** Vehicle-Miles Traveled Per Capita Peaked in 2004
*Transportation and the New Generation*
CHAPTER 2: The 3 D’s of Transit-Oriented Development

“Places are spaces that you can remember, that you can care about and make a part of your life”

Thanks to the availability of research into recent trends and changing attitudes toward urban living, it is now known for whom TOD strategies are intended to benefit. But in order for municipal planning agencies to begin considering implementing transit-oriented strategies, they must be provided with a number of goals which establish minimum requirements as well as the recommended physical makeup of the neighborhoods. We must now therefore ask ourselves: “What then, are we designing?”

Three physical attributes are thought to considerably distinguish TODs from typical suburban developments, resulting in increased ridership and the generation of a successful, livable environment. Robert Cervero, a professor of planning at the University of California, Berkeley and TOD expert, proposes these three “dimensions” (or “D’s”) of transit-oriented development in his book Transit Villages in the 21st Century. They are: density, diversity, and design.1 Density is, by far, the most important as it correlates directly to increased transit ridership and legitimizes the construction of potentially expensive rail infrastructure.

It is anticipated that different TODs will assume different characters and varying programmatic typologies depending on both their physical geography and location within the larger metropolitan region. Market demands of existing nearby communities, for instance, will have a significant impact on the types of employment offered within commercial zones. The primary attribute making TODs suitable for high-intensity commerce, retail, and job-generating activity is their direct adjacency to the transit system – more specifically, the ability to guide passengers directly to commercial destinations without requiring them to make transfers. As these TOD neighborhoods all depend on transit stations in such a manner, they are typically located anywhere from one-half mile to one mile apart, although these distances tend to fluctuate on account of transit line access and local planning regulations.

DENSITY

High densities in urban areas suffered from generally poor public perception throughout early parts of the Twentieth Century – roughly reaching a climax around the time of Wright’s publishing of The Disappearing City. Thick smog enveloped the urban cores of many cities throughout the nation, a result primarily of concentrations of heavy industry and automobile congestion.

But in this case, the advent of the automobile reaped at least one advantageous outcome, as heavy-polluting industrial facilities were able to drift outward to the edges of cities along with the extensive new highway infrastructure. By the 1970s, modern advancements in medicine and municipal sanitation coalesced with contemporary labor laws to make urban living far less dangerous to public health than at any time since before the Industrial Revolution. Had large numbers of families not already migrated to the suburbs, the resulting combination of better health and the rich vitality associated with a diverse population in a relatively small geographic locale would have produced urban regions offering a vast array of social and economic possibilities – a condition proven by cities like New York and San Francisco which (against the odds) maintained their high

levels of density throughout much of the Twentieth Century. These places have over time proven the positive benefits of high residential densities, immediately apparent in their flourishing and vibrant street life and history of rich cultural contributions to the creative arts.

High density neighborhoods remain, to this day, some of the most highly sought-after communities in all major cities throughout the United States. Higher concentrations of residents sponsor efficiency in civic amenities and greater use of public spaces, thus making them safer places to enjoy walks and leisure time. People who live in neighborhoods with higher net residential densities tend to be far less automobile-dependent for their daily commute. In fact, a San Francisco study showed that every doubling of residential density resulted in a 20 to 30 percent less likelihood in commuting by car. William “Holly” Whyte, in his book *The Last Landscape*, advances the argument for higher density environments beyond reasons for pure efficiency:

Concentration is the genius of the city, its reason for being. What it needs is not less people, but more, and if this means more density we have no need to feel guilty about it. The ultimate justification for building to higher densities is not that it is more efficient in land costs, but that it can make a better city.

In his argument, Whyte places particular emphasis on his belief that high density transcends practical implications by making places that are more aesthetically pleasing than the alternative. That position may well be of a certain subjective nature, but what is certainly true is that higher densities generate a larger variety of stores, public activities, and civic amenities than those offered by the conventional suburb. As a rule of thumb, a residential concentration of between 15 and 48 residential units per acre has generally been accepted as an appropriate target – dense enough to reap the benefits of extensive public conveniences, while tempered enough to prevent overcrowding.

The transit-oriented development concept contends that density and its proven benefits should not be limited to the central business districts of urban areas. As recent US Census data confirms that a majority of our population now resides in suburbs, it is therefore worthwhile to consider enhancing density in existing suburban developments in order to broaden the diversity and human exchange we commonly associate with central core neighborhoods. In this way, the rich public life offered by dense environments can be found in the same places the majority of American people now call home.

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DIVERSITY

While density remains perhaps the most critical component, diversity plays a major role. In *The City Reader*, Louis Wirth establishes the link between density and diversity by noting “Density thus reinforces the effect of numbers in diversifying men and their activities and in increasing the complexity of the social structure.” In this light, diversity can be seen as a positive consequence to density, and its application in coordination with density generates three main types of diversity: in housing, land use, and the heterogeneous population demographics who live and work in these “transit villages.”

DIVERSITY IN HOUSING

The TOD concept calls for an intricate mix of housing options to appeal to varying income levels and lifestyle choices. Certainly, single-family homes will continue to experience strong market demand in most neighborhoods and should have their place within TOD communities. However, higher density housing typologies like townhomes, duplexes, and multi-family buildings are gaining significant traction in market demand, and must also be considered.

Blending rental apartments, townhouses, small lot-single family homes, and duplexes within the same general pedestrian shed helps to establish a heterogeneous population base and thus promotes general cooperation among high and low income residents. Care should also be taken to provide options in housing cost and ownership opportunities. The resulting eclectic neighborhood will be better suited to provide access to basic civic amenities like libraries and entertainment venues, as they will be exposed to a broadened set of users. Integrated classrooms would denote the newly universal availability to quality educational facilities for students. Similarly, the resulting diversified job market of the metropolitan region would hamper the effects of unforeseen hazards while promoting resilient, stable growth over an extended period of time. When a city’s economy is balanced among many employment sectors, that region is better suited to weather economically challenging periods, its flexibility a welcome contrast to the risks historically associated with overconcentration in any one industry.

Diversity of housing choices would also mean an increase to the region’s stock of affordable housing. Countless American cities currently suffer from a severe shortage of inexpensive homes for lower income individuals. This condition has forced many families, single young adults, and first-time home buyers to live on the very fringes of the urban area or in dilapidated core districts, the victims of municipal oversight and the exodus of the middle-class to suburban developments. These unfortunate circumstances often result in working parents spending far more time commuting to distant jobs than at home with their families. Worse yet, because of the vast geographic distances separating lower income residents from employment, transportation costs are higher for this demographic – consistently by as much as 10 percent—a particularly disturbing statistic considering these households’ already strained financial outlook.

By increasing the number of available employment options in proximity to residential neighborhoods, as well as providing access to efficient means of public transportation, transit-oriented development can serve to alleviate this very troubling contemporary trend.

DIVERSITY IN LAND USE

In addition to being diverse in housing availability, individual TODs should also consist of a wide range of assorted land use types. In *Transit Villages in the 21st Century*, co-authors Michael Bernick and Robert Cervero shed light on the origins of our contemporary

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The obsession with allocating homogenous, uniform land uses to increasingly enormous amounts of space:

The separation of land uses is a legacy of Euclidean zoning principles that, when applied in the 1920s, sought to protect residences from nuisances like smokestacks and foul odors. In today’s cities where clean, nonpolluting businesses and shops are the norm, the logic of separating and excluding urban activities makes little sense. There are potential efficiencies in mixed land-use environments.\(^\text{10}\)

Quite simply, the transportation benefits associated with a variety of use types in a compact area encourages people to access these destinations by walking rather than driving. For instance, retail establishments and restaurants will be better attended if located adjacent to both employment centers and residential neighborhoods, as a steady stream of pedestrian customers could walk to these establishments during the day (perhaps on their lunch break) and during the evening after they leave work. Developers in Columbia, Maryland were able to implement this simple strategy and estimated that households within the community drove on average 30 fewer miles per month.\(^\text{11}\)

Bernick and Cervero also note that shared parking within TODs can serve as a means of resource efficiency. Residents of neighboring districts could access local shops in the evening by parking their cars in spaces now vacated by daily office workers. As parking facilities consume startling amounts of space, some estimates predict that a shared parking strategy might shrink suburban commercial centers by as much as 25 percent, a generous portion of space that could be instead devoted to pedestrian-friendly activities.\(^\text{12}\)

Ideally, these customers could access shopping and eating establishments in other districts by the use light rail, allowing them freedom from their cars on most days, altogether.

Of course, mixed-use development strategies offer benefits beyond those associated merely with transit. After all, having a diverse environment filled with (amongst other things) bakeries, drugstores, clothing shops, food markets, government buildings, health clubs, theaters, and schools contributes to a dynamic environment filled with variety and choice. As Bernick and Cervero note, “one only has to go to a suburban office park on a weekend to see how devoid of life these places can be.”\(^\text{13}\)

A lively mixed-use community is filled with activity throughout all times of the day, seven days a week – a direct product of its non-uniform character. The following chart and graphic illustrates Peter Calthorpe’s preferred mix of basic land uses within a given TOD, based on percent of land area within the neighborhood.

<table>
<thead>
<tr>
<th>USE</th>
<th>NEIGHBORHOOD TOD</th>
<th>URBAN TOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>10% - 15%</td>
<td>5% - 15%</td>
</tr>
<tr>
<td>Core/Employment</td>
<td>10% - 40%</td>
<td>30% - 70%</td>
</tr>
<tr>
<td>Housing</td>
<td>50% - 80%</td>
<td>20% - 60%</td>
</tr>
</tbody>
</table>

Even at densities of 12 residential units per acre, (less than the recommended 15 to 48 residential units per acre) a transit village with a quarter-mile pedestrian shed can accommodate a residential population of roughly 3800, certainly large enough to support even the most specific of use types like daycare centers, florists, and appliance repair shops.\(^\text{14}\)

A mix of land uses equates to a large number of diverse individuals maintaining them, and large assemblies of people in this context are particularly advantageous. Harkening to the principles laid out by Jane Jacobs in *The Death and Life of Great American Cities*, having a community secure under the casual surveillance of its many residents’ eyes creates the perception of a much safer environment, a condition particularly appealing to the elderly and families with young children.

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\(^{11}\) Ibid.

\(^{12}\) Ibid.

\(^{13}\) Ibid, 86.

\(^{14}\) Ibid, 87.
DIVERSITY IN POPULATION

Neighborhoods which sponsor ethnic and economic diversity tend to be considered the institutional and cultural “hearts” of almost any larger metropolitan region. This identity has likely less to do with circumstantial geographic centralization, and is more a product of the much higher concentration of cultural, artistic, and social institutions found in these areas. Even when home to a relatively small percentage of a city’s population, research has shown these districts to be the hub of that city’s community organizations, and that these organizations increase proportionally to ethnic and economic diversity within populations groups.

In their report Re-presenting the City: Arts Culture and Diversity, Mark Stern and Susan Seifert used local poverty and racial data to categorize Philadelphia’s neighborhoods as either ethnically and economically diverse or homogenous in nature. Their findings indicate that diversity is strongly related to the presence of social institutions:

Predominantly African-American neighborhoods have more organizations than predominantly white neighborhoods. However, integrated black/white neighborhoods and those with an Asian presence have even more groups. Neighborhoods that are ethnically and economically diverse have, on average, 221 social organizations within one-half mile; ethnically and economically homogeneous neighborhoods have 65.\(^\text{15}\)

The findings were not limited to the proximity of social institutions, as similar statistics were also generated for the prevalence of both art and cultural organizations: “Neighborhoods that are diverse economically and ethnically have 27 cultural organizations within one-half mile, more than five times the average.” And with regard to artistic affiliations: “In ethnically and economically diverse neighborhoods, art groups compose 10 percent of all organizations, nearly twice their proportion in homogenous neighborhoods.”\(^\text{16}\)

Furthermore, not only were cultural and artistic organizations more common in diverse neighborhoods, but the rate of neighborhood participation in these institutions was also higher than the rest of the Philadelphia metropolitan area. In a somewhat surprising finding, the residents of these highly diverse districts were more likely to serve as the participants and audience to many of Philadelphia’s more distant, regional cultural institutions and art programs.\(^\text{17}\)

Diverse places bring with them the desire for residents to establish the means of forging a shared identity within the heterogeneous structure, which explains the prevalence of community organizations in the most diverse neighborhoods of Philadelphia. This community-building movement contributes to the formation of an individualized neighborhood character apparent to visitors and residents, alike; but also (and perhaps most importantly) establishes the means for which residents can be the guardians of that identity, thus establishing a personal link between people and place. It’s all representative of a uniquely urban quality of life – the perpetual and universal promotion of community engagement, a phenomenon which helps to solidify diversity as one of the most critical components to city living. As one Philadelphia resident put it, “Quality of life is not how nice a house you have. It’s the neighborhood you live in… Culture is such a broad thing – it’s not just going to the ballet or the orchestra… it’s all art, an experience of participation that moves you emotionally.”\(^\text{18}\)

\(^{15}\) Mark J. Stern and Susan C. Seifert, Re-Presenting the City: Arts, Culture, and Diversity (Philadelphia: Univ. of Penn Press, 1999) 16.

\(^{16}\) Ibid.

\(^{17}\) Ibid, 19.

\(^{18}\) Ibid, 18.
DESIGN

Without certain general guidelines for design, it is plausible for transit-oriented development to be relegated to a mere catch phrase – an attempt on the part of developers to appeal to an increasingly urban-minded population through a potentially weak implementation of its strategies. In this context, any financially-motivated developer could build-up residential density on undeveloped land near a train station, and then promote the new project as a “transit village,” singing the praises of its sustainable, community-building features. This would, of course, be a falsification, as the new development may offer less in terms of mixed-use character than the original plot of virgin ground it was built upon. And while there is no defined set of design regulations for transit-oriented development – such a set would limit the very same character that the concept aims to promote – there exists, nonetheless, a number of general necessities which would serve any new TOD well to consider.

CORE COMMERCIAL AREAS

One critically important consideration for transit-oriented development is the necessity for each TOD to include a mixed-use commercial core immediately adjacent to its transit stop. In less dense neighborhoods, it is at minimum prescribed that this core area incorporates convenience retail with some measure of locally-serving office space. The cores of larger, more heavily populated TODs may feature food markets, establishments for eating and drinking, entertainment venues, and high-rise structures which combine Class-A office space with residential floors and a retail base.19

Regardless of its size, every true TOD must exhibit a commercial core at its center because they permit residents and employees to access basic goods and services by means of a short walk or bicycle ride. This arrangement is beneficial to both those who do not own automobiles and those who prefer to drive their cars short distances, as local automobile use can be effectively shorted by many miles to and from the commercial outlets. Use of the immediately adjacent transit system is also strengthened, as riders can quickly access the commercial area without the need for an additional transfer. Small purchases before and after work are made more convenient for residents who take the transit rail to other occupations located elsewhere within the region.

Core commercial zones are fundamentally central to transit-oriented development strategies, as their mixed-use nature has the ability to transcend sole applications to districts, alone, and can be applied specifically to individual buildings. For instance, larger buildings located in the core may contain upper-level residential floors, thus amplifying the goal of creating a truly “round-the-clock” neighborhood and ensuring an adequate, steady volume of pedestrian activity throughout most of the day. It is above all important to create a dense employment zone for neighborhood residents. More populous TODs might include high-rise office buildings and even a light-industrial component dispersed amongst street-level retail in order to ensure the generation of employment for nearby workers. Optimally, this area would also feature a large, open space for public gathering, serving (in symbiosis with the transit station) as the central focal point for the community.

RESIDENTIAL AREAS

Of primary importance to all TODs are residential areas within a roughly half-mile walking distance to the central commercial area and transit stop. It is advantageous to take a comprehensive approach in terms of housing typology in order to ensure occupancy for the diverse array of residents’ preferences and needs. Some housing types might include rental apartments, small lot single-family homes, townhouses, and condominiums.20

A residential area designed under TOD principles contains a far higher concentration of household densities in close proximity to efficient transport and commercial districts than the contemporary suburban model. Housing in transit villages should be arranged in a generally radial pattern adjacent to the core commercial transit area, and end at a distance roughly 2,000-2,500 feet from the center of the neighborhood, a measurement which corresponds to an average 10 minute walk. Peter Calthorpe, in his book The Next American Metropolis, explains that a prescribed minimum density requirement of 18 dwelling units per acre is intentionally succinct, a result of the desire to

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20 Ibid.
encourage variety over different neighborhoods. He states:

A mix of housing types may be used within this area, some high density and some low density, provided the overall average minimum density is met. For example, a TOD residential area may include a mix of small lot single-family homes with ancillary units (12 du/ac), townhouses (15 du/ac) and apartments (25 du/ac) combined to meet an average density requirement of 18 du/ac.\(^{21}\)

Of course, even higher residential densities should be considered for TODs located in close proximity to especially urban portions of a metropolitan region.

The resulting network of dissimilar TODs featuring differentiated methods of obtaining the minimum density, as well as the varying overall densities of neighborhoods within the greater region is anticipated to result in a diverse system of functioning communities all contributing to a more accessible, higher populated, less automobile-dependent city.

PUBLIC USES

Let us not forget that great communities have great public spaces – places for leisure, entertainment, fresh air, meeting friends and loved ones, and even for community action. In the transit-oriented development strategy, these open spaces and plazas serve not only residents, but also the employees of the central commercial center, and even households from other, neighboring transit villages. This required public space element can be achieved through parks, village greens, civic plazas, and municipal buildings open to the public.\(^{22}\)

The very foundation of transit-oriented development is based upon creating strong neighborhoods which feature accessible public destinations. Plazas, parks, and other urban open spaces encourage community participation and recreational opportunities by providing the district with a neighborhood “meeting place.” It is therefore a requirement that each TOD – big or small – must include adequate spaces to serve its community. Successfully designed public spaces are located in the center of the neighborhood, equally accessible by residential areas, commercial buildings, and public transit.

\(^{21}\) Ibid, 59.

\(^{22}\) Ibid.
Central plazas function particularly well when adjacent to civic buildings like libraries and courthouses, as these places convey a sense of municipal unity and urban identity. Other civic amenities to consider locating nearby are police stations, post offices, and day care facilities which have easy access to a safe outdoor environment for playtime and meals. Open spaces adjacent to highly visible public buildings tend to become figurative extensions of the civic-mindedness of those structures, so it is especially advantageous to locate these open spaces in the central core area alongside retail business, restaurants, and offices.

SECONDARY AREAS

There is a fourth TOD land-use type which provides for uses that require less density and might even remain automobile-dependent. These “Secondary Areas” are still valuable components to transit-oriented discourse, as they may harbor residents who shop in the central retail areas of transit villages, and who may even generate ridership for the transit station. While not precisely within the half-mile radius of the neighborhood center, these zones nonetheless provide market support for TOD businesses and services.

Secondary areas are adjacent to TODs, and may even surround them in every direction. In order for a space to be considered a secondary area, it must still remain within a one-mile radius of the TOD center and incorporate multiple direct street and bicycle access routes to the core area. Here, one might find lower density housing in the form of traditionally suburban single-family housing, schools, and lower intensity employment options. Explicitly not located in these areas are any commercial areas at all similar to those in the core – in terms of both market appeal and density. After all, this might compromise the ability of the TOD commercial core to remain viable as a center for retail and jobs. Light industrial uses like warehouses which require frequent use of trucks should also not be permitted, as these uses impede a healthy pedestrian environment. Therefore, single family homes are recommended to constitute the bulk of Secondary Areas. In this arrangement, large lot single-family homes are provided an amenity not typically available in most suburban residential areas: direct access to efficient transit by means of streets which connect the Secondary Area to the TOD proper.

CIRCULATION

The local street system within TODs is of primary importance, as thoroughfares should be highly visible and well-connected, avoiding dead-ends and the overconcentration of traffic on any small number of streets. Streetscapes should be designed in a consistent manner and promote flexibility in use; the incorporation of cars, bikes, and pedestrians all receiving adequate attention through design. Preferably, the composition of the street network should generally converge at the local transit stop and commercial core, while also giving parks and schools a certain level of prominence within the system. Streets inside the core area should adopt a slightly modified strategy, as multiple parallel routes – potentially a grid – are needed here in order to prevent the discharge of vehicles into arterial streets. Most importantly, streets should cater to the pedestrian. Peter Calthorpe explains in his book *The Next American Metropolis*:

> Streets must be pedestrian friendly; sidewalks, street trees, building entries, and parallel parking must shelter and enhance the walking environment.

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23 Ibid.

24 Ibid, 69.

25 Ibid, 64.
In order to contribute to neighborhood identity and residents' feeling of ownership and belonging, efforts should be made to also make the street pattern memorable and simple. Bikes and pedestrians should receive equal to preferred attention, resulting in the entire neighborhood being accessible by multiple modes of transport. A well designed street system will innately make most of the neighborhood’s common destinations clearly visible to residents, all while creating short, direct paths for pedestrians, bikes, and those who still use automobiles.

GENERAL DESIGN CRITERIA
Through a comprehensive commitment to addressing street life and sidewalks, walking will be encouraged amongst all residents. Some ways for buildings to address the public street include the use of balconies, porches, formalized entries, and an architecture fine-tuned to the human-scale. Development intensity and building orientation should address and promote the significance of the central commercial core and transit station, while reinforcing public spaces like parks and plazas. Architecture and massing of individual buildings should be varied, befitting with the diversity established through typologies, land use, and heterogeneous residential populations.

By bringing activities, landmark features, and the internal purposes of buildings closer to the street, this scheme encourages walking and reinforces pedestrian connections. Perhaps the most critical targeted zone for implementing these strategies is the retail center, as it not only promotes a healthy local economy but also supports the adjacency of the nearby transit station. These retail outlets might be at a high enough intensity to establish a commercial “Main Street” shopping spine for consumers. Multi-storied office buildings, perhaps with a residential component, are encouraged to occupy the upper levels of the commercial core, set back from the street when necessary. All buildings would optimally be oriented toward the street, and explicitly not the centers of blocks, and especially not toward parking structures. Parking lots and larger structures, if necessary, should be located to the backs of buildings, optimally placed in the interiors of blocks.

REGIONAL FORM
Peter Calthorpe recommends that in order to provide for an adequate mix of uses, each TOD should be a minimum of 10 acres in size. This size is, however, variable depending upon topography, existing adjacent development, and the ability to provide adequate street connections to those existing developments and within the TOD, itself. Of course, the major dictating rule is for the entire community to be within the 10-minute walking radius of the central transit station. With this strategy, the distance from the station to the boundary of the TOD proper is on average no greater than a half-mile, and a full-mile with regard to Secondary Areas.

Fig. 18 Transformation of Auto-Oriented District
Transit Villages in the 21st Century

26 Ibid, 66.
Optimally, TODs should be spaced a minimum of 1 mile apart from one another, in order to ensure that core commercial areas are not competing with those of other neighborhoods. When the strategy is applied to existing rail systems, TOD neighborhood spacing is determined by the stations of that system. A large-scale functioning network of TODs will ensure the ongoing commercial success of individual retail centers while providing residents with efficient access to the resources of their own neighborhood and those abroad within the greater system. The larger regional network which has adopted transit-oriented development strategies will, like all cities, be dictated by environmental constraints such as rivers, bays, lakes, high-altitude landforms and sensitive areas such as agricultural zones. It would be wise for the greater metropolitan region to adopt boundaries for ongoing development (including for TODs) in order to protect and honor these naturally occurring conditions.
EARLY STRUGGLES

Many planners, economists, and other experts (Peter Calthorpe, included) contend that public funding for another generation of new highway systems similar to those of the last Century simply does not exist.27 This finding thankfully does not spell doomsday for ongoing regional growth, as reinforced by the changing lifestyles and attitudes of both urban and suburban dwellers. We must simply change the way we think about growth, particularly in the form of embracing higher densities and the infilling of less dense urban areas. While public interest in transit-oriented development is certainly gaining steam, conventional suburban development is still very much the norm for most cities. In fact, the New Urban News reported that, for every one dollar spent in TOD, over $1,400 is invested in conventional suburbs.28 Examples of successfully-performing TODs are needed so that they can be measured by various performance criteria such as density, property values, household miles traveled by vehicle, and the varied ridership of local transit systems. After all, any optimistic plan can prescribe any number of hopeful strategies down to the very last detail, but it is still only as good as its outcome.

Unfortunately for the early champions of transit-oriented development, hardly any communities were developed that adhered to Calthorpe’s explicit strategy; thus making it difficult to quantify his form-based design method. Many planned neighborhoods intended for San Diego, for example, were mitigated by a poorly planned local transit system – its lack of influence resulting in confusion as to where to locate new commercial and retail centers.29 After two decades of planning, only a small handful of residential buildings would be built in San Diego areas intended for TOD, all while the city continued to grow outward.

Nonetheless, nearly 30 years after Peter Calthorpe first laid out his TOD principles in The Next American Metropolis, there do exist several communities which have successfully implemented transit-oriented development in suburban areas, the large majority of them welcoming waves of new residents wishing to leave their cars at home and take part in a more dynamically urban lifestyle. Examples such as these can particularly be found in Metropolitan D.C. and the Greater Portland region. These successful communities – like the Rosslyn-Ballston Corridor in Arlington, for example – do not adhere (by any sort of precision) to the initial TOD guidelines generated by Peter Calthorpe and Robert Cervero. Yet, their success at building dense, lively, growing neighborhoods cannot be denied.

As TODs like the Rosslyn-Ballston Corridor have proven successful in creating vibrant pedestrian-oriented environments without a strict application of form-based strategies, perhaps what is then needed is an extension of existing transit-oriented development theory; one which is guided by potential outcomes and performance-based measures rather than purely upon built form. In this way, future TODs might be judged not on their physical form, adjacency strategies, and circulation patterns, but instead on how well these neighborhoods contribute to quantifiable increases in the quality of life for residents.

27 Ibid, 71.
28 Puget Sound Regional Council, Creating Transit Station Communities in the Central Puget Sound Region (Seattle: Metropolitan Planning Organization, 1999) 66.
CHAPTER 3: A Performance-Based Definition of Transit-Oriented Development

Even withstanding growing trends like increased transit ridership and greater interest in small-scale housing, a closer look at existing TOD projects reveals that many still fall far short of their potential. For example, many of these developments deny themselves the opportunity to reduce parking as a result of their transit adjacency – opting instead to incorporate standardized, municipally-prescribed parking ratios immediately nearby the station. Contra Costa Centre, a transit village established in 1982 in the eastern San Francisco Bay Area, has implemented extensive parking in a similar vein. While projects like these are significantly better than conventional development, they nonetheless operate only under the veil of a true transit village, as the generous parking allotment confirms an underlying sympathy to the conventional auto-centric condition. On other terms, some new developments which implement an assortment of various uses still lack a synergetic mix of programs which respond explicitly to local market demand. And in yet other instances, communities like Englewood CityCenter in metropolitan Denver fail to include a varied mix of housing options for different household sizes and income groups, opting instead to focus on only one particular market segment by targeting higher income residents.\(^1\) Recently implemented TODs have, however, proven quite profitable for real estate developers and transit agencies. But these projects have generally been predicated on a financial basis and the promise of return for investors rather than adhering to the broad vision of synergetic neighborhoods working in tandem as advocated by Peter Calthorpe. In fact, the goal of generating revenue by commercial and residential rents works quite contrary to the fundamental goals which promote the creation of vibrant neighborhoods that instill community pride and automobile independence. Thankfully, interest in TOD has broadened in recent years to include performance measures beyond those of financial return. The completion of TOD projects—particularly in the Capital Beltway, Bay Area, and Greater Portland—enable planners to study authentic benefits to transit-oriented development which exceed developer and capitalist interests, all while challenging previously held tenets placing excessive levels of attention upon physical characteristics.

THE “ONE-SIZE-FITS-ALL” APPROACH

The traditional definitions of transit-oriented development focus on built form. While the physical characteristics of these neighborhoods are certainly important, they also tell us very little about how these neighborhoods truly function, and therefore are limited in their pursuit toward achieving all the benefits of transit-related development. As Dena Belzer asserts within her report *Transit Oriented Development: Moving from Rhetoric to Reality*,

Units per acre is a measure of physical form that tells us very little: a high-density area can easily be less pedestrian friendly than a low-density one. In contrast, the ability of residents to make fewer trips, own fewer cars, breathe cleaner air, and enjoy more parks are all functional outcomes that can be measured.²

The author contends that due to the dominant reliance on the built form definition, many projects which are marketed as TODs do not, in fact, achieve the fully intended benefits. While all achieve the most basic requirement of creating a dense, mixed-use environment near a transit station, many of these transit villages would actually be considered quite unsuccessful if measured by performance criteria. Therefore, a focus on the consequences to these TOD interventions rather than on a rigid adherence to Calthorpe’s design principles might be a better gauge of the true level of success for these neighborhoods.

Admittedly, Peter Calthorpe’s initial definition of transit-oriented development represented a somewhat limited, “one-size-fits-all” approach. As a result, many projects (especially those which are smaller than his prescribed 10 acres and those with irregular footprints) would find it difficult or even impossible to meet the standards first laid out in *The Next American Metropolis*. This is a significant conundrum as it leaves planners without a true benchmark to judge the success of their projects. This chapter will present a modified Twenty-First Century definition of TOD, one which responds candidly to the means by which developments can be measured in terms of their performance. Five performance-based criteria are discussed, all of which can be better used to evaluate TOD initiatives. Through their utilization, it is possible to create a thorough set of realistic goals for planners to pursue when designing for transit-oriented development. An adoption of these standards might even make it possible to broaden TOD’s appeal to additional types of communities outside the conventional suburban typology.

LOCATION EFFICIENCY

Evidence strongly suggests that people in dense neighborhoods drive less, own fewer cars, are more likely to bike or walk to work, and ride public transit more often than residents of suburbs.³ This pattern is even observed over wide income ranges. Locating efficient transit nearby these dense neighborhoods, as well as incorporating a diverse mix of uses needed to satisfy typical weekly errands, should thereby result in a reduction of automobile use. This conviction summarizes the concept of location efficiency: giving residents’ the choice to drive an automobile rather than making it a necessity.

Reduction in automobile use is directly correlated to household savings on transportation expenses (particularly the costs of owning and maintaining a household automobile). Currently, automobile investment is the second largest household expense for Americans after home ownership.⁴

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³ Ibid, 9.

with more options toward transit, an assortment of varied land uses, and pedestrian friendly streets (featuring unobstructed sidewalks and stable topography) will score highly in location efficiency – but these are only a few of the criteria incorporated into the model. Also considered are residential density and transit frequency. Measurable outcomes which relate to location efficiency include:

- Choice of Mobility Mode
- Increased Ridership of Transit Systems
- Reductions in Vehicle Miles Traveled
- Decreased Automobile Ownership
- Reductions in Household Trans. Costs
- Retail Development Intensity

VALUE CAPTURE

Location efficiency results in direct savings for households in their transportation costs. Studies have shown that residents of auto-dependent cities like Houston, Atlanta, and Miami spend an average of more than $8,000 per year on travel expenses, while residents of New York, Chicago, and Boston spend less than $6,000.\(^5\) Even when the costs of public investment toward transit are included in the calculation, residents of location-efficient cities spend less per year on transportation costs.\(^6\) In 1990, Americans spent an average of more than 13 percent of their yearly income on transit, compared to only 8 percent for Europeans.\(^7\) Simply put: location efficiency results in a significant savings for both residents of cities and the governing body of the region, itself. Every dollar invested into transit has the capacity to move far more people than every dollar invested into automobiles, roads, bridges, and parking systems. These financial savings comprise the essence of the “Value Capture” concept.

By implementing TOD, local governments might witness value capture in the form of increased tax revenues from jumps in sales and higher property values. Transit agencies would capture value through surges in rider fares. These increased revenues often translate to a reduction in the cost of ridership for transit users, further boosting the savings of residents. Employers might even experience value capture in the form of reduced employee commute times.

As studies continue to show that property values increase directly with proximity to transit, many local governments have taken notice of the potential for financial gain. Location efficient mortgages, or “LEMs,” are underwritten by Fannie Mae and are currently available in Los Angeles, Chicago, Seattle, and the San Francisco Bay Area.\(^8\) This new form of mortgage loan takes into account the added savings of living nearby transit stations, and attributes that value to income. The result for homeowners is a larger loan than would have been generated under conventional formulas. When taking into account that these properties have the potential for significant appreciation by means of their location efficiency, this initiative proves to be a major advantage for homeowners.

Living in neighborhoods with direct access to transit also results in savings from reductions in parking requirements. In San Francisco, for instance, homes that come with designated parking spaces sell for upwards of 15 percent more than those without.\(^9\) While it is certainly not practical to eliminate residential parking altogether, giving residents the choice to reap the financial benefits of opting to forego parking certainly contributes to the potential for further savings. Taking all these circumstances into account, the savings associated with implementing transit-oriented development would profit residents, transit agencies, developers, and local governments. The measurable outcomes which relate to value capture include:

- Increased rates of home ownership accomplished through location efficient mortgages
- Increased home ownership rates supported by cost savings from parking reductions
- Reductions in household and public expenses on transportation

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6 Ibid.


9 Ibid.
LIVABILITY

At the most fundamental level, transit-oriented development strives to create better places to live and work. While the term "livability" might convey a broad collection of romantic and vague concepts that avoid concentrations on measurable criteria, many nations are finding that quality of life is actually of critical importance to human and economic development. As Dena Belzer states within Transit Oriented Development: Moving from Rhetoric to Reality, “Much evidence indicates that people are increasingly frustrated with air pollution, long commutes, traffic congestion, and the difficulty of running errands.”

While defining “livability” has proven difficult from an objective standpoint, large amounts of data does exist which measures the livability of communities over time. This data has been generated through the utilization of standards which citizens feel are essential criteria for working cities. Often, these criteria (though not explicitly related to TOD) deal with issues concerning land use and transportation.

Fortunately, many of the generally desired outcomes of such livability studies tie into the anticipated benefits of transit-oriented development. For instance, reductions in auto usage result in cleaner air, less dependency on petroleum products, and reduced traffic congestion. Additionally, dense mixed-use neighborhoods provide more efficient access to basic services and exercise. Livability can be measured through numerous forms of criteria, many of which are unmistakably connected to TOD principles:

• Improvements in Air Quality
• Decreased Gasoline Consumption
• Increased Mobility Options (Walking, Biking, Organized Carpooling, and Public Transit)
• Reduced Traffic Congestion
• Smaller Distances to Available Services and Retail
• Improved public safety
• Reductions in Traffic Injuries
• Low Regional Unemployment

RICH MIX OF CHOICES

Choice is one of the hallmark characteristics of some of the best functioning, most pedestrian-friendly neighborhoods. In these communities, residents have the option of walking to and from a wide array of community activities. These circumstances are particularly advantageous for lower income households who cannot afford automobiles, the young, elderly, or simply for people who choose not to rely exclusively upon their cars. Providing a mix of available uses within neighborhoods helps to make communities more efficient because residents can complete multiple errands in single trips.

The concept of choice applies similarly to housing options. Multiple forms of residences allow for individuals and families to find the home that best suits their lifestyle, while allowing for them to proceed through different financial stages of their lives without being compelled to leave the community.

One common misconception is that transit-oriented development aims to “force” people to live a certain way, and this is simply not the case. Quite the contrary, in fact: TODs accommodate a much wider array of housing, transportation modes, and retail choices than any conventional suburban development. One study which attempted to discredit traditional neighborhoods’ abilities to reduce driving for shopping activities still found that it was of critical importance to those residents to have, at least, the choice to walk.

Transit-oriented development is intrinsically focused on expanding options rather than limiting them. Therefore, a diverse mix of uses and housing options is of particular importance to the concept’s application. Criteria for measuring an increased level of choice might include:

• Multiple Forms of Housing
• Diverse Array of Retail Choices
• Multiple Forms of Transportation

10 Ibid, 12.
11 Ibid.
EFFICIENT REGIONAL LAND-USE PATTERNS

Most of the urban areas in the United States have continued to grow at a rate which exceeds their population growth. This results in not only an ever-decreasing density for the totality of the metropolitan area, but also a consumption of previously virgin land, more highways and automobile infrastructure, and longer commutes from traffic congestion. Transit-oriented development presents us with an opportunity to establish more efficient development patterns which can decrease traffic congestion. As TOD is to be concentrated near transit stations, its development will effectively consume less land.

True measurements of the effectiveness of TOD projects have yet to be fully understood, primarily because completed examples remain isolated within regions which predominantly still continue to adhere to conventional, suburbanized land use patterns. If transit-oriented development were to be adopted on a larger, regional scale, many more origins and destinations would be linked by stations, thus making public transit a more viable option. Similarly, if growth were to be consolidated almost exclusively into transit regions, there would be significantly less sprawl.

Transit-oriented development is considered by most experts as a form of “smart growth” – or growth which aims to reduce additional suburban development. Minimizing sprawl, however, must not be the only objective. Growth must be channeled into places which make development more effective, better linking it to the system as a whole. Transit-oriented development exemplifies this objective. Measurable outcomes of efficient regional land use include:

- Reduction in the Consumption of Virgin Land and Agricultural Areas
- Shorter Commuting Time
- Traffic Reduction and Improved Air Quality
- More Efficient Linkage Between Housing and Jobs
- Transit Stations Which Serve as Places of Departure as well as Destinations

Fig. 22 Notable Benefits

Original Image
THE NEW TYPOLOGY

With the development of new performance standards, it is possible to examine TOD projects in a different light. Perhaps most notably, the measurement criteria uncovered in the previous sections creates the potential for a broader application of the concept’s principles. After all, urban regions are incredibly complex places with a truly staggering number of conditions to address, and we might find that these issues would be better evaluated by performance standards rather than prescribed physical form.

Transit-oriented development, while admirable in its goal of creating meaningful neighborhoods for people to live and work, has almost exclusively been utilized (and arguably never to its full potential) in suburban developments. These areas are often many miles away from the dense urban cores most desperately in need of rehabilitation. But older central neighborhoods might find the types of strategies appropriate for suburbs to be quite inappropriate for their needs. Downtowns are, after all, already quite dense. Often they embody some form of indispensable historic character which is central to overall regional identity. For these reasons, a more general, performance-based definition might be better suited for these core central neighborhoods – measurements which do more to reconcile the differences between urban and suburban. By contributing to a new definition of transit-oriented development, these performance standards could effectively become valuable benchmarks toward the rehabilitation of older neighborhoods as well. In other words, TOD might be better defined not so narrowly and instead in a way which addresses cities’ inherent complexities and unique local problems. If performance-based measures were to become a more integral means of evaluating transit-oriented development, the concept’s application broadens significantly. A new typology would do well to account for this broadened appeal: a system which incorporates different kinds of places and defines TOD in a way that distinguishes each application from the next, accounting for the diversified roles within a larger metropolitan network. A new classification of typology might include:

TRANSIT TOWN CENTER
These communities most closely resemble Peter Calthorpe’s intended candidates for transit-oriented development. Transit town centers are located on a light-rail or rapid bus line with efficient access to the regional center. This environment is conducive to a densification of retail and employment concentrated around the transit stop, with a mix of housing options available within.

SUBURBAN CENTER
Many older suburban neighborhoods have matured into functioning municipalities in their own right. Planners might find that these areas have already evolved into important employment centers. The potential exists for suburban centers to become more urbanized “round-the-clock” destinations in response to increased market demand for dense residential housing and commercial retail.

URBAN NEIGHBORHOOD
These neighborhoods were perhaps the original “suburbs” – dense, historic areas surrounding downtown cores once served by (now mostly extinct) municipal streetcar systems. Urban neighborhoods provide an intense mix of uses for their diverse residents including consistent street-front retail along pedestrian-friendly sidewalks. Their residential components often occupy the upper levels of low to mid-rise structures which commonly feature a commercial base floor.

DOWNTOWN CORE
As we have discussed in prior chapters, downtown districts are on the mend, welcoming hoards of new residents who wish to take part in a more civic-minded, culturally diverse environment. As Hank Dittmar asserts within his book The New Transit Town “This fundamental (and probably long-term) change has enormous implications for the character of central cities, the role of outlying areas, and the way transit systems serve these new metropolises.”

Downtowns often serve different functions to transit, as they are typically the place where multiple routes converge, making rapid access throughout an entire urban region feasible. Of particular note is the historic character of these districts, as they are almost always the first settled areas in any metropolitan area. A TOD intervention under these circumstances must be mindful of the unique challenges presented by historic communities.

21ST CENTURY TOD

Transit-oriented development, like our cities, is at a crossroads. Along with the arrival of realistic performance standards comes a pivotal transformation with regard to TOD’s influence: its application to environments outside those of the conventional suburb. If the concept’s goal is to create diverse, pedestrian-friendly, transit-ready neighborhoods, there is no shortage of districts within auto-centric cities which could benefit from its principles. For example, many cities now have downtown cores that are as homogenous and one-dimensional as the purely residential suburb, a condition which brands these downtowns as little more than large-scale office parks. Are these areas not also candidates for TOD’s support? Even more extreme examples can be found in the American “Rustbelt,” where some urban cores have shed a significant portion of their jobs to outlying suburbs, resulting in the downtown’s emergence as a civic and cultural hub rather than an employment center.

Downtown areas present unique opportunities and challenges to transit-oriented development. As they are often already the nucleus of regional transit, renewed efforts would do well to capitalize on considerable existing infrastructure. But perhaps the most distinguishing characteristic of urban cores are their histories – their early settlement responsible for the very existence of every metropolitan region, and their specialized industry which first catalyzed the growth of the larger urban region. Indeed, there could be no suburb without its parent historic center.

The deliberate, cognitive implementation of transit-oriented strategies might very well be a contemporary notion. But make no mistake: the concept’s essence is in that of tradition – the reincarnation of an efficient, functioning system which once grew organically in response to a city’s needs. In this light, historic urban centers might represent the most appropriate candidates for a concept so unmistakably rooted in the past. As we stand, cities have new needs. And they anxiously await our response.
CHAPTER 4: The Rosslyn-Ballston Corridor

The Rosslyn-Ballston Corridor is a transit-oriented development initiative which has completely transformed a previously struggling commercial artery in Arlington County, Virginia. In this example, TOD strategies were implemented along a three-mile stretch of low-density commercial land corresponding to five stations along the Washington D.C. Metro’s Orange Line. The development scheme dates back to the early planning stages of Washington’s rapid transit system, thus designating the municipal government of Arlington County as one of the earliest proponents of transit-oriented development. By the late 1970s, the targeted area had witnessed significant declines in residential population and commerce. More than a third of the area’s residents had moved away in the prior decade.¹ A consensus reached with the local redevelopment agency generated a comprehensive planning policy, resulting in a three-decades long redevelopment effort which resulted in the stabilization of the community as well as impressive population and commercial growth. Vacancy rates are now lower in the Corridor than anywhere else in the Capital Beltway outside of the District of Columbia, while rents are some of the highest in the region.² Currently, the area stands as a stronghold for consistent development, even withstanding the challenges of the recent economic recession.

The corridor consists of station zones which range in size from 140 to 275 acres, each station district exemplifying a “bulls-eye” densification strategy.³ Intensity is focused near the center of each zone, concentrating precisely around the Metro stations. These areas of highest density incorporate a mixture of mid-rise office and residential buildings within a general radius of 1,300 feet (one-quarter mile) from the passenger entrances of the Metro. Residential buildings tend to fall in a range between 18 to 22 floors, while 10 to 12 story office buildings are the norm.⁴ By incorporating ample public space and rigorous streetscape standards, these zones unite to form a highly pedestrian-friendly environment. Development intensity tapers gradually between the transition areas and outward to the North and South, where stable, low density residential areas surround the corridor.

² Ibid, 132.
⁴ Ibid.
MEASURING SUCCESS

- Metro Ridership up approximately 300%
- Quadrupled number of jobs since 1970
- 15 million + additional square feet of office space
- Housing increase from 7,000 to 26,000 units
- Walking/transit commutes are 5 times Fairfax Co.
- 10% auto traffic decrease on arterial streets
The Rosslyn-Ballston Corridor is a prime case study for transit-oriented development, as it is perhaps the only precedent (outside of the Portland metropolitan region) where contiguous stations have been considered in a general plan which reflects the hypothetical genesis of a much larger, regional system of TOD communities. But the corridor goes a step further. Recognizing the potential for an undesirable programmatic redundancy of neighborhoods (each only a half-mile apart), Arlington County Board planners opted to adopt an individualistic approach in an effort to bring varying character to each zone. This goal has been achieved in part due to site-specific architecture, but primarily by means of a varied land-use approach. The Rosslyn zone, for instance, has the highest density of the five stations and is characterized by large office and residential buildings with street level retail. A number of large private and corporate headquarters call Rosslyn home, a testament to its nature as a new commercial center. The Courthouse zone, meanwhile, focuses on government and institutional use. Clarendon is a hub for restaurants and retail, while Virginia Square features a large educational component due to its proximity to George Mason University’s Arlington campus. The fifth neighborhood, Ballston, focuses on highly intense retail. The strategy has proven enormously successful, all while providing residents and visitors with efficient access to different zone types via the accessibility of the rapid transit system.

Another resounding success has been the relatively small amount of traffic added to local streets. All five stations have experienced a truly remarkable upswing in transit ridership, even since the early 1990s, alone. Yet more impressive, most users of transit tend to access the Metro stations either by foot or bus. A 2008 report generated by Arlington County determined that an impressive 73 percent of Rosslyn-Ballston Metro riders access the stations by foot, a statistic that is made all the more remarkable when considering that only 15 percent of riders access rapid transit by foot in other suburban communities along the Orange Line. These numbers have helped make transit ridership in the Corridor the highest in the entire metropolitan area outside of the District of Columbia, and thus surpassing even the county’s goals at the time of the plan’s inception.

Considering these attributes, the Rosslyn-Ballston Corridor would certainly score highly in terms of ridership evaluation. But we are now armed with a comprehensive and focused set of new evaluation criteria; criteria that is far better suited to assess the true success of projects such as the Corridor, which does not adhere explicitly to the form-based definitions of transit-oriented development. In the Arlington County project, for example, housing options are almost exclusively allocated to large apartment buildings; predominant land-use identities characterize the five different neighborhoods. Furthermore, Secondary Areas only exist in a vague, imprecise manner, their assumed boundaries correlated more to building intensities which dissipate rather abruptly into large-lot single family homes, despite the application of the tapering strategy. Yet, the Corridor continues to thrive and has become one of the most sought-after districts in the Capital Beltway. The project has achieved the general aim of TOD without explicitly implementing form-based design strategies.
[PART II:]

Thesis Investigation
CHAPTER 1: Inquiry

As Part I of this thesis has affirmed, transit-oriented development strategies have been developed and applied over the last three decades in order to stymie the alarming effects of our modern development patterns. The autocentric nature of American cities has ushered in a troubling era of wide-ranging transportation inefficiencies, simultaneously met with decreases in the quality of life for the residents of large urban areas. Indeed, this transformation into a largely suburban nation has brought with it dramatic income disparity throughout large urban regions, increases in both public and household transport expenditures, and decreases in the safety of our now programmatically homogenous metropolitan zones. Transit-oriented development brings with it the promise of confronting these ill effects through a comprehensive reconstitution of our city-wide transit systems. But for as long as TODs stay confined almost exclusively to suburban fringe developments, the true potential of the methodology will not be able to meticulously address those city districts most profoundly effected by the post-World War II exodus outward: the dense urban center.

While it is assumed true that the implementation of TOD nodes throughout any specific urban region benefits the entirety of its respective populated territory by decreasing commute times and fostering economic and residential diversity to the city as a whole, one can only speculate into the potential gains that historical centers might experience through the implementation of transit-oriented strategies directly into distressed urban core environments. Making this inquiry more pressing is the coincidence that the most noteworthy and frequently documented transit villages belong to the handful of American urban areas with largely functioning, transit-rich central business districts, thus obscuring the full impact upon their parent urban core.

The San Francisco Bay Area’s Fruitvale Village, for example, has stood as a successful TOD precedent since its inception in 1991. Once a thriving hub for the area’s fruit canning industry, the neighborhood experienced devastating population declines with the loss of its factories during the 1950s and 60s. To counter further declines, the local community worked with the Bay Area Rapid Transit District to found Fruitvale Village, a 4-acre mixed-use transit village featuring extensive retail frontage along open public spaces. The project is located some 10 miles from San Francisco’s Financial District, and while it has proven successful, any means to quantify its positive impact on the urban core proves exceptionally challenging, as central San Francisco has remained one of the densest, most diverse districts in the United States.

The same condition holds true for Orenco Station (a similarly successful TOD community located 11 miles from Downtown Portland), as well as the Rosslyn-
Observation

- TOD counteracts suburban sprawl directly by transforming these auto-centric places into dynamic pedestrian environments. However, many of our downtown urban cores have also become auto-centric in nature.

- 5+ miles separate the central station of the Corridor from the Capitol Building, the geographic and historic center of D.C.
**QUESTION:** How could one engage TOD to an urban site with an established historical identity?

- Historic city centers are perhaps most in need of a major urban planning intervention.
- Dwindling populations and tax bases and decrease commerce resulting from mass suburbanization
Ballston Corridor found in suburban Arlington, Virginia. These three examples can all be found in urban regions with intact central business districts, each city having weathered the very real threats of mid-Twentieth Century suburbanization through the existence (or later implementation) of extensive, frequently used transit systems.

What then, might a new TOD-based neighborhood provide for cities that have not so successfully withstood the gradual depopulation of their historic centers? Considering that these core districts (being exclusively corporate in nature) have been stripped of their residents, 24-hour commerce, and tax bases, such an intervention might take the form of an explicitly urban transit-based neighborhood located within the very epicenter of sprawl’s destructive forces: a TOD community planned not for a suburban context, but within the historic center itself. Might transit-oriented development serve as the catalyst for the rebirth of urban cores desolated by the relocation of their permanent populations? Central core districts possess a critically distinguishing attribute not found in suburban developments built from the ground-up: their long-established history. How might that historic character begin to inform the design of such a place? The architectural response to these questions would not only absolve TOD from any form-based limitations, but also initiate dramatic new levels of site responsiveness yet to be seen in recent applications of transit-oriented principles.

Fig. 28 Washington Avenue - St. Louis, MO 1930 and 2013
The Old Motor & Original Image
CHAPTER 2: The Enduring Role of the Past

The problems with suburban development patterns transcend matters of automobile dependency (rates of which now exceeding 90 percent in the U.S.), safety (suburbs have actually proven more dangerous to both drivers and pedestrians) and the death of once-vibrant cities. Suburban developments, by their very nature, are disorienting environments in which to live. While many could legitimately argue that a simple orthogonal street pattern might do well to help alleviate the issue, that intervention would only address matters of geographic orientation. There is, after all, another important point of reference which remains critical to the discussion of explicitly urban places, that of **temporal orientation**: a heightened and more accurate sense of the flow of time and (perhaps most importantly) a person’s place in the present. Such a goal is made possible through the maintenance, preservation, and expression of a place’s past.

TEMPORAL ORIENTATION

As with all methods of orientation, landmarks are essential in order to establish places for reference. Orienting people in a temporal way proves no different. Since their inception, cities have been harbors of historical citation, rightfully charged with the responsibility of presenting their pasts to inhabitants through the diligent incorporation of temporal landmarks into the fabric of the city. These elements range from subtle to audacious, and manifest collectively in an assemblage of significant objects, buildings, art, and public places which have played major roles throughout the evolution of the community. Historically significant components might be preserved in their original state, re-purposed to serve contemporary needs, or even simply implied abstractly in order to give lasting relevance to notable past events and bygone places. An environment which effectively orients inhabitants in a temporal manner reflects in a visual, tangible way that same diversity which adds meaning and complexity to dense urban environments, thus further distinguishing these neighborhoods from other communities in the larger region. At the surface, the result is an urban-scale “collage” of sorts, that amalgamation of new and old forms which residents and visitors find so pleasing. Kevin Lynch explains in his book *What Time is this Place?*, “The aesthetic aim is to heighten contrast and complexity, to make visible the process of change.”

THE CITY SPEAKS

The pleasure associated with this blending of new and old stems from a heightened awareness of the gradual flow of time, and is a quality which is distinctively urban considering the fundamental “newness” and intentional homogeneity of suburban developments. The comfort derived is not a mystical, inexplicable phenomenon. Rather, it is an experience with roots that reflect the original purpose of converging people into cities since antiquity. The first population centers in Mesopotamia, Northern Africa, and China revealed a major shift from previously nomadic settlement patterns - their founding necessary in order to secure, maintain, and commercialize the yields of newly specialized agricultural practices. Cities were thus created to protect the primitive economy, encapsulating the working symbiosis between resources and the extensive consumer base benefiting from a suddenly generous supply of goods. Five thousand years later, on the most fundamental of levels, our cities continue to operate in much the same manner: the uniting of large groups of people under common purposes, each function unique but sacred to the ever-evolving city.

The role of cities as unifiers reinforces their obligation to communicate that role to the public. Throughout time, cities have become more and more complex in nature, far surpassing early agricultural dependencies to eventually encompass the multifaceted, contemporary demands of employment, technology, industry, and transit. The challenging task of absorbing and providing for these varied modern traits has resulted in increasingly complicated cities, reaffirming the need to effectively remind – to communicate – collective unity and common purpose to the participants of frenetic and potentially disorienting environments. Fortunately, cities possess an inherent characteristic which serves to tame the pressures of ever-changing responsibilities, a temporally-infused “trump card” of sorts which effectively navigates them through the dizzying forces of modernity determined to

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Fig. 29 The Pleasurability of Ruins

Original Image
veer them from consistency. The city’s answer to these stresses is its past; that common history which maintains coherence and common purpose even in times of threatened discontinuity and contemporary bewilderment.

 Truly, as cities unite people under common purposes, the ongoing disclosure of their history seals that bond. Thus demonstrates the critical responsibility of cities to impart upon residents their past, and the realization that history is synonymous with shared urban identity. And it is the built environment of cities, their architecture and working infrastructural systems, which has historically served as the most visibly apparent mediums to communicate that identity.
THE ROLES OF BUILDINGS

Cities which have imbued within themselves glimpses into their past often find that architecture continues to serve as the most immediately effective means of communicating that identity, a phenomenon at least partially attributed to the scale of buildings and their innate ability to promote encounters transcending mere visual observation. What some might find surprising, however, is the compelling argument against age as the one determining factor correlating a building’s power to its influence on the urban region. In other words, increased building age does not seem to correspond directly to a more powerful expression of that building as a temporal marker. For example, the beautifully restored art-deco hotels found along oceanfront thoroughfares in South Florida effectively sponsor a relatively recent history in much the same capacity that the crumbling porticos of the ancient Forum district continue to exemplify a contemporary Rome. This is, of course, not to say that a handful of mid-Twentieth Century hotels along Ocean Drive somehow denote an era as historically significant as Imperial Rome! Nor is it an effort to discredit the lasting integrity and beauty of the ruins themselves, their permanence a testament to the Forum’s construction and overwhelming contribution to Western culture. Rather, the comparison between the two is to signify each architectural condition’s similar effect on the perception of the two cities. In other words, the Roman Forum no more defines a contemporary Rome as colorful art-deco facades currently define South Beach. Both portray in very similar degrees the architectural lineage of each city, as art-deco is as much a part of Miami’s perceived character as the Forum and nearby Coliseum denote their own urban context.

Certainly, advanced age provokes a certain heightened fascination with the individual architectural moment, itself, but may not necessarily inform the larger urban whole in any more significant fashion than buildings a fraction the age of ancient ruins. This important observation sheds light on the inner workings of truly effective temporal markers: those which are bearers of regional historical identity and carry with them the instructive power to inform the future shaping of urban environments.

The corporeal brick and mortar of old buildings, alone, will not miraculously embed character and meaning into communities. And apparently, neither will their relative age. Yet, well-maintained historic urban centers convey a richness in their built environment not perceived in new, endlessly repetitively developments; so we can therefore assume that architecture must serve as an effective medium for the city to announce its past, purpose, and relevance. How then, are we to deduct an explanation for that poetic transference if buildings by themselves are merely self-referential? Perhaps it is an oversimplification of the process to allocate so much of the responsibility solely to the physical built environment. After all, we have thus far largely avoided a discussion of the most elemental component of all cities: the people who inhabitant them.

THE ROLES OF RESIDENTS

The residents of cities (more specifically: the personal connections they forge with their environment) effectively transform architecture from inanimate built form into a collective voice which informs people of their surroundings and present role in the life of the city. This decisively human component intimately links city to resident, as it is the mental and emotional process by which people make connections to an environment that establishes the ability of architecture - or any environmental moment for that matter - to become meaningful in some way. As for the individual, different structures may elicit unique emotional responses - many often highly personal and facilitated by means of memory. A grown adult catching even the most passing glimpse of their childhood home, for instance, might understandably experience powerful feelings of nostalgia and personal attachment. From a less sugary sentimental perspective, engaging an environment that was once the setting for an embarrassing or painful moment might derive quite the opposite effect. It is in this way that physical environments have the ability to not only temporally inform their participants of their context and locale, but also the means with each to orient themselves with respect to their own past experiences. In other words, built forms have the curious ability to initiate within people a better understanding of themselves - where they have been and (at times) how far they have come as individuals.
THE ROLE OF COMMUNITIES
or
“SPACE” vs. “PLACE”

The incorporation of memory brings with it the ability for individuals to augment their environment in a powerful way. Memory allows for an environment to inform residents about themselves by awakening past experiences associated with that same setting. Crucial to understanding this concept is a recognition that memory serves as the added element required in order to establish a distinction between buildings which orient and those which procure nostalgia. This is not to say that memory is always required to induce pleasurable feelings toward an environment. Even without memory’s involvement, people would continue to find environments enjoyable, mostly because of either their innate beauty or a person’s continued interaction with that setting which reinforces a sense of stability that makes our environments agreeable to inhabitation.

Nonetheless, the added component of memory explains the intimate relationships that individuals form with environments. Once it is understood that sole individuals have the ability to enhance the meaning of architecture by inviting it to play a role in self reflection, imagine then the profound role that large groups of individuals might play with regards to their surroundings.

Communities have the power to infuse within their landscape a significance that is exponentially more powerful than the interaction sponsored by lone individuals. It is through their application of collective memory that mere spaces are allowed to become “places.”

The concept of “place,” is best understood as a seamless amalgamation - a synthesis- of all three ascending levels of place-making components previously examined: (1) a tangible built environment that orients and characterizes, (2) individuals who build specific relationships to these objects via memory, and (3) the collective, shared memory of entire communities that imbue within that setting a common purpose. As memory enables individuals to determine their relative temporal position and to better understand themselves, the plurality of collective memory serves as a means for strengthening how people relate to one another.

Places implement the passage of time to advance collective significance to participants. On one weekend, for instance, a beloved sports stadium might serve as the setting for an emotional win before a capacity crowd, contributing to its role as the venerable home of a team beloved by millions more throughout an entire region. Three days later, the same scene might be repeated. Regardless of victory or failure, the continuous use of such a place and the reproduced emotional scene found therein allows for a cemented perception of that place as a destination for sporting enthusiasts, for fun, and as a setting that allows for a community to come together under common interests to foster memorable experiences time and time again. Throughout time, this building’s role to the community becomes intrinsically linked to the emotional past events shared within its confines. The stadium, by itself, does not authenticate that identity. It requires the thousands of impassioned fans, the moments they share within, and the memory of those past experiences to generate this place’s identity as a scene for intense excitement and athletic spectacle.

Other places are able to assume an even more significant role to residents via their versatility. Siena’s beloved Piazza del Campo, for example, functions year-round as the city’s main public gathering space. Here, people gather to meet friends, eat, shop, and enjoy the outdoors. Twice a year, however, it is transformed into the setting of one of the world’s most beloved public spectacles: the blood-pumping, centuries-old horserace known as the Palio. Both functions bring with them the need to accommodate thousands of people at any given time who actively make memories as they please. And regardless of the Piazza’s use (as either public

Fig. 31 Palio - Piazza del Campo, Siena
What Time is this Place?
square or as racing venue) it remains the perpetual site of people making those lasting memories with fellow citizens.

Throughout countless world cities, public squares commonly assume similar levels of meaning, often through their shared means of versatility. Civic gathering spaces in the United States might be the site of fervent political demonstrations one day, and for a jubilant public concert on the next. In any condition, the most successful public places serve as the locale for an abundance of emotional, memorable moments shared by large numbers of inhabitants.

THE TIME VALUE OF PLACE

Thus far in this chapter, we have explored how matters of time (from the point of view of both the built environment and its inhabitants) have an enormous impact on the way we perceive our surroundings. We have examined how cities announce their relevance to residents, and how markers of the past have the power to bond the residents of those cities to an ever more complicated built landscape, thus making the present a more manageable place to live. Memory plays the critical role as impetus for the generation of bonds between city and the individual (via nostalgia) and between city and the community (via place-making).

It therefore seems that time is very much not the enemy, but rather the vehicle through which our built environment becomes expressive and meaningful. This is of course contrary to the “flatten and build” technique that developers have used as of late, and which generally characterizes the growth of our built environment over the last half century.

Always, it seems, man is in a constant struggle to combat the passage of time. The powerful ebbs and flows of our ever-shifting natural environment have come to be seen as the adversary of those wishing to physically shape our world. In many cases, the human desire to manage and withstand environmental change is an appropriate and responsible answer to occasional natural threats. Fires have the ability to engulf entire buildings in the blink of an eye. Hurricanes can level coastal communities in a single evening. In response to such threats, builders of the man-made world have formulated strategies with the aim of withstanding potentially destructive environmental forces. But in our attempts to manage perpetual change and the heedless threat of decay, the eagerness to implement glimpses of time within the built landscape has waned. In new developments, reverence toward environmental transformation and its interaction with architecture has subsided to a desire to control it. The construction of new buildings combined with the modern means with which to tame the effects of the natural environment presents contemporary builders and planners with an important choice; do temporal signals of the past still have a place in contemporary society?

Based on this exploration, the answer is of course a resounding yes. Our world fosters intense periods of growth and decay mimicking our own human biological processes. And to celebrate and make visible the passage of time in our world is to show that we have an inherent place within it. The passage of time and the resulting changes in our environment our inevitable; to embrace it might do well to contribute to our well-being.

Perhaps no other work in the last few decades has done more to highlight the significance of maintaining our links to the past as Kevin Lynch’s *What Time is this Place*?
Place?. Originally published in 1972, the author takes a convincing stand advocating the past’s rightful place in our contemporary world. Notably, Lynch is compelled to preserve physical moments in time not by means of an obsession with purely past events and historic structures, but instead through an emphasis of the present’s foremost significance and its ability to be better understood by establishing ties to history. He claims:

*I shall argue that a desirable image is one that celebrates and enlarges the present while making connections with past and future. The image must be flexible, consonant with external reality, and, above all, in tune with our own biological nature.*

This statement summarizes the general tone of Lynch’s book. By affirming a critical link between human psychology and the built environment, the author is in effect establishing his basis of reasoning from which he begins to justify the extraordinary relationship between people and places. He reiterates: “Change and recurrence are the sense of being alive - things gone by, death to come, and present awareness.” Through the use of this clever analogy correlating changing environmental conditions with natural biological rhythms, the former passage validates the expanded emphasis on temporal integration into cities by suggesting that temporal markers are intimately connected to the natural stages of our own lives; and in a manner as intimately personal as our *health*. Once this conclusion is drawn, Lynch’s work becomes instantly more relevant to discussions of true “places.” The author has subtly established the intellectual basis behind the relationship between people, environments, and place-making examined in prior discourse. Buildings have the ability to inform people about themselves, thus becoming instructive in nature. Meanwhile, people exercise the role as place designators, thereby assigning meaning and significance back to buildings; thus also assuming an instructive role. The relationship is thereby reciprocal; each side witnessing expansions in their significance attributed to the work of the other. Prior to Kevin Lynch’s introduction of the psychological component, this interaction could only be accepted as pure phenomenon. But when taking his work into account, the reason behind the exchange becomes clear: our minds and biological rhythms depend on it.

We are already well aware of humanity’s desire to control our environment (especially when taking into account the conventional means of building development that has characterized the past several decades). What is so critically important for us to understand is that Kevin Lynch *does not* deny people this innate desire. In fact, he accepts it as a natural aspiration. Importantly, however, it is an action that must be accompanied by reciprocity. In other words, if we as humans choose to act on our desires to “reach out to the world to preserve or change it,” we must acknowledge our bond to the built environment by honoring the alliance: by allowing it to “reach” back to influence us, thus strengthening the accord. Lynch contends that our well-being might very well depend on it.

*What Time is this Place* is groundbreaking in this regard. When it was written in the early 1970s, Kevin Lynch might not have known just how dramatically different American cities would have become by the new millennium, but it is likely that he had an idea. The most fascinating aspect of his book is its discovery that a symbiotic duality exists between people and places that must be either exercised or be subjected to the risk of decay in both human welfare and (in more literal fashion) of the physical built environment through neglect. It is not an inherently shameful practice for humans to shape the world. Quite the contrary, our survival often depends on it. But an imbalance arises when people do not allow their landscape to “shape them back.” We can add meaning and value to our present by remaining sympathetic to the environment we inherit with each generation. This poetic theory might explain the creation of our banal suburban landscapes which now contribute the bulk of metropolitan land areas. The relationship has simply become too one-sided.

In latter portions of *What Time is this Place*, Kevin Lynch furthers the compulsory reciprocity of people to their environment by reinforcing the link between human biology and its external context. In his chapter “The Time Inside,” the author asserts:

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3 Ibid.
Biology now reasserts the ancient emphasis on the rhythm of life. The world around us pulses in cycles great and small (...) We change too - we sleep or waken, are hungry or full, alert or dull, joyous or sad, are born, grow old, and die. Our internal rhythms seem to respond to the rhythms of the universe, and we use those external changes to regulate our own life processes.¹

In order for the outside world to exhibit an effect upon our biological rhythms, habits, and points of view, the flow of environmental change must be perceived in a discernible manner by our own senses. All around us are opportunities from which to gain a better understanding of ourselves and our ever-transforming contextual environment - opportunities which (if realized) would bring us ever closer to the symbiotic comfort we seek with our environment. Lynch states:

By presenting [sensory data] in novel patterns, artistic inventions alter our sensibilities - change what we see and therefore how we conceive the world and again how we look at it (...) there are novel temporal manipulations of environment that will not only delight us but also vivify our image of time - help us to heal the breach between the abstract intellectual concept and our emotional sense of it.²

As our world changes with the gradual passing of time, so do both the built environment and ourselves. It is therefore logical that both components should depend on one another in order to sustain the passage of time with a sense of meaning and purpose.

While this expanded view of the direct and causal symbiotic relationship between humans and the built world is important to grasp, the most fundamental deduction to be gained is a simple one: that people and their environment remain profoundly similar. So similar, in fact, that they both have nearly identical responses to time as a stimulus. Our internal biological rhythms mimic the life processes of buildings in an unmistakable way. And it is time that truly is the agent which makes possible this intimate bond.

As both people and their contextual environment are subject to the same influence (time) and their response to that influence (expansion and/or decay), it is not without logic to anticipate similar outcomes with regard to the potential severing of both aspects from time. If the city, for example, were to suffer from its inability to know its past, entire built landscapes might endure a crisis of identity resulting from the deficit of temporal markers in much the same way that individuals suffer the disorienting effects from the absence of cognitive memory. Might this condition explain the dull expansive landscapes which characterize the modern condition of many American central business districts?

T.O.D. IN HISTORIC CENTERS

We have now examined the fundamental body of knowledge concerning transit-oriented development, and also the theoretical reasoning which supports its application to untested, urban settings with distinct historical identities. By connecting people to the past, our environment has the ability to enrich the lives of city residents. TOD should not discount history’s important role through a strict adherence to solely suburban developments. Historic city centers are the cultural, historic, and social epicenters for all metropolitan regions. By marrying TOD strategies within these contexts, transit-oriented development’s role might be expanded to encompass locales most critically in need of density and commercial restoration.

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¹ Ibid, 117.
² Ibid, 163.
MAN
(or the city)

Past

(memory)

IDENTITY DISORDER
CHAPTER 3: St. Louis and Competitive Spirit

May 14, 1804 is a familiar date for historians. On that day, President Thomas Jefferson’s private secretary, Meriwether Lewis, his personal friend William Clark, and nearly 30 other volunteers embarked on a memorable journey which began at the confluence of North America’s two longest rivers - along the banks of a small French fur-trading town named St. Louis. The team, dubbed “The Corps of Discovery” followed the Missouri River westward under explicit instructions by the President to discover an overland route to the Pacific Ocean, and to along the way document the geography, wildlife, and people found within the newly-purchased U.S. territory of Louisiana, a vast area of land that doubled the size of the United States. Three years later, Lewis and Clark would return to St. Louis as heroes, having achieved their goal of accessing the Pacific. The co-captains are celebrated to this day for their historic journey. The small city which served as their point of departure would achieve equally iconic status, earning St. Louis the nickname “Gateway to West.”

Over the next decades, the small riverfront city would grow into one of the nation’s principal transportation and economic hubs, servicing steamboat traffic along the Mississippi River en route to New Orleans and the distant upstream trading partners of Cincinnati and Pittsburgh.1 By the 1840s, the city had become second only to New Orleans in commercial steamboat traffic.2 Around this time, St. Louisans became acutely aware of a somewhat odd new transportation method taking Northeastern cities by storm: the implementation of steam to power locomotives which in turn pulled cars along a fixed metal guidance system. Widespread railroad transportation brought with it the promise of tremendous new commerce and improved communications channels to better link cities. The popularity of railroads spread like wildfire; first uniting the great eastern metropolises with iron corridors that quickly began to spread westward.3 Throughout the remainder of the Nineteenth Century, as the nation continued its relentless expansion westward in the name of Manifest Destiny, the city warmly welcomed the proliferation of this new type of transport, and thereby initiated one of the most notable intercity rivalries in American history - the great railway infrastructure proliferations of St. Louis and its younger, smaller neighbor to the immediate northeast: Chicago. St. Louis made good on its early, intrinsic ties with the American West by immediately allocating funding to build a line to the Missouri-

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1 H. Roger Grant, Don L. Hofsommer and Osmund Overby, Union Station: A Place for People, A Place for Trains (St. Louis, MO: Mercantile Library, 1994) 7.
2 Ibid, 8.
Kansas border, the terminus of which (despite all attempts of inconspicuousness) was clearly intended for further “expansive aspirations.” But in spite of St. Louisans’ attempts to secure their city’s lasting influence by way of its geographic endowment, those ambitions proved futile at the hands of young Chicago’s fearlessly aggressive leadership. The upstart metropolis had made headway in its ambitions to bypass St. Louis as America’s premier central rail hub with Lincoln’s signing of the Pacific Railroad Act of 1862, which advanced the Illinois city’s standing as a major player in new plans for a transcontinental railroad.5

Around this time, the rail ambitions of St. Louis were hindered primarily by the city’s lack of an efficient connection to bridge the Mississippi. Without a proper bridge to Illinois, the only means of transporting goods across the river was to unload cars of goods along each bank and ferry them to the other side, where they could in turn be redistributed to trains and allowed to continue along their journey westward. In 1867, engineer James B. Eads was selected to bridge the gap. By 1874, he had managed to do so in truly magnificent fashion.

Upon its opening, the Eads Bridge was the longest arch bridge in the world, spanning an astounding 6,442 feet in its daring use of ribbed structural steel for support (one of many Eads Bridge “firsts”).6 The bridge’s 54-foot road deck was accompanied below by a double track rail tucked within the web-like confines of its steel arch spans. In 1889, the upper roadway would be modified for street car use, expanding upon the example Eads had set for innovation.7

Only fifteen years after the celebrated opening of the Eads Bridge, yet another double track span was completed just north of the original crossing. Subsequently, the latter years of the Nineteenth Century proved to be astoundingly prosperous for St. Louis. The expansive existing rail infrastructure to the city’s west could now be seamlessly linked to the eastern half of the United States. As a result, the city flourished in its strengthened role as a major center for transportation and agricultural exchange. In a matter of years, St. Louis stood second only to Chicago as the nation’s primary rail hub. As Grant, Hofsommer, and Overby state within their book, St. Louis Union Station: A Place for People, a Place for Trains:

“The city’s population of 350,518 in 1880 grew to 451,770 in 1890. In that year, St. Louis stood fourth among American cities in gross value of manufactured products.”

St. Louis’s growth withstanding, not all news in the city was so upbeat. Much to the chagrin of local residents, the city had once again come in second place to Chicago (albeit this time in the company of New York and Washington) in regard to the selection of host city for the 1893 World’s Colombian Exposition. No reports on the tremendous success of the fair were lost upon the people of St. Louis. The nearly 30 million attendees and Chicago’s eager self promotion of its esteemed role in world culture only strengthened St. Louis’s resolve to deliver an equally if not more awesome event. In 1904, the city got its wish. That year, the Louisiana Purchase Exposition, by far the largest of the Victorian-era fairs, opened in what is

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5 H. Roger Grant, Don L. Hofsommer and Osmund Overby, Union Station: A Place for People, A Place for Trains (St. Louis, MO: Mercantile Library, 1994)


7 H. Roger Grant, Don L. Hofsommer and Osmund Overby, Union Station: A Place for People, A Place for Trains (St. Louis, MO: Mercantile Library, 1994)

8 Ibid, 14.
present-day Forest Park. Not to be outdone by its rival, St. Louis’s World’s Fair sat upon 1,200 acres (more than twice the size of Chicago’s expo) designed by landscape architect George Kessler, and featured over 1,500 buildings - the largest of which was the Palace of Agriculture, which alone encompassed some 18 acres. 

The architectural centerpiece of the grounds was Festival Hall (designed by Cass Gilbert), which served as a backdrop to the fair’s primary organizing element: an enormous central basin fed by roaring waterfalls and cascades - its surface brimming with dancing water features and gondola riders. At 140 feet in diameter, the dome of Festival Hall was only 4 feet less than that of St. Peter’s in Rome. 

The Louisiana Purchase Expo was not only well attended, it was also a financial windfall for the city. According the 1904 World’s Fair Society: “The St. Louis World’s Fair was the only fair of the era to show a net profit.” In total, some 20 million visitors attended the fair, a full 10 million less than figures commonly attributed to Chicago’s 1893 Expo. But that individual statistic did not do well to cause the city any concern; its crowd on opening day tallied 178,423.

10 Ibid.
a record for World’s Fairs. On one day in particular, a truly staggering 400,000 people were in attendance.¹³ The success of the World’s Fair embodied a city at the height of its national influence. By that year’s end, the city had amassed a population near 600,000 people, placing it firmly among the nation’s largest cities - ranking behind only New York, Philadelphia, and arch-rival Chicago.¹⁴ The dramatic increase in the city’s population at the turn of the century was indicative of a roaring local economy and a central business district bolstered by the construction of the Eads Bridge and the city-wide commercialization of streets at the hands of an extensive street car system.¹⁵ Evidence of this newly acquired commercial prowess could be seen in the construction of the city’s tallest habitable building in 1891: Sullivan’s revolutionary 10-story, 147 ft. tall Wainwright Building. Considering Chicago’s completion of the similarly 10-story (albeit 9 ft. shorter) Home Insurance Building in 1884, it is conceivable to see the construction of tall buildings - these two truly being among the world’s tallest at the time - as yet another venue for St. Louis to demonstrate its ever present competitive spirit.

¹³ Ibid.
THE WAINWRIGHT BUILDING

[The skyscraper] must be tall, every inch of it tall. The force and power of altitude must be in it, the glory and pride of exaltation must be in it. It must be every inch a proud and soaring thing, rising in sheer exultation that from bottom to top it is a unit without a single dissenting line.16

Architectural historians declare Adler and Sullivan’s Wainwright Building in St. Louis to be the world’s first modern tall office building for good reason. Built an entire decade preceding the Twentieth Century, the building captured Sullivan’s notion that tall buildings should express their inherent “tallness,” an attitude that has remained the most fundamental prerequisite for skyscraper design until this day. The Wainwright Building was not the first building to reach 10 stories, nor was it the first to implement steel-frame construction (although it does come within months of legitimizing that claim). Instead, it is definitively groundbreaking via its acceptance of itself - in its brand new typological scale which freed the building from past requirements and proportional strategies that had been universally adopted by buildings less than a quarter of its height for centuries. Thus, this building is modern on the most basic of grounds: its unapologetic break from tradition.

In keeping with “form following function,” Sullivan considered a tall building’s will to be prominent as

equally purposeful in determining its form. In this regard, the architect correctly anticipated the tall building’s associations with the joint egos of powerful cities and people, and thus designed the building earnestly as an expression of such. The synthesis of commercial values and vertically-oriented ambitions first became evident in Wainwright.

Prior to the construction of Sullivan’s tower in St. Louis, similarly tall buildings in Chicago and New York had been poorly received by the public; generally considered to be awkward, stacked curiosities. These structures - in their continuing dependency on weighty, laterally-themed construction methods and heavy building materials - are largely responsible for the introduction of the term “wedding cake” into our contemporary architectural lexicon. Rather than visually implying an architectural emphasis on the horizontal, Wainwright stretches vertically into the sky, likening itself more to a column than a collection of stacked, monotonous floors.

This is no accident. The building stands as Sullivan’s first completed demonstration of the now famous “tripartite” scheme, in which the building’s facade is likened to the vertical essence of a column and is characterized by three clear divisions. The lowest was a base which encompassed the lowest 2-3 floors. A accentuated cap of 1-4 floors could be found at very top. Between those two components was a shaft which included an unlimited number of identically articulated floors.

In Wainwright as well as his later buildings, Sullivan perpetuated a stark distinction between one key aspect of his work to that of his modern counterparts: his championing of the use of architectural ornament.

Intricate organic patterns set in terra cotta pervade the faces of the Wainwright Building, primarily noticeable at its spandrel locations and along friezes which wrap the building’s cornice. According to Vincent Scully’s article, Louis Sullivan’s Architectural Ornament, the architect’s love for facade embellishments was regarded at the time as “organic gush” and an “embarrassing” contradiction to Sullivan’s encouragement of function as the primary driver for design. Scully is, however, not so quick to judge the elaborate foliar patterns as detractions to Sullivan’s school of thought. Rather, he argues that the architect’s implementation of ornament is an expression of the exaggerated “upward thrusting” and “downward pulling” forces at play within the post and beam connections of a newly developed steel framework. Scully notes:

*He would seem to have been interested in the actual forces operating in the structure and in the methods whereby he could make them visually sensible. Therefore his attitude may be defined as expressing a peculiarly nineteenth century kind of “humanism.”*

When seen in this light, Louis Sullivan’s use of ornament is not contrary to his design philosophy at all, but rather, *analogous* to it. In this very new form of construction, forces moving through building materials interact with one another at heightened, highly concentrated moments. In an effort to express the function of his revolutionary structural systems, it is most likely that Sullivan wished to make the resulting, highly targeted and complex forces more “humanly comprehensible.” In the case of Wainwright, then, form is still allowed to follow function. Albeit the function here described is not programmatic in nature. It is structural.

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18 Ibid, 74.
19 Ibid.
The old Union Depot was a handsome - albeit small - two story brick structure trimmed in stone. Tucked tightly under an eclectic mansard roof was a humble consolidation of waiting rooms and ticket offices.

Once the nearby Eads Bridge opened to traffic in 1874, Union Depot’s limitations had become painfully more clear. Serving a maximum of 52 trains per day, the existing structure was not large enough to handle the heightened potential for rail capacity achieved with the completion of the Mississippi River crossing.21 The situation had grown dire enough that in 1889, the Terminal Association of St. Louis made public their plans of building a new, dramatically larger and more opulent terminal, one which would inevitably serve as the city’s most direct and grandiose challenge to the rising superstardom of Chicago.

Prior to initiating a worldwide competition for the right of authorship to the building’s design, an early decision was made by the Terminal Association for the future building to embody an innovative “stub-end” composition featuring an extravagant headhouse with tracks to its immediate south serving both arrival and departure functions. These specific constraints were in accordance with local citizens’ shared vision of St. Louis as a true “terminal city,” with “no trains continuing on through so all passengers would be starting or ending their voyages here, or changing trains.”

The competition guidelines also designated the site, a prominent location between Market Street (a road which continues to serve as Downtown St. Louis’s primary east-west thoroughfare) and the narrow Mill Creek Valley (the site of existing rail lines to Union Depot), thus apportioning a space large enough for the enormous building envisioned by the Association.

On July 1, 1891, three months after the announcement of the celebrated competition, a committee composed of the local Terminal Association and the heads of leading national railroad companies decided upon a winner. “Etruscan Vase,” the anonymous entry by a German-born, local architect by the name of Theodore C. Link was unanimously chosen as the recipient of the $10,000 premium. Link was instructed to commence with the formulation of general drawings, specifications, and complete details at once. 22

20 H. Roger Grant, Railroads and the American People (Bloomington, IN: Indiana University Press, 2012) 162.

21 H. Roger Grant, Don L. Hofsommer and Osmund Overby, Union Station: A Place for People, A Place for Trains (St. Louis, MO: Mercantile Library, 1994) 62.

22 Ibid, 64.
The “free-treatment” Romanesque Revival building (as Link would have described it) was truly of special magnificence. Said to be inspired by the architect’s Beaux-arts training and the medieval walled-cities of Western Europe, Link’s design of the headhouse building was the recipient of instantaneous acclaim. Fashioned from Indiana Limestone (an historically superior material incorporated into other prominent landmarks the likes of the Biltmore Estate, Empire State Building and the Pentagon), the Market Street facade featured an entire city’s share of lofty peaks and finely articulated exterior elements, all coming together in a marvelous climax with the campanile-style clock tower.

At a soaring 230 feet (a height not to be eclipsed for some decades by any future St. Louis structure) and capped in Spanish red tile, the tower was not only crucial to the picturesque composition of the building’s exterior and its practical purpose of coordinated time keeping. Indeed, it also served an additional, more innovative purpose, which attests to the growing modern efficiency of mechanical equipment at the turn of the Twentieth Century. As Osmund Overby states within *St. Louis Union Station*,

[The tower] contains an inlet for the ventilating system, another thoroughly modern aspect of the mechanical equipment. Air was drawn in through the tower with electrically powered fans and fed into a plenum system for distribution around the building. In cold weather,
the air could be heated by being drawn over steam coils. Air was discharged near the ceilings of the rooms and drawn out near the floors with auxiliary exhaust fans, providing a constant change of air. 24

In reverence to the now widespread utilization and ever more innovative applications of electricity found in turn-of-the-century architecture, Union Station boldly incorporated profoundly forward-thinking electrical lighting schemes to illuminate its interior. It is one of only a handful of buildings to claim the pioneering use of electricity for purely artistic purposes. This prevailing attitude is experienced in perhaps its most jaw-dropping fashion within the lobby vestibule of the original terminal hotel. Here, guests of the hotel would arrive at the building via their very own, exclusive portal, where they were met with a crystalline floor made entirely of glass block (the material, alone, was foreign to all but a few at the time) which was lit brilliantly from below through uplights positioned under their feet. More than one hundred years later, the floor still glows with spectacular intensity.

No space within Link’s building matched the emotive power of the Grand Hall. In an ingenious gesture to the broad, vaulted train shed volumes found at prominent stations worldwide, Link designed this centrally organizing space as a fabulously ornate barrel-vault, rich in ornament and vast in size. In effect, the architect had in St. Louis established a formal pattern for monumental central concourses which would later serve as the precedent to many large stations thereafter - such as Burnham’s Union Station in Washington D.C. and McKim, Mead, and White’s masterful Pennsylvania Railroad Station in New York. Through St. Louis Union Station, Link had in effect established a brand-new, highly influential tradition in terminal design. The architect makes efforts to describe the Grand Hall via the following:

It is the piece de resistance of the structure. The ornamental ribs of the vaulted ceilings are covered solid with gold. The deeply recessed background of the end arches and arched galleries is in a dull blue, giving them apparently immense depth and distance. The end walls of the Grand Hall are pierced with an arch of forty feet span. The sweep over the arch between a rich quirk bead in solid gold and the ceiling angle is decorated with low relief tracery emerging from female figures, seven on each wall, with torches in their uplifted hands. 25

No opportunity was spared within the impressive edifice to symbolically proclaim St. Louis as the North American continent’s great central rail hub. In keeping with that shared local identity, an allegorical stained glass window was placed prominently on center with the Grand Hall and its main stair, one which makes references to the universally recognized transportation centers of New York and San Francisco, and with St. Louis sited prominently between the two. Upon closer inspection, it is clear that both the California and New York maidens stare intently upon Saint Louis, her seated figure centered with the distant dome of her namesake city’s historic courthouse building. What is slightly less discernible - but certainly nonetheless apparent in local legend - is that the faces of her seduced company are composed of envious frowns, an understandable reaction to the splendor of her opulent new domain.

While the Headhouse building is perhaps the most publicly iconographic element of Union Station, it would be a great disservice to the building not to allocate appropriate measure to the equally impressive structure located to the Headhouse’s immediate south. St. Louis Union Station is, after all, a complex that is very much a union of two architectural personalities, a marriage between its very public side (the devastatingly

24 Ibid.

25 Ibid, 76.
charming and picturesque Romanesque Headhouse) and its more “nuts and bolts” corporeal side made manifest in the 11-acre rear train shed and its sheer engineering drama.

In all, the train shed was to cover a width of 606 feet, containing under its vast, curved roof enough room for 42 parallel tracks running perpendicular to its spans, and coming within only 70 feet of the south Headhouse wall. This space between the Headhouse and train shed, perpetually busy with passengers crossing as they either departed or arrived, was coined by Link as the “Midway,” a personal reference he made to Chicago’s Columbian Exposition from the year prior, where “coming through its numerous gates may be seen the peoples of all climes and nations.” 26

George H. Pegram was commissioned by Link to engineer the train shed, and he might have moved forward with a truly astounding plan to span the entire 606-foot distance with clear-span arches had Link not insisted that the height of the train shed was not to eclipse that of the Headhouse. Subsequently, a 100-foot limit was imposed upon the train shed, with the peak of its highest central monitor abiding to that parameter in order to ensure the Headhouse’s enduring visual prominence. The resulting design thus required the use of intermediate vertical supports which divided the train shed into five aisles, holding above them a sweeping metal-covered wooden roof featuring corrugated glass skylights and ventilators. The train shed was, by far, the largest in the world.

26 Ibid, 85.
- its 42 covered tracks easily besting its only rival: Boston's South Station and its "mere" 28 tracks. 27

On the evening of September 1, 1894, some 10,000 guests and 200 musicians flocked to Union Station, packing the Grand Hall for the building's opening gala. The braggadocio was infectious, with one speaker declaring the terminal: "A magnificent architectural conception, and ideal realization, the most completely equipped railroad station in the world." 28 The crowd celebrated deep into the evening, filing out only as the first shift readied themselves for the inaugural arrival: Vandalia's Fast Mail scheduled for a 1:45 a.m. stop. 29

Thus began an era of unprecedented passenger rail ridership in the United States, with St. Louis home to what was perhaps the grandest expression of a true cathedral of rail. It was not only the largest terminal in the world upon completion, but would also claim the title as the world's busiest in the decades following - a distinction bolstered in no small part by the construction and operation of the Louisiana Exposition held a decade after its completion. But even deep into the late 1920s, nearly 300 daily trains arrived and departed Union Station. At its wartime peak in 1945, the station's generous size accommodated 70,000-80,000 passengers per day. 30

Almost as fascinating as the story of the building is the history of its geographic site. In the century which preceded the construction of Union Station, its 30-acre site would have been completely unrecognizable, occupied instead by a large recreational lake known as Chouteau's Pond. The origins of this body of water were tantamount to the very founding of the city; the lake was the resulting formation of the damming of a small local creek by city founders Auguste Chouteau and Pierre Laclede. For many years, the site was the city's primary recreation spot. The water was clear and there are historical accounts of it brimming with fish. Its oak-lined shores were the frequent sites of baptisms by local preachers, making use of the lake's cleansing waters. Families came to Chouteau's Pond in droves to picnic, swim, fish, boat, or just to cheerfully enjoy the passing of the afternoon. 30

Sadly, Chouteau's Pond did not meet such a happy ending. As the city grew around the lake, pollution from industrial runoff and slaughterhouses began to overwhelm it. By the mid-Nineteenth Century, the lake had come to be perceived as more of a villain than a recreational escape. After a series of cholera epidemics in the 1840s, Chouteau's Pond was drained, allowing for a more seamless pattern of road connections to occupy its former footprint. The site was filled and leveled, allowing it to become a fully functioning zone within the city's expanding grid. A dense new neighborhood was born in place of the former lake: "Mill Creek," which was for years one of St. Louis's most diverse and eclectic districts. A substantial portion of Mill Creek would be razed in the 1890s to make room for Union Station and its vast railyard.

27 Ibid, 85.
28 Ibid, 18.
29 Ibid.
THE LOSING BATTLE

Following the allied victory in World War II, returning soldiers from St. Louis came back to a city in dramatic flux. A large and powerful American middle class, armed with their newly disposable incomes, desired more space with which to house growing nuclear families. With the introduction of affordable family-sized automobiles, it became a conceivable option for working adults to commute longer distances to places of employment - jobs which remained predominantly in the central urban core. Urban workers were thus met with the very real option to set roots in distinctly non-urban residential zones.

These changing American attitudes were met with two federal policies that effectively catalyzed the widespread population exodus from dense urban centers. The first of these programs was the Servicemen's Readjustment Act or “G.I. Bill” of 1944, which provided returning soldiers with low-cost mortgages that allowed them to afford larger single family homes. When the effects of this legislation combined with the Federal-Aid Highway Act of 1956 (which funded the initial 41,000 miles of Interstate Highway in the United States), the two programs worked symbiotically to effectively initiate the widespread suburbanization of many large American cities; particularly those in the Midwest.

In the case of St. Louis, however, the loss of large portions of its population to suburbs was particularly severe. Growing racism accompanied the city's rise in minority populations, especially as African Americans moved from the South to larger urban centers following the two world wars. Historically, St. Louis banks have come to earn a dubious reputation for discriminatory lending practices; charges of unlawfully preferential mortgage patterns continue to be common stories in local media outlets. Circumstances such as these led to a pronounced “white flight,” with the large-majority Caucasian population taking residence in fringe communities.

These burgeoning St. Louis suburbs grew rapidly, and by the 1970s had completely engulfed the perimeter of the city boundary. This paralyzing condition was effectively perpetuated by the city's decision in 1876 to split from its parent county in order to gain governing independence. At the time, city leaders would have never anticipated such a negative, Twentieth Century perception of urban density. But those attitudes would nonetheless prevail, and thus began a long, drawn-out city decline in the 1950s which would last well into the 2000s.

While other American cities faced similar challenges, most had the option of simply annexing more land in order to ensure lasting, adequate tax bases even in the face of dramatically falling densities in urban cores (certain metropolises in Texas and Arizona come to mind). But in the case of St. Louis, the potential for that remedy was made futile through a combination

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of the city’s geographic location along a state border, and also by way of its now enormous collection of parasitical, independent suburban towns which had permanently sealed off any hopes for future expansion.

In a twist of fate which would hasten the growth of St. Louis’s outer metropolitan area, suburban St. Charles County would find itself home to the nation’s very first stretch of 4-lane interstate highway, a small segment of Interstate 70 roughly twenty miles from the historic city center. Construction of three similar projects throughout the region would only exacerbate further population declines throughout the region.

The challenges facing St. Louis, while common to many American cities at the time, were heightened by an explicit local history of racial difficulties, poor municipal decision making, and (perhaps most ironically) the allocation of local funding directly toward highway projects which would only increase automobile dependency and sprawl. The city’s answer was to get creative in the face of the troubling recent trends, placing all of its last-ditch hopes on re-establishing a revenue base by spearheading massive urban housing projects on a scale which had not yet been seen in the United States. Enter Pruitt-Igoe.

St. Louis officials presented the Pruitt-Igoe concept to locals as an “urban renewal” intervention. By adding new parks, places for shopping, playgrounds, and new housing stock, they reasoned, the city might effectively rebound from recently troubling population losses. Designed by acclaimed architect Minoru Yamasaki, the 33-building Pruitt-Igoe complex on 57 acres was originally hailed by national publications and critics as a daring vision; the architect was praised for his daring answer to the social ills of the Twentieth Century. But the building quality upon completion was sub-standard. Apartments were small, and only after intense resident petitioning did the complex receive its promised playgrounds and outdoor green spaces. Stairwells were attractive venues for muggers, and ventilation was notoriously poor. Occupancy never rose above the 60% mark, and by end of the 1960s the complex was all but fully abandoned. Pruitt-Igoe, quite the opposite of the shining modern answer to contemporary urban ails, had deteriorated into a dangerous, crime-infested neighborhood fast on its way toward complete decay. By 1971, the complex was home to only six hundred people in seventeen buildings of the total thirty-three; the other sixteen had already been boarded up.

That same year, federal and state authorities agreed to move forward with Pruitt-Igoe’s demolition. The complex was dynamited less than twenty years after its completion.


Fig. 52 Interstate Highway Commemoration
Joe Balsarotti

Fig. 53 Pruitt-Igoe, 1960
State Historical Society of Missouri

1966
Streetcars Cease Service in St. Louis

1978
Union Station Closes

1985
Union Station Renovation Opens

2012
Property Sold to LHM for Redevelopment

MASS ADOPTION OF AUTOMOBILE
CLOSURE AND REBIRTH

As one would expect with the widespread growth of automobile dependency throughout the latter half of the Twentieth Century, passenger rail traffic began to experience severe declines. In St. Louis, these effects were particularly pronounced, given the region’s identity as one of the most highly suburbanized metropolitan areas in the nation. Union Station was far from immune to this immense shift in consumer travel patterns. By 1969, city officials were already seeking alternatives to address the lingering “passenger problem” at the terminal. Train service had slipped to only thirty-two daily trains, down from thirty-eight just the year before.35

St. Louis was now faced with the fact that their prized station, once the envy of the world, had become a prominent “white elephant.” In response, the governing Terminal Association commissioned a study performed by local architects which suggested alternative uses such as an amusement park, convention center, or even as a terminal for short-take-off-and-landing private aircraft.36 Plans for a large-scale adaptive re-use project would be temporarily put on hold, however, with the introduction of the National Railroad Passenger Corporation (later known as Amtrak) signed into law by President Nixon in 1970. All companies with passenger service at St. Louis Union Station soon ceded their cash, equipment, and services for stock in the government-backed venture. On May 1, 1971, Amtrak assumed control of the terminal’s operations, operating on a highly abbreviated schedule which required the use of only two of Union Station’s forty-two total tracks. Even under new management, employees continued to outnumber customers in the increasingly deteriorated station. As passenger rail continued to decline throughout the 1970s, Amtrak was met with little to legitimize the maintenance and staffing needed in order to maintain a building of such an enormous size. The decision was made to relocate service to a far smaller facility only two blocks away. On October 31, 1978, a final train bound for Chicago departed the station under the mournful strains of a live jazz sextet’s rendition of “Auld Lang Syne.”37

The doors of Union Station would be shuttered for seven years, until life once again returned to the building in the form of a combination retail-hotel-entertainment complex funded with an infusion of public and private investment. Designed by St. Louis-based architecture firm, Hellmuth, Obata, and Kassabaum, the $140 million festival marketplace project represented a synthesis of historical restoration and adaptive re-use efforts; it opened to critical acclaim in 1985 as the largest project of its kind. Union Station was once again a major feature in worldwide publications, cited for its convincing endorsement of the promise of adaptive re-use and the rebirth of our city’s obsolete, nonetheless iconic historic structures. Public fanfare was at its peak on opening day, when it has been said that some 100,000 people flocked to take part in the ceremonial festivities.38

While Union Station proper has remained relatively unchanged since its grand reopening some thirty years ago, its built context has witnessed significant infrastructural transformation. When the city began operation of its successful light-rail system in 1993, one so dubbed “Metrolink,” Union Station was acknowledged as a prime hub for activity, and was thus allocated a boarding station along the initial route. Banal architecture, however, as well as the station’s poor siting in a deep ravine to the immediate east of the property never equated to an appropriate level of ridership for the Union Station Metrolink stop. Amtrak has also acted on renewed interest in the site. In response to recently increased demands for passenger rail, a new intermodal rail hub has been built in the place of their former station; this terminal also features Metrolink access. However, further questionable planning has resulted in a major site redundancy of light-rail boarding stations: the Metrolink stops for Union Station and the intermodal hub are located a mere 1,000 feet from one another.

35 H. Roger Grant, Don L. Hofsommer and Osmund Overby, Union Station: A Place for People, A Place for Trains (St. Louis, MO: Mercantile Lib., 1994) 54.
36 Ibid.
37 Ibid, 57.
Fig. 58 Poor Metrolink Station Planning
Original Image
Union Station’s reincarnation as a festival marketplace has been the subject of mixed review. Certainly, no one can doubt the venture’s initial success: visitors flocked to Union Station by the tens of thousands on a daily basis for the most of the late 1980s and throughout the 1990s. The next decade, however, would witness a significant decline in retail sales, in no small consequence to the relative proximity of newer, larger, and more contemporary shopping centers located within the gridlocked, albeit truly flourishing St. Louis suburbs. Indeed, these communities continue to be recognized by Gallup polls and other stats-based research studies for their ability to foster some of the highest levels of quality-of-life in the entire country. 38

As anchor stores began to close at Union Station, out-of-town visitors were met with little more than a perfectly ordinary hotel and a dying mall. Thus, the once bustling marketplace began to carry with it the ultimately damning label of “tourist trap.” Taking into account the array of penny-squashing machines, caricature artists, and sports memorabilia dealers, there is little at hand to deny these new associations (save for the building’s architecture, which is not in itself a particularly lucrative feature). With exception to the hotel, the only profitable components of the current programmatic arrangement are surface parking fees and the flagship “Cardinals Clubhouse Store” which primarily does business on gamedays of the local professional baseball team. 39

Union Station, in its role as festival marketplace, is dying. Retailers are now leaving the property at a pace previously unseen. For the second time, St. Louis Union Station is faced with the uncertain task of reinventing itself. In late 2012, the property was sold to a locally-based real estate holdings company for $20 million. New ownership has expressed a desire for a complete redevelopment overhaul focusing less on retail and more toward hotel expansion.

The site is laden with opportunities abound for the implementation of an urban transit-oriented development that responds dynamically to explicit site character and historical identity. Not only does Union Station possess the obvious distinction of a place historically regarded as a center for transit, it is also equipped with a designated light-rail stop (one with a currently hapless, poorly-sited design that invites the opportunity for intervention). Union Station also benefits from an incredibly prominent downtown location, serving as the far western terminus of St. Louis’s Gateway Mall: a linear park on axis with Saarinen’s Arch. Immediately adjacent to Union Station is the city’s foremost civic zone, home to City Hall, court buildings, the Peabody Opera, Central Library, Main Post Office, and Veterans’ War Memorial. In keeping with the fundamental objective to implement historic character, the site offers an intriguing and singular site history - one that yields a variety of richly distinctive former site occupants with the ability to inform a newer, more responsible, transit-oriented intervention.

Perhaps most important with regard to more practical prerequisites, the Union Station site procures a generous size (some 30 acres in area); ample space with which to establish a truly innovative new mixed-use neighborhood centered around the convenience of readily-available transit. Furthermore, this specific application is based upon a most legitimate imperative for dramatically increased density, as (unlike a conventional suburb) this site’s density is derivative upon its direct relationship to the historic founding of the city, itself.
CHAPTER 4: Design Approach

The historic Union Station site yields with it a great number of inherent advantages in respect to an explicitly urban application of transit-oriented development. The site’s extensive, 28.9 acre size allows for a TOD intervention on a significant scale, one that invites the potential for a dynamic mix of programmatic uses and inviting public open spaces. Union Station is, of course, already the site of a fully functioning light-rail stop, a key feature with regard to TOD theory’s obligatory demands concerning transit stations and their prominent role as the main, generative architectural components of any transit village. While the design of the Union Station Metrolink stop is currently far from satisfactory, these circumstances merely encourage the opportunity for further architectural exploration via the project’s burgeoning capacity toward a more responsive, centrally-located light-rail stop.

Not to be overlooked are the more connotative, place-making characteristics imparted to the site by local residents. Historically speaking, Union Station is, above all, a great cathedral of public transit. Its ingrained identity is one synonymous with the mass-movement of people to new destinations. Under this lens, the soaring Headhouse clock tower is not only a physical landmark, but also a temporal one, an architectural element that serves to effectively remind people of the site’s former role as perhaps the greatest (certainly, for a time, the largest) hub of passenger rail in the entire world. This design exercise therefore benefits from a physically and emotionally powerful site that is imbued directly by the city’s collective memory. Union Station can therefore be accurately deemed a true “place” in any sense of the word: a physical place for trains and commerce, and a distinctively emotional place constructed from the memories, sentiments, and experiences of millions of people who have encountered the building in any combination of its reincarnations as a passenger rail terminal, festival marketplace, or simply as a principal component to the greater urban fabric of St. Louis’s historic central core.

The Union Station site is further bolstered by additional, more utilitarian characteristics that serve to enhance its validity as a future home to a dense, mixed-use, walkable community. At the time of its construction in 2008, the new Gateway Intermodal Amtrak station located only two blocks away served as a humble reminder of the loss of rail service to its magnificent and historic next door neighbor. Disheartening to many was the realization that Union Station had already been re-purposed to other, less dignified uses only two decades prior to the resurgence of passenger rail interest in the city. As long as Union Station retains its current identity as a failing commercial center, this great irony will remain eminent. But bearing the potential for an extraordinary repurposing of the Union Station site into one for transit-based activity once again, the new intermodal center (along with its supporting, industry-standard infrastructural components) would only prove to enhance the redefined neighborhood’s status a transit hub once again. The densified Union Station site, with its new population of TOD-minded residents, will have greater access to the larger regional rail network with efficient routes to cities like Chicago and Kansas City. Meanwhile, in a reinforcement of the reciprocity of the two sites, travelers passing through the new intermodal center will be adjacent to a diverse mix of retail stores, cafes, and comfortable public spaces which are currently neglected by the Amtrak station’s current, more sterile programmatic approach.

Fig. 62 Interior - St. Louis Gateway Intermodal Transit Center
85 Hours on the Bus (Part I)
Fig. 63 The New Gateway to the Gateway City
Original Collage
GENERATIVE HISTORICAL LAYERING

For purposes of design, the single greatest attribute of the Union Station site is its history. Prior to the construction of the great terminal, previous occupants included the enormous recreational lake known as Chouteau’s Pond, and later (after its draining) a large portion of the dense and vibrant Mill Creek neighborhood. Extensive documentation of both of these past two occupants invites the potential for their reincarnation via this contemporary TOD intervention. By conceptualizing these former occupants as abstracted historic layers, the past entities are able to assume roles as primary components and generators for design, a key strategy thus allowing them to coexist ideologically with future, more modern proposed elements. Other locally-specific characteristics might be interpreted in a similar manner, as the evolution of the site owes itself to these singular, often uniquely St. Louis idiosyncrasies. Of these attributes, perhaps the most historically prevalent is the city’s indestructible competitive spirit. It is this competitive drive, after all, that Union Station owes its very existence, especially considering the city’s rivalry with Chicago at the time of its construction. Today, this spirit is embodied primarily in the form of organized athletics. Unsurprisingly, the city’s numerous sports clubs find themselves in their most heated and spirited competitions with squads originating from that most bothersome metropolis only 300 miles to the Northeast.
CERVERO’S THREE “D’S” - A STEP BY STEP APPROACH

Robert Cervero, professor of planning at the University of California, Berkeley and foremost TOD-expert, originally proposed his three “dimensions” to transit-oriented development design in his landmark publication, *Transit Villages in the 21st Century*. These three “D’s,” as they have since come to be called, are *density, diversity, and design*. Collectively, the dimensions compose the core concept and central generative design layer of the Union Station transit village, simultaneously working in tandem with their accompanying historical and identity-infused layering components.

As the transit station is of primary architectural and infrastructural importance, it is critical that it is located as centrally as possible. Thus, shifting the Metrolink stop to a location central to the site comprises Step 1 of the process. Step 2 involves the creation of a dense commercial core adjacent to the station, while the following step infuses diverse retail throughout the site. Retail options will include basic services like grocery stores, dry cleaners, restaurants, and cafes. Step 4 of the process establishes a versatile transit network throughout the site and is a direct re-constitution of the former on-site street grid of Mill Creek district, a past occupant of the site. The next step accounts for residential buildings which will accommodate for a wide range of incomes, while the final step creates plazas, parks and greenbelts to allow for public assembly, exercise, and leisure time.
MASTERPLAN

The resulting mixed-use masterplan represents a fusion of design responsiveness to not only conventional TOD methodologies, but also to the site’s former urban occupants and to Union Station’s explicit site history - thus capturing through architecture and urban design the character and identity sponsored by its locale. Woven into the roughly 30 acre site immediately south of Theodore Link’s restored Richardsonian Romanesque Headhouse is a dense assemblage of many unique land use types. Residential buildings sponsor a resurgence in population density and are all located within a 1/4 mile walking distance of the newly-centrally located transit station. As the station is located beneath the train shed’s steel structure (and therefore is limited in height by the existing steel structural members), it employs a unique strategy to gain prominence within the scheme. Rather than calling attention to itself, the station’s nearby built context assumes the role of allocating significance to the Metrolink stop by way of the arced, enveloping nature of the central building arrangement.

A collection of de-concentrated fitness and athletic elements are infused at distinctive locations within the masterplan and collectively represent a gesture toward the city’s competitive nature which so completely permeates its very identity. The most readily identifiable component of this dispersed fitness program is the winding cross-country course, which pervades the grid, adding complexity to the building pattern before shooting over the interstate highway located to the site’s immediate south and
linking the new neighborhood to the existing historic neighborhoods and parks located on the opposite side. This grand landscaped gesture can be seen as an extension to the neighborhood’s primarily pedestrian nature, as walkers and runners will be invited to inhabit other, more dramatically designed zones in addition to the inviting and walkable streets found at ground level. The majority of the remaining program is composed primarily of commercial, office, and retail spaces organized around open public plazas, lawns, and - most notably - around the water-based-components of the recreational fitness program. These recreational and therapy pools are arranged on a north-south axis which emanates from the new station, hence occupying an exceedingly pronounced location within the neighborhood - an abstracted acknowledgement of one additional prior site occupant: the city’s former center for recreation known as Chouteau’s Pond.

In all, this scheme offers the possibility of accommodating more than 1.5 million square feet of diverse program within the confines of the site, correlating to a residential density rate approaching 15,000 persons per square mile, a number roughly three times the current city average. If such a pedestrian, transit-focused neighborhood were to prove successful within the historic core of a suburban-dominated St. Louis region, the result may very well serve as a founding precedent for further regional growth that promotes the benefits of an innovative new TOD building block the city can claim as its very own. St. Louis has the potential to be a pioneer amongst American cities once again.

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Fig. 68-69 Concept Views: New Neighborhood Plaza and Site Section-Perspective
Original Images
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