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The Institute provides a forum to conduct interdisciplinary research, applied scholarly analysis, public service and educational outreach on environmental and sustainable development issues at the local, state, national and international levels.

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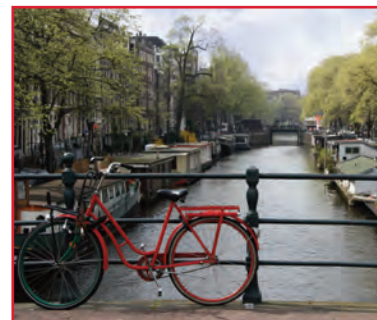
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Bicycle on a canal bridge in Amsterdam.



Thinking about the Ideal City

Since the beginning of civilization, there have been debates on what the ideal city should look like, from Athens in Ancient Greece to the 21st century Dutch city of Almere. More recently, social scientists have pondered many important questions: What is the just city? Whose city? Who has the Right to the City? And, what is the ideal city?

An ideal city provides basic necessities for all its residents, works to enhance the lives of everyone, and works to ensure an desirable level of freedom and creativity. Tolerance of drug use, sexual freedom, green lifestyles, and increased use of public transportation help to reduce many of the “social problems” faced by many cities. Most important is embracing green principles such as preserving historic structures and homes, recycling, increasing solar energy by harnessing the sun, and reducing fossil fuel dependency.

Amsterdam is one of the best examples of an ideal city. Amsterdam has a unique approach to drugs, crime, and prostitution and a progressive approach to housing, transportation, crime, brownfields, and urban design. Amsterdam has turned conventional urban policy and planning programs upside down and found innovative ways to solve social problems. Amsterdam is a laboratory of innovation that provides a model for the rest of the world. It is a place where others can honor their successes and learn from their errors in urban policy and planning. Many of the social, economic, and environmental issues facing Amsterdam are few compared to cities in the United States, and in many cases, Western Europe. It is not surprising that half the articles in this journal focus on Amsterdam.

In this special issue of *Sustain* (co-edited by John Gilderbloom and Matt Hanka), we present seven perspectives on the ideal city in terms of policy and planning. These papers represent the best presented at the Hawaii International Conference of Social Sciences in Honolulu, Hawaii and the Ideal City Conference in Amsterdam, Netherlands in October 2008. All of these papers were refereed by experts in the field of urban policy and planning.

The lead article by Carlton Eley looks at the impact of the smart growth movement on sustainable urban development through equitable development strategies. Some of these strategies for equitable development include housing choice, increased personal responsibility, capacity building, stewardship, entrepreneurship, and civic engagement. Mirela Newman, European born and American educated, focuses on the green successes of a newly-built Dutch city of Almere. This article looks at the positive and negative results of building a green city from scratch. Stephen Roosa’s article looks at the problems of carbon emissions and suggests solutions towards reducing carbon emissions such as improving energy efficiency of vehicles, upgrading buildings and facilities and expanding the use of alternative energy. Craig Reinerman’s article studies the impact of tolerance throughout the neighborhoods and cities in Amsterdam. He argues that tolerance is a key building block to cities that will become denser in the future. Ralph Buehler and John Pucher’s article examines the role of cycling and its contribution to sustainability in Amsterdam. John Gilderbloom and Matt Hanka’s article proposes that an “ideal” city lies in its downtown. Using Louisville as an example, the authors show that the renewal, revitalization, and restoration of the downtown can happen through principles of green urbanism and preservation which leads to stabilization of property values, strong leadership from community developers, and alternative forms of transportation such as light rail and increased bike lanes. Leonie Janssen-Jansen’s article is a case study of a neighborhood in the Dutch city of Utrecht, Kersetuin. She shows how 100 residents only need to share three cars when they have access to a well-built public transportation system.

We would like to thank Allan Ditmer, editor of *Sustain* and Russ Barnett, Director of the Kentucky Institute for the Environment and Sustainable Development (KIESD) for allowing us to publish these articles. We believe these articles reflect the current thinking in the area of green urbanism and urban sustainability in our cities.

John Gilderbloom, Ph.D. Co-editor

Matt Hanka, Ph.D. Co-editor

Equitable Development: Untangling the Web of Urban Development through Collaborative Problem Solving

By Carlton C. Eley
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Introduction

Social responsibility versus economic imperative is a false choice. In a like manner, the objectives of smart growth and meeting the needs of underserved communities are not mutually exclusive. Both can be addressed through equitable development.

This paper offers perspectives on smart growth and equitable development. The research has not been prepared to diminish smart growth as an approach. Through this paper, the author wishes to encourage a discussion for how to improve smart growth outcomes for all Americans.

While the smart growth movement has gained traction in the U.S. as an approach for planning and development, the movement's effectiveness in reaching underserved communities is lacking. The consequence has been a delay in creating a movement that reflects the broad socio/economic diversity of the nation. According to the author, truly sustainable outcomes will occur when local and regional smart growth initiatives consider the social implications of land use and economic development decisions, up front, rather than treat them as an after-thought.

The paper reveals that equitable development is not a new concept in the U.S. because the recurring theme in planning practice since 1965 has been how to foster balance in meeting the needs of physical, social, and human capital. Importantly, the paper affirms that encouraging equitable development is not wishful thinking. By highlighting case examples with tangible results, the paper demonstrates that encouraging equitable development requires taking the time to think through issues rather than charging ahead, impulsively, and advancing the status quo.

Historic Perspective

At the American Institute of Planners conference in 1965, prominent planners urged others to achieve mastery of the physical environment, and concede that social and economic problems were beyond their expertise. While most planners focused on physical planning, some of them challenged the dominant paradigm and became advocates for underserved populations and vulnerable groups (Checkoway 1994).¹

Today, modern planning practice in the United States (U.S.) consists of sectors that primarily focus on how to manage the built environment. The sectors include and are not limited to housing, transportation, land use, economics, finance, and environmental protection. While the sectors are distinct, practitioners know that each has an impact or effect on the other. For example, land use planners know there are some uses that are complementary to one another such as housing and commercial shops. When these uses are closer together, they may encourage more pedestrian activity.

The same can be said about planning for physical capital versus planning for social/human capital. As noted earlier, some city and regional planners would suggest the social realm is beyond their purview. However the International City/County Management Association (ICMA) argues in their book, *The Practice of Local Government Planning*, that understanding social diversity and responding to social change are keys to effective physical planning. The reference also argues that planning at its best takes account of the social implications of land use and economic development decisions (ICMA 1988).

To suggest that physical planning — or planning for the built environment — is professionally or institutionally separate from the social realm is a misleading notion. The history of planning in the U.S. is replete with examples that reveal how planning policy and practice have, at times, hindered the wellbeing of underserved populations or vulnerable groups. This paper will not inventory the canon of examples. Instead, the paper will affirm that a reoccurring theme for planning practice within the past forty years is how to deal with the *social aspects* of physical planning. The first of these approaches was devised during the Civil Rights era.

In 1965, Paul Davidoff challenged the status quo view of planning practice as a proponent for “advocacy planning.” Davidoff viewed planning as a process to address a wide range of societal problems and to improve conditions for all people. Incidentally, advocacy planning is occasionally referenced in academic research on environmental justice.²



“Equity planning” was central to the Norman Krumholtz approach for planning in Cleveland, OH. The objective was to defend the public welfare while also assisting the city’s poorest citizens. Through this approach, pressing urban issues were brought to the public’s attention (Krumholz and Forester 1990).

In the 1980s, Robert Mier, formerly of the University of Illinois at Chicago, coined the term “equity development.” Mier’s vision and practice were influenced by his years serving as director of development for Mayor Harold Washington. During Washington’s term as mayor of Chicago, city planners adopted an administrative procedure of “inclusion.” For example, important meetings were representative with participation from Whites, Blacks, and Latinos. Otherwise, meetings were postponed and rescheduled (Clavel 1994).³

For a very brief period, the FannieMae Foundation attempted to build some momentum around the concept of “fair growth.” The Foundation defined fair growth as land use practices that attempt to curb urban sprawl without endangering housing affordability and access to jobs for vulnerable groups (Davis 2000). Like the previous approaches, public discourse about fair growth gradually decreased.

Currently, the approach that has gained traction is “equitable development.” PolicyLink, founded by Angela Glover Blackwell, is the leading proponent of this approach.⁴ Collectively, the previous programmatic efforts could be viewed as seeking to foster a sense of balance in planning and development practice to ensure everyone has a safe and healthy environment in which to live, work, and play.

What is Equitable Development

The endeavors introduced in the preceding section are reminders that social planning is not an inconsequential issue. As central cities have become desirable places to live again, citizens and policy-makers are looking to innovative approaches for planning and development. Concepts like “New Urbanism” and “smart growth” have become more popular.⁵

While the nation has progressed since the 1965 conference of the American Institute of Planners, some challenges are still the same. As in 1965, many proponents for smart growth perceive the approach as primarily about the built environment or the impact of the built environment upon the natural environment. Smart growth seeks to create a sustainable or efficient urban form through policies and practices that expand economic development opportunities, foster community livability, and

preserve and enhance the natural environment. The outcome can be achieved through varying strategies, including but not limited to revision of land development regulations, placemaking, historic preservation, context-sensitive design, completing streets, green building construction, green infrastructure, and the like.

Fortunately, PolicyLink and other practitioners are demonstrating through research and action that the objectives of smart growth and meeting the needs of underserved communities are not mutually exclusive. Both objectives can be addressed through equitable development.

A graphic representation of this concept suggests equitable development is the area of overlap between two important objectives (see Chart 1). The need for stable communities, healthy economies, and improved quality of life for the public at-large juxtapose to the need for improving convenient access to employment, education, quality housing, services, a clean environment, and the like for underserved populations. The previous objectives suggest the general public and vulnerable groups have a common interest, **decency**. In other words, a community’s surroundings and the services it provides its residents are necessary for an acceptable standard of living.

Therefore, the means for fostering parity across communities requires increasing the size of the area of overlap. In the book *Getting to Yes*, the authors Roger Fisher, William Ury and Bruce Patton suggest mutually acceptable agreements between parties can be reached by increasing or enlarging the size of the pie, rather than splitting the pie into more pieces.⁶ With regard to equitable development, the objective is to increase the size of the pie in order to foster parity across communities.

As revealed in Chart 1, equitable development permits local officials to encourage smart growth and address goals for social

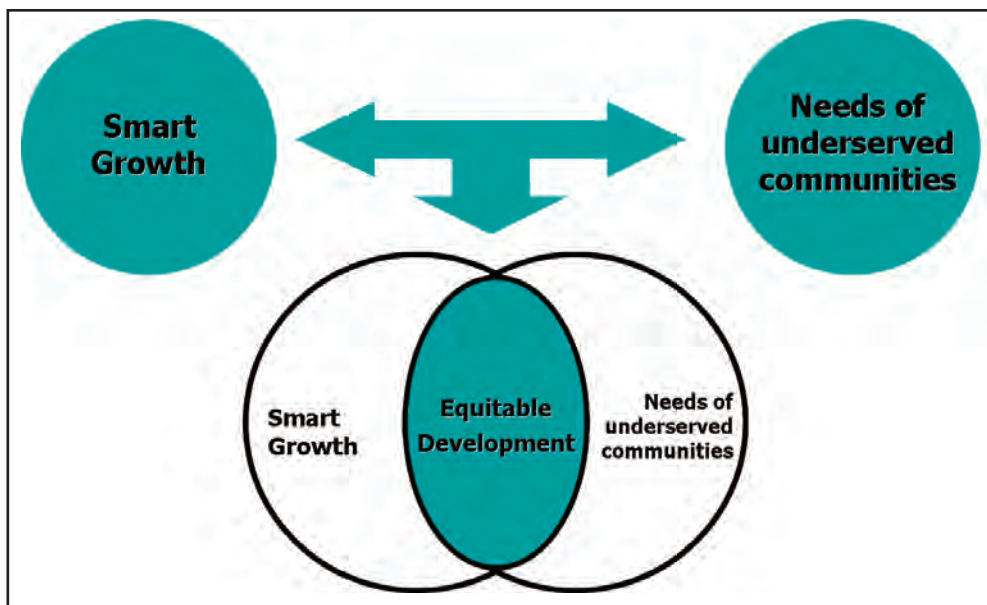


Chart 1. Model of Equitable Development - SOURCE: CARLTON ELEY



equity. Also, equitable development requires acknowledging the social perspective up front rather than treating it as secondary to economic, transportation, land use, or environmental objectives. Based on this model, equitable development could be defined as “an approach to meet the needs of underserved communities and individuals through projects, programs, and/or policies that reduce disparities while fostering places that are healthy, vibrant, and diverse.”⁷

Smart growth and equitable development are complementary to one another. For example, the Smart Growth Network (SGN) formulated ten principles for smart growth in 1997. Their research suggested healthy, vibrant, and diverse communities share similar characteristics.⁸ Further, the synergy of the characteristics yields smart growth as an outcome.

Just as smart growth is considered to be the sum of its parts, some research suggests communities practicing equitable development share commonalities. In a like manner, synergies within these communities result in places that are distinctive, successful, and livable. For transparency, the principles of equitable development are further explained in this section.

Housing Choice acknowledges the provision of decent housing, at varying price points is important, and housing is one of many factors that must be addressed for improving quality of life in underserved communities. Simply put, a both/and solution is required.

Transportation Choice emphasizes the importance of providing citizens with viable transportation alternatives that will enable the public to meet their daily needs or life-style needs. This includes the first mode of transport which is pedestrian oriented.

Personal Responsibility suggests people foster change. Successful communities often have change agents, either an individual or group, such as a neighborhood association, that works effectively with citizens and may even serve as a catalyst to put a community back on track.

Capacity Building considers the importance of effective outreach, education and technical assistance for fostering inclusive communities and wise consumers. In a nation of 304 million citizens, flexibility must be exercised to identify untapped audiences, reach out to them, and build new partnerships.

Healthy Communities considers health in the broadest sense, such as wellness, safety, supporting physical activity, access to nutritious food, and encouraging environmental justice.

Heritage Preservation considers the value of historic buildings, landmarks, and monuments while honoring the narratives, the institutions, and cultural presence that contribute to a sense of place. The later factors are just as important as historic structures and sites for creating distinctive communities that capture the affections of citizens and visitors.⁹

Stewardship is an ethic that suggests persons accept the responsibility to be custodians of the assets in their domain and pass the assets on to another generation.

Entrepreneurship is simply the act of organizing or managing a business or enterprise. The benefits of entrepreneurship include: creating jobs; growing the local economy; capturing dollars in the community; and building the tax base.¹⁰

Sustainable Wealth Creation refers to financial intelligence. Persistent poverty can affect multiple generations. As a counter, sustainable wealth creation provides individuals, families, and communities with the tools for: managing their money; making sound financial decisions; and building wealth as “a pathway out of poverty.”

Civic Engagement has been described as “part of the public life of living in a community.” Even in a representative democracy like the U.S., citizens are their own best advocates. As a result, it is important for citizens to attend public forums such as council meetings or planning meetings because individual opinions and perspectives matter.

From Good to Great through Planning and Design, Standard of Excellence acknowledges communities don’t become great places by accident. An investment of time, energy, preparation, and planning is required. Also, there is no substitute for quality design. Because the lifespan of the average building is thirty to fifty years, it is important to help citizens to make informed decisions about projects and encourage a level of quality that complements rather than detracts from the community.



Figure 1. The 18th and Vine Jazz District was created in 1989 with the vision of balancing economic development and cultural development in Kansas City, Missouri.
SOURCE: CARLTON ELEY



Why Encourage Equitable Development

In the decades following World War II (WWII), the nation's urban centers experienced staggering population loss due to white flight. The citizens who remained endured burdens that were beyond their control in the form of blight, reduced property values, increasing unemployment, and deteriorating public infrastructure and facilities. The previous burdens were the result of public and private policies that were shortsighted.

To suggest that these citizens, or even their children, “weathered the bad times” is an understatement. In many instances, their dreams were unattained or lost and in the worst cases their communities were “bulldozed by urban renewal, redlined by apartheid-like conditions, deserted by capital, or indeed, revitalized virtually out of existence (Cordova 1994).”



Figure 2. The Palace Theatre and the Broadway corridor in Gary, Indiana. During the city's heyday, Broadway was a symbol of Gary's strength. Currently, the street features the most obvious expressions of the city's decline.

SOURCE: CARLTON ELEY

Reflecting on the impact of expansive suburbanization, following World War II, requires acknowledging that presently distressed communities are part of this legacy, and these communities bore a disproportionate burden of the impacts from development. Post-war planning policies, including federal transportation spending, housing policies, financing and tax policies, didn't level the playing field; they amplified the wealth gap in American society.¹¹ As a result, it is all the more critical for current planning policies and development practices to encourage a rising tide that lifts all boats by sharing the benefits of development through inclusive community planning.¹² Further, it will be important for proponents of equitable development to frame clearly and decisively the value-added aspects of the approach.

First, and perhaps most important for the private sector, equitable development is profitable. Chicago-based ShoreBank has amassed two billion dollars in assets by investing in people and their communities to create economic equity and a healthy environment. Founded in 1973, the founders seized an opportunity to meet the financial needs for an untapped segment of the market. ShoreBank reasoned that creating roadblocks for accessing capital was not an astute strategy for combating urban disinvestment and blight (Grzywinski 2008). Considering the legacy of fifty years of disinvestment in America's cities, it would be extremely difficult to conclude that the founders of ShoreBank were erroneous for going against the grain and being pioneers in community development banking.

Second, social responsibility versus economic imperative is a false choice. Both objectives can be addressed. The phrase “there is an elephant in the room, and no one is talking about it” reveals two points. First, an uneasiness with openly discussing sensitive problems. Secondly, the problems do not disappear by ignoring them.

Proponents for smart growth could take the position that issues like equitable development are not central to the direction of the movement and acquiesce to business as usual by establishing alliances primarily with mainstream organizations, seeking innovation by returning to conventional sources rather than exploring untapped sources, remaining overly fixated on the built environment and land development patterns, and/or encouraging parity through words rather than deeds.

Alternatively, supporters could pursue a progressive position that “makes our Union more perfect” by encouraging collaborative problem solving for working through difficult planning challenges confronting communities, increasing capacity building with untapped audiences, leveraging the talent and expertise of professional organizations and institutions that reach out to people of color, cosponsoring symposia on equitable development, or deploying technical assistance or advisory service teams to underserved communities.¹³



Figure 3. Facilitators discuss options during a technical assistance workshop convened by the Planning and the Black Community Division of the American Planning Association in Gary, Indiana.

SOURCE: CARLTON ELEY



Third, nothing endures but change.¹⁴ The rank ordering of issues that shape how communities are planned has changed considerably within the past decade. In 1998, when oil was \$12.38 a barrel, the nation seemed quite content with land use planning based on Euclidian zoning patterns.¹⁵ Transportation planning was primarily driven by the needs of the automobile, and environmental planning was less prominent as a sector.

By 2008, community priorities evolved considerably. In contrast to a decade ago, the price for a barrel of oil peaked at \$145.15. Presently, many Americans are seeking options that will make it easier for them to drive less. As a result, mixed-use development and pedestrian-oriented development have become popular. As for the environment, Americans now sit in eager anticipation of the next sustainability trend. Carbon neutrality, green buildings, green collar jobs, and LEED-ND are the terms *du jour*.

Today, developers, planners, and elected officials are talking about meeting triple bottom lines with ease, “is it good for the economy, the community, and the environment?”

However, a triple bottom line approach to sustainability is not enough. A fourth bottom line is needed; a bottom line that considers social equity. Specifically, how are sustainability initiatives advancing or furthering the goals of social equity. Until recently, the challenge has been: framing how to encourage social equity during the development process; visualizing the product of development that supports social equity; and correcting the misperception that promoting social equity slows down development. The next section offers examples that suggest how public and private interests are addressing social equity through their initiatives.

Equitable Development is “Smart” - - Rebuilding America’s Communities

Equitable development is not an abstract concept. There are clear initiatives and tangible products that demonstrate the application of this approach as a means to rebuild America’s communities. Bethel Center, the Fruitvale Village, and Fall Creek Place are projects that encompass approaches for transportation planning, traditional neighborhood design, and land use planning. Further, these efforts are celebrated for reducing disparities among vulnerable groups. The examples are not all inclusive. Instead, the projects reveal some approaches that communities have successfully applied to untangle the web of urban redevelopment through collaborative problem solving while meeting the needs of underserved populations.

Bethel Center in Chicago, IL

In 1992, the Chicago Transit Authority proposed closing the Green Line transit station that served the neighborhood of West Garfield. This neighborhood was a distressed community with a population of 23,000 inhabitants, and residents could not afford to lose the station.

Eventually, Bethel New Life, a faith-based development corporation, came to the aid of local residents. Bethel New Life successfully organized local citizens and helped to convince the City to keep the transit station open. Following this victory, Bethel New Life worked with neighborhood residents in creating a transit village plan as a strategy to revitalize West Garfield.

The anchor for the neighborhood plan was a new multi-purpose facility known as Bethel Center. Bethel Center is approximately 23,000 square feet, and it was built on a brownfield property. The Center features a mix of uses and increases local access to community services such as child care, dry cleaning, banking, job training, retail, and the like.

Bethel Center has increased access to community services while reducing environmental impacts. For example, the Center complies with Chicago policies for encouraging green roofs. As an added bonus, the Center provides direct access to the Green Line “EI” stop through a connecting bridge made possible by the Chicago Transit Authority. According to Steven McCullough, President and CEO of Bethel New Life, the Center demonstrates that transit-oriented development and green technology combined with strong community participation prove that these concepts can work in low-income communities across the country.

Fruitvale Village in Oakland, CA

The Fruitvale District is a predominately Latino neighborhood, and foreign-born residents make up 47 percent of the district’s population. In 1990, Bay Area Rapid Transit (BART) began planning for building a parking garage between the local station and the district’s main shopping strip on International Boulevard. Unfortunately, BART authorities failed to ask for the views of residents of what seemed like just another hollowed-out inner-city area.

However, BART did not anticipate receiving push back from local residents nor did they consider finding an organized community voice, prompted by the intervention of the Unity Council. It’s worth noting that the community did not have objections to the parking garage. Local residents simply felt the garage was in the wrong place. The log jam between BART and the Fruitvale District ended when consensus was reached that a pedestrian plaza, or walkway, should be installed to connect the BART station to International Boulevard.

This solution was reached in 1992. It took another ten years, an investment of \$100 million dollars, and the formation of new partnerships before the construction of the Fruitvale Village was realized. During this span of time, Arabella Martinez, former President of the Unity Council, never gave up on her vision for improving the Fruitvale Village even though it took longer than a decade to bring it to fruition. The project is built around a rapid transit station and a bus hub.



Figure 4. The Unity Council assisted residents in the Fruitvale District of Oakland to prepare innovative solutions for community improvement through meaningful public involvement. The Fruitvale Transit Village is one of the outcomes.

SOURCE: JOHN BEUTLER

Incidentally, BART did erect a parking garage; which is currently positioned so that it does not cut off the station from the rest of the neighborhood. Also, the garage is one feature of a larger development project. Fruitvale Village reveals how to incorporate environmental justice goals into planning and design through broad partnerships among public, private, and nonprofit interests collaborating to revitalize a community.

Fall Creek Place in Indianapolis, IN

Following a prolonged period of suburban flight and urban disinvestment, the Indianapolis neighborhood Fall Creek Place became the poster child for the failed policy of urban renewal through slum clearance. For most of the 1990s, Fall Creek Place resembled a ghost town due to the prevalence of empty homes and vacant lots.

The turning point for Fall Creek Place was the city's receipt of a HUD Homeownership Zone grant which provided seed money for reclaiming vacant neighborhoods, to increase homeownership, and to promote economic revitalization. Rehabilitation of existing homes began in 2000, followed by new construction on vacant lots in 2001.

Fall Creek Place is a distinguished project for several reasons. First, community leaders encouraged broad community involvement in the project, and this helped residents to understand that Fall Creek Place was not a broad-based gentrification effort that would displace incumbent residents.

Second, the project surpassed the popular baseline of 20% affordable housing as a new construction project. In this instance, 51% of all homes were sold to households earning at or below

80% of the city's median income. Also, low to moderate income buyers were provided with down payment assistance. Third, quality design represented a central feature of the project. Low income homes were not differentiated from market rate homes. Finally, a builder's guide was prepared for encouraging residential infill that honored the heritage fabric of the neighborhood and to ward-off spotty infill development.

Nelson Bregon, HUD's Deputy Assistant Secretary for Community Planning and Development, has described Fall Creek Place as a model for how the federal-local partnership can work to restore hope and opportunity to once proud neighborhoods.

In part, former U.S. Representative Julia Carson deserves some credit for the success of Fall Creek Place for her role in securing the Homeownership Zone Grant that helped to jumpstart the project. Julia Carson was not an urban planner; she was a law maker. As a public servant, Carson simply found a way to put into practice what many planning experts, urban scholars, and community developers have been saying for quite some time about improving the condition of physical, social, and human capital.

Busting Myths about Equitable Development

This paper has presented the historic underpinnings, explored the concept, shared the rationale, and introduced case examples for equitable development. Before concluding, it is nec-



Figure 5. Former U.S. Representative Julia Carson was celebrated for being a "champion of society's least advantaged." Occasionally, she organized issue forums on "livable communities" for the Annual Legislative Conference for the Congressional Black Caucus Foundation.

SOURCE: U.S. CONGRESS



essary to set straight any misconceptions about equitable development. Responding to assertions that are not accurate is necessary in order to avoid having equitable development defined by skeptics or cynics.

First, equitable development is not an affordable housing strategy, in the sense that it would be inappropriate to construe that the parameters of equitable development only target the expansion of housing opportunities. The provision of affordable housing is an important component for creating livable communities, but it doesn't end there. Comprehensive solutions are required for underserved communities such as focusing attention on methods to improve capacity building, encourage heritage preservation, and increase entrepreneurship.

Second, equitable development is not an anti-gentrification initiative. The incumbent residents who lived in urban centers before they became fashionable places to reside again, have always wanted improvements in services, infrastructure, schools, and environmental quality. All citizens want these things. It would be a grave error to presume that residents who didn't abandon existing communities in an attempt to pursue suburban lifestyles were content with mediocrity. The communities referenced in this paper offer new strategies to encourage outcomes that are profitable, inclusive, and progressive.

Third, equitable development is not an initiative to maintain the status quo. The communities referenced in this research understand the importance of growth. Also, they have demonstrated a willingness to "be the change that they seek" by organizing conferences, building partnerships, and forming community advisory service teams with interests that support their values and vision. Proponents for equitable development seek to encourage well-planned growth that improves quality-of-life for all citizens, *especially vulnerable populations*.

Finally, the indicators of community stability, healthy economies, and public commendation demonstrate equitable development is consistent with smart growth. It is not against growth.

Conclusions

Robert Mier once described race as "the ubiquitous reality that must be acknowledged." In a post-civil rights era, it seems the issue of race has become passé, and most citizens are in a rush to frame discussions around "class" instead.¹⁶ Lance Freeman of Columbia University points out that "with the correlations between class and race being what they are in urban America, however, it is difficult to discuss class without alluding to race."

As the nation crosses the threshold into a post-civil rights era, it is necessary to acknowledge that equitable outcomes from planning and development will not materialize by accident, wishful thinking, or simply being optimistic. Such outcomes will be the result of action, such as clearly set expectations; collaborative problem solving; and persistent leadership, not words, rousing

oratory, or occasionally reciting the expedient speeches of Dr. Martin Luther King, Jr.

Skeptics and cynics are of the opinion that the issue of race, in the context of planning and development within communities, is an awkward subject, perhaps even politically charged. However, esteemed elder statesman and former Vice President Al Gore, has pointed out that "inconvenient truths must be acknowledged if we are to have wise governance." As our nation strives to create "one America," where every citizen can reach his/her full potential, it will require coming to grips with the fact that some present disparities that are persistent stem from past planning policies, development practices, and public policies that were injurious and/or ill-conceived and as a nation we have a moral responsibility to avoid these gaffes as we move forward.¹⁷

Experts and proponents for sustainable communities should remember that "environmental justice" and "smart growth" are connected issues. Both share the position that the environment is defined as "where we live, where we work, and where we play." When the National Environmental Justice Advisory Council (NEJAC) wrote the report "The Search for Authentic Signs of Hope," it did so with the understanding that how we plan and redevelop existing communities can compromise objectives for



Figure 6. Cover of "Environmental Justice, Urban Revitalization, and Brownfields." Prepared by NEJAC in 1996, the report offered a balanced discussion of the benefits and unintended impacts from urban redevelopment.

SOURCE: U.S. EPA



environmental justice, in the sense that low-income households or incumbent residents in affected neighborhoods that weathered the slumping period within urban centers may not have an opportunity to enjoy the benefits within the same neighborhoods once they rebounded.

Equally important, NEJAC understood that the best outcomes of urban revitalization would only come about through an inclusive process, not through coalitions that are limited to national standard setters and established stakeholder groups who opt to reach out to associations of like interest. As an approach, equitable development represents the common ground between environmental justice and smart growth.

Although sustainability is commonly viewed as a concept that incorporates energy, urban management, environmental objectives, and policy integration, the author asserts when development disregards cultural heritage and cherished/significant institutions; avoids meaningful participation of vulnerable populations or non-traditional stakeholders; and/or simply disperses or shifts poverty around rather than provides a pathway out of poverty, it is not sustainable.

As a concept, sustainability requires confronting the question of what kind of future will be left behind for the next generation. In the U.S., it is common for citizens to personalize sustainability and interpret it as “leaving their progeny with a cleaner environment, a robust economy, and a better quality of life.” Unfortunately, this perspective is only partially correct. The deficiency lies in the fact that sustainability is not a “linear” concept. It is a “systems” or “communal” concept. As a systems concept, success hinges on relationships as well.

In the end, sustainability cannot be reduced to simply meeting a triple bottom line. A fourth bottom line that accounts for social equity has to be integrated into the paradigm. To do any less is a compromise that will require future generations to assume responsibility for work that the current generation chose not to resolve. Through equitable development, the public can protect human health and the environment as well as encourage fairness in planning and development practice to ensure everyone has a safe and healthy environment in which to live, work, and play.

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Carlton's experience and responsibilities include: devising strategies for green jobs and sustainable economic development for the National Center for Environmental Innovation; researching approaches for encouraging equitable development; participating on the Advisory Committee for the National Vacant Properties Campaign; implementing smart growth technical assistance projects with local communities; coordinating recognition programs for environmental innovation; and harvesting lessons learned from Agency projects that demonstrate the application of Collaborative Environmental Problem Solving.

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Endnotes

- 1 Underserved populations may include minority populations, low-income communities, rural communities that are under-resourced, and the like.
- 2 The U.S. EPA (EPA) defines environmental justice as the fair treatment and meaningful involvement of all people regardless of race, color, national origin or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.
- 3 Jason Zenderle's article in *The New Republic*, "Operation Push: Obama's artful corralling of the Jesse Jacksons," suggests Mayor Harold Washington's presence lured a young Barack Obama to Chicago in the mid-1980s.
- 4 <http://www.policylink.org/>
- 5 According to New Urban News, New Urbanism is based on principles of planning and architecture that work together to create human-scale, walkable communities. EPA defines smart growth as development that serves the economy, community, and the environment. In this paper, the author will primarily use the term smart growth.



- 6 Negotiation is the focus of the book *Getting to Yes*.
- 7 The author's definition was prepared in 2006. At the time, the author corresponded with PolicyLink as a succinct definition was drafted for the application guidelines of the National Awards for Smart Growth Achievement.
- 8 <http://www.smartgrowth.org/about/default.asp>
- 9 ULI defines the place making dividend as the pride and satisfaction that accrues to the community when districts possess a strong sense of place that in turn results in high levels of repeat visitation and increasing rents, retail sales, leasing demand and real estate capital value.
- 10 In the book *Planning Local Economic Development*, E. Blakely and T. Bradshaw reveal that business development is the most important component of local economic planning because the attraction, creation, or retention of business activity is the best way to build or maintain a healthy local economy.
- 11 In the ULI publication *Making Smart Growth Work*, Douglas Porter reveals while suburbs boomed through the postwar decades, the populations and economies of central cities dwindled, especially in older cities. Also, there were great differences in the social and economic conditions of urban cores and outer suburbs.
- 12 Advancing equity is one of the ten "sustainable development principles" prepared by the Commonwealth of Massachusetts.
- 13 "Toward a more perfect Union" is growing increasingly popular as an expression that suggests the importance of resolving the prolonged difficulties, especially social/economic impasses, that seem to prevent America from reaching its fullest potential as a nation.
- 14 A quote from the Greek philosopher, Heraclitus.
- 15 <http://www.eia.doe.gov/emeu/international/crude1.html>
- 16 The April 2006 issue of the U.S. News and World Report features the article "Politics, Post-Civil Rights." In the article, David Gergen and Jeremy Licht suggest the baton is finally passing to a new generation. As much as emerging black leaders revere the civil rights activists of the past, these leaders believe changing times demand different answers. This shift in approach and paradigm is considered "the politics of the post-civil rights era."
- 17 Ending a detrimental housing, economic, transportation, or land use policy/practice does not mean that recovery from the harm will occur immediately. For example, the resolution passed by the U.S. House of Representatives (H. Res. 194) on July 29, 2008, acknowledges the vestiges of Jim Crow continue to this day even though Jim Crow laws were ended in the 1960s. In the resolution, the vestiges are described as losses tangible and intangible, long-term loss of income and opportunity, frustration of careers and professional lives.

Almere New City: Sustainable City, Ideal City? An Urban Morphological Analysis of the Newest Dutch City

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Introduction: Research Context, Questions, Goals and Methodology

At the beginning of the twenty-first century, as the total world population, urbanization and urban problems are increasing at a fast pace, scholars, practitioners and decision-makers from around the world continue to push for more in-depth urban research on city form and city life and analyze the implementation of recent, more innovative, creative planning approaches to solving urban problems and designing cities that approximate the “ideal” or “sustainable” city.

Could a brand new city, such as Almere, the newest Dutch city, be viewed as an “ideal city” or a “sustainable city” and if yes, why? What makes it a unique, creative, almost “ideal” or “sustainable” city? To what extent could the city’s polynuclear spatial form and overall urban fabric be viewed as an important “ingredient” in the “urban sustainability” formula? Are there any key lessons to learn and to transfer from this evolving “urban lab” in which decades long urban planning ideas and ideals were implemented?

This paper focuses on the case study of Almere New City, the newest Dutch city located on the newly reclaimed land of the Southern Flevoland polder, at about 25 kilometers from Amsterdam (see Figure 1), comprehensively planned and built as a modern polynuclear city that consists of a conglomeration of six compact urban nuclei/towns. Planned and built in the past three decades, Almere is the last of the twenty-one new towns recently built on the IJsselmeer polders and represents a quintessential expression of Dutch planning for both the newly created living environments and for the new dwellers. This urban study is set in the context of both international and national efforts to create “sustainable, greener cities,” and “better” lifestyles.

This research was guided by two sets of overarching questions:

- 1) general questions addressing the “ideal” and “sustainable” city” concepts and their tenets and
- 2) specific research questions addressing Almere’s general urban spatial and physical form shaped by an innovative, polynuclear comprehensive plan, as well as its unique and highly creative overall design.



Figure 1: Location of Almere New City - Map of the Netherlands (Source: Newman 2003, adapted from the Minister van Verkeer en Waterstaat-Directoraat-Generaal Rijkswaterstaat, 1996)



This paper aims to examine a range of urban morphological and design characteristics - including both key ingredients of its comprehensive urban plan and the resulting built form - and has been grounded in urban research and fieldwork conducted for several years in Almere. The author has employed the case study method, and used as a primary tool of analysis the urban morphological approach - anchored in the belief that cities can be 'read' and analyzed via the medium of their physical form at various levels of resolution.

Like many other urban morphological studies in the fashion of Michael Conzen (1960), James Vance (1990), Jeremy Whitehand (1981, 1987, 1999, 2001), and Anne Moudon (1994, 1997), this study grounds its research in Almere New City in the belief that the city can be "read" and analyzed via the medium of its physical form at different levels of spatial and temporal resolution, and that the analyzed urban form can provide the link between the city's genesis and evolution, on one hand, and the Dutch Green Urbanism planning paradigm, on the other (Newman, 2003).

Throughout the paper the author highlights Almere's unique hierarchical polynuclear spatial structure and its advantages while also pointing to its unusual green pattern of urban development with both 'green' and 'aquatic' infrastructures, degree of integration of land uses, presence of mixed use downtowns, extensive integrated public transit system, housing types, use of modern and innovative architecture and place names. This paper also highlights both successes and problems while also reflecting on its future development.

Background: Urban Planning and Development in the Netherlands

Within the global context, the Netherlands, with its deeply rooted urban culture and highly sophisticated urban planning policy, has been leading the world in its efforts to create new, more sustainable urban places that could approximate our "ideal city" image and expectations. The popular view of the Netherlands has been shaped by older images of a small, idyllic country with a landscape dominated by tulips, windmills and wooden shoes on one hand, and by undisturbed, old, traditional, compact settlements, on the other. While it is true that the Dutch have had a deeply rooted urban culture of compact urban settlements in well-established medieval urban centers, it is also true that the challenges of the postwar era brought about many changes in their evolving settlement landscape with Almere New City evolving as not only the newest, but perhaps one of the most innovative Dutch cities.

In the postwar Netherlands, the impetus for adopting integrated national planning came from at least six interrelated factors: 1) tremendous population growth and increased population density - with extremely high values of almost 1500 people per square kilometer in the crowded ring of metropolitan cities (CBS, 2007); 2) rising proportion and concentration of the urban population - with 89.4 percent in 2004 (United Nations Centre for Human Settlements, 2004), with over 45 percent of the country's total population concentrated in the western, highly developed and urbanized metropolitan area (CBS, 2007); 3) housing shortages - caused by the effects of wartime destruction, stagnation of building production and maintenance, and by the postwar baby boom; 4) Expansion of urban sprawl - especially around the main ring cities such as Amsterdam, Den Hague, Rotterdam and Utrecht threatening to "protrude" into the inner agricultural core "Green Heart" area of the Dutch polycentric metropolis; 5) accelerated growth of personal mobility; and 6) shortage of sufficient land for new urban development (Newman, 2003: 5). These postwar population, urban, housing and economic pressures demanded increased attention and management through concentrated urban and spatial planning from the Dutch government and its national planning agency, as the small country of the Netherlands - with a total area of only 16,033 square miles (CBS: 2007) - had to also deal with environmental pressures posed by its unique location and elevation, and its low-lying nature, with nearly half of its territory at or below sea level, out of which 27 percent of the areas in the north and west are permanently below sea level (Hooker, 1999: 7). (Figure 2).

The complex challenges that arose from these combined pressures led to changing sensibilities, outlooks and expectations. Newer, fresher, and more integrated planning approaches were



Figure 2: Physical Map of the Netherlands and the Location of Its Polycentric Metropolitan Region centered on the Four Main Cities: Amsterdam, Den Hague, Rotterdam and Utrecht



needed to solve the multitude of problems with which the Netherlands had to cope. Post-war economic and population changes, combined with changing cultural and environmental priorities, threatened to fray the tightly woven fabric of the Dutch metropolitan area and its fringes as young families sought more affordable housing opportunities.

With a more prosperous economy providing more disposable income and more time, the Dutch people demanded more and larger houses, more areas for recreation, a healthier urban environment, and an improved urban life for everyone. Thus, by the late 1950s and early 1960s, the classic, largely unplanned urban patterns of the old medieval compact towns were confronted with new challenges. It was then that the Dutch made the transition from their post-war reconstruction efforts to an attempt to shape a new urban society and a greener lifestyle. This transition required new approaches to the development of urban places, and Almere New City is one of the urban “products” of that era. While it is true that several facets of the new polder towns, including Almere, have been described within the past two decades and general references are made to Almere in other books, papers and internal documents that mention the planning for Almere, no comprehensive study of Almere’s urban spatial form has been done until 2003, when the author of this paper completed her doctoral dissertation titled “Dutch Green Urbanism: Planned Development and Urban Form in Almere New City, the Netherlands” (2003).

Site and Situation Analysis for Almere New City

One entry point into urban morphological analysis is to answer the geographical question of “why” the city located where it is. The notion of “location” plays an important role in understanding the city’s genesis and evolution, and can be conceived as “a dichotomy of site and situation” (Ullman, 1954:13-14, 1962:193, and Vance, 1990: 17). Site, as one of the essential components of the classic dichotomy of city location, refers to “the physical nature of the ground on which the city was built” (Vance, 1990:17), and why that location was better than any other possible site. In the case of Almere New City, site does indeed constitute an intrinsic and essential part of its morphology and development. Situation refers to the horizontal relationships and wider connections of the city with its hinterland and the world.¹ The analysis of Almere New City begins with an essential investigation of its land size, as well as with its site and situation.

By land area, Almere is a small city when compared to both Dutch and American cities. Its total area amounts to only 58 square miles (37,000 acres), which represents slightly more than double the size of, for instance, Amherst, Massachusetts (with a total area of 27.75 square miles). The comparison between Almere’s total area and the land area of a small New England town from Massachusetts is one very good indicator of how land size, land control, and land planning are perceived differently in the United States and the Netherlands. What is a large-size city (spatially speaking) in the tiny Netherlands, is small or very small in the much larger country of the United States. This land size comparison can provide at least an entry point to understanding the different perceptions and management of land (including urban land) in the Netherlands and the United States. With land perceived as a very scarce and highly valued resource, it is easier to understand why



Almere: The Newest and Fastest Growing Dutch City with an Innovative Approach to Solving Congestion



Post Modern Design and Architecture in One of Almere's Main Shopping Areas/Pedestrian Malls located between the Main Highway and the State of the Art Multifunctional Train Station



Movie Theater Design by Dutch Superstar Architect Rem Koolhaas



for at least two centuries the Dutch population has entrusted the national government to make land development decisions, and to strictly regulate and manage them through planning in the past century.

One of Almere's most striking geographical and morphological features is its site, which is located three meters below sea level, on the young soils of clay and sand that have been exposed to the surface only since 1968, when the most recently acquired piece of Dutch land was drained and dried. Almere was located on the youngest IJsselmeer polder, respectively on the Southern Flevoland polder that was reclaimed between 1959 and 1968. The creation of this polder constitutes the culmination of centuries-old Dutch tradition of reclaiming land from the threatening sea surrounding or penetrating into the Netherlands, while the creation of the city's fabric can be viewed as the culmination of decades-long Dutch efforts to refine and improve cities and urban life.

Interestingly, Almere did not have an old, pre-existent physical spatial foundation on which to be built. Rather, it took advantage of the newly shaped polder land, reclaimed from the waters of the IJsselmeer Lake. As a result, Almere's site carries along the characteristics of the young polder land, a site literally created in the aquatic landscape of the IJsselmeer Lake, on the northern fringe of the Dutch metropolis. The past one hundred years of human-induced physical transformations of the IJsselmeer Lake are, indeed, stunning by any measure. This aquatic landscape, where Almere was built, has undergone an interesting planned physical-spatial metamorphosis that developed through three stages: a) from a marine aquatic stage of the Zuider Zee, prior to the 1920s; b) to the lacustrine aquatic stage of the IJsselmeer Lake from the 1930s on; and c) to the terrestrial landscape of the IJsselmeer polders stage which culminated with the reclamation of the last and most recent land of the Southern Flevoland polder. In discussing Almere's site, it is important to mention the essential features and changes brought by the reclamation of Southern Flevoland. The 1960s marked a shift from the traditional reclamation of land for rural, agricultural and animal husbandry uses, to the necessity to reclaim land for spatial, urban and recreational purposes "for the huddled masses on the old land" (Van der Waal, 1997: 194). This shift was triggered by the conflict between the so-called agrarian interests and the increasing urban, recreational and natural preservation demands, as the urban, ecological, and environmental preferences changed in the postwar era."²

Equally important is the discussion of this city's "situation," a term which refers to the horizontal relationship of the location of the city, which in this case is Almere, with the region, the nation and beyond. It provides a regional context as well as its interconnections with the surrounding regions. Almere is geographically located within the close range of the Dutch polycentric metropolis, at the northern edge of the metropolitan region that goes by the name of "Randstad Holland" or "Green Heart Metropolis" and only 25 kilometers from Amsterdam. In addition, Almere is located on the most recently reclaimed land of the

IJsselmeer polders, in the southwestern corner of the Southern Flevoland polder (see Figures 1 and 2).

Almere's situation has been one of the driving factors behind the city's planning and physical development. Its location was a function of both precise planning decisions and random circumstances. Planned and built rather as "a friendly neighbor who could not only help solve some inner-city crowding problems of Amsterdam, but also regionally strengthen Amsterdam's hub function for social and economic mutual benefit, Almere has developed extremely rapidly and gained its distinct position in the Amsterdam region" (Van der Waal, 1997). This new city has lived up to its role in the regional context since it represents the fastest-growing municipality in the Netherlands, with 7,000 new residents coming each year.

Town Plan Analysis: Focus on Almere's Urban Morphological Dimensions

The postwar growth of the Dutch polycentric metropolitan region as a whole has had a considerable impact on the course and efficiency of planning in the Netherlands, and has influenced the planned urbanization on the new land located on its northern fringe. In many ways, the town plan for Almere remains consistent with the post-1960s visions and national and metropolitan efforts to plan for creating better, greener, more livable urban places by preserving and creating open space, green areas and waterways, while accommodating the changing needs of the population. The city of Almere may well be the most consistently planned city in the Netherlands. Almere New City was comprehensively planned and built as a conglomeration of six new nuclei/ towns, separated by green and aquatic internuclear areas (as shown in Figure 3). The analysis of the town plan points to a high degree of both vision and pragmatism, along with planning innovation, extreme attention to details and an integrative thinking and urban planning. . The town plan analysis reveals several interesting aspects including the fact that Almere has:

- 1) *a unique hierarchical polynuclear spatial structure*, with six compact urban nuclei/towns of different sizes. Each of these six towns has different functions suggested by their names. Almere Haven (Almere Port), Almere Stad (Almere City), Almere Buiten (Almere Country), Almere Hout (Almere Wood), Almere Pampus (Almere Out) and Almere Poort (Almere Port)
- 2) *an unusual green pattern of urban development for the whole city*, with at least two main types of "green infrastructure" incorporated into its spatial fabric. These are: an extensive green infrastructure represented by green belts made of parks, gardens, woods, nature preserves, and an extensive network of bike paths and bikeways, all interspersed both between the main urban nuclei/towns and within each of them; and an aquatic infrastructure represented by



Figure 3: The Polynuclear Planning Concept for Almere is illustrated by this aerial photograph showing Almere's compact polynuclear spatial structure. Note the built urban fabric separated and surrounded by green and blue belts (with different functions). SOURCE: MUNICIPALITY OF ALMERE (1999)

- blue belts consisting of water canals that drain the polder, and lakes artificially created and maintained for recreational and aesthetic purposes
- 3) *a high degree of integration of land uses and functions* including residential, commercial, transport, industrial, agricultural, ecological and recreational
- 4) *an extensive integrated public transit system*, along with one major highway (A6) and one railway that traverse the city and the main nuclei from southwest (coming from the main land) to northeast (toward Lelystad). The entire area has an interesting road system with roads collecting traffic while at the same time not disturbing most of the residential districts and neighborhoods
- 5) *a compact, polynuclear spatial pattern* that confines the city within its planned spatial limits, with no room allowed for urban sprawl
- 6) *a well-designed spatial fabric shared by several nuclei/towns*, each nucleus displaying its clearly defined and functioning center.

From an urban planning standpoint, Almere's structure or comprehensive plan is striking both in terms of its spatial and physical design.³ It has a uniquely planned polynuclear concept for the entire city. It promotes and incorporates a new type of urban space and living that includes a very generous (75 percent) amount of green buffered spaces (parks, bikeways, open space, agricultural land) and aquatic developments (canals, lakes) tightly woven into its spatial fabric (Figure 3). These spatial features



are visible on the landscape today, as Almere continues to implement parts of the plan that was designed in the early 1970s.

The Depiction of Green Sustainable Cities in the Urban Planning Literature

The ideas surrounding “green/sustainable cities” and “ideal/livable cities” have captured the interest of urban planners, urban and landscape architects, and urban historians and geographers particularly since the late 1980s and early 1990s. Despite this fact, and due to the relative “newness” on this subject, it is still hard to find a clear definition on what “green sustainable city” means and how it could be achieved. While scholarly publications on this subject are somewhat difficult to find and the terms “green urbanism/green cities” are still vague, as the ideas of green urbanism/green cities or sustainable cities are often hinted at in a number of books and papers published in various academic and non-academic journals, by using terms such as “sustainable urban development,” “sustainable cities,” “sustainable communities,” “green cities,” “green planning,” “ecological cities,” “smart growth developments,” and others. The wide array of terms used to hint to a greener urban planning and urban development, and their unwise interchangeable use creates confusion and blurs their meaning, very often with the boundaries between the concepts very hard to define. In fact, this situation creates real difficulties in research and misguides the process of understanding and dealing with the urbanism issues at various scales.

There appears to be a division in the literature, complicated by the confusing and interchangeable use of terminology, between at least two groups of authors, including (1) those who see the greening efforts as an ecological approach to the city focused on ecological system principles and thinking; and (2) those who see the greening efforts in the context of a broader approach to urban sustainability and smart growth, as a broader, more inclusive urban approach that integrates environmental, cultural, social, economic and technological dimensions, and thus including the goals of the first group’s ecological principles.

The first group of authors subscribes to the idea of a more ecological, green-oriented urbanism and cities, and echoes the idea that the ecological or green components in the city are the ones that matter most, and that, consequently, attention should be paid to issues ranging from ecosystems and urban ecology, to urban wetlands, urban trees and forests, urban parks, flood control, and finally to green open spaces and greenways (e.g., Bucht, 1991; Enwicht, 1992; Fabos and Ahern, 1996; Foulsham and Munday, 1994; Gordon, 1990; Kennedy and Kennedy, 1997; Nicholson-Lord, 1987; Platt & al, 1994; Roseland, 1997; Whyte, 1968).

The second group of authors focuses on the subjects of sustainable urbanism and sustainable cities and argues that green urbanism or green urban planning exists in various countries and

that it takes various forms, according to the specific location, form of government, and planning framework (e.g., Baker & al, 1997; Beatley, 2000; Beatley and Manning, 1997; Brandon & al., 1997; Breheny, 1992; CEC, 1990; European Commission, 1996; Hancock, 1999; Haughton and Hunter, 1994; Pezzoli, 1998; Singh, 2001; OECD, 1996; United Nations, 1993; Young, 2000). These authors contend that urban development and planning should apply the concept of sustainability—a term borrowed from economics and the idea of sustainable development. The common theme of these books is that the rising environmental, ecological, economic and social concerns and awareness, combined with the concern for future urban developments, led to the creation of a new urban paradigm, such as the one of sustainable or greener urbanism.

Almere New City: Sustainable City? Green City? Ideal City? Discussion

Based on years of research conducted in Almere, and when trying to describe and analyze Almere and its planned and built urban form, the author of this paper considered and shifted back and forth between using a range of terms including “garden city,” “green city,” sustainable city,” “ecological city,” “smart city,” and “aquatic garden city”. Also, the author focused on documenting research on the processes of urbanization that occurred in the metropolitan context, and reviewed specific Dutch urban planning concepts and principles of spatial organization including “Green Heart,” “Green Heart Policies”, “green planning,” and “green urbanization.” Why? Where does this terminological and conceptual “battle of terms” come from? The answers are many and need to be briefly discussed.

Perhaps one of the answers is provided by the fact that in designing Almere - this new and still evolving urban lab – the Dutch urban, physical, spatial, cultural and economic planners have incorporated, distilled and mixed in its comprehensive plan and built form a combination of ideas, concepts, tenets, and elements that started and evolved in the past century, starting with the garden city school, continuing with the ecological city movement and its tenets, followed by the more recent trends and approaches anchored in the urban sustainability and smart growth principles, policies and practices.

Dutch planners and architects consider Almere New City’s plan and urban form unique. Designed by Van Duin and Otto at the beginning of the 1970s, the comprehensive plan emphasized an improved and “greener” character for its six distinct urban nuclei/towns. Housing was a key element in their plan which included a low-density housing of 38 houses per hectare (Municipality of Almere, 2008) within walking or cycling distance of business, educational, transport nodes and recreational facilities, and with predominantly (80 percent) low-rise row housing, single and multiple-family detached houses, twin attached houses (duplexes), as well as apartment buildings of various heights (Van der Waal, 1997).



Also important to consider is the unusual degree of attention that was given to the amount of open landscape in the plan, in conjunction with green wedges penetrating into and between residential areas, the incorporation of green ecological elements into and outside the neighborhoods, and the separation of the urban residential neighborhoods, districts, as well as of the main urban nuclei, by planned buffered zones with clear recreational and transportation functions that are represented by green belts and blue belts (as illustrated in Figure 3).

Another interesting feature of the town plan lies in its growth limitations on spatial and population development. The *Verkenningen II* (Explorations II) planning report published at the end of 1972, stipulated that Almere would develop with limits to both its spatial and population growth, with spatial development taking place on an assigned area of 37,000 acres and with a population that should not exceed 250,000 inhabitants. From the early planning stages it was envisioned that Almere would have to reach an upper limit total population of 250,000 inhabitants by 2025. This specific population number echoes Ebenezer Howard's garden city or new town polynuclear plan, which included both the idea of a limit to growth to about 250,000 inhabitants and the idea of locating towns in a park-like setting. Also similar to Howard's garden cities that were envisioned to help decentralize the congested London metropolitan region, Almere New City was seen as one of the solutions to metropolitan congestion and overcrowding in the Netherlands.

Interestingly, the actual planning for Almere was largely influenced by the 1972 planning report for Almere, which itself was impacted by the 1972 book *The Limits to Growth*⁴, as well as by the increasing environmental awareness brought about by the 1973 global oil crisis (Van der Waal, 1997: 2000). Both the general awareness that there must be a limit to population and spatial growth and that the sources of energy are limited, were incorporated into many of the decisions made for the Netherlands at that time. The same environmental concerns were incorporated in Almere's plan. This is illustrated in the transportation system adopted for Almere, when the planners aimed to reduce the effects of car traffic, by increasing traffic safety and made a "clear choice for public transport, by proposing to install an extensive public transport system ahead of the actual demand, to create a favorable competition in relation to the private automobile" (Van der Waal, 1997: 200).

While Almere was planned as a city, the synthesis of "town" and "country" proposed at the beginning of the twentieth century by Ebenezer Howard, or between the built areas and the green open spaces present in each of its nuclei/towns makes it hard to believe that Almere is a city in the sense conceptualized by most urbanists. This situation shows that Le Corbusier's ideas of a vertical city dominated by high-rise buildings were never too popular in either the Netherlands, or later in Almere, where the major-

ity of the population preferred the low-rise buildings to the high-rise ones. This was clearly illustrated by both the results of a 1963 national survey done by the Netherlands Institute for Public Opinion (NIPO), which indicated that Dutch people, if given the choice, expressed an overwhelming (80 to 90 percent) preference for low-rise, single family row-houses (Van der Cammen, quoted in Van der Waal, 1997: 197), and by the lack of high rise building in Almere until recently, when the new 2005 AlmereStat downtown plan revitalization for Almere Stad brought a few "skyscrapers" into the city's landscape.

Whether the Dutch predilection for low-rise buildings is anchored in old social and cultural features of a Dutch society that has had to live on a rather flat and fragile landscape for centuries as discussed by Newman (2003), or in the postwar changing individual and collective preferences, as suggested by Van der Waal (1997), the fact is that for a combination of reasons Almere's planners also rejected the idea of high-rise buildings. At present, Almere New City displays a dominant low-rise urban landscape, with only a few recently built high-rise apartment buildings and office spaces (still in construction), primarily located in Almere Stad.

Could Almere New City be viewed as a "sustainable/green" city, one that embodies many elements of the "ideal city" tenets and principles? Based on her urban morphological planning and chronological analysis of Almere's plan and built urban form, the author of this paper contends that from the urban morphological standpoint Almere could be viewed as a "sustainable/greener city" with aspirations to become almost the "ideal" city for many Dutch planners and urban dwellers, and perhaps for the non-Dutch public. While far from perfect, as this new "baby city" evolves, it has the time to perfect and address some of its cultural and economic issues while also maturing and reflecting upon its "own mistakes."

Almere does appear to synthesize multiple greener, sustainable city approaches and captures, in many ways, the efforts to achieving a greener, more sustainable, more positive urban planning that includes both the central and environmental dimensions of cities in both Europe and the United States, as highlighted by Timothy Beatley in his 2000 book *Green Urbanism: Learning from European Cities*. Beatley suggests that, in order to create a "sustainable/green" city, there is a great need for innovative local, regional and national planning concepts, strategies and policies that combine and integrate environmental and ecological components with the spatial, morphological, cultural, social, and economic ones. The author of this paper contends that Almere does incorporate the above suggested elements and that the city's overall compact, polynuclear urban form could be used as an example to follow for both new town planning throughout the world, and for the development and redevelopment of old and new subdivisions and districts in already existing cities.



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Endnotes

- 1 These terms were developed and discussed by Edward Ullman in the 1950s and 1960s (Ullman, 1954: 13-14, 1962: 193).
- 2 The Ministry of Agriculture and Fisheries was afraid of losing land for agriculture, hence insisted on the allotment for agriculture (Van der Waal, 1997: 193).
- 3 The US counterpart for the local "structure plan" (structuur plan) is the "comprehensive plan" (Levy, 2002: 310).
- 4 In 1972, *The Limits to Growth* book has sold more copies in the Netherlands than in any other country, including the USA. According to the Het Spectrum BV publisher, between 250,000 and 300,000 copies were sold over the years in the Netherlands (Van der Waal, 1997: 215).



The Problem of Reducing Carbon Emissions

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We know now what the problem is. We have been successfully tracking gradual increases in atmospheric carbon emissions. We know this is serious. The importance of finding a solution to reducing carbon emissions cannot be understated. The emissions of atmospheric carbon, generated by man's activities, are exacerbating environmental changes on a global scale. In the past, we seem to have made conscious choices to ignore potential consequences. Today, the political and social structures we have established are developing only embryonic policies and taking only feeble action. Our initiatives often seem mismatched and the actions marginal. We have pushed aside our stewardship responsibilities and failed to bring our technical and economic resources to bear on the task of implementing viable solutions.

Consequently, new environmental problems have surfaced that emphasize the ultimate fragility of our planet's ecosystems. Due to our unresponsive choices, climate changes are occurring at a rapidly accelerated pace. Our common future is becoming grim. No matter what actions we take today, the consequences of increasing carbon levels will continue to plague the earth for generations to come. Never before have human-induced environmental changes had such a global impact. At this juncture, nothing less than the sustainability of life on our planet is at stake.

The results of our past insensitivity to the environment are becoming more and more noticeable, the consequences less and less dismissible. With the acceptance that an over-abundance of atmospheric carbon dioxide (CO₂) is impacting Earth's ecosystems and can be a planet-destroying greenhouse gas, a new age is dawning. The economies of the Hydrocarbon Age are at an impasse. Indeed, the availability of some fossil fuels is reaching a tipping point. We are changing our landscapes – terra-forming them to meet the needs of agriculture, industry, urban expansion

"If further global warming reaches 2 or 3 degrees Celsius, we will likely see changes that (will) make Earth a different planet than the one we know. The last time it was that warm was in the middle of the Pliocene, about 3 million years ago, when sea levels were estimated to have been about 25 meters (80 feet) higher than today".

James Hansen, NASA's Goddard Institute for Space Studies, New York (2006)

and regional transportation networks – as a result of economic development and technological advancements. Many of our cities have evolved to become "post-industrial" and are unlike anything that our forbearers might have imagined. Cities in Mexico, China and India are reeling from explosive population growth, poor development choices and environ-

mental damage. Countries seeking economic and political control over carbon-based energy resources are at times exerting their military muscle, threatening and waging regional conflicts. The impacts of each country's policies and economic systems are intensifying the problems associated with carbon emissions rather than resolving them. However, the political dialogue is shifting from outright rejection of the existence of carbon-induced climate problems to the development of strategies and legislation to mitigate them.

At this point in history – when creative solutions are needed – the backdrop of conflicting influences, political stalemates and economic turmoil makes long-term solutions difficult to implement. Energy, environment and economy are intimately linked. For example, energy-consuming systems account for 95% of man-made CO₂ emissions. According to Kenneth Cohen, Vice President of Public Affairs for Exxon Mobile Corporation, the real issue is "how to provide the energy needed to improve global living standards while also reducing greenhouse gas emissions."¹ The seminal inconvenient truth is that a consensus regarding how to proceed remains elusive. Regardless, governments are creating policies, corporations are reconstructing strategic plans, and institutions are redefining their missions. Agendas are changing and new programs are being launched and implemented. There is an evolving consensus on the horizon, one that will change how we prioritize our efforts to become more sustainable. The time has come to refocus our resources towards finding solutions that reduce or eliminate carbon emissions.



Mankind's continued misuse of carbon-based fuels has created an aura of uncertainty. While there are both natural and man-made sources of atmospheric carbon, natural endowments that reduce atmospheric carbon levels are under attack by our activities. Formed over hundreds of millions of years, carbon compounds were stored by natural processes that worked very slowly. These processes gradually reduced atmospheric concentrations by storing carbon in natural sinks, such as in soils, vegetation, underground and the oceans. There are currently no viable substitutes for these natural processes that have effectively sequestered massive quantities of carbon for eons.

The Increased Use of Carbon-Based Fuels

Today, the carbon compounds that are being released into the atmosphere come from many sources, including primary combustion of fuels such as coal, natural gas and oil. The use of coal represents more than half of the CO₂ being released into the atmosphere in the U.S. Despite its high levels of CO₂ emissions and its low thermal energy conversion efficiency (approximately 37%), coal usage will continue to play an important role in global energy supply. Yet ways must be found to reduce the carbon emissions generated from its use.

What is happening is that we are increasing our use of carbon-based fuels – and the atmospheric concentrations of carbon dioxide are also increasing. A consensus has evolved that global climate change is a result. The debate is over. We know that carbon emissions are directly linked to the use of fossil fuels and they are responsible for global climate change. Mankind's activities are



Rooftop Solar Collectors for Residences in Amersfoort, Holland

exacerbating this problem and creating climatic disruption, loss of biodiversity and economic uncertainty. Despite increased awareness, efforts to address the impacts of climate change are in their infancy. They have yielded little impact on global emissions. In fact, carbon emissions worldwide continue to increase. This is due to the growing quantities of fossil fuels being extracted and how they are used in combustion processes.

The concentration of carbon in fuels varies, as do the amounts of carbon released into the atmosphere during combustion processes. One way to reduce CO₂ emissions is to become less dependent on fuels with high carbon content. Efforts should be made to replace such fuels with those that generate less carbon. Alternative energy resources (e.g., windpower, solar, geothermal and hydropower) offer viable substitutes as they do not rely on carbon-based fuels.

There are two primary ways to manage atmospheric levels of carbon. Emissions can be reduced or carbon can be extracted from the atmosphere. Like other atmospheric pollutants, once emitted into the atmosphere, carbon is diffused and both difficult and expensive to extract. The technologies available to remove carbon from the atmosphere are commercially unproven and many are untested. Thus, reducing the quantities of carbon compounds prior to their release into the atmosphere holds far greater promise.

Our habits over the last 60 years have contributed to the dire situation we find ourselves in today. Many of the adverse environmental consequences we face are caused by increased atmospheric carbon concentrations and their impact has only recently become understood. Why is this? As with serious environmental problems encountered in the past (e.g., natural resource depletion or water pollution), there is a time lag before the environmental impacts of human actions become apparent. Environmental changes must be meticulously observed before the causes and effects are assessed. Theories typically evolve as to why the changes are occurring. Their projected impact must be

Table 1 – Carbon Intensity of Fuels

Fuel Type	CO ₂ Emissions Produced (kilograms)
1 gallon of gasoline	8.9
1 liter of gasoline	2.4
1 gallon of diesel fuel	10.2
1 liter of diesel fuel	2.7
1 short ton of bituminous coal	2.24
1 short ton of lignite coal	1.27
1,000 cubic feet of natural gas	54.7
1 cubic meter of natural gas	1.9
1 kWh of electricity	0.61

Source: McKinsey & Company (2007, December). *Reducing U.S. greenhouse gas emissions: how much at what cost?* U.S. Greenhouse Gas Abatement Mapping Initiative. p. 74.



considered. To do this, the scientific community must make comparative measurements of before and after conditions, link the environmental changes to the causes, and consider an assortment of remedial actions. Prior to suggesting approaches to mitigation, a wide array of intervention methodologies and technologies must be developed, tested and deployed. After a period of societal denial and disbelief, a political consensus must emerge before public resources can be used. This is time-intensive and laborious. Meanwhile, our present infrastructure continues to operate, exacerbating the problems it has created.

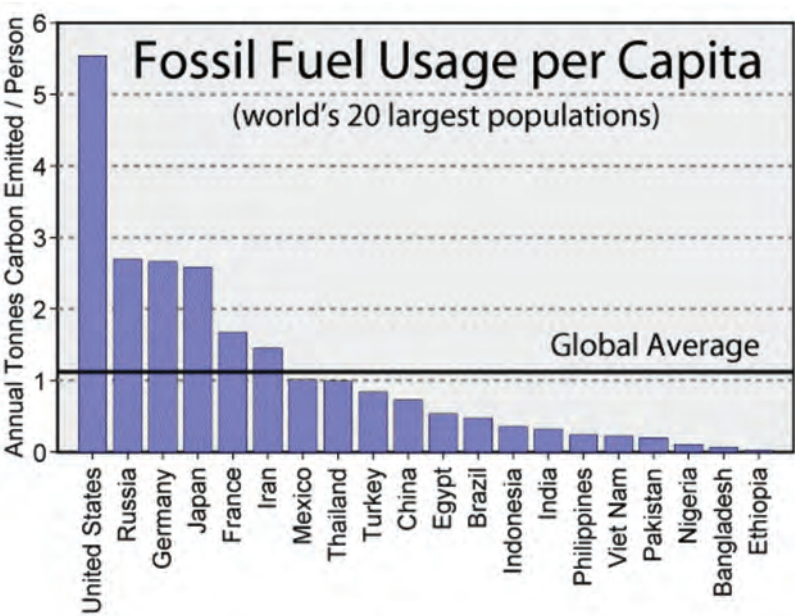
To complicate matters, seldom is there a single solution to a problem. The “smoking gun” is oftentimes more readily identified than the elusive “silver bullet” – and none may exist. In fact, scientific investigations often conclude that a set of customized mitigation approaches is necessary. Such contextual responses vary in their identification of the source of the problems, local circumstances, economic costs and the scope of the solution. In some cases, recommended technologies have unintended results that are not necessarily favorable. For example, in 2008 24% of the corn grown in the U.S. was harvested to manufacture ethanol and used as an alternative fuel. The use of corn for fuel production is expected to increase to 32% of the total crop in 2009. This has increased pressure on corn prices and has stressed food supplies.

A scientific consensus regarding the environmental damage caused by carbon emissions has only recently become available. Increasingly, the deleterious consequences of carbon-induced climate change have become more apparent. The consensus is that carbon emissions are contributing to possibly irreversible changes in the world climate. The time of inaction has passed and the time of initiative is upon us. We must take action now or our common future is in peril.

Carbon Emissions

Global carbon emissions from man-made sources more than tripled from 1950 to 2000 and they continue to increase. From 1990 to 1999, global emissions increased at a rate of 1.1% annually, jumping to 3% annually despite the creation of the Kyoto Treaty.² Carbon dioxide emissions (CO₂e) increased to 28.2 billion metric tons in 2005.³ Moreover, projections suggest that CO₂e will climb to 33.9 billion metric tons in 2015 and to 42.9 billion metric tons in 2030.⁴ Increases of such magnitude are unprecedented. The potential impacts to the Earth’s ecosystems are unknown. It is likely that further damage to the Earth’s climate will occur. This damage will have unforeseen consequences and impact our economies, our health, our resources and our settlements. These changes are likely to occur so quickly that we may be unable to adjust rapidly enough to avoid global catastrophe.

Table 2 – National Levels of Fossil Fuel Consumption



Source: Carbon Dioxide Gallery, developed by Rohde, R. from publicly available data. http://www.globalwarmingart.com/wiki/Image:Fossil_Fuel_Usage_png, accessed 21 September 2007.

Greenhouse gas emissions in the U.S. in 2006 have been estimated to be 7.1 gigatons.⁵ Of this total, approximately 6.0 gigatons were emitted as CO₂.⁶ In addition, 0.5 gigatons were emitted as methane (CH₄), a potent greenhouse gas 25 times more damaging than CO₂. Methane is used as a combustion fuel for electrical production and escapes into the atmosphere from fermentation, landfills, coal mining operations, manure, natural gas systems and other sources. Since burning methane releases less CO₂ per unit of heat generated than other hydrocarbon fuels, it is seldom the fuel of choice. With a half-life of seven years, methane in the atmosphere oxidizes and produces CO₂ and water.⁷ In comparison to CO₂, each methane molecule has a relatively large global warming impact that diminishes in a relatively short period of time. Methane tends to concentrate in the stratosphere and in tropical regions. For these reasons, efforts to mitigate atmospheric carbon concentrations must include preventing the release of methane gas. The amount of methane present in the atmosphere has increased from 700 parts per billion (ppb) in 1750 to 1,745 ppb in 1998, with more than half due to human activity.⁸ While atmospheric methane concentrations held steady through 2006, they began to increase afterwards.

The release of carbon emissions from the world’s countries is unevenly distributed. The U.S. emits CO₂ at more than twice the per capita rates of Germany, Japan, or Russia. In more populous, industrializing countries, the rates of increase are becoming unmanageable. In 1990, China and India combined for only 13% of world emissions, yet their share increased to 22% by 2004 and is anticipated to further increase to 31% by 2030.⁹ China constructs



the “equivalent of two midsize coal-fired power plants each week – adding a capacity comparable to the entire UK power grid each year”.¹⁰ In 2006, China surpassed the U.S. as the world’s No. 1 carbon dioxide polluter.

CO₂ emissions are often concentrated in or near urban areas. Canadian cities produce roughly 20 tons of CO₂ per capita per year, while residents of Amsterdam produce only 10 tons annually on a per capita basis. CO₂ emissions can also be considered as an average based on population which includes both urban and non-urban areas. There is wide variability in emissions rates. The table below uses national per capita emissions based on fossil fuel consumption as a measure. The U.S. ranks highest with an index of roughly 5.5 metric tons emitted per person annually.

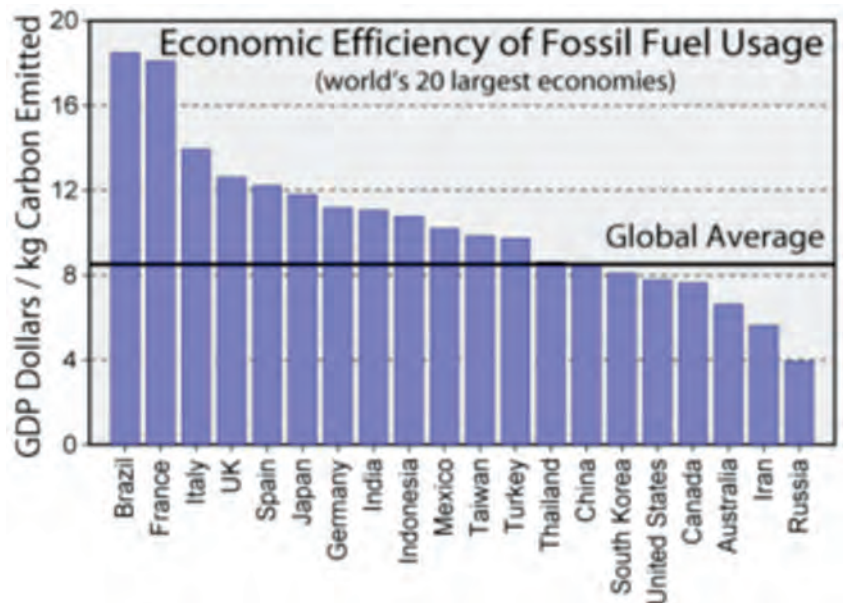
Within countries, greenhouse gas emissions vary widely across economic sectors. The production of greenhouse gases due to power generation, industrial processes and transportation account for over 52% of the world’s total greenhouse gas emissions. Strategies to reduce carbon emissions will impact all sectors of the economy and costs are likely to be unevenly distributed regardless of the strategies employed. Therefore, policies that focus on reducing carbon emissions must be broadly-based. A consensus must be reached. Programs must be implemented to achieve the goals established by the policies that are adopted. While policies and programs are replicable, they must be overarching in their principles, consistent in their goals, and locally adaptable. The technologies employed must be appropriate, adaptable and economically viable.

The Costs of Reducing U.S. Carbon Emissions

The cost of reducing U.S. greenhouse gases is difficult to estimate. The projections range from almost nothing to hundreds of billions, if not trillions, of dollars. According to a recent report entitled *Reducing U.S. Greenhouse Gas Emissions: How Much at What Cost?* by McKinsey and Company, annual greenhouse gas emissions in the U.S. are projected to increase from 7.2 gigatons¹¹ of CO₂ equivalence in 2005 to 9.7 gigatons in 2030 if no remedial actions are undertaken.¹² This report identifies the primary causes for the projected growth of U.S. carbon emissions:

- 1) The anticipated long term expansion of the economy.
- 2) Growth in the use of energy by buildings, appliances and transportation due to a projected population growth increase of 70 million.
- 3) The continued reliance on carbon-based electrical power generation from the construction of new coal-fired power plants that lack carbon capture and storage (CCS) technology.

Table 3 –Economic Efficiency of Fossil Fuel Consumption



Source: Carbon Dioxide Gallery, developed by Rohde, R. from publicly available data. http://www.globalwarmingart.com/wiki/Image:Fossil_Fuel_Efficiency_png, accessed 21 September 2007.

- 4) A gradual decline in the ability of U.S. forests and agricultural lands to absorb carbon, forecasted to decrease from 1.1 gigatons in 2005 to 1.0 gigatons in 2030.

The McKinsey and Company report provides case projections that consider abatement opportunities such as greater use of coal as an energy source using carbon capture and storage (CCS), expanded use of nuclear power, renewable energy and biofuels, along with vehicle efficiency improvements and energy efficiency upgrades for buildings. These carbon abatement projections establish a cost of \$50 per ton or less. However, motor vehicle efficiency improvements typically require investments greater than \$50 per ton.

Potential for Reducing Carbon Emissions

There remain opportunities to reduce carbon emissions. The potential in the U.S. can be measured by how policies, programs and technologies are effectively synchronized to implement this goal. There must be a focus on managing broadly-based initiatives that successfully reduce carbon emissions. However, the pressures of population growth and development temper the belief that we can reduce carbon emissions simply by initiating additional energy conservation and efficiency improvements.

The study by McKinsey and Company evaluates five categories of technologies that can be employed to reduce carbon emissions and estimates their potential impact. These categories are:¹³



- Reducing the carbon intensity from electric power production by using alternative energy and CCS technologies (800-1,570 megatons).
- Improved energy efficiency in buildings and appliances (710-870 megatons).
- Implementing carbon reduction opportunities in the industrial sector (620-770 megatons).
- Expanding natural carbon sinks to capture and store more carbon (440-590 megatons).
- Increasing vehicular efficiency and using less carbon-intensive fuels (340-660 megatons).

These approaches, if considered as additive, offer an estimated total reduction in carbon emissions ranging from 2,910 to 4,460 megatons, or a reduction from the base year (2005) emissions ranging from 40 to 62%. Infrastructure efficiency improvements will be necessary. If implemented, such initiatives would place the U.S. at a per capita carbon emission level close to that of Germany or Japan.

While the U.S. is improving the efficiency of vehicles and new buildings, it is clear that the country needs to direct more resources and efforts towards reducing emissions from electrical energy production and improving the efficiency of existing buildings and appliances – areas where the greatest reductions in carbon emissions are possible. The need to expand the U.S. economy and support a growing population makes the implementation of carbon emission mitigation programs more challenging. However, there are ways to reduce the impact of carbon emissions without adversely impacting the economy. Reducing electrical demand is a prime example. Projections indicate that improvements in building and appliance energy efficiency combined with industrial sector initiatives could offset 85% of the incremental demand for electricity through 2030.¹⁴ This scenario is certainly possible, yet it is much more likely that the increased need for electricity through 2030 will be met by increasing the number of coal-fired plants. Nuclear power is a potentially viable option as it does not generate CO₂ emissions. However, the waste disposal issues associated with nuclear energy remain unresolved.

The Impact of CO₂ Regulation in the U.S.

U.S. greenhouse gas regulations and policies are in flux. In April 2009, the U.S. EPA released a proposed finding on CO₂ and five additional greenhouse gases (methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride). The agency stated that “in both magnitude and probability, climate change is an enormous problem” and that greenhouse gases “endanger public health and welfare within the meaning of the Clean Air Act.”¹⁵ It cited man-made pollution as a “compelling and overwhelming” cause of global warming. According to EPA Administrator Lisa Jackson, the finding “confirms that greenhouse gas pollution is a serious problem now and for future generations.”¹⁶ This finding was prompted by a Supreme Court

decision in April 2007 ruling that greenhouse gases are pollutants as classified by the Clean Air Act and regulation is required if human health is threatened.¹⁷ A final finding is forthcoming as is congressional action. House Speaker Nancy Pelosi has stated that “the Congress is working on a comprehensive solution to global warming, and I am committed to moving clean energy legislation this year that will include perspectives from across our nation to create jobs, improve our national security, and reduce global warming.”¹⁸ (The U.S. House of Representatives passed the Waxman-Markey Energy bill on June 27th, 2009 and it is now in the Senate awaiting action.)

This redirection of U.S. policy is already impacting the utility industry’s plans to increase coal-fired electrical power generation. AES Corporation recently withdrew an application to construct a 600 MW coal-fired power plant in Oklahoma as part of a “broader strategy to reevaluate” their growth plans.¹⁹ In Louisiana, three coal-fired power plants or expansions are undergoing state review. Louisiana Generating was recently sued by the EPA for failing to install modern pollution control equipment when its Big Cajun 2 Plant underwent major modifications.²⁰ Michigan has placed seven power plants on hold while Governor Jennifer Granholm attempts to shift her state to power from cleaner, more sustainable energy sources.²¹ In Kansas, a state with a successful wind power development program, former Governor Kathleen Sebelius vetoed three legislative attempts to approve two large coal plants proposed by Sunflower Electric.²² If we are unable to meet the growing need for power by using carbon-based fuels (while simultaneously reducing CO₂ emissions), we must meet this need using energy efficiency improvements and alternative energy resources.

Summary

Carbon emissions generated by man’s activities are contributing to potentially irreversible changes in the world climate. The scientific consensus is that global climate change is one result. Nothing less than the sustainability of life on our planet is at stake. Natural processes have effectively stored large quantities of carbon for eons and there are currently no substitutes for these natural processes. The carbon compounds that are being spewed into the atmosphere come from many sources – especially fossil fuels. The Hydrocarbon Age is at an impasse. We must find ways to use carbon-based fuels more efficiently and effectively.

We know that energy, environment and economy are linked; yet a consensus regarding how to effectively deal with this relationship remains elusive. There is no single, quick fix solution since greenhouse gas emissions vary widely across countries and economic sectors. Long-term solutions that reduce carbon emissions are needed, yet they are costly and difficult to implement. Policies that focus on reducing carbon emissions must be broadly-based. Programs must be implemented to achieve the goals established by those policies that we choose to adopt. Technologies that are directed towards the reduction of carbon emissions must be adaptable and economically viable. In the near future, CO₂ is likely to become a regulated pollutant in the U.S.



We find ourselves at an impasse and solutions will be both technologically challenging and costly to implement. Solutions include using natural carbon sinks, improving the energy efficiency of vehicles, upgrading buildings and facilities, reducing emissions caused by electrical energy production, using more efficient appliances, and expanding the use of alternative energy. The potential can be measured in how policies, programs and technologies are effectively synchronized and implemented to reduce carbon emissions.

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Signs and Shapes of a Culture of Tolerance: Ethnographic Impressions from Amsterdam

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Mark Twain once quipped that “Rumors of my death have been greatly exaggerated.” The same may turn out to be true of Amsterdam’s culture of tolerance. Its roots run deep and its value as an urban *modus vivendi* remains immense. Some of the boundaries of tolerance are being re-drawn, to be sure. But for an American to wander the streets of Amsterdam is to be immersed in a different structure of feeling (Williams, 1974). How has Amsterdam been sustained for six centuries — rescued from the water, rising out of the medieval mud, under constant threat of inundation and invasion — to remain one of the cosmopolitan jewels of Europe, visited by millions year after year? Among other things, this has required a shared commitment to tolerance from conflicting groups — Protestant and Catholic, labor and capital, immigrants from former colonies. Tolerance makes for the sort of city that its diverse residents want to sustain and will work to sustain, which is the *sine qua non* of sustainability.

On a winter Wednesday evening in 1976 in an overflowing theatre at the Collège de France, Michel Foucault first sketched his approach to the study of power. His opening “methodological precaution” was to “understand power by looking at its extremities ... where it becomes capillary” He conceived of power as “something that circulates” and “is exercised through networks” in which individuals “are always its relays,” and he argued for “an ascending analysis of power... beginning with its infinitesimal mechanisms” (2003:27-30).

Much the same may be said for the study of tolerance. The infinitesimal mechanisms of tolerance in Dutch daily life both give rise to and help sustain the tolerant laws, policies, and institutional practices for which Amsterdam is justly famous. The forms and facets of tolerance described below provide glimpses of the culture of tolerance that is an essential part of what makes Amsterdam work as a city. Like the intricate system of canals, dikes, dams, and sluices that accommodate the water in which the city sits, the everyday practices of tolerance create social space

that accommodates difference and deviance. And just as the canals have transformed a natural enemy into an aesthetic asset, Amsterdam’s culture of tolerance has transformed its cacophony of lifestyles and people into a civic resource (see Becker and Horowitz, 1971:6).

This culture of tolerance is being tested at present. Liberal asylum laws and a generous welfare state led to immigrant enclaves that many Dutch find problematic. The ideal of multiculturalism, which Amsterdamers were among the first to embrace, is under attack — from the left for not going far enough to ensure that all ethnic groups are full participants in society, but more powerfully from the right for going too far. Two wrenching assassinations helped spark a rise in Islamophobia (see Buruma, 2006). A more conservative governing coalition in Parliament has tightened immigration policies and social support programs. There are fewer cannabis coffeeshops and “ladies in the windows” (as one of Camus’s characters called them [1956:15]). But more ominously, an explicitly anti-immigrant, right-wing party has gained ground, winning one-sixth of the Dutch vote in the 2009 elections for the European Parliament (Staal, 2009). All this has led more than one Dutch observer to declare the death of the culture of tolerance (e.g., de Winter, 2005).

Architecture and Attitude

In most European capitals, monuments narrate national mythologies. Guide books and maps number them and tour leaders dutifully point to them. Amsterdam has more than its share of things to see, but as Dutch historian Geert Mak has noted, “The architecture of prestige has largely passed Amsterdam by.” Indeed, the city is “almost an anti-monument turned flesh” The skyline, if it can be said to have one, “has emerged untouched by the grandeur of absolutism.” Amsterdam’s Centraal Station and Rijksmuseum are breathtaking, but they are public buildings that are not about the greatness of royal or noble families. Mak



argues that Amsterdam, long a city-state unto itself, has about it a “quiet self-assurance.” It is “unproud in a proud sort of way,” and “oriented towards individual citizens rather than a powerful aristocracy.” Its inhabitants “have for centuries felt no need of boastful tombs, palaces, statues, avenues” (2001:3-4). Tourists who traverse the graceful bridges that criss-cross the canals and gaze at the old churches and merchant homes probably don’t notice a shortage of grandeur. The Queen does have an imposing palace on Dam Square in the middle of Amsterdam, but it was originally the City Hall and was only made into a royal palace by Napoleon, who made the Netherlands a Kingdom. In relation to other European capitals, Mak is right. There are simply fewer giant monuments in Amsterdam than in comparable cities elsewhere in Europe.

Big monuments and broad avenues are more difficult to build with all that water everywhere, and this may be one reason why one senses a spatial modesty in the Netherlands, one of the world’s smallest countries, about the size of Massachusetts and Connecticut combined. With over 16 million inhabitants, it has long been among the most densely populated countries in the world. Much of this small space was reclaimed from the water and is unusually precious. When you see the constant maintenance of the canals, the dikes, and the homes built on timbers that are driven through the water into the earth, you realize that Amsterdam’s sustainability is an ongoing accomplishment.

The homes built on this precious land are often small and architecturally unassuming by European standards. They are built very close to the street, which helps give Amsterdam its enticing intimacy. Most of the famous 17th-century merchant homes along the main canals, for example, are gorgeous by almost any standard, with beamed ceilings, marble floors, brass fittings, and magnificent brick and stone facades that speak of material success. Yet most were built on relatively small footprints. While some are grand indeed, many others are modest in scale, neither wide nor deep, with small rooms and steep stairs. Neighborhoods built for artisans and the working class like the Jordaan area on the west side, have even smaller houses along dark, narrow streets.

But taken together, as an old city center arrayed along concentric semicircles of tree-lined canals graced with brick bridges — particularly at night, with lights tracing the arcs of the bridges, streetlamps shimmering their reflections in the water, and curtains open to interiors with candles and lamps glowing on bookshelves and

paintings — the merchant homes are visually captivating. Visitors cannot help but project a kind of grandeur-of-the-whole onto each of its parts, most of which do not have all that much of it, particularly since many have been split up into small apartments. Next to the homes of comparable captains of industry in London, Paris, or Milan, or to New York’s brownstones, many of the homes of Amsterdam’s mercantile nobility are unpretentious. Whether constrained by Calvin’s warnings about the reckoning that awaits those who overindulge or by the high cost of reclaiming land, even the merchants of the Dutch Golden Age — men who loved feasting and finery and having their portraits painted — often built relatively unpalatial homes.

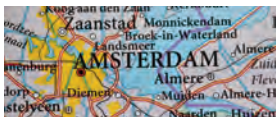
Bicycles and Worldviews

The stereotypical images of Dutch life are windmills, wooden clogs, and bicycles. Every postcard stand in the tourist areas of Dutch cities includes picture postcards of bicycles in various poses. Over half the workforce in the country bike to their jobs. Folklore has it that in Amsterdam, a city of about 750,000 inhabitants, there are well over 1,000,000 bicycles. No one who has ever walked off a train and out of Centraal Station would dispute this claim. At all times the station is surrounded by immense metal hedges made of bikes, thousands of them lined up leaning into each other, pedals and handlebars entangled like twisted branches of briar. This is so despite a 3-story, floating parking lot filled with 5,000 bikes and a secure indoor garage where commuters store hundreds more. The city is marked by webs of bicycle paths built into traffic plans with their own bicycle stop lights at riders-eye-level and bike racks everywhere.

Since the late 19th century, the Dutch have manufactured solid, good quality bicycles, but really fancy bikes are more rare than one might imagine in a bike-centric society. Most Amsterdamers ride quite ordinary bicycles, usually black with



Thousands of bicycles at Central Station.



only one speed. They are sturdy and do their jobs, but they are almost ostentatiously unfancy, more often than not scratched, rusty, and in need of repair. A chain scraping the side of its chain guard or a fender rattling as its wheel rolls over bumpy brick streets is as iconic a sound for Amsterdam as seagulls are for the seashore. *Tour-de-France*-level racing bicycles are unusual except for exercise in parks or out in the countryside. The 27-speed dirt-street hybrids that are common all across the US are far less common in Holland, and not just because there are no hills and thus no need for all those gears. Many natives attribute this to the risk of theft — no use having a really good bike that would only get banged up or stolen. Most apartments and houses are small and so most bikes must be stored outside in the elements. Bicycles invariably get tangled up with other bicycles in bike racks and thus get nicked and scraped.

But beyond such material constraints, it also seems to be the case that most Amsterdamers do not think of bicycles as objects that provide an opportunity to display status or to conspicuously consume. This ethic seems widely shared across the more affluent neighborhoods like the *grachtengordel* (ring of grand canals) and in working-class neighborhoods outside the Centrum. The scrapes and rattles are almost as likely to come from the bike of a lawyer or professor as from a clerk or a student. By some strange blend of Calvinism and egalitarianism, there is an unspoken politics according to which it is not just wasteful to pay a lot for a fancy bike that could get stolen and surely would get banged about; it also seems to be considered bad form to show off by riding a bicycle that is markedly better than those ridden by one's neighbors.

Amsterdamers in particular find bicycles to be a great aid to the sustainability of their city. Bikes are the only sensible way to get around town, and most people use them every day for almost every purpose — to get to work, to pick up children from kindergarten, to shop for groceries, to go to movies, dinners, and Sunday outings. Bicycles are the least expensive mode of transportation and also the most environment-friendly. The Netherlands has the largest proportion of its citizens as members of environmental organizations of any country in the world, and there is a very high level of awareness of the environmental costs of cars. There is a huge tax on new cars in the Netherlands. Gasoline costs more than double what it does in the U.S. In Amsterdam, the parking permits that are required even for one's own neighborhood can cost \$50 a month and a person must often wait years to get one.

There are highly efficient and well run trains, trams, and subways going everywhere from Haarlem a few minutes west to Paris a few hours south. Still, for most travel within cities and even in most small towns,

bicycles are faster and more convenient for almost any purpose. In Amsterdam, it is common to see young Dutch mothers (somewhat less often, fathers) with a one-year-old in a kiddie-seat in front of her, a 3-year old in a larger seat behind her, flowers, baguettes and grocery bags stuffed into saddlebags and/or hanging from each handlebar, happily peddling down the street within inches of passing trucks and taxis. To the non-Dutch eye, it is an acrobatic marvel; to Amsterdamers, mundane. The vast bulk of the populace — across class, race, gender, and other divisions — shares a bicycle-level view of urban life which seems to yield up a certain citizen solidarity. Amsterdamers ride their bicycles with the attitude that they have every bit as much right to the often narrow streets as cars, those automotive *arrivistes*. Just because the laws of physics say that cars are much bigger, faster, and heavier and can easily crush the bicyclist does not give cars a scintilla more rights according to the city's bicycle norms.

A secondary, technical meaning of tolerance is "an allowable amount of variation of a specified quantity, especially in the dimensions of a machine or part." This is what machinists and mechanics mean when they refer to the microscopic deviation from design standards or variation in the distances that are allowed between the moving parts of motors or machines. This meaning of tolerance, too, applies in Amsterdam, where bicyclists speed down streets so narrow they would be called alleyways in the U.S., and the tolerances are thin indeed. Near-misses are an everyday occurrence. Until you get used to them, they can be heart-stopping, but the Dutch seem hardly to notice, gliding around almost any sudden obstacle as if it were a sin to slow down.

This is where the primary meaning of tolerance re-enters. People in every imaginable means of conveyance routinely make moves in traffic that would be interpreted as aggressive in the

Bicycles are the least expensive mode of transportation and also the most environment-friendly.





U.S., provoking raised voices or digits, honked horns or even road rage. But in Amsterdam it is not the norm to interpret them that way. On bicycles, Dutch people do in traffic pretty much whatever they can get away with. The old line about traffic signals being merely suggestions in New York City isn't really true about New York City, but it is true about Amsterdam for cyclists. The Dutch daily newspaper, *Het Parool*, once published on its front page a photo of a man on a bike, stopped with one foot on the curb, under the headline, "Cyclist halts at traffic light." The man was the new Burgemeester or mayor of Amsterdam, Schelto Patijn, who in his early weeks in office was still trying to set a good example. If they see no cross traffic approaching, stoplights are routinely ignored; one-way streets are two-way for the two-wheeled. By some urban alchemy, these aggressive-seeming traffic moves rarely inconvenience anyone else for long, partly because others are making similar moves and partly because those who might be inconvenienced simply maneuver around them.

To American eyes, there is also a patience for obstacles and delays in Amsterdam which seems positively Zen-like. One winter morning in 2004, a kitchen equipment delivery truck stopped under my window in the middle of the street and the driver began unloading a half dozen large crates into the shop downstairs. The drivers of the three cars and one truck behind him quietly waited. Given how the city is built, this is pretty much the only way to get goods picked up or delivered, furniture moved in or out, houses repaired or remodeled. People are accustomed to narrow streets and various forms of delay as something that cannot really be avoided. Cyclists keep peddling as they squeeze by the parked trucks, sometimes twisting their bodies sideways to take up less space, their coats brushing against the trucks' side mirrors, as if they would be thought of as incompetent if they lost forward motion. Other vehicles, however, simply shut off their engines and sit, sometimes for four or five minutes. And yet there seem to be far fewer horns blown and cross words exchanged in traffic than in most large U.S. cities. This does not stem from an ideology or a policy that enforces such norms but rather from the concrete, unavoidable exigencies of urban life. Amsterdam was built centuries before the automobile, and so its narrow streets physically encourage traffic tolerance.¹ Perhaps because it is structurally pointless to get upset, it seems to take just a little longer in Amsterdam to go from zero to angry.

Utrechtsestraat is a narrow street running roughly north to south from Rembrandtsplein along the southeast edge of the grachtengordel. On maps it runs straight. In real life, it snakes sharply to the side at the intersections with each major canal. Utrechtsestraat does this because trams run down the middle of the street in both directions, but the street is not wide enough for two sets of tracks, so there is just one. Only at intersections, where the street broadens over the bridges, is it wide enough for the two tracks needed for trams to pass each other. During rush hours, one sees cars, trucks, motor scooters, and bicycles by the dozen all traveling at different speeds, all jockeying for position,

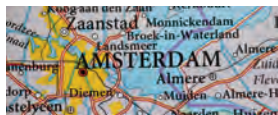
all aligning their paths parallel to that of the tram as it begins its snakey turn at each intersection. At that point, the tolerances between all of them can shrink from a few feet to a few inches. Once you get used to it, this collective swerve becomes ballet-like rather than just frightful. There are no stop lights to choreograph any of it, just local knowledge of how to fit together as moving parts.

The Social Ecology of the Zeedijk

The Zeedijk is a dark, narrow street built in the 15th century, one of Amsterdam's foundational walls that carved the city out of the sea. It begins across from Centraal Station and curves along the eastern edge of the oldest part of Amsterdam to Nieuwmarkt ("new market," although it was built 500 years ago). In the 1950s, Camus had one of his protagonists "frequent sailors' bars in the Zeedijk" (1956). The Zeedijk forms part of the periphery of the red light district, where, in addition to "sailors' bars" and sex workers, there are strip clubs, discos, gambling joints, and other attractions of the *demi monde*, which draw a melange of shady characters along with droves of tourists. In the 1960s and 1970s, most people saw it as a grungy, scarey, crime-ridden pocket of inner-city blight.

Criminologist Maurice Punch did field research working with the Amsterdam Police in this area in the mid-1970s (1976, 1979). He described a mix of foreign tourists, squatters, guest workers, addicts, and the sorts of criminal organizations that prey on or cater to them. The already difficult role of the police had become more difficult in Amsterdam in the aftermath of the 1960s, particularly along Warmoesstraat and the Zeedijk. Street crime increased, but at the same time there was widespread criticism of the police for what many saw as their overly harsh response to student demonstrations. By the mid-1970s, the police had backed off and become more tolerant. Faced with conflicting mandates and constraints, officers on patrol in this area did more negotiating and interpreting of the law and less rigid enforcement, looking the other way if violations were not too blatant.² As Punch noted, many police felt morally confused and frustrated by this; their traditionally authoritarian role had been undermined by a society that had become resolutely anti-authoritarian in the wake of the Nazi occupation and then the 1960s. The result in the Zeedijk area was what Punch called a "normative ghetto," where an array of deviance was tolerated as long as it remained contained within the red light district (1976:223).

The Zeedijk and its environs are still not a high-end neighborhood, but the Municipality of Amsterdam has slowly subsidized its redevelopment so that it is now lined with small shops, deli's, bars, cafes, Chinese restaurants, and refurbished apartments on upper floors. Like many other nooks and crannies of Dutch cities, however, traces of the past remain alongside the present residue, resistant to redevelopment. Halfway down the Zeedijk there is an intersection where throughout the 1990s and up until 2005 you would invariably see a handful of older, hollowed-out heroin users (*gebruikers*) wandering about looking to



score or sell, or having just scored, leaning into a doorway to put a lighter's flame under their foil "to Chinese" or "chase the dragon," their term for smoking heroin Chinese-style. These are among the most impoverished, marginalized, and dysfunctional drug users, a minority near the bottom of the heroin world. Alongside redevelopment, Amsterdam authorities opened a user room, where these gebruikers can get off the streets and use their drugs in private, so it is now rare to see them at their traditional intersection on the Zeedijk.

Yet, in hundreds of trips up and down the Zeedijk over the years when these heroin users did congregate there, I never saw them bother anyone beyond the level of occasional nuisance – standing in the midst of bicycle and tourist traffic, sometimes panhandling. And I rarely saw anyone bother them, either, except for the occasional cop shooing them along. Each side seemed to know the other's role: The heroin users appeared to understand that shooing is the cops' job, and the cops appeared to understand that scoring and using is the heroin users' job. Both seemed to understand the need to ensure that businesses were not disrupted and that tourists weren't hassled. Both had some incentive to minimize their impact on the delicate social ecology of the Zeedijk.

The heroin users were generally rather oblivious to both the tourists who walk past them all day and the bicycles whizzing about them on all sides. Some riders rang their bells if the Zeedijk was particularly jammed, but these bells, like the tourists, scarcely seemed to register for the heroin users, intensely focused on their own round of activities. More interesting, the heroin users scarcely seemed to register for the tourists. On one of my forays into this neighborhood, I sat at a corner café writing field notes when a white, middle-class American family strolled past, cameras about their necks and maps in hand. "Look at the gable on top of that gorgeous old house, Harry," the mom exclaimed to the dad, both looking up while their young children peered down into the canal's dark mysteries (standing, unbeknownst to their parents, in front of a cannabis coffeeshop). Ten feet behind her, two men stood on a bridge. One handed folded money to the other for a small envelope. Their deal done, they shook hands and quietly walked away in different directions. The whole transaction took twenty seconds. "And see how it leans into the other houses," Harry replied, "amazing they're still standing."

Riding up the Zeedijk one evening in 1998 on the way home from the university with Peter Cohen, a Dutch colleague, a man at a sidewalk café called out. Peter stopped and greeted him warmly, asked what he'd been up to. I was introduced. We chatted for a few minutes. This man had been an Amsterdam Police officer who worked the Zeedijk beat. He'd gotten to know the heroin users there and they him. He had found the role "difficult," increasingly so over the years. He said he came to feel that even the relatively soft touch of Dutch drug policy too often required him to act in ways that denied the heroin users some part of their humanity. So he had recently taken early retirement. When he did, some of the heroin users from the Zeedijk got together with a neighborhood restaurant owner and organized a surprise retire-

ment party in his honor. Friends brought the retiring cop to the restaurant under some ruse. He opened the door to the standard screams of "surprise!" from a room full of well-wishers, many of whom were the "junks" it had been his job to shoo along, to keep in check. He took "one look around," he said, and "immediately walked out" – overwhelmed, in tears. He said he was sure he would be "unable to speak," so he waited around the corner until he could compose himself. A few minutes later he came back in, to much applause, appetizers, and beer.

"Proud to be Dutch"

"The Light at the End of the Tunnel" is a tale of self-discovery, of coming home and coming out, by Gerrit Komrij, Poet Laureate of the Netherlands. Its mid-20th-century protagonist, Jacob, worked to exhaustion on Latin and Greek in order to gain admission to the classical high school in Amsterdam. He did so because that was "the only possibility to reach the city whose name alone filled him with a shudder of awe: Amsterdam Every fiber of his body pointed, like the needle of a compass, toward Amsterdam. But why? Because of sin, first of all. Sin he didn't even know and that was as hidden as it was highly promising. Something in that city lured him, though he didn't know what." That something, Jacob came to learn, was "being allowed to belong" (2001:129-141).

At the stroke of midnight on the first of April, 2001, the day the new law took effect, the mayor of Amsterdam officiated at the first legal gay marriages in Dutch history. Dolf Pasker, who married his partner of six years, said "I'm proud to be Dutch." Of the four couples in the ceremony, one had been together 36 years. Among the cheering crowd were members of Parliament, which passed the law by a 2-to-1 margin. Religious parties had opposed the law, however only seven protesters were outside the ceremony in Amsterdam City Hall.

As with most other aspects of Dutch tolerance, the Netherlands has not always been so supportive of its gay and lesbian citizens. In the 1730s, for example, there were 250 trials of "sodomites," at least 75 of which ended in execution by hanging (Crompton, 2003; Downes, 1988:70). As in other societies, Dutch gays and lesbians have had to struggle long and hard against all the usual prejudices to achieve basic rights (see Boswell, 1980). And there is no reason to doubt that many Dutch people, like people elsewhere, still hold such attitudes.

But those attitudes notwithstanding, since 1979 the Netherlands has recognized the rights of "co-habiting partners" and has steadily expanded those rights. As of 1998, these have included the same rights as heterosexual married couples. Amsterdam is now known as "the gay capital of Europe." The Euro Gay Scoreboard (2004) uses 8 criteria to grade progress toward gay rights. These include decriminalization of consensual sex with members of the same sex, anti-discrimination laws, asylum for those fleeing homophobic violence, the right to adopt a child if they meet the same criteria as heterosexual couples, and



registered partnership/marriage rights. The Netherlands scored 8 for 8, which only Belgium and Sweden have managed to match.

Around the corner from the Anne Frank House, there is a large brick plaza on the side of the Westerkerk on which sit three, huge, red granite triangles that comprise a monument to gay freedom. One triangle is inscribed along its sides by eighteen-inch inlaid brass letters: “naar vriendschap zulk een mateloos verlangen” (for friendship, such a longing without measure). A thin strip of the red granite extends out from one edge of this triangle across the plaza and the street to a third triangle, a plane which juts out sharply into the Keizersgracht, along which hundreds of tour boats pass each day. There, a simple sign:

HOMOMONUMENT

Commemorates All Women and Men Ever

Oppressed And Persecuted

Because of Their Homosexuality.

Supports the International Lesbian and

Gay Movement in Their Struggle

Against Contempt, Discrimination and Oppression.

Demonstrates That We Are Not Alone.

Calls for Permanent Vigilance.

Most days, this triangle is festooned with fresh flowers, placed there, one suspects, by visitors from around the world who found that in this city, they too were allowed to belong.

In Latin Over Leidseplein

Spui is a very old, odd-shaped plaza a few blocks off the main artery of Amsterdam. Cars, trucks, trams, and bikes angle through Spui from every direction. The space shifts purposes regularly; full of antiquarian book stalls on Fridays, artists and their wares on Sundays. On one side there are venerable watering holes like the Café Lux (Luxembourg) and Café Hoppe, where on warm nights indigenous beer drinkers spill out onto the sidewalks across from an 18th-century Lutheran church. Across Spuistraat is the Atheneum bookshop with newspapers from around the globe and all manner of magazines, including many with sexually explicit covers, all on sidewalk display. A few doors down is the entrance to het Begijnhof, a beautifully restored, cloistered religious community of a small church, a hidden chapel, and about thirty houses which were started as a home for the sick in the 14th century by the Beguines, a Laic order of Catholic women. Since “the Alteration” of 1578, when Amsterdam became officially Protestant, it has been a Protestant shrine. Pass through its main door and the sounds of the city are hushed into silence. Spui’s parts seem jarringly contradictory listed on a page, but to people passing through it every day they are woven together into a seamless urban tapestry.

Walk a block south and Spui spills into Leidsestraat, a shopping street crowded with tourists and franchise stores, and you arrive at Leidseplein, a patchwork of plazas that sits along the outer edge of the Centrum. All species of people-moving machinery cut through it — major bike lanes, taxis, and trams entering from three directions which manage (it is not clear how) to avoid killing oblivious tourist pedestrians and mad local cyclists. Leidseplein is a cultural delta region of Amsterdam, a destination nightlife stop for visitors and locals alike. In the warmer months, crowds oooh and aaah, laugh and cheer at fire eaters, jugglers, acrobats, comics, musicians, and other street performers. Behind them flashes the big neon bulldog atop the famous Bulldog Café, which was once a police station but became the cannabis coffee-shop where a few million Americans and other non-Dutch people smoked their first legal joint.

On summer evenings, several hundred people sit in Leidseplein’s outdoor cafes and drink beer. The architectural centerpiece is a magnificent 19th-century theater, the Stadsschouwburg Amsterdam, where there are plays, concerts, and debates. A block or two in either direction finds dozens of different ethnic restaurants. Off another corner, over a miniature draw bridge, is an 18th-century dairy which since the 1960s has served as a theater/night club/music hall called the Melkweg (the milky way). It also once sold marijuana and hashish and has been the scene of “raves,” those all-night dance parties at which ecstasy (the drug MDMA) is used. Directly across the narrow street sits a neighborhood police station. This geographic juxtaposition is apparently so unimaginable to tough-on-drugs Swedes that their TV journalists periodically travel there to film the police station and the Melkweg in the same frame, as if to say to Swedish viewers, “Can you believe these Dutch?!” I once asked a Dutch friend about this and his response was, well, tolerant: “Yeah,” he shrugged, “the Swedes can be a little provincial sometimes.”

Across the tracks to the south is the Max Euweplein, a complex of buildings with café’s, cinemas, and restaurants on the ground floor and offices on the upper floors. Half a block down is the famous club, Paradiso, where the greats of jazz, rock, and reggae have played for decades. Out back is another open plaza with a chess board twenty feet square on which players move 3-foot-high pieces in front of a gallery of devotees. A bit further down the curvy path in back is a gambling casino that overlooks the park. Out front is a covered plaza between buildings where street musicians find excellent acoustics. I’ve heard Peruvian flute players, a North African doing Coltrane on alto sax, Roma guitarists, and a Ukrainian violinist playing the theme from *The Godfather*.

Forming the entrance to the two main buildings in this complex is a row of gray, faux-classical pillars holding up a stone beam that joins the two buildings in a playful postmodern twist. Across this beam, suspended three stories up in the open air, inscribed in Roman lettering, are these words:

homo sapiens non urinat in ventum



Roughly translated from the Latin: “people shouldn’t piss into the wind.” This risqué inscription was approved by municipal zoning officials and apparently by the business people who pay high rents to occupy the offices that overlook it. The saying is not an official motto, but it captures something essential about the residual philosophy Amsterdamers have developed for dealing with difference and deviance: We can’t force these things to go away, and attempts to do so will have unwanted consequences, so we find ways of living with the mix.

Prinsengracht 263

One cold, grey, rainy, February morning I was riding along the Prinsengracht, the outermost of the great canals in the Centrum. Just past where the Westerkerk’s steeples reach above the brown brick merchant homes through the bare trees into the sky, there is a line of people outside #263. I have ridden past this place a hundred times and there is always a line. Only about forty today, in this weather, winding along the sidewalk, clouds of breath hanging in the chill air as they talk in Dutch and a dozen other tongues. In the summer tourist season, the lines are often two blocks long from morning into early evening. They are waiting their turn to walk through the Anne Frank House. They come as if in pilgrimage to this small house with its still smaller Secret Annex of concealed closet-like spaces in an attached backhouse. A swing-away bookcase reveals steep steps to the space where Anne Frank and her family hid during the Nazi occupation. From July, 1942, until they were betrayed in August, 1944, they tiptoed in stocking feet, took care when to flush, kept watch while another bathed, and lived in whispered darkness without going out into the street. Anne wrote of small pleasures, like listening to Westerkerk’s bells ring. The pencil lines on the wallpaper that marked how much she had grown are still visible.

The Nazis first corralled Amsterdam’s 100,000 Jews in a small section of the city, and then removed their rights one after another: banned from streetcars, forced to surrender their bicycles, allowed to attend only Jewish schools, required to wear a yellow star, and so on (Warmbrunn, 1963).

The German security officer and his Dutch police allies arrived without warning that day in August, pistols in hand. They

ransacked the Annex, dumping its contents into heaps, leaving behind as worthless a small notebook with checkered cover that would become the most famous diary in the history of the Western world. They put Anne Frank and her family on the 83rd and last train from Amsterdam’s Muiderpoort Station to Auschwitz, where Anne, her sister, and mother soon died of hunger and disease.

The Dutch have preserved the Annex just as Anne lived in it. They have built a museum complex next to it with exhibits, display cases, historical documents, photographs, and a bookstore/café. A cynical reading of the Anne Frank Huis complex is that it is one more variation of the heritage industry that seems to crop up in the crannies left when other industries leave for more profitable climes. But the heritage industry does not explain why hundreds of Amsterdamers lobbied authorities, formed a non-profit group, and donated labor and money to preserve the diseased and dying tree in the back yard, just because it was one of the few sources of pleasure for Anne Frank in her last days. Mixed in with many such noble intentions is a sense of guilt for not having done more to resist the Nazis and save the Jews, which remains a dark presence in Dutch political consciousness (see Buruma, 2006).

Still, the fact that the Dutch have chosen to highlight this piece of their relatively recent past is telling. The components of the Anne Frank complex say, with one voice, that this museum and the city and society that surround it stand against racism and for “freedom, human rights, and democracy,” as it says in the introductory pamphlet handed out in many translations. The Anne Frank Stichting (foundation) which operates the house “hopes, with the work it does, to inspire people from all over the world to become actively involved with these ideals.” It stands as a reminder of what that young girl, arguably the most famous Amsterdamer, stood for: “One day this terrible war will be over,” she wrote in her diary on April 9, 1944, “The time will come when we will be people again and not just Jews!” The Anne Frank Huis is a humble building, yet a towering monument to tolerance.

Riding home one warm May evening I came across the largest crowd or demonstration I had ever seen in the Netherlands. Tens of thousands were assembled in Amsterdam’s Dam Square for Bevrijdingsdag (Liberation Day), the annual commemoration of the end of Nazi occupation. They assembled at the National Monument, which contains urns filled with soil from Nazi execution sites in each of the Dutch provinces. The Queen laid a wreath and the Prime Minister gave a speech to commence the traditional two minutes of silence for the victims, observed across the country at the same moment. Pausing several seconds each time, he closed by repeating the Dutch word for freedom: “Vrijheid. ... Vrijheid. ... Vrijheid.” As this word echoed off the buildings, bells rang out from the old churches all over the city. When they fell silent, the great hushed crowd, some older folks wiping tears, quietly melted away into Amsterdam’s honeycombs. Looking into their eyes, it was hard to imagine them abandoning the culture of tolerance that flowered in the wake of the Nazis.



These vignettes cannot fully capture the spirit of Amsterdam. They are by definition fragmentary — ethnographic postcards sent to convey glimpses of a larger vision. Laid next to each other they can form at best a collage, a rough-cut genre of sociological impressionism. Still, they convey a sense of Dutch tolerance where it becomes capillary, which in turn helps explain how this unlikely patch of marsh land became one of the world's urban jewels. The uniqueness of Amsterdam is not the presence of any one or two of the qualities sketched here, but rather that all of them exist together in the same small space, each helping to hold the others in place, much like the old canal houses that settle over time into their reclaimed land and lean together, one keeping the other from falling, sustaining a whole greater than the sum of its parts.

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Endnotes

- 1 Cf. Sahlins (1978:3), who saw "the culture in the praxis, the symbolic order in the material activity."
- 2 See Bittner (1967) on the similar "peace-keeping" function of police on skid rows in the U.S.



Cycling to Sustainability in Amsterdam¹

By Ralph Buehler, Assistant Professor,
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Introduction: The many dimensions of cycling's sustainability

There are many good reasons to encourage more cycling. It causes virtually no noise or air pollution and consumes far less non-renewable resources than any motorized transport mode. The only energy cycling requires is provided directly by the traveler, and the very use of that energy offers valuable cardiovascular exercise. Cycling requires only a small fraction of the space needed for the use and parking of cars. Moreover, cycling is economical, costing far less than both the private car and public transport, both in direct user costs and public infrastructure costs. Because it is affordable by virtually everyone, cycling is among the most equitable of all transport modes. In short, it is hard to beat cycling when it comes to environmental, social and economic sustainability.

This article examines how Amsterdam has consistently improved cycling conditions over many decades and succeeded at raising even further the share of trips by bike. As a result, it has become one of Europe's most sustainable cities, offering convenient, safe, and socially acceptable alternatives to car dependence. Unlike cities in North America, all segments of society cycle in the Netherlands: women as much as men, all age groups, and all income groups. The universality of cycling in the Netherlands highlights the extraordinary degree of social sustainability that bicycling makes possible.

Amsterdam: Cycling Capital of Europe

Bikes have shaped the image of Amsterdam to such an extent that, for many people throughout the world, Amsterdam is almost synonymous with cycling. In 2008, cycling accounted for 38% of all vehicle trips—a bike mode share unheard of in other European cities of comparable size (City of Amsterdam, 2009).

With a population of 743,000, Amsterdam is the largest city in the Netherlands. The greater Amsterdam region has 1.5 million inhabitants and is situated at the northern end of the Randstad, the Netherlands' largest urban agglomeration.

Amsterdam's city administration estimates that there were 600,000 bikes in Amsterdam in 2006, about 0.75 bikes per inhabitant (City of Amsterdam, 2007). Amsterdam's topography and spatial development patterns are ideal for cycling. The city is mostly flat and densely built-up. Mixed use neighborhoods keep

trip distances relatively short. Furthermore, many small bike bridges and bike short cuts make it easy to navigate the city center by bike. By comparison, car use is difficult in the central city. There are few car parking spaces, and many cul-de-sacs and one way streets hinder car travel.

Given high bike ownership levels, restrictive policies on car use, compact and mixed-use development patterns, it is no wonder that in 2003 fifty percent of Amsterdam's inhabitants made daily use of their bikes (City of Amsterdam, 2003a). Over 85% of Amsterdam's residents rode their bikes at least once a week in 2003. Bicycling is almost universal in Amsterdam. The rich and the poor, men and women, children and the elderly, all use the bicycle for a minimum of 20% of their trips (City of Amsterdam, 2003b). Two noteworthy variations in bike use exist, however. First, the affluent cycle more than the poor in Amsterdam. Higher car ownership levels in affluent households lead one to expect more car use in this income group compared to poorer households. Bike planners in Amsterdam speculate that lower income groups see the car as an important status symbol, while they view the bicycle as a "poor man's" vehicle. Consequently, they prefer to drive instead of cycle. Bike planners argue that richer households find the bicycle to be a fast, healthy and convenient means of transportation without a stigma attached to it.



Everybody cycles in Amsterdam. Children ride both in front and behind, and no one wears a helmet.

PHOTO BY JOHN PUCHER



Over half of all bike trips in Amsterdam are by women.

PHOTO BY JOHN PUCHER

Secondly, recent immigrants and their children also cycle less than the average resident of Amsterdam (Dutch Bicycling Council, 2006). Amsterdam's bike planners found that cycling is often not part of the original culture of immigrants. Therefore cycling is not their transport mode of choice in the Netherlands either. The city council tries to promote bike use through special programs for immigrants and their children.

Travel trends

Amsterdam has a long tradition of cycling. In 1955, up to 75% of all trips in Amsterdam were made by bicycle. From 1955 to 1970 the cycling mode share had declined to only 25% of all trips (Dutch Bicycling Council, 2006; Langenberg, 2000). Declining levels of cycling were accompanied by increasing suburbanization and growing car ownership and use. However, most other European cities of comparable size would be proud of a bike mode share of 25%.

Since the late 1960s and early 1970s, bicycle advocates and environmentalists have promoted bicycle use in the city. Their main concerns were air and noise pollution, traffic congestion, and unsafe traffic conditions caused by automobile use in the city. At the time, there were two competing solutions to Amsterdam's traffic problems: adapting the development patterns and city structure to the automobile or limiting car access to the city center and promoting walking, cycling, and public transportation. The city council chose to promote alternative modes of transport over widening roads and building car parking garages in the city center.

Finally, in 1978, a newly elected city council focused on bicycling as an integral tool for solving the city's transport problems. Since the early 1970s, bicycle use has been increasing. Bike mode share reached 31% of all vehicle trips in the mid-1980s, and rose further to 37% in 2005 and 38% in 2008 (City of Amsterdam, 2007 and 2009). Over the same period of time, the mode share for public transport declined slightly (from 27% in 1985 to 25% in 2008). The percentage of trips made by car declined from 42% in 1985 to 37% in 2008 (Dutch Bicycling Council, 2006; City of Amsterdam, 2007 and 2009). Bicycling in Amsterdam is used for all trip purposes: for 34% of work trips, 33% of shopping trips and 27% of leisure trips in 2003.

In 2000, over half (55%) of all vehicle trips in the historic city center were by bike. Cordon counts at important intersections in the city center support this number. They also reveal an increase of up to 20% in the number of bike trips from 1986 to 2000 (City of Amsterdam, 2003b).

As in most other cities, bicycling levels decline with distance to the city center. In 2000, 40% of trips were made by bike in inner ring city districts; and 21% of all trips were by bike in more suburban districts built after World War II. From 1986 to 2000 bicycling levels decreased by around 10% in these outlying areas.

Overall policy goals

Non-motorized modes of transport are at the center of Amsterdam's transport policy. Even though the city's main transport policy goal is to increase accessibility by all modes, concerns about quality of life and air pollution give the bicycle a special role in transportation planning. In 2006, the main areas of concern for cyclists were bicycle theft, shortage of safe bike parking facilities, traffic safety, and relatively long waiting times at signalized intersections.

Following its bicycle policy plan "Choosing for Cyclist: 2007-2010," the city has started to try to address these problems by increasing bike parking facilities, combating bicycle theft, improving and promoting traffic safety, completing and improving the bike network and getting young people to bike more (City of Amsterdam, 2007). From 2007 to 2010, about €40 million of city funds will be spent on bicycling projects, not including addi-



Bike access to "Big Box Retail" in the Netherlands.

PHOTO BY PETER BERKELEY



tional measures to increase traffic safety. Together with matching funds from other levels of government, the total amount of funding for bicycling will increase to €70 million over 4 years. This comes to about €13 per inhabitant per year, which is comparable with other Dutch cycling cities. About €12 million is set aside to improve bike parking facilities and guarded bicycle garages. Furthermore, traffic calmed areas (with a speed limit of 30km/h) are to be expanded. Amsterdam will invest €500,000 for bike education, public relations campaigns and other activities designed to increase bicycling among young people and other groups of society that tend to cycle less often (City of Amsterdam, 2007). The city also wants to replace on-road bike lanes with separate bike paths.

The city is making efforts to integrate bike and transport planning across all city districts and across many departments of the city administration. For example, efforts are being made to integrate transport and spatial development plans. The main responsibility for carrying out bicycle projects lies with the city districts. This results in slight differences in implementation of bike projects and bike infrastructure among the different areas of the city. The traffic and transport infrastructure department (DIVV) tries to coordinate and harmonize all bicycling efforts city-wide.

Amsterdam recently launched a comprehensive program to combat bike theft. In 2006, about 50,000 bikes were stolen in Amsterdam (almost 10% of all bikes!). That might seem like a lot, but it is in fact a 37.5% decrease compared to 2001 and can be considered a first success in combating bike theft. Amsterdam's bike policy postulates the goal to further reduce bike theft to 6% of all bikes by 2010 (City of Amsterdam, 2007).

To help to achieve this goal, the city has a comprehensive approach consisting of official bike registration, collaboration with bike stores, and strict police checks for bike ownership. Amsterdam has invested €5 million since 2002 and plans to invest €4 million



Cycling at the intersection of two bikeways in front of the Rijks museum.

PHOTO BY JOHN PUCHER

Safety

As in most Dutch cities, traffic safety increased for cyclists over the last few decades. In 2005, there were 40% fewer severe cyclist injuries and deaths from traffic accidents than during the mid-1980s. Even though progress has been made, between 6 and 7 cyclists are still killed in traffic accidents in Amsterdam every year. Bicycle safety is important in the Netherlands. It does not revolve around bicycle helmets, however. In the Netherlands, bicycle helmets are seen as unattractive and therefore potentially discouraging to cycling. Additionally, bike planners argue that bike helmets might lead cyclists to behave more dangerously, as they feel less vulnerable. Finally, bike planners point out that car drivers use less care when interacting with cyclists wearing helmets.

Dutch traffic laws protect young cyclists and put the responsibility for an accident on the car driver. The only exception is when cyclists deliberately and flagrantly disobey traffic laws. Similar to Germany, Dutch traffic laws postulate that car drivers have to take special care when encountering children and the elderly.



Two-way bike path in the middle of a car-free zone in Amsterdam.

PHOTO BY LEWIS DIJKSTRA



Special Traffic signals give cyclists priority and display seconds till green light.

PHOTO BY LEWIS DIJKSTRA



Typical traffic-calmed neighborhood in Amsterdam, with restricted car access and speeds limited to 30km/h.

PHOTO BY JOHN PUCHER

Provision of cycling facilities

In 2007, the city of Amsterdam had a total of 450km of bike paths and lanes. In contrast to cities like Copenhagen, where bike paths and lanes have a long history, most paths and lanes in Amsterdam have been built since the early 1980s. In 2007, the city's bike infrastructure was made up of 200km separate bike paths throughout the city and 200km of bike lanes along 30 km/h traffic calmed neighborhood streets. There were 50km of bike paths along roads with speed limits of 50 km/h. In addition, Amsterdam had about 775 km of traffic calmed streets in 2000. Over the coming years, the city plans to expand the main bicycle network by about 40 – 50 km of paths and lanes and to add another 175 km of traffic calmed streets.

Most of the proposed investments for bicycling discussed above will go towards cycling infrastructure. The majority of funds (€24 million) will be used for three crucial bridges and tunnels connecting the main bike network ('Hoofdnets Fiets').

Building separate bicycle paths to connect the bike network will cost an additional €18 million. Funding for bike infrastructure comes from district, city and regional budgets (City of Amsterdam, 2007).

Restrictions on cars

The city of Amsterdam has greatly restricted car access to the city center. Many streets are one way for cars, and others are solely reserved for pedestrians and cyclists, and are completely off-limits to automobiles. Since the 1970s, the city has reduced the amount of car parking in the city center. Additionally, fees for the remaining car parking spaces were substantially increased since the 1970s (Langenberg, 2000; Dutch Bicycling Council, 2006). In 1992, citizens voted to continue to decrease car parking in the city center. This has proven to be an effective transportation demand management tool. When parking is sparse and costly, it discourages car trips to the city. Furthermore, as in most Dutch cities, many residential areas are traffic calmed at a low speed for cars (30 km/h areas).

Bike Parking and Coordination with public transport

Amsterdam has large bike parking facilities at its train stations. During peak hours on workdays, up to 10,000 bikes were parked at Amsterdam Central Station in 2006. Unfortunately, the number of unguarded bike parking facilities has declined sharply in recent years due to massive reconstruction around the Central Station. The reconstruction is proposed to last until 2012. The city is trying to accommodate bike parking needs with a temporary three story bike parking garage. Demand for parking outnumbers the available 2,500 parking spots, however. City planners estimate that about 4,000 bikes are parked in this parking garage. This is accomplished by double parking bikes in parking spots originally designed for single bikes. Even though this parking garage is overcrowded, it is still not enough to accommodate all bicycles.

As a result, bikes are parked all around the train station. The City of Amsterdam installed an additional 1,000 bicycle racks around the station and provided another 1,500 bike parking places on an old ferry —anchored on an adjacent river—until construction of the train station is completed. After reconstruction is complete in 2012, there will be 10,000 bike parking spaces in sheltered facilities at the train station.

Amsterdam has pioneered an innovative integration of automobile and bike use. This program is called "Park and Bike," which allows motorists to park their cars at the fringe of the city and to complete their trip to the city center on bike (Dutch Bicycling Council, 2006). The main reason for implementing this program was the lack of car parking in the downtown area and a shortage of transit access to all parts of the city. The bike rental



fee is included in the price of the car parking ticket. In 2006, Amsterdam had 80 of these rental bikes at two locations (Olympic Stadium and Sloterdijk station). During summers, the city reports that 60% of all rental bikes are in use every day. The program is not working at a profit, thus municipal governments in the region cover excess costs not met by parking fees.

Bicycling promotion

Similar to Germany, Dutch school children go through bicycle training in school. This further familiarizes children with bicycling and teaches necessary traffic rules and behavior. Bicycles are made available to schools by the city government for free so that children who do not own a bicycle can learn at school how to cycle safely in Amsterdam. In the Netherlands, many children experience bicycling early in life; they learn to cycle when they are 3-4 years old. Many infants make their first bike ride on the backseat or in special bike trailers with their parents. Children of immigrants often do not have these early experiences of bicycling, as cycling is not part of the culture of their country of origin. Indeed, the city reports that children of recent immigrants cycle less than the average child in Amsterdam. Therefore, the city plans to make special efforts to target children of recent immigrants through bicycling promotion and to make bicycling as appealing and as irresistible as possible to them.

Learning from Amsterdam

Many countries around the world have set themselves the goal of increasing the sustainability of their transport systems. They would do well to look to the Netherlands and Amsterdam for effective strategies to restrict car use and promote the use of alternative modes that are more environmentally friendly as well as more economical and socially equitable. It is hard to beat cycling in terms of sustainability, and Amsterdam provides an excellent example of how a city can become more livable and most sustainable by designing its transport system around the bike.

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Endnotes

- 1 Information on cycling in Amsterdam was collected directly from Dutch transport planners and cycling experts. The main bicycling planner for Amsterdam, Ria Hilshorst, provided extensive information, corrections, and valuable feedback on this case study of cycling in Amsterdam. Information was also collected from the following published sources: City of Amsterdam (2003a; 2003b; 2007); Dutch Bicycling Council (2006); Langenberg (2000); and Osberg et al. (1998).

Green Urbanism:

The Magnet for Renewing, Reinventing and Revitalizing Cities

By John Gilderbloom
and Matt Hanka



The future of cities is in the downtown. If it is not downtown, then cities do not have a bright future. What is starting to take place in Louisville, Kentucky has already happened in the world's great cities, such as San Francisco, Paris, Chicago, Amsterdam, New York and London. What was once the epicenter of the poor and minorities will soon be the place of the rich, powerful, and the creative. The downtown core will become a shared space, a green space, a cultural space, a creative space, and an attractive space, and a place to "live, work, and play," according to a former Louisville city mayor. Geographers, economists and sociologists like Ernest Burgess developed the concentric zone theory to explain housing prices in relation to location, race, and density. Low-density, affluent suburbs typically exhibit the highest housing prices, while inner city neighborhoods usually represent the lowest housing prices. The further one moves from downtown and the CBD (Central Business District), the more expensive the homes.

Now, a revolution is taking place in cities, where retirees, empty-nesters, alternative life-stylers, and young professionals are moving "back to the city," especially in America's largest cities. Jackson Pollack, who became famous for abstract expressionism, rented a loft in an old industrial area in New York in the late 1950s to live and do his work. Other artists followed and soon loft living transformed deteriorating neighborhoods into very desirable real estate. Today, outer-ring suburbs are turning into "slumburbia" as gas prices rise, congestion grows, and outer suburban homes depreciate in value.

One doesn't need to be a weatherman to know which way the wind is blowing; it is towards downtown. Suburbs, shopping malls, segregation, and homogeneous neighborhoods by race and income are dying. Although new urbanist communities located in suburbia are experiencing price increases, these neighborhoods are mimicking older neighborhoods in the downtown, where dwellers are experiencing significant appreciation in property values.

The reinvention, renewal, and revitalization of cities is due to the confidence, bravado, edginess and creativity of developers,

who see downtown as the place to be for cities' future. Many mid-sized post-industrial cities are slowly catching up with the other great cities in the U.S. and Europe.

The future of the suburbs outside of the beltway in many cities is not good, especially in terms of property appreciation and energy consumption. Commuting long distances and energy costs for big single dwellings, leave a large environmental footprint. Louisville ranks in the bottom third (35th out of 50 large cities) among green and sustainable cities and has a sustainability factor of 47 out of 100, according to the 2007 book *How Green is Your City? the US City Rankings on Green Cities*. Louisville's sustainability factor ranks much lower than Chicago, which measured at 71 out of 100. In terms of transit, we rank 44th out of 50 states and 41st out of 50 in regional transportation. Only 4 percent of Louisville residents use public transportation while four out of five commute to work alone in their cars. In terms of green buildings, Louisville ranks 48th out of 50. As mentioned in the Spring/Summer 2009 issue of *Sustain* magazine, Louisville has only one green building that is LEED certified. In terms of local food and agriculture production, Louisville ranks 43rd out of 50 states. In order for Louisville to attract young professionals to relocate there from other parts of the country, it will need to become a much greener city.

Louisville will need to encourage biking to downtown by installing more bike lanes, shower rooms for bikers and bike rental facilities. Bike lanes benefit everyone, even those who can't ride a bike, by creating less car traffic. Rutgers University Professor John Pucher shows that for every hour a person bikes, that person adds another hour of life, an increase in lifespan from 2 ½ to 4 years.

We save on health-cost payouts because people are healthier. People who ride bikes are smarter and happier, and cut down on commute times, reduce dependence on foreign oil, and cause less environmental pollution. In Amsterdam, four out of every five people ride bikes. One of the reasons why Santa Barbara, Davis, CA, Chicago, and Amsterdam are such desirable destinations is largely due to the vast networks of bike lanes. By installing curb



cuts, ramps, rails and bike lanes, the elderly and disabled are more able to reside in the area for the remainder of their lives. This means that sidewalks must be well maintained and homes must be built that have universal accessibility.

Two-way streets should be at the heart of a city's downtown development strategy. Neighborhoods become more sustainable, livable, and prosperous because of two-way streets. A key strategy to renewing downtown historic neighborhoods is converting one-way streets to two-way streets. Research shows that four-lane downtown one-way streets are a factor in destroying neighborhoods and small businesses.

Conversions to two-way streets have already happened in more than 100 cities across the United States. Cities such as Miami, Dallas, and Minneapolis are reverting back to two-way streets, which have resulted in a larger influx of upwardly mobile residents to their cities. Unfortunately, other small and mid-sized cities have been slow to use this planning tool to help save and enhance their downtown neighborhoods.

One-way streets have hurt downtown businesses such as Calle Ocho in Miami and Vine Street in Cincinnati. The conversion of one-way to two-way streets has led to significant improvements such as facades being improved and businesses relocating there. This strategy has fostered the reinvention of downtowns by slowing traffic, building bike lanes, widening sidewalks, and generally improving the quality of life and livability of the neighborhoods in the city.

Vital cities provide an extensive public transportation system for commuters and residents. New urbanist planners promote light rail, trams, and subways as an instant stimulus to downtown tourism while reducing traffic congestion through a park-and-ride system. Many downtowns have numerous vacant lots. One way to use these vacant lots is to create attractive parking structures on them. Multiple areas of surface parking in the middle of downtown is not a good use of that space. A well-designed parking structure would place condominiums on the top and other businesses on the ground floor.

Historic preservation is environmentally responsible living at its best. The best green house is an old house. Older neighborhoods are generally closer to downtown areas where people work and play, and those who live there conserve energy and fuel. Downtown residents have the opportunity to practice good environmentalism by reducing heating and cooling costs, reducing the work to home commute significantly, while having more time for friends, family, and recreation.

While many cities have demolished older buildings, Louisville fortunately has saved much of its building stock, the result of economic stagnation and has supported the efforts of historic preservation by neighborhood groups. Boarded up buildings that were once manufacturing sites, warehouses, or distribution centers now have become places of opportunity for entrepreneurs and developers. The downtown is a magnet for the young, who

see space within and without as a catalyst for creativity, art, tolerance, boldness, freedom, and the opportunity to pursue one's dreams. It is much more costly to taxpayers and to our environment to build new structures in suburbia than to renew and restore old buildings in the central city. Downtown can also be a magnet for seniors and empty-nesters, where their desire and demand to be close to the arts and medical facilities is met, and where families can walk to museums, parks, and minor league baseball venues that are kid and family friendly.

Downtowns also have seen the destruction of many great architectural landmarks. Losing one architectural landmark not only diminishes the value of that structure, but the immediate neighborhood and the city as a whole. For the most part, Chicago has been successful in protecting the facades of most of the historic buildings in downtown, but preservationists in many cities have suffered significant losses. The Marriott Hotel in downtown Louisville is a shining example of how a building can be rebuilt and restored in an area that was once a block of pornographic bookstores, strip clubs, and adult movie theaters. Part of the greatness of places like San Francisco, Chicago or Amsterdam is that this kind of destruction of historic buildings is not tolerated. Great cities preserve their heritage whether it's the Taj Mahal, a working-class wood shotgun home, or a brick warehouse. In order to accomplish this, cities must pass laws that protect older buildings in the central city from being demolished or facades being destroyed.



A view of Louisville from the Second Street Bridge.



Museum Plaza, located on Main Street in downtown Louisville, inspired by Dutch architect Rem Koolhaas, is rooted in Dutch postmodern architecture, Museum Plaza will be seen as banal and hardly a leap from the Le Courbsier design of the 1960s. Like Chicago, Rotterdam or San Francisco, downtowns do not need another tall modern building that is anti-ecological and unsustainable, and in these tough economic times, unlikely to be built any time soon. This is in contrast to the groundbreaking Humana building on Main in Louisville, designed by renowned architect Michael Graves, and ranked by the American Institute of Architects (AIA) as one of top the 100 greatest architectural works. This building magically conveys the story of Louisville's history from Lewis and Clark landing at the Falls of the Ohio to the bridges linking the city to the north.

Downtowns must pursue development projects like sports stadia and arenas as magnets for economic development. Sports arenas and stadia are an important strategy to attract businesses downtown, and to bring tourists and patrons with disposable income to spend at shops, restaurants and entertainment establishments in and around the arena or stadium. Cities like Indianapolis, Nashville, and Memphis have benefited from an increase in tourism and economic development as a result of their downtown sports arenas.

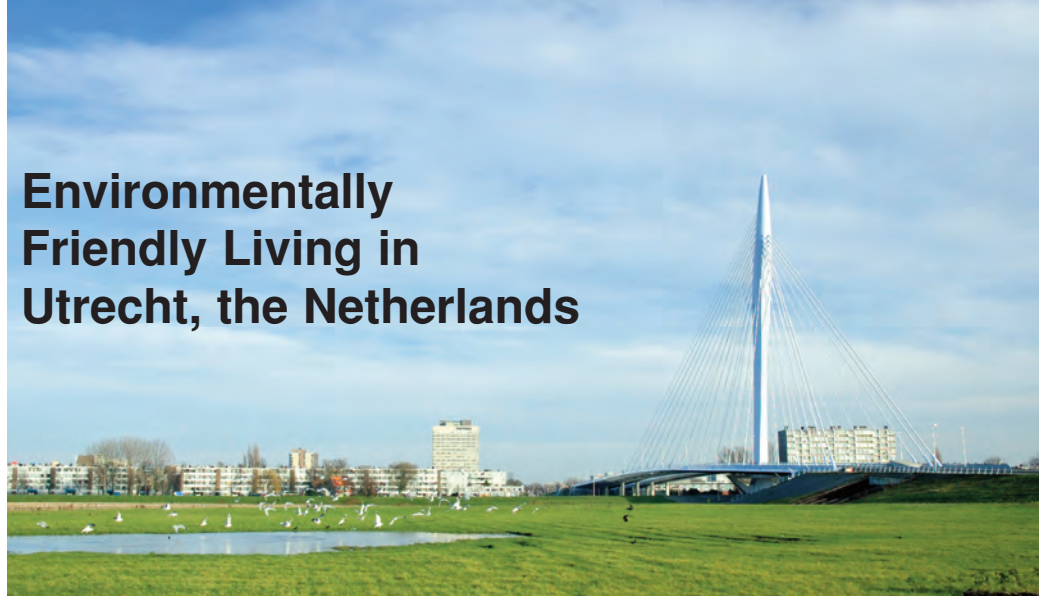
Young and old alike are captivated by cities that are tolerant, such as San Francisco, New York, Amsterdam and London. Planners should resist efforts to restrict entertainment venues such as, late operating bars and discos. Downtowns have a bright future given the convergence of the energy crisis, strong community leadership, the cultural embrace of green and new urbanism, local entrepreneurship and better real estate investments. The future all points to downtown. _____

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The Kersentuin: Environmentally Friendly Living in Utrecht, the Netherlands

by
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Abstract

In the Netherlands, a country known throughout the world for its innovative approaches to meeting the needs of its citizens, several examples of innovative experiments with sustainable housing can be found. The Kersentuin (Cherry Garden), an environmentally, socially and economically friendly community in Leidsche Rijn, an urbanization-from-scratch area in the west part of Utrecht, has been founded and developed by the residents themselves. The area is very popular and is seen as an interesting best practice in ideal green neighborhood developments. This paper evaluates this attempt to create a sustainable neighborhood.

Introduction

With more than 300,000 inhabitants in a metropolitan area of about 650,000 inhabitants, Utrecht is a large town in the middle of the Netherlands. Though not formally included in the Amsterdam Metropolitan Area, the proximity of the Amsterdam Area with its 2.1 million inhabitants results in strong relations between the cities. Leidsche Rijn, a region named for the Leidsche Rijn river, a branch of the Rhine, is one of the largest urbanization-from-scratch projects currently underway in the Netherlands with an anticipated 30,000 new housing units constructed by 2015¹. The development in the Leidsche Rijn area started about fifteen years ago and is now in full swing. In about a decade, 90,000 people will live and work – or commute out to Amsterdam and Utrecht – where until the mid-nineties cows grazed. Further, some 700,000 m² of office accommodation will be provided in four new business estates, and about 40,000 people will ultimately find employment in the new town (Municipality of Utrecht, 2006). Prior to development, about 500 houses were located in the area, apart from the villages of De Meern and Vleuten, with about 20,000 inhabitants. Leidsche Rijn is located at the west side of Utrecht, tightly positioned between two of the three major motorways in the Netherlands.

The new developments required the extension of urban zoning. In the Netherlands, with its restrictive spatial policy, the government had to exclude the area from the so-called Green Heart (Ministry of Housing, Spatial Planning and the Environment, 1990).

After the decision to build the Leidsche Rijn in 1994, a project team was assembled that produced a masterplan, with only the main development structure decided on. The two municipalities — Utrecht and Vleuten-De Meern — cooperated in developing this plan. The masterplan formed – on the Utrecht side - the basis for the development-oriented zoning plan, issued in 1999. The community of Leidsche Rijn actually is now subdivided into many different communities, like Terwijde, Het Zand and Parkwijk. For each neighborhood, requirements have been formulated. Later this was developed into a global urban plan. It is the city's aim to create neighborhoods in which people with various backgrounds live next to each other.² Further, considerable attention is paid in the masterplan to visions for public transport and cycle lanes. Phasing of development of these services, however, is not included. The masterplan is regularly updated with development plans. In the development plan of 2003, for example, the problem of accessibility and lack of services was discussed in light of the financial deficit of the project caused by delayed development of houses. Measures are being taken to hasten housing production. Furthermore, according to the 2003 update, there will be more attention paid to social cohesion, participation and communication (Projectbureau Leidsche Rijn, 2002).

Leidsche Rijn is being built according to the principles of sustainable construction, and large investments have been made towards environmental protection and energy management - such as rain water collection systems, low-energy demand houses, and centralized heating systems.

An important intention of the Utrecht municipality for its greenfield development in the west was the wish to build a sustainable neighborhood, with a good mix of houses. One of the aims of extending Utrecht was that the city could become more balanced in terms of income of the residents. As mentioned above, the city's housing stock is now more in balance. Further, planners had important ideas about Sustainability issues.

Initially, the idea was to develop the whole community of Leidsche Rijn (with its 30.000 residencies), as a carless community. However, due to delay in the development of public transport services, many of the pioneers became very car dependent, forcing the planners to increase the amount of parking spaces per res-



idence from 0.8 to 1.4. The parking norms for schools, day care, and shops have not been adjusted. For example, no single parking place will be developed at schools for parents to bring their children by car with the intention of encouraging them to use bicycles or walk.

Within Leidsche Rijn, each neighborhood is being designed separately, predominantly by the municipalities of Utrecht and Vleuten-De Meern and constructed by private developers individually, allowing for distinct identity and flexible solutions to localized problems, needs, and circumstances (www.leidscherijn.nl). In addition to the large numbers of homes to be constructed in contracts commissioned by housing corporations and project developers, Leidsche Rijn will also offer latitude for groups of residents and individuals to experiment. The municipal planners encouraged these innovative experiments and pro-actively sought residents who would take advantage of the opportunities. This has resulted in several projects, ranging from creating individual commissioners of housing and working projects, to initiating and maintaining virtual communication networks within the neighbourhood, to the organizing of cultural festivals. This “private development” is a frequently discussed theme that seems to have trouble getting off the ground, due to lack of land, lack of experience of people, architects and constructors. Private development involves only a small part of the total development, but some of the projects get more attention than others. The most famous project is the Kersentuin (Cherry Garden), a privately developed sustainable housing project.

The Kersentuin: the planning process

The Kersentuin is a unique neighborhood in Leidsche Rijn/Utrecht. It originated with a vision from a group of people, brought together by the municipality, who felt the need for an environmentally friendly living space, a kind of development not provided by traditional corporations and developers. The idea was to plan and develop a socially and environmentally sustainable place to live for diverse groups of people (families, elderly), with good contact between neighbors, lots of social activities, where everything is organized by the inhabitants.

Seven initiators started planning a neighborhood and discussed several options with the municipality of Utrecht. In the Netherlands, the municipality is the most important player in development. Quite often the municipality owns the land and issues the building permit. The ideas of the initiation group met the goals and objectives of the Utrecht municipality for a sustainable Leidsche Rijn, so the municipality decided to invest in the project and to cooperate. By this time, more participants, including future residents became interested. They founded the Kersentuin Neighborhood Association, which took over much of the bureaucracy. Through this association, the future residents negotiated with the municipality and builder, approached architects, and searched for suppliers of sustainable materials. The planning process took about seven years. One of the Dutch housing corporations, Portaal, joined the association in order to develop social housing. Portaal has also been involved in the building

phase. As project leader, pre-financer and buyer of the social housing units (and renting them), the housing corporation played an important role. It was able to take advantage of its expertise on builder selection and its knowledge of sustainable building processes. Unfortunately, there have been numerous changes in the representatives of Portaal, resulting in unanticipated transaction costs for the residents. Nevertheless, without the help of Portaal, the Kersentuin would never have existed. The construction of the project started just before the summer of 2002 and it was completed by the end of 2003. During the first years, Portaal was responsible for the maintenance of the buildings. Later on, the Kersentuin Association selected another independent organization for its maintenance.

The plan included 94 residencies, 28 of which are social housing and 66 are homeowner houses. All of the houses are different, but there are 9 different styles that can be customized. The residents decided to build a parking structure in order to enhance the quality of the neighborhood by avoiding crowded surface parking. The parking structure, with gardens on top, consists of about 50 parking places, which still does not accommodate all of the residents.

Some of the housing types are located on top of the parking structure. Because all the residents agreed not to have surface parking, and instead, agreed to have green public space with cherry trees, many of them have decided to share cars. Sixteen families share two cars, which decreases car use. However, not all households wanted to get rid of their cars. Those wanting to keep their cars have agreed on renting or buying a parking space, even though the car-owner is responsible for buying the space. If, in the future, the amount of parking space is still not enough, the inhabitants will use a part of the green area for parking space because their desire is to be self-sufficient and not have to park in another



Some of the housing types, also on top of the parking structure.



Low car use area.

neighborhood. All residents hope the green space will be more valuable by then, thus discouraging more cars. In the Kersentuin, about 40 percent of the households do not own a car. In Leidsche Rijn, only 11 percent of the households do not own a car. Sharing amenities is quite common in the Kersentuin. Instead of large lots, the inhabitants decided to open up part of the land for public areas, with room for play spaces for kids.

The group of residents also invested in shared facilities (washing rooms, project house). All of the houses were constructed with sustainable materials, solar power systems, special thermal insulation, a balanced ventilation system, extension structures to allow for growth as families get bigger, lots of green spaces, a community garden, and car-sharing. The residents are very self-sufficient and arrange new initiatives such as hand crafts, a carrier cycle, carshare, etc., from which both residents



Public garden meets private garden.

and the rest of the town now benefit (Van den Ouwenland et al., 2006). The North-South orientation of the houses increases the return of the solar system. All residents pay for the use of the services, as well as maintenance costs for having the facilities. The people who rent the social houses pay rent to Portaal.

Because the residents wanted their environment as green as possible, they decided to share one big garden instead of having smaller individual gardens. Now, the area consists of three large shared gardens. They also created green public space for multi-functional use (i.e. a playground and a meeting space). The carefully selected vegetation also offers space for birds and small mammals.

The Kersentuin: An Ideal City?

The Kersentuin is highly appreciated by its residents. The character of the neighborhood is quite unique and the residents all subscribe to the concept. From a social perspective, the benefits are considerable, particularly a more child-friendly environment, with lots of play space due to fewer cars in the neighborhood. The mix of residents is also interesting, with lots of activities organized to create a positive social cohesion of the neighborhood.

From an environmental perspective, the car-sharing project is seen as a best practice of sustainable neighborhoods. In addition, the amount of public and shared green space maintained by the inhabitants, helps to bring people together. Sharing facilities with



Play area in the shared public space.



Cherry trees and solar energy systems.

environmentally friendly washing machines also helps the environment. The investment in solar cells for energy and rain water for the gardens also contributes to the environmental quality of the village (Van den Ouwenland, 2006).

From an economic perspective, there is a significant benefit to the residents. Organizing certain services on their own and sharing facilities saves money and in the near future, they will be able to sell the overproduction of energy from the roof-top solar cells.

The Kersentuin is completed and probably will not be replicated, but overall, its development seems to be a success. The residents of Kersentuin perceive it as their ideal neighborhood, designed and maintained by the residents. They like the pleasure of taking care of and feeling responsible for their own environment, illustrated by the fact that they enjoy picking cherries from their own cherry trees each year.

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Endnotes

- 1 Of the planned 30,000 housing units, about 12,000 were ready for occupancy in May 2008 (36,000 Inhabitants, of which 27% under the age of four in the Municipality of Utrecht, 2008). The percentage of owner-occupied houses is above the Utrecht average of 42%. Most of the homes are single family houses (84% versus 43% in the remainder of Utrecht). As social homes were overrepresented and there was a lack of medium-priced homes, the municipality of Utrecht intended (and still intends) to build more expensive houses to increase house mobility in the city (Gomes et al., 2004). With an average housing production of 1,000 houses a year, the development of Leidsche Rijn will not be completed in 2015 (Municipality of Utrecht, 2008). Verduin (2007: 8) estimates it will be completed after 2020.
- 2 However, recently the newspapers mentioned that there are plans to increase the amount of expensive houses because of financial circumstances. On the other hand, some planned expensive housing areas are replanned to housing areas with higher densities.

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