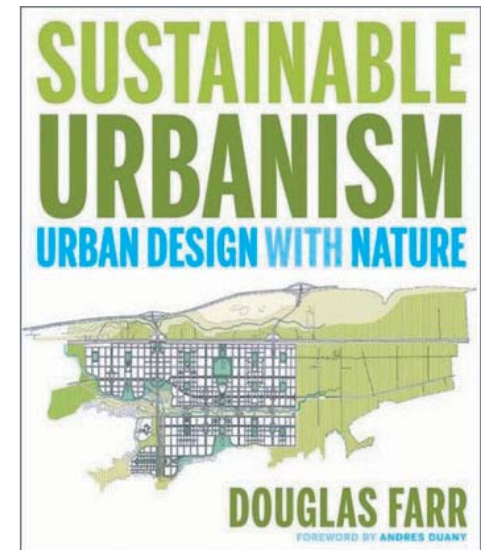


Douglas Farr:

Sustainable Urbanism



Social Conditions of Urban Design

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Abbreviations

AIA	The American Insitute of Architects
DU/A	dwelling units per acre
cit.	citation
e.g.	“for example”, (from Latin phrase “exempli gratia”)
etc.	“and so forth” (from Latin phrase “et cetera”)
LEED	Leadership in Energy and Environmental Design
LEED-ND	Leadership in Energy and Environmental Design for Neighborhood Development
VTMs	vehicles miles travelled

I Introduction

This paper introduces to the American movement and network Sustainable Urbanism, as promoted by one of its founders Douglas Farr in the book “Sustainable Urbanism. Urban Design with Nature”. “Sustainable Urbanism” may be an answer to many questions referring to how places should grow, how people should get from one place to another and how people could live more sustainable. This movement unites these questions with one coherence set of policies which can help next generations cities get reality.

1.1 Douglas Farr & Farr Associates

Douglas Farr, an architect and urban designer, is the founding principal and president of Farr Associates. He has served as cochair of the Environmental Task Force of the Congress for New Urbanism, chair of the AIA Chicago Committee on the Environment, and chair of the U.S. Green Building Council’s LEED for Neighborhood De-

Sustainable Urbanism

velopment (LEED-ND) project, a first ever leadership standard for sustainable land developments. [Farr], [wBF]

Farr Associates is widely regarded as one of the most sustainable planning and architecture firms in the country. Its mission is to design sustainable human environments with environmental, social, economic and aesthetic benefits. [wFF]

2 Sustainable Urbanism. Urban Design with Nature

The book provides a comprehensive introduction to sustainable urbanism.

“A small but fast-growing number of leaders are now beginning to recognise the power of thoughtful urbanism to induce people to voluntarily live a more human-powered and less resource-intensive lifestyle (...), to enhance the inherent sustainability of a walkable, diverse urbanism integrated with high-performance buildings and in-



Fig. 1 Douglas Farr

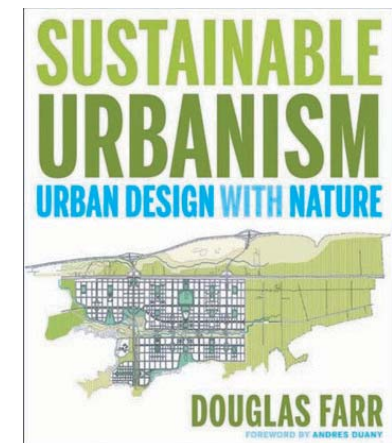


Fig. 2 Cover page [Farr]

frastructure.” [cit. Farr, p. 10, Preface by Andrés Duany¹]

Content at a glance: The first part deals with American conditions up to day. Following sections focus on the type of leadership and communication strategies most helpful in implementing both small and large-scale projects; technical tools and special techniques for community involvement are also explored extensively. Other chapters discuss the role of density, how to approach corridor situations, diagramming neighborhoods, „biophilia” — including everything from designing walkable streets to integrating wastewater ma-

1 Andrés Duany is an American architect and urban planner. Duany and Plater-Zyberk founded Duany Plater Zyberk & Company (DPZ) in 1980. DPZ became a leader in the national movement called the New Urbanism, which seeks to end suburban sprawl and urban disinvestment. At DPZ, Duany also led the development of comprehensive municipal zoning ordinances that prescribe appropriate urban arrangement for all uses and all densities. Duany is a co-founder and emeritus board member of the Congress for the New Urbanism, established in 1993. [wWD]

nagement — and high-performance buildings and infrastructure. The last section of the book is given over to case studies.

2.1 Part I: The Case for Sustainable Urbanism

The first part of the book posits that the American lifestyle puts society and the planet on the wrong course. The effects are: growing obese, economic cost, indoor activities, psychic prize (due to asphalted, non-walkable urban spaces), etc.

*“We have seen the enemy and he is us.”
Pogo, by Walt Kelly*

“By the age of twenty-five, the average American has spent one year in a car.” [cit. Farr, p. 20]

This part proposes sustainable urbanism, a comprehensive reform, as an achievable remedy to the effects caused by the American lifestyle and as an outline for courses in planning, architecture, engineering, environmental studies and interdisciplinary sustainable development.

2.1.1 Pioneering Reforms before “Sustainable Urbanism”

Sustainable urbanism grows out of three late 20th Century reform movements:

The “smart growth”, “new urbanism” and “green buildings movement” with its standards for green building - Leadership in Energy and Environmental Design (LEED). While all three share an interest in comprehensive economic, social and environmental reform, they differ in their history, constituencies, approach and focus.

The smart growth movement concerns with taking advantages of compact building design. The location within a region is important so natural areas can be preserved. New urbanism’s main focus is on creating walkable and mixed-use neighborhoods. The green building concern with urban heat islands, stormwater filtration, local content, and buildings’ life cycle cost. [Farr, p. 50] For more information about these movements, see Attachment 1.

However, among these movements, there has been an unwillingness to engage a

comprehensive and interdisciplinary agenda. For instance, a certified green building isn't really positive for the environment when it is surrounded by a massive paved parking lot; a walkable neighborhood is hard to sustain when its houses are wastefully constructed and energy inefficient.

2.1.2 Sustainable Urbanism: Where We Need to Go. The Grand Unification

The three movements above mentioned are essential stepping-stones, but only by using them as a cooperative whole a new framework that supports a truly sustainable lifestyle can be formed. „The time for half measures has passed.“ [cit. Farr, p. 41]

The path to a sustainable lifestyle builds on the principles of the three movements. The setting for this lifestyle is sustainable urbanism - the communities that are well designed for a high (healthier and more independent) quality of life because people decide to meet their daily needs on foot and transit.

2.1.3 LEED-ND

The book seeks to create an agenda and standards for an emerging and growing sustainable urbanism reform movement. There has always been a demand for communities and developments that integrate the features and benefits of urbanism with those of environmentalism, but the ability to develop consensus standards has been blocked by urbanists who resist environmental performance and by environmentalists who oppose urbanist development. [Farr, p. 10, p. 54]

Leadership in Energy and Environmental Design for Neighborhood Development (LEED-ND) may be just that sought branded standard. It expands the focus of LEED beyond the scale of the individual building to address infrastructure and entire neighborhood-scale developments.

Closely related to the themes of the book, LEED-ND is a voluntary leadership standard to define what constitutes smart, sustainable land development. [Farr, p. 54]

LEED-ND is a rating system that integrates

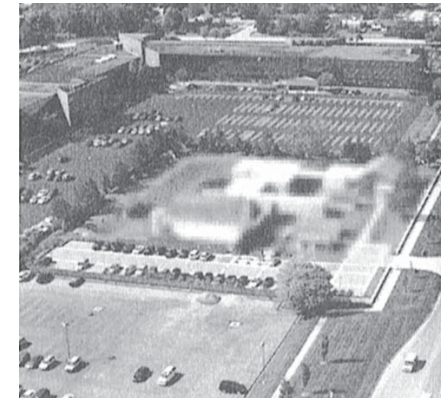


Fig. 3 A green building project could achieve LEED Platinum - despite its auto-dependent location.

the principles of smart growth, new urbanism, and green building into the first national standard for neighborhood design. It is being developed by U.S. Green Building Council (USGBC) in partnership with the Congress for the New Urbanism (CNU) and the Natural Resources Defense Council. [wFAQ]

LEED-ND Standards are organized into four divisions:

The location of the project in a region – *where it is* – (primary focus of the Smart Growth movement) is addressed in the “Smart Location and Linkage” Division.

The total score projects may achieve divides them into following categories:

(The more project's point score goes up, the more positive the result)

"Certified" — 40 - 49 Points

"Silver"— 50 - 59 Points

"Gold" — 60 - 79 Points

"Platinum" — 80 - 106 Points

Fig. 4 Total score levels in LEED-ND Ranking

Development Timeline of LEED-ND:

2007: LEED for Neighborhood Development pilot program launched (Pilot program with 238 projects)

2008: Public comment periods begin for post-pilot version of LEED for Neighborhood Development

2009: LEED for Neighborhood Development will ballot and launch [wCNU]

Fig. 5 Development timeline of LEED-ND

Walkability, land uses, urban design and architecture of place — *what goes on there* — (principal concern of New Urbanism movement) is addressed in the "Neighborhood Pattern and Design" division.

The "greenness" of the construction and the operation of a development — *how is it built and managed* — (principal concerns of the LEED rating system) are addressed in the "Green Construction and Technology" division.

Fourth division, "Innovation & Design Process", rates innovative performance in categories not specifically addressed by the LEED-ND rating system.

For the first time, social issues such as housing diversity, affordable housing, communities, visitability for all including the handicapped and community participation but also urban design attributes such as walkability, connectivity and a mix of uses are now part of a neighborhood rating system. Even design strategies such as stormwater infiltration, energy efficiency, and local and recycled content, are now

applied to the design of infrastructure and entire neighborhood-scale developments. [Farr, p. 54 - 55]

2.2 Part III: Emerging Thresholds of Sustainable Urbanism

"Over the next 45 years, estimated 2.6 billion people worldwide will be housed in new developments. All of that development needs to be built to sustainable urbanist principles. It is difficult for every project in the country (...) to do so. How can thousands upon thousands of stakeholders intergrate the human and natural systems of sustainable urbanism if the rules are unwritten?" [cit. Farr, p. 101]

The third part of the book is devoted to teasing out those rules and features nearly thirty emerging thresholds of sustainable urbanism. Every threshold is interdisciplinary. For example, car sharing can reduce off-street parking requests and increase allowable development density. This one strategy, after being fully integrated, can create neighborhood wealth, contribute to

the reduction of greenhouse gases, and increase the quality of life. [Farr, p. 101]

The thresholds may be organised into five comprehensive areas of concern: density, corridors, biophilia, high-performance buildings and infrastructure and neighborhoods. Together they constitute some of the most challenging opportunities in sustainable urbanism. [Farr, p. 13, p. 101]

2.2.1 Density (Compactness)

Sustainable urbanism is not achievable at low densities below 7-8 dwelling units per acre (DU/A). The sites should be dense enough to set the place walkable and provide the place with public traffic system. For these reasons, sustainable urbanism requires minimum development densities roughly four times higher than an average U.S. development density of two DU/A.

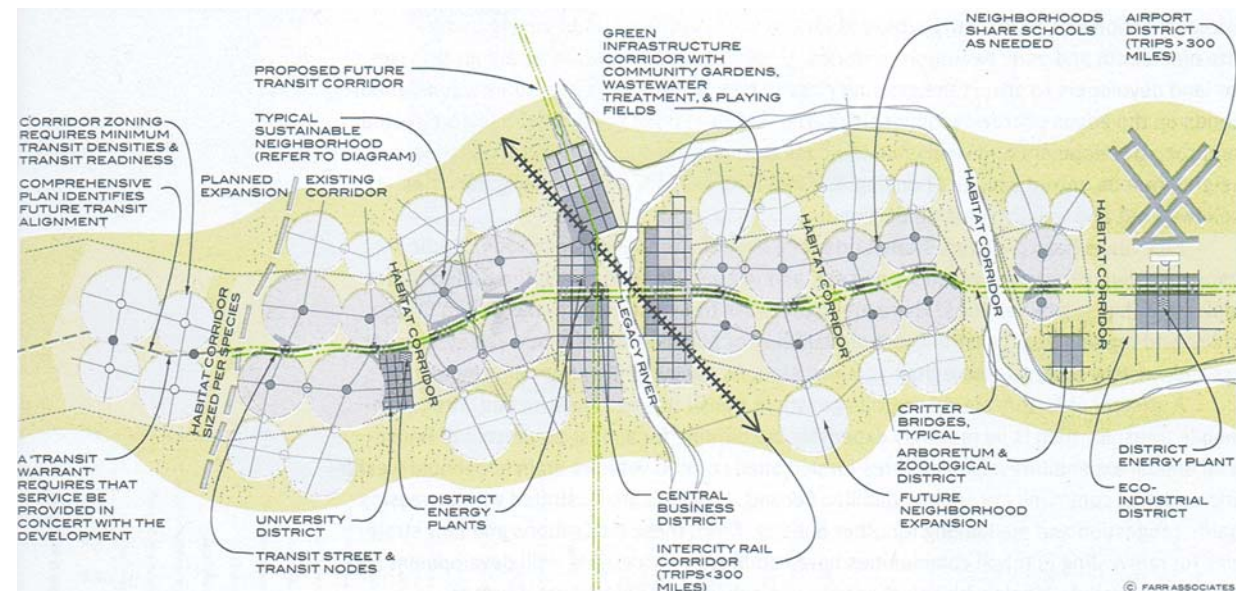
2.2.2 Sustainable Corridors

Sustainable corridors are building blocks of sustainable regions. The main parameters of such a corridor are its density and land

use mix (fig. 6). To achieve a well-based density and to free people from automobile dependence, minimum of 7 DU/A are required. For even better service and modes, a density of 15 DU/A for trolley transfer and 22 DU/A for light rail system are necessary. The corridor land use mix should achieve a 1:1 job-housing balance. [Farr, p. 113]

Transit corridors are the backbone of sustainable urbanism, linking neighborhoods together with districts and other regional

Fig. 6 A sustainable corridor (building block of a sustainable region)



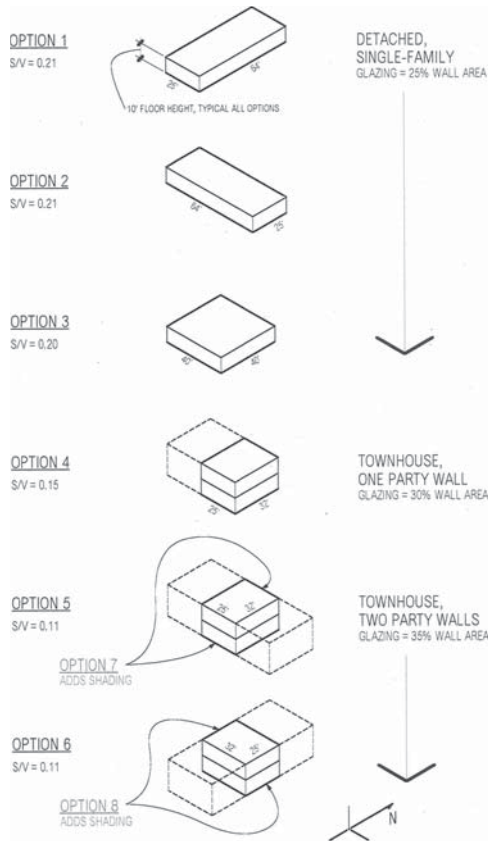


Fig. 7 High-performance buildings: Building massing and orientation options.

destinations. Biodiversity corridors support sustainable populations of native and rare species and connect otherwise isolated habitat patches. [Farr, p. 46]

2.2.3 Biophilia (Human Access to Nature)

Biophilia is the name given to the human love of nature based on the interdependence between humans and other living systems. In order to strengthen human interdependence with natural systems, sustainable urbanism believes that human settlements need to be designed to make resource flows visible and experiential. For example, a wastewater system that extracts nutrients to grow food in one's neighborhood creates an incentive not to dump chemicals down the drain. [Farr, p. 48-49]

Chapter "Biophilia" concerns in detail with biotopes, stormwater systems, locally grown food and local waste management.

2.2.4 High-Performance Buildings and Infrastructure

In this chapter, the impact of urban planning on building energy usage is shown. Building orientation and massing (which is the work of an urban planner) have significant influence on the energy used by the unit, even before any energy efficiency measures are incorporated into the design (e.g. well insulated walls etc.). The results from planner's perspective are obvious: Reduce surface-to-volume ratio as much as possible and reduce south-facing glass that receives direct sunlight (in terms of overproportional heating) [Farr, p. 189-193]

The term "high-performance infrastructure" refers to core best practices improving the performance of the entire roadway system (fig. 8). This design includes street and sidewalk, underground utilities, stormwater infrastructure, landscapes, and streetscape elements. [Farr, p. 195-198]

2.2.5 Sustainable Neighborhoods

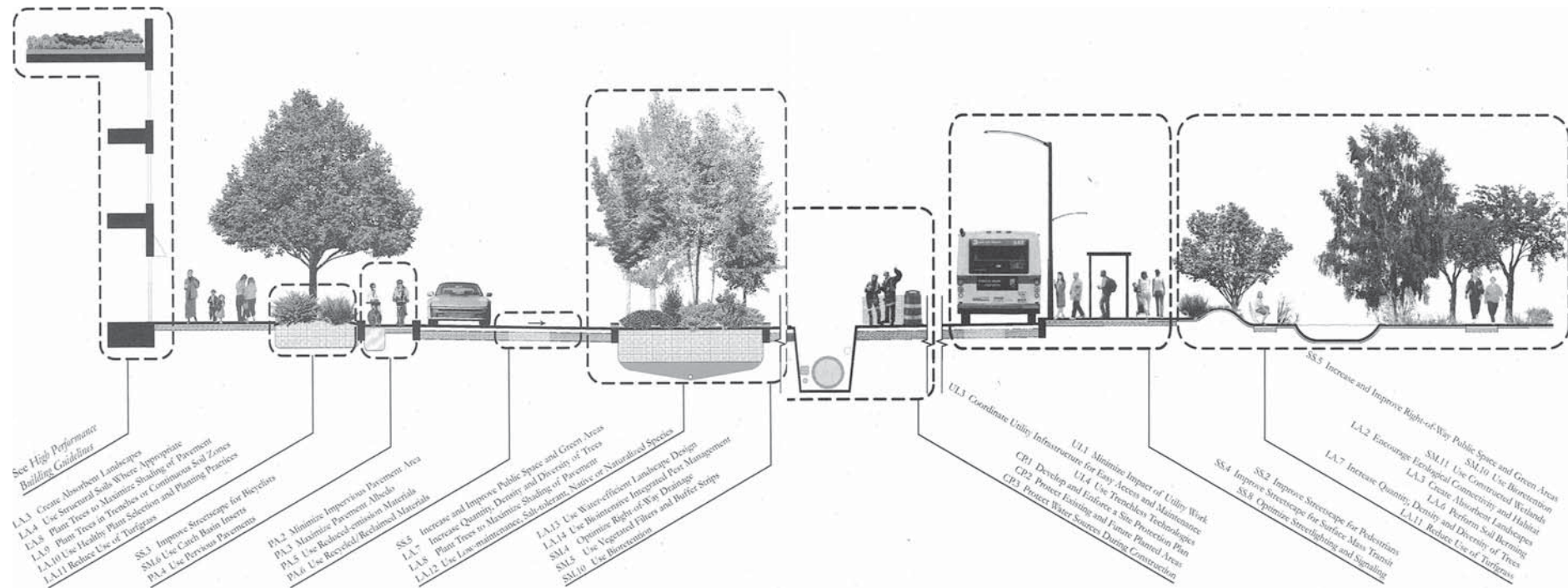
A sustainable neighborhood is a form of real traditional neighborhood, which „meets those same needs – for housing, workplaces, shopping, civic functions – but in formats that are compact, complete and connected, and ultimately more sustainable and satisfying.“ [cit. Farr, p. 127] Very important is, that despite the impression, we should specify the exact parameters of the ideal neighborhood (dimensions, densi-

ties, populations, commercial components etc.), the metrics of neighborhoods should range widely to reflect regional customs, climates, and site conditions. Although the numbers vary, there are five basic design conventions that link great neighborhoods:

1. Identifiable Center and Edge to the Neighborhood

“One should be able to tell when one has

Fig. 8 High-performance infrastructure: Rights-of-way can be designed to reduce long-term resource use and costs, e.g. by creating absorbent landscapes.



arrived in the neighborhood and when one has reached its heart.” [cit. Farr, p. 127] The best centers are within walking distance, and typically some gradient in density is discernable from center to edge.

2. Walkable Size

The overall size of the neighborhood should be suitable for walking. Neighborhoods range from 40-200 acres (16-81 hectare). A quarter-mile radius (approx. 400 m) is a benchmark for creating neighborhood unit that is manageable in size and feels walkable. Even before the World War II, most neighborhoods were one-quarter mile from center to the edge. [Farr, p. 127]

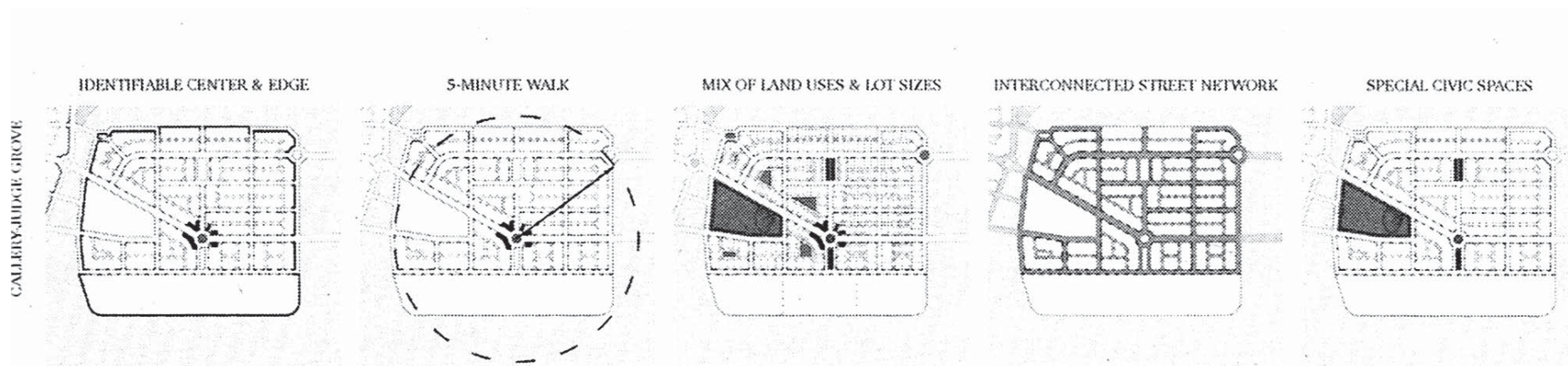
3. Mix of Land Uses and Housing Types

A mix of uses gives residents the ability to dwell, work, entertain themselves, exercise, shop and fulfill needs and services within walking distance. It is understood that the amount of nonresidential uses varies from neighborhood to neighborhood. Some neighborhoods may have a fine commercial presence, but every live/work combination, also known as “zero-commute housing”, eliminates at least one car from rush-hour traffic. [Farr, p. 129]

4. Integrated Network of Walkable Streets

A street network forms blocks that set up

Fig. 9 Sustainable neighborhoods: Five basic design conventions



sites for private and/ or public development and it provides multiple routes for walking, biking and driving safely through a neighborhood. The maximum average block perimeter is 1.500 feet (approx. 450 m), with streets at intervals no greater than 600 feet (180 m) apart along any single stretch. Small block size and frequent intersections are necessary. When designing streets, we should make them walkable first and then add provisions for motorised vehicles. "Design speed" for a highly walkable environment should be less than 25 mph. [Farr, p. 129] Furthermore, a high-quality public street space for activity and aesthetic values should be provided and its environmental qualities should be protected as well. [Farr, p. 154]

5. Special Sites for Civic Purpose

In complete neighborhoods, some of the best real estate should be set aside for community purposes. Landmarks and civic buildings as well as open space facilities (parks, squares, plazas, green corridors and playgrounds) should be a part of it.

More components of sustainable neighborhoods are e.g.:

- Car-Free Housing (buildings which do not provide off-street parking)
- Neighborhood Retail
- Third Places (Where people meet, develop, trust and form associations)
- Transportation demand management (strategies to make the most efficient use possible by limited transportation)
- Car Sharing

The diagram of the sustainable neighborhood (fig. 11) builds on the diagrams by Clarence Perry, 1929 and Duany Plater-Zyberk & Company. Following the previous characteristics, five distinctions result:

- the neighborhood is a building block of a transit corridor
- the central bus stop is replaced with a higher density transit mode (BRT, trolley, light rail)
- it is fitted out with high-performance infrastructure: district power, dimmable streetlights and a share car per block

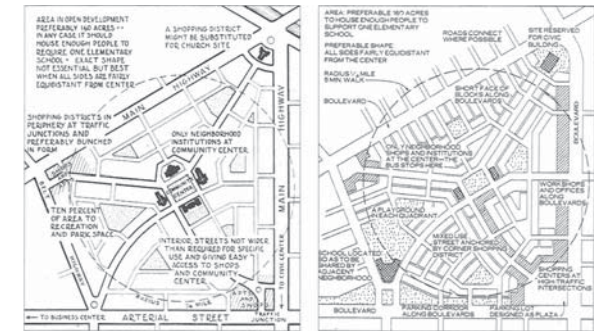


Fig. 10 Neighborhood Unit by Clarence Perry (left), updated by Duany Plater-Zyberk & Co. (right)

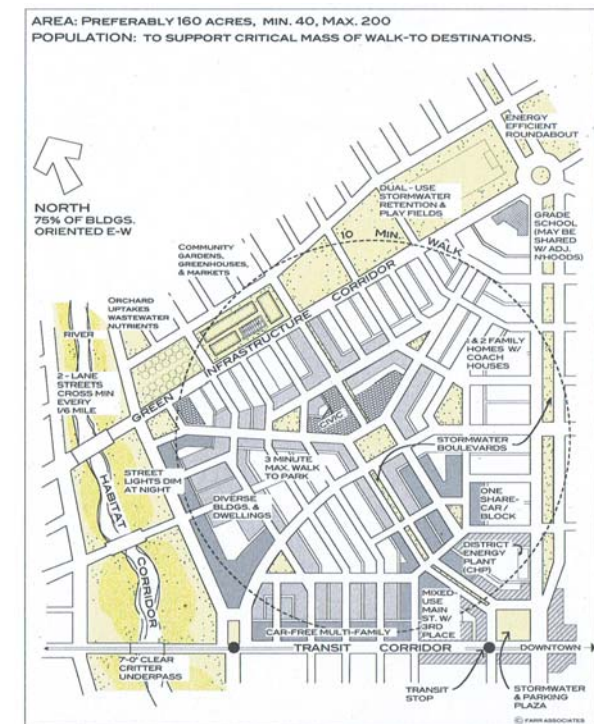


Fig. 11 A sustainable neighborhood unit (building blocks of a sustainable corridor) by Farr Associates



Fig. 12 2030 Community Challenge - Goals for LEED-ND Platinum Certification

- the mix and density support car-free housing and a “third place”
- habitat and infrastructure greenways give the neighborhood distinct edges

Thresholds in the book have demonstrated that a complete neighborhood can encourage walking and reduce car trips by up to 10-40 %, and is associated with reduced levels of obesity, land consumption and per capita pollution. [Farr, p. 160]

2.2.6 Time: The 2030 Community Challenge

The 2030 Communities Campaign proposes to reverse the increase in vehicles miles traveled (VMTs) and adopt LEED-ND as a municipal standard by 2030. The challenge calls for a 50% decrease in VMTs from 2005’s baseline of 8000 VMTs per capita, to 4000 VMTs and aims to have 100% of public and private development projects achieve LEED-ND Platinum certification by 2030 (fig. 12). The 2030 Communities Campaign serves as a viable standard to address the challenge of climate change in

the transportation sector, while improving community health and well-being. [wFC]

2.3 Part II: Implementing Sustainable Urbanism

An introduction to the implementation tools of part two of the book makes only sense after the intentions and thresholds of sustainable urbanism have been described in this paper.

The book proposes sustainable urbanism to be implemented continuously, by interdisciplinary terms, working at all scales, on every project. To make this easy to do, there are some basic principles like interdisciplinary work in form of charrettes and benchmarking as well as the planning regulations system introduced in the book.

2.3.1 Conventional and Unconventional Regulations

The book provides a historical perspective on the standards and regulations that are often barriers to reform. Hundreds of sepa-

rate national standards, and likely millions of local regulations, interact to increase resistance to change and make it difficult or even illegal to create sustainable urbanism.

Regulating Plan and Form-Based Code

Conventional zoning generally ignores building form, and focuses solely on use. The result has been buildings that are out of character with existing development of the community.

Conventional form-based codes focus on building form and how it affects public spaces. This focus allows form-based codes to guide the creation of active, sustainable neighborhoods.

These codes are visually represented making it easy for all stakeholders to understand, but are missing many of the criteria important for sustainable development.

Codes, Covenants and Restrictions

Stakeholders involved in the master-planned communities desire assuran-

cies that the projects will be realised as planned, all with their sustainable components. Such commitments can be difficult to enforce in the above mentioned, normal regulatory process. Unconventional instrument “Codes, Covenants and Restrictions” (CC&Rs) applied to private property can work with other regulations to ensure the desired outcome.

An example of a “code provision” is a standard that rain barrels and cisterns have appropriate safety covers. A “covenant” is a promise or obligation, for example a commitment to pay the cost of maintenance for a bike trail. “Restrictions” are the limits on activities that are allowed within the project. An example of restriction is the prohibition of campfires within preserved open spaces.

LEED-ND

LEED-ND is an instrument for communities to require a specific certification level from developer.






Project Scale	Type of Construction	Sample Project with Select Sustainable Systems	Project Image
Less than 1/4 acre	Single building	Bethel Commercial Center <ul style="list-style-type: none"> Transit-oriented design Mixed-use, multimodal center Green roof 	
1/4–1 acre	Multiple buildings	Christie Walk <ul style="list-style-type: none"> Solar hot water Community gardens Thermal mass construction 	
1–5 acres	An urban block	BedZED <ul style="list-style-type: none"> Natural ventilation Combined heat and power system (CHP) Passive solar design Car share 	
5–40 acres	Fraction of a neighborhood	Dockside Green <ul style="list-style-type: none"> All buildings LEED Platinum Biomass co-generation Biodiesel facility 	
40–200 acres	Neighborhood	High Point <ul style="list-style-type: none"> Seamless integration of affordable housing Community gardens Streets relinked to Seattle grid 	
200+ acres	Corridor	Green Line Initiative <ul style="list-style-type: none"> Complete neighborhoods developed Transit-oriented design Density concentrated in mixed-use buildings near transit stops 	

Fig. 13 Sustainable urbanist projects organized by size

2.4 Part IV: Case Studies in Sustainable Urbanism

This part documents a diverse and mature worldwide movement of neighborhood-scale projects, both those already built and those yet to be built. The case studies, redevelopment- and greenfield projects, integrate walkable urbanism, natural habitats, and high-performance infrastructure and buildings. The case studies confirm that the best sustainable neighborhoods are more than a complex of energy-saving technologies — sustainability needs context. One of the signs for the practice of sustainable urbanism is the variety of scales at which projects are being built (fig. 13): a small-town mayor can pursue a moderately sized project on an available infill site; and areas of fast greenfield growth can plan entire transit-rich sustainable corridors.

In this paper, one realized project and one up to be built project will be introduced. By both projects, the key urbanism sustainable thresholds are listed.

2.4.1 Hannover - Kronsberg (Built greenfield Project)

The Kronsberg project is the city of Hannover's vision for sustainable development in Germany. The planning process resulted in a development dominated by ambitious energy reduction goals, transit-oriented design, and mixed-income residential areas. When the city of Hannover won the bid to host the Expo 2000 World Exposition, the city made a decision to pursue a sustainable development under the motto "Humankind – Nature – Technology". Kronsberg's big success is, by 2001, a 74 % reduction in CO₂ emissions compared with conventional developments.

Key Sustainable Urbanism Thresholds:

Compactness — Walkable streets and networks — Open space — Stormwater systems — Intergration of transportation, land use and energy — Impact of planning on building energy usage — Large district energy systems

[Farr. p. 242-245]

Kronsberg - Project Details:

Master plan and developer: City of Kronsberg

Land area: total development 395 acres;
first phase 173 acres

Timeline: city council resolved to use sustainable guidelines in 1990; first phase built 1998

Dwelling units: First phase: 3.000, including 300 private row houses;
3.000 additional private houses upon completion / in planning

Commercial: approx. 377.000 square feet

Project Highlights / Benchmarks:

- Compulsory connection to district heating system reduces CO₂ emissions by 23%
- 74% reduction in CO₂ emissions in 2001
- All residents within +/- 1/3 mile (536 m) from tram stop
- 0,8 parking spaces per dwelling
- Bike street runs through development
- Green building guidelines built into land contracts
- Two 1,5-megawatt wind turbines
- All digged up soil used within development
- 47 units per net acre density supports a tram line



Fig. 14 Hannover-Kronsberg Masterplan



Fig. 15 Hannover-Kronsberg residential area with biosystem network



Fig. 17 Dockside Green Victoria, Canada. Masterplan



Fig. 16 Dockside Green Victoria, Canada. Biodiversity corridor

2.4.2 Dockside Green Victoria, British Columbia, Canada (Unbuilt infill project, being realized)

A reclaimed industrial wasteland near to the waterfront will host Victoria's most ambitious green project to date - a zero-carbon development, regenerating this parcel formerly contaminated with petrochemicals and toxic heavy metals. The project philosophy values economic profits as well as environmental and social issues. Dockside Green is famous for its plan to certify all 26 buildings in the development as LEED Platinum, in addition to incorporate green infrastructure. [Farr, p. 258-261], [wDG]

Key Sustainable Urbanism Thresholds:

Compactness — Walkable streets and networks — Car sharing — Neighborhood Retail — Biodiversity corridors — Open space — Stormwater systems — Wastewater treatment — Integration of transportation, land use and technology — The impact of planning on building energy usage — Large district energy systems

Dockside Green Victoria - Project Details:

Master plan:	Busby Perkins + Will
Developer:	Windmill Develop. Group and Vanity Enterprises
Land area:	15 acres
Timeline:	10-year build-out; first phase to be completed 2009
Dwelling units:	approx. 860
Commercial:	242,194 square feet + 73,842 square feet of industrial space

Project Highlights / Benchmarks:

- All 26 buildings LEED Platinum certified
- Estimated building energy savings of 45-50 %
- Estimated potable water savings of 65 %
- 11 percent affordable housing and senior-assisted facilities will help to ensure resident diversity
- Biomass co-generation facility
- Biodiesel facility
- Re-strengthening of harbor industry
- Re-use or recycle at least 90 % waste on-site
- Pedestrian and cyclist routes run through the heart of the development

3 Closing Words to „Sustainable Urbanism“

“Sustainable Urbanism”, reduced to its most basic principles, is walkable and transit-served urbanism integrated with high-performance buildings and high-performance infrastructure; where compactness and human access to nature are core values and where aspects of sustainability, functionality and interconnectivity are more important than design.

Nevertheless, design aspects play very important role in Sustainable Urbanism, too. This makes the movement a strong competitor to other co-existing movements, whose’ primary focus is on the design quality as a basis for socially sustainable settlements (e.g. contemporary streams in European urbanism which focus on reconstruction of traditional cities).

However, even more important is the fact, that “Sustainable Urbanism” is not only the approach how sites are designed and managed - it is furthermore a comprehensive network and agenda of interdisciplinary focused stakeholders - planners, architects, engineers etc. and thanks to this characteristics it has - and also in the future will have - reforming influence on the whole planning and developing community.

The movement searches for global urbanistic solutions - having its roots in America by facing the problems of suburban development, it helps moreover to adapt sustainability principles in different urban planning conditions worldwide. This posits the movement to the role of a global network and agenda which values local factors and responds - by using the tools of sustainable urban design - to local requests.

Sustainable Urbanism targets critical issues and challenges - not only those of urban design - social, environmental and economic sustainable community development as well as health and climate on local and global scale; and proposes comprehensive solutions for these interdisciplinary tasks of both present and future meaning.

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- Fig. 5 Development Timeline for LEED-ND, [wCNU] (Access on 2.7.2008)
- Fig. 6 A sustainable corridor (building block of a sustainable region). [Farr, p. 113]
- Fig. 7 Building massing and orientation options. [Farr, p. 191]
- Fig. 8 High-performance infrastructure. [Farr, p. 196-197]
- Fig. 9 Sustainable neighborhoods: Basic design conventions. [Farr, p. 131]
- Fig. 10 Neighborhood Unit by Clarence Perry (left), updated by Duany Plater-Zyberk & Co. (right). [Farr, p. 125]
- Fig. 11 A sustainable neighborhood unit (building blocks of a sustainable corridor) by Farr Associates. [Farr, p. 126]
- Fig. 12 2030 Community Challenge - Goals for LEED-ND Platinum Certification. [Farr, p. 206]
- Fig. 13 Sustainable Urbanist Projects Organized by Size. [Farr, p. 295]
- Fig. 13 Hannover-Kronsberg Masterplan. [Farr, p. 243]
- Fig. 14 Hannover-Kronsberg residential area with biosystem network. <http://www.oekosiedlungen.de/kronsberg/galerie/galerie2.html> (Access on 29.7.2008)
- Fig. 15 Dockside Green Victoria, Canada. Biodiversity corridor. <http://www.busby.ca/clients/docksidegreen/index.htm> (Access on 1.7.2008)
- Fig. 16 Dockside Green Victoria, Canada. Masterplan. http://www.metaefficient.com/images/docksidegreen_plan.gif (Access on 1.7.2008)

Attachment

Smart Growth

Smart Growth is an urban planning and transportation theory that concentrates growth in the center of a city to avoid urban sprawl; and advocates compact, transit-oriented, walkable, bicycle-friendly land use, including neighborhood schools, streets that work for everyone, mixed-use development with a range of housing choices.

Smart growth values long-range, regional considerations of sustainability over a short-term focus. Its goals are to achieve a unique sense of community and place; expand the range of transportation, employment, and housing choices; equitably distribute the costs and benefits of development; preserve and enhance natural and cultural resources; and promote public health. [wWSG]

New Urbanism

New Urbanism is an American urban design movement that arose in the early 1980s. Its goal is to reform many aspects of real estate development and urban planning, from urban retrofits to suburban infill. New urbanist neighborhoods are designed to contain a diverse range of housing and jobs, and to be walkable.

New Urbanism can include (neo)traditional neighborhood design and transit-oriented development.

In 1991, the Local Government Commission, a private nonprofit group in Sacramento, California, invited architects Peter Calthorpe, Michael Corbett, Andrés Duany, Elizabeth Moule, Elizabeth Plater-Zyberk, Stefanos Polyzoides, and Daniel Solomon to develop a set of community principles for land use planning. Named the Ahwahnee Principles, the commission presented the principles to about one

hundred government officials in the fall of 1991, at its first Yosemite Conference for Local Elected Officials.

Calthorpe, Duany, Moule, Plater-Zyberk, Polyzoides, and Solomon founded the Chicago-based Congress for the New Urbanism in 1993. The CNU has grown to more than 3,000 members, and is the leading international organization promoting new urbanist design principles. It holds annual Congresses in various U.S. cities.

The CNU's Charter of the New Urbanism says: "We advocate the restructuring of public policy and development practices to support the following principles: neighborhoods should be diverse in use and population; communities should be designed for the pedestrian and transit as well as the car; cities and towns should be shaped by physically defined and universally accessible public spaces and community institutions; urban places should be framed by architecture and landscape design that

celebrate local history, climate, ecology, and building practice.” [cit. wWNU]

New urbanists support regional planning for open space, context-appropriate architecture and planning, and the balanced development of jobs and housing. They believe their strategies can reduce traffic congestion, increase the supply of affordable housing, and rein in urban sprawl. The Charter of the New Urbanism also covers issues such as historic preservation, safe streets, green building, and the redevelopment of brownfield land. [wWNU]

Green Building Movement

United states Green Building Council (USGBC): Sustainability’s Building Performance and Certification Movement

The oil shocks of the 1970s jump-started a movement for building energy efficiency and solar heated and powered buildings. Unfortunately this movements were unable

to attract much governmental policy support throughout the 1980s. In 1993, however, the American Institute of Architect’s Committee on the Environment, inspired by the 1992 Rio Earth Summit, published The Environmental Ressource Guide. This comprehensive catalogue on the theory, practice and technology of “environmental” buildings drew heavily on the pionieering work that preceded it. [Farr, p. 35-36]

The USGBC leaders and industry professionals, David Gottfried, Richard Fedrizzi and Michael Italiano, were inspired by the Rio Earth Summit and The Environmental Ressource Guide as well.

Shortly after its founding the USGBC drafted pioneering standards for green building, completing a “final” version in 1995. The name Leadership in Energy and Environmental Design (LEED) was adopted in 1996. USGBC launched the pilot version in 1998 and its rating system in 2000. The LEED standard combines prerequisites,

with optional credits than earn points toward an overall score. As a project’s point score goes up it earns LEED certification at increasing levels of performance from “Certified” on the low end to “Platinum” on the high end. This flexibility works well in the marketplace, allowing a project to incorporate only well-suited green building strategies. [Farr, p. 35]