Is LEED for Neighborhood Development an Outline for the Next Utopia?

By Eric Douglas

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In October 2008 the United States Green Building Council (USGBC) released its "LEED for Neighborhood Development Rating System" (LEED ND) for public comment. The USGBC has developed a suite of rating systems under its LEED (Leadership in Energy and Environmental Design) brand, providing environmentally-friendly guidelines for various types of construction. What started as a single set of requirements (for new construction, or "LEED NC") developed into guidelines tailored to specific building types (core-and-shell, existing buildings, schools, etc.). Although each LEED product considers regional impacts, LEED ND is the first set of guidelines from the USGBC directed at community-scale development. Although these guidelines are similar in content to other LEED guidelines, the fact that they address settlement patterns and not just buildings puts them in the category of urban design. This opens LEED ND to scrutiny from a city planning perspective. What would cities look like if they all conformed to these guidelines? What problems would be solved, which would remain, and which would crop up? Is this a vision of utopia? If so, *how does it compare to other utopian visions?* Will it fare any better than the others?

Although the LEED ND guidelines do not directly address all of the political, social, and economic issues that a utopian thesis would, still they are designed to suggest an ideal built environment, at least from the standpoint of environmental sustainability. Other issues, such as social justice, are obliquely referenced but not

necessarily central to the agenda. However, other utopian visions of the past have left many issues unresolved, even theoretically. So LEED ND is still fair game for comparison, even if viewed as a component of a larger plan.

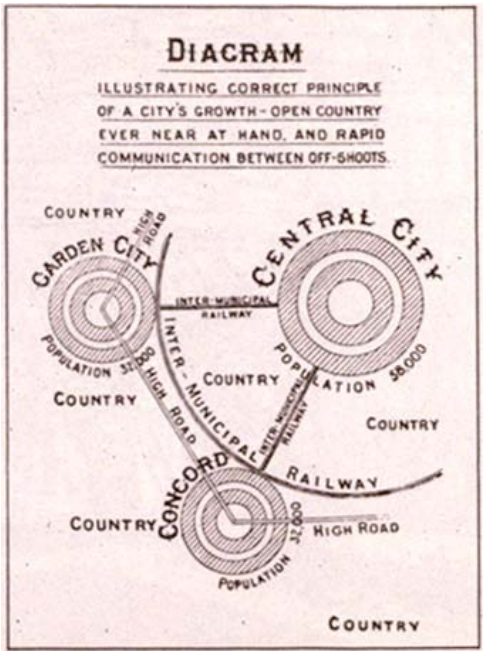
To put the discussion in perspective, we should first consider other visions of utopia. The word utopia comes from a book written in 1516 by Sir Thomas More entitled “Of the Best State of a Republic, and the New Island Utopia.” The “-topia” part of the word comes from the Greek word for “place,” whereas the “u-“ could be a transliteration of either “not” or “good.” Thus, the play on whether utopia is good, impossible, or both. Although several writers have offered verbal descriptions of utopia and many artists have painted it, only a few architects and planners have sought to show us how it would actually work. These latter are of interest to us, especially in comparing how this codified modern understanding of a sustainable built environment would fit into these other visions.

Just as LEED standards are a response to perceived current deficiencies in the built environment, utopias of the last centuries were largely responses to the dismal urban conditions brought about by the industrial revolution. Three utopian thinkers of note are Ebenezer Howard, Charles-Edouard Le Corbusier, and Frank Lloyd Wright. Each sought to spacially demonstrate an ideal arrangement for communal living.

Ebenezer Howard, a modest clerk with no special training, was an unlikely source for a movement that would later be highly influential in shaping many cities. Yet, his Garden City concept proved highly compelling, especially in his home country of England in the late 19th century. At a time when London was a scene of pollution, squalor, and chaos, Howard proposed a scheme in which everyone would have a

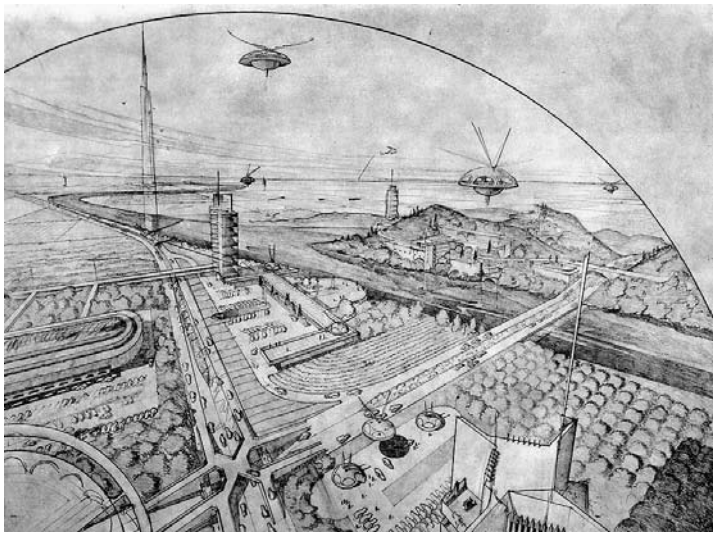
private garden. Furthermore, all of his urban centers would be surrounded by a green belt of farms and parkland.

Howard's plan was rooted in two popular notions of his era, namely that healthy living was linked to the accessibility of nature and that urban problems, much like math problems, could be solved if one simply understood the variables and applied the proper formulae. For Howard, the variables were open space, ownership of land, and transportation. He wanted to keep people close enough to their (manufacturing) jobs and to civic centers that they could walk to them. Of course, since everyone had a small, personal garden, this arrangement resulted in a low-density city. Rents would not go to landlords, but rather into a collective fund which would pay for civic amenities. The Garden City Movement is especially notable in that actual cities were constructed in whole or in part according to these guidelines.



Typical Garden City Plan

In the 1920's Frank Lloyd Wright developed a set of ideas that would become "Broadacre City," essentially a non-city community. He published a description of this plan in 1932 in a book entitled "The Disappearing City." Wright viewed the city as a problem to be solved and the solution looked very much like suburban sprawl. Like Howard, Wright saw inequalities in land ownership as a fundamental source of discontent. He also wanted each family to have personal open space, but much more than Howard recommended. He recommended a minimum of one acre per household, enough for each family to be self-sufficient. Instead of walking, people would travel by automobile or flying whirligigs. Little thought seems to have gone into the economics of Broadacre City, especially since it was intended to be self-supporting. All of America was to look like it. There seemed to be no place for cultural or manufacturing centers.

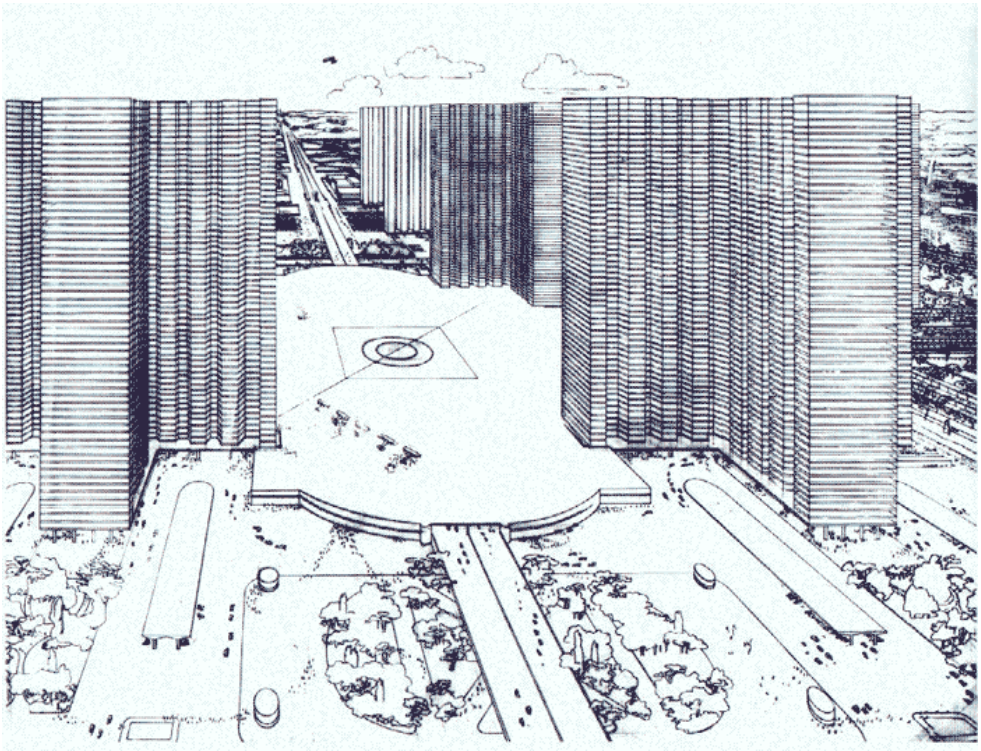


Broadacre City

Coming at the problem from a slightly different angle was Le Corbusier. He also was concerned about the relationship between the worker and the city. Just as Wright and Howard thought unequal ownership of land had to be addressed, Le Corbusier wanted equitable ownership of the means of production. His association with

Syndicalism – a rejection of corporate hierarchy in favor of worker participation – strongly influenced his concept of how communities should be organized.

Le Corbusier's offering to the utopian mix was the Radiant City. Like Wright, Le Corbusier embraced the automobile. Antithetical to Wright, however, he relied on extreme density, public open space, and a dominant central authority. Extremes of opulence and poverty would be eliminated with housing that was scaled to the size of households rather than the size of incomes. The fundamental unit of the Radiant City was the Unite building. Within this building were all of the living functions a family would need, organized according to a collective arrangement, such that individual members could be free to dedicate time to either work or leisure. The building would become a machine for living.



The Radiant City

Although these three plans provided starkly different visions, they were all responses to a perceived lack of central planning, of opportunities missed due to oversight. To one extent or another, each plan considered the social, cultural, and political requirements and ramifications of its layout. But what sets these visions apart from other utopian thinking was that they showed where, if not how, people would live their lives. All of them rejected the urban conditions of their day and the orthodoxies that produced them. And, they all sought to be universal, based upon human needs more than site specificity. They were urban – or communal – guidelines, ideal plans that could be implemented anywhere, and should be. This brings us back to the humble LEED ND. How does it compare to these other utopian visions?

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LEED makes no overt statements regarding economic policy, but it does have much to say about how people live. Issues such as suburban sprawl, traffic congestion, and urban blight are generally regarded as problems, but the LEED rating assigns a weighting system to these problems and rewards specific actions intended to address them. For example, most planners advocate walkability and preservation of open space, but the LEED system takes a stand as to the relative value of one versus the other. The assignment of points creates a specific value system that previously had been vague in the planning community.

Just as previous utopian visions described layouts for ideal communities, and by exception, suggested what to avoid, so does LEED ND give us a vision of an ideal community. Its recommendations fall into three main categories, “Smart Location &

Linkage," "Neighborhood Pattern & Design," and "Green Infrastructure & Buildings." Each has much to say, indirectly, about how we should live.

While LEED ND covers a significant spectrum of issues, there are certainly recurring themes. Heavy emphasis is placed on increasing walking and bicycling and reducing auto use. Health reasons are cited but not referenced. There are both the expected issues of minimizing energy use, pollution and waste, as well as new forays into issues of social justice. LEED ND makes no effort to legitimize its intentions; it simply states what they are as a legitimization of its recommendations. Likely, few urban planners today would argue against the merits of any of these intentions, but an examination of the *relative* benefits of each could make for a lively debate.

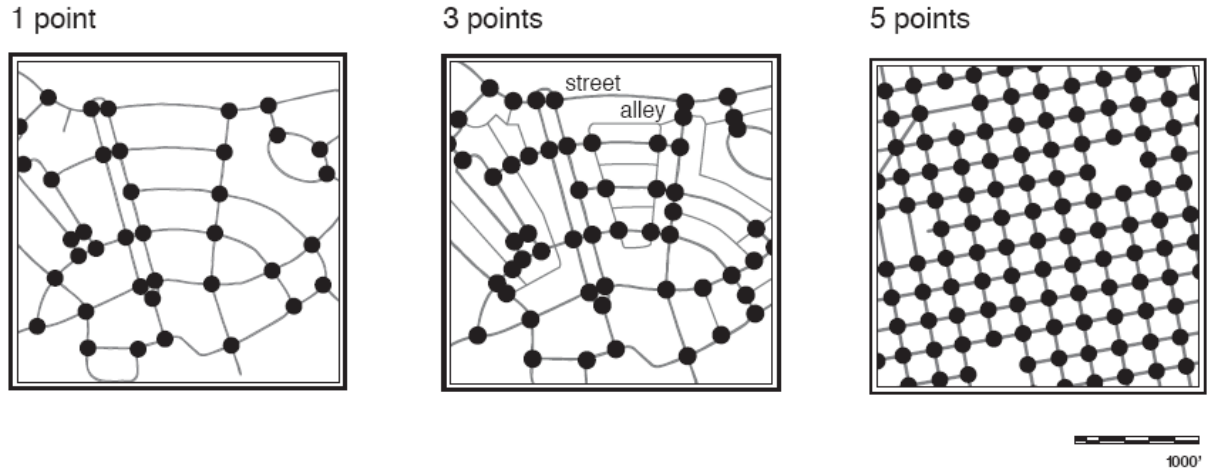
Each of the main categories has subcategories that advance specific goals. Each subcategory begins by stating its intention. Although it is interesting to examine the applications recommended by LEED ND, I think it is even more illuminating to consider the intentions behind them, especially in comparison to previous utopian intentions. What follows is a discussion of some of these stated LEED intentions and what they imply about a USGBC vision of an ideal community. (Note: inset quotations taken from "LEED for Neighborhood Development Rating System", October 31, 2008)

> ***Intent -*** *Encourage development within and near existing communities or public transportation infrastructure. Reduce vehicle trips and miles traveled and support walking as a transportation choice. Reduce the risk of obesity, heart disease, and hypertension by encouraging daily physical activity associated with alternative modes of transportation and compact development. Improve the mental health of the community by reducing work commute time and increasing time devoted to leisure, community activities and family.* (Note: these issues are repeated in several subcategories)

This first listed intention sets the tone for the guidelines as a whole. Here is a very direct intention to move away from suburban sprawl and toward transit-oriented-

development. This is a bit of Garden City (being within walking distance of work and leisure), some Radiant City (less the superhighway), and none of Broadacre City (with the possible exception of encouraging healthy living). On the surface, these goals are very straightforward. Critics might argue to what extent location is directly linked to physical and mental health, especially the mental health of the community. If people are located near a bus stop, will they really drive less, walk more, and lose weight? Will people who leave their comfy homes in the suburbs really have better mental health by moving to a denser area, or will they merely exchange one set of anxieties for another?

SLLc1 Preferred Locations
Option 2- Connectivity



Intent - *Encourage new development within and near existing communities in order to reduce multiple environmental impacts caused by sprawl. Conserve natural and financial resources required for construction and maintenance of infrastructure.*

Much of LEED ND is a direct rejection of sprawl and, therefore, an indirect rejection of Broadacre. It would be helpful if the LEED manual included an appendix or other reference that outlined exactly what the objections to sprawl are. Obviously there are advantages to sprawl, otherwise, why would it exist? What, if anything, is lost when

sprawl is reduced? Would Ebenezer Howard accept that not everyone could have a private garden? As far as conserving financial resources is concerned, isn't this the responsibility of the market? As long as developers are required to provide full infrastructure for new developments, they will be motivated to reduce their costs by tapping into existing infrastructure rather than building new. Also, it may be that, despite diseconomies of scale, multiple newer infrastructure installations may prove more resistance to catastrophic failure than aging mega-structures. In time, this may prove to be a genuine advantage to the proliferating 'Edge Cites' developing in between suburbs and downtowns.

Intent - *Protect imperiled species and ecological communities.*

This is new territory for the USGBC. Previous LEED products (NC, Homes) deal with protecting native plant species and avoiding invasive ones. This is the first that addresses endangered species. It is noteworthy that this issue was not even available to early utopians as it has only been in the general consciousness for the last several decades, even though species have been endangered by human activity for centuries. We might say that this issue would have factored into Howard's plans, but likely not the other two.

Intent - *Conserve water quality, natural hydrology and habitat, and preserve biodiversity through conservation of water bodies or wetlands.*

The concept of preserving wetlands is fairly recent. Traditionally, they have been viewed as completely worthless, since they offer essentially no value to humans. The preservation of wetlands is related to the previous intent, in that it assumes a value in preserving habitat for non-human species.

Intent - *Reduce the permanent loss of prime agricultural land, especially in places where such land is not abundant. Conserve prime agricultural land for*

future generations, even if such land is currently covered by forest or otherwise not currently used for food or fiber production.

Farmland is a major component of any urban area. Cities cannot feed themselves; they require hinterlands. Both Wright and Howard were adamant about including farmland in their proposals. Today, the issue is more complicated. On the one hand, economies of scale suggest that modern farming and distribution methods do an excellent job of providing an amazing variety of food, year-round, to major metropolises. On the other hand, modern farming techniques are arguably the most environmentally destructive practices on earth, and, are completely dependent upon cheap foreign oil. So, while the idea of preserving farmland is surely better than losing it, we would be naïve to think that this is necessarily a preservation of bucolic pastures. It could mean the preservation of a cesspool of hog manure.

Intent - *Protect life and property, promote open space and habitat conservation, and enhance water quality and natural hydrological systems.*

This is actually about not building in the floodplain. In other words, let the 9th Ward go. In a USGBC utopia, we do not build where we ought not.

Intent - *Encourage the reuse of land by developing sites where development is complicated by environmental contamination, reducing pressure on undeveloped land.*

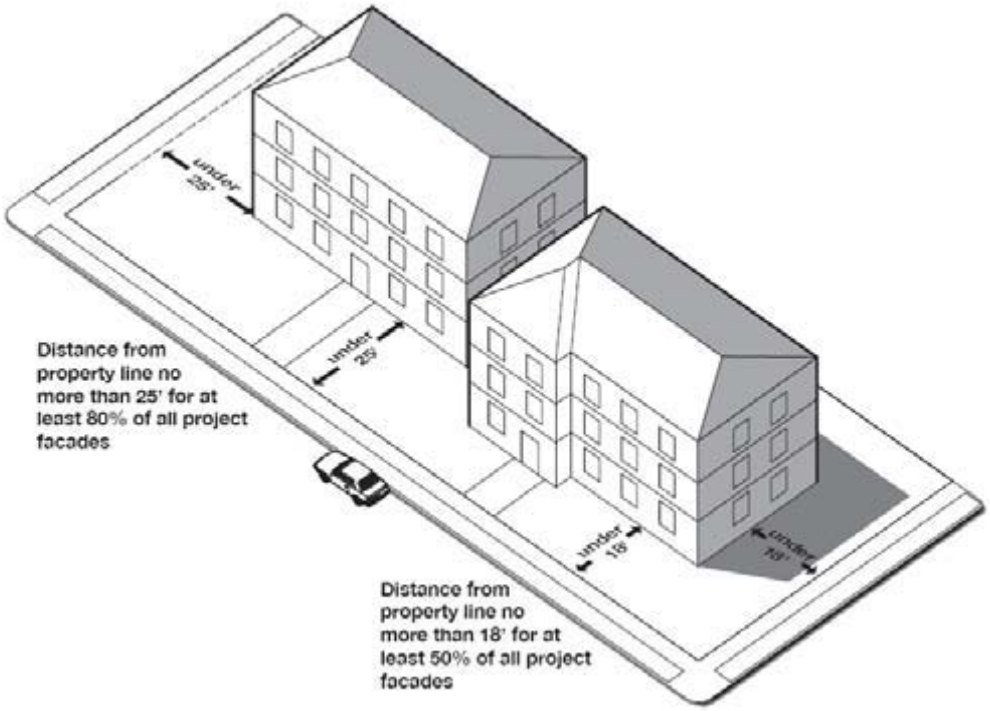
At first blush, this may seem a bit odd. Why build on contaminated land when one could build on clean land? The answer is that the contaminated land is in the middle of town and is better covered with buildings than with parks. Then again, it really is kind of odd to seek out poisoned land to live on. Plutonium anyone?

Intent - *Encourage balanced communities with a diversity of uses and employment opportunities.*

This is more new ground for LEED. It's a quick proof to show the connection between a mix of housing prices in a community and sustainability, but, unfortunately, we are only given the intent. Still, it is a good intent. Often, affordability and sustainability are at odds because the former offers less profit and the latter more cost. It is refreshing to see LEED providing value in affordability.

> ***Intent -*** *Promote walking and bicycling by providing safe, appealing, and comfortable street environments.*

This is a nice intention but the applications are a bit odd. The requirements set a minimum building height and minimum set back along the 'walkable street,' without explaining why this makes a street any more walkable than another.



Intent - *Promote communities that are physically connected to each other. Foster community and connectedness beyond the development.*

In practical terms, this means aligning a new development's streets with those of surrounding areas. On a more theoretical level, it calls to mind Howard's Garden City arrangement in which communities would be physically separate but connected by transit. In contrast, LEED ND seeks to join communities directly, allowing walking access as well as vehicular.

NPD p3: Connected & Open Community
Option 1

Intent - *Promote socially equitable and socially engaging communities by enabling citizens from a wide range of economic levels, household sizes, and age groups to live within a community. Promote architectural diversity.*

The first part of this intention is closely aligned with that of Le Corbusier in his Radiant City. He wanted people from all income levels to live together. This was closely tied to his political views. One might argue that a mix of incomes reduces automobile use because it brings service workers closer to moneyed classes. But, USGBC doesn't make this connection and simply leaves us to accept that this economic mix is preferable. The problem is that discontents may decry this as social engineering. It is unlikely that wealthy communities will accept a neighboring community with a 'wide

range of economic levels' without resistance. As for architectural diversity, this also may be rejected by communities that value architectural homogeneity. In either case, this intent may be difficult to directly justify on purely environmental grounds.

> ***Intent -*** *Encourage transit use and reduce driving by creating safe and comfortable transit facilities.*

Transit is central to LEED ND. It was also central to the Garden City and the Radiant City. Most urban planners today see transit as a solution to several problems. It remains to be seen how well American cities, most of which have been designed for auto use, can adapt to transit use. It is also difficult to tell how much of this transition will take place due to legislation and incentives such as the LEED ND program.

> ***Intent -*** *To provide a variety of open spaces close to work and home to encourage walking, physical activity and time spent outdoors. Promote socially equitable and socially engaging communities by providing appealing and comfortable spaces for social networking, civic engagement, personal recreation, and other activities that create social bonds between individuals and groups.*

LEED has long encouraged healthy buildings, so provision of open space for health reasons is a natural extension. However, encouraging a socially equitable and socially engaging environment is very new for USGBC. The goal of open space would comport well with Wright's plan and the idea of social engagement would surely further the intentions of Le Corbusier and Howard. It will be interesting to see if the USGBC continues to emphasize the health benefits of these spaces, or whether they take a proactive stand for social equity on its own merits. The question is not so much whether this is a worthy goal, but whether the organization can successfully add social equity to its mandate.

> ***Intent -*** *Enable the widest spectrum of people, regardless of age or ability, to more easily participate in their community life by increasing the proportion of areas that are usable by people of diverse abilities.*

‘Universal Design’ is a recent concept that builds on advances made by the Americans with Disabilities Act (ADA) to make spaces available to people with physical limitations. The idea is that it is not necessary to make special accommodations for handicapped persons if a design is barrier-free to begin with. This is another area new to LEED, since it is not directly a sustainability-related concern. Here is yet another example of LEED growing beyond just green building standards to encompass an entire suite of goals related to the built environment.

> ***Intent -*** *Promote socially equitable and socially engaging communities by encouraging community participation in the project design and planning and by involving the people who live or work in a community in deciding how it should be improved or how it should change over time.*

This idea would likely be rejected by all three previously mentioned utopians. Each believed he had a holistic plan that addressed society’s needs comprehensively. None would have wanted his plan subjected to the whims of the masses. Wright thought his plan should be implemented throughout the country as it was and Le Corbusier wanted nothing to do with a democratic process, seeking instead totalitarian support from either the left or the right. Engaging the community always seems like a good idea until one actually tries it. Usually the sane and productive eschew public debate while the nuts and the NIMBYs come out in force.

> ***Intent -*** *Promote community-based and local food production to minimize the environmental impacts and public health impacts – such as asthma, respiratory diseases, and injuries from motor vehicles – from transporting food long distances. Reduce the risk of cancer and other chronic diseases by increasing direct access to fresh foods.*

This is another great idea whose justification is a bit of a stretch. Are farmer’s markets really going significantly curtail motor vehicle injuries? The problem with

basing a good idea on a weak premise is that it inoculates the populace against the idea and they resist it again even when a strong premise comes along. On the other hand, the idea of communal self-sufficiency for food production resonates clearly with both Wright and Howard.

> ***Intent -*** *Encourage walking, bicycling and transit use. Reduce urban heat island effects. Improve air quality. Discourage excessive motoring speeds. Reduce cooling loads in buildings.*

This is the justification for planting street trees. Although they are called street trees, they are usually planted in pedestrian areas, so it is not clear how they would reduce motoring speeds. Still, bringing the garden into the city is consistent with a utopian vision.

> ***Intent -*** *Encourage the design, construction or retrofit of buildings to utilize green building practices.*

This is the heart of the traditional USGBC mandate. In fact, if LEED ND were only concerned with green buildings, the whole of the guidelines could be reduced to this single intention. The fact that the scope of the guidelines is so much broader shows that the organization is broadening its interest to other areas of social welfare.

> ***Intent -*** *Encourage the preservation and adaptive use of historic buildings, which represent significant embodied energy and cultural value, in a manner that preserves their historic materials and character-defining features.*

While it's true that historic buildings represent significant embodied energy, this is also true of ahistorical buildings as well. The accurate differentiator lies in the buildings' cultural value. But, why does this concern the USGBC? What about an historic building with poor energy efficiency and poor air quality? Why should this building receive a LEED point? Also, why give credit for preserving an historic building when one would have to do so anyway? Although great harm has been done by clearing away good old

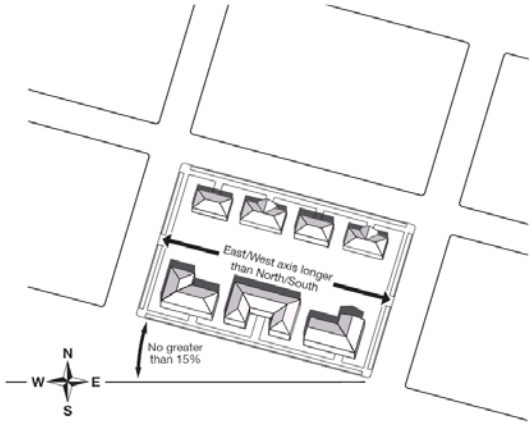
buildings in order to make way for bad new ones, taking a stand in favor of historicism seems an oddly nostalgic extension of USGBC's mandate.

> ***Intent -*** *Preserve existing tree canopy, native vegetation and pervious surfaces while encouraging high density, smart growth communities.*

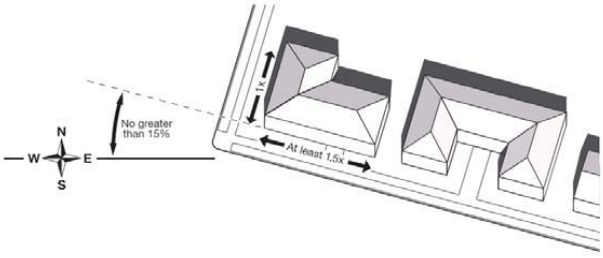
It is significant that LEED ND references smart growth, because this is a complete planning ideology with its own set of strategies. It is generally compatible with LEED provisions, so it is a safe reference. But, smart growth has not been universally accepted, so those who oppose smart growth might be inclined to oppose LEED ND by association.

> ***Intent -*** *Achieve enhanced energy efficiency by creating the optimum conditions for the use of passive and active solar strategies.*

One application of this intent is to orient city blocks such that they are conducive to optimal solar orientation of the buildings that will later occupy them. This may offer minimal benefit. The other option, perhaps more directly useful, is to optimize the solar orientation of the buildings themselves.



Solar Orientation: block orientation



Solar Orientation: building orientation

Intent - *Encourage on-site renewable energy self-supply in order to reduce environmental and economic impacts associated with fossil fuel energy use.*

This credit is only worth between one and three points, but could be critical to a utopian community. Although LEED does not make self-sufficiency a priority, the way preceding utopias did, it does reward it. Taken as a whole, LEED favors a completely self-sufficient environment.

Intent - *Minimize light trespass from site, reduce sky-glow to increase night sky access, improve nighttime visibility through glare reduction, and reduce development impact on nocturnal environments.*

This credit is a holdover from LEED NC. Although nighttime sky visibility is nice for some applications, it is not clear how it is directly related to sustainability. Also, it may run counter to safety (and, thereby health) issues, especially in dense urban environments.

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It is unlikely that the USGBC committee that drafted the Neighborhood Development Rating System had any thought of referencing, let alone reinventing or competing with, century-old utopian urban theories. Still, the comparison is worthy since LEED ND seeks to answer the same question as its forebears, namely, How shall we live? Also, putting LEED ND in the context of utopian plans forces us to evaluate it from a holistic perspective that was likely never intended. Yet, this perspective may find the rating system less wanting than it would be were it less ambitious.

Although serious discussion of utopian plans has largely been abandoned by modern planners and architects, there are current theories that seek to provide ideal planning guidelines. Two of these include Smart Growth (mentioned earlier) and New Urbanism. How does LEED ND compare to these theories?

What is New Urbanism? According to William Morrish ("Urban or Suburban" 1996), "New Urbanism is an economic, social, and environmental education system, a public policy exploration, and a community-building framework that shifts architecture from its status as "object" into a system encompassing more than buildings." New Urbanism goals include concentrating commercial activities, including shopping and working, in town centers. As a way of convincing the public to accept this anti-sprawl approach, New Urbanists use traditional architectural styles common to the local region. As advocate Andres Duany notes, "Style is a weapon." One significant criticism of this theory is that it tries to accommodate entire communities within towns of 5,000 people. How a robust economy can exist within these confines is not yet resolved.

A related set of objectives are contained within the Smart Growth movement.

> "Smart growth refers to an overall set of broad goals and policies designed to counteract sprawl. These usually include: (1) limiting outward expansion, (2) encouraging higher density development, (3) encouraging mixed-use zoning as distinct from fully segregating land uses, (4) reducing travel by private vehicles, (5) revitalizing older areas, and (6) preserving open space. Promoting more affordable housing may or may not be an explicit goal of smart growth programs." (Anthony Downs, "What Does 'Smart Growth' Really Mean?" *Planning*, April 2001)

Obviously, Smart Growth objectives are closely related to those of both New Urbanism and LEED ND. All systems include anti-sprawl measures as core values. Unfortunately, this puts these theories at odds with a decades-old American trend toward diffusion from downtown areas into the suburbs. Ironically, all of these theories intend to improve quality of life by keeping people in dense cities, after generations of individuals have tried to improve the quality of their lives by leaving them. Although LEED ND attempts to reward provision of affordable housing, generally speaking, the most affordable

housing is found furthest from urban employment centers. As cities densify, (and, especially if quality of living in them increases) gentrification follows. Any attempts to override this condition result in market inefficiencies that can prove detrimental to municipal revenue.

There are other challenges to the notion that density is the answer to suburban woes. Joel Garreau (Edge City – Life on the New Frontier, 1992) writes about what he calls “Edge Cities.” He describes them as being in between downtown and suburban areas. These are employment centers that have more jobs than bedrooms. Garreau notes that “already, two thirds of all American office facilities are in Edge Cities, and 80 percent of them have materialized in only the last two decades.” First the people moved out to the suburbs, then the jobs moved to quasi-suburban centers. What would it take to bring them back to the urban core? It is difficult to imagine what would reverse this trend.

Another problem is noted by Jim Heid (Greenfield Development Without Sprawl: The Role of Planned Communities, ULI, 2004). He claims that the United States population will grow by some 50 million by 2025, and that “infill strategies, even if universally accepted, cannot happen fast enough or in great enough numbers to make much of a difference by 2025.” He argues that many of the goals of Smart Growth can still be fulfilled with Greenfield development, even if the development is not contiguous or directly linked to existing urban cores.

Perhaps any overarching urban improvement strategy should begin with a cogent summary of irrefutable goals. Manuel Castells offers one such vision in “Beyond the Crisis: Toward a New Urban Paradigm.”

> There are some basic needs and desires that cities should provide: a decent, affordable shelter; a healthy environment; adequate urban infrastructure; a communication/transportation system that ensures mobility and connectivity; personal safety and psychological peace of mind; access to health and education; a spatial form that facilitates sociability, anchored in public spaces throughout the metropolitan area; the capacity to satisfy a share of the basic needs without depending on commercial consumption…(urban farming); the ability to express peoples' culture at large…; the integration between the built and the natural environment.

I think LEED ND would do well to formulate its own manifesto to stand, fall, or mutate before the will of those who will pay for it, support it, and implement it. Good intentions are limited without substance because common sense is a fickle phantom that belongs to the hour. Every action has both benefits and costs. LEED ND is missing a discussion of what these may be.

Finally, we should also keep in mind that even good plans are often abandoned or even ignored. Leo Marx (The American Ideology of Space, p77) asked, "Can there be any doubt that the prevailing American ideology of space has done more to shape the national terrain than the ideas and practices of our most gifted architects, landscape architects, and planners?...all their efforts put together hardly begin to compare with the results of the countless uncoordinated individual, corporate, and governmental decisions made in accordance with the reigning ideology of space." Be that as it may, those of us in the planning and design professions still cling to the idea that we can somehow make things better. And maybe, if we can only get the plans right, utopia will be just around the corner.

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