LEED-ND – Tool Summary

Authors

Name	Organisation	Origin
-	Congress of New Urbanism (CNU)	Industry
-	USGBC	Gov
-	NRDC	Gov
Various	LEED for neighborhood Development Core Committee	Mix

Info

Date:
Public ballot and pilot projects from 2007
Official launch Summer 2009

Place of origin:
US

Homepage:
http://www.usgbc.org/DisplayPage.aspx?CMSPageID=148

References:
- USGBC, 2009a. LEED 2009 for Neighborhood Development Rating System
- USGBC, 2009b. LEED 2009 for Neighborhood Development Fact Sheet

Latest use:
On-going since 2007 with more than 200 pilot project, most recent in Feb 2010 is Melrose Commons, Bronx, New York, US

Download:
http://www.usgbc.org/ShowFile.aspx?DocumentID=6824

Description

"The LEED 2009 for Neighborhood Development Rating System is a set of performance standards for certifying the planning and development of neighborhoods. The intent is to promote healthful, durable, affordable, and environmentally sound practices in building design and construction." (USGBC, 2009a, p. xiv)

"LEED for Neighborhood Development recognizes development projects that successfully protect and enhance the overall health, natural environment and quality of life in our communities. The rating system encourages smart growth and New Urbanist best practices by promoting the location and design of neighborhoods that reduce vehicle miles traveled (VMT) and creating developments where jobs and services are accessible by foot or public transit. It also promotes an array of green building and green infrastructure practices, particularly more efficient energy and water use."

"LEED for Neighborhood Development is designed to certify exemplary development projects that perform well in terms of smart growth, new urbanism, and green building. Projects may constitute whole neighborhoods, portions of neighborhoods, or multiple neighborhoods. Projects are often mixed-use, though small single-use projects that complement existing neighborhood uses may also use the rating system. Local jurisdictions should not use LEED-ND as a replacement for comprehensive planning, however, many local jurisdictions may find that LEED for Neighborhood Development is a meaningful tool to help promote sustainable land development if incentivized or used as a guideline when revising local codes and regulations."(USGBC, 2009b)

Key Theoretical Background

"The work of the LEED-ND core committee, made up of representatives from all three partner organizations, has been guided by sources such as the Smart Growth Network's ten principles of smart growth, the charter of the Congress for the New Urbanism, and other LEED rating systems." (USGBC 2009a, p. xii)
"LEED for Neighborhood Development (LEED-ND) integrates the principles of smart growth, New Urbanism and green building…" (USGBC 2009b)
This includes related theories originating mainly from the US like transect planning, urban village, neo-traditional urbanism, compact city and transit oriented development. Draws heavily from Farr's "Sustainable Urbanism".
"Subject matter experts representing the U.S. Green Building Council (regional councils and chapters), the Congress for the New Urbanism (chapters and membership in regions without chapters), and Smart Growth America (members of Smart Growth America's State and Local Caucus or their designees)." (USGBC 2009a, p. 109)

SUD Framework

"The impacts are defined as the **environmental** or **human effect** of the design, construction, operation, and maintenance of the building, such as greenhouse gas emissions, fossil fuel use, toxins and carcinogens, air and water pollutants, and indoor environmental conditions. In the LEED for Neighborhood Development Rating System, social and public health benefits were added to the impact categories, and the impact categories were then applied at the neighborhood scale." (USGBC 2009a, p. xiii)
"The following credit categories are included in the rating system:
•**Smart Location and Linkage** encourages communities to consider location, transportation alternatives, and preservation of sensitive lands while also discouraging sprawl.
•**Neighborhood Pattern and Design** emphasizes vibrant, equitable communities that are healthy, walkable, and mixed-use.
•**Green Infrastructure and Buildings** promotes the design and construction of buildings and infrastructure that reduce energy and water use, while promoting more sustainable use of materials, reuse of existing and historic structures, and other sustainable best practices.
•**Innovation and Design Process** recognizes exemplary and innovative performance reaching beyond the existing credits in the rating system, as well as the value of including an accredited professional on the design team.
•**Regional Priority** encourages projects to focus on earning credits of significance to the project's local environment. These credits acknowledge the importance of local conditions in determining best environmental design and construction practices as well as social and health practices." (USGBC 2009b)

Input

"LEED for Neighborhood Development differs from other commercial and residential LEED rating systems as it has three stages of certification, which relate to the phases of the real estate development process.
•**Stage 1 – Conditionally Approved Plan**: provides the conditional approval of a LEED-ND Plan available for projects before they have completed the entitlements, or public review, process. It is envisioned that completing Stage 1 will help projects get support from the local government and from the community.
•**Stage 2 – Pre-Certified Plan**: pre-certifies a LEED-ND Plan and is applicable for fully entitled projects or projects under construction. Completing this review can help projects secure financing, expedited permitting or attract tenants.
•**Stage 3 – Certified Neighborhood Development**: completed projects formally apply for LEED certification to recognize that the project has achieved all of the prerequisites and credits attempted." (USGBC 2009b)

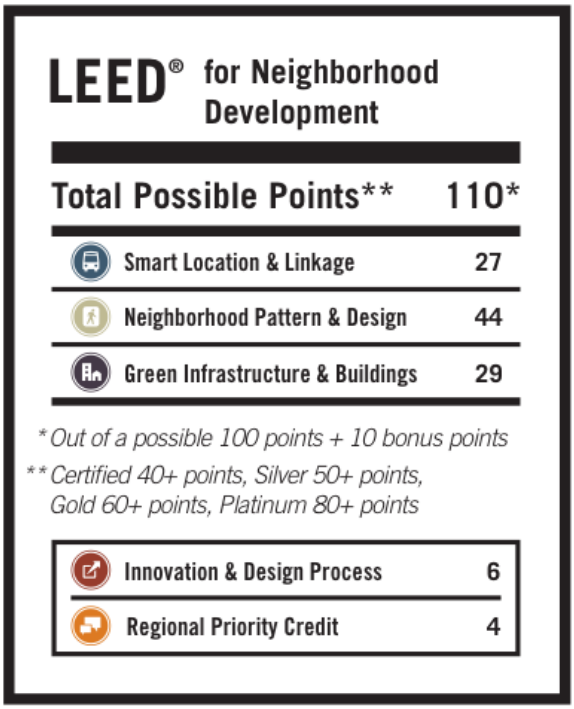
Methods

"A combination of approaches, including energy modeling, life-cycle assessment, and transportation analysis, is used to quantify each type of impact." (USGBC 2009a, p. xiii)

Any method that can calculate the specification of the credits (indicators) is acceptable. The INDEX software from criterion planners is closely linked to the LEED-ND and its indicator formulas can be applied here.

Output

"LEED for Neighborhood Development creates a label, as well as guidelines for both decision making and development…"



"The allocation of points among credits is based on the potential environmental impacts and human benefits of each credit with respect to a set of impact categories.
[…]LEED 2009 uses the U.S. Environmental Protection Agency's TRACI$_3$ environmental impact categories as the basis for weighting each credit. TRACI was developed to assist with impact evaluation for life-cycle assessment, industrial ecology, process design, and pollution prevention. LEED 2009 also takes into consideration the weightings developed by the National Institute of Standards and Technology (NIST); these compare impact categories with one another and assign a relative weight to each. Together, the two approaches provide a solid foundation for determining the point value of each credit in LEED 2009.
The LEED 2009 credit weightings process is based on the following parameters, which maintain consistency and usability across rating systems:

- All LEED credits are worth a minimum of 1 point.
- All LEED credits are positive, whole numbers; there are no fractions or negative values.
- All LEED credits receive a single, static weight in each rating system; there are no individualized scorecards based on project location.
- All LEED rating systems have 100 base points; Innovation and Design Process and Regional Priority credits provide opportunities for up to 10 bonus points." (USGBC 2009a, p. xiii)

Criteria

Below is a list of the prerequisites and credits that give points. The amount of points depends on the fulfilment of different design indicators or measurements.
There is some overlap where certain credits get more points if a certain level is achieved in other credits. We list these links in the credit (CRED) column for the SLL and NPD credits.

CAT	ID	Criterion	CRED
SLL	P3	Wetland and Water Body Conservation	GIB.C8
SLL	P4	Agricultural Land Conservation	SSL.P1
SLL	C1	Preferred Locations	NPD.C4
SLL	C5	Housing and Jobs Proximity	NPD.C4
SLL	C7	Site Design for Habitat or Wetland and Water Body Conservation	SSL.P3, SSL.C9
SLL	C8	Restoration of Habitat or Wetlands and Water Bodies	SSL.C7
SLL	C9	Long-Term Conservation Management of Habitat or Wetlands and Water Bodies	SSL.C7
NPD	P2	Compact Development	SSL.P1, SSL.C3
NPD	C3	Mixed-Use Neighborhood Centers	SSL.C3
GIB	C8	Stormwater Management	SSL.C2, NPD.C1, NPD.C2, NPD.C3
GIB	C10	Solar Orientation	NPD.C2

LEED-ND – Tool Review

Comments on the tool regarding the various assessment criteria.

General

Application (Scale and Design Phase)

The rating is specifically created for sites from 2 buildings up to 320 acres in size, based on the assumption of maximum walking distance (1/2 mile) to a transit stop such as rail. The rating can be applied to larger sites upon consultation and eventual adaptation.
It is clearly made to evaluate designs, although it can also evaluate existing neighbourhoods.
The tool is designed to create a specific type of residential neighbourhood, and since the vast majority of the pilot projects is in the US and Canada, one might argue that this type of neighbourhood is specific to those regions.
Other types of urban areas such as campuses would not be directly assessed by the tool without adaptation. The existence of other large scale/regional uses and their areas is acknowledged but not covered or addressed in detail. The focus of the tool is on residential use, and the principles are from the perspective of the residential building out up to the walking limit (1/2 mile), not the services. This reduces the scope of the tool to this type of project.

Sustainability Principles

There is no attempt to relate the sustainability dimensions, quality of life indicators or sustainable development policy to the design dimensions of urban form and buildings.
The tool is only based explicitly on two of the core sustainability dimensions: environmental and social. The economic dimension is maybe implicitly covered but not addressed by specific categories or indicators.
There are very few references given for the principles followed, the standards presented and benchmarks specified. The references come eventually from practice (CNU, Douglas Farr) and policy () only, not directly from research.
The tool was produced and compiled by a committee with largely the involvement of practitioners, policy makers and governmental organisation representatives. As such, research and empirical evidence is incorporated indirectly through the expertise of those committee members and of the community involved in the consultation process.

Assessment Criteria

The residential focus brings a very local scale to the assessment, as the perspective of businesses or institutions with larger catchments is not considered. This also reflects the lack of concern with the economic vitality of the area. It can only be applied to a specific type of residential area.
The criteria are weighted through the award of different points.
There are some prerequisite criteria for each assessment category, which ensures to some extent a holistic approach, rather than amassing many points in one dimension only.

Indicators and Methods

All of the indicators and methods are design indicators and don't have an explicit link to sustainability criteria or indicators.
The indicators are extremely detailed in their description, definition and benchmark values. This is only possible because a very specific outcome is expected or desired in design terms, not a generally sustainable outcome or a variety of projects types. This approximates in many indicators a design code. Some indicators specify CCR's to regulate more detailed behaviour, like keeping shop windows visible during the night without shutters.
There is a reference to INDEX's indicators and its list of land uses for neighbourhood completeness.

Output

By rating the neighbourhood/project it assigns a sustainability degree to the bounded area. It is not the contribution to the sustainability of the region. One could imagine a project with a high rating next to a "sea" of low rating ones? The value is absolute, the weights are fixed.

Local/Global Context

"LEED for Neighborhood Development places emphasis on the site selection, design, and construction elements that bring buildings and infrastructure together into a neighborhood and relate the neighborhood to its landscape as well as its local and regional context."
The three dimensions would in principle cater for the three scales of concern: regional, local and building. It's in the detail: the criteria and indicators of each, that the local focus is stressed.
For example, "smart location" has a big weight overall but is only a very local concern, with the indicators relating to the boundary with adjacent sites, the connection of streets with the vicinity, and the type of adjacent site in terms of density and use. Nowhere is a mention of the location within the region, what role it plays and what impact the regional position might have.