A FORGOTTEN BOOK?
HOW A 36-YEAR-OLD BOOK
INFLUENCED GREEN DESIGN

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INTRODUCTION

The list of books and references on green building and sustainable development has grown tremendously over the last decade and a half. Much of this has coincided with the growth of the LEED and other green rating systems, as well as society's realization about the benefits and potential of sustainable design. Looking back though, there were many wonderful and influential texts written around the time of the 1970s' oil/energy crisis that may have never been seen by today's professional. This article examines one of those important texts, A Pattern Language: Towns, Buildings, Construction, *and briefly outlines how it influenced some of the green practices seen today.*

KEY WORDS

A Pattern Language, books, CNU, green building, LEED, neighborhood development, sustainable development

A FORGOTTEN BOOK

Architects are known for their extensive book collections. The shelves of many firms and professionals contain various topics such as history, religion, and philosophy, as well as biographies and monographs of famous projects. There is even a book about the bookshelves of architects.[1] If most architects are like me, after their initial reading most of these books collect dust unless there is a particular subject matter or topic to research. However, there are a few exceptions. Some of my favorites will be taken down periodically and reread or, at the least, flipped through to catch the highlights or to try to remember what the notes scribbled in the margins were for. One of these "classics" is Christopher Alexander's *A Pattern Language.* In my most recent perusing of this tome I noticed some interesting similarities to another document I had been reviewing, the LEED 2009 for Neighborhood Development.

For those not familiar with *A Pattern Language,* it was first published in 1977 and was a groundbreaking work in architecture, planning, and the sustainability movement. Influenced by the then-emerging language to describe computer programming and design, it has the structure of a network.[2] The book actually creates a new language, a "pattern language" based on observations of timeless truths noted as the patterns. These patterns can be combined to form an individual language for a community or an individual home. The 253 patterns are

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arranged in the book from large scale to small, from the entire regional area down to the individual particulars of a home. One of the unique things about the book is that the author's intent is for these patterns to be for everyone, not just professionals such as architects, engineers, and city planners. In that way it is not only a guide to embolden ordinary people to design their own houses, streets, and communities,[3] but a guide to community activism. As Alexander puts it, "At the core . . . is the idea that people should design for themselves their own houses, streets, and communities. This idea . . . comes simply from the observation that most of the wonderful places of the world were not made by architects but by the people."[4]

According to Planetizen, *A Pattern Language* is one of the top 20 urban planning books of all time,[5] and although it was first introduced over 30 years ago, the book is still very popular. According to Google Scholar Citation Search, the book has been citied 5,574 times since 1982. This, of course, would not include the sure to be many more citations from its publication date in 1977 to 1982, nor the ones not included in the Google Scholar database. The online retailer Amazon lists *A Pattern Language* as the second most popular book in Architectural Criticism[6] and the ninth most popular in Urban & Land Use Planning[7] based on number of copies sold; therefore, it is clear that even 35 years after publication it is still selling well today and is reported to be selling at least 10,000 copies a year still. *A Pattern Language* is just one of Alexander's popular books, along with *The Timeless Way of Building* and *Notes on the Synthesis of Form.* Alexander is still publishing, as noted by last year's release of *The Battle for the Life and Beauty of the Earth.*

Despite this popularity, Alexander is still considered an outlier in the profession. He is seen more as a sage, or "architectural mystic,"[8] than a practitioner. His works have rarely graced the pages of popular architectural print media, and among architecture's elite he is seen as very polarizing.[9] Despite his popularity, the text is rarely used in architectural education,[10,11] even though as recently as 2009 he was awarded the Vincent Scully Prize by the National Building Museum.[12]

It is possible that this seminal text is seen as more important to those outside the design and construction industry. Its first influence outside of this industry was in the computer science world. Computer scientists saw its format as a way to build their own language for computer programming. This led to software design, user interface design, and even gaming. Will Wright, creator of "The Sims," cites *A Pattern Language* as his influence,[13] and the language was influential on the development of the iPhone and Wikipedia.[14] Additionally, the writings of Alexander have been championed by the Transitions Movement.[15]

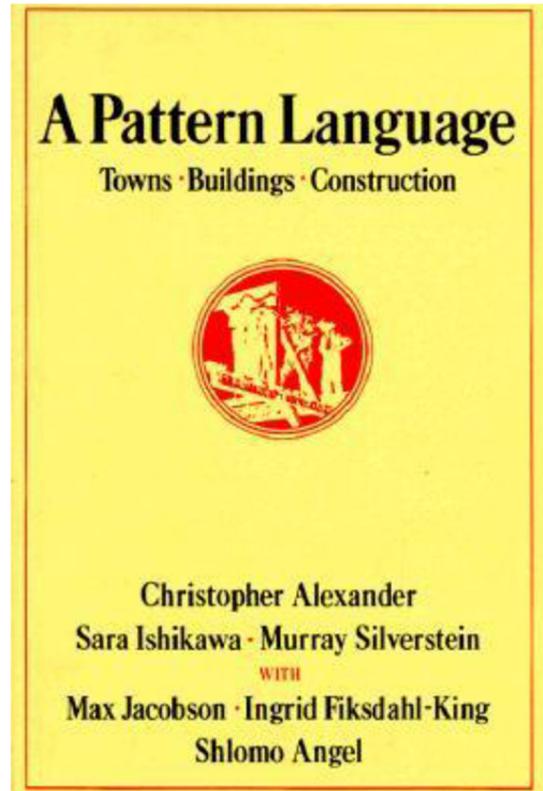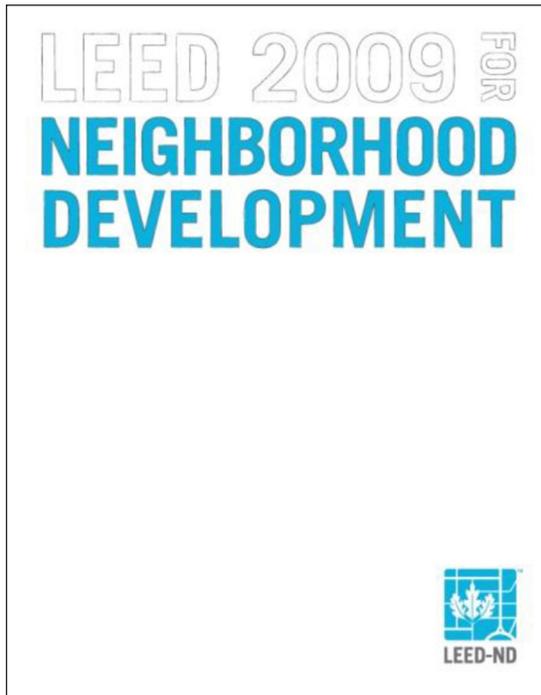**FIGURE 1.** Cover, *A Pattern Language,* Oxford University Press.

FIGURE 2. Cover, LEED 2009 for Neighborhood Development, USGBC.

According to Transition U.S., "the Transition Movement is a vibrant, grassroots movement that seeks to build community resilience in the face of such challenges as peak oil, climate change, and the economic crisis. It represents one of the most promising ways of engaging people in strengthening their communities against the effects of these challenges, resulting in a life that is more abundant, fulfilling, equitable, and socially connected."[16] In these fields, where effectiveness is valued more than visual, *A Pattern Language* quickly caught on and became a powerful tool. Many other fields have begun using pattern language technology successfully, including molecular biology, economics, product engineering, and organizational management.[17] An important field that has embraced this, even if it doesn't realize it, is sustainable design.[18]

Regardless of what one thinks of his bombastic character and almost messianic position,[19] Alexander's influence cannot be ignored. Besides its influence on computer programming, the book's most lasting influence on architecture and planning seems to be the theories on place making. This is evident by some of the subsequent literature with similar ideas: William Whyte's *The Social Life of Small Urban Places* (1980), Alex Kreiger's *Towns and Town-Making Principles* (1991), Peter Calthorpe's *The Next American Metropolis* (1993), and more recently Doug Farr's *Sustainable Urbanism* (2007) and Andres Duany and Jeff Speck's *The Smart Growth Manual* (2010). Quite a few of these were involved in the founding of Congress for the New Urbanism[20] and the Smart Growth movement.

Out of that Congress and through the USGBC's structure, LEED-ND, or LEED for Neighborhood Development, was born. Just about every architect, engineer, and planner has been exposed to LEED either through industry literature, continuing education, and the buildings they use, or through involvement in a LEED project. Through this exposure, design professionals are still experiencing and being influenced by the ideas of *A Pattern Language.* Examining the similarities brings to light the obvious influence this book had on those who developed the LEED-ND guidelines.

The similarities start with the organization of the book and the LEED-ND framework. *A Pattern Language* is divided into three divisions: Towns, Buildings, and Construction.[21] This same macro to micro organization is used in the three main categories of LEED-ND, Smart Location and Linkage, Neighborhood Pattern and Design, and Green Infrastructure and Buildings.[22] Both focus first on the area as a whole in concert with natural phenomena and what makes a good location for a town or neighborhood. Next they both define how the buildings and functions of a community are related and what characteristics they should have. LEED-ND even possibly borrowed the term "pattern" from Alexander in naming this section.

Lastly, they both then turn their attention to the actual construction of buildings. This is one area where the similarities break down though. Obviously, the LEED-ND focus on buildings has to do with energy and water savings, materials used, waste reduction, etc.—the same focus as LEED for New Construction and LEED for Homes. In *A Pattern Language,* the focus is on actual construction methods and the spatial relationships of the parts of a home or building to achieve that "quality without a name."

LEED-ND	*A Pattern Language*
Smart Location and Linkage	Towns
Neighborhood Pattern and Design	Buildings
Green Infrastructure and Buildings	Construction

Similar to the LEED programs, *A Pattern Language* is seen as a kind of checklist of things to do in a project. For example, it states that if you do these items 1 through 25, you can achieve "X". This type of checklist is very attractive to do-it-yourselfers and builders especially. Design professionals typically look skeptically at these sorts of things. Maybe it is a little hubris, a little protectionist, or a little of both; but shouldn't we want to make it easier for non-design professionals to achieve good design? They are not always going to use professional designers, and when they don't, it would be better if they at least used some of the principles we do. One of the original goals of *A Pattern Language* was to let everyone have access to good architecture. This is another area where the two documents diverge. While *A Pattern Language* is meant for architects and non-architects alike, LEED-ND may be too technical for the layman, and each LEED program provides points for the involvement of a LEED-Accredited Professional. One area where LEED-ND differs from the other LEED areas is in recognizing community involvement and the charette process that brings together those from different backgrounds.

PATTERNS AND CREDITS

Once you look further into the actual patterns from *A Pattern Language* and the credit areas of LEED-ND, the similarities are quite striking. In *A Pattern Language,* each of the patterns is numbered 1 through 253 followed by the pattern name (e.g. 4 AGRICULTURAL VALLEYS). In LEED-ND the credits and prerequisites are organized by their category then number, and then name. In LEED-ND, SLL stands for Smart Location & Linkage; NPD for, Neighborhood Pattern & Design; and GIB for, Green Building & Infrastructure (e.g. SLL Credit 4: Bicycle Network and Storage). Below are just a select few of the LEED-ND credit areas followed by the similar pattern from *A Pattern Language.*

### SLL Prerequisite 4: Agricultural Land Conservation[23]
Intent: To preserve irreplaceable agricultural resources by protecting prime and unique soils on farmland and forestland from development.

4 Agricultural Valleys[24]
The land which is best for agriculture happens to be best for building too. But it is limited-and once destroyed, it cannot be regained for centuries.

Preserve all agricultural valleys as farmland and protect this land from any development which would destroy or lock up the unique fertility of the soil. Even when valleys are not cultivated now, protect them: keep them for farms and parks and wilds.

FIGURE 3. Picture, Agricultural Valleys, pg. 28, *A Pattern Language.*
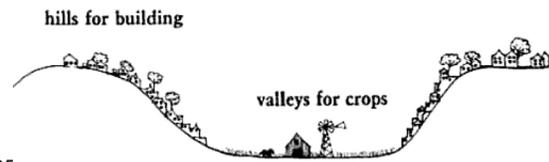
SLL Credit 4: Bicycle Network and Storage[25]

Intent: To promote bicycling and transportation efficiency, including reduced *vehicle miles traveled* (VMT). To support public health by encouraging utilitarian and recreational physical activity.

56 Bike Paths and Racks[26]

Bikes are cheap, healthy, and good for the environment; but the environment is not designed for them. Bikes on roads are threatened by cars; bikes on paths threaten pedestrians.

SLL Credit 5: Housing and Jobs Proximity[27]

Intent: To encourage balanced communities with a diversity of uses and employment opportunities.

9 Scattered Work[28]

The artificial separation of houses and work creates intolerable rifts in people's inner lives.

Use zoning laws, neighborhood planning, and tax incentives, and any other means available to scatter workplaces throughout the city. Prohibit large concentrations of work, without family life around them. Prohibit large concentrations of family life, without workplaces around them.

48 Housing In Between[29]

Wherever there is a sharp separation between residential and nonresidential parts of town, the nonresidential areas will quickly turn to slums.

SLL Credit 6: Steep Slope Protection[30]

Intent: To minimize erosion to protect habitat and reduce stress on natural water systems by preserving steep slopes in a natural, vegetated state.

169 Terraced Slope[31]

On sloping land, erosion caused by runoff can kill the soil. It also creates uneven distribution of rainwater over the land, which naturally does less for plant life than it could if it were evenly distributed.

NPD Credit 4: Mixed-Income Diverse Communities[32]

Intent: To promote socially equitable and engaging communities by enabling residents from a wide range of economic levels, household sizes, and age groups to live in a community.

35 Household Mix[33]

Encourage growth toward a mix of household types in every neighborhood, and every cluster, so that one-person households, couples, families with children, and group households are side by side.

NPD Credit 5: Reduced Parking Footprint[34]

Intent: To design parking to increase the pedestrian orientation of projects and minimize the adverse environmental effects of parking facilities. To reduce public health risks by encouraging daily physical activity associated with walking and bicycling.

103 Small Parking Lots[35]

Vast parking lots wreck the land for people.

22 Nine Percent Parking[36]

Very simply—when the area devoted to parking is too great, it destroys the land.

NPD Credit 7: Transit Facilities[37]

Intent: To encourage transit use and reduce driving by providing safe, convenient, and comfortable transit waiting areas and safe and secure bicycle storage facilities for transit users.

92 BUS STOP[38]

Bus stops must be easy to recognize, and pleasant, with enough activity around them to make people comfortable and safe.

11 Local Transit Areas[39]

Cars give people wonderful freedom and increase their opportunities. But they also destroy the environment, to an extent so drastic that they kill all social life.

20 Mini-buses[40]

Public transportation must be able to take people from any point to any other point within the metropolitan area.

NPD Credit 9: Access to Civic and Public Space[41]

Intent: To improve physical and mental health and social capital by providing a variety of open spaces close to work and home to facilitate social networking, civic engagement, physical activity, and time spent outdoors.

31 Promenade[42]

Each subculture needs a center for its public life: a place where you can go to see people, and to be seen.

NPD Credit 11: Visitability and Universal Design[43]

Intent: To enable the widest spectrum of people, regardless of age or ability, to more easily participate in community life by increasing the proportion of areas useable by people of diverse abilities.

155 Old Age Cottage[44]

Build small cottages specifically for old people. Build some of them on land of larger houses, for a grandparent; build others on individual lots, much smaller than ordinary lots. In all cases, place these cottages at ground level, right on the street, where people are walking by, and close enough to neighborhood services and common land.

26 Life Cycle[45]

Make certain that the full cycle of life is represented and balanced in each community. Set the ideal of a balanced life cycle as a principal guide for the evolution of communities. This means:

1. *That each community include a balance of people at every stage of the life cycle, from infants to the very old; include the full slate of settings needed for all these stages of life;*
2. *That the community contain the full slate of settings which best mark the ritual crossing of life from one stage to the next.*

These are just a few examples. Of the 53 prerequisite and credit areas in LEED-ND, 22 have a corresponding "pattern" with similar goals. Even a few more could be extrapolated and interpreted to have similar goals. This can't be a coincidence. The obvious lineage of influence is that it was an important text to people such as Andres Duany[46], one of the founding members of the CNU, with the CNU serving as one of the three collaborators in the development of LEED-ND. Dauny has said again and again that the whole birth of the CNU came about because of his wish to emulate the content of *A Pattern Language*[47]. This can be seen in the book by Jeff Speck and Andres Duany, *The Smart Growth Manual.* That book contains 148 principles, patterns really,[48] that add up to a language for community design, from entire regions to neighborhood streets. Much like LEED-ND, *A Pattern Language* advances the belief that in building something, say of a home or a neighborhood, one could also repair the world around it, and within it, so that the larger world at that one place becomes more connected, and more whole. The two follow the idea that communities can be shaped by choice or they can be shaped by chance,[49] and choice is sustainable. The absence of the community scale in sustainable design literature has been overshadowed by the focus on "green buildings"[50]. Alexander himself believes that architects can and must be engaged in sustainable design, but it must be more than just a collection of "bolt-on" mechanisms.[51,52] Alexander realized that design is iterative, it has steps. It is also adaptive but only when it is done in these steps. Much like his language, each step accepts feedback from the existing structure. An isolated design method can never be adaptive, and this has important implications for the direction of sustainable design.[53] This principle crosses many disciplines and underscores the connectedness of designers; therefore, it's not surprising that the text should become relevant again at a time when the designers of information technology systems, buildings, and cities are finding that they are all working within a common context.[54]

There have been numerous reviews of *A Pattern Language* over the last four decades, some as recently as 2013. How many books are reviewed almost 40 years after their first publication? This is yet another example of its importance and relevance. My intent is not to provide another review of *A Pattern Language.* It is simply to remind those that may have forgotten about it, introduce it to those that have yet to experience it, and show all how it has permeated and influenced the profession. Regardless of the criticisms of *A Pattern Language,* the influence it has had, and still has, on the building profession cannot be disputed. Builders, do-it-yourselfers, architecture and planning students, and young design professionals should not forget to include this text in their library. Additionally, those professionals that have been exposed to the book in the past should not forget the lessons and even reminders it still contains. Let's make sure this is not a forgotten book.

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