HOW TO USE LIGHT IMPRINT

You can use Light Imprint

» to develop a strategy for sustainability and pedestrian oriented design in an economical way

» to change the mindset of your community from a suburban model towards a New Urban and traditional neighborhood model.

» to reduce costs associated with conventional engineering practices

» to provide an organizational framework to complement and expand the effectiveness of Leadership in Energy Efficient Design for Neighborhood Development (LEED-ND)

» to complement other land planning approaches, including conventional suburban development, Low Impact Development, and Best Management Practices.

The next few pages discuss the content and format of Light Imprint.

FORMAT

Light Imprint is presented in two formats: the Handbook and the Website. These are meant to complement each other. All of the content of the handbook is available on the website in a searchable, user-friendly way. The website also includes additional photos and resources; it will be updated in real time. As Light Imprint evolves, more tools and relevant case studies will be added.

The Handbook

The majority of the handbook is devoted to the organization of Light Imprint tools. The Light Imprint Matrix is the primary organizing method.

The matrix is a summary of the Light Imprint tools described in the Light Imprint Handbook. It is a quick reference to which tools can be utilized to best implement LI techniques; it also shows where tools are most appropriately located along the transect.

General Tool Selection

LI tools are selected to be as inclusive as possible, offering a wide spectrum of solutions. LI emphasizes well-tested tools, techniques, and methods that some consider intrinsically green. Tools that are excluded usually involve highly technological and complex devices dependent on machines and systems whose cost and benefits are questionable.

Organization

To create a simple framework, the LI tools are classified into four main categories: Paving, Channeling, Storage and Filtration. Clearly, some tools can be used for more than one function. The LI Team's approach is to classify most tools by their principal function and refer to their benefits in other categories. For example, some tools in Storage may also be useful for Filtration.

The Transect

The Transect Zone Matrix is designed to serve as an organizational framework and is by its nature somewhat subjective. The LI Team suggests where on the rural to urban scale each tool is most useful. Depending on location on the transect, each project will have a specific set of needs.

Cost

Providing specific costs for products, material, labor, and maintenance for a particular project is not the main intent of this handbook. Initial costs and maintenance costs vary widely depending on location and availability of materials and labor.

LIGHT IMPRINT CLASSIFICATIONS:

Transect
T1 - Natural
T2 - Rural
T3 - Sub-urban
T4 - General Urban
T5 - Urban Center
T6 - Urban Core

Initial Cost
Low
Medium
High

Maintenance Cost
Low
Medium
High

Slope
Flat
Moderate
Steep

Climate
Cold
Temperate
Hot
Dry
Moderately Wet
Wet

Soil Quality
Poor Drainage
Medium Drainage
Good Drainage

The given costs, therefore, are well-researched approximations. Resources are provided for tools to enable detailed cost estimates for specific projects.

Many of the tools involve the use of plant material and natural vegetation. This book is not intended to be a plant selection guide. Although the LI Team is supportive of using native species, the members do understand that some non-native plants, where appropriate, can be adapted to local conditions. Non-native, invasive species should only be considered if maintained by knowledgeable caretakers. Engaging a horticulturalist with expertise in native plants is recommended.

Slope

Slope is determined by percentages of change in elevation over a certain distance. Typically, slope is analyzed to determine appropriate locations for drainage, roads, buildings, and other infrastructure. Special consideration must be given when slopes exceed reasonable grades for thoroughfares and infrastructure layouts.

LI design is said to lie lightly on the land. It promotes respect for the existing topography.

The tools have been selected to avoid significant grading and landscape disturbance wherever possible. It takes into consideration natural features, including ridges, valleys, drainage corridors, natural ecologies, and habitats. LI uses a three-part classification of slope as follows:

- Flat - 0-8%
- Moderate - 8-15%
- Steep - greater than 15%

Climate

Climate, the generally prevailing regional weather conditions (including percipitation and temperature) averaged over a series of years, is classified in a variety of ways throughout the United States and the world. LI uses the following six variables to define different climatic conditions:

- Cold - Average low below 32°F (0°C) for more than three months per year
- Temperate - Average low of below 32°F (0°C) for one to three months per year
- Hot - Average low never drops below 32°F (0°C)
- Dry - Average precipitation less than 10 inches (254 mm) per year
- Moderately Wet - Average precipitation between 11 and 60 inches (255-1,524 mm) per year
- Wet - Average precipitation more than 60 inches (1,524 mm) per year

Soils

Soil classification, often referred to as hydrology, is a very complex and much debated process. It is based on soil characteristics, which include additions, transformation, translocation, and removal. When combined, the characteristics describe the soil development process and composition. Due to the many variables, there are at least fifteen widely recognized soil classifications.

Soils have also been generalized into five broader types based on particulate size. Particulate size type and soil composition are represented by the soil texture triangle. This is useful in determining the drainage capabilities of soil with a given composition. This does not take into consideration the nutrient makeup of the soil. LI uses a three-part soils classification as follows:

- Poor Drainage - rock & clay
- Medium Drainage - silt & loam
- Good Drainage - loam & sand

Accessibility

Accessibility is an important factor in selecting tools, especially in the Paving category. These issues must be considered when calibrating each specific project. Life safety and fire codes shall always take precedence over the use of any tools.

Case Studies

Five communities are profiled as examples using Light Imprint. They provide a broad range of LI applications over a range of conditions based on topography, climate, soil, drainage, and development status. Projects chosen for case studies include the following:

Monteagle - Located on the Cumberland Plateau of the Tennessee mountains, the historic precedent of Monteagle uses LI tried and tested tools.

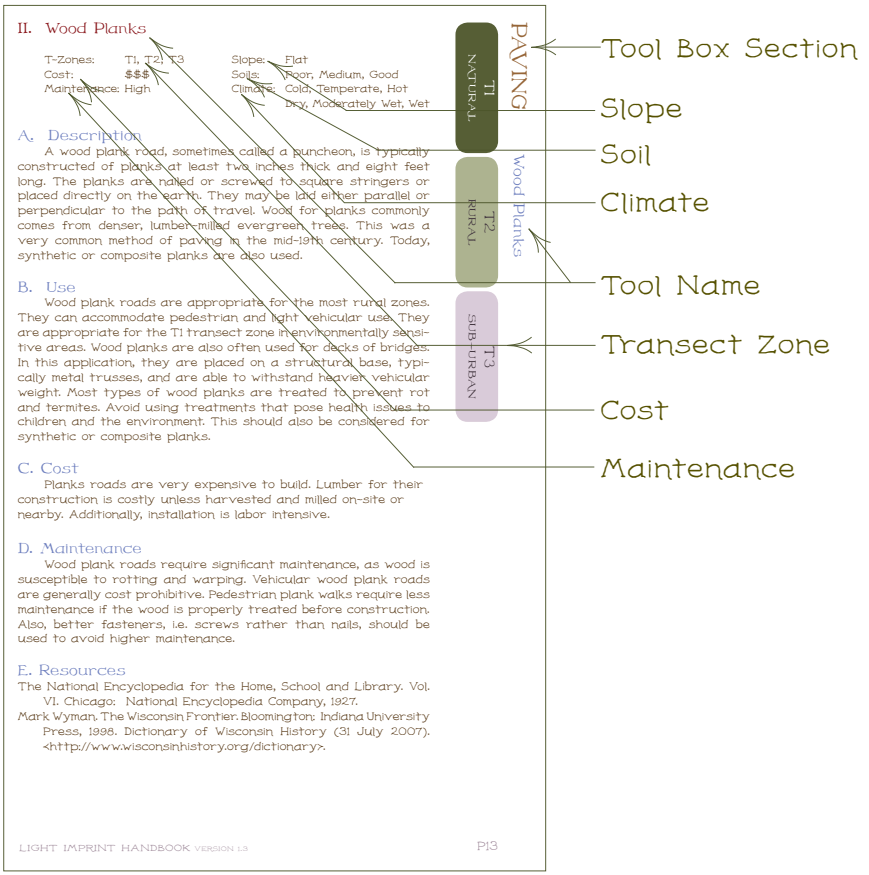
Habersham - Located on the coastal plain of South Carolina, Habersham's flat topography is enhanced by wetlands and sandy soil. Construction is nearly complete.

Griffin Park - Located in the rolling South Carolina foothills, Griffin Park is crisscrossed with

creeks and rivers, and has clay soils. The development is new and under construction.

Lockett - Located in Tennessee on the shoreline of the Cumberland River, Lockett has steep mountain slopes, bluffs, and ravines; it has rocky soil. It is a newly-planned New Urbanist community, conserving significant open space, designed with LI in mind.

Cheshire - Located in North Carolina at the foot of the Black Mountains, Cheshire is crossed by a creek and has clay soils. The general neighborhood of Cheshire is near completion while the town center is designed with LI tools.



Sample Toolbox Page