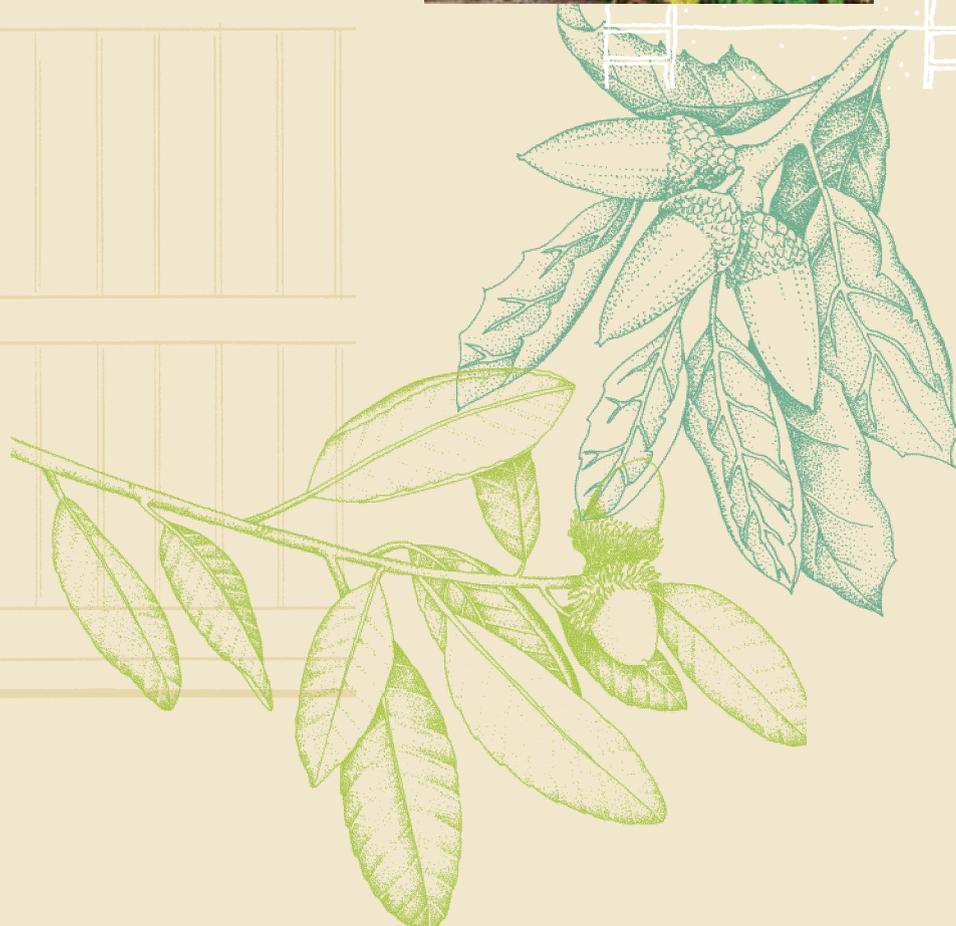
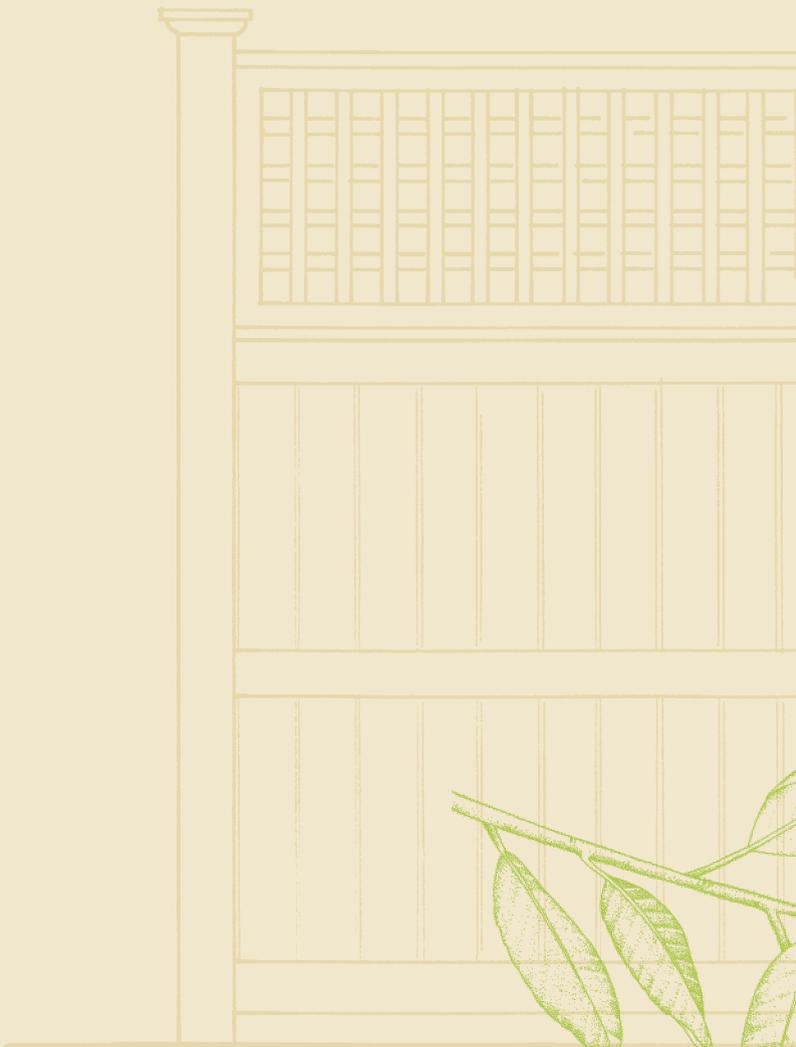


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Landscape Patterns

Throughout the United States there is an incredible range of climatic zones, microclimates, plant species, and landscape traditions. This section of the Pattern Book is intended to provide guidance for designers, volunteers, and homeowners regarding the private landscape elements found on individual lots within American neighborhoods.

This section begins with an overview of General Site Considerations. Following that, individual sections define the typical characteristics and elements of the hardscape and landscape improvements recommended for a lot. Finally, the Landscape Patterns Section concludes with pages describing Sustainable Practices and their implementation.



General Site Considerations

When laying out the lot, particular attention should be placed on site orientation. Ideally, a house would be situated to capture the cooling breezes from the southeast while placing the garage and buffer planting to screen from gusting northwesterly winds. The southwest corner, which receives the full intensity of the sun, should be planted with shade-providing canopy trees.

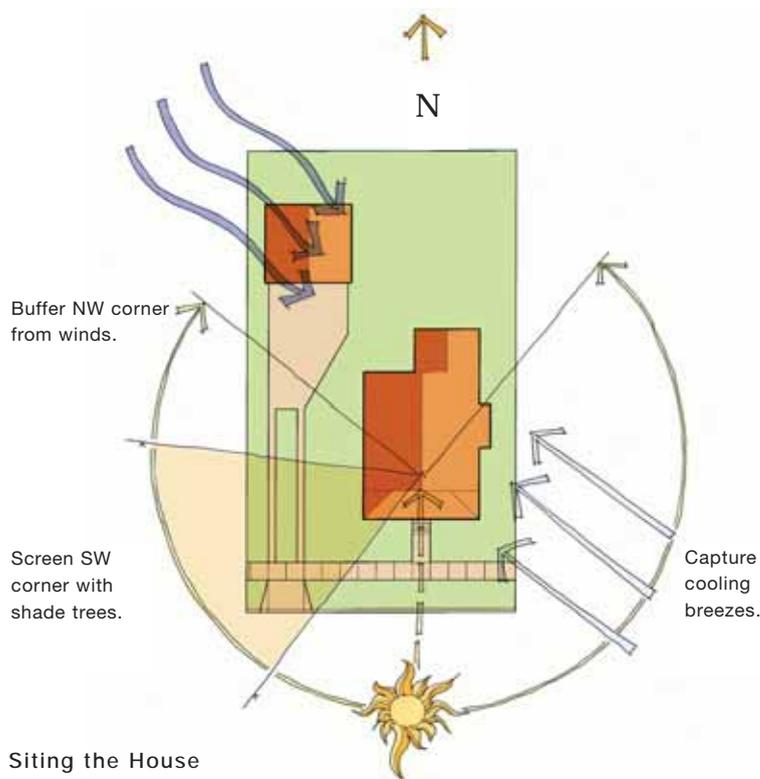
For the following diagrams, we have selected a lot in the Northeastern United States. In order to properly assess regional conditions, contact the following agencies for additional information:

Sustainable Building Industry Council
www.sbicouncil.org

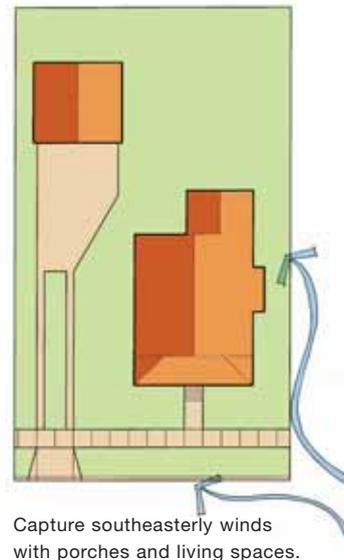
NAHB's Building Greener:
 Building Better:
 The Quiet Revolution (NAHB 2002c)
www.nahb.org

Initial Site Study

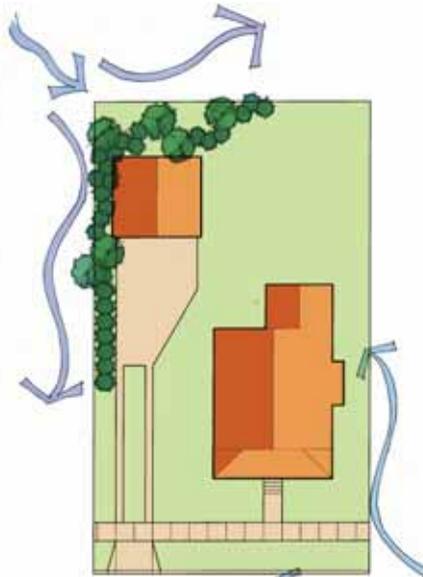
Identify sustainable design information resources prior to construction and develop a strategy for the site. (Refer to EarthCraft House Technical Guidelines manual for additional information.)



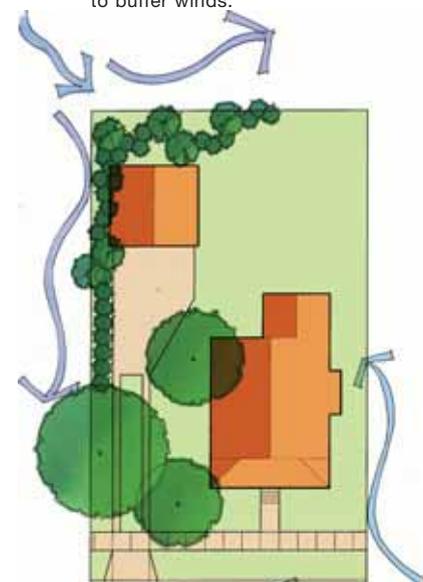
Siting the House



Capture southeasterly winds with porches and living spaces.



Buffer northwest corner with garage and evergreens to buffer winds.



Shade southwest corner with well placed shade trees.



Composite Diagram

Ideal Building Orientation

Buildings should be oriented to take advantage of the local solar and climatic conditions. Ideally, the longer walls of the structure should face north and south to maximize the use of passive solar energy. Garages, evergreen trees, and hedges can be placed to help buffer against winter winds from the northwest while porches can be placed to benefit from the southeastern cooling summer breezes. Shade trees placed in the southwestern quadrant of the lot provide shade and help reduce the need for air conditioning in the summer.

Use Landscape Features to Conserve Energy

Evergreen trees and shrubs help to buffer the house against winter winds while deciduous trees provide cooling shade in the summer. Shrubs and vines planted at the house's foundation create air pockets that insulate the building in both summer and winter. Additionally, earth berms help to insulate building walls as well as reduce temperature extremes within the home. Planting on the berms increases evaporative cooling within the house.

Preserve and Restore Existing Vegetation

Protection and enhancement of existing vegetation can provide wildlife habitats, facilitate stormwater infiltration, reduce water pollution, cleanse the air, and mitigate heat island effects. Clearing of existing vegetation should be limited during construction. Existing trees should be protected. After construction, use plant material native to the region in order to conserve water and preserve habitats.

Use Recycled, Renewable, or Reclaimed Materials

Environmental impacts from the manufacture and transportation of building materials negatively impact ecosystems around the world through increased pollution levels and habitat destruction. Using recycled or reclaimed materials can minimize the damage listed above as well as decrease building costs. Additionally, resalvaged materials increase the aesthetic qualities of the site.

Conserve and Protect Water Resources

Rainwater collection systems, such as rain barrels, can be used to create rain gardens within your private garden space. The natural drainage pattern of your site should be respected and the house should be sited to incorporate the natural drainage pattern as well as to reduce the amount of clearing and grading required. By minimizing impervious surfaces, through the use of crushed gravel walkways and driveways, stormwater run-off will be reduced.



Hardscape Improvements

The Hardscape of the Neighborly Habitat House

Hardscape improvements for the typical Neighborly Habitat House include entry walks, driveways, rear patios, fencing, and lighting. Entry walks and patios should be made of porous materials (gravel, crushed stone, etc.) where possible and may utilize recycled or reclaimed brick or stone as an enhancement. Driveways should consist of tire strips with a grass or gravel strip between. Additionally, driveways may be made of gravel, crushed stone, or porous pavers. Front yard fencing and post lights may be used to augment the front yard landscaping, while rear yard screen fencing may provide privacy for the patio.



Wood picket fence at front sidewalk



Typical post light at front entry walk

Grass Strip at Driveway

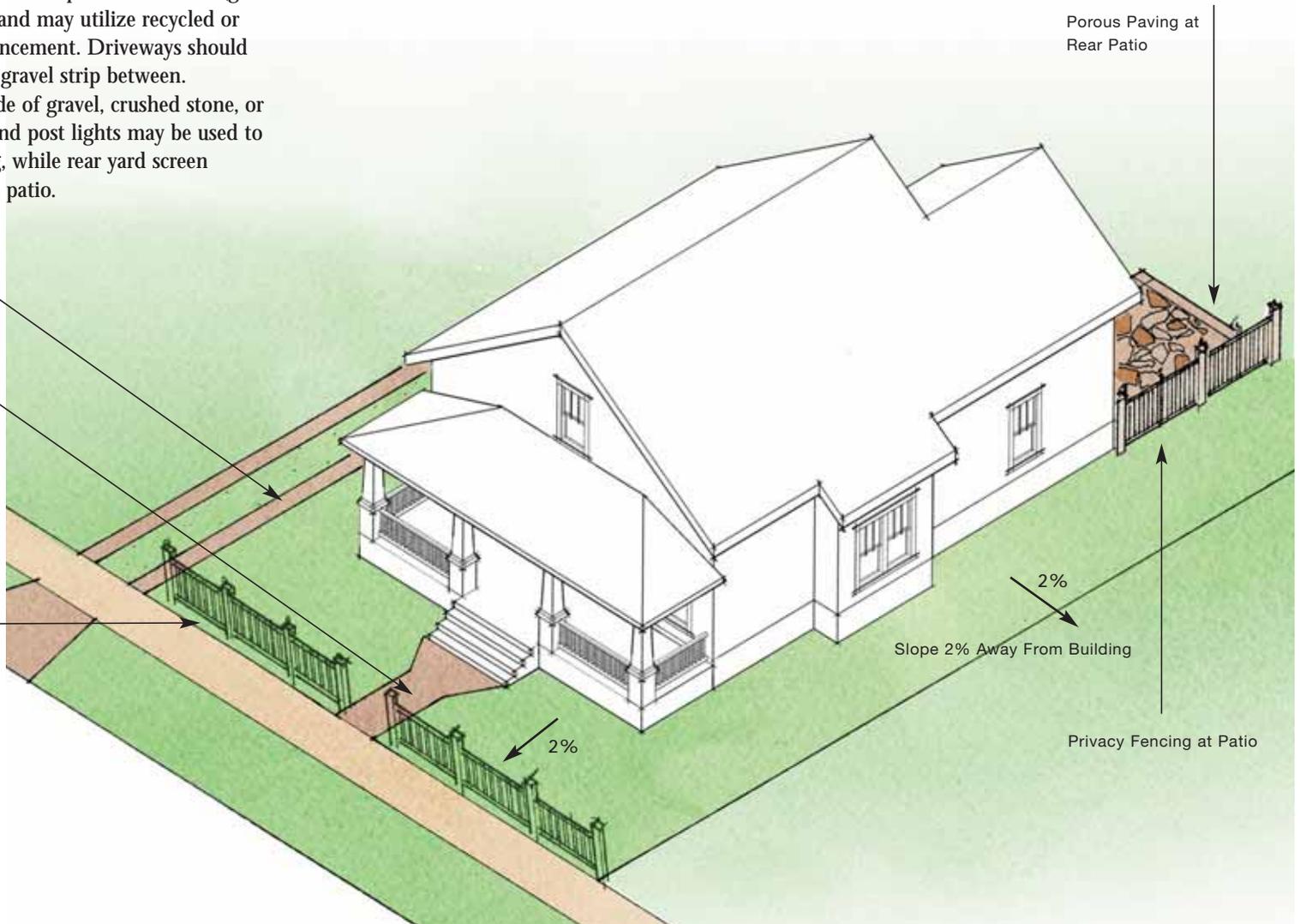
Porous Paving at Front Walk

Optional Fence at Front Yard

Porous Paving at Rear Patio

Slope 2% Away From Building

Privacy Fencing at Patio



Crushed gravel walks and driveways



Rear yard privacy fencing



Reclaimed brick driveway with lawn strip

Landscape Improvements

The Landscape of the Neighborly Habitat House

Landscape improvements for the typical Neighborly Habitat House shall be concentrated on the front yard and may include foundation planting framing the entry, shade trees in the southwest portion of the lot for cooling, evergreen hedges and trees in the northwest portion for buffering, rain gardens, and private gardens. Front yard planting may consist of ornamental shrubs framing the entry, with simple evergreen beds bordering perennial beds. The base of screen fences should be planted with groundcovers.



Picket fence with planting bed at base

Shade Trees in the Southwest Corner of the Lot

Perennial Beds

Evergreen Beds

Ornamental Shrubs Frame Entry

Planting Bed at Base of Screen Fence

Ornamental Tree



Ornamental and shade trees as well as common groundcovers



Drought tolerant perennials



Wood fence with planting bed at base



Brick walk lined by groundcover bed



Sustainable Design

Landscaping for Sustainability

In order to seamlessly integrate stormwater and greywater management systems into the natural landscape, greenways that run adjacent to the natural waterways should be preserved and developed into a system of parks and trails. Onsite stormwater management will help transform water at the source from a potential nuisance into a resource for the environment and community. In turn, it will beautify individual lots and neighborhoods, support wildlife habitat, provide recreational amenities, and reduce the need for more sewage lines and treatment plants. Properly utilizing native plantings, shade trees, porous paving, rain barrels and cisterns, rain gardens and rain chains, and onsite greywater management systems are ways to help a community become sustainable and prosperous.

The following is a list of sustainable devices and techniques strongly encouraged for every resident to use:

- Native plantings to reduce watering
- Increased yard planting in place of lawn to reduce maintenance
- Proper shade tree placement to reduce solar gain
- Pervious paving surfaces or the use of a central driveway strip to enhance porosity
- Rain barrels, rain chains, and rain gardens to catch rain water for irrigation
- Greywater retention to recycle water

Pervious Paving Surfaces

Pervious paving used by lot owners allows on site filtration, reducing the amount of storm water run-off that must be dealt with off site.



Pervious paving to aid in percolation of runoff water

Rain Barrels, Rain Chains, and Rain Gardens

Reclaimed rain water may be used to irrigate plants on site. Rain gardens can help to reduce storm water run off while providing a private space for enjoyment and education.

Greywater Retention

Salvaged grey water may be used to irrigate plants and used for toilet flushing. An underground cistern typically holds greywater on site for future uses.

Native Plantings

Indigenous plants have evolved with the local climate and the soil and are perfectly suited to the environment. There are many advantages to using local plants besides their natural ability to thrive. They are often low maintenance and grow well without the addition of fertilizers or pesticides, and they provide food and shelter for native wildlife.



Native plantings to support local ecosystems without irrigation demands

Increased Non-Lawn Plantings

Fencing, hedgerows, and evergreens can help to buffer the house from gusting winds as well as reduce heating costs. By decreasing lawn areas and replacing with indigenous plantings, water consumption and pesticide and fertilizer use is greatly reduced.

Proper Shade Tree Placement

Deciduous trees provide cooling in the summer and reduce the need for air conditioning. In the winter, because of the lower sun angle, solar energy can filter into the house unimpeded by the bare branches of shade trees.



Rain gardens fed from roof runoff that aid in the biofiltering of runoff



Rain barrel for collecting roof runoff in turn used for irrigation

Design With Water: House and Lot

Stormwater runoff from roofs, driveways, and roads carries pollutants such as oil, heavy metals, chemicals, and lawn fertilizers directly to nearby waterways, where they bioaccumulate and harm water quality. To accompany the sustainable practice of planting native and noninvasive species, residents are to utilize tools and techniques such as rain barrels and rain gardens and to help soil and vegetation capture, neutralize, and manage stormwater runoff. Shade trees help to keep homes up to 20 degrees cooler in the summer time and, coupled with increased yard planting, can help intercept and clean stormwater. Another design technique is to utilize pervious paving materials that aid in percolation, such as individual brick or stone paving units or pervious concrete.

Despite the varying techniques, the purpose of such ecologically-conscious design is to allow water proper time to soak into the soil where it nourishes plants, replenishes aquifers, and supports the water systems during dry periods. Onsite stormwater management transforms polluted water from a potential hazard into a resource for the environment and community. Additionally, proper management techniques beautify lots and, in turn, the streetscapes and neighborhoods.

- 1 Shade Tree and Shrub Plantings
- 2 Pervious Paving
- 3 Increased Yard Planting
- 4 Native Plantings
- 5 Rain Barrel and Rain Garden

