

Green Guide for Individuals/Households

Strategies: Development

Smart Growth, Mixed Use and Compact Development

Fast facts

- Nine out of ten Americans want states to fund refurbishment and improvement of existing communities rather than new, sprawling development (NRDC, 2007).
- Of people planning to buy a home in the next three years, 87% prefer a short commute (NRDC, 2007).
- Higher density housing facilitates more walkable communities, because neighborhood shopping and schools within walking distance become financially feasible, with enough people living in a small area (NABH, 2009).
- Dense land use patterns that offer more mixed-use opportunities and smaller unit options can assist with lowering housing prices, reducing transportation costs, and providing access to needed amenities (RMLUI, 2209).
- Residents of “smart growth” communities drive as little as one-fifth as residents of conventional sprawl developments (NRDC, 2007).
- Mixed land use reduces disruption and fragmentation of habitat and provides wildlife corridors (UDOT, 2003).

Actions for Individuals / Households:

Join Smart Growth Network for access to an e-newsletter, online information and discussion forums on facilitating “smart growth”.

Resources:

Smart Growth-

Codes that Support Smart Growth Development <http://epa.gov/livablecommunities/codeexamples.htm>

National Resources Defense Council- <http://www.nrdc.org/buildinggreen/factsheets/smartgrowth.pdf>

Smart Growth Online - <http://www.smartgrowth.org/about/principles/default.asp>

Smart Growth Leadership Institute - <http://www.sgli.org/index.htm>

Smart Growth Toolkit - <http://www.smartgrowthtoolkit.net/>

Form-based Code-

A Form-based Code for Cincinnati - <http://www.planetizen.com/node/37267>

Form-based Code Institute - <http://www.formbasedcodes.org/resource.html>

Local Government Commission-Form-Based Codes -

http://www.lgc.org/freepub/community_design/factsheets/form_based_codes.html

Congress for New Urbanism-LEED for Neighborhood Development (LEED-ND)

<http://www.cnu.org/leednd>

Southern Corridor Draft EIS, March 14 2003- www.udot.utah.gov/sc/06-Smart_Growth.pdf

US EPA- <http://www.epa.gov/dced/pdf/bestdevprimer.pdf>

References:

Natural Resources Defense Council. March 2007. Fact Sheets: If you build it, they will come: Americans want smart growth alternatives to conventional transportation.

<http://www.nrdc.org/buildinggreen/factsheets/smartgrowth.pdf> accessed February 03 2009

The Urban Land Institute. February 2007.

http://thegroundfloor.typepad.com/the_ground_floor/2007/02/mixed_developme.html. Accessed February 03 2009.

National Association of Home Builders. 2009. High Density development and Mixed-Use Development. <http://www.nahb.org/generic.aspx?sectionID=628&genericContentID=17371>. Accessed February 03 2009.

National Association of Home Builders. 2002. Smart Codes Smart Process Checklist. Land Development Services Department. N.W. Washington DC 20005

Project for Public Places. 2008. Mixed use Development: Creating a Place. http://www.pps.org/mixed_use/info/mixed_use_approach Accessed February 07 2009.

Parking Area Development

Fast Facts-

- Large parking lots contribute directly to non-point source water pollution, which is the leading cause of water pollution in the U.S. Each acre of impermeable parking surface produces runoff of 25,000 gallons of water during a 1-inch storm (Sierra Club).
- Permeable asphalt/concrete parking lots reduce storm water management; water passes through into the ground aquifer, decreasing the need for expensive drainage systems (City of Toronto, 2008).
- The redesign of Fort Bragg's vehicle maintenance facility parking lot reduced impervious surface by 40%, increased parking by 20%, and saved \$1.6 million (20%) on construction costs over a conventional design (North Carolina Stormwater Authority, 2008).
- American Power Solutions replaced 215 watt fixtures in the parking lot of an apartment complex with 140-58 watt fixtures at zero cost (APS, 2006).

Actions for Individuals / Households:
Build new parking areas away from wetlands and watercourses to limit environmental impact.
Reduce air conditioning by planting trees in parking area to keep vehicles cool.
Replace High Intensity Discharge (HID) lights with energy saving fluorescent or LED lights.
Reduce impervious surfaces by:
Pave the minimum number of spaces required by zoning regulations.
Including small spaces for smaller cars.
Using pervious material where possible.
Including as much green space as possible between rows and at row ends.
Improve storm water management by:
Install storm water treatment facilities to treat runoff.
Using rain gardens, bioswales and bioretention ponds onsite.

Resources:

Size and Surfaces of Parking Lots-

U. Conn. Extension Land Use Educator-

http://nemo.uconn.edu/tools/publications/tech_papers/tech_paper_5.pdf

Indiana Living Green-

http://www.indianalivinggreen.com/index.php?option=com_content&task=view&id=86&Itemid=107

Filtration System- <http://aquashieldinc.com/>

Greening Parking Lots- <http://www.docuticker.com/?p=18723>

Lighting Parking Lots- http://www.americanpowersolutions.com/parking_garage_lighting.html

Tips for Constructing Parking Lots- <http://www.cenews.com/article.asp?id=227>

Planting Trees- <http://www.ext.vt.edu/pubs/trees/430-028/430-028.html>

References:

American Power Solutions. Parking garages and parking lots. in American Power Solutions [database online]. USA, [cited February 6, 2009]. Available from http://www.americanpowersolutions.com/parking_garage_lighting.html (accessed February 8, 2009).

City of Toronto. Greening surface parking lots - porous asphalt pilot project. in City of Toronto [database online]. Canada, 2008 [cited February 6 2009]. Available from <http://www.explace.on.ca/green/Porous%20Concrete%20Asphalt.pdf> (accessed February 8, 2009).

Gibbons, Jim. 1999. *Parking lots*. USA: University of Connecticut, 5.

Building Material Choices

Fast Facts-

- Building and construction activities worldwide consume 3 billion tons of raw materials each year or 40 percent of total global use. Using green building materials and products promotes conservation of dwindling nonrenewable resources internationally (CIWMB, 2008).
- Buildings that have been retrofitted using green materials have been seen to achieve 80% carbon reduction; fuel bills for residents could be reduced by 65% (Green Building Press, 2008).

Actions for Individuals / Households:
Use durable products that last longer than conventional products and require replacement less often.
Pick products that can be reused or recycled after they have served their purpose for the project.
Choose manufacturers that use resource-efficient processes.
Decrease transportation costs by using locally available materials.
Use materials that:
Contain and advertise their recycled content.
Are natural, plentiful, or renewable.
Take advantage of salvaged, refurbished, or remanufactured supplies.
Are packaged in reusable or recyclable materials.

Resources:

Current green buildings in Ohio, from Green Energy Ohio-
<http://www.greenenergyohio.org/page.cfm?pageID=261>

Green building in Cincinnati, OH:
<http://www.livegreencincinnati.com/articles/category/green-building>

Green building materials and where to get them: <http://www.green2green.org>

Sustainable Building Sourcebook
<http://www.austinenergy.com/energy%20efficiency/Programs/Green%20Building/Sourcebook/materials.htm>

References:

(CIWMB) California Integrated Waste Management Board. 2008. Green Building Materials. USA, (cited February 5 2009). Available from <http://www.ciwmb.ca.gov/greenbuilding/Materials/> (Accessed February 6, 2009).

Green Building Press. 2008. Green Retrofit Achieves 80% Carbon Reduction. USA. Available from http://www.greenbuildingpress.co.uk/article.php?category_id=1&article_id=36 (Accessed February 5 2009).

Greening Landscape Practices

Fast Facts

- With wetlands, trees and downspouts, Indianapolis, reduced storm water flow into their combined sewer system, allowing them to reduce the diameter of their planned sewer pipes from 33" to 26", resulting in savings of over \$300 million (American Rivers, 2009).
- By restoring the NAPA River channel and wetlands Napa, California, protected 2,700 homes from flooding, saving \$26 million in flood damage each year, while creating new parks and open spaces (American Rivers, 2009).
- Green landscapes create jobs in landscaping, plumbing, engineering, building and designing. They also support stores and jobs connected with supply and manufacturing, such as for rainwater harvesting systems and permeable materials (American Rivers, 2009).

Actions for Individuals / Households:
Preserve critical natural areas such as wetlands and streams.
Protect, enhance and promote the working landscape (open space, forests, farms) and greenspace through resource management and land trusts.
Certify your community as an NWF Community Wildlife Habitat to benefit wildlife.
Promote or create NWF Certified Wildlife Habitats in backyards to benefit wildlife.
Plant trees wherever possible to store carbon long-term.
Plant trees strategically on the east, west and southwest of buildings to shade from afternoon sun in summer and allow sun through in winter.
Use water-harvesting systems such as cisterns and rain barrels to collect grey water for landscaping use to decrease use of city water.
Decrease area in lawns.
Where lawns are necessary, plant "freedom" lawns, composed of several grass species or a mixture of grass, lilies, wildflower and ground cover, that require little care or watering.
Use permeable materials (cobble stones, bricks etc.) for the construction of sidewalks, pavements, and pathways.
Use only necessary lighting outdoors.
If lighting is needed, use solar lamps.

Web Resources:

Natural area preservation-

<http://www.mass.gov/?pageID=e0eeatopic&L=2&L0=Home&L1=Land+Use%2c+Habitats+%26+Wildlife&sid=E0eea>

The Working Landscape-<http://www.smartgrowthvermont.org/toolbox/issues/theworkinglandscape/>

Harvesting rainwater- <http://ag.arizona.edu/pubs/water/az1052/harvest.html>

Gardens for wildlife- <http://www.nwf.org/gardenforwildlife/>

Planting trees- <http://www.colostate.edu/Dept/CoopExt/4DMG/Trees/beatheat.htm>

Permeable materials- <http://www.sfaa.org/0706fabrega1.html>

Promoting educational programs

<http://www.mass.gov/?pageID=e0eeahomepage&L=1&L0=Home&sid=E0eea>

<http://ohio.sierraclub.org/miami/index.html>

Promoting recreation/tourism

<http://www.mass.gov/?pageID=e0eeahomepage&L=1&L0=Home&sid=E0eea>

Lawns- <http://www.enfo.ie/leaflets/Sustainable%20Lawn%20Management.pdf>

Local connections

Educational Programs http://www.ci.montgomery.oh.us/landscaping_workshop.htm

<http://bygl.osu.edu/index.php/bygl-newsletters/industry-insight/186-july-17-2008/383-a-rain-gardenlandscape-water-management-manual-for-southeast-ohio-under-development->

Landscape Design <http://www.helpfulgardener.com/landscape/04/ohio.html>

Rain Garden <http://www.hcswcd.org/newsltr/MSDManualDraft.pdf>

<http://www.indianaeconomicdigest.net/main.asp?SectionID=31&SubSectionID=61&ArticleID=45540>

<http://www.hamiltonswcd.org/sitebuildercontent/sitebuilderfiles/raingarden.pdf>
Wildlife Habitats <http://www.hamiltoncountyparks.org/giftshop/books.htm>
Grants <http://www.hamiltoncountyohio.gov/administrator/bsi/grants/ManualApril2006.pdf>
<http://www.epa.state.oh.us/pic/nr/2001/nov/oef-wal.html>

References

American Rivers. Our nation's crumbling water infrastructure. in American Rivers [database online]. USA, 2009 [cited February, 2009 2009]. Available from http://www.americanrivers.org/site/PageServer?pagename=AR7_GreenInfrastructure_Background (accessed February 9, 2009).

Schrock, Denny. 2009. Beat the heat with landscape plants. *In* Colorado State University [database online]. Denver. CO. USA, 2009. Available from <http://www.colostate.edu/Dept/CoopExt/4DMG/Trees/beatheat.htm> (accessed February 9, 2009).