



# Introduction to Green Jobs and Green Building

## What is Green?

“Green” refers to all activities and behaviors that either improve our environment or protect the planet from damage. Damaging the earth’s resources—draining or poisoning water; polluting the air by burning coal, oil, and gas; and destroying with poor mining and farming practices—leaves nothing safe or useful for our children to inherit. A green lifestyle benefits future generations by using only what we need and replenishing or restoring our resources.

This tip sheet provides an introduction to green jobs in four major areas of sustainable development: 1) urban sustainability, 2) water, ecosystems, and agricultural preservation, 3) material management and human health; 4) renewable energy and climate change. This tip sheet also discusses an overview for building green homes. Future Green Tip Sheets will cover some of these elements in depth, particularly those related to green building and green jobs.

## Examples of Green Jobs in Four Major Areas of Sustainable Development

Urban Sustainability	Water, Ecosystems, and Agricultural Preservation
<ul style="list-style-type: none"> <li>• Smart growth projects that stop urban sprawl</li> <li>• Green building and infrastructure design</li> <li>• Energy-efficient homes and commercial buildings</li> <li>• Development of efficient mass-transport systems</li> </ul> <p><b>Some jobs in this field:</b> green contractor or designer, energy auditor and retrofitter, green-roof installer, brownfield remediation worker, public transit maintenance, bicycle repair, assembling efficient appliances, windows, doors, roofing, decking, and electronics.</p>	<ul style="list-style-type: none"> <li>• Biodiversity promotion and ecosystem preservation</li> <li>• Protection and management of water</li> <li>• Improve air quality</li> <li>• Practice sustainable agriculture</li> </ul> <p><b>Some jobs in this field:</b> watershed manager, drinking water treatment or engineer, hazardous material removal, tree pruner, invasive species remover, park maintenance, agricultural inspector, farm product purchaser, organic farmer and grocer.</p>
Material Management and Human Health	Renewable Energy and Climate Change
<ul style="list-style-type: none"> <li>• Reduction of waste and chemical contamination</li> <li>• Green product design and manufacturing</li> <li>• Green engineering and chemistry</li> <li>• Increase the use of recycled and reused materials</li> <li>• Life cycle assessment</li> <li>• Remediation of polluted areas (brownfields, wetlands)</li> </ul> <p><b>Some jobs in this field:</b> material and site de-constructor, recycling technician, material salvager, computer refurbisher, sustainable product manufacturer, lithium ion battery manufacturer, air quality inspector, hybrid vehicle mechanic.</p>	<ul style="list-style-type: none"> <li>• Build a Smart Grid to support more electricity from wind, solar, hydropower, and more</li> <li>• Development and use of renewable energy—geothermal, hydro, solar, wind, and biofuels</li> </ul> <p><b>Some jobs in this field:</b> photovoltaic panel installer, wind turbine technician, iron or steel worker, electrician, machinist, welder, line worker, plumber, equipment assembler, green energy components manufacturer, environmental educator.</p>

## Building Green Homes

Green homes are better for the environment because they use less energy, water, and materials than conventional homes. Green homes use a construction process that creates less waste, pollution, and environmental harm, and improves the indoor environment for the family living inside. A green home can incorporate some or all of the elements of sustainable building through new construction, the weatherization of an older building, or ensuring energy efficiency. Here are some ways to accomplish each of these approaches:

New Construction	Weatherization of Older Buildings	Energy Efficiency
<ul style="list-style-type: none"> <li>• Design using green principles and practical approaches such as use of envelope/insulation materials, whole system lighting, and sustainable landscaping</li> <li>• Install efficient appliances using low VOC (Volatile Organic Compound) products and use renewable and recycled materials</li> </ul>	<ul style="list-style-type: none"> <li>• Seal air gaps in walls, doors, and windows</li> <li>• Install insulation</li> <li>• “Right-sizing” motors and HVAC equipment</li> <li>• Protect pipes from corrosion and freezing</li> <li>• Provide ventilation and replace inefficient doors and windows</li> <li>• Create a vapor barrier</li> <li>• Install drains to protect building from surface and ground water, and assess outdoor landscaping</li> </ul>	<ul style="list-style-type: none"> <li>• Use efficient lighting design, including CFL (compact florescent lamps) and LED (light-emitting diode) bulbs</li> <li>• Install high efficiency Energy Star appliances (particularly refrigerators and stoves)</li> <li>• Use green HVAC options</li> <li>• Install low-flow toilets and showers</li> <li>• Select alternative and renewable energy generation</li> </ul>

## Green Resources

Certification and training in weatherization from the Building Performance Institute:  
<http://www.bpi.org/content/home/index.php>

Energy efficiency and renewable energy workforce development and education:  
<http://www1.eere.energy.gov/education/>

Information about green jobs:  
<http://www.americangreenjobs.net>  
<http://www.careervoyages.gov>

USDA career information and education about sustainable agriculture:  
<http://www.nal.usda.gov/afsic/pubs/agnic/susag.shtml>

US Green Building Council’s new green home certification:  
<http://www.usgbc.org/DisplayPage.aspx?CMSPageID=147>

Green building certification program from Green Advantage:  
<http://www.greenadvantage.org>

Department of Energy’s weatherization assistance program site:  
<http://apps1.eere.energy.gov/weatherization>

Energy efficient home guidelines at ENERGY STAR:  
<http://www.energystar.gov>