GREEN BUILDING MATERIALS

The construction of buildings both commercial and residential consumes billions of tons of raw materials each year as well as contributes significantly to solid waste found in landfills. Using green materials and products promotes conservation of resources and assists in reducing the environmental impacts associated with the extraction, transport, processing, fabrication, installation, reuse, recycling, and disposal of construction and demolition waste[1].

Design professionals and builders should work in an integrated process in order to specify and utilize materials in a manner that will reduce or eliminate waste and to collect and recycle all inescapable construction and demolition waste. Consider utilizing resource reduction and reuse methods such as Optimum Value Engineered Framing to reduce amount of lumber needed; ground wood and sheet rock scrap on site to be reused as mulch or compost; crushing demolition concrete for use as road bed, drainage or back fill. One of the most effective strategies for minimizing the environmental impacts of material use is to reuse existing buildings and salvaged materials. The deconstruction of buildings and reuse of the building components is a methodology that is quickly becoming more accepted.

What you need is to have every dollar you spend — on materials, energy, labor — add value for both customers and shareholders rather than go out the door — or down the drain — as product you make but can't sell.
- William Reed, Natural Logic Inc.

Green building materials are environmentally responsible due to the consideration of the material's impact over the life of the product. Based upon the building projects goals and design a material may be evaluated in more than one criterion to minimize the overall environmental impact. For example recycled plastic lumber is made from recycled waste, it's highly durable and it can obviate the need for pesticide treatments[2].

EXAMPLE OF A GREEN BUILDING PROJECT IN NEW JERSEY

Willow School Case Study[3]

The Willow School located in Gladstone, N.J. is composed of a 13,500 square foot classroom building and site infrastructure including roadways, parking lots, and landscaping that was completed in September 2003 and LEED™ Gold certified. With natural wood siding and barn-like roof, the building conforms to the rural character of the surrounding neighborhood. The overall building includes the latest in environmentally-sensitive materials.

Salvaged Timbers and Bluestone
Wall Insulation made from Recycled Jeans
Forest Stewardship Council-Certified Wood
Stainless Steel Roof composed of recycled content
Plant-Based Linoleum and Cork Flooring
Cabinets and Lockers made from Wheat-Board
Recycled Glass Terrazzo Tile
Waterless Urinals
Low and No VOC Paints and Finishes
Recycled Plastic Bathroom Stalls

1. Excerpt from California Integrated Waste Manage Board – Green Building Materials. www.ciwmb.ca.gov/greenBuildingMaterials/
2. Ex. GreenSpec Directory 7th Edition - Product Listings & Guideline Specifications from BuildingGreen, Page xxi. www.buildinggreen.com
3. A Green Education - by Christina Koch, Eco-Structure Magazine, September/October 2005

APPLICABLE NEW JERSEY GOALS

Extend the life cycle of existing buildings
Divert construction and demolition materials from landfill disposal
Reduce environmental impacts related to building material manufacturing and transportation
Increase the demand for building products that contain recycled content and can be recycled
Expand the demand for building materials that are manufactured locally
Proliferate the use of building products made of rapidly renewable materials
Encourage environmentally responsible forest managment

SUGGESTED ACTIONS AND STRATEGIES

Overall Material and Product Selection Criteria Include[4]

Resource Efficient Products

- Salvaged Products
- Products with post-consumer content
- Products with pre-consumer or post-industrial content
- Products made with waste agricultural material
- Products that reduce material use
- Products with exceptional durability or low maintenance requirements
- Certified wood products
- Rapidly renewable products

Non Toxic or Low Emissive Products

- Natural or minimally processed
- Non ozone-depleting products
- Non hazardous products
- Products that reduce or eliminate pesticide treatments
- Products that reduce storm water pollution
- Products that reduce impacts from construction or demo activities
- Products that reduce pollution or waste from operations

Energy and Water Efficiency Products

- Building components that reduce heating and cooling loads
- Equipment that conserves energy and manages loads
- Renewable energy equipment
- Fixtures and equipment that conserve water

Products for a Safe and Healthy Built Environment

- Products that do not release significant pollutants into the building
- Products that block the introduction, development, or spread of indoor contaminates
- Products that remove indoor pollutants
- Products that warn occupants of health hazards in the building
- Products that improve light quality
- Products that help noise control
- Products that enhance community well-being

4. GreenSpec Directory 7th Edition - Product Listings & Guideline Specifications from BuildingGreen, Page xxvi. www.buildinggreen.com

STATE TECHNICAL/FINANCIAL ASSISTANCE

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FURTHER INFORMATION

GreenSpec Directory & Environmental Building News Published by BuildingGreen Inc.
www.buildinggreen.com or www.greenspec.com

U.S. Green Building Council – LEED Reference Package Version 2.2 - www.usgbc.org/

Green Building: Project Planning and Cost Estimating from R. S. Means Company Inc. - www.rsmeans.com/

“Prescriptions for A Healthy House” by Paula Baker-Laporte, Erica Elliott, MD, and John Banta - www.newsociety.com

Green Depot - www.greendepot.com/

Building for Health - www.buildingforhealth.com/

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