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LEED GREEN ASSOCIATE EXAM
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ONLINE TRAINING BY KRISHNAJI PAWAR
LEED AP(BD+C),GSAS CGP,GCP,ISO 14001
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MODULE 13

Materials and Resources

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This chapter discusses strategies to minimize environmental impacts of building materials in the Materials & Resources (MR) category of the Leadership in Energy and Environmental Design (LEED) green building certification program.

Learning Objectives +

- Water efficiency
- Energy and Atmosphere
- Materials and Resources
- Indoor Environmental Quality
- Innovation and Regional Priority
- Project Surroundings and Public Outreach
- Summary and Resources
- LEED GA : Practice test

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INTRODUCTION +

- The lecture discusses strategies to minimize environmental impacts of building materials, as depicted in the Materials & Resources (MR) category in the LEED green building certification program.
- It outlines how to assess and select materials, and their disposal after their useful life, crucial for the environment and the building industry.
- The LEED V4.1 changes encourage project teams to focus on minimizing embodied energy and other impacts associated with the extraction, production, transportation, consumption, maintenance, and disposal of building materials.
- Unmanaged extraction practices can cause deforestation, degradation of water sources, habitat loss, threats to rare and endangered species, releases of toxic chemicals, and infringement of indigenous peoples' rights.
- Project teams may need to consider the environmental impact of their materials and product specifications.

MATERIAL AND RESOURCE SELECTION AND DISPOSAL

- Conservation of materials.
- Preference for environmentally, socially, and locally preferred materials.
- Waste management and reduction.



CONSERVATION OF MATERIALS STRATEGIES





- Reuse existing buildings and salvaged materials.
- Plan for smaller, compact communities to prevent urban sprawl.
- Design smaller, more flexible homes and buildings.
- Use efficient framing techniques like space studs at 24 inches and structural insulated panels.
- Promote source reduction in operations by encouraging reuse of office supplies and implementing a minimal print and double-sided print policy.

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ENVIRONMENTALLY PREFERABLE MATERIALS

- Support local economy.
- Sustainablely grown and harvested.
- Have end-of-life scenarios avoiding landfill.
- Contain recycled content.
- Bio-based material.
- Free of toxins.
- Long-lasting, durable, and reusable.
- Made in factories supporting human health and workers' rights.





MATERIALS AND RESOURCES STRATEGIES



- Identify local sources of environmentally preferable products.
- Develop a sustainable materials policy defining goals, thresholds, and procedures for purchasing consumables and durable goods.
- Specify green materials and equipment, including Green Seal and Forest Stewardship Council certifications.
- Specify green custodial products, including Green Seal, Environmental Choice, or EPA standards, when purchasing green cleaning products and materials.

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ENVIRONMENTAL IMPACTS OF CONSTRUCTION PROCESSES AND WASTE MANAGEMENT

- Construction processes and operations contribute to environmental impacts from waste disposal and disposal.
- Landfills and incineration facilities contribute to greenhouse gas emissions, methane production, and carbon dioxide production.
- Green building project teams and facility managers are encouraged to implement waste diversion strategies to avoid landfills and incineration facilities.





ENVIRONMENTAL IMPACTS OF CONSTRUCTION PROCESSES AND WASTE MANAGEMENT +



- LEED certified projects have diverted over 80 million tons of waste from landfills since its inception.
- Construction waste management plans should consider on-site waste separation or commingled collection and off-site sorting.
- Trade-offs exist between commingled collection and onsite collection.
- All materials, including metals, concrete, and asphalt, should be collected for recycling. Recycling options vary by region.

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STRATEGIES TO REDUCE WASTE DURING CONSTRUCTION

- Design buildings with less waste, install prefabricated products, and use material-efficient framing.
- Develop a construction waste management policy with a goal like a 50% diversion.
- Establish a waste tracking system and require contractor compliance monitoring.





STRATEGIES TO REDUCE WASTE IN OPERATIONS AND MAINTENANCE



- Develop a solid waste management policy with a goal and procedures.
- Conduct a waste stream audit to improve recycling rates.
- Maintain a convenient recycling program.
- Monitor, track, and report performance to improve diversion rates.
- Compost using landscaping and food debris as mulch.
- Provide recycling for durable goods like furniture and e-waste.

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