

POLLUTION PREVENTION/ENVIRONMENTAL IMPACT REDUCTION CHECKLIST FOR BUILDING/HOUSING CONSTRUCTION

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U.S. Environmental Protection Agency
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<http://es.epa.gov/oeca/ofa/pollprev/build.html>

How Can Building/Housing Construction Affect the Environment?

Wastes associated with building/housing construction include unused and excess material generated during site excavation, site clearance, construction, and renovation activities. These wastes may be rubble (concrete, bricks, and asphalt), wood and wood products, plaster, metals, plastics, and insulation. These materials (commonly referred to as C&D debris) comprise approximately 15 to 30 percent of all waste disposed of in landfills. Further, some of these waste products may contain toxic constituents that pose a risk to human health and the environment. Many local governments have passed ordinances that restrict or prohibit the disposal of C&D debris in landfills and require the recycling of many of these materials. In addition, purchasing decisions associated with building/housing construction projects can affect the amounts of waste generated, as well future energy requirements (e.g., from lighting and heating).

What Questions Should Be Asked To Ensure That These Effects Are Minimized or Eliminated?

Ecosystem Concerns. The clearing of lands for construction can lead to the loss of wildlife habitats, erosion and sedimentation associated with the use of heavy machinery, loss of native plant life, and contamination of soils and surface and groundwater. However, proper design and planning can help reduce these impacts.

- Is the construction project necessary? Is the project over-designed? In some cases, the construction of additional structures is not needed and minor alterations to existing facilities may be sufficient.
- Have attempts been made to avoid construction in environmentally sensitive areas (such as wetlands and threatened or endangered species habitats)? ^(*)
- Are specifications for construction practices designed to control and exclude pest entry in contained habitats? ^{*}
- Does the construction contract specify that contractors should cause the least possible disturbance to the site's vegetation? For example, under certain circumstances, it may be possible to preserve individual trees or stands of old growth that would otherwise be destroyed.
- Does the construction plan provide for erosion and sediment control during construction as well as after? Uncontrolled soil erosion can have adverse effects on local water bodies and aquatic life.
- Will soil excavated from the construction site be reused? Topsoil can be re-spread in areas to be landscaped to enhance plant health. ^{*}
- Does the plan include the re-vegetation of areas disturbed by construction? ^{*}

- Is there a plan to reduce the use of materials containing constituents that can negatively affect the environment?
- Is there a spill control and countermeasure plan to properly address spills of hazardous construction materials?
- Will hazardous materials be stored properly at the construction site? Hazardous materials should be kept in storage buildings (with secondary containment and hard stands) located away from the active construction zone. Examples of hazardous materials typically found at construction sites are petroleum products (lubricating oils and greases), fuels (gasoline, kerosene), solvents, paints, batteries, and miscellaneous equipment maintenance supplies.

Procurement Concerns. Environmentally sound purchasing decisions are an important element of pollution prevention, helping reduce the amount of waste generated by a building/housing construction project. In addition, the purchasing of recycled-content material helps support markets for materials collected for recycling.

Executive Order 12873 directs all Federal agencies to review and revise their specifications, product descriptions, and standards to increase their purchase of environmentally preferable and recycled products.

- Will the project include the use of durable, long-lasting materials that will not need to be replaced as often, thereby reducing the amount of construction waste generated over time?
- Are there provisions for the proper storage of construction materials to reduce the amount of waste caused by damage or exposure to the elements?
- Will perishable construction materials (such as paints) be purchased incrementally to ensure reduced spoilage of unused materials?
- Will the project use building materials that have minimal packaging to avoid the generation of excessive packaging waste?
- Will the project use building materials that are produced locally to avoid energy use and pollution generated from transportation?
- Will the project use construction materials containing recycled content when possible and in accordance with accepted standards? Examples of recycled-content materials include concrete containing fly ash and thermal insulation containing cellulose (i.e., recovered newspaper with fire retardant). (*)
- Does the construction plan include the use of alternative, environmentally preferable construction materials? Alternative construction materials include lumber products containing recycled plastic and/or wood, lead-free and low-VOC paints and coatings, and recycled steel for use in building frame applications.
- Does the construction plan call for the use of refurbished construction materials? Purchasing and using once-used or recovered construction materials can often save money and reduce the amount of C&D debris disposed of as waste.

Reuse and Recycling. Many of the waste materials generated as a result of building/housing construction can be reused, refurbished, or recycled into usable products. The benefit of these practices is that materials that would otherwise be disposed of from the waste stream are diverted for productive uses.

- Will the construction contract specify that construction materials left over at the end of the project be reused in other projects rather than be disposed of? (*)

- Will the construction contract specify that construction materials that are damaged or wasted be recovered for refurbishing and use in other construction projects? Such items as cabinets, doors, plumbing and lighting fixtures, tile, carpeting, door hinges, wall paneling, restroom mirrors, and stairway banisters can be recovered and renovated for use. Local community groups or individual homeowners may also be interested in reusing these items. *
- Is there a plan to use or sell trees cut down during construction activities as lumber or compost? *
- Will any metal, wood, or packaging wastes generated as a result of construction activities be collected for reuse or recycling into other usable products? Commonly recycled construction materials include concrete, asphalt roofing material, metals, and structural wood. *
- Will mercury-containing materials recovered in any renovations of existing structures be recycled?

Energy Efficiency. Employing energy efficient technologies and practices can have a significant positive effect on the environment. There are a number of opportunities to include energy efficiency in building/housing construction projects.

Executive Order 12902 calls on Federal agencies and facilities to increase energy conservation efforts and improve energy efficiency.

- Does the construction plan specify the use of "low-embodied energy" construction products whenever possible? The energy required to make a product should be considered in making purchasing decisions.
- Does the construction plan specify the use of energy efficient lighting systems?
- Will preference be given to purchasing energy-efficient electric products and equipment (such as appliances and heating and cooling systems)?
- Does the construction plan call for sufficient insulation to reduce heat loss and conserve energy?
- Will the proposed facility participate in the EPA Energy Star Buildings program?

Other References

"Environmental Building News: A Bimonthly Newsletter on Environmentally Sustainable Design & Construction." RR1 Box 161, Brattleboro, VT 05301. Telephone No. (802) 257-7300.

Metropolitan Council of the Twin Cities Area. "Construction Materials Recycling Guidebook - A guide to reducing and recycling construction and remodeling waste."

National Association of Home Builders. 1201 15th Street, NW, Washington, DC 20005-2800. Telephone No. (202) 822-0200/(800) 368-5242, Fax No. (202) 822-0559.

* Indicates an environmental impact reduction opportunity.

Contact Pinellas County's Pollution Prevention and Resource Recovery (P2R2) Program at 464-4761 for Waste Reduction Assistance