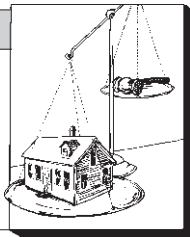


Recycling: Its Impact on You

by Jeffrey H. Mills



Garbage collection and disposal have never been more than a minor engineering or aesthetic issue for builders. But the nation's solid waste crisis and the resulting push for recycling has elevated the subject to a new status, raising questions about the designs and materials you use. Legislative actions being considered now may affect your project planned for next year, and could result in extra expense or other unexpected hurdles, unless accommodated for. Foresightful developers will have to design buildings that are "recycling-friendly," and builders who aren't already using recycled materials, will have to consider it.

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Designing for Recycling

Many states (especially in the Northeast where landfill space is rapidly depleting) have mandatory recycling programs that demand on-site separation and storage of such materials as newspaper, glass, metal, plastic bottles, corrugated and waste paper. Due to the infancy of these programs, building design standards to accommodate recycling have not yet been mandated by law, but solid waste professionals warn that such standards may be imminent in some areas. Clearly, the most important design criteria is storage space that is accessible on a regular (usually weekly) basis. "What you need is an area that will be a kind of transfer station," says Sheila Millendorf, Director of Office Paper Recycling Service for the Council on the Environment of New York City (an urban area with ten years of recycling program experience.) "Space for storage and handling of recyclable materials should be close to a loading dock or accessible trash area," she adds. Curb cuts, turnaround lanes, and loading docks designed to service waste dealers, therefore, are important features. And sprinklers must be installed near paper storage areas to

reduce the fire threat, according to Nancy Vandenberg, Coordinator of Markets for Recycled Products in New York City.

Space demands can be influenced by many things. Joan Edwards, Director of Recycling for New York City's Department of Sanitation, stresses that no two buildings are alike. "The amount of waste storage space depends on:

- the materials that are going to be collected by the locality
- the weight-to-volume ratio for the materials to be collected
- the maximum and minimum amounts of materials to be collected (called the "diversion rate")
- the categories materials will be segregated into

Problems arise when new tenants create uses that were not considered in the initial building design.

Most challenging is the location within buildings for set-aside storage. Obviously, a storage area must be provided near the loading dock, but in multiple-story buildings the trash must somehow get from the top to the bottom. "The ideal arrangement is to have space on each floor," suggests Ms. Edwards. "True, you could provide one area in the basement and have every tenant bring it down, but you probably don't want all your tenants going to the basement anyway."

In office buildings where most of the recyclable material is paper (newspaper, corrugated and waste paper), storage spaces could be incorporated into areas of high generation, such as computer stations and photocopy rooms, or areas of easy transport, such as cargo elevator bays. "Then building management, whose job it is to remove waste from individual offices, would collect this paper floor to floor," says Ms. Millendorf (administrator of successful recycling programs in several New York City skyscrapers). If the building "sweeps" are often enough, stresses Ms. Millendorf, commercial tenants may not need additional storage areas for recyclable goods.

Collection systems are more complicated when residential or commercial uses produce a wider range of recyclable goods. The alternate use system allows the same smaller storage space to be used for many different recyclable materials. Tenants are instructed to place newspapers out on Mondays and metal and glass on Wednesday, for example.

Design changes to enhance recycling

on the residential unit level may help marketing efforts in the 1990s. A utility closet or four-bin system under the sink will likely make individual units more attractive to potential tenant-buyers.

Another alternative is to build trash chutes for recyclable goods. But, as Ms. Edwards points out, "There's a real problem with breakage. If metal and glass breaks, it's valueless to some markets." Chutes present a problem where color separation of glass is required, and when used for paper, they can create fire hazards. A version of the old dumbwaiter that goes up and down but doesn't create breakage may also be possible.

For some projects, chutes still present a viable option. The Hartford Development Group is examining the use of chutes in its high-rise condominium project, Linden Court at City Park, in Hartford. "We're looking at a system in which chutes will be used for multiple materials," reports Greg Chase, Project Manager for Hartford Development Group. The goal is to ensure proper separation of materials and avoid penalties for sending recy-

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clable materials out with disposable trash. Chase believes their system will only work if building staff sweep each floor and feed the appropriate waste (laid out by tenants on designated days) into a locked chute.

States that have recycling programs have not yet mandated design criteria but they may soon do so. Ms. Edwards, whose Recycling Programs and Planning Division intends to recommend changes to the Building Code, tells us, "Existing buildings are going to be on their own, but there may come the day when building design criteria for recycling are built into the law for new buildings or substantial rehabilitations." According to Ms. Millendorf, legislation is proposed that would require developers to take design criteria into consideration for new projects.

Recovered Buildings Materials

Federal and state agency procurement programs now have requirements that contractors use products containing the maximum amount of recovered materials. By court order, in August the U.S. Environmental Protection Agency published a proposed guideline (the

final rule must be published by February 1989), mandated by the Resource Conservation and Recovery Act and the later Solid Waste Disposal Act. If more than \$10,000 in federal money is spent on a project, the rule specifically requires use of recovered insulation products.

The proposed rule has understandably generated a lot of excitement in both the insulation industry and the solid waste community. The proposed rule would implement Section 6002 of the Solid Waste Disposal Act by requiring that any time a procuring agency using more than \$10,000 of appropriated federal funds purchases insulation products, such materials must be composed of the highest percentage of recovered materials practicable. As the proposed rule states, the insulation requirements are "one in a series of guidelines designed to encourage the use of products containing materials recovered from solid waste." The EPA expects this ruling to have a ripple effect throughout state and local governments that use federal funds.

A wide range of other materials that incorporate recycled products are becoming available and cost-competitive: reinforcing bar is made almost entirely from scrap metal; parking lot bumper stops, fence posts, and park benches are now being constructed from recycled plastic; sludges are successfully being used in landscaping; asphalts containing ground tire rubber and non-structural concrete containing incineration ash is available.

This March, American Recycling Market, Inc. (800/267-0707) will publish the first issue of the National Recycled Products Guide. The Guide will list recycled products that are available, and which meet the minimum recycled content requirements per EPA guidelines. The guide will address all types of commodities from paper to rubber, plastics, textiles, glass, metals, and concrete.

Efforts are also being made to recapture surplus construction materials that might otherwise be thrown away. In Maryland, Richard Keller of the state's Energy Office tells of a non-profit group called The Loading Dock which collects surplus materials (lumber, insulation, etc.) and sells them back to non-profit contractors at about one-third retail price.

Summary

Builders and developers are well advised to keep an eye on local recycling developments. Meanwhile, it is important to plan projects with an eye toward reducing solid waste and making buildings as recycling-friendly as possible. ■

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