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FAIL-SAFE SKIES
THE HOUSE THAT JUNK BUILT

Steel framing made from old bridges, insulation from newspapers, and wood siding from mill scraps are part of this resource-conserving house.

BY SUZANNE KANTRA
You would never know by looking at them, but the building materials in this seemingly ordinary new house already are in their second incarnation: They have been newspapers, old cars, sawdust, soft-drink bottles, polystyrene packing peanuts—even used computers.

But at the Resource Conservation House, conceived by the National Association of Home Builders Research Center, it is not only "garbage in." There is also almost no garbage out. Unlike most building sites, where nearly all waste is sent to a landfill, an estimated 90 percent of the scrap materials from this Upper Marlboro, Md., house were either recycled or reused on-site. Designed to conserve energy, the house uses solar power as well.

Building a resource-conserving house starts with careful planning to reduce construction waste. Architect [Continued on page 90]
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The house that junk built

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Orville Lee’s plan specifies rooms laid out so that many of the standard-size building products do not have to be cut to fit. This also saves construction time.

The next step is using recycled materials, which today are comparable in cost and quality to those made from virgin materials. The Research Center discovered dozens of such products, including “lumber” that combines plastic grocery bags and used pallets ground into sawdust, ceiling material made from old newspapers, and siding produced from mill waste.

One of the biggest resource-savers was the house’s steel frame, made from demolished bridges and junk cars, says architect Lee. Unlike wood, he says, “Steel is always specially cut at the mill,” eliminating scraps. At a visit during construction, the mass of glinting steel overhead also provided a striking contrast to the usual wood “stick” framing.

The house’s roof ventilation system is formed from recycled plastic soda bottles. As it saves energy by releasing hot air in summer, ventilation also prevents rot-causing moisture buildup. The vent works well with the house’s Nailite plastic roofing. The roofing is made from recycled computer housings; the soffit guards on the house are made from the same material as the vent.

Wrapping up the leftovers

Not all construction waste could be eliminated through planning or using resource-efficient materials, however. The remainder, a mixture of fast-food wrappers from the Maryland construction crew’s meals, odd bits of wire, and other scraps, presented its own problems. The major one: finding corporations and hauling contractors to participate in recycling the waste, according to Steve Scully, senior engineer at the center. “There are more than 200 dumpsters in this county [of Prince Georges] and only one is segregated for wood, cardboard, and steel,” he explains.

This won’t be a permanent problem, says Scully. “The cost of dumping at a landfill for [construction waste] from a residential site is about $500 now,” he says.

Costs will likely rise, however, if the EPA determines that construction landfills are just as toxic as municipal ones—and consequently also would require the same types of costly linings. “When the price of dumping at construction landfills rises,” notes Scully, “builders will turn to recycling their waste.”