LETTERS

Use ecological model to renovate old Sears building

To the Editor: What a wonderful opportunity the Metropolitan Service District's move to the old Sears building on the east side presents for the Portland metropolitan region. Why not use this renovation to create a model of ecological design and sustainable development?

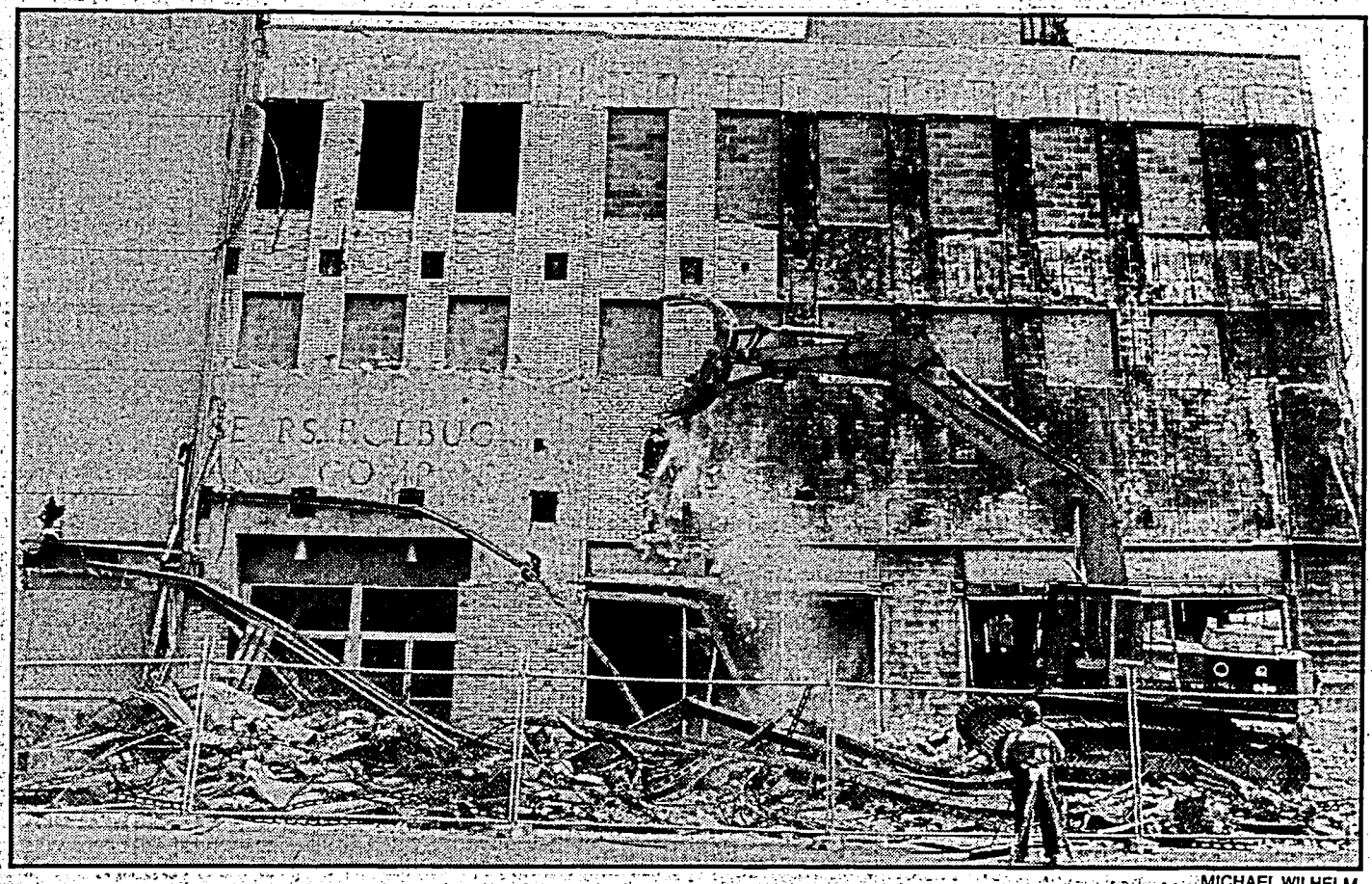
Metro could include educational references and demonstration projects throughout the building on such topics as energy and water conservation, solar heating and hot water systems, solid waste reduction and recycling systems focused on a minimal-discharge goal, ecological landscaping and xeriscaping (for withstanding dry summers with minimal watering) and non-toxic building materials, natural and energy-efficient lighting.

These concepts should be incorporated into the design and renovation of the building in addition to simple organizational systems incorporating ecological planning — cafeteria dishwashing, storage space for recyclables, reusable cloth towels, procurement standards and so on. In many cases, the life-cycle costs of this type of planning could be significantly less than traditional construction and operation, not to mention the spinoff educational value for the region.

We should encourage the Metro Council and design teams not to move forward so rapidly as to miss chances for long-term innovation and benefits. Perhaps a citizens' advisory committee on the east side should also provide real opportunities for first-source hiring from the surrounding community in order to contribute to the sustainable revitalization of the area as a whole.

DIANE MEISENHELTER
Northeast Portland

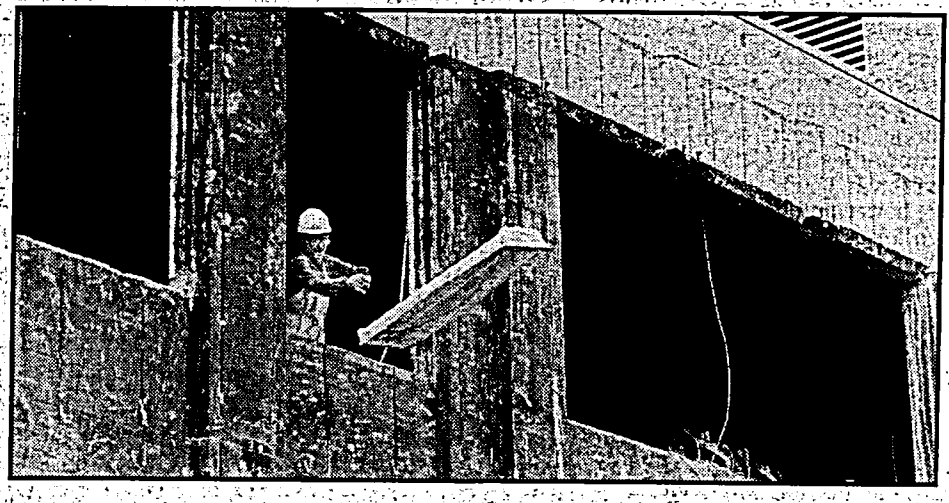
BUSINESS



MICHAEL WILHELM

Eastside face-lift

Above: Mathew Harris watches as Jesse Hancock takes the face off the old Sears building on Northeast Grand Avenue. Both men work for Allied Demolition Co., which is preparing the structure for its transformation into the new Metro headquarters building. At right: Marty Lane of Hoffman Construction Co. disposes of a light fixture.



Focus on Metro

Metro Executive Officer
Rena Cusma

Metro starts new outreach program for women and minority businesses

Metro is implementing a new employment outreach program for women and minorities.

The format was developed as a result of the cnstruction contract with Hoffman/TVA-Cole to renovate the Sears building as a new Metro headquarters.

Hoffman Construction will open a job information booth at the site in response to the Metro contract that encourages opportunities for minorities and women.

Work may include construction jobs on the new Blazer Arena and possible employment with other contractors.

Those interested in more information on the job booth can call Wayne Thomas at 221-8811.

Subcontracting opportunities for minority and women-owned businesses are also available. Contact Dave Meyer at Hoffman Construction, 221-8811, for subcontracting information.

The participating firms are: Rev. Scott Masonry and Carr Construction, MBE; Northwest Concrete Pumping, WBE; and Blessing Electric, Inc., MBE/WBE.

To increase job opportunities for minorities and women, a meeting was hosted for employment service providers at Hoffman offices on March 4, 1992. It was attended by representatives of the various union crafts and service providers. The unions made presentations on job opportunities in trades and crafts.

The job information booth will open the first week of April to provide individuals with career guidance in the building and trades apprenticeship programs, both union and non-union.

The booth will be located near the Sears renovation site on Northeast Lloyd Boulevard between Seventh and Grand. It will be staffed several hours in the mornings and afternoons by people from building and trades organizations.

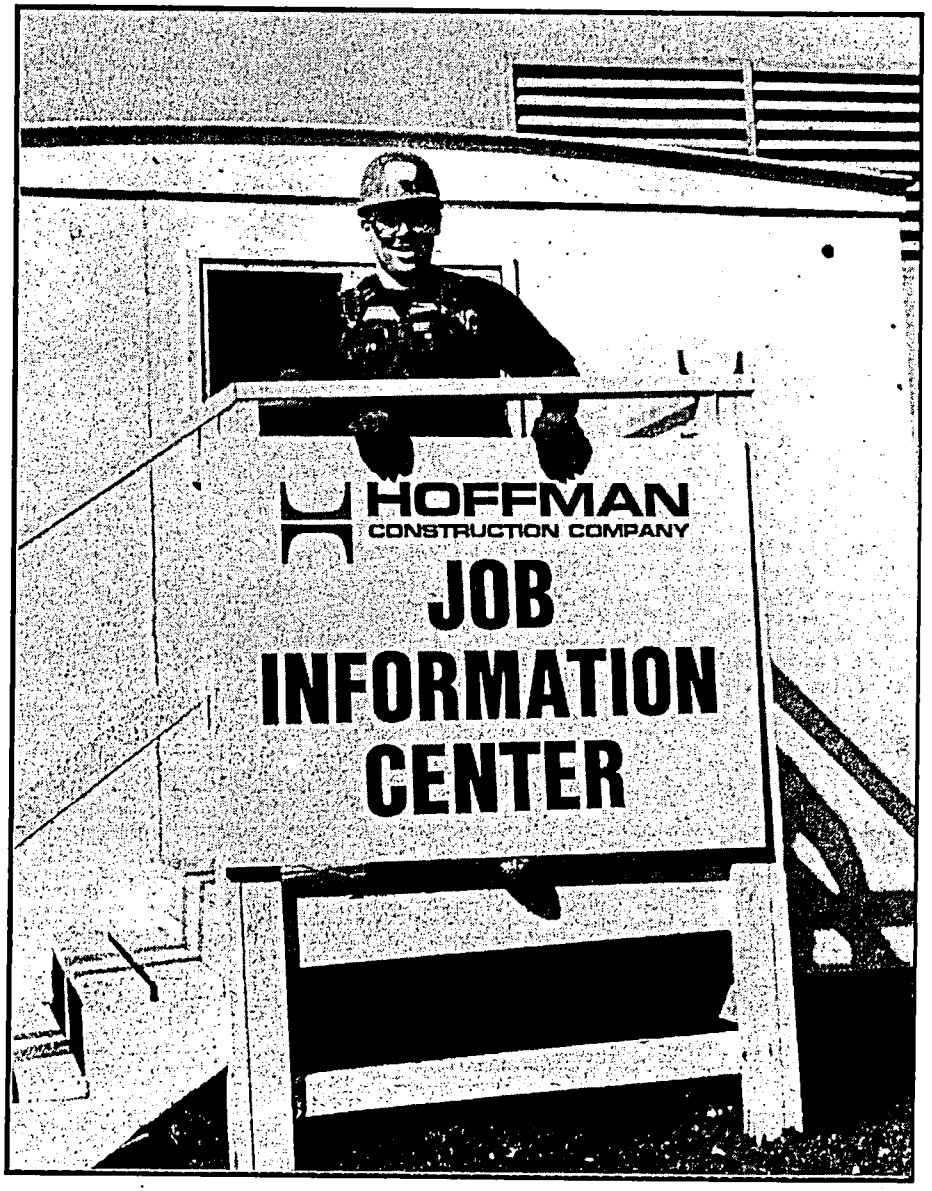
"We want to help people find and develop a career, not just a job," said Wayne Thomas of Hoffman. "We hope to train and place people on the Metro job, and transfer them to other projects in the Lloyd Center area."

The basic philosophy of Metro's new minority and women-owned business program is to solicit interest from potential contractors.

A prebid conference for the Sears renovation project was hosted by Metro and Hoffman Construction at Hoffman's offices on Jan. 27. The meeting was attended by 19 minority and women-owned business representatives.

Dave Meyer described the project and outlined subcontracting opportunities on the project.

To date, with 10 percent of the project completed, two minority and two women-owned businesses have been awarded contracts by Hoffman Construction to work on the Sears renovation project.



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METRO OFICE RENOVATION UPDATE

KATU CH 2

17 JUNE 1992

6:38 PM

NEWSCASTER MELISSA MILLS: Officials with Metro say they know voters are angry about the spendy new state Archives Building and that's why they're being careful not to go overboard in the construction of their own new Metro headquarters. But that doesn't mean they're not spending money. Currin Snipes updates us on what Metro officials call "the resourceful renovation."

REPORTER CURRIN SHIPES: Right now it looks more like a bombed out wreck, but by next spring Metro's new glass-guilded headquarters will be a shimmering example of the latest high tech architecture. The price tag? $23 million, financed by revenue bonds paid for by zoo admission, garbage disposal and other user fees. However, Metro officials say once the old Sears store is converted, it will simply be an office building and that's why they're trying to spend tax dollars wisely.

NEIL SALING, METRO FACILITIES DIRECTOR: We're being very, very careful that the types of things that go into the building for our use--the furniture, fixtures and equipment--are nice in appearance but not opulent, not flashy.

REPORTER: Saling says Metro, the agency responsible for solid waste planning and recycling in the Portland area, intends to move a lot of its old office furniture and equipment into the new building. The only problem is they can't get any more of the furnishings from the manufacturer.

SALING: If we can't continue to acquire the types of office equipment and panels that we have in this building, then it's prudent to go with somebody who looks like they'll be in the business a little bit longer.

REPORTER: But Saling says it won't be an additional expense since there's more than a million dollars in the budget for new furniture and fixtures. Metro officials are also trying to practice what they preach. They plan to salvage, re-use, and recycle as much material as they can. So far, they've pulled about 200 tons of debris out of the building.

SALING: This is the tile for the restrooms.

REPORTER: They also intend to use ceiling tiles, underflooring and other recycled products where they can, even if sometimes they aren't the best buy for the price. In Portland, Currin Snipes, Channel 2 News.

(more)

2-2-2-2 METRO OFFICE RENOVATION UPDATE, CH 2, 6/17/92

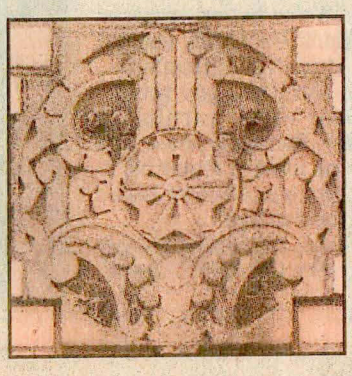
NEWSCASTER: Metro officials say their new headquarters will have plenty of parking and be pedestrian-friendly. They hope to move into the new building toward the end of next March.

CATALOGING THE PAST

By JULIE TRIPP
of The Oregonian staff

Sighs of relief — cast-stone relief — were issued all around recently when workers at the old Sears building on Northeast Grand Avenue peeled off a concrete skin to reveal Art Deco ornamentation on the original 1929 building.

The intricate designs amid the old brick under the facade were in good shape on the building's east side, reports the architect for the Metro project, Bob Thompson, partner in the Portland firm of Thompson Vaivoda Cole & Associates.

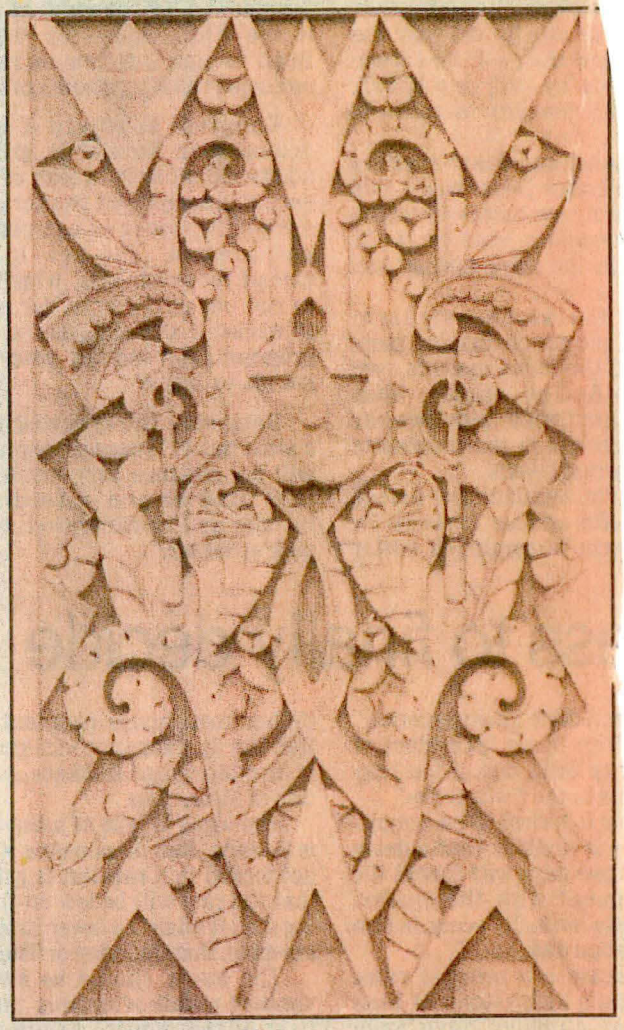


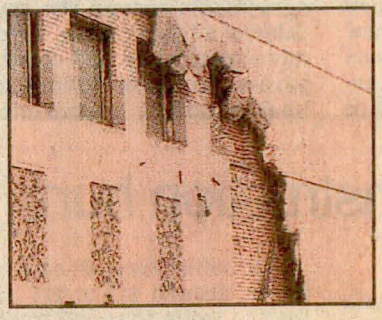
Metro, rebuilding the Sears structure for its headquarters in a $23 million project, wants to incorporate the original ornamentation into the contemporary design, as a bridge to the past.

The castings on the south and west sides of the building may not have fared as well, though, Thompson worries. The building's four remodels since 1929 have taken their toll on some of the 18-inch diameter medallions.

Depending upon the number of castings that are found to be undamaged, Thompson will either use them on the column base around the new building or install them at the building's entries.

In another historical bridge, Portland's Hoffman Construction Co. is Metro's contractor — just as it was in 1929 for Sears Roebuck. The project should be completed in January 1993.





Cast-stone reliefs in the Art Deco style lie hidden under a facade that workers began removing from the old Sears building last week. They'll be used in the new Metro headquarters.

Managing a resourceful renovation

by Jim Goddard and Debbi Palermini

Jim Goddard is a senior solid waste planner at the Metropolitan Service District in Portland, Oregon. Debbi Palermini is the principal of Palermini & Associates (Portland, Oregon), an environmental consulting firm specializing in environmentally sound business practices.

Reusing and recycling construction and demolition debris on large projects requires careful planning to assure that waste reduction goals are met.

Many in the recycling industry take pride in living the recycling ethic. At work, we make double-sided copies, compost food scraps, buy recycled paper, use mechanical pencils and refill laser jet cartridges. But what about the buildings we work in? Do they adhere to the recycling ethics we espouse?

At some time, many businesses and government agencies are faced with the need to renovate, expand or build a place to call home. How that "home" takes shape, with a solid floor, a weatherproof roof and protective walls, can reflect the ethics and values of the people that work there. We can work in recycled offices.

The commercial construction process is beyond the average person's experience. It represents substantial capital investment and is not normally encountered in daily business activities. The limit of a working person's involvement may be identifying the need for the building and its space requirements. Most people feel that the construction process is best left to those who build things for a living.

It may be surprising to realize that many waste reduction practices can be integrated into designing a building, selecting construction materials and specifying how construction work is performed. The Metropolitan Service District (Metro), in Portland, Oregon, faced this challenge when it outgrew its existing leased headquarters and chose to purchase and renovate an existing vacant building.

As the regional government responsible for managing solid waste disposal and recycling in the three-county Portland metropolitan area, Metro has worked with the construction industry to help builders reduce waste. Staff efforts have focused on salvaging building materials, recycling waste from construction sites, buying recycled-content construction materials and incorporating recycling areas into building plans.

Metro's own renovation project creates the opportunity for the agency to integrate all of these elements into a single project and to learn first-hand what obstacles and what benefits come into play.

Scope of the project

The Metro headquarters project consists of converting a 1920s-era Sears Roebuck department store into 95,000 square feet of office and public space on two upper levels and 170 parking spaces on the basement and ground levels. In order to expose the structure, the original facade and materials from two renovations were stripped away. Virtually all interior walls and finishes were removed, leaving floor slabs and structure columns exposed.

Elements of the new construction include applying a glass and brick facade and finishing an open interior floor plan with a minimum number of enclosed offices. Public areas of the building include lobbies, meeting rooms, a council chamber, employee lunch rooms and retail space. A day care facility is also incorporated.

Metro was already reviewing proposals from design/build team proposers when agency recycling staff became involved in the project. An ad hoc committee of interested Metro employees formed to develop and implement the project's waste reduction philosophy. Management enthusiastically supported the idea, and the "Resourceful Renovation" was born.

Ideally, the waste reduction philosophy should be part of a construction project from its inception. Management and project staff should incorporate an organization's philosophy into the building requirements and set specific goals and standards. Information about acceptable methods to meet these requirements should also be provided to help proposers understand how to transform the philosophy into a tangible product. Proposers should be asked to include ex-

perience in salvaging reusable materials, recycling construction site waste, using recycled construction products and designing recycling systems in their proposals. Previous experience in these areas can dramatically increase the level of recycling incorporated into a project.

The design/build proposals Metro received incorporated varying levels of waste reduction. The winning team, Hoffman Construction and Thompson/Vaivoda Architects, has been instrumental and very cooperative in meeting the waste reduction goals of the Resourceful Renovation.

Materials are sorted by type during the partial demolition of an old Sears & Roebuck building. The construction/renovation process will result in new headquarters for the Metropolitan Service District in Portland, Oregon.

Reuse

The concrete frame (or skeleton) of the building is being reused in the new structure. This preserves 80 percent of the original building's mass, but allows the architect to redesign the building's appearance and alter its function.

The design/build team has incorporated many of the building's existing features. Of the several stairways, all but one were reused. The existing loading area, with raised concrete levels and ramps, was included in the final design.

A water tank in the building's tower is being transformed into a meeting room (the "think tank") and beautiful cast medallions from the original exterior will be incorporated into the new structure. Many other existing features, such as

freight elevators and hardwood flooring, were salvaged only after considerable analysis of reuse feasibility.

Salvage

Renovation of an existing building provides many unique opportunities for salvaging building parts and pieces that are not incorporated into the new design. The vacant building looked barren to the untrained eye, but salvagers who were asked to evaluate reuse potential found many opportunities. Marketable items included solid core doors, door hardware, sinks, urinals (you can't give away power-flush toilets), paneling, carpet, hardwood flooring, signs, fire pull boxes, spotlights and funky mechanical equipment.

Salvagers understand what has value and what does not; what has a ready market and what will sit in inventory for years. Much to Metro's dismay, "removing" toilets from the wall meant applying sledge hammers to porcelain to an untrained construction crew early in the process. This underscores some important points. Salvage should take place before demolition begins, and the project schedule should allow sufficient time for salvage activity.

Salvagers operate in different ways. Some provide salvage labor in exchange for the materials. Others pay a small price for the rights to perform salvage. Still others provide pick-up service for materials that are already removed. All three types of salvagers were used on the Resourceful Renovation.

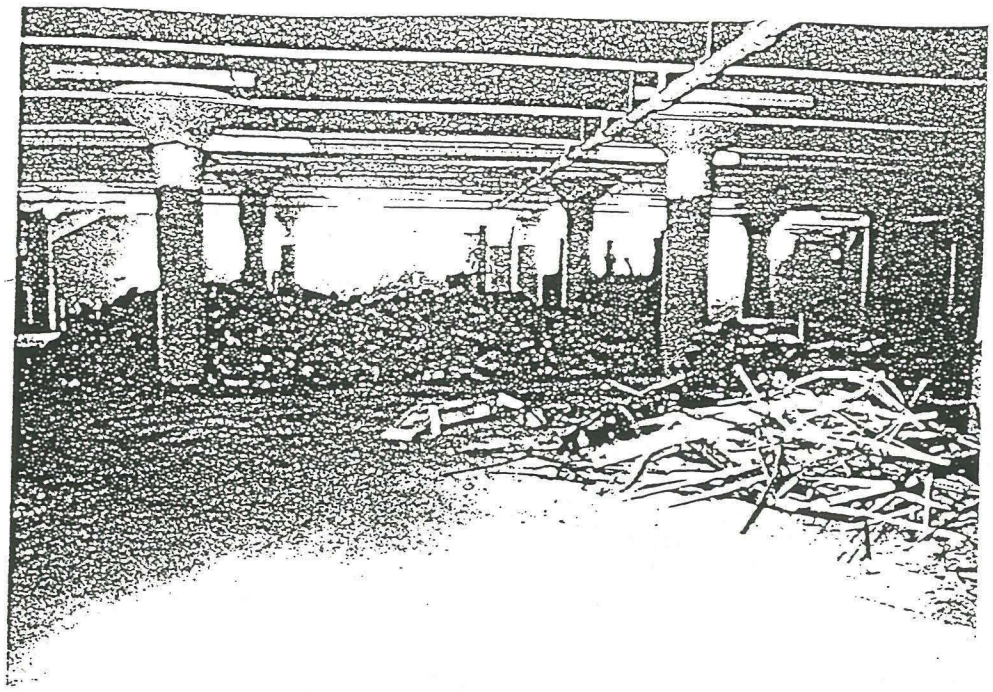
Salvagers that provide removal services are not normally in the mainstream of the construction industry. They are often unable to pay wages that meet prevailing wage standards required for public works projects because the material value does not cover their costs. Their crews may consist of temporary help with little or no experience in the building trades. And their general liability coverage may not meet the specified limits.

For these reasons, Hoffman Construction was reluctant to subcontract to salvagers. Consequently, Metro contracted directly with a salvager. The salvager's general liability insurance limits were reviewed, and reduced levels of coverage were accepted, since all the areas in which they would work would be demolished later. Workers' compensation coverage was required. Metro also required that the salvager register with the State Contractor's Board. This was based on a ruling that salvage work constitutes partial demolition of a building and therefore requires a license to perform the work.

The entire process of determining how the salvage could be executed on the Metro project took approximately two months. However, once finalized, the agreement format was used several times for additional salvage opportunities.

Salvagers that provide pick-up services are much less complicated to incorporate in a project. The prime contractor removes the materials and sets them aside for the salvager. Thus the salvager does not actually work on the site and the contractor's risk is consequently reduced. The major disadvantage is that the contractor's crew is paid higher wages than a salvager to remove the materials, which can affect the cost of the project. This method was used for salvaging carpet, since it was already cut and rolled for recovery.

Hoffman Construction actively sought



Large quantities of source-separated metal and rubble were also collected for recycling from interior demolition work.

salvage opportunities and delayed demolition activity in areas where salvagers needed to complete work. This salvage effort led to the potential reuse of 35 tons of the materials listed earlier.

Construction site recycling

Construction site recycling involves the removal of demolition waste and construction scraps from the site for processing by a recycler. While much work has been done to reduce construction site waste in the past few years, construction and demolition debris still makes up approximately 17 percent of the solid waste stream.

The Portland area has an exceptional construction waste recycling infrastructure, which includes 15 scrap metal recyclers, 16 wood and land clearing debris processors, nine concrete and rubble clean fill sites, five used building material salvagers, three dry wall recyclers and one window glass processor. The tipping fee for landfill disposal of general purpose waste has increased to $75 per ton, providing a substantial incentive for the building industry to use recyclers and to source separate construction waste.

Metro contracted with Palermini & Associates (P&A) to conduct a site audit to

determine what materials would be recyclable during the demolition phase of the project. At that time, little information was available about the manner in which the demolition would be performed, so the initial investigations were very general. A more accurate and detailed site audit was developed by discussing specific demolition plans with Hoffman. Contractors normally perform a demolition audit as a part of their planning process.

P&A compiled a list of all construction material recyclers within the Metro area. The disposal fee or reimbursement for materials, the expected quantity of material from the project and the transportation costs to deliver materials to the recycler were used to perform a cost/benefit analysis for the demolition phase. Hoffman Construction used this information to help complete demolition plans.

Based on the results of the cost/benefit analysis, Hoffman determined that it was cost effective to use extra

Tips for developing a demolition project waste management plan

Owner responsibilities

- Develop explicit language for the initial proposal package that clearly sets forth the requirements for implementing a waste management plan. Set a goal for waste reduction.
- Require the prime contractor and subcontractors to develop and implement a waste management plan.

Contractor responsibilities

Develop and implement a waste management plan:

- Begin by identifying:
  - Materials that have the potential to be salvaged and reused on-site or recycled.
  - Potential site layout for source separating materials and placing recycling bins.
- Conduct cost benefit analysis that includes:
  - Market value of materials or costs for dropping at a recycling facility or the local landfill.
  - Source separation requirements for each material. Determine cost to source separate on-site (including labor costs).
  - Transportation costs. Determine hauling costs and options. Will sub-contractors self-haul or use a removal hauler? (Some recycling companies will provide bins and pick-up services.)
  - Cost of landfill disposal.
- Develop a waste management plan that includes:
  - Type of material.
  - Estimated quantity.
  - Source separation requirements.
  - On-site storage.
  - Transportation method.
  - Destination.
- Designate one person to be responsible for waste management. Develop and use a tracking form for proof of where demolition debris was recycled, reused or landfilled.

labor to source separate materials and prepare them for recycling. This is a successful approach as long as crews have a clear understanding of on-site preparation requirements for each material. Without that critical information, separated material can become waste, which is what occurred with 74 tons of rubble generated early in the project. Because the crew did not realize that all protruding metal must be removed and only small manageable pieces be delivered as clean fill, the load was rejected. The situation was quickly resolved for the remaining 4,000 tons of rubble.

P&A and Metro developed a waste management plan that Hoffman included in all subcontract packages. The plan described Hoffman's intent to recycle as many materials from the site as possible and also provided subcontractors with a list of all recyclers accepting materials.

Table 1 — Waste reduction through the salvage and demolition phase

Reuse of structure	20,000 tons
Rubble (clean fill)	4,000 tons
Recycling	485 tons
Salvage	35 tons
Garbage	132 tons

Source: Palermini & Associates, 1992.

P&A provided assistance and training to subcontractors to help them understand and use the plan.

The demolition phase included only one subcontractor, so tracking and managing the quantities of waste materials removed from the site was simplified. As a result of implementing the plan during the demolition phase, 485 tons of wood and metal were recycled and only 132 tons of nonrecyclable waste left the site as garbage. The majority of this was roofing, for which there are no local recycling options.

New construction on the project has not yet begun, however the waste management plan developed during the demolition phase will be instrumental in communicating with the subcontractors about on-site recycling. The U.S. Environmental Protection Agency has awarded Metro a grant to hire a project coordinator to help subcontractors maximize recycling and document the lessons learned from the project. This will involve meeting individually with 40 subcontractors to explain recycling options, train them in recycling procedures and monitor their progress and difficulties. The grant also funds a comprehensive "how-to" guide that summarizes all phases of the Resourceful Renovation project.

Buying recycled

When undertaking a similar project, locally available recycled-content materials should be investigated to determine which are feasible to incorporate into the project. Some common building materials have included recycled content for many years. Examples include suspended acoustical ceiling tiles manufactured with recycled newsprint, carpet under cushions and resilient flooring made from tires, and tiles made from recycled auto glass.

Paint that is locally remanufactured from Metro's household hazardous waste facility, fiberglass insulation con-

taining recycled glass, and carpet produced from recovered polyethylene terephthalate plastic are some of the new products becoming available in the Portland area.

The Resourceful Renovation Project hired Edwin L. Mays of Envirowise Developments to research and compile a list of recycled-content materials available in the Portland area. Twenty-four materials were identified.

Subsequent review reduced the list to 16 products that potentially match the style and requirements of the new building. The architect has reviewed the materials and begun the specification phase, which will include many of the materials identified. To reinforce their importance, a project goal is to maximize the use of recycled-content products in the public space.

Oregon recycling laws and a Metro executive order mandate that a 5 percent price preference be given to recycled-content materials. This translated into a $35,000 budget item to cover the cost of the preference. The actual method of application and evaluation of this preference is still being developed.

Office recycling systems

Internal recycling systems should be incorporated into project planning from the beginning. Considerations include the type and number of materials to be collected, use of deskside and central collection systems, storage areas for collected materials, access to loading docks for recycling operators to pick up materials, and compliance with fire codes for the collection and storage of recycled paper. Planning for these elements should continue as the space planning phase progresses.

In the Resourceful Renovation project, the offices occupy the second and third floors, while the loading dock is on the ground floor. Because of the building layout and availability of existing mechanical shafts, a three-chute paper collection system for white ledger, colored ledger and computer paper will be installed. The chutes eliminate the need to transfer loads of collected materials between floors and allows the use of large containers to collect paper at the chute outlets.

Steve Guisto, Oregon Paper Fiber, assisted Metro in developing the criteria for the chutes and established performance specifications and a cost estimate. The plans were forwarded to the fire marshal to determine what fire protection would be needed in the chutes and the recycling room.

Other source-separated materials to be collected in the office will include magazines, newspaper, glass, aluminum, tin cans, kraft paper and corrugated cartons. These will be collected in each floor's break room and moved to the recycling room regularly.

Conclusion

Waste reduction philosophies can be successfully integrated into large construction projects. But early planning and identifying waste reduction as an integral part of the project from the beginning are critical. Selecting an architect and a contractor that are supportive of waste reduction goals is essential to success. Ongoing education of those involved in the project, and regular evaluation of progress, will help maintain momentum and overcome barriers that arise throughout the project. **RR**

notes Eugene Moore, who is heading the study for the city. Currently, the city recycles 17,000 tons of steel cans, 7,800 tons of bulk metals and 1,700 tons of aluminum cans and foil each year. When its collection program is fully implemented in 1994, aluminum scrap should increase to 3,200 tons, steel cans to 50,000 tons and bulk metals to 29,000 tons.

Before committing to a marketing strategy, the Office of Recycling wants to review its options. Beyond a look at the structure of individual industries, this study also will investigate the potential for siting manufacturing facilities in the metropolitan area. NYC recently completed a 10 year agreement to supply paper to a new $200 million deinking plant located within city limits. Moore believes that a similar deal can be arranged in the metals area. The initial analysis of the metals markets will be completed within a year, prior to the city going out with a long term supply RFP.

Tifton, Georgia
STUDENTS LEARN COMPOSTING

Three hundred high school students from all over Georgia met for the Natural Resources Conservation Workshop at the Abraham Baldwin Agricultural College in July. The students separated and composted their food scraps, paper towels and napkins during the four day conference in a demonstration that will lead to similar projects at high schools throughout the state next year. Workshop participants scraped their plates and placed napkins in containers labeled "compostables only," according to Clark Gregory of the Fulton County Soil and Water Conservation District, who was in charge of the project. Wet paper towels from the rest rooms were added to the bins, which were taken to the college farm.

Portland, Oregon
SETTING AN EXAMPLE

The Metropolitan Service District (Metro), the agency responsible for solid waste planning and recycling, purchased a vacant building formerly used as a Sears Department store to serve as its new headquarters. In renovating the 73-year-old building, Metro wants to create a model for environmentally sound construction. "Besides reusing an existing structure rather than building on vacant land, most of the waste produced in the renovation process is being salvaged, reused or recycled, and recycled building materials are being incorporated where possible," says Metro spokesman Michel Gregory.

Recycling chutes for office paper are being installed in an existing mechanical shaft, and storage space for recyclables is being designed for easy access to the loading dock. The U.S. Environmental Protection Agency has given Metro a $30,000 grant to document the project for educational purposes.

Resourcefulness

Today's builders are beginning to ask more questions about ways to build environmentally friendly structures

BY
DEBBI PALERMINI and MICHAEL O'BRIEN
Sustainable Building Collaborative

Environmental concerns, such as dwindling forest products and other natural resources have grown very rapidly over the past few years and have significantly impacted the building industry.

One very important question facing the Northwest is, "How can the building industry balance the need to protect the environment with the need to provide affordable housing for an estimated 500,000 new households over the next 10 to 20 years?"

One answer is for builders to develop a philosophy of "building sustainably." The Sustainable Building Collaborative (SBC), a new non-profit educational organization is trying to develop answers to questions, such as what is "building sustainably."

In August, the SBC brought together a group of experts in energy and resource-efficiency to help develop a working definition for sustainable building. The group came up with: "sustainable" construction meets present needs and doesn't compromise future choices. It is accomplished by incorporating resource-efficiency throughout all phases of design, construction, operation and demolition.

What impact will all of this have on the building industry? While there is an obvious need to develop new building products that provide an efficient alternative to traditional resource intensive materials, can America's waste stream provide some of those needed materials? We are hoping the answer is yes.

Debbi and Don Palermini sort wood on this year's Street of Dreams in an experiment t find out what types of building material could be recycled.

COMPONENTS: Innovators in the building and design community are beginning to look further into the energy and resource impacts of the building itself. There are really four basic components of any green building plan:

- Conserve natural resources, such as energy, water and forest products.
- Provide for indoor air quality, which has two parts: the ventilation system and reducing pollutants, such as off-gassing of formaldehyde and other fumes from paint, furniture, finishes, etc.
- Recycle construction debris and use new recycled content building materials.
- Developing a water quality plan

that includes reducing soil erosion and surface water runoff and reduce the use of hazardous materials.

When thinking about which building materials to use, they are asking such questions as:

- Do the products use virgin resources efficiently?
- Are the materials produced locally?
- Do they make reasonable use of recycled materials?
- Will they offer high quality, durability and value over the life of the building?
- Will they help ease pollution?
- Do they minimize health risks to those who manufacture the products, use them to construct the building or to those who occupy or operate the building.
- Can they be recycled?

For many builders who want to build environmentally responsible buildings, one frustration is a lack of clear guidelines. What really works in the real world? How much is this new "resource-efficient" building product going to cost me and my client? How easily is it to recycle construction debris on a job site? How much extra labor and time will it take to install these new products? What is the market for new "green" buildings? And what are these new "resource-efficient" building products anyway?

DEMONSTRATIONS: Two demonstration projects are currently being built in Portland that will help answer some of those questions. The first project is Metro's new regional center. This project, currently under way, is the renovation of an old 1920s era commercial structure into a 93,000-square-foot office building.

Throughout the project, the majority of construction waste has been salvaged, reused or recycled. New resource-efficient building materials are being incorporated and a state-of-the-art recycling system is being installed. In addition, the building meets new high energy and water-efficiency standards.

Care is being taken to incorporate landscaping that will requires less water and pesticides.

A second project, is called the HERE Today House. This Healthy, Environmentally sound, Resource and Energy efficient house is sponsored by Portland General Electric and the Sustainable Building Collaborative, and endorsed by Metro, the Home Builders Association of Metropolitan Portland and the City of Portland.

The 2,500-square-foot home was designed and is being built by Gregory Acker of Eco+Tech Construction. Acker is also a founding member of the Sustainable Building Collaborative.

The purpose of the demonstration home is to see first hand the successes as well as pitfalls of building a more resource-efficient home.

A high priority has been placed on using wood as efficiently as possibly and utilizing wood composites or substitutes whenever possible.

Other examples of materials to be used are:

- Tile made from recycled auto glass
- Willamette Valley rye-grass manufactured into wall coverings and tiles
- Recycled pop bottle carpet
- Recycled content drywall
- Paint containing recycled paint
- Insulation made from old newspapers.
- Ceiling tiles and panels made with recycled newsprint.

Additionally, all construction wastes will be recycled to reduce the amount of waste generated by the building process. Landscaping will focus on plantings that need little pesticides and water, and a rainwater collection system will be incorporated.

Only preservative-free paints as well as non-toxic adhesives and finishes will be used. Care is also being taken to prevent soil erosion and reduce surface-water run-off.

The home is owned by Michael and Andrea Burke, who have been very active in helping make the "right" decisions about products and construction methods.

A resource guide is being developed to document the building process and to provide guidelines and offer choices for those interested in building or living in an "environmentally sustainable" home.

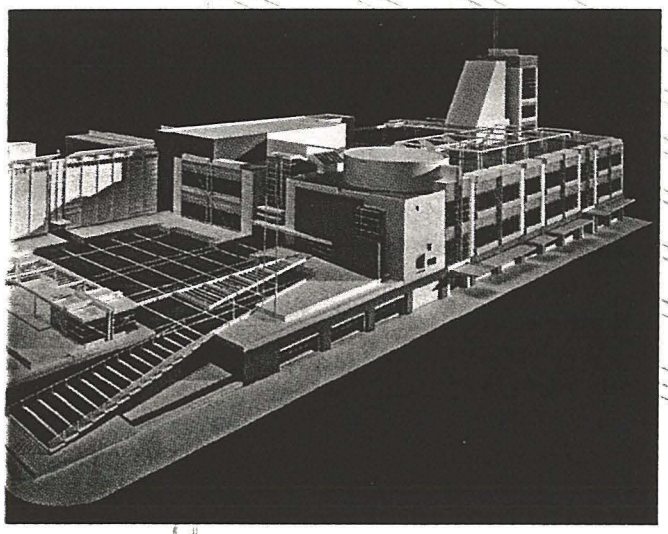
Builders and consumers, such as the Burkes, are faced with many choices each and every day. Information learned from demonstration projects such as Metro's Resourceful Renovation and PGE's HERE Today house will provide invaluable information for the new generation of "green" builders.

It is up to all of us to promote a healthy environment. One of the most important ways to do this is by building with a philosophy that sustains and at the same time enhances our environment. ❑

Debbi Palermini and Michael O'Brien are members of the Sustainable Building Collaborative in Portland.

ON THE BOARDS

Municipal Conversion



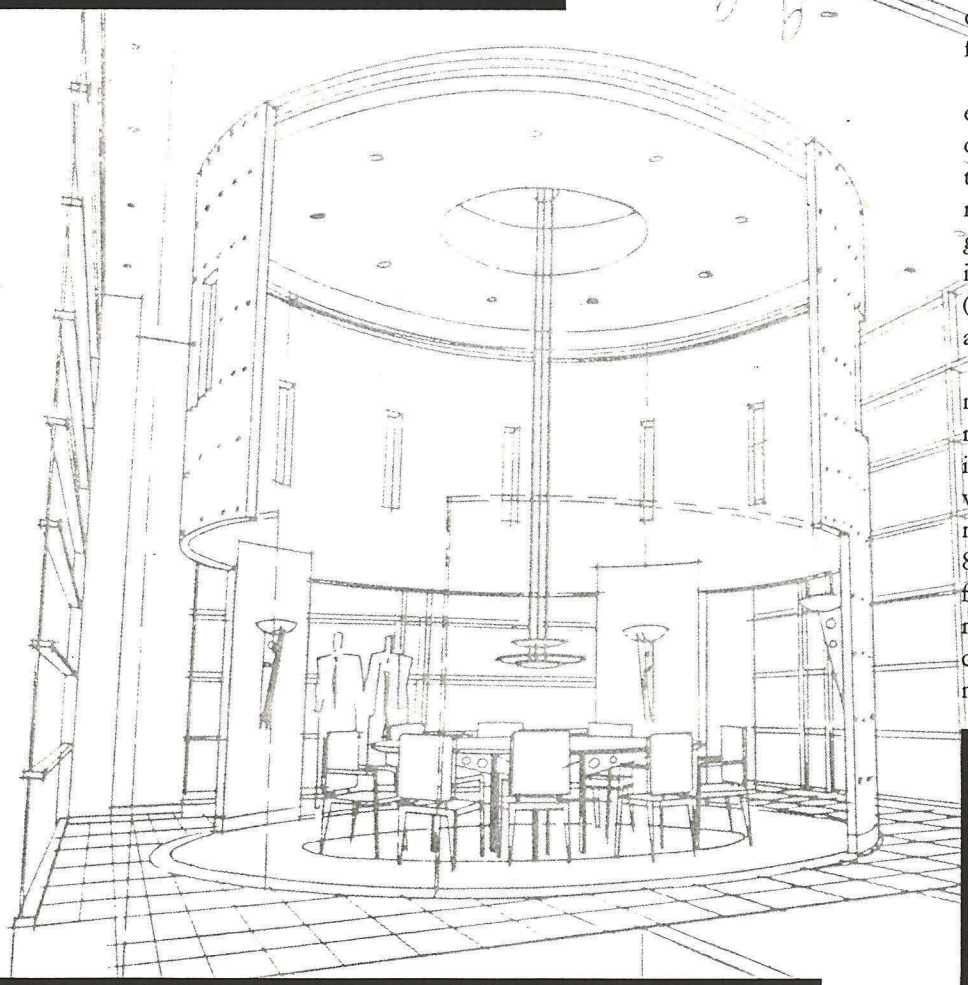
Metro Headquarters
Portland, Oregon
Thompson Vaivoda Cole and Associates

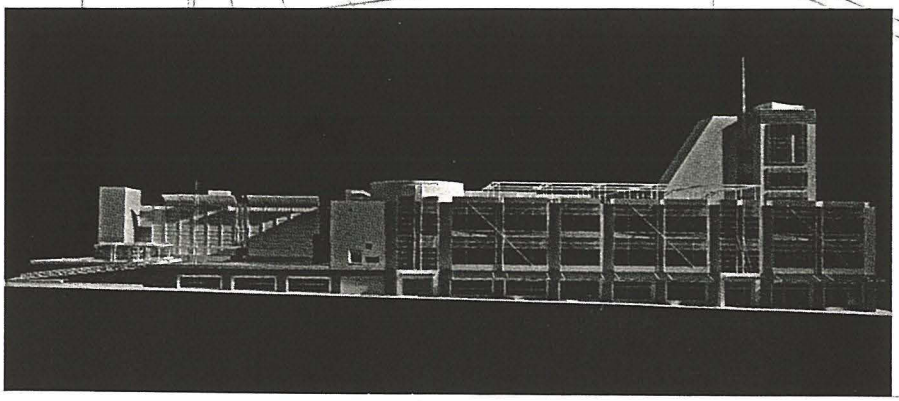
PORTLAND'S MUNICIPAL AUTHORITY, THE Metropolitan Service District, oversees the city's public transportation system, the Performing Arts Center, and the Oregon Convention Center. Two years ago, Metro commissioned the local firm of Thompson Vaivoda Cole and Associates to convert an abandoned Sears department store (below) into a new headquarters for the municipal body, charging the architects to develop a strong visual presence appropriate to the building's prominent downtown location in Portland's Lloyd District. Comprising a block-long site, the existing Sears store was an amalgamation of four undistinguished buildings completed from 1929 to 1966.

Thompson Vaivoda and Cole stripped the existing building down to its original concrete structural frame and is now recladding the entire complex in stone, white brick, and metal panels, inserting large windows of pale green glass. Along the south elevation, they incorporated an existing, six-story stair tower (below and bottom) to house a staff lounge and a circular conference room (left).

To create a ceremonial entrance on the north elevation, the architects carved out a new landscaped courtyard (top left). An existing, one-story addition to the east was converted to house a daycare center. To accommodate the growing agency, they created 85,000 square feet of office space atop two floors of parking, which will be leased when needed. The headquarters is currently under construction and scheduled for completion next year.

—LYNN NESMITH





cc Steve Krebs
Debbie Gorham
ANDY SLOOP
PAT VARNEY

METRO: A Resource Efficient Building

by DIANA O'FARRELL, Glumac & Associates

Additional information on Resource Efficient design is available from the following sources:

√ *Business for Environmentally Sustainable Tomorrow (BEST) Curt Nichols (503) 823-7418*

√ *AIA Committee on the Environment Dorothy Payton (503) 223-2581*

√ *Sustainable Building Collaborative (503) 234-6931*

Palermini & Associates Debbi Palermini (503) 235-0137

As the business sector has assumed more responsibility for the environment, the design and construction industry has produced a "green" design movement.

For example, the American Institute of Architects recently published an *Environmental Resource Guide* addressing critical issues such as land use, site design, energy, recycling and building ecology. Encouraged by financial programs through the utilities, consulting engineers have begun to conduct studies for potential energy conservation measures. Contractors can implement salvage and recycling of construction debris.

Debbi Palermini of Palermini & Associates, a building industry environmental consulting firm, says many resource efficient approaches are not new, but must be used consistently as a standard for building design.

A resource efficient building is energy efficient; optimally uses raw materials and natural resources; recycles and salvages materials; reduces waste; uses products that minimize health risks for manufacturers, installers, and users; and provides the best quality at affordable prices. Long-term benefits are lower operating and waste management costs, reduction of health risk costs and the creation of new product and recycling industries.

A recent example of a resource efficient building is METRO's nearly completed renovation of an old Sears store for its new headquarters. With the desire to provide an example of a resource efficient building, METRO emphasized the use of recycled products and the disposal and reuse of waste materials in the design and construction of the building.

METRO also took advantage of PP&L's FinAnswer program by utilizing energy conservation measures modeled by Glumac & Associates, consulting engineers. This created a 35 percent savings in energy use.

Berit Stevenson, Project Manager for METRO, said they had a four-pronged approach to resourceful renovation:

1. **Implement an on-site construction and demolition recycling program.** With Palermini's direction and Hoffman Construction's cooperation, METRO has avoided dumping 800 tons of "stuff" in the landfill to date. Salvagers collected material before demolition. Hoffman sorted and separated materials for easy collection by recyclers. Hoffman made money by recycling rather than paying huge landfill fees, said Bart Eberwein, Marketing Director for Hoffman.

2. **Implement a process for in-house recycling.** An old dumbwaiter and mechanical vents were used for chutes to the basement for easy collection of recycled material.

3. **Use new products with recycled contents.** Twelve of 25 proposed recycled products were used in the project, including paint from METRO'S household waste recycling project, ceiling tiles, insulation, and toilet partitions made of old milk jugs.

   "METRO is an ideal client because they are strongly committed to recycling and provided in-house resources to aid our finn," said Paul Thimm of Thompson Valvoda & Associates. Although not every idea could be used, the cooperative effort of the team provided cost effective and innovative solutions.

4. **Promote sustainable buildings and educate the building industry.** Palermini and METRO are producing a video tape to be available to the building industry. METRO is also planning a permanent display telling the story of the remodel with a "u-find-it" map giving the location of recycled products.

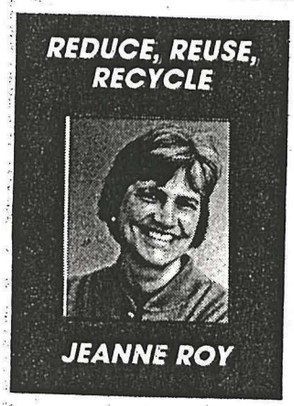
With strong public support and a wealth of information available, it is up to each discipline to increase its awareness and cooperate with other disciplines to produce the most resource efficient buildings possible. ■

Post-it™ brand fax transmittal memo 7671 | # of pages ▸ 1
To Pat Merkle | From Diana O'Farrell
Co. METRO | Co. Glumac
Dept. | Phone # 227-3280
Fax # 273-5586 | Fax #

HOMESTYLE

Dream house realized

Suppose for a moment that you have been granted a New Year's wish. You can design and build your dream house — one with cutting-edge features to save energy and resources. How would it be different from a modern tract home?



The answer can be found in Portland at 2204 S.W. Luradel Drive. Under construction at that site is the HERE Today House, a dream of three visionaries you will meet below. HERE stands for Healthy, Environmentally responsible, Resource and Energy efficient. You will have an opportunity to tour this house on the weekends of March 13-14 and 20-21. Call 234-6931 for directions.

Recycled materials

The hallmark of the HERE Today project is use of recycled materials. The siding and subfloors contain waste wood. The drywall is made of recycled wallboard, the insulation is shredded newspapers, and nails are made from recycled steel.

Beyond these basic building materials, the designers have been particularly creative. For example, the entry clay tile is made from crushed auto glass and the carpet is fabricated out of plastic soft drink bottles. Oregonians who detest field burning will be happy to know that waste rye grass straw was used to make the parquet-type wood floor. If you want to know how to find some of these products, try Metro's "Index of Recycled Products."

The visionary behind such extensive use of recycled materials is Michael O'Brien, a person committed to sustainable building practices. O'Brien, an energy and buildings specialist, has a newfound passion to teach builders how to recapture the energy in reused materials. "About 40 percent of old trees are going to lumber. If we can stretch the lumber supply, we are doing the forests a favor."

Construction waste

Construction of an average home generates four to six tons of crap. In fact, about 10 percent of all landfilled waste in the Metro area is wood, and most of it comes from construction sites.

Using careful source separation techniques, the builder of the HERE Today House has already sent two tons of wood waste to Grimm's Fuel, where it will be chipped into fuel for paper plants, and two tons of drywall to Gypsum Wallboard Recycling in Tualatin to be made into new drywall. Almost one ton of roofing tiles were recovered to be used for driveway fill, and 260 pounds of corrugated cardboard containers will be made into new cardboard.

Debbi Palermini, a consultant, has been a pioneer in finding ways for builders to recycle their scrap. This was a natural outgrowth of her many years in energy conservation work. The past two years, Palermini worked with Street of Dreams builders to recycle construction debris and then was hired by Metro to recover material during the massive renovation of the old Sears building.

With her help, Metro has printed "Construction Site Recycling" for builders who don't want to landfill wood, drywall, metal, glass, carpet padding or rubble. The guide lists over 30 sites accepting these materials. Builders can save from $20 to $60 per ton by diverting material to processors instead of landfills.

Respecting the environment

Too often, contractors bulldoze vegetation and pay little attention to erosion. At the HERE Today site, the builder has retained as much vegetation as possible and is using bags of wood chips to control surface runoff. Additionally, the landscaping features native plants that provide friendly habitat for wildlife. A cistern will be constructed to collect rainwater and distribute it slowly to plants as needed. To save energy the house was positioned so the floor tiles will collect solar heat.

Greg Acker, architect and builder specializing in passive solar design, has the Peace Corps perspective: "I realized that the rest of the world doesn't waste resources like we do. They don't even produce garbage." He came back from his Peace Corps tour inspired to alter U.S. construction practices. His construction firm is called Eco + Tech — it combines the latest technology with a concern for ecology.

If resource and energy efficient construction sounds good to you, remember that consumer demand is the key. If home buyers and remodelers demand this type of construction, builders will provide it.

Send correspondence to: Recycling Advocates, 2420 S.W. Boundary St., Portland, Ore. 97201.