

1999

## Rebuilding with Habitat: a Feasibility Study for a Portland Re-Store

Eli Spevak

*Portland State University*

Rebecca Newman

*Portland State University*

Barbara Linssen


*Portland State University*

Clint Wertz

*Portland State University*

Let us know how access to this document benefits you.

Follow this and additional works at: [http://pdxscholar.library.pdx.edu/usp\\_murp](http://pdxscholar.library.pdx.edu/usp_murp)

 Part of the [Urban Studies Commons](#), and the [Urban Studies and Planning Commons](#)

---

### Recommended Citation

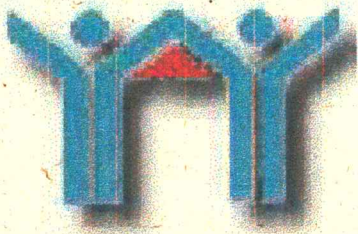
Spevak, Eli; Newman, Rebecca; Linssen, Barbara; and Wertz, Clint, "Rebuilding with Habitat: a Feasibility Study for a Portland Re-Store" (1999). *Master of Urban and Regional Planning Workshop Projects*. Paper 104.

[http://pdxscholar.library.pdx.edu/usp\\_murp/104](http://pdxscholar.library.pdx.edu/usp_murp/104)

This Report is brought to you for free and open access. It has been accepted for inclusion in Master of Urban and Regional Planning Workshop Projects by an authorized administrator of PDXScholar. For more information, please contact [pdxscholar@pdx.edu](mailto:pdxscholar@pdx.edu).

# Rebuilding with Habitat

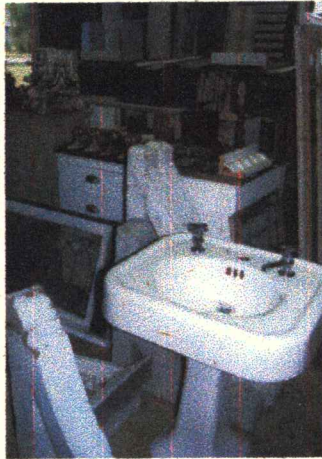
## A Feasibility Study for a Portland Re-Store



Submitted to Habitat for Humanity, Portland  
March 17, 1999



Portland State University  
Graduate Planning Workshop  
Eli Spevak, Rebecca Newman  
Barbara Linssen, Clint Wertz



*More than just building materials*

## **What is this report about?**

In September 1998 Habitat for Humanity's director asked our team to conduct a feasibility study on the possibility of opening a Habitat Re-Store in Portland, a store that would re-sell used building materials. In addition to exploring that question in the traditional manner - considering issues of supply and demand, local competition and potential market niches – we found ourselves compelled by a deeper exploration of the possibilities. Given that the store would be a Habitat for Humanity venture...how could the store be utilized to improve people's lives...to empower and to educate....to both gain from and give back to the community? With the following report we hope we have answered the original question and raised some new ones.

**The Portland State University (PSU) – College of Urban and Public Affairs**  
Graduate Planning Workshop Team:  
Clint Wertz, Eli Spevak, Rebecca Newman and Barbara Linssen

## **Acknowledgments**

We would like to thank Portland State University, Portland Habitat for Humanity, and the following individuals for helping with this report: Connie Ozawa, Deb Howe, our workshop cohort, Cynthia Winter, Anne Zoomajian, Bryce Jacobson, and Shane Endicott. We would also like to thank all of the people we interviewed, who shared their time, energy, and insights with us and expressed excitement in this project. Special thanks to Anu Shinnamon for help in editing the report. Copies of the Executive Summary will be distributed to all informants.

---

## TABLE OF CONTENTS

	<u>Page</u>
Executive Summary	5
Introduction	9
Project Goals	
Goal One: Fund Habitat	13
Goal Two: Provide Low-Cost Building Materials	25
Goal Three: Promote Economic Development	27
Goal Four: Expand Volunteer Opportunities	31
Goal Five: Reduce Environmental Impacts	33
Goal Six: Promote Historic Renovation	37
Recommendations	39
Conclusion	43
<b>Appendix</b>	
A. Glossary of Terms	
B. MAP - Age of housing	
C. MAP - Income level	
D. Contacts, Leads, and Web sites	
E. Information sources	
F. Bibliography	





## EXECUTIVE SUMMARY

### Study Overview

The Portland, Oregon affiliate of Habitat for Humanity is considering opening a used building materials store in the Portland metropolitan area. Before moving ahead with this idea, Habitat asked a team of graduate students at Portland State University to conduct a feasibility study. If the store looks viable, a business plan will follow.

The team has pushed the study beyond simple economic feasibility. As a non-profit entity, Habitat has a commitment to serving the community in a variety of ways. A used building material store has the potential to meet several of Habitat's goals, including helping low-income home owners to maintain and repair their homes, helping other non-profit housing developers produce more livable housing, protecting the environment, and funding Habitat's activities in the Portland area. The team's goal was to expand this traditional feasibility study in an effort to link the value of a Re-Store with Habitat's broader mission.

### Store Goals

- To fund construction of affordable housing
- To provide low-cost building materials for low-income and non-profit partners
- To spur economic development
- To provide new opportunities for volunteers and donors
- To encourage resource re-use and reduce environmental impacts
- To promote historic renovation

The team explored these possibilities, gathering information from the literature and from successful stores around the country. They compared the Portland market to other cities, examined local and regional competitors, and performed extensive interviews of potential suppliers and customers. From this information, the team provides an evaluation of the potential of different programs to meet the needs of a Portland Re-Store.



## SUMMARY OF RECOMMENDATIONS



*Older hardware from Pumpkin Ridge house,  
Whole House Recycling Project 1994*

- **Habitat should open a Re-Store in Portland in the near future.**  
The local market for re-used building materials is growing rapidly; Habitat's planned expansion of home production coincides with the need for additional revenues that a store could provide. Habitat should set up a store before other non-profits follow suit.
- **A Portland Re-Store should follow a traditional Re-Store model.**  
The store should be owned and operated by Habitat, and adhere to a typical thrift store financial structure. Some space within the store could be reserved for offices or meeting space, and Habitat might also identify space for 'overflow' storage, perhaps at a second location.
- **The Re-Store should focus on functional, lower-cost building materials.**  
A focus on affordable building materials would allow Habitat to serve lower-income community residents, match the store's market niche to materials most likely to be donated, and avoid competition with higher-end stores.
- **Habitat should consider locating the Re-Store in Southeast Portland.**  
Habitat has recently expanded its target area into Southeast Portland. The presence of old housing stock; concentrations of low-income households; proximity to upcoming Habitat construction operations; and distance from a similar store make Southeast Portland a desirable location.
- **The Re-Store should maintain and expand partnerships with other non-profits.**  
Habitat should partner with existing non-profits to establish the Re-Store as a hub for community development activities, such as paint-a-thons, home-repair classes, and community events. Although Habitat may not run such programs itself, hosting them at the Re-Store could foster community support for the store. Habitat could also support the development of affordable housing by offering discounted prices to housing non-profits.

- **The Re-Store should offer home repair and renovation classes.**  
Such classes could empower participants to repair and modify their own homes - and bring potential customers into the store.
- **The Re-Store should operate a salvage crew with volunteers and/or professionals.**  
Salvage or de-construction crews would supply the Re-Store with materials; provide volunteers with a new way to contribute to Habitat's mission; remove re-usable materials from the waste stream; and (potentially) create employment opportunities.
- **Habitat should research the impacts that lead regulation will have on salvage and resale industries.**  
Recent EPA and OSHA regulations raise liability issues that Habitat should investigate prior to opening a Re-Store.



*Deconstruction in progress*

### **Furthering Habitat's Mission**

By locating a Re-Store in inner- or outer-Southeast Portland, Habitat could use the store to create a visible presence in a new part of the city and to initiate partnerships with Southeast non-profits. Such partnerships could make a Re-Store into a focal point for the non-profit community, similar to the role that the annual Walk for Humanity event has taken on in North and Northeast Portland in drawing attention to Habitat's community activities.

Other ways that a Re-Store could further Habitat's mission include:

- Using the store as a staging ground for Habitat's volunteer construction crews.
- Providing storage space for Habitat's construction program.
- Providing auxiliary office space, if necessary.
- Educating visitors about Habitat's mission.
- Defining Habitat as a leader within Portland's non-profit community by building social capital in two arenas at once, simultaneously creating jobs and affordable housing.



### **Trade-offs**

Inevitably these goals will sometimes conflict with one another. Economic development objectives may push Habitat toward creating more paid staff positions, which may decrease the potential for new volunteer activities. On the other hand, some programs comfortably meet several goals at once. The sale of low-cost building supplies, for example, may provide source materials for cottage industries, artistic creations and other “micro-enterprises”. Habitat can use these goals to evaluate different programs and choose the mix best suited for the Portland Re-Store.

## INTRODUCTION

### A Vision for Habitat

Portland Habitat for Humanity, a non-profit housing developer, has expressed interest in developing a non-profit resale store for used or donated building-repair and home-improvement products. Over 40 Habitat affiliates across the United States and Canada have set up similar businesses, known as “Re-Stores” (Ewing). A Portland Re-Store could provide funding to assist Habitat with its mission to provide decent housing for low-income families. In fact, “Some Habitat Re-Stores are raising over 40% of the funds their affiliates spend on building houses”. (Ewing)

Habitat Re-Stores operate by a formula similar to non-profit thrift stores. The Re-Stores accept donated materials from the general public and/or from the building trades. In return, donors receive tax-deductible receipts for the value of their donations. Donated materials are added to the Re-Store’s inventory, and can be used in Habitat construction projects or sold to the public for a profit, which supports Habitat’s operating budget. In situations where the local Habitat affiliate works in the same geographic area with other housing non-profits, the Re-Store often supports these agencies by offering them reduced prices. In turn, these non-profits refer building material donors to the Re-Store, increasing the store’s inventory.

Habitat’s plan to increase housing production over the next five years requires that new funding sources be identified. Habitat Re-Stores across the U.S. and Canada provide their affiliates with healthy income streams. For example, the San Antonio, Texas, Habitat affiliate’s Re-Store generated more than \$800,000 in revenue from 1994-97 (Griffith, 1997). In Tulsa, Oklahoma, profits projected from a Re-Store in the next five years will decrease the amount Habitat requires of home sponsors from \$35,000 to about \$20,000 (Warehousing the Habitat Re-Store Way). In just one year (1996), the Re-Store operation in Raleigh-Durham, North Carolina was able to generate a \$5,000 subsidy per Habitat home (Second Time Around, February 1998). In 1992, ten South Atlantic Re-Stores raised enough funds, combined, to build ten Habitat homes (Warehousing the Habitat Re-Store Way).



*Sorting used lumber after house deconstruction*



*Older Portland style Bungalows are common through the city*

### **The Workshop Project**

Portland Habitat requested that the PSU planning workshop team determine whether there is room in the Portland market for another used building materials store. To answer this question the team conducted a feasibility study, but has extended the study to also investigate compatible goals that a Re-Store might pursue.

The team generated a list of possible goals for a Re-Store, which Habitat then prioritized. The report is organized by these goals to show how a Re-Store might (or might not) address each one of them.

### **STORE GOALS**

- To fund construction of affordable housing
- To provide low-cost building materials for low-income and non-profit partners
- To spur economic development
- To provide new opportunities for volunteers and donors
- To encourage resource re-use and reduce environmental impacts
- To promote historic renovation

Some of these goals may extend beyond Portland Habitat's original concept of a Re-Store as a revenue source for Habitat's existing housing program. However, the team believes that it is valuable for Habitat to evaluate the store's feasibility through the lenses of multiple goals for the following reasons:

**1) Habitat should encourage opportunities for participation and collaboration.**

As one community-based non-profit surrounded by many others, Habitat is not an island. To support the efficiency of service provision to low-income residents, Habitat should consider how its activities mesh with the activities of other community development organizations. Since a store could have community impacts beyond its role in funding Habitat (such as economic development, waste reduction...), and other non-profits are already working on similar issues, Habitat should be aware of opportunities for partnerships and collaboration.

**2) Re-Stores with multiple objectives may be more successful.**

In studying other Re-Stores with similar missions, the team discovered that the most successful stores pursued multiple objectives. There appears to be some relationship between breadth of programs and store success. This suggests that by pursuing multiple goals – meeting more of the customers' and the community's needs - Re-Stores may be more successful in meeting all of these goals for Habitat.

## **Study Approach**

A number of different methods were used to collect data for this report. Although there is lots of written material available about salvage stores in North America, very little of it has been collected in one place. The team combed through magazines, newspapers and journals for articles about recycling and salvage issues. Many stores around the country have produced advice booklets, business plans and financial reports which were collected by the team and will be given to Habitat. The team also collected relevant statistics from cities with good salvage markets to compare with Portland. Because of the breadth of this study, it was decided that specific financial analysis would be left to a business plan.

For experienced based knowledge the team

- interviewed local builders, retailers, suppliers, and non-profit agencies to gain information about the Portland market
- spoke with the managers of salvage stores around the country to investigate different community-oriented programs
- conducted an informal survey of potential customers and donors
- visited local and regional comparable stores, which provided context for the national data collected and information about market niches, store sizes, and storage issues.

### **Next Steps**

The team conducted this feasibility study to determine whether a business plan is worth doing. Habitat recently received funds from the Department of Housing and Urban Development to prepare a business plan, and based on the findings from this report, Habitat can decide whether or not to proceed.

## GOAL ONE: FUND HABITAT FOR HUMANITY

### To provide a steady source of income for Portland Habitat to fund the development of decent, affordable housing.

Americans continually throw away valuable building materials, typically because they have no other alternative. An organization that is willing to accept these items (removing them from the waste stream) and resell them is often richly rewarded for the effort. Across the country, over 40 Habitat affiliates have entered the re-use market to fund charitable programs in support of their mission. Before considering additional store goals in the sections that follow, a Portland Habitat Re-Store would need to generate income.

To evaluate the economic feasibility of a Re-Store in the Portland area, the team looked at **Portland's used building material market, markets in similar cities**, and local sources of **supply and demand**. The team reviewed several **store models** that Habitat could choose between or mix and match. Then, the team analyzed this information to suggest a **market niche for a Habitat Re-Store**. The role of good **management practices** to a successful store and the need to respond to **evolving markets** within the used building material industry were also evaluated.

#### Portland's used building material market

Several used building material stores already operate in the Portland market. Three of these stores deal in lower-end building materials; a fourth store in this category recently closed its doors. The Rebuilding Center is a non-profit store that accepts any reusable building materials, including plumbing fixtures, lumber, tile, lighting, doors and windows and hardware. They sell items at 10 – 50 percent of the cost of new materials, aiming at low to moderate income consumers. Hippo Hardware focuses on both new and used small hardware, but also carries plumbing fixtures, lighting, doors, and windows. This store markets toward bargain hunters and maintains a junk-store atmosphere. Ralph Miles Liquidators in Southeast Portland operates out of four warehouses, selling limited quantities of used building materials along with their primary business of factory-second and overstock. The fourth store, the non-profit St. Vincent de Paul Home and Garden Center (now defunct due to poor management) accepted and stocked almost any used building materials, including carpet and plumbing fixtures, and sold to lower-income customers.

Two Habitat Re-Stores measure success in different ways. In San Antonio, store profits support overhead costs so that donors are assured all gifts are directed into building houses. At the Austin store, performance is measured by how many homes the Re-Store has financed (HFH St. Louis 1997).



*Hippo Hardware recently opened a second store in Multnomah Village. According to Steve Miller cofounder of Hippo, "We are looking at expanding our reach, and this store is also a prototype retirement storefront. It gives employees a dignified way to retire." When asked why he called the new store the Holding and Fondling Company, Miller replied: "You can't really tell the value of something until you hold it and fondle it." (Historic Property Magazine 1998)*

Bill Welch, a Portland salvager, thinks there is a big need for a Rebuilding Center type operation. He feels that existing companies like Rejuvenation and Hippo don't take good items because they don't have a ready market or space. (Christ, 1998)

Two Portland-area stores focus on higher-end products. Rejuvenation House Parts carries mostly new furnishings and their own line of custom light fixtures (sold through mail order), with salvage as a sideline. They sell pre-1940s doors and windows, molding, flooring, and bath fixtures. Their customers tend to be higher-income, period-conscious renovators. The 1874 House stocks vintage antique hardware and materials, including paneling, stair balusters, doors and pillars built before 1940. As part of Sellwood's "Antique Row," this store accepts only premium older materials and markets toward the highest-end consumers.

**Re-Store comparisons for Austin and San Antonio**

	San Antonio	Austin
1992 sales	-	\$29,000
1993 sales	-	\$128,000
1994 sales	\$83,000	\$239,000
1995 sales	\$251,000	\$330,000
1996 sales	\$416,000	\$460,000
1997 sales (projected)	\$517,000	\$470,000

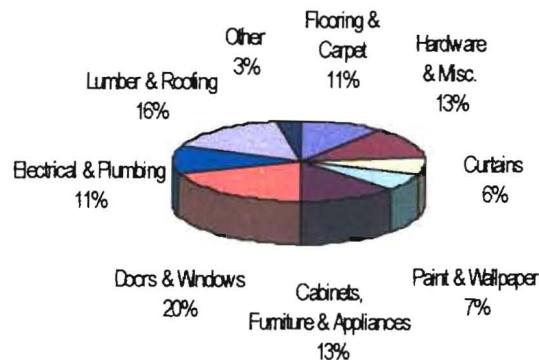
Source: Griffith, 1997

**Markets in similar cities**

Comparisons between Portland and cities with similar populations, levels of construction activity, and recycling rates might provide insight into whether Portland's used building material industry has room to grow. Unfortunately, data on construction activity and recycling rates is notoriously unreliable (Bryce Jacobson).

For purposes of a rough comparison, the team collected data from the following four U.S. cities that share attributes with Portland and have strong used building material markets: Minneapolis, Minnesota; Baltimore, Maryland; Austin, Texas; and San Antonio, Texas. Although there are too many variables to do a formal market comparison between cities, the chart on the next page shows a range of store sizes, revenues and city populations.

**1997 Sales Activity  
San Antonio Re-Store**



City	City Population	Metro Area Population	Store Name	Sales Floor Area	1996 Revenue	1997 Revenue	1998 Revenue	Founded
Portland, OR	445,458	1,477,895						
Minneapolis, MN	362,696	2,464,124	ReUse Center	26,000 sf			\$375,000	1995
Baltimore, MD	726,096	2,382,172	The Loading Dock	21,000 sf				1984
Austin, TX	492,329	781,572	Habitat Re-Store	40,000 sf	\$460,000	\$470,000		1992
San Antonio, TX	966,437	1,302,099	Habitat Re-Store	45,000 sf	\$416,000	\$517,000		1994

Data from store brochures, US Census.

## Supply

To determine which materials would be supplied to a Habitat Re-Store, the team used a wide variety of sources, including donation-referrals from **calls to Habitat's** offices and **calls to Metro's Recycling Hotline**; interviews with **Habitat Building Partners** and **non-profit housing providers**; and **construction industry data**. Findings from these interviews are summarized below.

### Calls to Habitat

Habitat often receives unsolicited calls from people who would like to donate materials of all sorts to help Habitat with affordable housing. On occasion Habitat can accept a donation for use in construction, but due to lack of storage space and a focus on new-construction, Habitat currently turns away many useable building materials. Donors are usually referred to The Rebuilding Center in Northwest Portland. For one month, Habitat receptionists recorded potential donations that they referred elsewhere. See the adjacent text box for survey results.

### Metro's Recycling Hotline

Since Metro operates the waste transfer stations in the Portland region, Metro's Recycling Hotline also receives calls from people wishing to donate usable materials. Hotline employees answered 103,000 calls in 1997 and estimated that about 20% of the calls were related to construction and demolition debris. Certain of those materials would not benefit a Re-Store, such as drywall scraps, broken concrete or wood scrap. But Metro still receives this still represents a substantial number of calls each year from people with re-usable building materials. Staff often refer construction- or remodeling- related donations to The Rebuilding Center rather than for-profit stores like Hippo Hardware. Callers are usually glad to know that someone can take their donations in exchange for a tax-deductible receipt.

#### Example of supply sources for the Tulsa Re-Store include:

- General donations
- Building supply stores
- Lumber companies
- Building supply manufacturers
- Construction sites and contractors
- Commercial property management

#### Materials referrals by Portland Habitat

1/20/99 – 2/16/99

##### Building Materials:

- Kitchen cabinet sets (2 donors)
- Counter tops
- Cupboard fronts and drawers
- Lumber (small dimension boards)
- 3 Glazed windows
- Hot water heater
- Vinyl flooring
- Carpeting (4 donors)
- Bricks

##### Furnishings/Appliances:

- Mattress/Box Springs
- Stoves (3 donors)
- Furniture
- Sofas, like new (2 donors)



**Likely Building Partner donations to a Re-Store:**

Close-out tools, supplies and sand paper  
Lots of paint (3 firms)  
Storage shelving  
Office furniture, including chairs and filing cabinets



*At BRING (Eugene), screening of donations is a huge challenge due to (1) its location next to the county transfer station, (2) the wide range of items they accept (bicycles, lawn trimmers, electronics... in addition to building materials), (3) pressure to accept anything that might be used again, and (4) apparently weak management controls.*



**Habitat Building Partners**

Habitat has established partnerships with local and national firms, called “Building Partners,” that supply or work directly in the construction industry. Since these firms have donated to Habitat in the past, Building Partners seem to be natural donors to a Re-Store. Habitat staff members called about a dozen of these firms to measure donation interest. Six firms responded positively and one gave a flat out “no.” Most firms that responded positively said they would probably make one large donation a year. Several said that they would make more frequent (up to monthly) smaller donations. In Tampa, Florida the Habitat Builder’s Surplus store receives large donations from retail stores around tax time and inventory time – they would rather donate it (and receive a tax deduction) than count it. Possible donations from Building Partners are shown in the box to the left.

**Non-profit housing providers**

Staff members from several local housing non-profits were also interviewed for this feasibility study. In general, non-profits have less motivation than private individuals and businesses to make donations to a Re-Store. Non-profits cannot take advantage of tax benefits for donated items and are strongly motivated to bring in funds wherever possible, so they would more likely reuse or try to sell any useful building materials that they generate rather than give them away.

**Construction industry**

The bulk of donations to a Re-Store could come in one way or another through the construction industry, which processes used building materials on a huge scale and at a rapid rate, especially during economic boom times. While individuals would bring significant donations to a Re-Store, based on sheer volume per interaction, the building and trades industry would definitely be a donation source worth cultivating. Team members interviewed local experts in the de-construction industry to learn about supplies of re-usable building materials that now often end up at the dump.

Recently a new \$450,000 home in Portland’s west hills was renovated shortly after its construction. As part of a sale to new owners, contractors dismantled valuable wood moldings and other finishing since the new owners wanted it completely redecorated. Some of these materials found their way to the waste stream before a local contractor stumbled upon the materials and salvaged them for re-use. (Stewart Ashmore)

New construction, remodeling, and demolition projects could all supply a Re-Store in different ways. During new construction, off-cuts from framing lumber could be used for landscaping or smaller renovation projects. On remodeling jobs, cabinets, trim, doors, and other re-usable materials are routinely removed and dumped. On demolition projects, every piece of a house that is in decent condition can potentially be reclaimed, so long as labor costs are not prohibitive.

Last year, Portland issued approximately 8,000 permits for residential construction and remodeling, while Austin, a city only slightly larger than Portland, issued 6,000 permits. Between July of 1998 and February for 1999, nearly 250 permits were issued in Portland for building demolition (City of Portland Permit Center). Metro estimates that over 2,300 housing demolition permits will be issued from 1995-2010, based on the assumption that building demolition permit increases are directly related to single family residential growth (Joslin 1993). These factors indicate that significant quantities of material are available to salvage in Portland - plenty to supply a Re-Store. The challenge lies in collecting these materials.

According to interviews with regional stores, Habitat would need to develop close ties to an informal network of demolition contractors and salvagers in order to tap into this huge potential supply of re-usable materials. The cost-effectiveness of de-construction in relation to traditional demolition is supported by lower labor costs and higher tipping fees. Habitat's use of volunteer labor in salvage might overcome the cost obstacle to de-construction, allowing Habitat to supply a Re-Store with materials that comparable stores could not afford to collect. Also, many salvage teams take only vintage items and may be willing to partner with Habitat to collect the newer, but still usable items. Finally, as the team learned in discussions with prospective donors, The Rebuilding Center has been passing up donations and salvage opportunities, suggesting that the Portland market could supply another store.

Some Re-Stores sell overstock or manufacturer-defective building materials, which are donated by retailers of new building supplies. However, both Habitat's inquiry of one such retailer and the team's calls to two others suggested that these stores may not be willing to donate to a Re-Store in Portland. This may be because these stores worry about competing with themselves, even if the donated materials do not exactly overlap with stock items.



*Urban Ore in Berkeley salvages 4000-5000 tons of materials per year from construction sites transfer stations and landfills.*

## PORT OF PORTLAND - TERMINAL 4 Portland, Oregon

Site visit 1/21/99, interview with Aaron Ellis

In North Portland, the Port of Portland started dismantling and demolishing the Terminal 4 building in November 1998. This 230,000 square foot wood-frame building was built in 1928 to protect sacked grain, sacked wool, and palletized lumber from the weather while being hand-transferred on and off of ships. Over time, containerization of the shipping industry has made such structures unnecessary. Terminal 4 was last used in the 1980s for a couple years to house New Zealand sheep for slaughter. Since then, it has fallen into disrepair and become un-safe to occupy. Demolition of the building will continue in phases through the summer of 1999.

Most of the building is over water, resting on a rugged foundation of wooden posts, girders and beams. These timbers are huge, with cross-sectional dimensions of up to 18M x 36M. The demolition contractor is salvaging this lumber and will re-sell it to buyers around the world for an estimated 1 to 1.5 million dollars. Proceeds from the combination of selling salvaged timbers and not having to pay to chip them for hog fuel have allowed the demolition contractor to decrease the project cost to the Port. Salvage of this building extends beyond wood. Metal goes to Schnitzer Steel across the road, and concrete and asphalt are ground up on site for re-use as fill.

Although much of the lumber in Terminal 4 will be sold for re-use, much will be left behind to be chipped and burnt as hog fuel. In fact, the smallest dimensions of lumber that are being salvaged are 2Mx10Ms, which are on the large side for residential construction. The demolition contractor is clearly skimming the cream off the top, leaving most of the smaller-dimensioned wood in the building walls, roof and finish floor to a chipper. Industrial demolition sites such as this may provide a high-volume source of quality salvaged lumber, free for the taking.



*At Bring Recycling in Eugene the top four used items sold are doors, windows, lumber and cabinets. (Czech, 1998)*

### Demand

Demand information is more challenging to collect directly than supply data. The most compelling demand information comes from the experiences of **successful local stores** that trade in used building materials – because these stores must have an understanding of their customer base in order to succeed. Other potential sources for demand data include **informal surveys** of prospective customers, interviews with **contractors and non-profits** that might purchase from a Re-Store, interviews with staff members at other Re-Stores, and **geographic data** on home remodeling activity.

### Successful local stores

Shane Endicott of The Rebuilding Center thinks that so long as new lead regulations do not negatively impact the used building material industry, there is plenty of room for a Portland Re-Store, even one located right next door to his store. The Rebuilding Center turns over stock quickly, has a hands-on understanding of the Portland market, and is in an ideal position to know whether there is sufficient demand to support another store. Endicott mentioned that “The Rebuilding Center was operating in the black after only one month of operation”. This is likely a combination of aggressive and well-organized management, not just a strong market.

### **Informal survey**

The team distributed an informal supply/demand survey to classmates and friends. The 16 responses point towards a niche for which there are both suppliers and consumers. While this is a very limited survey distribution, the trends of what people want to donate and want to buy are consistent with our store interview sources and observations. These survey results are summarized in a sidebar to the right.

### **Contractors and non-profits**

Several contractors in the Portland area have expressed interest in the following used building materials: dimensioned lumber, wood moldings, oak and fir flooring and usable plumbing fixtures. Materials would need to be cleaned, organized and in quantities sufficient to complete whole rooms to make shopping at a Re-Store worthwhile for contractors.

In addition, non-profit housing developers expressed interest in consuming materials from a Re-Store, primarily for use in renovating and maintaining older homes that they manage. More specific data from non-profits is included under Goal #2

According to Emily Keys with the Raleigh-Durham Re-Store, one third of the store's customers are rental property managers, another third are small contractors, and the remaining third are low-income residents.

### **Geographic data**

Successful used building materials stores consistently locate in the parts of a city in where the materials they sell will be used. For instance, the Brass Knob in Washington, D.C. is located in the heart of Adam's Morgan, a D.C. neighborhood known for older homes and renovation activity. The Rebuilding Center in Portland is centered between Northwest Portland and Northeast Portland; both of these areas are home to avid remodelers.

### **Informal Survey Results**

#### **Overlap (both supply and demand)**

Wood windows, solid interior doors, kitchen cabinets, lighting fixtures, sinks, bathtub or shower, toilets, wood flooring, wood trim, ducting, bricks and stones, appliances, used tools

#### **Supply Only**

Aluminum windows, interior hollow-core doors, linoleum, carpet, small 2"x4" board lengths

#### **Demand Only**

Tools, garage cabinets, tile, siding, decorative gates and ironwork, electrical hardware, countertop material, lawn ornaments and garden art, mailboxes, plywood



Every non-profit interviewed mentioned materials they might purchase from a used building material store. Materials demanded include: vinyl composition tile, sheet vinyl flooring, carpet, rubber base, drywall, paint, tubs, kitchen and bathroom sinks, low-flow toilets, studs, siding, pressure-treated lumber, screen doors, door casing and jamb sets, bagged cement products, newer appliances, quickset locks, light bulbs and tubes, used carpentry tools and yard tools.

The parts of Portland best suited for a Re-Store would contain a concentration of older buildings and a strong local remodeling industry. Appendix C contains an age-of-structure map that shows where older homes are concentrated in East Portland.



*Sinks at BRING*

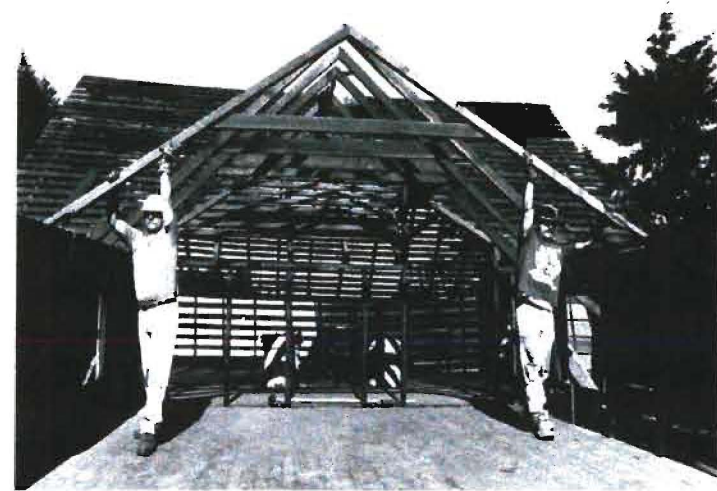
Portland uses financial tools, such as low-interest loans and limited property tax abatements, to encourage residents in certain parts of the city to do improvements to their homes. The Portland Development Commission has targeted the Martin Luther King Jr. corridor, Central Eastside Industrial district, and Lents neighborhood for public investment, which is targeted to spur economic development and neighborhood improvement projects. In addition, the Bureau of Housing and Community Development has Target Area Programs along McLoughlin Boulevard in inner-Southeast, Foster/Powell further away from downtown, and several neighborhoods in North and Northeast Portland.

This pattern of public investment will not necessarily spur renovation in these neighborhoods, but it illustrates a general focus on Portland's East side. Judging from experience in North and Northeast Portland, public investment may increase renovation activities (and gentrification) in the targeted portions of the city, creating demand pockets for used building materials.

## Store Models

Many Habitat Re-Stores share their sites with other non-profit organizations or use the store location to host multiple programs. A symbiosis can be developed. Locating with organizations which have similar or compatible missions can benefit both groups.

- In California's Bay Area, Alameda County Waste Management Authority is looking to develop a construction and demolition "ecological-park" – a one-stop reuse location with a number of different entities all related to recycling of construction materials would be located together. In addition to diverting waste from the landfills, the symbiosis provided by the location could allow small start-up companies to emerge (Cut Your Trash in Half, 1999).
- In San Antonio the Habitat Re-Store rents out surplus space on its site for warehouse use by other companies, creating additional revenue.
- In Minneapolis, the Green Institute's Re-Use Center is one of the anchor stores for a shopping center in a low-income neighborhood. The store hires local residents for living-wage jobs. In 1998, the Green Institute began construction of a 64,000 square foot mixed commercial and industrial facility that will house many local businesses breaking into the energy and environmental sector.



*Deconstruction in progress, Portland*

### **HABITAT BUILDER'S SURPLUS, Tampa, Florida**

#### **Customers salvage it themselves**

Habitat Builder's Surplus in Tampa, Florida operates a "Members Club". Membership is limited to about 100 people, many of them rental property owners, who pay a yearly \$25 fee. Habitat accepts donations of homes en-route to demolition, and gets title to them at least two weeks ahead of the bulldozer. When Habitat gets title to a house, club members are notified and given a chance to walk through and make bids on any part of it they like, from the trim to the turf. After the bidding is closed, the winners retrieve/extract the items themselves with one Habitat staff person on site to make sure everything goes smoothly.

**"We make quite a bit of money off the Member's Club sales" Bob Pause, Habitat Builder's Surplus store manager:**

The Habitat Builder's Surplus then brings in an all volunteer crew to salvage remaining building materials. Store manager Bob Pause says the volunteers don't require any special training, just close supervision from staff members on site.

## SECOND USE BUILDING MATERIALS, Seattle Washington

Site visit on February 12, 1999

Second Use Building Materials in Seattle, WA is a for-profit store that partners with three Seattle-area Habitat for Humanity affiliates. When one of the Habitat affiliates receives a call from someone interested in donating building materials, the affiliate forwards the caller to Second Use. Then Second Use pre-screens the donated materials over the phone, retrieves them if they have re-sale value, and gives the donor a receipt to document their tax write-off. Any costs for retrieval and pick up are taken off the top by Second Use, which then sends remaining proceeds to the Habitat store that referred the donation in the first place.

Second Use will pick up building materials only after determining their value over the phone. At the site, materials were screened and tagged at a check in cart at the front of the store. A cart similar to an airport baggage collector waits patiently outside, adorned with tape and tags to mark the items. Second Use uses a material donation sheet for Habitat items which tracks quantities of materials, inventory numbers as well as travel costs for pickups.



*Second Use has quickly outgrown its South Seattle warehouse*

Other store models described on these pages were found in Seattle, Washington, and in Tampa, Florida.

### Habitat's Niche

Successful salvage stores seem to fall into two market niches. Some sell high-cost, high-priced items, usually vintage house parts and specialty pieces. These stores generally maintain a smaller retail space and locate in popular shopping districts. More reasonably priced stores accept newer materials and market toward home repairs, and budget minded remodeling. These stores require more storage area and display space, usually include some outdoor storage, and often locate in industrial or warehouse districts. Typically, stores will focus on either high-cost or low-cost materials, not both.

The selection of a market niche to target would be informed by supply/demand data and by looking at other stores. The range of materials stocked by The Rebuilding Center is very similar to other successful stores throughout Oregon and Washington, and would represent a good starting point for a Habitat Re-Store. Habitat could add to this niche some higher-cost items, which may be donated by wealthier residents. At Second Use, a for-profit store in Seattle, many of the nicest items come into the store as Habitat donations, which are sold on commission to benefit nearby Habitat affiliates.

## Management Practices

Habitat should commit resources to do an excellent job of managing a Re-Store because even if all the external pieces are in place for a successful store, poor management can allow a store to fail. According to Endicott at The Rebuilding Center, the two Habitat Re-Stores he visited that were doing poorly were faltering because of poor management. As the team learned in Eugene (BRING site visit), a re-use store can become a mess if donations are not screened and the physical space within the store is not kept organized. Store start-up would require substantial investments of time and energy from staff members and the board of directors.

On the positive side, a skilled Re-Store manager could foster relationships with the Portland non-profit industry to the mutual benefit of both organizations, and their shared goals of community improvement and affordable housing.

## Evolving Markets

A Habitat Re-Store, like any business, would need to re-evaluate its market niche over time. Second Use distributes a survey to customers on an ongoing basis. The Rebuilding Center is currently in the process of performing a stock inventory. Most stores track what they buy and sell. All of these techniques provide information that help stores continuously refine their niche, and adjust donation policies accordingly.

One current example of how the market can shift quickly relates to lead paint. Recently the Environmental Protection Agency proposed regulations regarding the removal, disposal, and re-use of materials with lead-based paint (see sidebar in Historic Renovation section). Obviously if approved this type of regulation would have a huge potential impact on the used building materials industry. If lead regulation follows the path of asbestos regulation, it may become much more costly to sell materials that contain lead-based paint (anything pre-1978). If stripping of lead-based paint becomes required prior to re-installation, lead-painted materials may become harder to sell as well. It is too early to know if these regulations will be approved and, if approved, how they would affect a Re-Store.



*Low cost building materials could enable residents to maintain and improve their homes at a fraction of the cost of new materials.*



### **Goal One Overview**

The market for used building materials in the Portland area continues to expand. Both for-profit and non-profit housing developers have expressed interest in patronizing a Habitat Re-Store, but may not be entirely aware of the opportunities and limitations involved in using these materials. As more organizations become familiar with the potential uses of salvaged materials, they become more likely to purchase these items.

#### **Toolbox Tips**

- Carefully screen intake materials
- Keep materials well organized and clearly priced (see 1874 House)
- Alternate model is Rebuilding Center where prices must be negotiated in order to further community contact
- Offer weekend hours and stay open after 5PM during weekdays
- The capacity to pick up donations is essential. The pick-up driver should have experience and authority to screen donations, refusing items which will be difficult to sell.
- Have a high ratio of interior to exterior space. Builder's City (Portland) and BRING (Eugene) are examples of stores with too much outdoor space. Particularly in our climate outdoor areas are often unpleasant for shoppers, and materials decay quickly.
- Land costs may put large central-city locations out of reach. One approach may be to have a smaller showroom coupled with a larger yard in a less expensive location. Aurora Mills Architectural Salvage (Aurora), Second Use (Seattle), and Brass Knob (Washington DC) successfully use versions of this approach.

## GOAL TWO: PROVIDE LOW-COST BUILDING MATERIALS

**To help lower income members of the community repair and maintain their homes at a reasonable cost. To provide non-profits, particularly housing development organizations, with reasonably priced construction materials with which to build and renovate affordable housing in the community.**

The opening of a Re-Store could provide the Portland community with a source of quality building materials at significant savings compared with new retail materials. In addition to helping families buy high-quality, affordable homes, Habitat could assist the broader community to maintain their residences. Materials donated to the Re-Store could **reduce the cost of Habitat homes**. Habitat could also extend store benefits to other **non-profit housing developers** and target building materials for sale or donation to **low-income residents**. However, there are important **trade-offs** to be considered between this goal and Goal #1.

### Reduce the cost of Habitat homes

A Re-Store would help Habitat reduce the cost of building homes. Throughout the construction process, Habitat could treat a Re-Store as a free source of building materials, taking whatever they need from the store inventory to use on the construction site. Conversely, extra supplies from Habitat's construction activities could be sold at the Re-Store instead of being scrapped or stored. One study estimated a savings of \$5,000 per home where Habitat integrated used building materials into its construction program (Resale Store Resource Manual, 1993).

### Non-profit Housing Developers

A Re-Store operation could be linked to other housing and workforce organizations within Portland to foster inter-organizational relationships and strengthen the overall non-profit sector. The likelihood that community development corporations (CDCs) would take advantage of a Re-Store depends on the kind of work they do (new construction vs. renovation, in-house property management vs. contract maintenance) and on their knowledge of what materials are available used. Interviews with active non-profit Portland housing providers illustrated how they might benefit from a Re-Store.



*Items such as hot water heaters could be used in Habitat's own housing projects*



*The Rebuilding Center now sells many items at 10-50% of the retail price. Price breaks are given to non-profit organizations. The Austin Re-Store regularly gives merchandise away to low-income customers. They also have a freebies bin. In the Winnipeg, Canada Re-Store, low-income residents can perform sweat-equity in exchange for building materials (Resale Store Resource Manual*



*Urban Ore in Berkeley (a for-profit store) employs 26 full-time people. The Green Institute in Minneapolis employs homeless people through a contract agency to pick up donated materials. The Rebuilding Center in Portland employs 5 full-time people with "over 100" volunteers assisting. The Re-Store in Raleigh has four full-time and two part-time people who are responsible for store operations.*

## Low-income Residents

A Re-Store could offer a variety of programs to assist low-income residents. The store could provide discounted prices, provide a 'free area' in the store, or allow customers to buy materials with 'sweat-equity.'

One way to make a Re-Store accessible to low-income residents is by choosing a location close to or within a low-income neighborhood. Appendix B includes an 'income level' map (produced from 1990 census data by the Bureau of Housing and Community Development) which displays Portland's census blocks in which over half of households were below 81% of median family income.

## Trade-offs

Selling merchandise at reduced prices or giving it away would inevitably reduce the amount of money a Re-Store makes for Habitat. In designing a Re-Store, Habitat should think through how much a Re-Store should subsidize Habitat's programs versus how much it should subsidize the work of other affordable housing developers and materials for low-income residents.

### Toolbox Tips

- Maintain a search-bank for items
- Discount area, freebies bin
- Have staff or volunteers roaming the floor to answer questions and help make sales
- Provide some multi-lingual signs in the store (Russian, Spanish)

## GOAL THREE: PROMOTE ECONOMIC DEVELOPMENT

**The Re-Store should serve to strengthen the community around it; the store becomes an economic development instrument improving the lives of the community.**

Several Portland non-profits have ventured into economic development as a means of supporting their operations, but on-the-ground programs are hard to find. Operation of a Re-Store may represent one step in this direction.

**Employment and job training** opportunities at the store or through **salvage crew** training would benefit members of the surrounding community by developing skills and work experience. By utilizing difficult-to-employ populations, such as people with handicaps, to **create “value added” products** with on-hand materials, Habitat could increase store revenues and provide job skills and experience. Cottage industry and **arts community** interests can also be sources of creative products and additional revenues if the Re-Store considers sales possibilities beyond the strict categories of home improvement materials. Finally, by seeing the Re-Store location as an economic development opportunity, Habitat could affect community redevelopment and reinvestment and encourage other compatible enterprises to locate nearby.

### **Employment and job training**

The Green Institute in Minneapolis has a policy of providing “living wage jobs” to all employees who work at the Re-Use Center store. While Habitat’s active volunteer pool and emphasis on funneling store proceeds to home-building activities might rule out a similar policy at a Portland Re-Store, a goal might be for the full-time permanent staff to receive living wages. Hiring from the local community would also be consistent with this store goal.



*“To get the highest workforce from used building materials, reuse operations were found to generate 9 times more jobs than traditional recycling facilities and 38 times more jobs than landfilling the same material.” (Second Time Around, 1998)*

2895 Accent Bench \$159.95



*Like the bench made from reclaimed wood above, furniture designer Carrie Stevens turns exterior siding and wood framing from old farmhouses into eight chairs, five benches and two cabinets. Stevens who sells her goods at Rejuvenation works exclusively with recycled wood (Dunham, 1998).*



*Vintage door knob key holder from a women's catalog, \$39*

St. Vincent de Paul's of Lane County Oregon provides employment not only through its donation and retail store operations but also in a workshop that makes furniture. This began when the organization noticed more demand than supply for bureaus and dressers. So St. Vincent's opened a workshop to build them from donated or inexpensively acquired lumber. Now 10-15 people are employed in this micro-enterprise, and finished products can be purchased at many of the St. Vincent's stores. St. Vincent's has a policy of giving workers a decent living. In fact, the recent increase in minimum wage did not affect a single employee - a rarity in the retail sector. Other St. Vincent's employment (and revenue) generating activities include the repair of soiled or damaged mattresses and box springs and refurbishing old appliances.

Other workforce development opportunities include organized sources of labor such as at-risk youth employment programs, prisoner populations on work release, and subsidized workers through federal employment programs. Habitat already has some experience working with these underemployed groups. A Re-Store could be another venue to work with members of the community in need of training, opportunities and skill-building. There would be shared benefits - both to the community and to individuals - while the Re-Store receives low-cost labor. Job-training partnerships could be set up with:

- Federal Welfare to work program
- Vista, Americorps, youth programs
- Community Service workers
- Inmate work crews

### Create "value-added" products

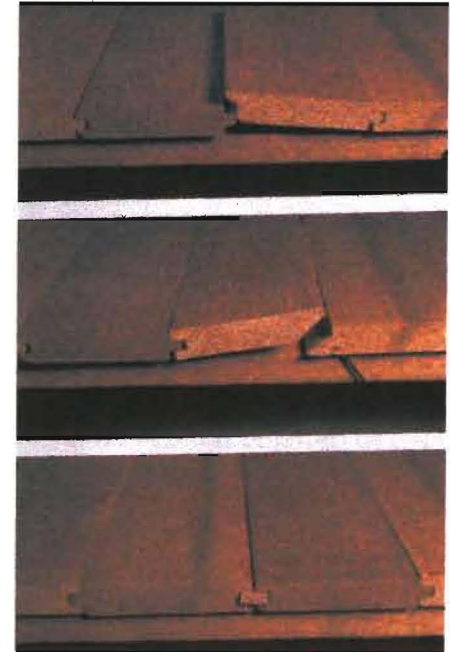
Working with groups such as The Arc (formerly the Association for Retarded Citizens) the Re-Store could commission items such as cat scratcher posts (made from scrap wood and recycled carpet), or bird houses (from scrap wood and recycled paint). Raw materials for these items could easily come from donations brought to the store. With low labor costs and the added community benefit of providing meaningful work for these contract agencies, Habitat could re-sell finished products at the Re-Store. Buyers should be made aware that their purchase of a handmade magazine rack, birdhouse or cat scratcher post benefits to both The Arc workers and Habitat's housing mission. Such win-win types of products should be displayed near the front of the store, and would likely be very well received among customers.

Towards the higher end of the used-building materials is a small but growing “yuppie niche” for lack of a better term. While it is not recommended that Habitat pursue the higher-end section of this industry, some lessons can be learned from it. The growing popularity of vintage items or even new items artificially given the “patina of age” demonstrates a large market for interesting older things. People are paying high prices for rusted pieces of old iron work, terra cotta, and vintage roof brackets. At Rejuvenation House Parts furniture made from rough hewn, salvaged lumber, often with the original paint finish left as is, are sold at gourmet prices. Garden furniture, planters, and garden art made from vintage materials are very popular and can command high prices at stores throughout the country.

While Habitat’s main concentration for the Re-Store would be more mundane home repair materials, creating a small space for high-profit value added products could prove beneficial for the Re-Store. When unusual or architecturally interesting items do arrive they could get the attention (and the prices) they deserve in a special display area. The Rebuilding Center has an area near the front door where they display some of the more interesting new arrivals. Other stores visited by the team (Rejuvenation, Second Use in Seattle) have similar display areas in their salvage departments to showcase these one of a kind finds.

Another easy-to-manufacture, value-added product is old wood windows with the glass replaced by mirrors. Antique stores sell these windows for upwards of \$50. A bit of labor and the cost of the mirror are all that’s required. People coming to look for home improvement items may also be looking for home or garden decoration items. This line of products could do well for Habitat given the low production costs (most materials would be culled from donations), competitive pricing, and the added attraction of the money going to a good cause.

At Bernadette and Breu in the Pearl District (11<sup>th</sup> and Everett) well-to-do shoppers ohh and ahh over rusted pieces of old iron gates, antique porch lights and broken pieces of decorative cast iron molding. Both Aurora Mills Architectural Recovery and 1874 House are located in popular destination antique shopping districts.



*Maple flooring that Kaczmanonski salvages and re-mills for flooring cost less than new flooring (Netzer, 1998).*

### **Arts community**

A natural relationship exists between those working in creative fields such as the visual arts and those working in salvage and scrap collection. At the Rebuilding Center, a few unneeded rooms of the warehouse were occupied by a non-profit operation called SCRAP – Schools and Community Reuse Action Project (another example of successful site-sharing). This group collects anything that could be used in art projects and re-sells the material at nominal cost to artists and art teachers. SCRAP has diverted many tons from the landfill and allowed these materials to be re-used. Similar programs exist in many cities.

Some re-use centers host scrap art contests for kids. The results of the art projects would make a colorful display for the front of the store. This would also promote the scrap-for-art programs in Portland and honor the environmental and waste reduction ethic within the community. Weekend events could be held at the store aimed at area children and their families at nominal or no charge to Habitat. The events would publicize the store, allow parents time to look around and shop, and also increase Habitats presence in the community as more than just a builder of homes.

#### **Toolbox Tips**

- Offer to hold items for 72 hours (Rejuvenation)
- Implement community swap board- a place for those wishing to barter materials
- Have a box of handiwipes at the check out counter
- Help with lifting and loading

## GOAL FOUR: EXPAND VOLUNTEER OPPORTUNITIES

**Provide new opportunities for the community to participate in Habitat's mission.**

The Habitat organization cannot exist without volunteers; opening a Re-Store can provide important new volunteer opportunities. For Habitat families this can mean a **new way to fulfill the sweat-equity commitment**. A Re-Store would also provide the Portland community with many new **volunteer and donor opportunities**. Habitat could accept and benefit from the many willing donors with usable building materials or time and talent who want to assist Habitat in its mission.

### **A new avenue for "sweat-equity"**

Each Portland Habitat homeowner family is required to perform 400 hours of sweat-equity. Not all family members may be comfortable or able to participate in the construction aspects of their new home. Re-Stores around the country have allowed families a new way to provide their sweat-equity hours for Habitat.

At the Habitat Re-Store in Tulsa, partner families are required to complete 300 hours of service. With 12 houses planned for 1999, 24 sweat-equity workers would fill nearly all of the volunteer opportunities at the construction sites in the spring and summer months. The Re-Store enables Habitat to divert some of this labor into the Re-Store and open up new avenues for community volunteers wishing to work on site (Warehousing the Habitat Re-Store Way).



*Some Re-Stores have started up their own deconstruction crews to dismantle, by hand, older one-story wood frame homes. These crews provide value supply materials for the stores, which are often sold quickly. Used materials can be sold at low cost while the owner receives a tax break and lower tipping fees for debris.*

Other volunteer opportunities provided by a Re-Store:

- Pick-up drivers
- Store staffing
- De-nailing
- Sorting, clean up and display of donations
- Assign steady volunteers a section of the store which they are in charge of, such as lighting, bathroom hardware, etc.
- Sales and customer assistance





*One Re-Store challenge is to provide large enough quantities of used materials to complete entire jobs. Contractors are reluctant to buy used materials unless they are certain they will have enough to complete the job. This slate for sale at Urban Ore would be enough to tile an entire room or outdoor patio.*

### **Increased Donor opportunities**

Each week many people call the Portland Habitat office wishing to donate good reusable housing materials such as doors, windows, carpet, paint and more. These people are usually told that Habitat cannot take their donation, and they are directed to some other organization. By widening the range of materials Habitat could accept, a Re-Store would provide a powerful ability to say “Yes” to more people. Hearsay among the re-use community is that the “no thanks” answer has created some ill-will towards Habitat in the past. The ability of a Re-Store to accept donations – even to pick them up – would provide a whole new way for Habitat to increase its profile in the community and to allow people to support its mission of affordable housing by donating used building materials.

#### **Toolbox Tips**

- Community outreach is critical. People need to be informed of the value of re-using building materials. Education can simultaneously make people more aware of the benefits of re-use and attract customers and donors to the store. (Rosemarie Cordello, Sustainable Communities Northwest)
- Train and foster knowledgeable store staff
- Assign steady volunteers a section of the store which they are in charge of, such as lighting, bathroom hardware, etc.

## GOAL FIVE: REDUCE ENVIRONMENTAL IMPACTS

### Reduce the environmental impacts from disposed construction and demolition materials.

Although it is not a major focus for Habitat's activities, environmental activism is one of the potential uses of a Re-Store. Construction and demolition waste make up 20-30% of the entire waste stream (Metro, 1997). By buying and selling used building materials, a Re-Store could help **remove items from the waste stream**. It could also **promote waste reduction** by educating customers. On the other hand, used building materials may be **less energy-efficient** or cause more environmental damage than their newer counterparts.

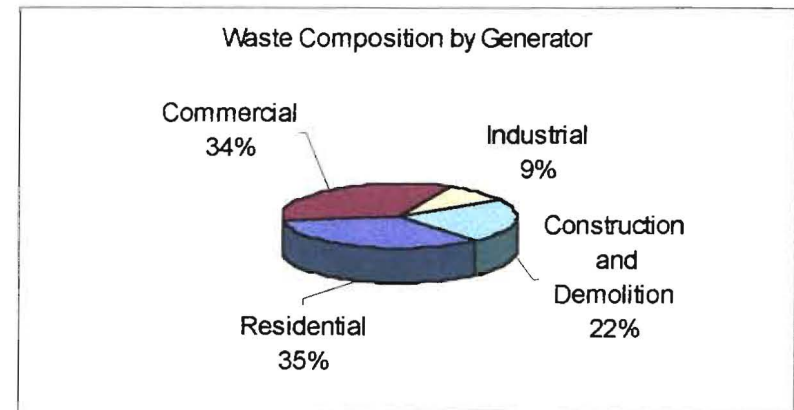
### Removing building materials from the waste stream

Creating new building materials uses up resources and energy; disposing of those same materials later requires even more. Salvaging materials for re-use can spare our communities environmental costs, including:

- The resource and energy costs of the manufacture of new materials, including labor and pollution produced during processing. For example, one thousand board feet of salvaged lumber can replace up to 10,000 board feet of standing timber (Used Building Materials versus Environmental Costs and Benefits).

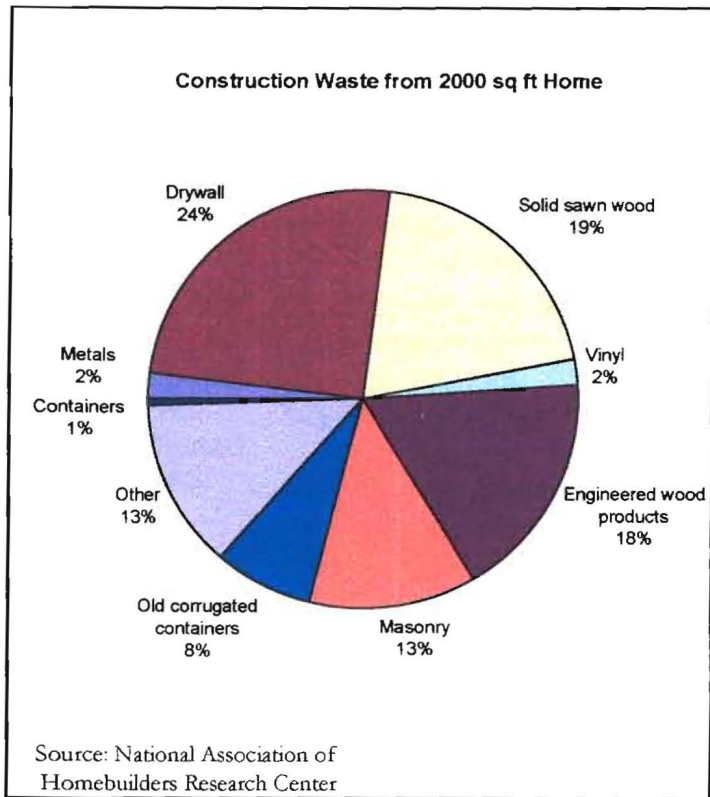
- The effects of the extraction of raw materials such as lumber and ore, with their associated damage to streams, groundwater, soil erosion, and wildlife. Over three trillion board feet of lumber have been harvested in the US since 1900, much of which is already in buildings (Falk, 1997).

- Open space loss and air and water pollution from expanding landfills. Demolishing a single house can fill five 40 cubic yard dumpsters (Salvaging for Use in New Construction, 1998)



The Rebuilding Center will divert 300 tons of solid waste each year. (Christ, 1998)

The Loading Dock in Baltimore, Maryland, reclaimed more than 6500 tons of building materials through its store. More than 75% of these materials were composed of wood. (Gitlin, 1991)



Many of these environmental concerns regarding material disposal also carry high economic costs. Citizens are burdened with higher taxes and tipping fees at landfills to dispose of materials. Indirectly they eventually pay for environmental clean-up of pollution.

The opening of a Portland Re-Store could reduce the waste stream simply by providing a market for used building materials. An analysis of demolition permits in the Portland Metro region found that 944,000 board feet of lumber could be removed from the waste stream each year through salvage and re-use (Joslin, 1993). Habitat could also re-use materials in their projects.

### Promoting waste reduction

Beyond selling used building materials and removing items from the waste stream, a Re-Store can provide community services that can educate people about the importance of waste reduction while providing funding for Habitat’s mission. In its advertising and promotion, the Re-Store can help educate its customers about the need to reduce and re-use as well as recycle.

“Reduce, re-use, recycle” is the motto used in promoting waste reduction. Reducing what we use or re-using what we have can reduce the demand for an excess of materials; the least preferred method is to recycle materials. Recycling requires more energy to turn materials into a usable form, and often results in a less efficient use of the materials. Wood products from construction, for example, are typically used for “hog fuel,” an inexpensive wood composition that is burned for power or heat in industrial settings. Although this may be better than putting this wood in the landfill, re-use would provide even more benefit from these materials with less energy for reprocessing.

The Re-Store could also promote waste reduction by forming partnerships with organizations interested in the re-use and recycling of building materials. Some donated materials might be useful for arts programs or as materials for value-added production businesses. For more information on value-added programs, see Goal Three: Economic Development.

## Environmental implications of building material re-use

Many older building materials are less energy-efficient or environmentally friendly than modern ones. For instance, all salvaged items which were painted before 1950 probably contain lead paint. In planning a Re-Store, Habitat should consider several issues:

- Energy conservation — Many older windows and doors provide less insulation than modern ones. Older windows can be used in sheds, garages, or other unheated areas. A plastic laminate can also be applied which helps conserve energy (Used Building Materials versus Environmental Costs and Benefits, 1997).
- Water conservation — Older toilets use larger amounts of water to flush. Customers can mitigate the amounts by putting filled plastic bottles in the toilet tanks. San Antonio's Re-Store runs a "Kick the Can" program which encourages families to replace high flush toilets (Habitat St. Louis).
- Environmental regulations — Current building codes require 1.6 gallon flushes for toilets and high insulation values for doors and windows. In Southern California, many people buy older, high-flush toilets to avoid water flow regulations (Used Building Materials versus Environmental Costs and Benefits, 1997). Some cities provide vouchers for residents to get water efficient models and recycle the old toilets into roadway materials.
- Lead paint issues.



*Recovery One in Tacoma, WA*

### ***RECOVERY ONE INC, Tacoma, Washington (Site visit on February 12, 1999)***

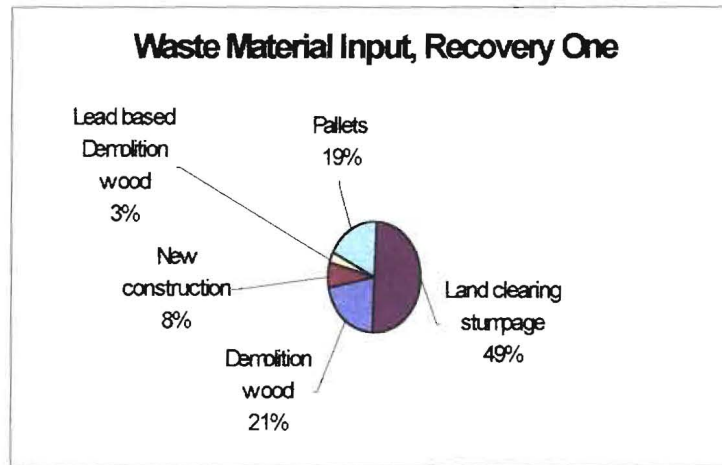
*The traditional method for house demolition and material recovery involves heavy equipment such as a track hoe and 40 cubic yard dumpsters. The structure is demolished with little thought towards the re-use or recycling of the materials in the building. Today, operations like Recovery 1 in Tacoma have developed economical processes for separating valuable material out of piles of building material debris. Recovery 1 accepts whole houses, crunched up by back-hoes and crammed into trucks. Yet according to owner Terry Gillis, after his machinery has processed this debris, less than 1% of it has to be sent to the landfill.*

*On site a massive pile of twisted beams and splintered 2x4s are mixed with concrete, lathe, wiring, pipes, window weights and fasteners. Recovery 1 uses an elaborate separation system to grind and sort building materials that are then recycled locally. About 67% of processed materials come from demolished buildings. The remaining quantity comes from contractors, wood finishers, landscapers, sawmills or shipping companies.*

*The grinding and separation process generates two grades of "hog fuel," which are sold to industry to burn for heat or power. Gillis hopes to find higher-market consumers for his product such as paper and fiberboard companies. When asked how far away he gets material, Gillis responded by saying "A few years ago we received lumber from the McMurdo Station demolition on Antarctica."*



*Building Materials from traditional mechanical demolitions often arrive at Recovery One*



*Supply sources for Recovery One comes mostly from construction and demolition activities. If building materials were recovered before demolition they could be re-used instead of recycled.*

#### Toolbox Tips

- Provide in-store space for value added crafts made of re-use building materials
- Post information inside the store about places people can bring used materials that the Re-Store does not accept. (Second Use, Seattle)
- Maintain records on store progress and amount of material diverted – useful for grant writing
- Develop in store display regarding landfills, waste reduction and environmental costs
- Set up “Recycle” days or a “Re-use” fair at a local church or school parking lot. (survey respondent)
- Post pictures and prices for nicer items from the store inventory in the internet (survey, Rebuilding Center, Rejuvenation, Hippo)

## GOAL SIX: PROMOTE HISTORIC PRESERVATION

**To encourage historic preservation and renovation. By keeping the large number of older homes in Portland in good condition our community's history and character is preserved.**

Shifting priorities about the environment and the costs associated with waste disposal have led to a change in how buildings are viewed. Many older buildings are now renovated instead of demolished. Cities are enacting ordinances to maintain period architecture and preserve the character of neighborhoods. Older buildings are becoming increasingly more desirable. The high cost of new construction makes rehabilitating older structures more cost-effective by comparison. A Re-Store encourages the **renovation of historic homes**, and provides a place to find the parts to **repair older homes**.



*Some contractors and designers demand older materials because of their appearance. Tim Ashmore, who designs newer versions of Portland-Style homes, likes the quality of older materials. (Netzer, 1998)*

### Historic Renovation

In the northwestern United States housing types fall into relatively few categories. Older sections of cities like Portland, San Francisco,

#### Get the Lead Out

Lead is a poisonous heavy metal that can be stored in the bones for years after exposure. Lead affects brain function, motor skills, and learning ability. Studies have tied lead poisoning to behavior problems, attention deficit disorder, school drop out rates and criminal activity (Forham Urban Law Journal, 1993). In adults the effects are more subtle, but extreme cases of lead exposure can cause vomiting, fainting, and seizures or shaking. Despite clear evidence that lead paint was a danger, it was not until the 1970's that the government began to regulate it, thanks to a powerful lead industry lobby.

Contact with older items containing lead paint is probably inevitable in the home parts business. However, careful training of employees and volunteers should limit lead exposure. When working with volunteer salvage crews, gloves should be available and a policy of always cleaning up before snack breaks should be instituted. Good ventilation is necessary when disassembling. The most likely route to contamination is lead paint dust; the small particles of lead dust are easily absorbed into the lungs. Respirator masks might be purchased as paper dust masks are not effective against lead dust.

The Re-STORE could play a vital role in terms of community education about the risks of lead paint. The store might be a host site for the monthly child lead testing events held by the Urban League of Portland. Fact sheets and flyers near the check out counter or bulletin board can help make the community aware of the lead issue and provide resources for further information.

### **Why Aren't More Construction Materials Salvaged?**

*Even with these attempts at protecting older buildings, many are still razed with little regard to material reuse. With a booming economy in this country, buildings are removed and replaced with larger units in record time. Until building material costs skyrocket, new construction will outpace renovation. Many builders now consider the demolition process necessary to clear the lot and make way for new development. Timetables are tight and little opportunities exist for salvage. Few incentives exist from the government to encourage building salvage. Those interested in salvaging materials often receive short notice to remove items. This results in "cherry picking" the easy to retrieve, highest value materials leaving other perfectly reusable materials and finishes to be destroyed by machinery.*



and Seattle have seen a revival in building refurbishing. In homes like Bungalows and Victorians, owners often seek out used building materials to replace damaged or poorly remodeled building materials. With increasing real estate values, many buildings are being converted into vintage rental or condo units. Owners of these units seek original furnishings such as light fixtures, hard core panel doors and other era accoutrements.

Compared with much of the country, Portland is a young city. The majority of houses were built between 1910 and 1940 (see Portland Age of Structure Map in Appendix C); within the city limits, few houses built before 1890 survive. Rejuvenation House Parts and the 1874 House stock salvaged materials for these older homes. Because of the national trend toward period renovation and the relative scarcity of useful salvage, most of these historical pieces are quite expensive. More salvaged materials are available from newer homes (1940s and after) for minimal cost; much of the stock that has been donated to The Rebuilding Center and the St. Vincent de Paul stores fall into this category.

### **The value in saving older buildings**

Some homeowners are simply trying to repair structures with many years of wear and tear. They are searching for inexpensive building materials to use. This could be replacing a tub or toilet or a broken double hung windows. Maybe they need to replace the molding around a door or are just looking for a decent mailbox. They need bargain prices and materials that will do the job.

Older homes also require repair, often needing materials that are difficult or impossible to purchase new. Home Depot doesn't stock radiator keys, crystal doorknobs, or five-panel hard-core doors. Besides offering these parts for sale, many used building material stores teach classes on common home repairs and period-accurate renovation, which encourage local residents to buy their supplies there. Classes do require some available space, competent teachers, and a minimal amount of equipment. In addition, they also need to be consistently scheduled and well advertised to residents who may not already patronize the store.

#### **Toolbox Tips**

- Provide classes for residents on repairs
- When possible, list the source of a salvaged item (ex. Label from Rejuvenation: "Door from old City Hall, \$65") (Second Use, Seattle; Rejuvenation)
- Supply loaners tape measures (identify with rope or chain so that they don't inadvertently walk away) (Rebuilding Center)
- Photo display board illustrating used materials in home projects (Rebuilding Center gives 10% off coupons for people who bring in photos of other products utilized in remodeling projects.)

## RECOMMENDATIONS

A Habitat Re-Store in the Portland area would have the opportunity to provide a wide range of services to the community. In the previous sections of this report, the team has described different programs and possibilities that salvage stores around the country have discovered. All of these programs have some trade-off in time, space or money which must be balanced within a business plan. However, the team feels confident making several recommendations based on conditions in Portland.

**1. Habitat should open a Re-Store in the Portland area in the near future.**

According to the team's research, the stores currently operating in the Portland area have not saturated the market. Many salvage opportunities continue to be passed over by used building material stores for lack of time, staff or storage space, and more customers continue to buy used goods. In fact, the market seems to be expanding as more people become aware of the possibilities of donating and purchasing used building materials. Habitat could take advantage of this growing market by opening a Re-Store in the near future. Habitat also has a competitive edge with its name recognition, access to donated building materials, volunteers for building de-construction and store staffing, and mailing list of 6,000 donors in the Portland area.

**2. The Re-Store should follow a traditional store model, possibly incorporating offices.**

Used building materials stores around the country operate from a variety of different models. Some share warehouse space with other stores, while some require memberships to shop there. In one case (Second Use in Seattle), three Habitat affiliates allow a for-profit store to sell donated items on consignment, with a portion of the price of the item returned to Habitat. However, the most common model is the traditional store model with a single entity operating under one roof, open to the public (not just to members).



The more traditional model seems best suited to the Portland market. Other non-profits in the area have expressed limited interest in partnering with Habitat or sharing store space, although a deeper exploration of this would be advisable if Habitat wants to pursue a partnering opportunity. However, many Habitats have incorporated their offices into their store space. This might be useful in a Portland Re-Store, especially if it were located outside the North Portland - Martin Luther King Jr. corridor, where it might serve as a satellite office.

**3. A Re-Store should focus on lower-cost building materials.**

A few non-profits have been successful with higher-end salvage stores, providing tax receipts for the full market value of the item. Few salvage operations exist in Portland. Most Habitat affiliates operate lower-end stores, and these materials are more readily available in the Portland area. Selling more common house parts also enables Habitat to help low and moderate income home owners to repair their houses, preventing deterioration of living conditions in their area.

**4. Habitat should consider locating a Re-Store in Southeast Portland.**

This location would be close to many low-income residents, surrounded by old housing stock, and in a part of the city where Habitat has in the past had a minimal presence. A Southeast location would open the door to partnerships with new non-profits and allow Habitat to locate construction offices and supplies closer to the homes that are being built.

**5. A Re-Store should maintain and expand partnerships with other non-profits.**

Most Habitat affiliates around the country offer discounts or free materials to other non-profit housing developers. Some keep lists of materials that other non-profits need, then notify them when it arrives at the salvage store. These are simple ways for Habitat to encourage the construction and renovation of even more homes in low-income areas - and build beneficial relationships. Both for-profit and non-profit salvage stores offer free classes in home repair and renovation. These classes encourage home owners to repair and renovate their houses, providing them with great instructors who are probably volunteering their time.

**7. The Re-Store should operate a salvage crew with volunteers and/or professionals.**

Many salvage stores throughout the country operate salvage crews. Having a demolition/ salvage crew insures that the store will always have a supply of high-quality materials. The team has found that in Portland, salvagers beat the backhoes to a mere fraction of the buildings which are eventually demolished. For Habitat, this also provides more ways for volunteers to get involved. Donors may be willing to allow a salvage crew to remove items from a house they are demolishing. Because of the weak Portland salvage market, having a salvage crew associated with the Re-Store could greatly increase both donations and the quality of available materials.

**8. Habitat should research the impacts that lead regulation will have on the salvage and re-sale industries.**

As this report goes to press, there is widespread misunderstanding and uncertainty about how proposed new federal lead regulation will impact every level of the used building material industry, from professional salvage to do-it-yourself remodeling. Any organization considering a used building material store should become informed about existing and potential hazardous material regulations.



## CONCLUSION

Overall, the team's findings were quite positive. Issues that will need to be explored further, such as lead regulations and store management systems, are noted throughout the report. It is encouraging that a Portland Re-Store has the potential not only to provide funding for Habitat, but also to meet the multiple goals discussed in this report. The team believes that a Re-Store has the potential to be a true community asset to Portland.

Portland Habitat has identified funding for a business plan to follow this feasibility study. Habitat should consider which of the Re-Store programs (from the Recommendations section and throughout the report) best match Habitat's organizational priorities. Based on this report's findings, the team members expect that Habitat will find substantial overlap. If this is indeed the case, Habitat should proceed with a business plan.



---

## APPENDIX A: GLOSSARY OF TERMS

<b>Construction</b>	Building structures with either new or used materials.
<b>Deconstruction</b>	The reverse process of construction where a structure is dismantled by hand.
<b>Demolition</b>	Removal of a structure by mechanical means and the clearing of all debris from a site.
<b>Recovery</b>	The collection, re-use or recycling of building materials.
<b>Recycling</b>	The collection, reprocessing and reuse of materials.
<b>Renovation</b>	The refurbishing of a building to meet functional needs of tenants.
<b>Restoration</b>	The act of restoring a building, using historically accurate materials and design.
<b>Re-use</b>	To use again, more than once.
<b>Re-Store</b>	The name used by Habitat for Humanity affiliates in identifying used building material stores.
<b>Salvage</b>	Removal of building materials from a structure either by hand or by mechanical means.
<b>Tipping Fees</b>	A charge for the disposal of materials at a landfill or transfer station, usually per ton.
<b>Value-Added</b>	The secondary processing of raw or recovered materials into finished products to increase their value.

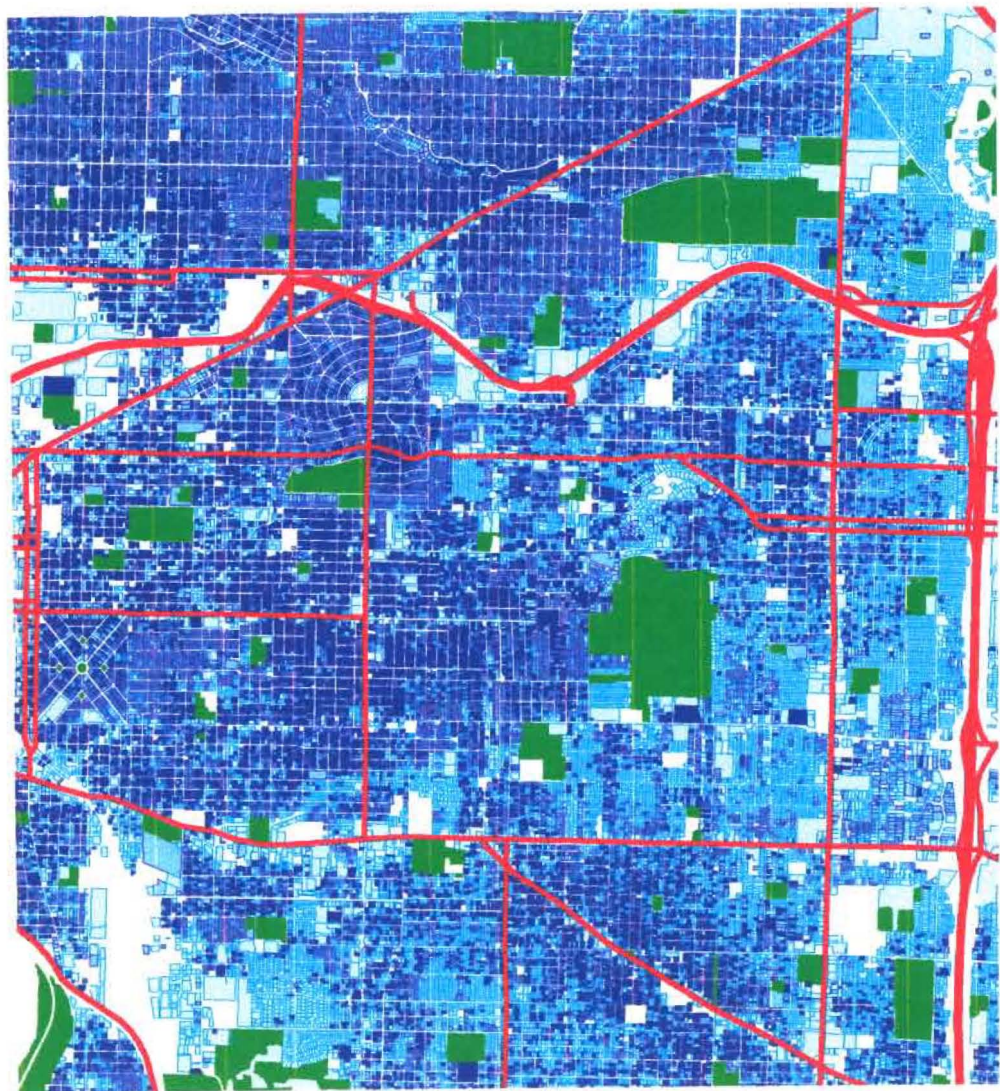


*Materials from SCRAP are re-used in a variety of very creative ways. Here a snowman is adorned with an old scarf, carrot for nose, hat and gloves for the Portland winter.*

---



# APPENDIX B: AGE OF HOUSING - PORTLAND'S EASTSIDE



**MAJOR ARTERIALS**  
**CITY PARKS**  
**YEAR STRUCTURE BUILT**

- 1850 - 1920
- 1921 - 1940
- 1941 - 1998

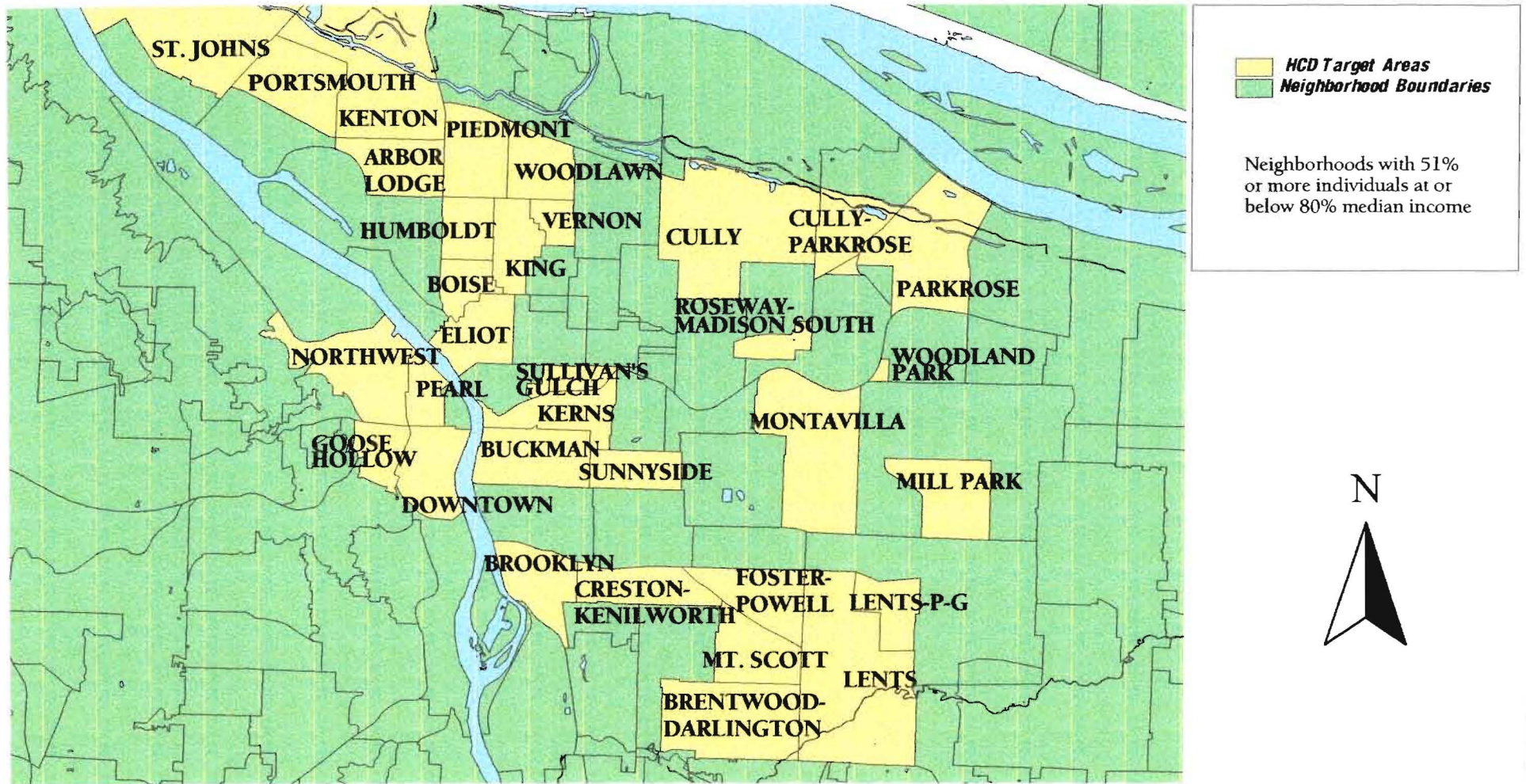


Based on Metro's RLIS database,  
taxlot file Updated 1997





# APPENDIX C: HOUSING AND COMMUNITY DEVELOPMENT AREAS



Based on U.S. Housing and Urban Development, and Center for Urban Studies, Portland State University 1990 Census

(Please note that neighborhoods mapped may overlap with actual census tract data. Neighborhoods highlighted had large portions qualifying for BHCD status.)



---

## **APPENDIX D: CONTACTS AND LEADS**

### **Supply and Demand**

- *ROSE CDC* - Sometimes Rose CDC purchases houses that are in such bad shape that must be demolished. If there were a way to make de-construction of the house less expensive than traditional demolition, they might donate re-usable portions of the house to a Re-Store. One advantage Rose CDC might have over for-profit developers is that they typically have sufficient time to allow for de-construction, which is a lengthier process than demolition.
- *AURORA MILLS* - When Mike Byrnes and his partners at Aurora Mills Architectural Salvage go out to salvage materials from buildings about to be demolished, they take only the vintage items. He regularly sees more recent building perfectly re-usable materials go to waste, including doors, hot water heaters, windows. Both Phil Kreitner and Mike Byrnes of Aurora Mills Architectural Salvage bemoaned the lack of warning on potential salvage jobs and, once on site, the lack of time to work before the backhoe moves in. Mike would be very interested in setting up a partnership with Habitat to salvage these re-usable materials that fall outside of his market niche. He has tried on occasion to get The Rebuilding Center to salvage sites, but with limited success because they seem to be too busy

### **Promote Economic Development**

Portland Development Commission - Contact PDC's city area coordinator staff to help find a location. PDC staff track properties that they would like to see redeveloped within certain regions of the city. PDC also owns a number of parcels itself, and is interested in redevelopment proposals. (Dominique Boswell, MLK Corridor; Elissa Gertler, Lents Urban Renewal Plan; Denise McGriff, Central Eastside Industrial Area Coordinator)

Arc of Multnomah County, for information on contracting retarded adults to create value added products for sale in the store 233-7279  
Federal Welfare to work program: contact: Moe Mowery 326-5209  
Vista, Americorps: contact Robin Sutherland 231-2103

### **Reduce Environmental Impacts**

Metro gives grants for projects related to waste reduction and recycling education: 797-1650.

Green Neighborhood Network, 823-7725.

ORLO, a non-profit environmentally oriented arts organization, would likely be interested in partnering on recycling/waste reduction arts events. 242-2330.

---

## USEFUL WEB SITES

### PLANNING AND LAND USE

[www.americaspeaks.org/](http://www.americaspeaks.org/)">AmericaSpeaks  
[www.planning.org/index.html](http://www.planning.org/index.html)">American Planning Association  
[www.local.org/](http://www.local.org/)">American Local Power Project  
[www.civic.net/ccn.html](http://www.civic.net/ccn.html)">Center for Civic Networking  
[www.lgc.org/clc/](http://www.lgc.org/clc/)">Center for Livable Communities  
[www.sustainable.doe.gov/](http://www.sustainable.doe.gov/)">Center of Excellence for Sustainable Development  
[www.cpn.org/index.html](http://www.cpn.org/index.html)">Civic Practices Network  
[www.cfe.cornell.edu/wei/](http://www.cfe.cornell.edu/wei/)">Cornell Center for the Environment  
[www.earthisland.org/](http://www.earthisland.org/)">Earth Island Institute  
[www.epn.org/](http://www.epn.org/)">Electronic Policy Network  
[www.greenbiz.com/](http://www.greenbiz.com/)">The Green Business Letter

### LOCAL GOVERNMENT

[www.jff.org/](http://www.jff.org/)">Jobs For the Future  
[www.localgov.org/](http://www.localgov.org/)">The Local Government Home Page  
[www.ncl.org/](http://www.ncl.org/)">National Civic League and Alliance for National Renewal  
[www.cais.com/nlc/](http://www.cais.com/nlc/)">National League of Cities  
[www.newsociety.com/](http://www.newsociety.com/)">New Society Publishing  
[www.hooked.net/users/verdant/index.htm](http://www.hooked.net/users/verdant/index.htm)">Overcoming Consumerism Home Page  
[www.futurenet.org/](http://www.futurenet.org/)">YES! A Journal of Positive Futures

### RECYCLING

[www.sustainablebusiness.com/](http://www.sustainablebusiness.com/)">Sustainable Business.com  
[www.sustainable.org/](http://www.sustainable.org/)">Sustainable Communities Network  
[www.igc.apc.org/cri/](http://www.igc.apc.org/cri/)">Container Recycling Institute  
[www.epa.gov/wastemin/](http://www.epa.gov/wastemin/)">EPA Waste Minimization National Plan  
[www.grrn.org/](http://www.grrn.org/)">Grassroots Recycling Network (GRRN)  
[www.greenculture.com/](http://www.greenculture.com/)">The Green Culture  
[www.materials4future.org/](http://www.materials4future.org/)">The Materials for the Future Foundation  
[www.stopwaste.org/](http://www.stopwaste.org/)">Waste Reduction and Recycling Information for  
[www.webdirectory.com/Recycling/](http://www.webdirectory.com/Recycling/)">Web Directory Environmental Page  
[www.ebuild.com/](http://www.ebuild.com/)">Environmental Building New

---

---

## APPENDIX E: INFORMATION SOURCES

Name	Organization or Connection	Phone #	Date	Type
<i>Salvage/ Recycling</i>				
Mike Byrnes	Aurora Mills Architectural Salvage	(503) 678-6083	2-6-99	person
Bryce Jacobson	Metro	797-1650	several	person, phone
Mike O'Brien	Northwest Energy Efficiency Alliance	827-8416 x. 244	1-29-99	phone
Shane Endicott	The Rebuilding Center	221-3193	several	person, phone
Phil Creighton	Wood Resource Efficiency Network	245-5781	2-1-99	phone
<i>Supply</i>				
Craig Osbeck	Architectural Recovery	240-2684	1-15-99	phone survey
Phone answerers	Metro - Recycling Hotline	234-3000		person
Aaron Ellis, Dan Schuller	Port of Portland	731-7054	1-21-99	site, person
Habitat Partners	Portland Habitat	287-9529	2-5-99	phone survey
Phone answerers	Portland Habitat	287-9529	2-16-99	survey
<i>Demand</i>				
Susan Steinler	PCRI	288-2923	2-3-99	phone
Mike Maset	Reach CDC	231-0682 x.39	2-19-99	phone
Nick Ilienski	Reach CDC	231-0682	2-4-99	phone
Lynn Urban	ROSE CDC	788-8052	2-3-99	phone
Matt Kirkpatrick	ROSE CDC	788-8052	2-1-99	phone
Stewart Ashmore	Small Contractor	285-4918	2-22-99	phone
Rosemarie Cordello	Sustainable Communities Northwest	288-1099	2-17-99	person
<i>Local Comparables</i>				
	Builder's City	285-0546	1-23-99	site
	Goodwill Industries	238-6165	3-8-99	site
	Hippo Hardware	231-1444	Several	site
	NW Salvage & Recovery (Vanc, WA)	(360) 694-0662	1-23-99	site
	Rejuvenation House Parts	238-1900	Several	site
	St. Vincent DePaul in Portland		2-19-99	site
Shane Endicott	The Rebuilding Center	221-3193	Several	site

---

<b>Name</b>	<b>Organization or Connection</b>	<b>Phone #</b>	<b>Date</b>	<b>Type</b>
<i>Regional, National Comparables</i>				
Mike Byrnes	Aurora Mills Arch. Salvage (Aurora, OR)	(503) 678-6083	2-6-99	site
	The Brass Knob (Washington, DC)		12-29-98	site
	BRING (Eugene, OR)	(541) 746-3023	2-6-99	site
B.J. Perkins	Habitat RE-store (Austin, TX)	(512) 478-2165	2-22-99	phone
Gary Casteel	Habitat Re-Store (Tulsa, OK)	(918) 592-4224	2-22-99	phone
Emily Keyes	Habitat Warehouse (Raleigh, NC)	(919) 790-7870	2-22-99	phone
Bob Pause, store mgr.	Habitat's Builder Surplus (Tampa, FL)		2-24-99	phone
	The Loading Dock (Baltimore, MD)	(410) 728-3625	12-28-98	site
	Recovery One (Tacoma, WA)	(253) 627-1180	2-12-99	site
Joyce Wisdom	Re-Use Center (Minneapolis, MN)	(612) 874-1148	2-12-99	phone
Adam	Ritters (Salem, OR)	541-393-7101	2-6-99	site
	San Fernando Valley Re-Store (CA)	1-818-487-9600	2-17-99	phone
	Second Use (Seattle, WA)	(206) 763-6929	2-12-99	site
	Urban Ore (Berkeley, CA)	(510) 559-4460	2-28-98	site
<i>Portland policy interests</i>				
Howard Cutler	BHCD - economic development	823-2384	2-3-99	person
Dave McConnell	Enterprise Foundation	223-4848	2-22-99	phone
Denise McGriff	PDC - Central Eastside	823-3295	2-4-99	phone
Elissa Gertler	PDC - Lents		2-17-99	phone
Dominique Boswell	PDC - MLK Corridor	823-3037	2-17-99	phone
Lucille Cartright	PDC - Small business loans	823-3347	2-17-99	phone
<i>Trade Groups</i>				
	Eco-building guild	222-3881		phone
Peter Yoss	Home Builders	1-800-638-8556 x. 542		phone
	Oregon Remodelers Association	257-9119		phone
<i>Statistics</i>				
	BHCD			phone
	Bureau of Buildings-City of Portland- permit data		2/19/99, 3/11/99	site, phone
	RLIS - housing age map			
<i>Legislation</i>				
Bryce Jacobson	METRO	797-1650		phone

---

---

## APPENDIX F: BIBLIOGRAPHY

Andres, Adolf and David Wiebe, "Survey Results Data for Used Building Material Stores in North America, April 1997 for Environment Canada

Andres, Adolf, Points to Consider When Setting up a Used Building Material Store, April 1994 for Environment Canada, Manitoba

Austin, David, "Recycling Turns Trash into Treasure" November 13, 1998, *Oregonian*.

Bernhardt, Chris, "Cash From Trash: The Development of Recycling-Based Industries in the Portland Metropolitan Region", June 1995,  
Portland State University Department of Urban and Regional Planning.

Christ, Janet, "Old Building Parts Find a New Home", June 5, 1998, *Oregonian*.

Cucina, Hope S., and Rosalia Scalia, *The Loading Dock: A Re-use Warehouse*, 1995. Baltimore, Maryland.

"Cut Your Trash in Half" *Service Matters*, Association of Bay Area Governments newsletter, January/February, 1999, Issue 38.

Dunham, Elisabeth "Parts and Soul", January 8, 1998, *Oregonian*.

Ewing, Dr. David, *The Habitat ReStore*, briefing paper written for Habitat for Humanity International, no date.

Falk, Bob, "Wood Recycling: Opportunities for the Woodwaste Resource, *Forest Products Journal*, June 1997, Vol. 47, N.6 pp.17.

Griffith, Don, *The Habitat ReStore and Warehouse Operations 1997-98 Business Plan*, for Habitat for Humanity of San Antonio, Inc., September 1997.

---



Habitat for Humanity St. Louis, no author, "Visit to Re-Stores in Austin and San Antonio", no date.

Historic Property Magazine, various articles, November, December and January issues, Vol. 2, 3 and 4. Portland, Oregon.

Joslin, Jeff, Phil Kreitner and Bill Welch, *The Waste Papers: Analysis of the Potential for Salvage and Re-Use of Construction Materials from Residential Demolition*, June 1993. Written for Metro, contract #902816.

Materials for the Future Foundation fact sheet: "What is Recycling Based Community Economic Development?", author unknown.

McKeever, David B., "Resource Potential of Solid Wood Waste in the United States", in *Use of Wood and Paper in Building Applications Conference*, September 9-11, 1996.

Metro, *Regional Solid Waste Management Plan, 1995-2005*, February 1997.

Netzer, Greg, *Irreplaceable Artifacts: The roots of Oregon's boom in architectural salvage run deep*, *Oregon Home*, Fall 1998, pp.64.

Port Sets T-4 Dismantle Project in Motion" Port of Portland press release, September 10, 1998, No. 68, [www.portofportland.com](http://www.portofportland.com)

"Recycling recycling" editorial, March 29, 1998 *Oregonian*

Resale Store Resource Manual, September 1993, no author, for Habitat for Humanity, South Atlantic Region.

*Salvaging Building Materials for Use in New Construction: Methodology and Economics*, October 1998, Center for Construction and Environment, University of Florida, Gainesville Florida, prepared for Alachua County Public Works Department and Gainesville Public Works Department.

---

---

“Second Time Around: Rescuing Materials from Landfills”, *Bio-Cycle*, February 1998.

Tulsa Habitat for Humanity 1998 Re-Store Business Plan, November, 1997.

“Used building materials versus environmental costs and benefits”, Web discussion, various participants, December 11, 1997. [www.islr.org](http://www.islr.org)

Used News from BRING Recycling, Vol. 7, No.4, Winter 1998, BRING Recycling, Eugene, Oregon.

Vandall, Jeffrey, “Recycling your Buildings: its Possible, and its Preferable” *Parks and Recreation*, January 1995, Vol. 30, N.1 pp.61.

Warehousing the Habitat Re-Store Way, packet of related materials compiled by Habitat for Humanity International, no date.

---

