Deconstruction:
A New Cottage Industry for New Orleans

Purpose: This working paper advances building deconstruction and materials recovery as a high-value alternative to demolition and disposal of building components in the City of New Orleans. Building deconstruction and materials recovery foster a sustainable, locally-based post-Katrina construction industry in the community. The goal of this paper is to encourage the City of New Orleans to establish a policy to procure building deconstruction and materials recovery services as the primary means to remove unwanted buildings, in lieu of demolition and disposal.

Request: After reviewing the financial and social benefits as well as policy considerations, it is hoped that the Mayor of New Orleans will request that Federal and State demolition funds be made available for building deconstruction for those building removals where deconstruction costs do not exceed equivalent demolition and disposal costs.

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EXECUTIVE SUMMARY

DECONSTRUCTION DEFINED: Deconstruction is the systematic hand-dismantling of a structure with the intent of maximizing the yield of reusable building materials. While the process differs from standard demolition, the results are the same: a completely cleared site. Deconstruction crews work for homeowners, contractors, local governments, and other property owners to provide environmentally friendly, cost-effective removal of building components and complete structures, both residential and commercial.

PROBLEM: With thousands of homes likely to be demolished in post-Katrina New Orleans, an extraordinary amount of building materials could be placed into landfills. If this occurs, historic and otherwise valuable building materials will be lost forever rather than reused or recycled back into the economic stream of the community. At the same time that it can create a tremendous disposal problem, this waste of resources would also result in tremendous economic "waste" to the community, in the form of lost jobs, building materials, economic activities and local government revenues.

The Federal Emergency Management Agency (FEMA), the agency providing funding for building removal, currently has no policy for the use of building deconstruction and materials recovery as the preferred alternative to demolition and disposal. Without a formal request from the City to prioritize deconstruction over mechanical demolition and disposal, FEMA is unlikely to fund building deconstruction.

OPPORTUNITY: With the initial round of building removals moving forward now, citizens see the loss of valuable building materials resources and historical character from mechanical demolition and disposal of New Orleans' housing stock. With federal funds poised to reimburse contractors for demolition, now is an ideal time to establish a policy that promotes deconstruction and materials recovery in New Orleans to reduce the burden on already overstressed landfills and to keep valuable resources within the community for economic development and reconstruction.

Recovering just 50% of the total lumber materials from 1,000 older wood-framed homes[1] is equivalent to 5 million board feet (BF) valued at $2,000,000[2], which is enough lumber in turn to build approximately 400 new wood-framed houses at 2,000 square feet each[3]. The conservative estimate of optimal labor to recover this quantity of materials from approximately 1,000 homes would create 160 full-time jobs for one full year at a living wage. ***The avoidance of waste from a 50% diversion rate is equal to about $1,040,000***

[1] According to the USDA US Forest Products Laboratory, the average home built in 1962 used 11,000 board feet of lumber.

[2] For purposes of estimate, average lumber value of $00.40 per board foot is used based on conversation with David Reynolds, The Green Project, August 2, 2006. If this number is higher the total potential will be greater

[3] According to the USDA US Forest Products Laboratory, the average home built in 2000 used 13,000 board feet of lumber. The average home in 2000 is over 2,000 square feet.

in disposal cost savings. The expenditure of only $7,500 per home on deconstruction, with comprehensive reuse and recycling, can result in an additional $21,150 per house of expenditures in the community from the direct, indirect and induced spending multiplier effects[4] (NRC, 2001).

BENEFITS: Deconstruction has several tangible benefits:

- **Job Creation and Workforce Development.** Where federally funded demolitions tend to rely on large outside firms, deconstruction is most appropriately done by locally-based contractors. Deconstruction skills can be taught as a form of "pre-construction" training, conveying basic construction and safety measures from which employees gain a valuable foundation to move into other higher-skilled trades within the construction industry. Additional jobs are created in used materials sales facilities and value-adding to wood products, such as furniture making, reclaimed flooring and other specialty wood products. A commitment to local deconstruction business development would allow Mercy Corps and other organizations and government agencies to invest in job-training to increase the existing local capacity to undertake building deconstruction.

- **Waste Reduction—Extends Landfill Capacity.** Deconstruction can result in 50% of a building's materials being diverted from the landfill and reused. This extends the life of the landfill, which in turns reduces the burden on government agencies to close and monitor landfills that reach their capacity more rapidly. In addition, shortening the lives of landfills means avoiding excessive costs and the political burden to find sites, obtain approvals, and open new landfills.

- **Environmental Management.** Deconstruction, as a careful practice of building dismantling, means that all materials are managed more carefully, including any potential hazardous materials. By the elimination or minimal use of equipment, neighborhood environmental impacts such as noise, dust and other air emissions such as asbestos, disruption of traffic and physical hazards to other homes, pedestrians and vehicles are greatly reduced or eliminated.

- **Historic Preservation.** Reusing valuable historic materials is a means of preserving New Orleans' architectural heritage in the repair and rehabilitation of existing buildings and by incorporation into new construction. By reclaiming vernacular and appropriate materials and architectural elements, it is more likely that the rebuilding process will be able to utilize materials that maintain the architectural and cultural character of the City.

[4]According to the National Recycling Coalition, 2001, the Type II value-added multiplier for the reuse and recycling industry in the US on average is 3.82. The Type II multiplier is the ratio of direct, indirect and induced spending to the direct expenditures for a given economic activity, i.e. for every $1.00 spent directly a total of $3.82 in spending is generated by all spending related to that activity, including the spending by employees and supporting service employees in the community.

- **Financial.** Reused building materials are typically sold at 30-50% less than new materials by reuse stores across the United States. The primary consumers of these materials include rental property owners and homeowners who can then make repairs to their homes at lower costs. In the current rebuilding climate, new building materials are even more expensive than normal making often better quality, reclaimed materials that much more economically appealing. Also, private property owner who donate their home's materials can receive tax-deduction credits for donations of the reclaimed materials to non-profits either directly or through for-profit deconstruction companies.

COSTS: Deconstruction is often cost competitive with demolition, particularly in buildings with older materials (pre-1970's) and where hazardous materials (e.g. asbestos) are not present in large quantities. Where hazardous materials are present, deconstruction affords the greater potential to "capture" these materials and manage them properly, reducing potential for emissions from a demolition process and the current and future economic and environmental liabilities of improper disposal. Deconstruction is cost-competitive for appropriate buildings by reducing disposal costs and obtaining revenues from the resale of reclaimed materials, where demolition creates zero revenues from materials recovery and reuse or recycling.

PATH TO SUCCESS: For a vibrant deconstruction industry to be established in New Orleans, job-trainers and contractors will need to be assured of a reliable stream of deconstruction opportunities. For reclaimed materials markets to be established in the community a consistent flow of materials is needed that in turn can support capital investment in land, buildings, equipment, etc. for reuse and recycling facilities. All of these supply factors are critical to allowing the design and construction community to then take advantage of locally reclaimed materials as an alternative to new and imported materials. The City of New Orleans will need to make a formal statement to federal and state officials that building deconstruction and materials recovery is a preferred alternative to demolition and disposal to create the foundation for reuse and recycling markets to take hold.

SPECIFIC REQUEST: We request that the Mayor notify FEMA, the Corps of Engineers, and the Louisiana Recovery Authority that the City's policy is that building deconstruction with maximum feasible reuse and recycling of recovered materials is preferable to wide-scale demolition and disposal within the current cost formulas for building removals.

Establishing Deconstruction in New Orleans: A Primer and The Vision

The Deconstruction Process: Once deconstruction has been approved for a particular building, contractors seek necessary permits and shutoff the utilities. Any asbestos is properly abated. Next, refuse and household hazardous materials are separated and taken to proper facilities for recycling and disposal. Then the structure is gutted and the initial salvageable materials are removed. Roofing material is removed next, and then the building is dismantled in the reverse order that it was constructed—roof rafters, ceiling joists, walls, flooring material and joists, and sills. At this point all that typically remains is either concrete or brick piers and concrete porches and steps. The bricks are salvaged and the stable concrete is usually left, unless otherwise contracted. Any accumulated scrap metal is removed and taken to a recycling facility. The lot is finally graded, and ready for new construction.

A typical building takes an average of ten days to deconstruct and requires a crew of four to six workers.

The Deconstruction Movement. Growing out of public awareness of household recycling issues in the 70's and 80's, and then the explosive growth of the green building movement in the 90's and early 21st century, building deconstruction has emerged as a recognized alternative to removing unwanted buildings. One of the oldest reused non-profit building materials centers in the US, The Loading Dock, Baltimore, MD was established in 1984 to provide low-cost building materials to the community. At last and best count, there are approximately 1,000 reused building materials stores, both for-profit and non-profit (excluding architectural antique stores) in the US[5]. Approximately 205 of these reuse materials stores are Habitat for Humanity (HfH) ReStores. To illustrate the growth in the reused building materials industry, the oldest HfH Restore was established in 1987, however approximately 57% of all stores have been established within the last 5 years. The average ReStore is over 10,000 square feet, and in aggregate they produce about $40 million in net revenues per year for their affiliates[6]. Across the US in almost every state, with the exclusion of locations such as Hawaii, Wyoming, and North Dakota, over 250 active deconstruction programs exist (excluding primarily demolition companies). The annual national conference of Building Materials Reuse Association, which supports the deconstruction and building materials industry, has grown from approximately 60 participants in 2001 to an expected 200 participants at the next event in May, 2007 (www.buildingreuse.org).

[5] Hamer Center for Community Design, 2006

[6] Michael, J.H., Echols, A.E., Bukowski, S.W., Gresock, A.R., An Investigation of Habitat for Humanity ReStores: Marketing, Management Characteristics, and the Wood-Based Materials Inventory, Prepared for Habitat for Humanity, The Pennsylvania State University, December, 2005.

A Vision for New Orleans. As the new New Orleans begins to take root in the post-Hurricane Katrina recovery phase, deconstruction should emerge as a new cottage industry growing out of the activities associated with removing thousands of homes from Orleans parish. Initially, a corps of interested workers will be trained in deconstruction skills and will begin deconstructing homes along with those who currently have the capacity. At the same time and as reusable materials are placed on the market, new jobs will emerge at non-profit and for-profit facilities that market and sell salvaged building materials. Over time, many of these workers will advance to higher skilled construction and marketing jobs. Whereas demolition would typically employ large outside firms whose employees leave the area once they are finished, hundreds of local people trained in deconstruction methodologies will result in greatly improved employment opportunities in construction and materials processing jobs. Locally skilled persons with the opportunity to rebuild their City will stay in New Orleans, own or rent homes, have families here, pay taxes, etc. At strategic locations within the City, reuse depots can be established to store salvaged materials. These depots are vital commercial nodes, possibly in conjunction with neighborhood community centers, and are places homeowners and construction contractors can go to find materials to affordably rebuild or restore their homes. Once the bulk of hurricane-damaged buildings are addressed — probably within 2-3 years — the deconstruction industry will settle into a sustainable sub-sector where perhaps 100-200 buildings may be available for deconstruction each year.

Opportunity in New Orleans. The impact of Katrina's floodwaters, plus the unusual extent of pre-Katrina blighted properties has created an opportunity for New Orleans to lead the nation in deconstruction. Currently there are efforts moving forward with FEMA to promote deconstruction of a small number of historically significant buildings that pose an imminent threat to public safety and must be removed. Federal funding is available for deconstructing these houses (approximately 50) since their historic status requires that alternatives to demolition be considered under Section 106 of the National Historic Preservation Act.

The greater opportunity rests with homes where property owners have requested demolition from the City and homes that will be transferred to the State under the Road Home Program's buyout process. There will be other opportunities associated with many of the City's adjudicated properties. Also the Department of Housing and Urban Development's plans to remove several public housing projects could open additional deconstruction opportunities of a more institutional nature.

Figure 3. Reclaimed cypress and pine lumber from New Orleans homes.

Why Deconstruction?
Of course, recycling reusable building materials makes common sense, but there are significant tangible benefits beyond the obvious.

- **Job Creation and Workforce Development**. Having a reliable volume of buildings requiring deconstruction allows for the creation of new construction jobs as well as jobs associated with the processing, marketing, management and value-adding of the reusable building materials. Unlike demolition, where much of the low-skill work is handled by non-local contractors, deconstruction provides an opportunity to train local workers in the construction industry with the assistance of nongovernmental organizations (NGOs) and government agencies. ***It is estimated that deconstruction can support the local economy by providing three to six living-wage jobs for every one from standard demolition, with nearly 100 percent of the revenue re-invested in the local community.***[7]

  Moreover, as a culture of deconstruction takes hold and as property owners become increasingly aware of the benefits, the demand for deconstruction will remain well after the Katrina-related demolitions are completed.

  Since deconstruction is more labor intensive than demolition, more time and money is spent on hand labor and less on the operation and maintainance of heavy equipment. Through cooperation with job-training programs, deconstruction has the potential to create well-paid entry-level jobs to the construction trades.

  An average 1,500 square foot older wood-framed house deconstruction can take six (6) people working eight to ten (8-10) days versus two to three (2-3) people working two (2) days to demolish and haul the debris from this house using heavy

[7] The Rebuilding Center, Portland, Oregon

machinery. Deconstruction therefore can result in about 8-10 times more employment-hours at a living wage, per house removal. According to the Deconstruction Institute, the deconstruction of a 2,000 square foot home would create 38 more worker days at a living wage than would demolition.[8] The labor costs, of course, are offset by the resale value of the reclaimed materials

- **Reducing waste to landfills.** Studies indicate that deconstruction reduces waste at landfills by 50%-70%[9]. Reusing building materials thus extends the life of the landfill for other materials that cannot be recycled. In New Orleans where stagnant floodwaters took their toll in addition to the presence of the destructive Formosan termites, reuse rates may be less than the national average. A review of buildings deconstructed in New Orleans[10], for instance, suggests a 48% material salvage rate, still a significant waste reduction benefit. Moreover, an additional 15-20% of the material could be diverted from the landfill if there were an active construction and demolition recycling facility (e.g. for concrete, bricks, etc.) in New Orleans area.

- **Historic Preservation.** No American city possesses such a tremendous legacy of historic architecture as New Orleans. Moreover, New Orleans began advocating for preservation well before most cities. Unfortunately, forty years of a declining economy and now Katrina have taken a toll on the City's historic buildings. Many houses simply must be torn down due to structural decline and Katrina's floodwaters. Deconstruction and materials recovery provides an alternative to demolition and disposal that allows for the use of significant historic materials, such as moldings, doors, mantels and decorative elements in the renovation of other homes. Unique to New Orleans is the legacy of highly desirable wood species such as cypress and heart pine that was harvested in the region for building purposes, and older growth lumber that was brought down to New Orleans from the Great Lakes southward. Even where typical historic materials are not present, flooring, roof rafters, wall framing and floor joists, etc. from as late as the 1950's have significant value for reuse

- **Financial.** While some materials salvaged from the deconstruction process will command a premium, many of the boards and beams, sinks and windows can be offered at a more affordable price to consumers looking to rebuild or renovate. Tax benefits associated with donated materials are an additional factor. Homeowners can take a charitable deduction if their properties are deconstructed by a non-profit organization. Private contractors may also choose to donate some of the extracted materials and would also be eligible for tax benefits.

- **Economic Multiplier Effect.** The reuse and remanufacturing industry in the U.S., in 2001, employed 170,000 persons, with annual payroll of $2.7 billion and value of receipts of $14.2 billion. The average reused merchandise establishment

[8] www.deconstructioninstitute.com
[9] See the Deconstruction Institute website research section at www.deconstructioninstitute.com
[10] See attached Appendix 1

employed six persons at an average wage of $16,000 per year. The average wood reuse employee wage was $21,000. The reuse and recycling sector combined averaged annual wages of about $32,700 per employee, approximately $3,000 higher than the national average wage. Due to the uncertainties of categorizing reuse businesses along with other manufacturing related industries, this economic impact may be as much as three (3) times higher than calculated (NRC, 2001).

The total economic effects of a business sector in a local economy are its multiplier effects. The Type I multiplier identifies the value of direct and indirect transactions, i.e. the output of a business category and all other output that it purchases from its suppliers in the region - relative to the value of only the direct transactions. The Type II multiplier identifies the value of all economic transactions (direct, indirect, and induced) that are stimulated in the economy by an industry under study, including the personal spending of employees throughout the supply chain whose economic activity is apportioned to the industry, relative to the value of only the direct transactions. The Induced effects accrue when workers in the direct and indirect industries spend their earnings on goods and services in the region. When workers in direct and indirect industries purchase goods and services for household consumption, they, in turn, stimulate another layer of the economy.

Reuse and Recycling Economic Impacts

Sector	*Jobs Multipliers*		*Income Multipliers*	
	Type 1	*Type 2*	*Type 1*	*Type 2*
Manufacturing	***2.65***	***4.87***	***2.30***	***3.78***
Reuse and Recycling Average	***2.18***	***3.53***	***2.31***	***3.54***
Wood Reuse	***1.75***	***2.59***	***2.20***	***3.37***
Retail Used Materials	*1.53*	*2.09*	***2.23***	***3.42***
Construction	***1.84***	***3.16***	*1.84*	*3.01*
Services	*1.31*	*2.17*	*1.35*	*2.21*
Retail Trade	*1.13*	*1.59*	*1.24*	*2.02*

(NRC, 2001)

As can be noted in the table above, next to Manufacturing:

- The Reuse and Recycling sector on average, provides higher *job* multiplier impacts than Construction, with Wood Reuse close behind Construction;

- The Wood Reuse and Retail Used Materials sectors both provide higher *income* multiplier effects than Construction;

- The Retail Used Materials and Wood Reuse sectors both provide much greater *job and income* multiplier impacts than Services or Retail Trade.

Deconstruction and reuse of recovered building materials is an essential component of the construction industry, particularly for the rebuilding of New

Orleans, and can provide equal if not better economic benefits to the New Orleans' economy than construction, and substantially better benefits to the local economy than service or retail trade business activities.

According to the National Recycling Coalition, "Despite the fact that more discards are disposed than recycled…the reuse and recycling sector (in the US) is larger than the waste management industry. This is because recycling and reuse are inherently value-adding, whereas disposal is not, and value-adding supports jobs and economic activity." (NRC, 2001).

Figure 2. Reuse Education Center at Beyond Waste, Cotati, CA demonstrating value-added reclaimed wood products such as wainscoting, flooring, and furniture.

- **Cost Effectiveness.** Contrary to what most people assume, deconstruction is often cost competitive with a typical demolition operation. This is particularly true when the amounts of hazardous materials, such as asbestos, are minimal and when there are sufficient amounts of reusable building materials.

  Mercy Corps conducted an informal study of five buildings that were deconstructed in New Orleans, post-Katrina. ***Costs to deconstruct a building range from between $6,225 to $10,500, with an average of $7,729. See Appendix 1.***

- **Public Tax Revenues Generated.** Because deconstruction creates more jobs — and long-term ones at that — state and local revenues will be enhanced by income tax revenues and sales tax revenues from a new group of citizens with purchasing power. Moreover, because a successful deconstruction program will result in the

resale of several million dollars a year worth of building materials, sales tax revenues will be generated from this process as well.

Deconstruction: Seeding A New Economic Development Tool.

Mercy Corps hopes that deconstruction can become an economic development instigator for New Orleans. Establishment of an effective deconstruction skills training program and the siting of community-based reuse depots are two specific ways in which the non-profit community can help the deconstruction industry plant a foothold. With the establishment of a quality training program and the establishment of reuse depots, many jobs could be created to undertake the deconstruction work as well as handling and marketing the materials.

Moreover, as entry level jobs, it is reasonable to expect that as deconstruction workers mature within the industry, they will transfer to higher skilled construction jobs. In addition to the onsite deconstruction activity, jobs will be created in the handling and marketing of reusable materials. It is estimated that for every 15 people actually doing deconstruction, five people would be required for the processing of materials.

- **Training.** Mercy Corps is interested in partnering with public agencies to provide quality training in deconstruction and in the business of handling reusable materials. Training would generally require three-five weeks. Currently, approximately 30-40 people are working in the deconstruction/salvage industry. We estimate that another 20 people would be trained immediately upon FEMA approval of deconstruction. Ongoing training resources from public and private sources would need to be identified. Until there is official support from the City, the LRA, and FEMA for deconstruction, an ambitious training program cannot proceed.

- **Community-Based Reuse Facilities**. A successful deconstruction industry requires the establishment of reuse facilities (depot) where recycled materials are stored and sold to the public. Mercy Corps and its partners envision increasing the capacity of existing neighborhood depots and establishing additional facilities, as needed, where deconstructed materials could be gathered and sold on the open market for use in renovation and new construction in the New Orleans region[11]. Depots could be sited in conjunction with other community-based facilities in neighborhoods where citizens are returning, thereby providing location efficiencies between sources of materials and rebuilding activities. They could be

[11] Because of the Formosan termite quarantine in effect in nine Southeastern LA Parishes, "all architectural components, such as beams, doors, and other wood salvaged from a structure in the… parishes shall not be sold or placed in a new, remodeled, or reconstructed home, building, or permanent structure located in the… parishes or in any other parish prior to being fumigated or treated for Formosan termites… according to Louisiana Structural Pest Control Commission's Rules and Regulations", Louisiana Department of Agriculture and Forestry Office of Agricultural and Environmental Sciences, Division of Pesticides and Environmental Programs, State of Louisiana.

created at or near community centers, or along commercial streets needing a boost, thereby providing a synergy between rebuilding and helping with a neighborhood's redevelopment. A typical depot would require a site with approximately 20,000-30,000 square feet of storage capacity. Depending on its size, a neighborhood depot could employ between 5 and 10 people to handle and market the reusable building materials.

The City can assist in this effort by supporting existing facilities (such as The Green Project and the New Orleans HfH ReStore) to expand and to help provide land and buildings for new satellite facilities. As demonstrated across the US, there are many models such as membership-based reuse stores where income-eligible private citizens and non-profit building organizations receive discounts, cooperative facilities where volunteers can work in exchange for discounts, training in rehabilitation and energy-efficiency upgrades are provided in-house, other value-added activities using reclaimed materials can share space, and non-deconstruction used materials and "new-used" materials donations can be collected for affordable resale to the community. As with the training component, until there is clear policy support from government agencies, it will be difficult to begin the process of seeking philanthropic funding for developing these community based facilities.

Current Impediments to Deconstruction.

- **Public Agency Acceptance.** While the opportunity to implement large-scale deconstruction seems plentiful, the reality is that so long as the federal agencies overseeing and funding demolitions do not recognize deconstruction as a reimbursable activity, it will not be realized as an economical, environmental and community-beneficial means to remove large number of unwanted buildings. In order to be realized at the scale commensurate to the City's needs, it will require recognition and use of federal funding that is earmarked for building removals. With this economy of scale and volume of work, a new deconstruction industry can be realized with large down-stream economic benefits to the community even after the original building deconstruction has taken place.

- **Concerns that Deconstruction Takes More Time.** Moreover, concerns about the additional time required for deconstruction will have to be tolerated. With buildings where haste is required, perhaps deconstruction will not be appropriate. For the thousands of other buildings where an extra six to ten days is acceptable, then timing should not be a concern.

- **Employer Capacity to Undertake Deconstruction**. There is not currently sufficient capacity to deconstruct more than two-dozen buildings a month in New Orleans. In order to meet the potential demand for deconstruction, a first-rate training program will need to be established. Additionally, facilities to store and process the reusable materials will need to be created.

NEXT STEPS

City's Potential Leadership Role in Promoting Deconstruction. With the support of City leaders, it is proposed that FEMA, the US Army Corps of Engineers, and the Louisiana Recovery Authority will recognize building deconstruction and materials recovery as a favorable alternative to demolition and disposal in many cases. It is hoped that after reviewing the benefits of deconstruction and materials reuse, that the City will adopt a policy that promotes deconstruction and materials recovery as a preferred alternative to demolition for all building removals in the City.

Request. We request that the Mayor of New Orleans notify FEMA, the Corps of Engineers, and the Louisiana Recovery Authority that the City's policy is that deconstruction should be pursued over demolition whenever it is appropriate.

EXAMPLES OF SUCCESS:
REUSE CENTER CASE STUDIES

Portland, Oregon's ReBuilding Center. Starting with a few volunteers and a small loan, in 1997 social entrepreneurs in Portland, Oregon began a non-profit deconstruction business in one of Portland's low-income neighborhoods. Portland, while not possessing the historic building heritage of New Orleans, was benefiting from immigration and a renovation boom over the past ten years. Coupled with a strong conservation and recycling ethic, the demand for reusable materials was high.

Today, the ReBuilding Center is a flourishing non-profit enterprise that has contributed significantly to the revitalization of the surrounding neighborhood, which had been previously bypassed by Portland's economic success. Operating like a thrift store, everyone can donate and purchase affordable material for construction, building repair, and home remodeling. Each year the ReBuilding Center and its deconstruction arm keep 5 million pounds of reusable material from the landfill, host 90,000 visitors and hundreds of volunteers, create dozens of livable-wage jobs, and provide $50,000 in donations of free reclaimed building materials to local organizations. In 2006 they have 49 full-time employees, plus two AmeriCorps positions, and a $2.3 million budget.

Burlington, Vermont's Recycle North (RN), is a non-profit reused materials resale, job-training and deconstruction services organization in Burlington, VT. It was founded in 1991. In 2005, RN had 39 staff members with a $2.3 million budget and over $1.5 million in sales and services located in the two stores: the Household Goods Store and the Building Materials Center. The current income stream is split as follows: 75% from reuse sales and services, 15% from government grants that partly fund the training programs, and approximately 9% of revenues come from individual and corporate contributions. Of the proportion of revenues from reuse sales and services, this includes appliances (17%); furniture and household goods (26%); computers (9%); building materials and deconstruction services (39%); pick-up and delivery services (4%); and appliance repair and computer repair services (5%). RN offers four job skills training programs, which complement its reuse and deconstruction operations, and the organization donates yearly more than $50,000 worth in goods through its Essential Goods Program. In 2004, RN diverted 300 tons in household goods and 274 tons in building materials from landfills. Since its inception in 1991, through 2005, the organization has sold $5,346,777 worth of reusable and repaired material that otherwise would have ended up in landfills, and has trained and employed over 200 individuals (Arias, 2005)

Pittsburg's Construction Junction (CJ) is a non-profit reused building materials organization in Pittsburgh, PA opened in 1999 with support from the Pennsylvania Resources Council. In 2002, the organization moved into a 50,000 square feet facility located at the epicenter of its top five customer locations by zip code. Since 1999, CJ has recorded over $2,200,000 in sales of used and "new-old" building materials donated by more than 3,000 individuals and companies. CJ's sales growth has averaged a respectable 30% per year since opening. In 2004, the store recorded sales of $631,000-its best sales year covering over 98.5% of operating expenses. In 2005, the store went into the black, more than covering all operating expenses strictly from sales (Dowty, 2005).