

# Deconstruction in Milwaukee



## 1 SUMMARY REPORT

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### Introduction

Deconstruction is hand demolition to dismantle and preserve building components for the purpose of reuse, repurposing, and recycling of construction products. This process is markedly different from mechanical demolition, with the same end result. The recycling of deconstructed material is considered “green” construction and promises to reduce disposal cost and reduce dependency on landfills.

Deconstruction affords communities such as Milwaukee with the widest opportunity for recycling, reuse and diversion of useful materials from landfills. An additional component of deconstruction not fully realized in our initial project is job creation and job training opportunities. Deconstruction can be a way to build job skills and can provide an excellent opportunity for job training.

This report will discuss the recent history of deconstruction in Milwaukee and major considerations in building and expanding deconstruction activity. The report will also discuss how much demolition can be achieved through deconstruction, and what the parameters on future deconstruction activity should be.

### Starting a Deconstruction Initiative

The Department of Neighborhood Services (DNS) conducted its first Common Council-approved deconstruction project in 2009. The initial project was considerably more expensive than anticipated and did not meet Department expectations. In subsequent projects, DNS learned successful deconstruction is far more complicated than taking apart a building and requires more than labor and tools to have a positive impact on blight and reduce the waste stream.

The Department’s initial deconstruction project included five properties. DNS advertised a bid package to deconstruct five properties to private contractors. Contractors who could meet the rigorous city demolition requirements had the opportunity to place a bid. The average bid price was \$49,000 per parcel, over three times the cost of mechanical demolition. We interviewed bidders to understand how they arrived at their prices and what barriers there were to more reasonable contract costs.

Bidders raised numerous issues: labor costs, safety, site security, material handling and storage costs, limited markets for materials, and cost associated with marketing of materials.

In addition to consulting with potential bidders, DNS examined other cities’ efforts and reached out to national deconstruction expert, Dave Bennink. Mr. Bennink uses an alternative method of deconstruction called Hybrid Deconstruction. Hybrid deconstruction is the combination of semi-skilled labor and mechanical demolition. The hybrid method reduces liability and creates a wider range of salvage opportunities, while speeding up the deconstruction process. Based on expected performance improvements using the hybrid model, the Department employed that method in another demonstration project.

DNS contracted with Mr. Bennink in 2012 to introduce his hybrid method to a larger group of contractors. The goal was to create a larger pool of contractors who could capably deliver cost-effective deconstruction. Two projects were initiated:

- hybrid deconstruction of five buildings, and
- deconstruction of 100 residential garages.

The opportunity for garage deconstruction was created by the Milwaukee Jobs Act, developed by Mayor Barrett and Ald. Ashanti Hamilton. These two projects provided an excellent opportunity to put the hybrid method into use and created a smaller, less complex, program of deconstructing garages as a training ground for building contractor capacity.

The Jobs Act also helped create the environment that enabled Milwaukee Area Workforce Investment Board (MAWIB) to get involved. With the help of the Mayor's Office and many others, a partnership was formed that resulted in the jobs created for these deconstruction projects would be part of an employment training program. This program would be able to provide training wage to workers. Participants would receive a training wage of \$12.50 per hour funded through agencies in collaboration with MAWIB.

A great deal of work was also done in 2013-2015 to build partnerships between local community groups and the demolition industry. Mr. Bennink agreed that building these connections would grow the pool of contractors and build the deconstruction industry in Milwaukee. The idea was to partner an established demolition contractor with a community group that could provide the workers/trainees for a project. This would create a local workforce with established partners who would be able to operate in conjunction with an experienced contractor who is licensed, bonded, and insured. Demolition contractors like Cream City Wrecking and Running Rebels participated in this program. These two projects produced some of the deconstruction practices we are using today. An additional benefit from the training and participation by community groups has been the overall reduction in cost per deconstruction project.

In 2014, Mayor Barret's budget provided \$300,000 in funding for a deconstruction project with a goal of deconstructing 15 houses. Aldermanic participation further refined the plan to solidify a sustainable "training" wage of \$12.50 per hour. DNS once again enlisted community based organizations because of their ability to secure training funding from private and government sectors. Our first 2014 bid package with 3 houses didn't produce any proposals within our expected price range. DNS rejected the bids which ranged from \$27,000 to \$29,500.

With prices continuing to occur at higher than expected rates, we decided to solicit lump sum bids believing we would receive better rates with greater volume. We conducted information sessions and a walk through hoping to get buy-in from the contractors. That decision proved to be effective at lowering the price. We were able to achieve our pricing goals. A new larger bid package included 12 properties attracted a bid from Jake's wrecking for \$199,500. These projects are currently in progress. Once completed we be able to evaluate the results.

In addition to the above project, DNS is conducting 5 pilot deconstruction projects. These projects are being performed by local community groups that were involved in the garage demolition program. They have learned a great deal from their experience deconstructing garages. These community groups will employ approximately 50 worker/trainees at a training wage of \$12.50 per hour. Each of the four community groups Ezekiel, Milwaukee Community Service Corp., Running Rebels, and Northcott is partnered with a private contractor. The combination of these programs has created a more competitive deconstruction atmosphere. It will also help reduce the cost to deconstruct as well as improve salvage/reuse industry in Milwaukee.

In assessing deconstruction needs, it is clear that suitable salvage industry does not yet exist. The markets for harvesting, transporting, reselling, and recycling used buildings materials is still in its infancy. Transport and storage continue to be problematic. Sales and marketing also provides its own unique challenges. Contractors must also have the necessary tools such as a de-nailer to recycle, repurpose, and reuse the material. That process relies on vendors who ultimately become the end users. While there is a market for antique or nostalgic features, we need to develop the local market for lumber, flooring and similar materials. Storage and transport cost currently threaten to overcome incentives to salvage these materials so, we must develop local markets before these salvage opportunities can become sustainable. We are currently working with three organizations that have made inroads into this area. During their pilot, **Ezekiel** did an excellent job at marketing material prior to deconstruction so that

customers were awaiting selective salvage. Those are packaged quickly and transported once as a cost savings. Similarly, **WasteCap** and **Jake's wrecking** have established warehouse showrooms in the city where materials are prepared, marketed, and if necessary, stored for sale or transport to their final destination. To meet our goals, we must see improvements in the on-line marketing and warehousing operations recently developed.

### **Examples of Partnerships**

Cream City and Running Rebels have joined forces where Cream City Wrecking is the trainer and Running Rebels provides the workforce, fulfilling the RPP requirement. It can also be seen in the agreement with WasteCap and Northcott or Milwaukee Community Service Corp., (MCSC). In these cases, the CBO's provide the workforce, meet RPP requirements and subsidize the labor cost while WasteCap provides bonding, administrative services, and salvaging options. Joint ventures with CBO's maximize the Job/training opportunities. In these projects we require certification of the Residential Preference Program workers and wage verifications.<sup>1</sup>

### **Subsidies are the key to success**

Recently we have provided a subsidy lists<sup>2</sup> to contractors encouraging them to take advantage of the wage subsidy these employment and training programs provide. Through this process we use state and federal funding to subsidize the workforce. The garage deconstruction program utilized mostly Department of Corrections (DOC) inmates on pre-release or early release programs and their salaries are paid by the DOC. This also addresses the concern regarding inmates transitioning back into the workforce. In the deconstruction environment, these subsidies allow bidders to off load a portion of the training and labor costs lowering the cost of deconstruction.

### **The training wage has since become part of our deconstruction specifications**

At the request of DNS, the State Department of Workforce Development accepted our proposed training wage of \$12.50 per hour for trainees involved in our deconstruction activity. Initially this wage was requested for the garage demolition initiative. This wage is being applied to other deconstruction and salvage projects.

It was formalized in our recent lump-sum deconstruction contract awarded to Jake's Wrecking. The contract requires Jake's wrecking to pay all trainees at the \$12.50 per hour rate. For jobs requiring a training wage, the contractor must submit wage verification forms identifying those employees, the hours worked and the salaries paid. These forms must be submitted with their invoices as a condition of payment. This was not a requirement on our earlier deconstruction pilots.

### **Resident Preference Program (RPP)**

The current deconstruction contract requires a 40 % RPP requirement. This is a recent requirement to ensure we are maximizing employment opportunities for Milwaukee residents. The Department will be tracking the success of this initiative in the current and future contracts. We do not have this data available for previous deconstruction projects since it was not a contract requirement for those projects. This requirement can be placed on properties owned by the city, using City funding. It cannot be included in contracts that utilize federal funds such as the NSP or CDBG programs. Additionally, an RPP requirement for privately owned parcels would create a cost recovery problem as the cost of demolition is passed on to the property owner.

### **Bonding continues to be an issue**

The department currently uses payment and performance bonding to reduce the cities liability and to insure that projects are completed. We must continue to use this method to protect the city's interest as well as the interest of employees. This is an ordinance requirement which creates considerable challenges for new contractors. Bonding

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<sup>1</sup> Wage & RPP reports. Copies attached.

<sup>2</sup> Subsidy list. Copy attached.

requires the contractor to have a history in work related to this industry and a good credit rating. Contractors not meeting these essential requirements find the cost of the bond prohibitive or are not able to bond the job thereby losing a valuable opportunity.

We have addressed this problem by encouraging joint ventures that allow the new contractor to gain experience while working on their credit score. Through this process, we have recently developed several small businesses. Another option that helps contractors overcome the bond issue is an irrevocable letter of credit. The letter of credit can be issued when the contractor is credit worthy but has no real deconstruction experience. The letter of credit insures completion of the contract, payment to employees and is released once lien waivers are received. This also helps to reduce the cost of deconstruction.

### **Not all properties are suitable for deconstruction**

Because of asbestos and other environmental concerns we are required to do a more thorough sampling protocol for deconstruction than required for a traditional 1 or 2-family mechanical demolition. When that sampling identifies large amounts of Asbestos Containing Material (ACM) such as transite siding, roofing or plaster, the cost of abatement may make deconstruction cost unreasonable. In these cases, mechanical demolition may be a less expensive and more reasonable option.

Similarly, in emergency demolition situations, buildings in danger of collapse, damaged by fire, damage by natural causes, collision with vehicle, etc., it may be necessary to keep conventional demolition methods open and available at the discretion of the commissioner to avoid unreasonable delays that would increase the risks to the public or incur unreasonable costs.

Deconstruction requires a buffer area around the subject building for staging and operation purposes. In some Milwaukee neighborhoods where properties are tightly situated in close proximity to one another it may not be feasible or safe to deconstruct. The deconstruction process requires access around the structure as well as staging area to set up, dismantle and store materials for pick-up. Not all condemned properties will accommodate the staging requirement.

Deconstruction of privately owned properties presents additional challenges. When the City enforces a raze order it is our responsibility to award parcels to the lowest price responsive bid submitted by a qualified contractor. The city attorney has warned that adherence to this requirement is required by charter ordinance. Currently, the cost of deconstruction will most likely prevent a proposal using this methodology from being the lowest bid. However, this may change as the market for salvaged and reuse materials grows.

Commercial properties, commercial construction projects, large buildings, and buildings that may pose environmental and other regulatory concerns are not good candidates for the type of deconstruction discussed in this report. Existing demolition contractors are skilled in dealing with waste stream regulations, environmental concerns such as universal waste, tank removal and spill remediation. These types of concerns are more frequent and command a higher demolition and bonding cost than typical 1 & 2-family demolitions. Inroads and training in the industry may make these buildings deconstruction options in the future.

**Mandatory Diversion Rates.** Understanding that all properties are not and cannot be made suitable for deconstruction, we must avoid mandatory diversion rates on selected demolitions. Most of the properties DNS encounters are nuisance demolitions. We want to make sure we preserve our goal of minimizing nuisance properties while bolstering the deconstruction option. During the deconstruction process, we often discover items previously thought to be salvageable now deemed as waste due to water damage, infestations, lead contamination and the like. Similarly, as in the case of asbestos remediation, we do not want to artificially increase the cost of demolition or deconstruction by requiring mandatory measures that force higher abatement costs than those already regulated by the industry. Roof shingles would be an example of this artificial cost. Asphalt shingles can be recycled and mixed

with other asphalt material as road pavement. However, the sampling and removal of asbestos containing roof shingles may make a deconstruction project cost prohibitive. Sampling all roof material could mandate a second tier of sampling during the demolition process, slow down the deconstruction or create a hidden cost with no real benefit. Conversely, we can increase salvage and diversion rates by identifying areas of demolition and certain construction projects where salvage is both desirable and where a present market opportunity exists. Our current process is taking a look at these areas and developing ways to expand salvage markets.

**Using selection criteria to encourage deconstruction standards.** Currently DNS has a method of ranking properties<sup>3</sup> that make good deconstruction candidates. By doing this we can increase salvage and profitability, thereby preserving the jobs training opportunities. Selecting a low-ranking property simply prolongs the agony of getting a nuisance abated. Contractors use a similar process to target the materials they have known to sell. It is important that those methods be retained as part of the deconstruction decision-making process. In lieu of mandatory diversion rates, we should use the bid selection process to award to contractors whose bids yield higher diversion rates, job creation and training options. These options can be implemented under our current bid ordinance without the need for legislative change.

**Lessons Learned.** As we have gone through this process we have documented both the good and the bad. Lessons learned help us improve the process.

- Lump sum bidding. Recently lump sum bidding saved us \$100,000.00 on a 12-parcel bid package. That is huge. These types of savings help to make deconstruction a competitive reality.
- Avoiding asbestos pitfalls. Asbestos that does not become friable during demolition is better left alone. Mechanical demolition allows you to dispose of this material much more economically than abatement.
- Ranking properties. Not wasting time on fire and water damaged properties prevents the dilemma of what to do with the scrap, reduces storage needs and avoids the need to handle material that can't be sold.
- Workforce development. We have had great success with Community Based Organizations (CBO's) already engaged in the adult-build training program. They have an existing infrastructure that can assist in reducing the deconstruction cost, improving RPP performance and addressing the need for jobs and training. We have already begun to look at ways to include these types of programs in the selection criteria for the bidding process. This may not be possible in all demolition as the city attorney has cautioned, RPP selection criteria may be in conflict with the city charter.

## Marketing

DNS met with several demolition and salvage contractors to explore the marketability of deconstruction salvage. It was determined that although condemned buildings contained some reusable material, most contractors found it easier and more cost effective to simply complete the demolition and not invest any time in salvaging, storage and attempted resale of this material. We also found that there are people looking for salvaged material but no readily available market to search from. Our goal has been to create an on-line market where interested buyers can search for salvaged products. It will be important to develop a warehouse with a curator that would market and monitor these sales. As the curator learns the market, we can better identify what products sell and market those products faster. Through marketing, we can reduce warehousing cost while steering material to targeted groups. Additionally, the salvage contractor could work with CBO's eliminating their need to worry about what and how to salvage. They would become the depository for materials not historically known to have a market. Through this process we would increase sales and maximize reuse, repurposed and recycled materials while leaving the CBO's with the responsibility to create jobs and expand training programs.

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<sup>3</sup> Ranking report added.

## 2 CONCLUSIONS.

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Time we invested in meeting with contractors, launching pilot programs and consulting with experts in the industry have yielded great results. These efforts have allowed us to “test” the market and learn what works and what doesn’t work in our local economy. The desire to create jobs while reducing waste and maximizing reuse, repurposing, and recycling has to become our focus. But, this must be done in a manner that benefits the city as well as participants. For that reason we offer observations gleaned from experience with this process.

1. Not all demolition candidates are suitable for deconstruction. Currently, we are targeting city owned 1 and 2-family dwellings. Nuisance demolitions where the city then turns around and bills the private owner may not be collectable using a deconstruction methodology. We have been cautioned about this approach from both the city attorney and our collection agency. We do not encourage deconstruction for these private/nuisance demolitions.
2. Commercial properties tend to be more heavily regulated and present more complex environmental issues that become cost prohibitive during the recycling process. Historically, we have had greater success using the competitive bid process to reduce our cost when dealing with commercial properties. These properties are not good deconstruction candidates.
3. Currently, we are able to write deconstruction specifications that favor awarding contracts to contractors based on a diversion plan. This practice requires no new legislation and results in getting the highest diversion rate possible at a competitive price. At this time, we are in discussion with the City Attorney’s Office to determine if job creation and/or job training can be considered in bid specifications.
4. CBO’s currently provide a better workforce. Under our current model, we advocate both job creation for the unemployed/underemployed as well as jobs training. These two factors offer additional benefits to the city not currently driven by the demolition process. However, to train you need experienced teachers. To meet RPP requirements intrinsic to our deconstruction model, you need agencies that can provide a suitable workforce. We have found that there are several CBO’s currently involved in adult-build programs designed for similar purposes. These agencies make for ideal partners and because of their ability to attract funding, help reduce labor cost, document training hours, RPP and other significant data necessary to report job creation benefits derived from the program.
5. While many contractors claim to be experts in deconstruction, their business plan may not be the same as ours. Components of their programs must still be custom tooled to fit our needs. By writing better specifications and encouraging joint ventures, we were able to achieve our desired goals and increase success without paying a higher cost for deconstruction.
6. City demolitions provide a constant source of revenue. Whether its demolition or deconstruction, contractors will find a way to participate in city contracting at a competitive rate. As the city diverts funding to deconstruction, we will receive greater “buy-in” from experienced contractors. This can only help to improve the deconstruction options and market available for salvage. Over time, deconstruction can become a significant training program in city government. We must use care while setting the stage to achieve the desired results.