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## **Deconstruction Reuse and Recycling Plan**

**May 5, 2017**

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**Client:** City of Madison  
**Project:** Vacant Mt. Olive Church  
**Location:** 4018 Mineral Point Road, Madison, WI 53705  
**Prepared By:** Madison Environmental Group, LLC

### **Overview**

Reusing and recycling materials rather than sending them to the landfill during demolition can substantially reduce the environmental impact of a development. It can also reduce overall costs associated with demolition. The City of Madison will be demolishing the vacant Mt. Olive Church to build a new police station.

The Deconstruction Reuse and Recycling Plan are divided into three sections in order to coordinate with the project timeline.

- I. Reuse Phase:** Salvaging reusable items prior to deconstruction is the first priority for material reuse and recycling. Madison Environmental Group, LLC will coordinate and manage the removal of salvageable materials.
- II. Pre-Deconstruction Phase Recycling:** Hazardous and regulated materials must be removed for proper disposal prior to full deconstruction. These items include lighting, electronics, batteries, refrigerants, appliances, and hazardous chemicals.
- III. Deconstruction Phase Recycling:** Recycling building materials during deconstruction and demolition can reduce negative environmental impacts and reduce landfill fees. Recyclable materials include concrete, brick, asphalt, metal, and wood.

## **I. Reuse Phase**

Reuse involves using something again in its original form for the same or different purpose. Reusing an item is the most environmentally friendly form of recycling.

The City of Madison values the importance of reuse and has sold many items at the vacant church including the tool sheds, stained glass windows, candle holders, pews, maple boards, and decorative windows.

Madison Environmental Group, LLC conducted an inventory of remaining reusable items in the building and around the site, and identified markets for their reuse:

- **Habitat ReStore of Dane County**, 208 Cottage Grove Rd., Madison, WI 53716.  
Contact: Frank Byrne, Deconstruction Manager (608) 712-0737
  - Habitat ReStore will be removing cabinets, wood shelving, and other miscellaneous building materials.
- **Madison Children's Museum**, 100 N Hamilton St, Madison, WI 53703.  
Contact Brenda Baker, Director of Exhibits, 608.256.6445, ext. 545.
  - The children's museum will be removing the stage lights, kneelers, pipe, speakers, amplifier, pew frame, fire extinguisher cabinet, faucet nozzle, chalk boards and vintage phones.
- **Occupy Madison – Tiny Homes**, 304 N Third St., Madison, WI 53704. OM-Tiny Homes will be removing toilets, sinks and any other build material it can use at its new facility.

### **Reuse Materials List**

- Cabinets – wood and laminate
- Kitchen sinks
- Windows
- Chalkboards
- Light fixtures
- Wood and metal railings
- Built-in shelves and
- Base boards
- Vintage phones
- Solid wood paneling
- Ceiling tiles
- Vintage lights and control panel
- Maple boards
- Pews
- Pipe organ
- Stained glass windows
- Dishwasher
- Candles holders
- Pulpit
- Wall coat racks
- Maple boards
- Sheds
- Stove hood



Kitchen sinks and cabinets – Reuse



Chalkboards – Reuse



Light fixtures – Reuse



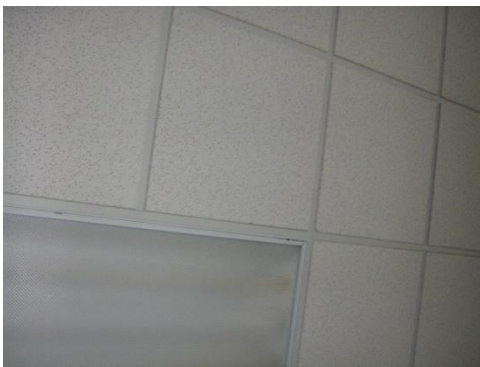
Interior doors, jams, and hardware - Reuse



Vintage phones – Reuse



Wood paneling – Reuse



Ceiling tiles– Reuse



Toilets – Reuse

## II. Pre-Deconstruction Recycling

For all materials removed during the pre-deconstruction phase, the deconstruction contractor shall provide evidence of proper handling. Receipts or other proof of recycling shall include the date(s), material, quantity, weight or volume, and recycling or disposal company contact information. As deconstruction contractor, it is their responsible for ensuring that all documentation of recycling and disposal is given to Madison Environmental Group, LLC.

Asbestos testing and abatement must be completed before deconstruction. Anyone involved in deconstruction should be familiar with the findings from the asbestos and lead reports and take the necessary safety precautions.

State hazardous waste regulations provide guidance for recycling the following items after the reuse phase is complete and prior to building deconstruction.

- Lighting
- Batteries
- Refrigerants
- Appliances and HVAC equipment
- Hazardous chemicals, including paint
- Thermostats containing mercury

### Lighting

- *Background Information:* State hazardous waste regulations require all light bulbs and ballasts containing mercury or polychlorinated biphenyls (PCBs) to be recycled. If not reused, bulbs and ballasts must be taken to a recycler or consolidator. The consolidator or recycler must be licensed and in compliance with applicable environmental regulations. Potential materials of concern include:
  - **Fluorescent bulbs:** Fluorescent tubes contain mercury and are required to be recycled.
  - **Fluorescent lamp ballasts:** Each fluorescent lamp fixture contains a built-in ballast, which may contain PCBs. Any ballast containing PCBs must be recycled. Ballasts manufactured after 1979 with a “NO PCBs” label can be landfilled. Madison Environmental Group, LLC recommends that all ballasts are recycled to reduce future liability. Efficient electronic ballasts should be reused whenever possible.
  - **Compact fluorescent lights (CFLs):** CFLs contain mercury and must be recycled if not reused. CFLs should be reused when possible.
  - **High intensity discharge (HID) lamps:** HID lamps contain lead and mercury (except for low pressure sodium lamps, which contain only lead). HID lamps containing mercury are required to be recycled. Madison Environmental Group, LLC recommends recycling all types of HID lamps to reduce future liability.
  - **Capacitors in HID fixtures:** Each HID fixture has a capacitor that may contain PCBs. Capacitors manufactured after 1979 with a “NO PCBs” label can be landfilled. Madison Environmental Group, LLC, however, recommends recycling all capacitors to reduce future liability.
  - **Incandescent bulbs:** Though these bulbs contain lead, they are not required to be recycled. However, Madison Environmental Group, LLC recommends recycling all types of bulbs to reduce future liability.

- *Site Materials:* Fluorescent bulbs, ballasts, CFL's and incandescent bulbs are located throughout the buildings and should be removed and recycled properly.
- *Recyclers:*
  - Midwest Lamp Recycling 3224 Kingsley Way, Madison, WI, 53713; (608) 275-6766
    - **Cost:** Price varies depending on the size of the bulbs and ballasts. Discounts are offered for large quantities.
    - **Logistics:** Materials can be dropped off at Midwest Lamp Recycling, or Midwest Lamp Recycling can pick them up for a charge.
    - **Details:** Midwest Lamp Recycling offers barrels and boxes to consolidate materials on site.

### **Batteries**

- *Background Information:* Batteries may contain toxic heavy metals and chemicals, including nickel, cadmium, manganese, mercury, lead, and sulfuric acid, which threaten our environment if not properly handled.
- *Site Materials:* Exit signs batteries and batteries not taken by previous occupant should be removed and recycled.
- *Recyclers:*
  - Midwest Lamp Recycling  
3224 Kingsley Way, Madison, WI, 53713; (608) 275-6766
    - **Cost:** Midwest Lamp Recycling charges \$0.70 per lb for alkaline, \$0.95 per lb for nickel-based, \$4.75 for lithium, and \$0.35 for lead based batteries.
    - **Logistics:** Materials can be dropped off at Midwest Lamp Recycling. For Madison customers, there is a \$25 transportation fee and a \$9 fuel surcharge fee for pick up.
    - **Details:** Midwest Lamp Recycling offers barrels and boxes to consolidate materials on site. Will take all kinds of batteries including car batteries and works with a registered E-cycle recycler.

### **Refrigerants**

- *Background Information:* Refrigerants are used in cooling equipment such as air conditioners and refrigerators. Wisconsin Administrative Code NR 488 regulates handling and disposal of refrigerants. It requires all commercial entities handling and recovering these refrigerants and coolants to register with the Wisconsin DNR and annually certify that they will transport items in a manner that prevents refrigerant releases. Documentation of proper handling must be retained for three years.
- *Site Materials:* The roof top air conditioning units as well as any water fountains need to have the refrigerants removed.
- *Recycler:*
  - Kruser Recycling.  
6421 Edna Taylor Parkway, Monona, WI, 53716; (608) 223-9220
    - **Cost:** \$10 per appliance, regardless of the type of appliance.
    - **Logistics:** Appliances should be dropped off at the facility.

### **Appliances and HVAC equipment**

- *Background Information:* Wisconsin Statute 287.07 requires the recycling of major appliances including clothes washers and dryers, dishwashers, air conditioners, stoves, ovens, microwave ovens, freezers, refrigerators, water heaters, furnaces, dehumidifiers, and boilers. All of these appliances are banned from landfills as of 1991. Microwave ovens may be

landfilled only if the capacitor has been removed. Most major appliances are made primarily of high quality steel. They also may contain glass, plastic, rubber, copper, aluminum, and several hazardous materials that require special handling. Any appliances that have refrigerants or coolants must be handled according to instructions in the refrigerants section. All appliances less than ten years old and in good working condition should be removed for resale or reuse by Habitat ReStore.

- *Site Materials:* The HVAC systems should have refrigerants removed and unit recycled. The remaining appliances have been removed from the site.
- *Recyclers:*
  - Alter Metal Recycling (Formerly Samuels Recycling)  
4400 Sycamore Avenue, Madison, WI, 53714; (608) 241-1571
    - **Cost:** Alter Metal Recycling offers a rebate based on weight for appliances.
    - **Logistics:** Appliances must be dropped off at their yard.
    - **Details:** Alter Metal Recycling does not accept microwaves. They cannot accept any appliances with refrigerants unless they are presented with a certificate showing the refrigerants have been properly removed. All capacitors must be removed from appliances such as dishwashers and clothes washers.

### Paints, Stains, and Other Chemicals

- *Background Information:* Oil-based paints, products containing organic solvents, and latex paint cans that are more than half full are considered hazardous waste and must be taken to a designated recycler for disposal. Latex-based paints can be properly hardened and disposed of in the trash if the can is less than half full.
- *Site Materials:* There did not appear to be any chemicals on the premise. However, if any cleaning products or other chemicals are found they must be disposed of properly.
- *Recyclers:*
  - Dane County Clean Sweep  
7102 US Hwy 12, Madison WI 53718
    - **Cost:** There is no charge for individuals dropping off hazardous waste at Dane County Clean Sweep. Businesses are charged a fee based on quantity of materials.
    - **Logistics:** Dane County Clean Sweep is open for drop-offs from Tuesdays - Fridays 7:00am - 2:45pm or Saturdays 8:00am - 10:45am. Closed Sundays, Mondays and Holidays. Businesses may drop materials at Clean Sweep by appointment only.
    - **Details:** When bringing a load to Dane County Clean Sweep, products and materials should be packaged to keep them from spilling or breaking in transit. Leave materials in their original containers.

### Thermostats Containing Mercury

- *Background Information:* Mercury-containing thermostats hold mercury equivalent to the amount in 200-300 fluorescent bulbs and must be recycled. Though mercury is a hazardous waste, the Universal Waste Rules allow thermostats to be recycled without going through a hazardous waste permitting process. Care must be taken not to break the glass bulb containing the mercury during deconstruction and transportation.
- *Site Materials:* Most of the thermostats were pneumatic and there were many located throughout the building. The covers shown to the right potentially have mercury as the liquid in the thermometer.



- *Recyclers:*

- Madison Gas and Electric,

- 133 South Blair Street, Madison, WI, 53703; (608) 252-7117

- **Cost:** MG&E accepts thermostats for recycling free of charge.

- **Logistics:** Deliver thermostats in a box to their reception area.

### III. Deconstruction Phase Recycling

Madison Environmental Group, LLC has prepared this document as a guide for the deconstruction contractor to follow. Madison Environmental Group, LLC will be documenting the percentage of recycled materials for this project. The deconstruction contractor is required to ensure that all documentation of recycling and disposal is given to Madison Environmental Group, LLC. The documentation shall include: the date, material, weight, quantity or volume, and hauler, as well as recycling, diversion, or landfill information.

This section includes information for the recycling or proper disposal of the following:

- Brick and Stone
- Concrete or Concrete Block
- Metal
- Acoustical Ceiling Tile
- Cardboard, Paper, Cans, and Bottles
- Wood
- Carpet

#### Brick and Stone

- *Background Information:* Brick and stone can be salvaged whole or crushed, or used as clean fill. Recycling brick and stone costs significantly less than sending it to the landfill.

- *Site Materials:* The building is clad in brick on the exterior and stone in the worship hall.

- *Recycler:*

- Homburg, 6106 Milwaukee Street, Madison, WI, 53704; (608) 241-1178

- **Cost:** Homburg charges \$2/ton for brick and stone that is dropped off at their quarry to be used for fill.

- **Logistics:** Homburg can arrange to haul the materials or they can be dropped off at Homburg's quarry.

- **Details:** Brick must be free of all paint. Homburg reuses whole stone and crushes facing stone to use as fill.

#### Concrete and Concrete Block

- *Background Information:* Clean concrete and concrete block may be crushed and used as fill, aggregate in roadbeds, or for recycling into new concrete. "Clean" means that concrete is free of dirt, clay, wood, and any paint. Recycling these materials costs substantially less than hauling them to a landfill. Recycling also reduces the impacts of quarrying and extracting materials for new concrete.

- *Site Materials:* Concrete landings, concrete block, and sidewalks are recyclable.

- *Recyclers:*

- Homburg, 6106 Milwaukee Street, Madison, WI, 53704; (608) 241-1178

- **Cost:** The price depends on the quantity and type of concrete. Homburg charges \$3.10/ton if it is dropped off at their quarry to be used as fill.

- **Logistics:** Homburg can arrange the hauling, or materials can be dropped off at their quarry.

- **Details:** In order to be recycled to use as aggregate, concrete must be free of rebar. If it contains rebar, it will be used as clean fill. Homburg has a staffed scale and can provide receipts.

### Metal

- *Background Information:* Though not required by law, we recommend recycling all metals. Painted metal, even if it contains lead-bearing paint, is typically recyclable.
- *Site Materials:* Habitat ReStore can remove most copper piping and miscellaneous metals during the reuse phase for recycling. However, inevitably the building will still contain valuable recyclable metals such as the flagpole, bike racks, fence, and hand railings.
- *Recyclers:*
  - All Metals Recycling 1802 South Park St, Madison, WI 53713; (608) 255-0960
    - **Cost:** All Metals Recycling generally does not charge a bin placement, but charges \$100 per pull. They offer a rebate per ton, depending on the type of metal.
    - **Logistics:** Haulers such as Waste Management also haul their bins of metal to All Metals for recycling. Therefore, it is **financially beneficial to contract directly with All Metals Recycling** for hauling, as opposed to going through a third party hauler. All Metals Recycling has 12, 20, 30, and 40 cubic yard bins.
    - **Details:** They accept all types of metal for recycling, including iron, steel, aluminum, and copper. Metal must not be contaminated with materials such as cement, plastic wrap, or wood. They also accept metal appliances if the refrigerants and coolants have been removed.

### Cardboard, Paper, Cans, and Bottles

- *Background Information:* Cardboard, paper, cans, and bottles must be recycled under Wisconsin law.
- *Site Materials:* Any recyclable materials on-site or generated during demolition must also be recycled.
- *Recycler:*
  - Madison Recycling Center, 2200 Fish Hatchery Road, Madison, WI 53713; (608) 251-2115.
    - **Cost:** No charge for recycling.
    - **Logistics:** It only accepts materials from designated haulers.
    - **Details:** The Madison Recycling Center is not affiliated with the City of Madison. It is operated by Recycle America, a division of Waste Management.

### Acoustical Ceiling Tile

- *Background Information:* Acoustical ceiling tile that is not reused is recyclable.
- *Site Materials:* Acoustical ceiling tile is present throughout the building and the 1992 addition tested negative for asbestos but the other tiles tested positive.
- *Recyclers:*
  - Acoustech Supply Inc. 3070 Progress Road, Madison, WI 53716; (608) 226-9424
    - **Costs:** Free if the proper paperwork is completed.
    - **Logistics:** The ceiling tiles need to be delivered to Acoustech Supply with the proper paper work verifying the tiles meet the recycling requirements (asbestos test, mineral fiber tiles).
    - **Details:** Acoustech is an Armstrong Recycling Program Consolidation Partner and will coordinate the recycling process with Armstrong.

### Wood

- *Background Information:* Any unpainted and untreated wood is recyclable. If possible, the demolition contractor should collect unpainted and untreated dimensional lumber and



engineered lumber, such as oriented strand board (OSB), plywood, and particleboard for recycling.

- *Site Materials:* Any untreated and unpainted wood that can be separated from other building materials is recyclable. While most of the wood in the structures is painted or treated, wooden studs and subfloor materials may be present.
- *Recyclers:*
  - Royal Container Service, P.O. Box 6438, Monona, WI 53716; (608) 206-3174
    - **Costs:** Royal charges \$125 for a wood recycling container and hauling. There is no additional tipping fee.
    - **Logistics:** Royal provides a container for recycling.
    - **Details:** Wood that is treated, painted, or stained is not accepted. OSB, engineered lumber, and nails and fasteners smaller than 3/8" diameter are accepted.

### **Carpet**

- *Background Information:* Carpet and carpet padding are recyclable by a chemical process that breaks down the carpet and recovers the raw materials.
- *Site Materials:* The carpet located on all floors has had contact with asbestos and should be disposed of properly.