

Resources for Construction and Demolition Waste Management

Habitat for Humanity ReStore

(417) 829-4001

Habitatspringfieldmo.org

City of Springfield

Solid Waste Management – 417-864-1905

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Recycling Hotline

417-864-1904

Web site: www.springfieldmo.gov/recycling

Building Development Services – 417-864-1901

Storm Water Services – 417-864-1901

Web site: www.springfieldmo.gov/stormwater

Greene County

Building Regulations Section

417-868-4015

Environment Section (storm water)

417-868-4147

Watershed Committee of the Ozarks

417-866-1127

Web site: www.watershedcommittee.org

Missouri Department of Conservation

Southwest Regional Office

417-895-6880

Web site: www.mdc.state.mo.us/

Missouri Department of Natural Resources

Southwest Regional Office

417-891-4300

Web site: www.dnr.state.mo.us

Construction and Demolition Waste Management



Presented by the
**Missouri Department of Natural
Resources,
Habitat for Humanity,
and the City of Springfield, Missouri**

Waste Management During Construction

The most important factor in minimizing waste is careful planning. According to NAHB, the typical builder pays \$511 per house for construction waste disposal. During all phases of construction there are ways to reduce wastes.

Prevention During Design

- Optimize building dimensions to correspond to standard lumber dimensions to reduce the amount of scrap materials
- Keep in mind that stick framing yields more than three times the amount of lumber and panel scrap than component framing
- Develop framing layouts to avoid wastes and unneeded costs when ordering lumber.
- When remodeling, evaluate whether the used lumber is salvageable or not.
- Order drywall in optimal dimensions to minimize cut-off waste. Drywall is available in different lengths, and designed dimensions should correspond to standard sizes.



Prevention During Purchase and Storage

- Avoid excessively packaged materials and supplies. Packaging should be adequate to prevent damage and waste.
- Minimize waste of vinyl siding, flooring and countertop materials by ordering only the quantity needed in building specific lengths.
- Store lumber on level blocking and under cover to minimize warping, twisting and waste.
- Set aside, in a marked and designated area, lumber and plywood cut-offs that can be used as fire blocking, spacers in header construction and in other ways.
- Clean concrete chunks, old brick, broken blocks and other masonry rubble can be used as backfill along foundation walls.
- Install leftover insulation in interior wall cavities or on top of installed attic insulation if it cannot be used on another job.

- It can be cost-effective to cut and stack waste drywall into uninsulated wall cavities. Care must be taken to place pieces securely to prevent rattling, to choose framing cavities without wiring runs, and to use cavities in closets, basements, and garages in which interference with subsequent additions or renovations is less likely.

Lumber

- Unused or scrap lumber is one of the most commonly thrown away items at construction sites, though it's easy to recycle, even if warped or water damaged.

Reuse

Several waste materials can be reused on-site. Individually, these materials do not fill dumpsters but collectively they can turn one or two containers per job to two or three, significantly increasing total disposal costs.

- Fiberglass and rigid insulation
- Slightly damaged finished products such as cabinets and doors
- Large pieces of clean carpet and vinyl flooring
- Insulation materials can be placed in attic space and larger rigid insulation scraps can be used under concrete floors.
- Flooring sheet goods can be neatly rolled and stored for the homeowner.

Deconstruction

When remodeling, the amount of waste created can be decreased by a very significant amount by disassembling rather than demolishing, an activity that unfortunately is sometimes synonymous with “gutting” a house. Materials that are removed carefully enough can be sold at auction, reused by the property owner, or donated to a charitable organization.

The following materials are accepted by the Habitat for Humanity ReStore:

- | | |
|-----------------------|---------------------|
| ▪ Appliances | ▪ Hardware |
| ▪ Bathroom fixtures | ▪ Light fixtures |
| ▪ Cabinets | ▪ Lumber |
| ▪ Carpet | ▪ Paneling |
| ▪ Ceiling Fans | ▪ Plumbing fixtures |
| ▪ Doors | ▪ Shelving |
| ▪ Electrical fixtures | ▪ Sinks |
| ▪ Flooring | ▪ Windows |

Before this office building was demolished, nearly three tons in reusable and recyclable materials were removed in four days. The property owner's tax-deductible donation benefited the Habitat for Humanity ReStore, providing materials like tin siding, windows, paneling, and doors.



Storm Water Runoff and Soil Erosion Management

There are many affordable ways to effectively reduce storm water run-off and the soil erosion that it can cause.

- Preserve natural vegetation in floodplains and drainage ways to slow runoff and filter out pollutants.
- Slow runoff by collecting water in detention basins, allowing soil and pollutants to settle out.
- Mulch and re-seed areas of exposed soil as soon as possible.
- Direct downspouts to grassy areas instead of pavement to prevent rains from washing toxic chemicals, bacteria, or silt into streams or lakes.
- Use fertilizer wisely. Have soils tested to determine proper amount needed. Excess fertilizer in streams and lakes promotes algae growth.



At the Construction Site

- Keep soil on site with silt fences and sediment ponds.
- Clear site in phases and only as needed.
- Replant cleared areas as soon as possible.
- Maintain vegetation on steep slopes to keep soil in place.
- Other questions regarding water runoff can be directed to:
 - Watershed Committee of the Ozarks (417) 866-1127
 - Missouri Department of Natural Resources (417) 891-4300
 - City of Springfield Storm Water Services Division (417) 864-1901

Tree Preservation

Even though urban growth will continue to spread into forested areas, builders can maintain the natural environment of trees. Trees growing in areas of new construction are susceptible to injury at the roots, the trunks, and limbs.

Tree Preservation Through Planning

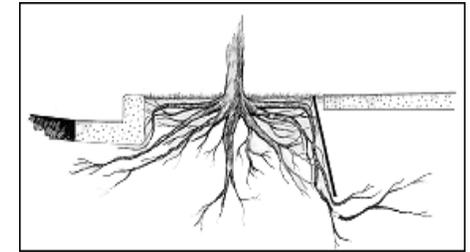
- Leave some natural areas relatively undisturbed. These areas tend to occupy land considered unbuildable due to poor accessibility or rugged terrain.
- Oval trees fit nicely into most street plantings, because of their somewhat upright growth habit, they can be placed closer to buildings than more spreading trees—although their lofty height makes them unsuitable for planting under power lines.
- Round trees have a more spreading growth habit. Trees with an ascending branch structure are more compatible with city streets, while trees with a descending branch pattern demand greater distance between adjacent trees or buildings.

- Columnar trees usually have tightly ascending branches with narrow angles. Trees with this shape are valued for their narrow width that enables them to be planted in tight spaces where there is not enough room for a tree with a spreading branch structure.
- Shade must also be considered when selecting trees for preservation.

Tree Preservation During Construction

- As early as possible, place a physical barrier around trees that are to be kept.
- Do not place stored materials or vehicle around base of tree. Soil can become compacted and cutting off air and moisture from the roots.

- If a utility line must be ran within 20 feet of a tree's trunk, it should be ran in a tunnel underneath the roots rather than cutting through them.
- If a tree is damaged the area around the injury should be cut back to a smooth even edge. Painting is not necessary.
- Rainwater from runoff or downspouts should be directed not only away from the building, but also away from surrounding trees.



Deflection barriers direct lateral root growth.

- Roots are notorious for buckling the pavement of sidewalks and streets. Use deflection barriers to divert roots away from susceptible surfaces.

Separation and Disposal of Waste Materials

There are many different types of waste that can result from construction or demolition projects. Get to know the various classifications along with their disposal options.

Rocks/Clean Fill

- Uncontaminated inert solid material—includes soil, rock, stone, dredged material, used asphalt, or concrete from construction or demolition activities. Large chunks of concrete should be broken into smaller pieces.
- Clean fill must be uncontaminated by spill or release of non-biodegradable materials or substances. If it is slightly contaminated, levels must be below allowed amounts.
- For current disposal options for clean fill, contact the City of Springfield, Solid Waste Management Division at 417-864-1905.

Top Soil

- Topsoil is the uppermost layer of soil, usually the top six to eight inches— should be mostly free of any large debris and completely free of any toxic substances.
- Top soil has value and can be usually sold, if not retained for use on-site.

Vegetation

- It is important that waste containing trees, brush and similar materials are separated at the construction site prior to disposal. Limbs over 6" in diameter and root balls are accepted at the Springfield Sanitary Landfill; however, yard waste is not accepted at Missouri landfills. Yard waste, when used in this manner, is defined as brush, leaves, grass

clippings, trimmings, etc. Limbs less than 6” in diameter are considered yard waste. The City’s Yardwaste Recycling Center (YRC) accepts these items from residents and businesses of Springfield and Greene County. For information, including hours of operation and items accepted at each facility, contact the City’s Solid Waste Management Division, the City’s Recycling Hotline, or their web site.

Landfill Disposal

In spite of best efforts to reduce C&D waste and to recycle or reuse as much of the material as possible, the remaining waste must be disposed of in an appropriate manner. The Springfield Sanitary Landfill serves the Southwest Missouri region and offers convenient and affordable disposal of unsalvageable materials in an approved and regulated facility. For more information contact the City of Springfield Solid Waste Management Division.

Asbestos Containing Materials

During deconstruction of buildings that were built or remodeled prior to 1980, certain asbestos containing materials (ACM) may be encountered. Examples of ACM are: sheet and tile flooring, mastics, roofing shingles, cement-board siding, wallboard (Transite), ceiling tile and pipe installation. Due to concerns with handling and disposing of ACM, special precautions should be taken. If you encounter suspect ACM, a licensed asbestos inspector should be consulted for verification. For additional information on ACM, contact City of Springfield Solid Waste Management Division at 417-864-1905.

Recycling

Construction and demolition waste constitutes almost one quarter of the materials sent to sanitary landfills—a large majority of which is recyclable. Cardboard, wood, and drywall make up 75% of all job-site waste, though all can be recycled.

For current information and a listing of resources to recycle/reuse C&D materials, call the City of Springfield’s Recycling Hotline at 417-864-1904 or visit their web site at www.springfieldmo.gov/recycling.

Appliances

Used appliances can dramatically add to the waste output from job sites.

Area resources to recycle used appliances:

Habitat for Humanity ReStore – 2410 South Scenic Ave. (417) 829-4001

Cardboard

Though the weight doesn’t always add up to much, the cardboard packaging disposed of on the job site can inflate dumpster fees unnecessarily because of excess air—in addition to overburdening landfills with a recyclable item. Aside from an on-site cardboard recycling container, cardboard can be recycled at any of the following location:

Midwest Fibre Sales – 911 N. Westgate (417) 862-1976

Drywall

Clean waste gypsum board, after being ground, can be recycled into new drywall, used for some types of animal bedding, or applied as a soil amendment.

Preparation and Planning for Disposal

- Estimate the types and quantities of waste the project will generate and determine a schedule of when the wastes will be developed.
- Work with all suppliers to reduce waste on a project by asking them to buy back unused product.
- Ask suppliers to deliver supplies using sturdy, returnable pallets and containers. Then have the suppliers pick up the empty containers when delivering new building materials.
- Develop a list of suppliers and recycling contacts for easy reference and use in future projects.

Construction Waste

