

**THE**

**DECONSTRUCTION**

**CRAFT**

**Constructively Dealing with  
Abandoned Housing**

**Dennis Livingston  
Community Resources**

This document grows out of the Institute for Local Self Reliance publication *Building a Deconstruction Company*, Copyright 1999 (ILSR). ILSR is a nonprofit research and education organization that provides technical assistance and information to city and state governments, citizen organizations, and industry. The original version was written by Dennis Livingston, Community Resources; and Mark Jackson, ILSR. Neil Seldman directed the project. Original funding was from the Department of Health and Human Services. Original copyright; the Institute for Local Self Reliance, Washington DC 2001, 1999.

The original document focused on developing a deconstruction company, whereas this version is designed as a training guide for deconstruction crews.

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**Dedicated to:**

Charlie Doble, whose vision created the Baltimore Loading Dock ReUse Center in 1984, and Hope Cucina, whose dedication made it work.

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This document was written based on Maryland, particularly Baltimore experience. Legal requirements and institutional resources focus on the Baltimore area. Other states and municipalities are encouraged to take the core of this manual and make it locally relevant.

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**INSTRUCTOR SUGGESTIONS AND RESOURCES**

# Introduction

Although this manual focuses on the deconstruction of buildings, it explores a broad range of solutions to abandoned buildings. Considering the options for dealing with abandoned property needs to include cost, future community plans, safety, consideration for neighbors, historic value, reuse opportunities, and environmental impact.

This is a training manual designed to equip trainees with deconstruction skills. But it assumes the deconstruction trade to be an entry into construction trades; therefore, the manual presents construction and renovation information beyond minimal knowledge necessary for deconstruction work.

The manual encourages highly labor-intensive methods of disassembly of buildings. These methods maximize employment opportunities and retention of valuable building materials. At the same time, they minimize environmental impact and use of diminishing landfill capacity. The deconstruction industry offers an excellent entrance into many fields including construction, sales, and environmental remediation.

## 1. Why Deconstruction?

In 2009 the Construction Materials Recycling Association estimated that about 350 million tons of C&D [Construction and Demolition material] is generated in the US alone each year. By point of comparison, municipal solid waste-the material generated from homes and offices-is about 225 million tons each year.

The EPA estimated that only 20 to 30 percent of this debris was recovered for reuse or recycling. Although the C&D industry has made great strides in the recovery of debris, the demolition of buildings continues to destroy valuable building materials, consume scarce landfill space, and expose workers, neighborhoods, and the environment to toxic and hazardous waste. Developers and construction companies typically look at buildings located on property slated for development as a costly, unavoidable annoyance. Developers and construction companies are offered little choice when it comes to removing these buildings.

Deconstruction – the planned and systematic disassembly of buildings – provides developers and construction companies with another option. Deconstruction companies use mostly manual labor and hand tools in much the same manner as construction companies. Most deconstruction companies disassemble buildings and supply salvaged building material. Many companies also provide additional services such as job development, skills training, “value-adding”, reconditioning, and re-crafting of material.

Deconstruction can provide many opportunities and benefits for companies, individuals, communities, and the environment.

Deconstruction is optimal for rebuilding local economies. Deconstruction can promote the recycling of dollars spent in a local economy by providing salaries, channeling salvaged materials through local building material reuse stores, and by supplying material to local remanufacturing operations and housing renovation projects.

## 2. The Hierarchy of Benefit

### 1. Maintain

The most cost-effective and beneficial approach to buildings is constant, high-quality maintenance.

### 2. Restore

Restoration consists of maximizing the retention of a building's design, to the greatest extent practical using historic material. Any modernization should be both inconspicuous and reversible. Oftentimes tin ceilings are found above drop ceilings, hardwood floors under linoleum, and plaster under paneling. Wood windows once restored can outlast vinyl many times over. Most early construction material, particularly those used before the turn-of-20th-century, are superior from the perspective of life cycle costing, health (except lead paint), and maintenance. Restoration work is often the best paid of the building trades.

### 3. Renovate

Redesigning, expanding, or upgrading.

### 4. Stabilize & Secure

Protecting an abandoned building from vandalism or weather-related damage to maintain its value for future use.

### 5. Deconstruct & Reuse

Disassembling a building and using its components (mantels, studs, flooring, etc.) for another building.

### 6. Deconstruct & Recycle

Disassembling a building and recycling material into other uses (brick into fill, wood into furniture, roofing into paving, etc.).

### 7. Demolishing

Usually a combination of recycling and land fill.

### 3. Levels of Deconstruction

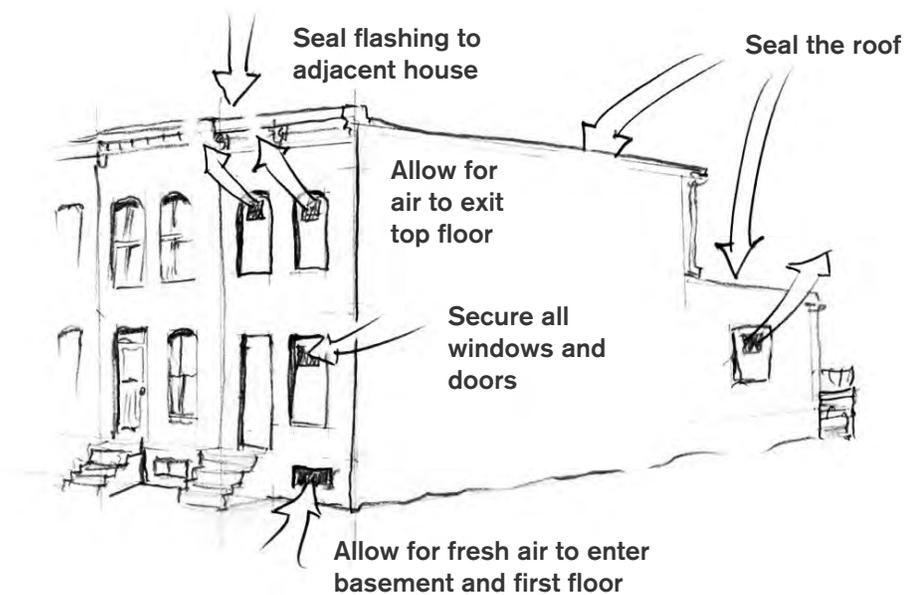
#### Architectural Salvage “Creaming”

This operation involves the least risk and expense as it does not include structural deconstruction. Its focus is on historically- and architecturally-significant components such as stained glass, panel doors, mantels, lighting fixtures, hardware, shutters, etc. This material’s removal is the most lucrative, but it lowers the value of the remaining building.

#### Cap, Clean, and Secure - Mothballing

Where an abandoned building has no immediate reuse options, it can be “mothballed,” i.e., cleaned, weatherproofed, and secured. Although “mothballing” requires both preparation and maintenance, it costs a fraction of demolition or deconstruction, maintains the integrity of the neighborhood, and greatly increases a building’s resale value. Mothballing includes:

- Repairing a roof’s membrane, gutter, and flashing systems - this is critical
- Securing windows and doors with an effective security system



- Setting up a natural ventilation system to keep the building dry
- Clearing out all trash, particularly carpeting, and removing any water-damaged material such as damaged ceilings or walls
- Monthly maintenance visits made, preferably by a neighborhood person who is paid to call in problems

## Component Removal

Removing elements that need disassembly but do not require any structural work, including case goods, flooring (where the floor is on a sub-floor and does not run under partition walls), trim, window sash, plumbing fixtures, etc. The value of this material is preserved by skilled removal.

## Interior Gutting

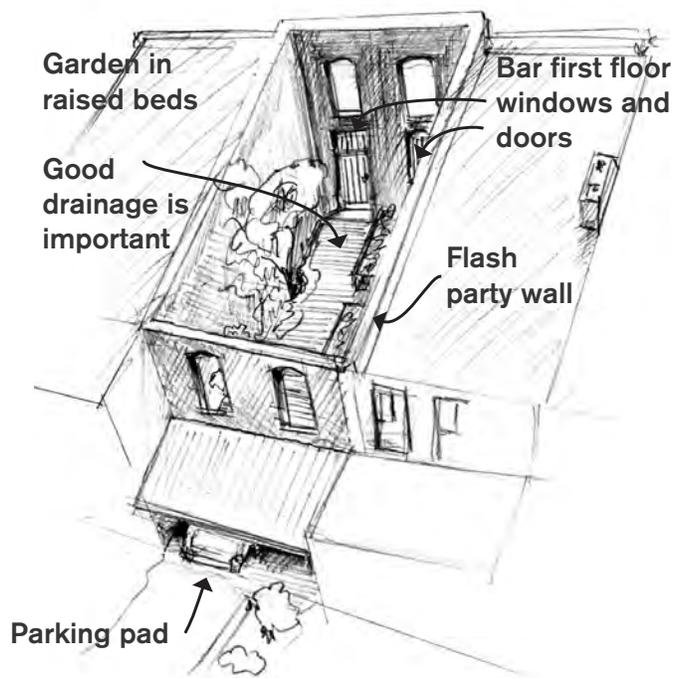
Where a building will be gutted due to severe internal damage or the need to reconfigure the internal space - partition walls, wall substrates (plaster, drywall, etc.) staircases, windows including jambs, etc. The exterior shell, even if it is only the façade, can usually be preserved. If original windows are in place, they may be saved in place.

## Selective Reuse

Where a building cannot be saved and the lot is not in immediate demand, options other than complete deconstruction can be explored. An empty lot among occupied homes, particularly in a row house configuration, is usually not used as "open space". These lots are more likely to be used as a garbage dump and can be magnets for vermin and crime.

Making a empty lot into a desirable space and having it adopted, unofficially or contractually, can turn a liability into an asset. For example:

Where the interior of a row house cannot be saved, the front and rear walls may be saved. The window can be barred and a raised beds garden in raised beds. Good drainage is important. Bar first floor windows and doors. Flash party wall. Parking pad.



The inside space can be used for a day-care play area, garden, or parking garage entered from the rear.

Replacing the second floor structure with a weather-resistant deck both stabilizes the building and is a step toward rebuilding. Maintaining the roof makes filling the basement unnecessary and allows the preservation of the original joists and decks.

A neighbor could be paid to maintain the space and control access. The façade of the block is kept whole, the empty lot is secured, a community space is created, and front and rear walls already exist for a future building.

### **Full Structural Deconstruction**

Where the removal of the building has already been determined and selective reuse is not an option, full deconstruction can be the next step.

- The more labor intensive, the better
- The more local the reuse, the better
- The more complete the reuse, the better
- The more value-added the better, such as wood components that are remanufactured as toys, furniture, mantels, etc.

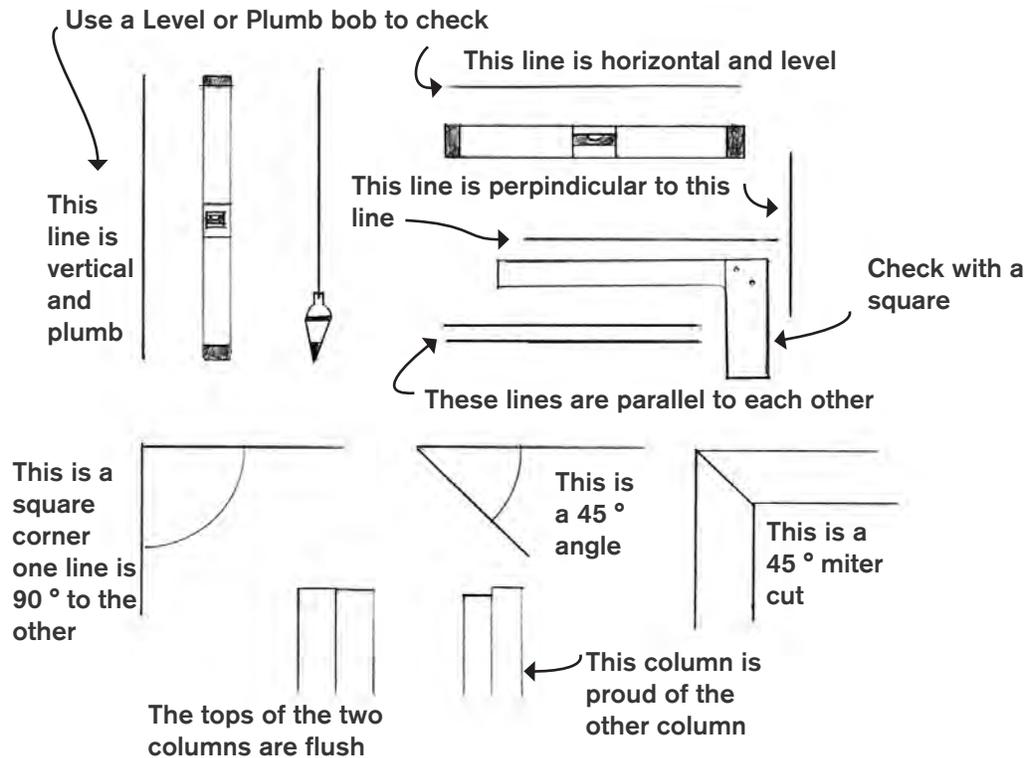
What can't be reused may be recycled. For example, asphalt shingles can be ground to make new roofing or paving material, broken bricks and concrete blocks can be crushed for fill, and damaged wood can be ground and used as mulch. Copper, aluminum, and steel also have salvage value.

### **Foundation-Fill, Land Reclamation, and Landscaping**

Where free-standing buildings are taken down, the foundation walls can be used by filling in the foundation and covering the top four inches with topsoil for raised garden beds on uncontaminated soil. Parts of the frame can be roofed to create a work-space, studio, or garage. Architectural elements like a front porch can be saved as a gathering space for neighborhood gardeners.

## 4. Construction Vocabulary

It is important trades people share a common language. This is particularly true for people who wish to advance in the construction and restoration trades. Following are some basic terms:



### Numbers

Being able to read a ruler is critical. Although only the most basic math is necessary, (addition, subtraction, multiplication, and division) these skills need to be developed.

Inches, feet, yards

Read a tape measure to 8ths

Degrees - 45°, 90°, 360°

Square - inches, feet, yards

Linear - inches, feet, yards

Cubic - inches, feet, yards

Plywood comes in 4' x 8' sheets

Dry wall comes in 4' x 8', x10' and x 12'

A 2x4 is actually 1 1/2" x 3 1/2"

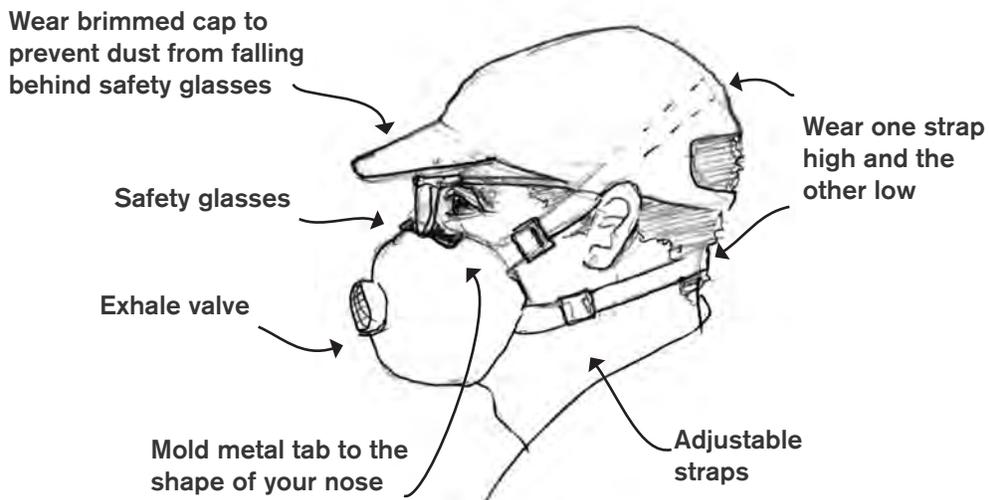
## 5. Personal Protective Equipment

The deconstruction trade is particularly dangerous. Tearing out creates more risks than building. Many deconstruction projects take place in damaged buildings and deconstruction workers are exposed to an accumulation of toxic materials. It is therefore critical that worker safety is a constant and primary concern. Health and safety concerns will be emphasized throughout this document. Following are basic personal protection requirements.

### Respiratory Protection

The breathing in of any dust puts workers in jeopardy. Deconstruction often creates toxic dust. This can include lead dust, asbestos dust, accumulated organic materials from rodents and roaches, accumulated coal dust in wall cavities, and various chemicals.

Unrated dust masks should never be used as they create the illusion of protection. At a minimum, in low dust situations, N95 respirators should be worn. In situations where there is any possibility of toxic dust workers should wear N100 respirators. These respirators include a gasket and HEPA filtering material. They have adjustable straps and create an effective perimeter seal. They are the equivalent of a half-face negative-air respirator with HEPA canisters. These respirators must be stored in sealed plastic bags when not in use.



HEPA filters are not designed for fumes. Where toxic fumes are present, workers must wear a half-face, negative-air respirator with carbon filter canisters. These respirators must be custom fit for each worker.

## **Eye Protection**

Although safety goggles do a good job of protection, they tend to fog up. For this reason, safety glasses work better as long as the worker wears a brimmed hat to prevent material from falling behind the safety glasses.

A hardhat with a brim also provides this protection. As safety glasses are made out of plastic, it is important to store them in plastic bags when not in use to prevent the lens from being scratched. Even with eye protection, it is always possible for particles to get into workers' eyes. It is therefore mandatory to have easily accessible eyewash stations available throughout the worksite.

## **Head Protection**

Hardhats are critical in all cases where workers are working above each other or disassembling anything. Hardhats must fit well enough to not fall off when a worker bends over, or they do not provide sufficient safety.

## **Hearing Protection**

Anyone working with, or near someone using a high-volume tool such as a chainsaw should be wearing hearing protection.

## **Foot Protection**

Deconstruction sites are particularly dangerous to workers' feet as the nature of this work includes pulling down beams, masonry, and other heavy material. Boots with steel toes provide protection from falling objects. The other major risk is stepping on nails. Steel soles offer protection from these puncture wounds.

## **Protective Clothing**

Clothing can absorb dust created in deconstruction and then contaminate workers' vehicles and homes. It's therefore important that workers wear disposable protective clothing when creating high dust levels. At least vacuum or change clothes at the end of the day.

Protect hands with well-fitting gloves with friction surface but avoid picking up rubbish from abandoned buildings with your hands.

## 6. Hand Tools

Mastery of hand tools is a prerequisite to any construction trade. Learning the use of power tools can come later. The use of a tool belt is particularly important on a deconstruction site to avoid searching for misplaced tools. At a minimum master:

**Tape Measure** - basic maintenance and use; reading to 1/8th of an inch

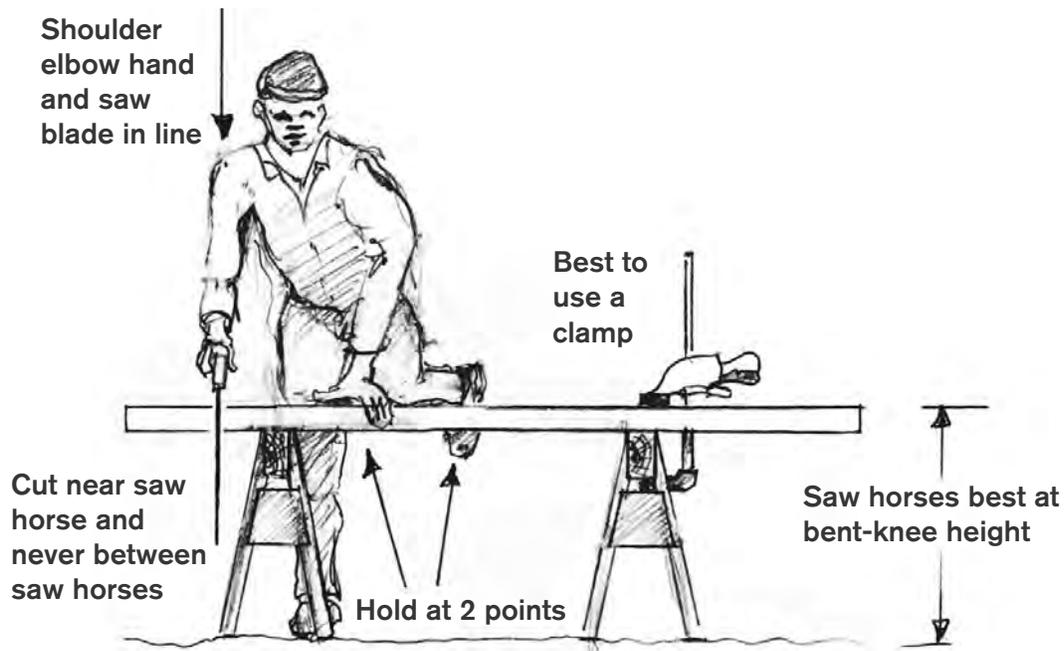
**Combination Square** - maintenance and use

**Hand Cross Cut and Rip Saw** - explanation of the difference in tooth design and set

**Hammer**- finish, framing, curved claw, and rip hammers

**Cat's Paw, Crow Bar, Wrecking Bar, Front-End Nippers**

**Clamps**



## 7. Ladders, Scaffolds, and Safety Equipment

The following 4 items will be covered in the OSHA course that all trainees will attend.

1. Safe Use Of An A-Frame Ladder
2. Safe Use Of An Extension Ladder
3. Scaffold Erection and Safety
4. Safety Harness

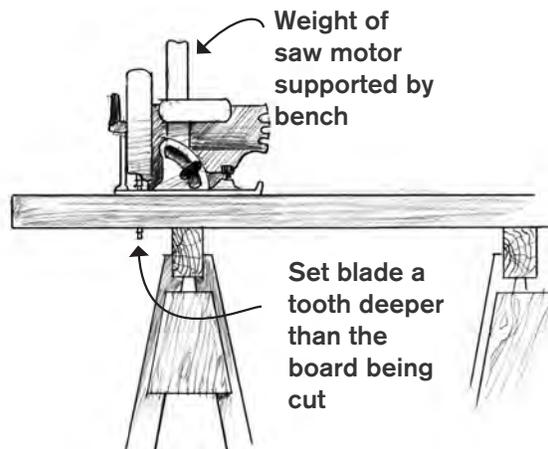
## 8. Power Tools

### Power Saws

Circular and chain saws are the most dangerous tools on a deconstruction site.

#### Circular Saw

- Always wear eye protection and avoid loose fitting clothing and jewelry
- Always assume the saw will bind and kick-back; identify a clearance area
- Set the blade depth to no more than a tooth's length deeper than the board
- Rest the circular saw motor on the stable end of the board being cut
- Know what the cut piece will do once cut through--do not hold up and bind
- Don't assume the blade guard is in place when putting the saw down
- Unplug when not in use
- Always maintain a well-set and sharp blade
- If there is a chance of nails, use a blade designed for encountering nails
- When resawing used lumber use a metal detector to check for buried nails



## Chain Saw

A lightweight chainsaw with an 8-inch to 12-inch guide bar is all that is needed for most deconstruction work.

Equip yourself with protective equipment including safety glasses, hearing protection, steel-toed shoes, hard hat, gloves, and close-fitting clothing. Preventive maintenance always pays off with chain saws. Keep teeth sharp, maintain proper chain tension, keep proper lubrication level, and a clean air filter.

Always use both hands when starting a chain saw. Always start it on the ground on a stable surface. Prevent kick-back by avoiding contact with the blade tip. Keeping the tip guard on also helps avoid kick-back.

- Never make cuts with the saw between your legs, always cut with the saw to the outside of your legs
- Don't stand on the board being cut
- Always keep in mind where the chain will go if it breaks, and never position yourself or other people in line with the chain
- Keep the chain out of the dirt; debris will fly, the teeth will be dulled and the chain life shortened considerably
- Transport the chain saw in a case in a level position with the gas cap up. Drain, then run the saw at idle speed until it stops before storage. For long term storage remove the chain and store it in a container of oil to prevent rust.

## 9. Community Relations and Teamwork

Taking down a house, whether by demolition or deconstruction, is disruptive to a neighborhood. It may also be seen as detrimental to the health of the neighborhood. Engaging the neighborhood in the methods to be used and keeping everyone fully informed at each stage in the process can help determine the degree to which the neighborhood will be a cooperative partner.

Elements of this process include:

- Bringing information to community organizations and surrounding institutions, such as churches and schools, as early as possible in the process
- Asking the neighborhood to choose a contact person that will have ready communication access to the project director and site supervisor

- Having the crew meet with neighborhood people to discuss issues and engage both parties in dialogue
- Warning immediate neighbors of sidewalk blockage and dumpster placement
- Posting signs when asbestos removal is taking place (this is required ) and informing neighbors of safety precautions being taken
- Cleaning up the immediate neighborhood on a daily basis
- Quickly responding to complaints
- And, most importantly, leaving the lot as a desirable space in the neighborhood

Attending a neighborhood meeting can be a positive experience. Have the trainees role-play what they believe would be potential complaints raised by the neighborhood and how they would address those complaints.

## **10. Crew Areas of Responsibility**

Cooperation among workers on a jobsite is as important as teamwork in a sporting event. It makes the work safer, more enjoyable, more cost-effective, and of a higher quality. A construction crew is only as safe as their least safety-minded member. A lack of teamwork can prove fatal. It is recommended that all crewmembers have at least one area of responsibility. It is impossible for a site supervisor to effectively coordinate a project and also implement each aspect of site supervision. During the first few months, crewmembers will be encouraged to cross-train each other so there is always at least one back-up person. Crewmembers may need to be responsible for more than one task area. The supervisor will review each person's area of responsibility at morning meetings.

The following is an example of one way to divide up tasks into seven areas of site responsibility:

### **1. Site Supervisor in Training**

- Do pre-work site review and write up list of site preparation tasks.
- Develop contact with neighbors. This includes explaining the project and reporting problems or potential problems to supervisor.
- Review on-site work orders before a job starts to confirm all special-ordered materials are on hand and all specifications are clear.

- Set up the job site – containment, isolation, break area, material preparation, sale area, de-nailing station, and debris and recycling containers.
- Establish and maintain a production schedule. When a production goal is not met the supervisor will, in consultation with the crew, write up a memo on what needs to be done to improve production or change the schedule.

## **2. Supply/Inventory Coordinator**

- Review supply list with supervisor to be clear on quantity, specifications, source, and order time of each supply item.
- Maintain a two-day supply of materials on trucks or trailers, and make sure the main storage area has a monthly supply.
- Make additions, deletions, or changes on the inventory form as the crew requests. If possible, work with administration to computerize a working system that may include inventory software.
- Maintain on-site, weather-protected, secure storage areas.

## **3. Tool & Equipment Inventory and Maintenance**

- Train people on use of equipment; particularly ladders, power tools, and electrical cords. If equipment is damaged, tag and repair it before use.
- Keep an inventory of all crew tools and material. Be sure there is a replacement for critical tools in the warehouse. Check inventory of these tools daily.
- Keep tools clean and sharp and maintain a full supply of replacement blades.
- Evaluate tools for condition, ergonomic quality, and design for non-destructive salvage; and make recommendations for replacement or additional tools.
- Make provisions for custom modification of hand tools for job-specific needs.
- This person may also be responsible for vehicle maintenance (checking air, gas, and oil) on a regular basis.

## **4. Health and Safety (puncture and respiratory risks, heatstroke, falls, etc.)**

This person will be asked to “write up” safety violations. Their job is to be stringent enough to avoid violations should an inspector visit the site.

- Inspect site for any health and safety problems before and during job
- Responsible for implementing daily and weekly safety meetings and maintaining injury/accident reports
- Maintaining first aid kit, drinking water supply, eye wash stations, and maintain a safe, clean, well-lit break area
- Implement a respirator maintenance program as required by OSHA
- Inspect use of ladders, scaffolding, (observe OSHA rules) power equipment, etc.

## **5. Quality Control**

This job should rotate often so all trainees develop a strong commitment to quality control. The goal is to see the job from varying viewpoints, such as a neighbor's, a customer's, or a city inspector's. There needs to be constant monitoring to ensure neighbors are protected and the job site is kept clean and safe.

## **6. Site Administration**

- Maintain visitors log, key contact, and emergency information
- Maintain contractor and sub-contractor scope-of-work documents
- Post permits and notices
- Maintain record of all job licenses and certifications for all crewmembers
- Maintain a daily site meeting log with a clear record of who is responsible for action items
- Keep hazardous material (asbestos, etc.) inspection reports available for OSHA inspectors

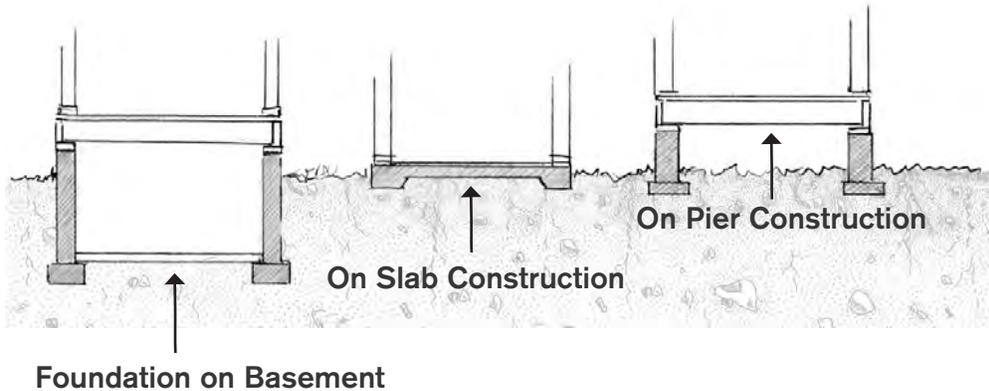
## **7. Labor and Material Tracking**

- Track the use of materials and labor hours for each facet of the job and make weekly comparisons (estimated vs. actual)

# BUILDING STRUCTURE PROTOTYPES

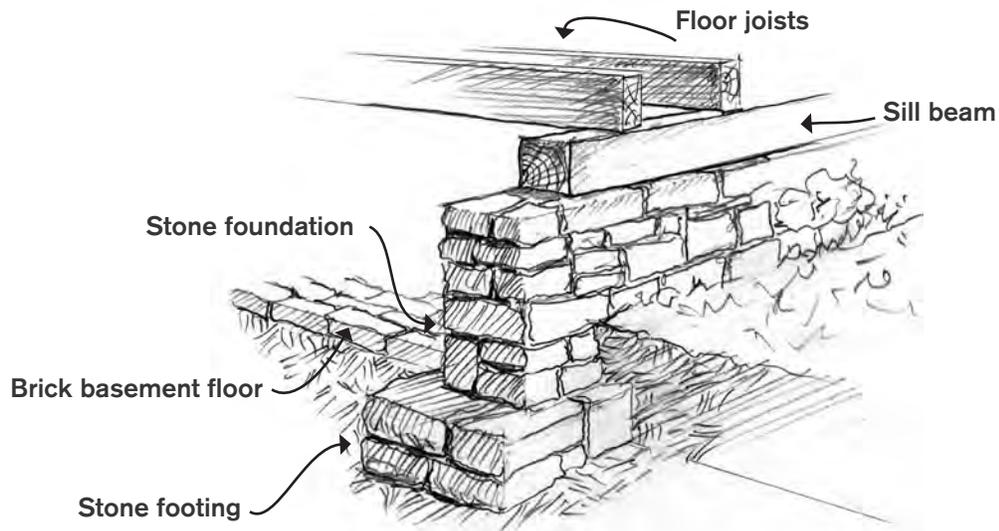
## 11. Foundation Designs

Again, deconstruction should be treated as an entry point into the construction and renovation fields. It is therefore important that people understand how buildings are structured and know what building elements are called.

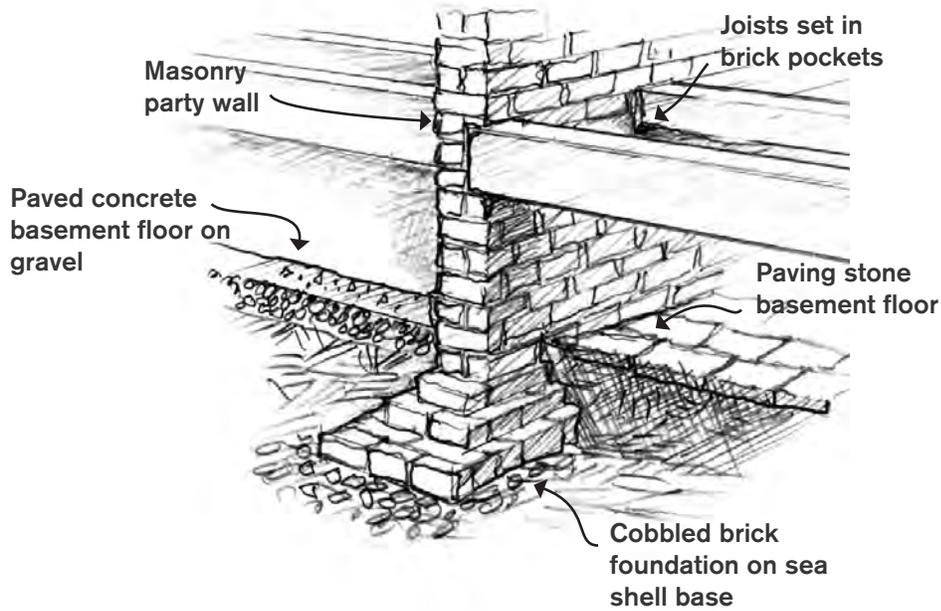


## 12. Foundation Materials

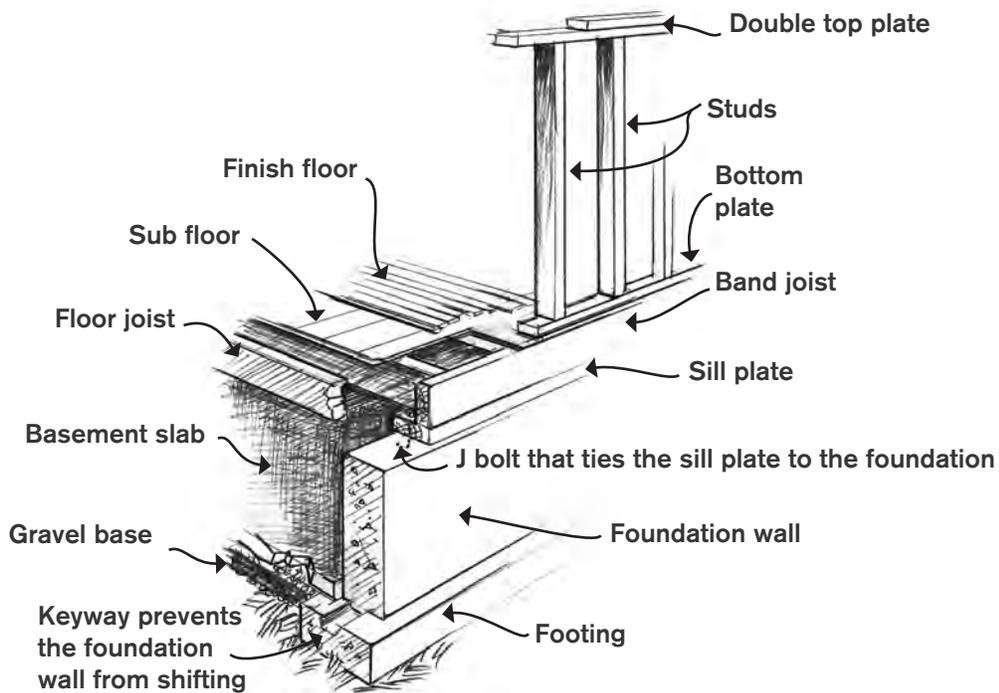
### Traditional Foundation



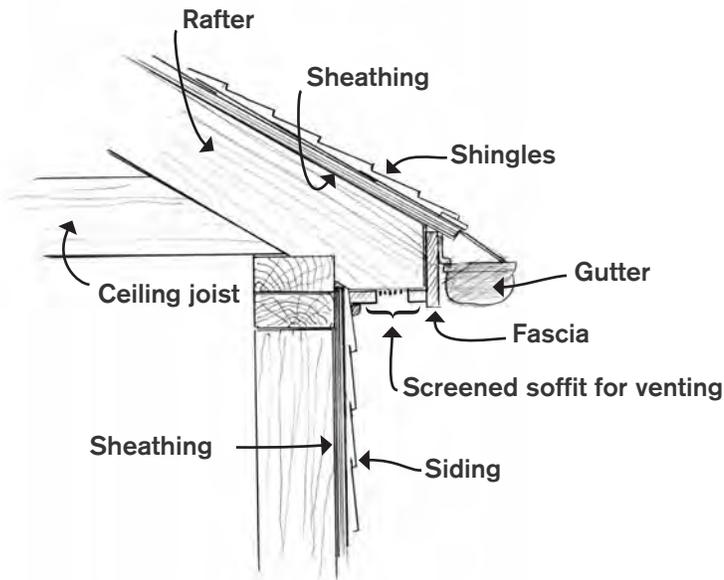
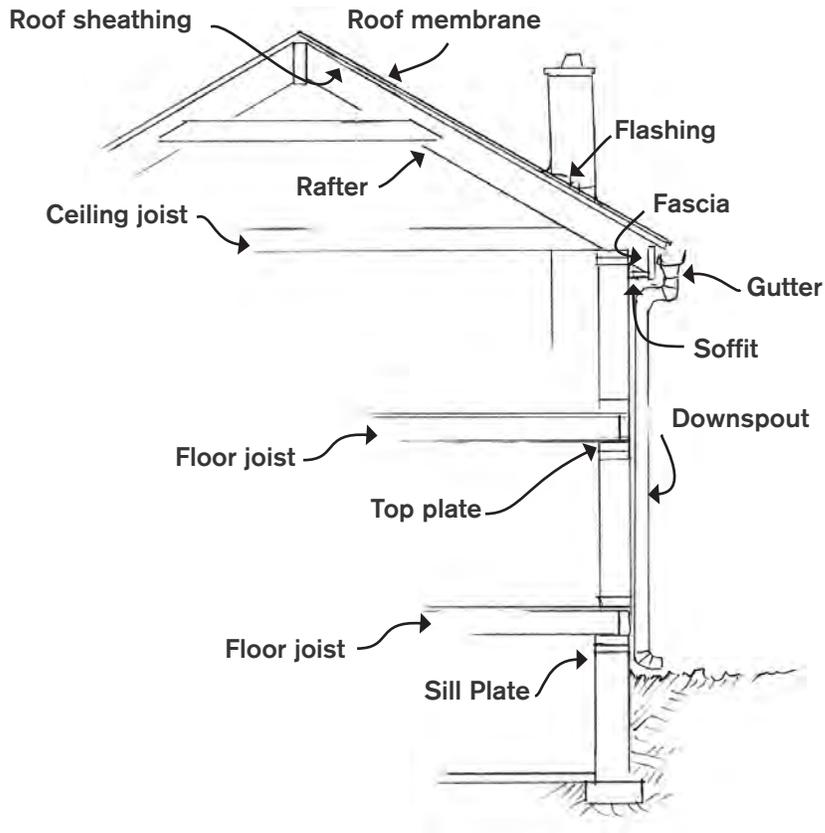
## Row House Foundation



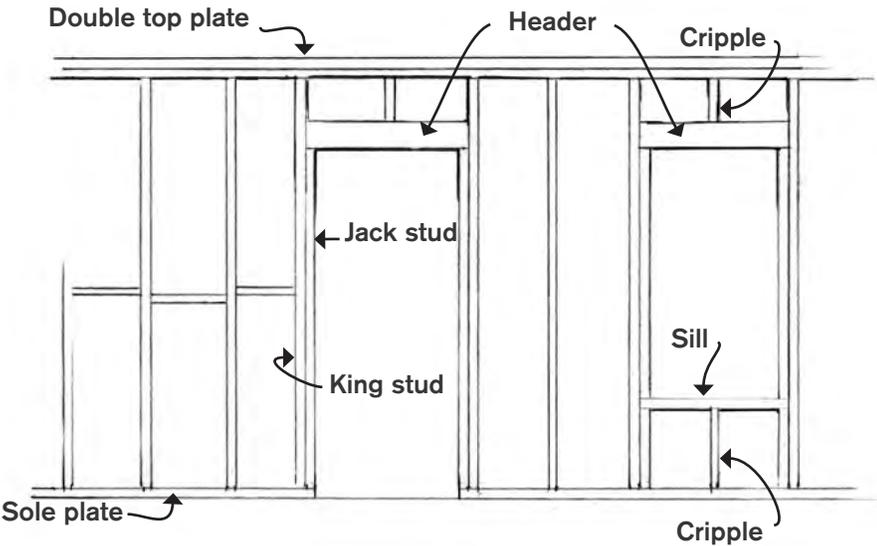
## Modern Foundation for a Frame Building



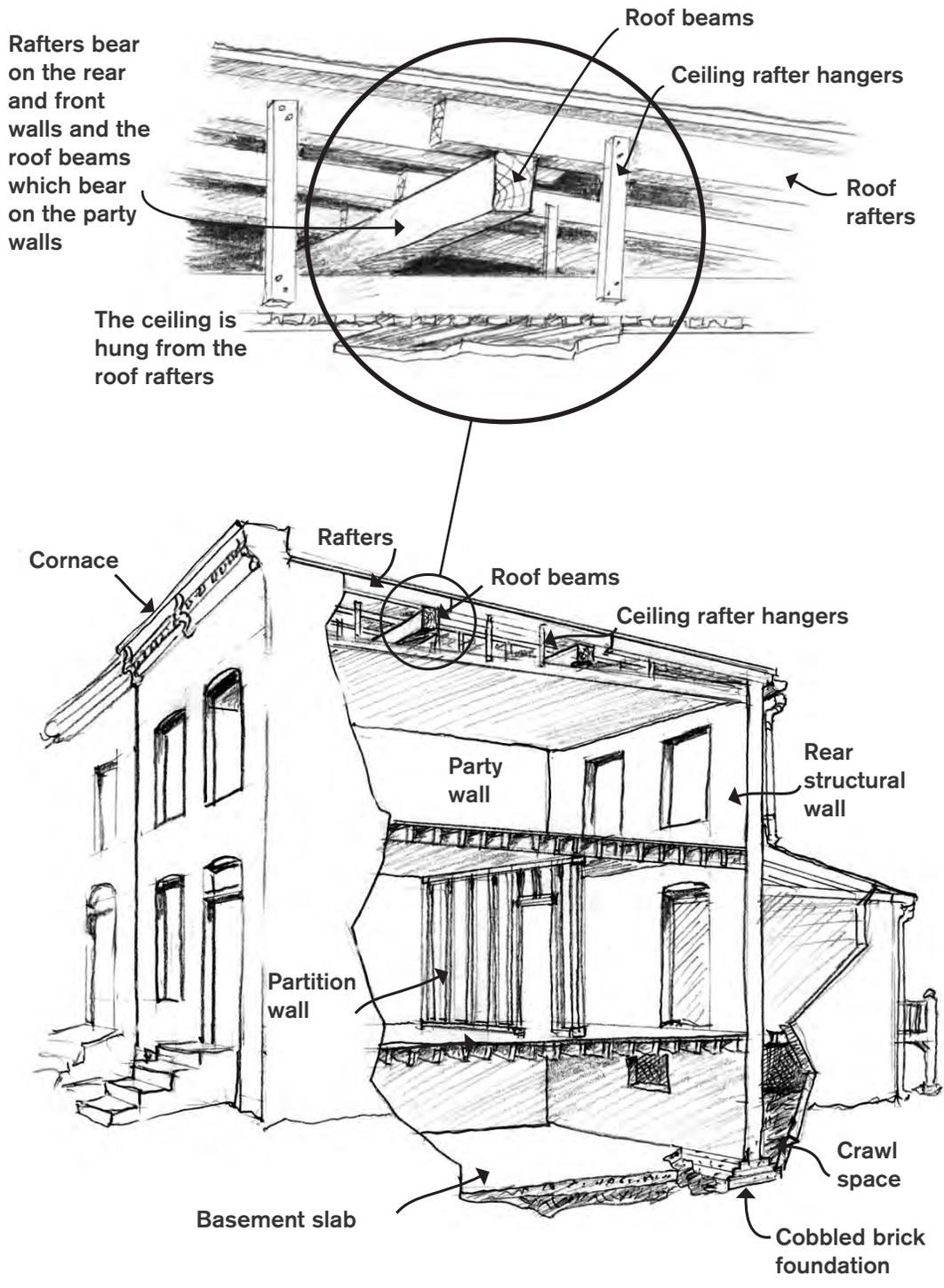
# Gable End Frame Building



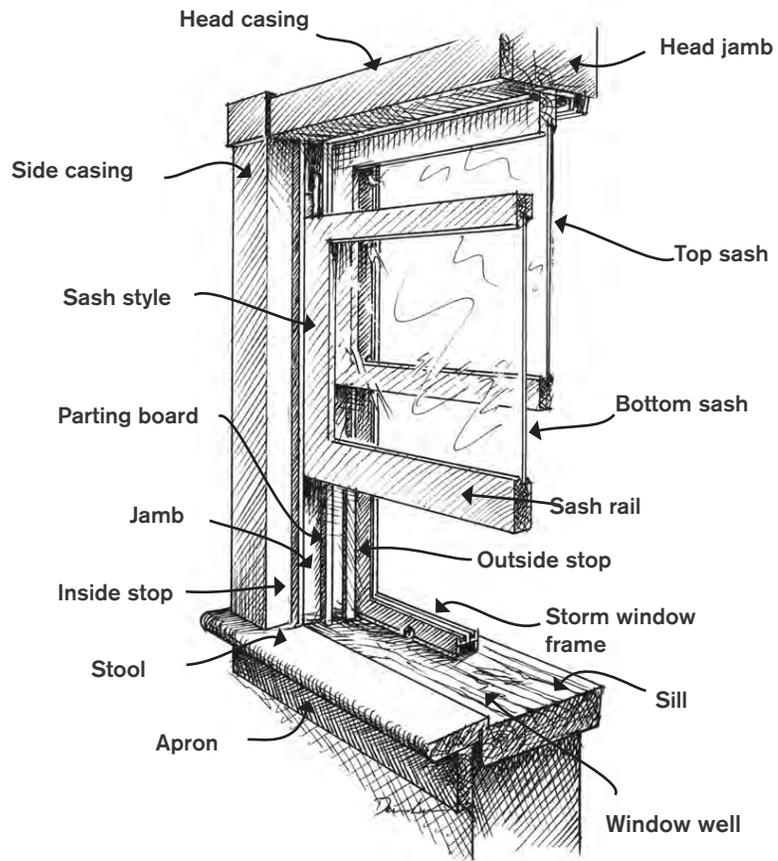
# Gable End Frame Building



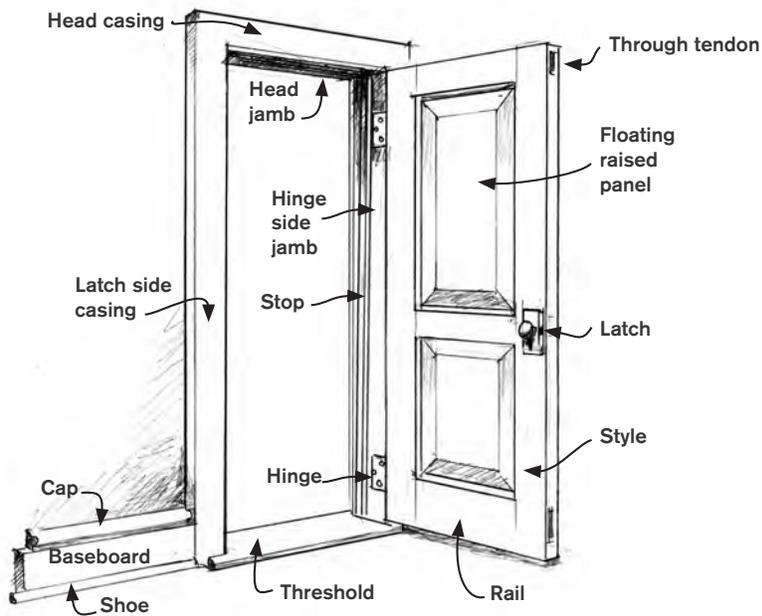
# Masonry Row House



# Window



# Door



## ON THE JOB PROJECT PREPARATION

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### 13. Community Outreach

- Working with association leaders, develop a presentation for the community association
- Present the proposal to the neighborhood organization and immediate neighbors
- Set up a job-site board to display notices and permits

### 14. Pre-Deconstruction - Site Secure Work

In many cases, a building slated for deconstruction has already been stripped of valuables. In cases where valuables remain (mantelpieces, stained glass, built-ins, light fixtures, copper, etc.) it's critical they are removed as soon as possible. There may need to be a separate agreement signed to remove specific items before a deconstruction contract is signed. This preliminary agreement may include a hold-harmless clause for the owner.

### 15. Material Value Analysis

Unless there is value in the material taken from a deconstruction project it may cost more than demolition. Even with that, it is worthwhile subsidizing the difference to create jobs, save landfill space, and minimize environmental impact.

The goal is always to minimize what goes to the landfill, ideally no more than 10 to 20% of the building. The more material reused the better. What cannot be reused can be recycled. Choosing what elements can be reused is critical before deconstruction begins. Learning the retail value of materials is the basis for deciding what to save. Some materials in poor condition may be worth saving because of their historic value. For example a damaged stained-glass window or panel door may be worth an investment of labor as it will be recouped at sales.

## 16. Environmental Analysis

- **Underground Storage Tanks** - A sub-contractor needs to drain, clean, and cut them open for disposal.
- **Asbestos Sampling** - Any friable asbestos (meaning particles that may become air-borne) needs to be removed by asbestos-certified workers before deconstruction begins. It is preferable to have certified workers on the crew as opposed to bringing in a sub-contractor.
- **Lead Sampling** - the crew would be permitted to take samples under OSHA guidelines or in Maryland as certified Visual Inspectors. Dealing with the lead issue needs to be integrated into every aspect of deconstruction. Although deconstruction spreads far less dust than demolition, it is recommended that crews take composite soil tests prior to deconstruction so there is a baseline figure – in other words, so the crew is not blamed for the contamination that was there before deconstruction started.

### Lead-Painted Components:

- Lead paint can be safely removed from components using HEPA-assisted power tools such as random orbital sanders and power planers. Boards can be sent through a stationary shop planer if the machine is fully enclosed and the enclosure is kept under negative pressure by a HEPA vacuum drawing in air at the cutter head. Detail items can be “wet-scraped”, HEPA-scraped, or HEPA-sanded, removing all poorly-adhered paint and then finished with an encapsulant paint. These methods are approved by both HUD and the EPA.
- PCB's and mercury - Any electrical equipment known or suspected to contain PCB's should be removed by a hazardous abatement professional.
- Paint, solvents, flammables – These should be removed to a toxic waste facility.
- If there is evidence of rodent infestation in the building to be deconstructed, an exterminator should be contacted to eliminate infestation before deconstruction begins. If this is not done, the rodents will be driven into neighboring houses.
- Evidence of roach infestation can be dealt with by an application of Roach Pruf, but this would need to be applied about a week before deconstruction begins.

## **17. Utility Shut Off**

Utility services need to be disconnected and secured in compliance with local building codes before construction begins.

### **Gas**

Call the utilities to be sure the gas supply is shut off at the street. Do not just shut off the gas where it enters the building. A gas leak is extremely dangerous.

### **Electricity**

Have the electrical company shut off the power at the meter. If power is needed on the jobsite, you may use a generator or, preferably, have an electrician install a main breaker and meter in a construction box near the building. Or, you may offer to pay a neighbor's entire monthly electric bill in exchange for using their power. This can be the lowest cost option.

### **Water**

Install a hose bibcock and shut-off valve at the water entrance for access to water. Otherwise, have the water turned off at the meter (you may be able to turn the water on and off at the street shut-off valve using an extension wrench.) If the building has a basement supply line and it can be protected, the water can be left on right up to basement removal. To avoid freezing in cold weather, it is crucial that exposed pipe be heat-taped and insulated.

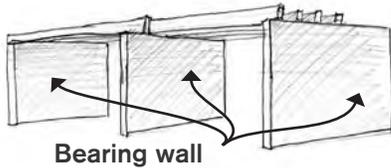
### **Sewer line**

If the sewer will be reused, cap it with a test plug at the main sewer line where it enters the building. If it will not be used again, cap it at the cleanout.

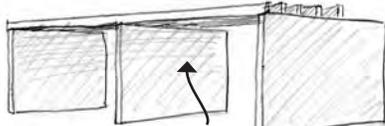
## **18. Structural Analysis**

It is critical for the crew's safety that a detailed review of the structure's soundness be conducted by what OSHA terms a competent person before any work begins. This is particularly true of masonry row houses. (Note that some jurisdictions may require evaluation by a licensed structural engineer. A row house's relatively flat roof is far more subject to leaks than gable-end houses, and once the roof sags it acts as a funnel. The entire floor structure is supported by joists that are often bearing on less than 3" of masonry, and it is these three inches most subject to rot due to the surrounding masonry holding moisture. A floor collapsing is likely to bring down the floors below, leading to a collapse of the entire structure into the basement. This is particularly dangerous for end- row houses where the entire sidewall is pushed out and collapses. Bricks at the top of masonry walls are often loose and subject to falling at the least disturbance; a potentially fatal risk.

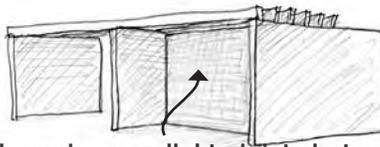
Any wall on which the end of a joist rests is a bearing wall



Bearing wall



A wall that may carry the weight of joist may or may not be a bearing wall



A wall running parallel to joists between bearing walls is a partition wall

It is critical to differentiate between partition and load-bearing walls.

Where there has been water damage, it is important to step on the floor directly above where the floor joists are located to avoid falling between the joists. Laying down 2'x8' strips of plywood creates a safe path.

A major danger for frame buildings is their collapsing into a parallelogram. Diagonal bracing is used to solve this problem.

## 19. Site Set-Up

**Note:** Three problematic aspects of row-house deconstruction are:

- The danger of floor or sidewall collapses
- Avoiding damage to adjacent houses
- A lack of clear workspace adjacent to the work site

### Overhead Wire Analysis

Know what lines on or near the site are live. Live electrical lines can be dangerous in placing dumpsters and working off of ladders or scaffolding.

### Dumpster Situating

Ideally the dumpster can be placed under a window and still be easily accessible to the roll-off truck.

### Secure Perimeter

Keep all unauthorized persons away from the site. This is particularly challenging as families may live in close proximity to the site. Where a neighboring door is close, plywood barriers may be necessary. A permit must be secured to block off the sidewalk. A row-house project would require front- and rear-access, and both should be secured.

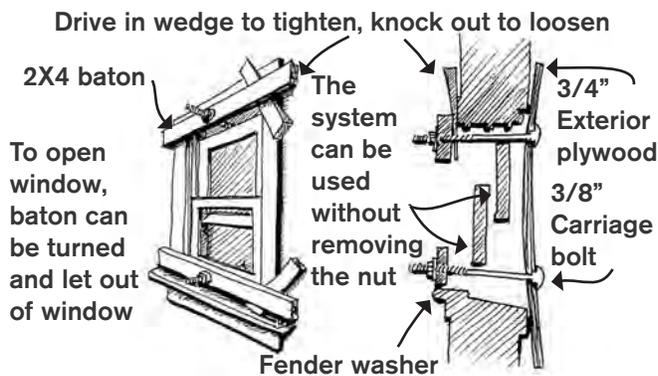
## Environmental Protection

Setting up environmental protection is critical from an environmental, legal, and moral point of view. The set-up may include:

- Bale and mesh, storm water run-off barriers
- 6-mil polyethylene sheeting for ground cover
- Rip-stop plastic for shrouding staging when necessary
- A hose for misting rubbish and pump sprayers for misting interior dust
- Plastic mesh or chain link fencing for defining the work area perimeter

## Site Security

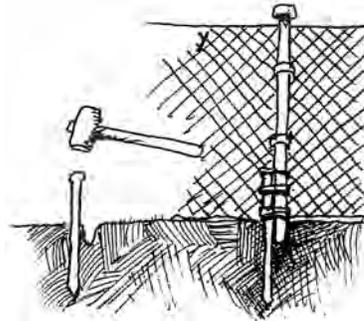
The two main reasons for site security are to prevent theft and prevent injury to trespassers, particularly children.



- A row house is relatively easy to secure using the board and baton system for windows, and a fence across the back yard. In a neighborhood setting, pay a neighbor to watch the site and make sure it's well-lit.



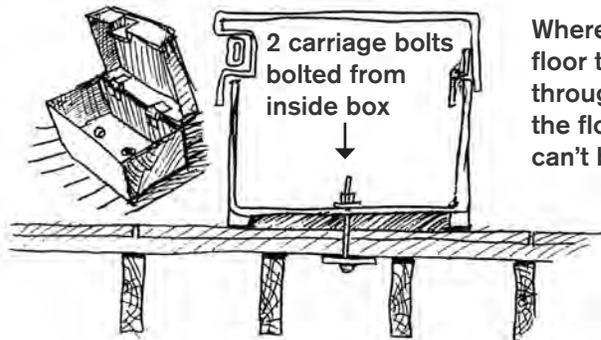
To install a temporary chain link fence, bind posts to stakes that have been driven deep into the ground



- Fencing is important around crucial areas such as the recovered material storage area and material drop zone.
- Lighting is crucial to security. Ideally, mount light fixtures on poles to shine on the building. Movement-activated lights will save electricity.

## Equipment and Tool Storage

A strong box bolted to floor joists is a secure tool storage area. It can be used even when the building is almost deconstructed. This can also be used as a storage place for workers' personal tools. If the site permits, a steel shipping container can be left on site, which can also serve as a break area.



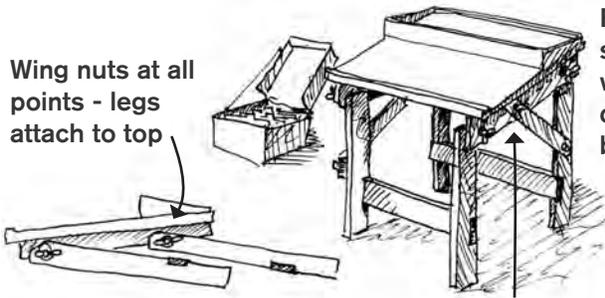
2 carriage bolts  
bolted from  
inside box

Where there is no sub  
floor the bolts can run  
through the joists so  
the floor and the box  
can't be pried up

Or run steel plate with two holes  
under floor boards and bolt through



Wing nuts at all  
points - legs  
attach to top



Remove one end of diagonal brace before folding

Folding,  
stand-up  
work site  
desk and file  
box

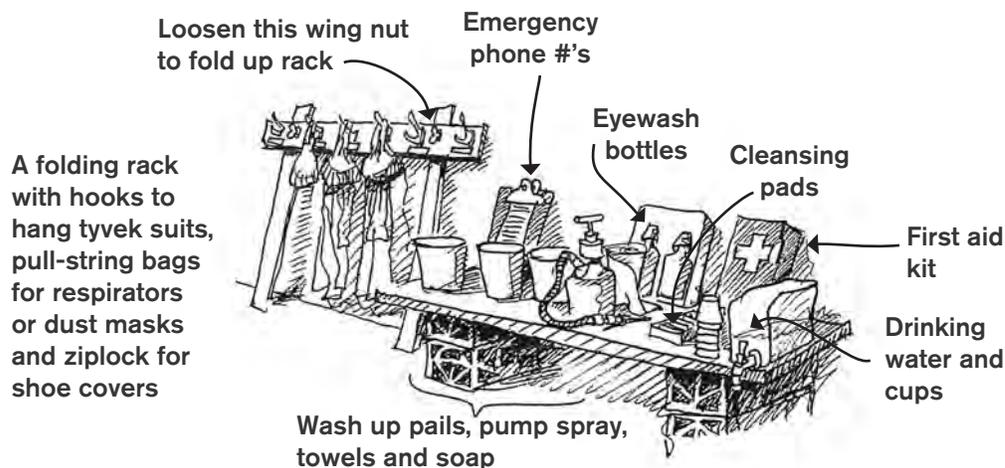
## Site Administrative Station

Construct an on-site  
administration station  
to include stand-up  
table, lighting, and  
a loose-leaf binder  
with critical forms.

## Worker Break and Clean-up Station

The break area must be able to be kept clean, well lit, and well ventilated in the summer or heated in the winter. It should include comfortable places to sit, and a cooler to store food and drinking water. Use this space to store extra personal protection supplies - respirators, disposable suits, safety glasses, etc.

A safety and clean-up area is set up adjacent to the break area. It includes a wash station, first aid kit, eye wash station, emergency phone numbers, injury report forms, and a place to hang respirators and protective clothing.



A closed-in break area cannot be heated with an unvented gas or propane heater; rather use an electric heater. Easy access to a clean, portable toilet is required.

When laying out and designing areas for processing, recycling, disposal, and storage, consider the material quantity and type, weather conditions, and site features.

### Material Drop Area

The removal of material from the building can be dangerous. It is therefore critical that the drop area be at a safe distance from other work areas. Throwing materials off the roof or out of windows should be avoided. There can be no passage through the drop site (both ends need to be blocked by a barrier, such as a mesh fence). A roof-mounted beam and pulley system is another way to lower material.

The site must be adjacent to containers for recycling and disposal, and the denailing station. For a large job, the drop site and the denailing station may need to be moved one or more times during the job.

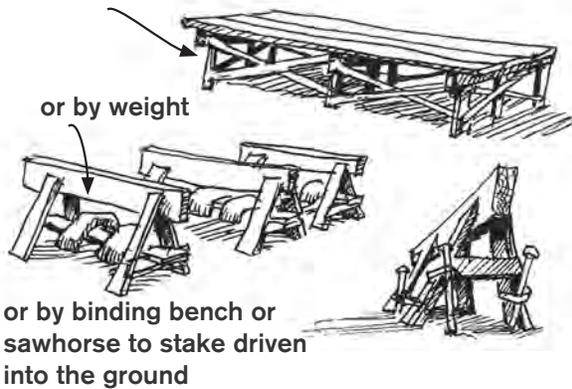
### Denailing Station

If wood will be sold from the site, the denailing station should be between the drop zone and the retail space. Renting a part of a neighbor's yard, or using a nearby lot and moving material on a cart works. Options include denailing at the point of take-down or using a separate denailing station.

Denailing at the point of take-down for trim can reduce the potential of nail puncture wounds. But it is easier and faster to denail larger lumber at a properly-constructed station.

The design of the denailing station is critical to both production and worker safety. It should be made stable and big enough for at least two people to safely use.

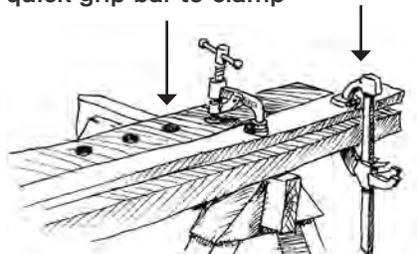
**Workbench stability is critical. It can be achieved by mass**



Wood sawhorses work well and can be easily constructed and transported. Diagonally bracing them together creates a more stable platform.

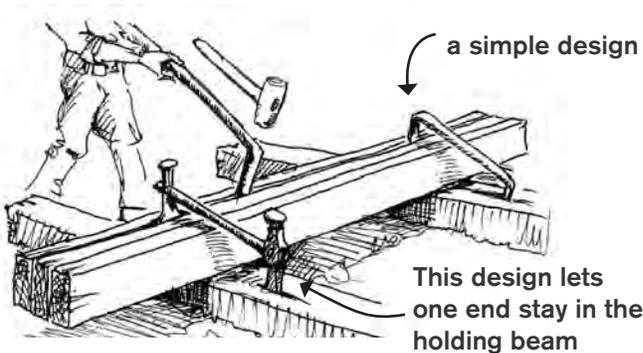
Use a “hold-fast” or other clamping system for holding lumber steady during denailing.

Drill a series of holes in the work bench to use a hold fast or use a quick grip bar to clamp



Workers can also use a modified log-dog system to take double headers or composite tresses apart. Hydraulic tools such as the “Jaws of Life” can also be used to separate composite beams.

**The dangerous, frustrating job of prying apart composite beams or headers becomes easier with log dogs**



Developing a safe system for dealing with exposed nails:

- Bundling boards as soon as they are removed
- Removing nails from lumber as it is detached
- Restricting passage through the denailing station
- Placing removed nails in a safe container

## 20. Internal Set Up and Maintenance

### Light

Sufficient lighting is critical to efficient and safe work. An effective way to light a job is to run a “String-O-Lights” (100’ of cord with sockets containing 100-watt bulbs every 10’) through the rooms.

### Ventilation

While the building is closed up, a large commercial box-fan blowing out at the top of the building will draw fresh air into the lower floors. While windows are still in place, only open the windows in the work area, to increase circulation at that point.

### Heat

A torpedo propane heater works nicely on a well-ventilated open deconstruction site. Never use one in an enclosed space. Install a carbon monoxide (CO) meter with a digital read-out to monitor CO levels.

### Structure

Always use proper support and bracing when deconstructing building components. Always have a qualified safety supervisor who monitors the site. Consult a professional building structural engineer when tasked to deconstruct unfamiliar buildings or building components.

## 21. Hazards Avoidance

Following safety protocols on deconstruction sites is vital for protecting workers from injuries such as nail-puncture wounds, being hit by falling objects, falling, or becoming trapped or crushed by improperly-supported building components.

Constantly confirm workers are wearing appropriate personal protection equipment including steel-toed boots; respiratory, ear, and eye protection; and a well-fitting hard hat. Separate work areas, such as material drop zones, the denailing station, the materials storage area, and debris and recycling containers.

Because OSHA has not developed safety standards specific to deconstruction, surpass OSHA’s construction and demolition standards for worker protection.

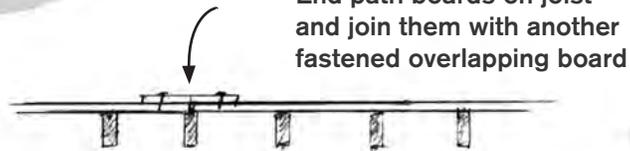
- Once you see a 16d nail coming through the top of a person’s work boot you’ll remember to never leave a board that hasn’t been denailed.
- Covering a hole with a piece of plywood will come as a surprise to the person who later picks up the back end of the plywood and carries it forward.

- A kick-board on a scaffold may not seem important until a cinder block slides off the edge while someone is passing underneath.

**Constantly clean up the work site.**

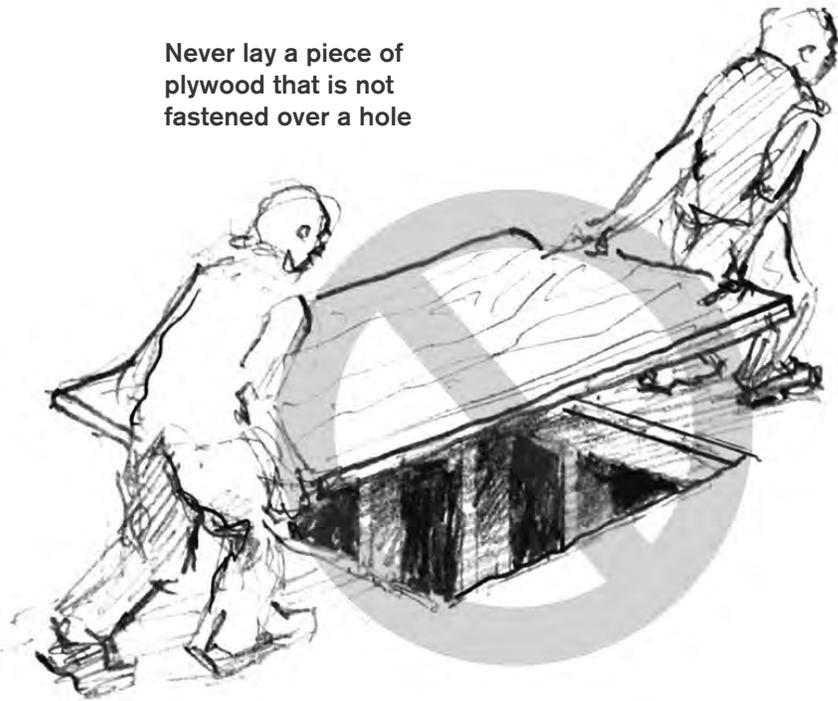


Never allow boards being used as a path to end between joists



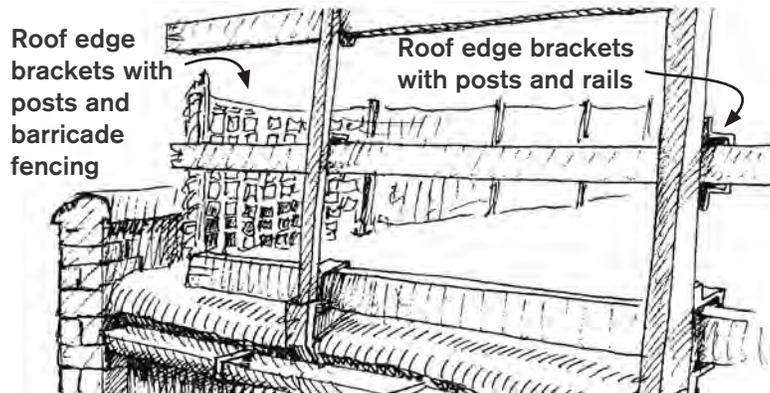
End path boards on joist and join them with another fastened overlapping board

Never lay a piece of plywood that is not fastened over a hole



Deconstructing a building's roof is probably the most hazardous aspect of any deconstruction job. All stages of roof work on a pitched roof must be done from a safety harness with an appropriate lanyard system. Removal of a flat roof must be done with a perimeter safety line, mesh barrier fence, or "Quick-Rail Safety System" with 2x4 rails.

There are specific tools, protocols and dangers unique to each kind of roofing (shingle, slate, standing-seam metal, corrugated metal, hot-tar build-up, etc.) Consult with a roofer for additional safety protocols with any unfamiliar roofing type.



### **Dust Control**

Breathing any dust is unhealthy, particularly demolition dust as it may contain heavy metals, molds, fibers, coal particles, asbestos, and organics. The goal is to minimize the generation of dust to reduce the need for respirators, but if any dust is being generated, respiratory protection is necessary. Wetting down dust helps, but be careful not to use so much water that valuable materials are damaged or debris-containing water drains off the site.

### **Clean as Work is Done**

This is important for health, safety, and efficiency. Avoid walking on demolition debris. Move debris to dumpsters as it is generated. Where possible, use barrel chutes rather than open chutes and cover containers with tarps to greatly reduce the spreading of dust.

### **Use Safe Cutting Techniques**

Using power tools to cut lead-painted materials generates large amounts of lead dust. When using a cutting torch on lead-painted surfaces, you must wear a combination HEPA/organic filter that protects against both dangerous dust and fumes.

## Cluster Dust-Generating Activities

Examples:

- Initial debris removal, including tearing up wall-to-wall carpet
- Removing casing and baseboards
- Any work that opens wall cavities
- Removing drop ceilings
- Pulling up attic decking
- Tearing out plaster and lath or dry wall
- Removing cellulose, fiberglass, or rockwool insulation
- Removing siding

Limit the exposure to unprotected workers by sealing off the dust-generating work areas. Limiting exposure could be as simple as closing doors to rooms where dust-generating activities will occur, or it may require containment of these areas with 6-mil plastic before any dust-generating work is performed. Where demolition is restricted to interior non-bearing structures, each sealed work area should be cleaned before doors are opened or plastic is removed to minimize exposure to other workers.

# THE DECONSTRUCTION

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## 22. Clean Out Procedure

Before any work is done, a structural review must be conducted by a highly-experienced person. If a building is in such poor condition that rubbish cannot be cleaned out safely, it may not be suitable for deconstruction, or the structure may need to be reinforced first to secure worker safety. The structural review would include inspecting:

- The soundness of roof joists
- The structure of any water-damaged decks, particularly joist ends in masonry pockets
- The strength of any posts and beams, especially at their ends and bearing points
- The soundness of the foundation

Remove as much rubbish as possible before beginning interior deconstruction. Where asbestos needs to be removed, do away with rubbish as necessary to give asbestos workers access.

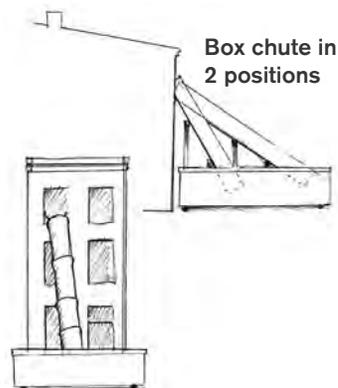
Use, brooms, shovels, and puncture resistant gloves to pick up rubbish, particularly in buildings that have been vacant. Clean away all rubbish as soon as possible because it creates, and potentially masks, dangerous conditions. Workers should always wear respiratory protection and disposable suits to protect themselves from toxins and dangerous dust particles such as lead, molds, coal dust, and fiberglass.

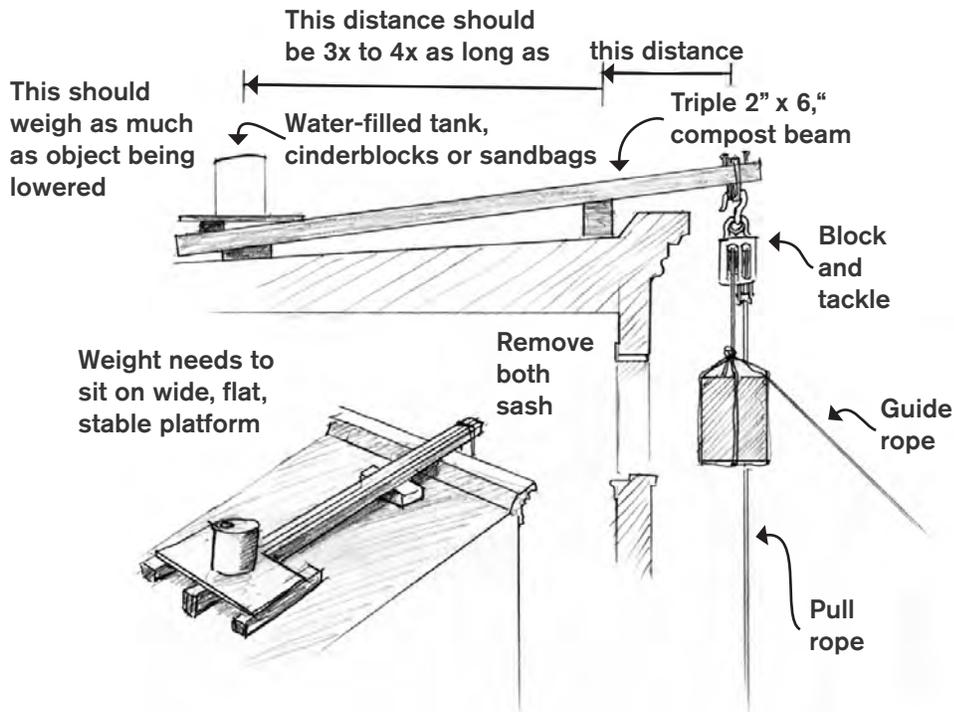
### Chutes

Avoid throwing rubbish out of windows into the dumpster. Either build a box chute or set up a barrel chute. The barrel chute works best in buildings over 2 stories. Both the box chute and dumpster should be covered to avoid the spread of dust.

### Pulley Drop

An alternative to bringing heavy objects (stoves, carpet, tubs, etc.) to the ground via a staircase is to use a beam and block-and-tackle system. Oversize the beam and secure more weight than necessary to the beam end. Keep all workers out of the drop zone. Use one worker to guide the load with a rope held outside of the drop zone.

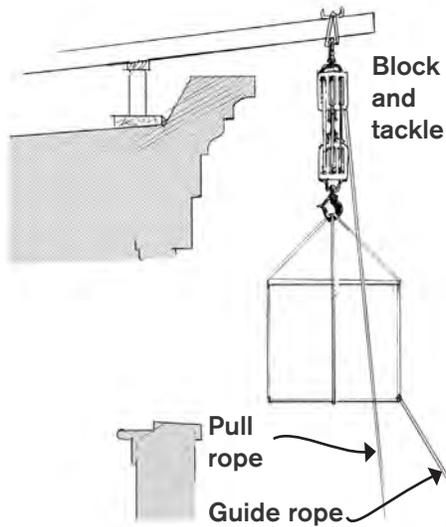




As a shop exercise, set up beams of various sizes using a scaffold or platform, then lift various weights until trainees can predict a safe beam length, strength, and load design. Then, demonstrate the mechanical advantage of block-and-tackle systems.

### White Goods, Rubbish, and Furniture

Remove all white goods (refrigerators, stoves, washing machines, etc.) before removing furniture. Pressboard furniture can easily collapse when being moved. Use hand trucks where practical. "Big Wheel Carts" are far more effective and safer than wheelbarrows for removing rubbish.



### Carpet

Respirators are particularly important when removing damp and/or dusty wall-to-wall carpet. Carpet that is damp can weigh double. It needs to be cut into manageable pieces. Use a long-handled hook knife; for example, a Grundlach Stand-up Carpet Cutter.

## **23. Component Removal**

Before removing building components that are unfamiliar to the crew, the crew leader should determine and describe exactly how components will be removed and handled.

The deconstruction techniques chosen will depend on how material will be reused and marketed. For example, material such as marble and finely finished wood must be removed with particular care to retain its retail value.

### **Hardware and Lighting Fixtures**

Any valuable hardware; such as hinges, locks, and knobs; should be removed, wrapped in paper, and boxed-up. Remove difficult screws by scratching the paint from the screw's slot, then use a brace and bit with a screwdriver bit to avoid stripping the screw head. If the hardware is not reusable, place it in the recycling bin. You might also want to leave the hardware on and resell the doors and hardware as a single unit. Lighting fixtures that have value should also be wrapped in paper and boxed up.

### **Doors**

Panel doors are valuable, and some are built like fine furniture. Solid core doors may also be estimable. Hollow core doors are the least valuable.

### **Windows**

Sashes have minimum value unless they are made of hardwood, have historic value such as containing float glass, or are unique in some other way. A whole window unit, including jamb and counterweight system, could be reused. To remove the entire unit, extract the interior casings and aprons, then cut the fastening nails using a reciprocating saw.

### **Case Goods**

Removing valuable historic built-ins that were constructed integral to the original house (like the traditional book cases built on either side of a fireplace, or butler pantries) is a skilled craft. Finding the fasteners is often difficult and removal by simply prying them off the wall tends to cause damage. It may be necessary to pry them away from the wall just enough to insert a reciprocating saw blade to cut the fasteners. Or, drive the fasteners all the way through from the face using a drift pin.

If built-in case goods are worth saving, it may be worth the time to number parts to match a drawing. Number each part in the same location (for example in the top left-hand corner). Chemical stripping removes most marker ink, so unless it is certain that components will not be chemically stripped, use a number punch set.

Kitchen cabinets are relatively easy to remove intact. Solid wood cabinets are far more valuable than pressboard cabinets. Unless counters are made of valuable material (slate, marble, maple, etc.) or in very good condition, they are usually not worth saving

### **Plumbing Fixtures**

Before disconnecting waste lines, be sure to cap the sewer line in the basement to prevent sewer gas escape. If it will not be used again, seal it at clean out.

A safe option to removing a cast iron tub down a staircase is to attach a pulley to a stud at the top of the staircase, tie a rope through the drain hole of the tub, then ease the tub, upside down, down the staircase. Protect the staircase with plywood runners if it is to be saved.

Be very careful not to chip porcelain finishes. Even badly-damaged antique fixtures may be worth saving to be refinished.

### **Trim**

If trim is to be saved it is usually easier to pull nails as it is removed. Pull finish nails out of the back of trim using front-end nippers or a Nail-Jack. Driving it out from the back will likely damage the trim face.

To transport, lay down two ropes with loops on their ends, and pile on the trim. When the pile is still manageable, pull the rope ends through the loop.

Removal of trim, particularly casing and baseboards, will release accumulated dust including lead, coal, mold, and roach dust from wall cavities. Workers must wear respiratory protection when removing this trim.

### **Flooring (If Sub Floor)**

In most cases, flooring can be removed before partition walls. However, in the case that flooring runs under partition walls you can protect the floor surface with craft paper covered with 6-mil plastic until the walls are removed, then remove the surface protection after all the plaster and lathe wall has been removed. Or, you can cut the flooring around the wall partitions using a shallow set circular saw with a nail cutting blade.

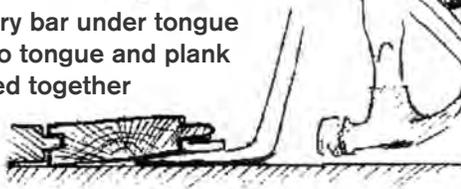
The value of flooring is affected by how little damage is done during its removal. For example, when removing tongue-and-groove flooring, pry the flooring up using a bar under the tongue edge (the first board or two may have to be destroyed to accomplish this).

Welding a small bar of steel to the blade of a pry bar and working in teams of 3 or 4 (depending on the length and fragility of boards) will help to prevent the nails from splitting the tongue as the board is pried up. The rope method mentioned above for carrying trim boards, also works well for transporting flooring boards.

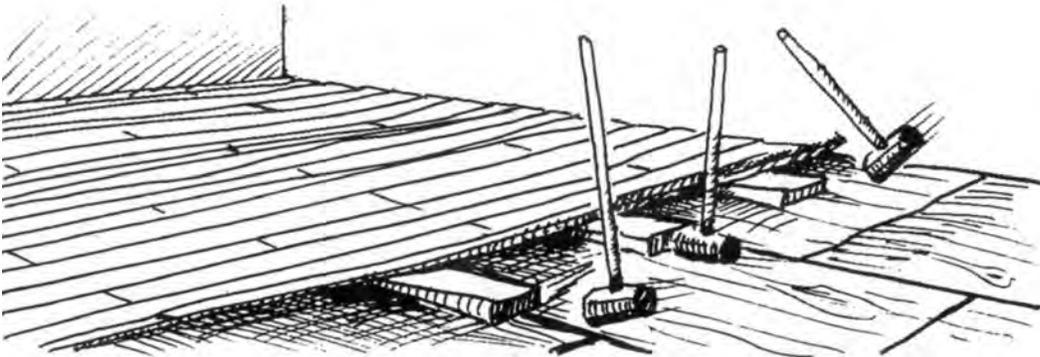
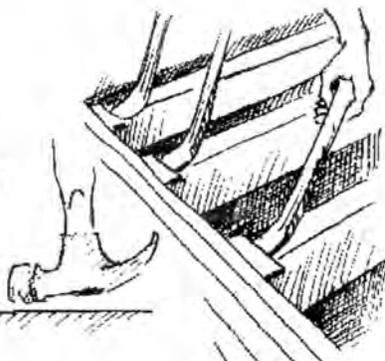
Weld a steel bar with a beveled edge to a prybar



Drive pry bar under tongue edge so tongue and plank are lifted together



This can be done best by several people prying on the same board at the same time



Where flooring is attached to a sub floor, a series of wedges can be simultaneously driven under the flooring to lift the flooring from the sub floor. Use as many wedges as necessary to avoid damaging the flooring.

## 24. Preparation for Material Disposal

The timing and placement of containers for the collection of deconstruction material is critical in creating an effective process. The goal is to reuse or recycle at least 80% of the building.

Ideally, a good deal of the interior deconstruction can take place before the masonry deconstruction, as the masonry deconstruction will require a full 30 yard dumpster which will take up virtually the entire backyard. There will be instances where there is insufficient turn space in the alley behind the building to bring in a 30 yard dumpster. In these cases, most work will need to be done to the front of the building. An average row house will fill about two 30 yard dumpsters per floor.

Depending on the strategy for deconstructing the building, the order of collecting materials will change but the major divisions are as follows:

**Asphalt Roofing** is collected separately

**Wood members** of value (usually at least 6 feet long with no rot) either get de-nailed, stacked, and taken off-site or collected in a separate container to be turned into mulch. This would include lath.

**Metal** items, including aluminum, copper, cast-iron, and galvanized are collected in a single container. Copper may be valuable enough to single out and sell separately.

**Brick** falls into four basic grades:

1. Soft or salmon brick collected in the same container as plaster for fill
2. Brick in good enough shape to be used decoratively and for patios
3. Hard face brick that can be reused structurally
4. Historic brick that can be used in restoration of historic structures

**Note:** Grades 2-4 can be cleaned and palletized for sale or dumped in a container to be sold from the site

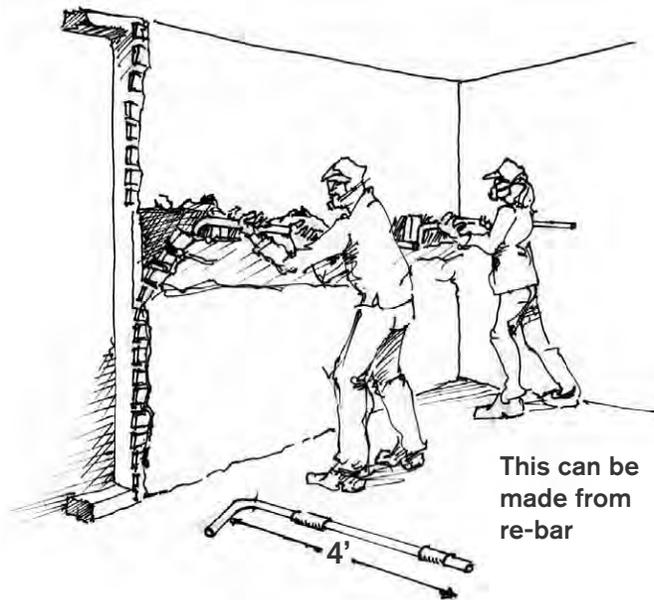
## 25. Interior Deconstruction

### Plaster and Lath

One way to remove plaster and lath from walls is to pull down large wall sections at a time, so the lath lands on top of the plaster, then removed and bundled.

This can be done using several “L” shaped tools in tandem. These tools can be made from re-bar stock. Cut slots through the plaster, slip several “L” tools in behind, then pull simultaneously.

The plaster will separate from the lath as it hits the floor. The lath can then be collected, laid on a piece of rope with a loop, and rope-bundled. If the studs are to be reused, remove remaining lath-nails after cleaning up the plaster.



Use large scoop shovels and “big wheels” to transport plaster rubble to the rubble container. On large jobs, an effective way to dispose of plaster is by shoveling it into a “300-pound” tilt truck, running it up a ramp, and dumping it into a funnel on a barrel-chute.

The safest way to remove plaster and lath from ceilings is from a rolling platform, such as a Baker Scaffold that can be backed away from the rubble pile as work is done.

The ceiling can be pushed down from above. This minimizes the danger of working directly under the ceiling being torn down.

Plaster can also be removed by hitting it with the back end of a flat shovel to break the keys, then scraping it off the lath. The lath would then be pulled off separately.

## Insulation

If the attic has loose-fill insulation (cellulose or rockwool), consider contracting with a removal company that has a truck-mounted vacuum. Fiberglass insulation bats can be stuffed into 6-mil bags. Wear protective suits, caps, safety glasses, and N100 respirators for this work. After work is completed, wash the fiberglass particles off of your skin using cold water.

## 26. Recycling Of HVAC and Plumbing Elements

In most cases the salvaging of HVAC elements from a single row house deconstruction is more costly than the value of those elements. The material's value goes up to the degree that they are sorted. Setting aside a dumpster for metal collection until it is full also increases value.

Above-ground oil tanks need to be drained. The oil itself has value. The tank then needs to be cut open before being brought to a recycling facility. This operation can cost up to \$500 a tank. Disposing of buried oil tanks requires equipment that would necessitate a separate subcontracting company.

Removing cast-iron furnaces is labor-intensive. Large furnaces can sometimes be cut apart with oxyacetylene torches. Smaller furnaces can be broken up with a sledgehammer. A certified company must remove any asbestos before any other work is done. This can easily add \$2,000 to \$3,000 to the cost of the job. In Maryland notice must be given to the Maryland Department of the Environment 30 days before work begins.

Ductwork can be cut up and put into a 50-gallon drum for recycling. Easily accessible copper such as the winding on large motors or copper wire not encased in plastic is most valuable.

A CFC-certified technician must drain any air-conditioning unit that still contains refrigerant. Air-conditioning units less than eight years old may not contain CFC.

Radiators in good condition may be valuable enough to be picked up by a reuse and resale company.

In terms of plumbing, again, copper is worth separating out. Galvanized and cast-iron are combined in the metal container bin.

# MASONRY ROW HOUSES

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## 27. Structural Deconstruction of Masonry Row-Houses

To take a building apart safely, affordably, and efficiently, know how it was put together and its structural weaknesses.

The row house is a masonry building consisting of several contiguous units sharing party walls. Most were built in the Richmond, Chicago, Boston triangle. Their major difference is a function of the occupant's wealth: from majestic four-story 4,000 sq ft, 12' -ceiling brownstones, to humble Baltimore two-story, 800 sq ft alley houses.

Some row houses were built as cheap slave or worker's houses adjacent to the mansions the occupants built and served. They tend to be thin-walled, built of weak salmon brick, and structurally unstable.

Row houses were inexpensive designs that enabled working class people to own their own home in dense neighborhoods. The corner houses were frequently where the builder's builders' homes (usually of higher quality) and /or small store-fronts or taverns.

But, regardless of size and quality of construction, they usually have several features in common that may present risks to deconstruction crews. It is critical that each of these aspects be investigated before deconstruction begins.

Row house foundations are built on relatively weak foundations; most commonly bricks directly on the ground or a bed of seashells or gravel. Any undermining by water or ground shift can lead to wall shifts that can weaken the entire structure.



**Brick foundations will conform to ground irregularities weakening the wall above**

Modern foundations are poured concrete containing steel reinforcement bars. This enables them to span small wash-out sections and still uniformly support a wall.

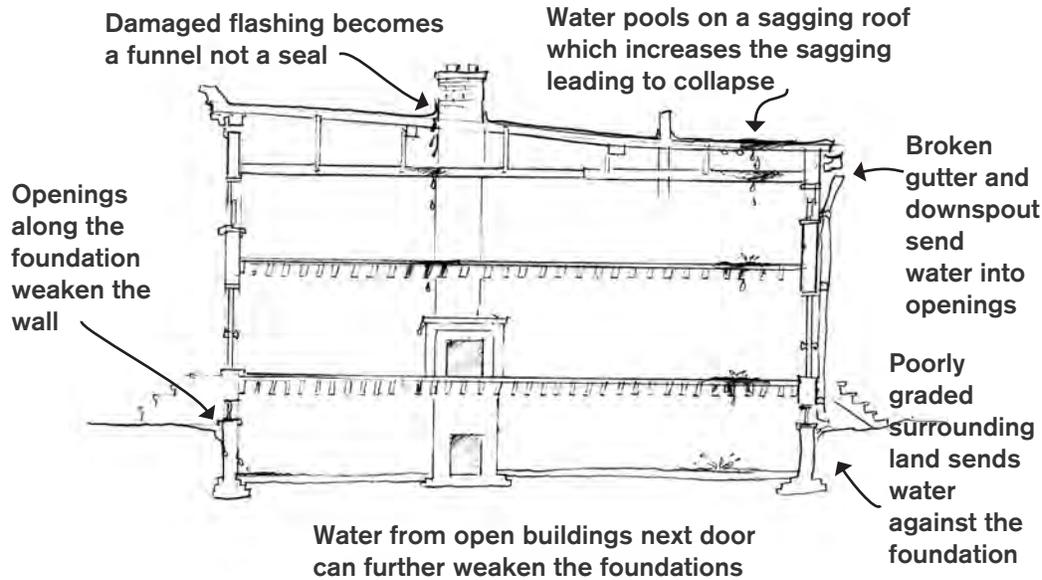


**Poured concrete footings are monolithic and can span some voids caused by erosion or ground settling**

Row houses are more susceptible to collapse than frame houses. It is therefore extremely important to understand what makes them collapse and how to prevent collapse during deconstruction. In many cases, the building is so damaged that deconstruction is not an option and the building needs to be taken down with heavy equipment.

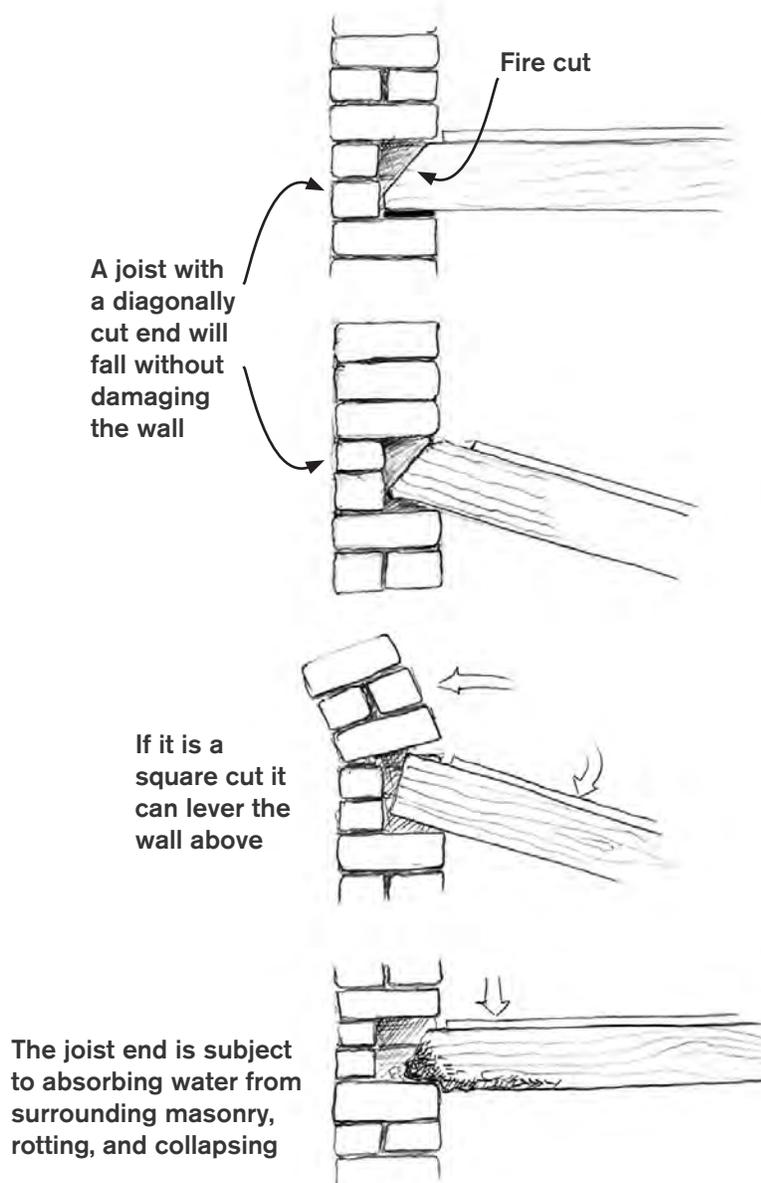
## Water Damage

The major cause of row house collapse is water. If you don't understand how water weakens a row house you can be subject to extreme danger.

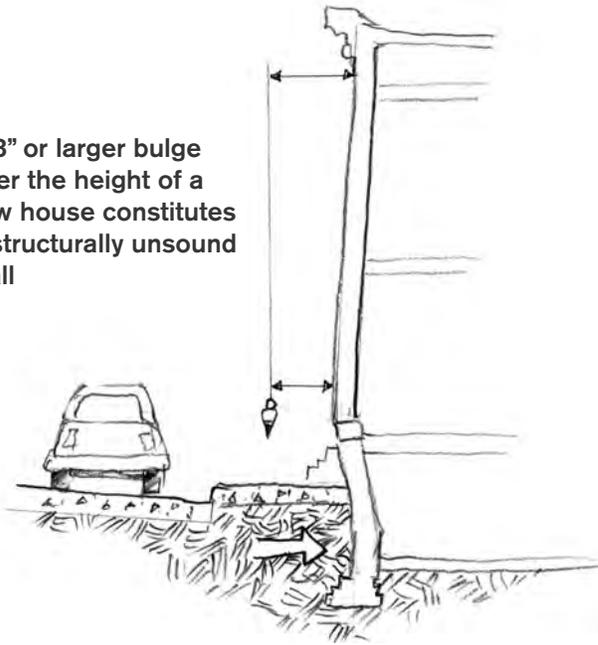


- The slight slope of the roof invites pooling of water, particularly toward the rear. Once an opening occurs in the membrane, the roof sags, causing more water intrusion and more roof collapse. This water accumulates on each floor rotting out flooring and structural joists.
- Edge flashing, party wall flashing, and flashing around chimneys, vent pipes, and skylights is often poorly done. Water gets behind the flashing, freezes, expands and turns what should be a seal into a funnel.
- Water running down the party wall is particularly destructive as it rots out the joist ends leading to floor collapse. Floor collapse of end-of-row houses may also lead to sidewall collapse.
- Row houses are built on relatively unstable foundations.

- Water intrusion from poor grading, dysfunctional gutter and downspout systems, rising ground water, and neighboring houses with leaking roofs lead to foundation shift. Even a slight sidewall shift can bring down a row house as joists are often bearing on no more than 3" of masonry pocket.



A 3" or larger bulge over the height of a row house constitutes a structurally unsound wall

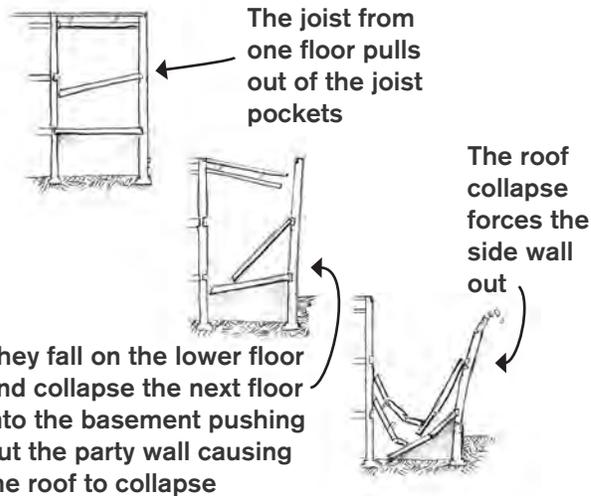


### Street Pressure On Façade

A century of street and sidewalk reconstruction, plus constant traffic, puts pressure on the building's façade pushing in the base and creating a front wall bulge. A bulge of more than three inches over the building's height constitutes a structurally unsound wall.

### Weak Front Wall Attachment To Party Wall Masonry

Where the buildings' façade is not tied at many points to the sidewall it will tend to lean out at the top and can easily collapse with a small amount of vibration. If there is any separation, it should be assumed there is a probability of its collapse during deconstruction and therefore there should be a restricted area about 10' plus the height of the building, from the buildings base. Also create a restricted area of about 10' on both sides. At the same time the project must develop a plan so there is free egress to and from neighboring houses.



### Weak Rear Wall

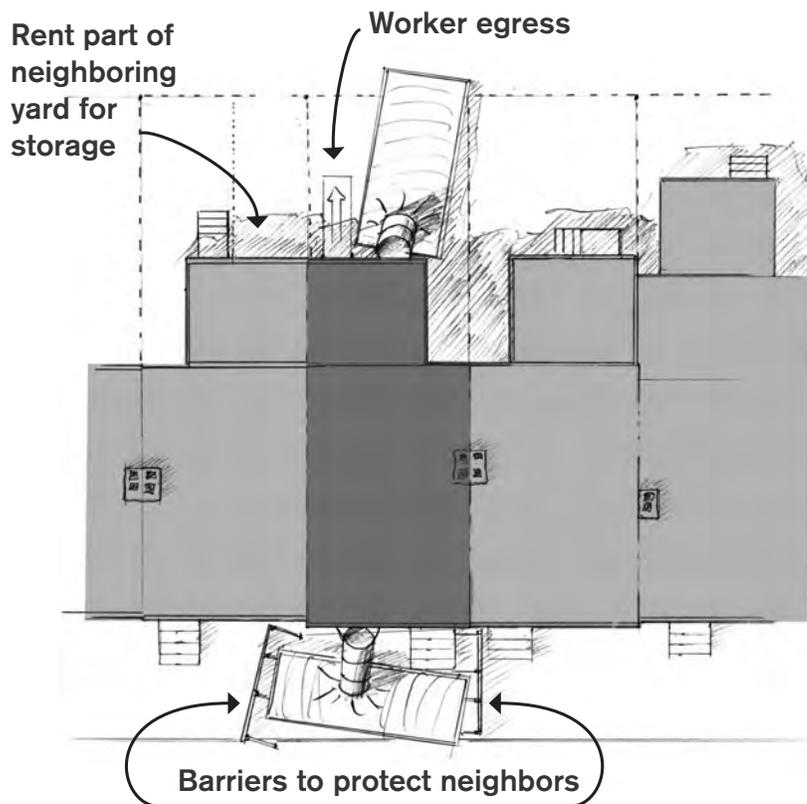
The row house rear walls are often built on poor foundations, are heavily exposed to roof run-off, and are often built of poor quality masonry. They tend to easily collapse for these reasons. If they are structurally unsound, take them down as a first stage of deconstruction.

## 28. Site Set-Up

Setting up the equipment and facilities to deconstruct a single unit in a row of houses is challenging. Space is extremely limited and there is great risk of damaging neighboring houses. It is important that neighbors have constant and safe egress from their homes. As the rear space of a typical row house is small, adjacent spaces may need to be found for material accumulation, equipment storage, and crew break areas. A nearby abandoned building's rear yard or renting part of a neighbor's yard can solve this problem. Because of limited space, it is frequently necessary to use smaller dumpsters and have them exchanged frequently.

Although barrel shoots work well for vertical drops, box shoots may work better in distributing material to the back of a dumpster, and then subsequently sliding forward to fill the dumpster evenly. Box shoots and the dumpster should be covered as much as possible. Barrel shoots work best to control dust.

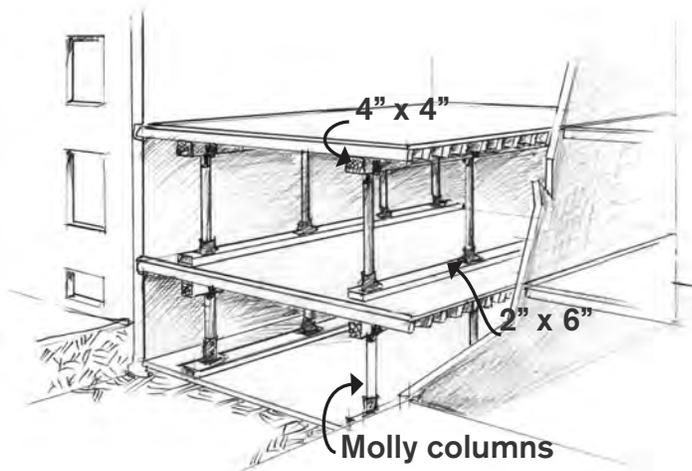
When working in close proximity to adjacent houses, control of dust is a critical and difficult aspect of deconstruction, although it is far easier to control dust using deconstruction techniques as opposed to demolition. Assume all dust created by deconstruction contains toxic materials.



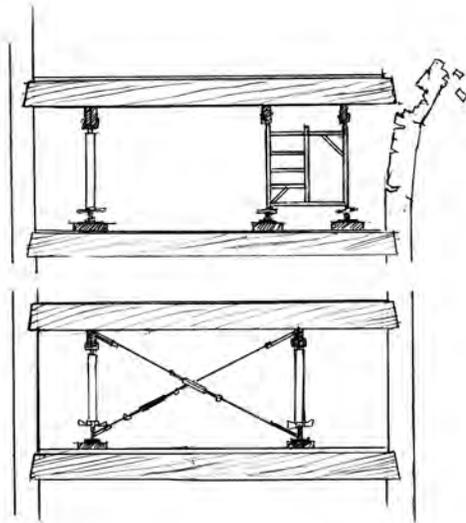
## 29. Bracing

It is critical that joists throughout the building be examined for structural soundness, particularly soundness of their bearing points in the masonry pockets. Some plaster ceiling areas may need to be removed to check a representation of joist ends. Water damage will be more obvious in the floor's center. Where there is floor rot, lay down a path of 2' x 8' plywood sheets for safety.

A building that is structurally unsound may not be appropriate for deconstruction, unless the materials are sufficiently valuable to pay for the additional cost of bracing. Lateral bracing can be built in two rows about 3' from the party walls.



Use 16' 4' x 4's on molly columns set about every 10'. Tie 4x4's together by sistering 4' 2x4's to their sides at joints. Use double head 16d nails. Set molly columns on 2' x 6' plates spanning many joists.



If the building is end-of-row it runs the risk of lateral collapses. To avoid this, one of the rows can be replaced with a row of staging to support the floor above, even if the side-wall collapses, or two rows of molly columns diagonally braced.

## 30. Optional Use of Heavy Machinery

In 2010 a deconstruction demonstration project was implemented in the Barclay neighborhood of Baltimore. The project provided training for nine trades-people in the deconstruction craft. One of its focuses was to demonstrate how heavy machinery can be used as part of the deconstruction project. The major piece of machinery used in this project was an extended boom forklift. Its initial use was as a crane. A chainsaw was used to cut the roof, including underlayment and membrane into approx. 12'x12' sections. The sections were chained to the forklift and lowered to the ground. Once on the ground, they were disassembled. An option would be to remove the membrane from the roof, push it over the edge, then bundle the sheathing boards and lower them to the ground.

The forklift was then fitted with a plywood box into which bricks were thrown as they were taken down floor by floor. These were driven to an adjacent empty lot and dumped for recycling or resale. Toward the end of the process, the forklift was used to push the remaining brick wall into the basement. This required the use of a Bobcat to clean out the basement.



This project deconstructed a single unit in a row of houses that were to be demolished. Maneuvering the forklift in this confined space was difficult. A small telescoping crane would have been easier to manipulate and less expensive. It also would have permitted a worker to work out of a bucket.

The forklift was useful in moving palletized materials, but that work could have been done with a simple pump forklift. It is probable that a machine like a forklift would be more efficient where many buildings are being deconstructed simultaneously.

## 31. Roof

A water-damaged roof stands a chance of collapse. If there is rot in the structure, always work off of sheets of plywood. Use safety harnesses while working along the front and back edges of the roof.

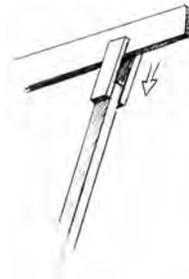
Remove the chimney to the roofline.

Use a serrated roofer's shovel to remove the roof membrane. Separate metal flashing, gutters, and downspout into metal bins. If adjacent houses are occupied, it is critical to temporarily flash the top of the party walls. Permanent flashing will be installed with the new bracing walls.

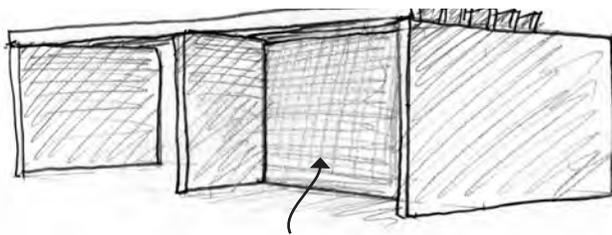
Removal of roof rafters and ceiling joists is best done from below from a Baker Scaffold or other secure platform. Doing structural work from an A-frame ladder on a deconstruction site is extremely dangerous and should be avoided.

## 32. Partition Walls And Joist

Using a small chainsaw to cut away joists that are secure in the pocket is an effective but dangerous method. As the cut is finished, there is a danger the weight of the joist will bind the chainsaw. To avoid this, have a person on the deck brace the joist and lower it to the deck once the cut is through.



Partition walls are easiest to disassemble once the deck above them is removed. Use a reciprocating saw to separate it from adjacent walls. Using a rope or brace, slowly lower the entire wall to the floor and remove the bottom and top plates with a sledgehammer.



**A wall running parallel to joists between bearing walls is a partition wall**

Partition walls can also be disassembled vertically by slipping a crowbar under the bottom of each stud, prying it over, then pulling it down to release it from the top plate. Be sure the top plate is secured so it does not fall with the last stud removed.

### **33. Foundation Deconstruction and Prep**

It may be more cost-effective to subcontract with a demolition company for the removal of slabs and basement foundations. However, certain situations, such as limited access for large machinery or building removal in environmentally sensitive areas, might require that the deconstruction crew remove the foundation.

Break up slabs using jackhammers and digging bars. A gas-powered conveyer belt can be used to carry the rubble to the recycling container. If the slab is in a sub-grade basement, it should be broken and removed before the foundation walls are taken down in order to avoid the risk of a cave-in. If it appears that the foundation walls are bowing inward, determine whether or not the first floor joists are bracing them. If so, keep the first floor joist in place. If there is pressure on basement walls, brace them before removing the slab. If a basement slab is to be left, and filled above it, it should have holes punched at frequent intervals for drainage.

### **34. Party Wall Finish**

Building buttressed masonry reinforcing walls should be done by a masonry sub contractor. These walls are built on a reinforced monolithic footing. The new wall needs to be frequently tied to the existing party wall, and it needs to be well sealed across the top. This seal would combine metal flashing and a flexible membrane.

### **35. Site Reclamation and Landscaping**

Although subcontractors can do site reclamation and landscaping, it presents expanding training and employment opportunities for a deconstruction company.

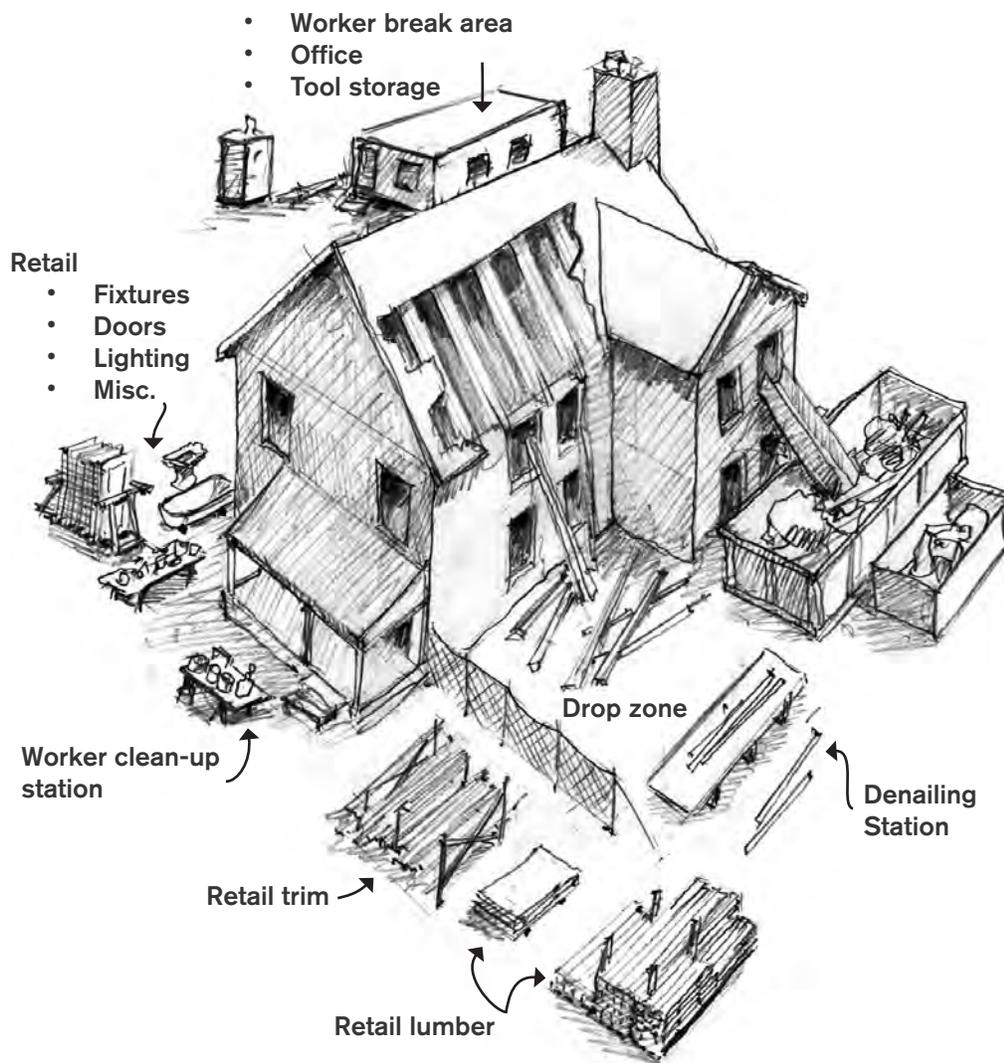
Strict requirements regulate both the content of backfill as well as the density. This is determined by the projected reuse of the lot.

# FRAME HOUSES

## 36. Structural Deconstruction - Frame Houses

Following are elements unique to the structural deconstruction of frame buildings.

Frame houses having front, back, and side yards make deconstruction far easier. The material drop zone, denailing station, and roll-off unit placement may change as the house is worked on from various sides. If there is room, set up a tool supply and worker break area at the edge of the property. Temporary fencing is useful in separating neighboring properties.



## **37. Partition Walls**

Where weather makes working difficult (i.e. cold or rain), the roof may be left on until all interior deconstructural work is completed including flooring and wall finishes. If weather permits, removing the roof first allows access to light and ventilation, as well as making the disassembly of partition walls easier. One reason to take out partition walls before removing the roof and joists above them is to remove the flooring if it runs under these partitions.

It may be easier to work with partition walls out of the way. Confusing a partition wall with a load-bearing wall can be fatal. If in doubt, assume the wall is bearing and do not remove it before the roof and joists above.

An easy way to remove partition wall studs while the joists are in place, and minimize the damage to ends of studs, is to jam a four-foot pry bar with a sharpened foot under the stud, then lift the stud and pry it to one side. The nails will usually bend and pull out. Tie the top plate of the partition wall to the ceiling joists before removing the studs, then lower the top plate and pry up the base plate.

Ceiling joists are sometimes designed to hold up only the ceiling, not people, and are kept structurally sound by partition walls. It may therefore be prudent to leave top floor partition walls in place unless it's clear the joists will hold workers' weight without the partitions.

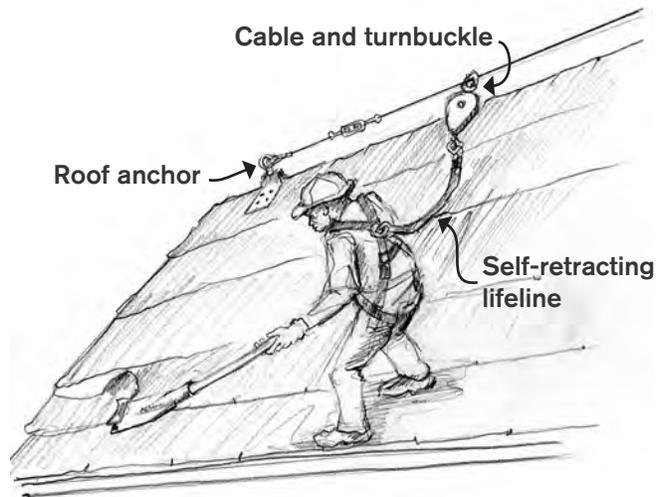
## **38. Chimney**

Before removing the decking or sheathing around a chimney, take the chimney down to the roofline. A chimney that is in good shape above the roofline may be severely degraded at or directly below the roofline. It may be supported by the roof structure and in danger of collapsing. Take it down in sections as each floor is deconstructed.

Carefully remove the bricks from the chimney and drop them to the floor below. Be careful not to break the bricks when dropping and transporting them. Some bricks are hard enough to sustain a fall while others may need to be lowered in buckets.

## 39. Roof

Start work by running a cable along the roof ridge to attach safety harnesses. Maintaining spring-loaded or correctly sized lanyards is critical.



Removing sheathing or decking from a steeply pitched roof is best done with a person on the roof secured to a retractable life line on the roof, and a couple of workers inside on a scaffold. The workers below can hammer or pry up the sheathing or decking.

Removed shingles with a flat serrated roofing shovel. To the degree possible, set up dumpsters so the shingles are funneled directly into them.

1" x 4" or wider board-sheathing is usually worth saving and can be pried right up from the rafters. 4" x 8" sheathing, particularly strand board, is rarely worth saving. It may be easier to pry the sheathing up from below.

It is critical that you check the roof's diagonal stability, and brace it if necessary, before removing the roof sheathing or decking from a gable-end roof; particularly a gable-end roof made of trusses. Although rafters are usually held together by a tie beam, trusses, in most cases, are not. In some instances, the roof sheathing or decking may be stabilizing the roof. The entire roof structure, including the gable end, can collapse as the last row of sheathing is removed. To prevent the trusses from collapsing, connect the top of the trusses together after removing the first row of sheathing and diagonally brace them to the gable ends.

Before rafters are removed, brace gable ends using a combination of diagonal brace; preventing the gable ends from falling in; and a rope or cable, preventing the gable end from falling out.

Cutting the rafters at the bird's mouth (the notch cut for them to sit on the top plate) then prying them away from the ridge beam saves denailing.

Dropping the rafters down on their ends does the least damage. Be sure this drop zone is roped off.

## **40. Exterior Siding**

Where exterior siding is nailed to sheathing, use a flat pry bar with a block of wood between the pry bar and the exterior building surface to carefully pull up trim boards at the nailing points. Remove nails by pulling them through the back. Edge nailed siding can be removed similar to tongue-and-groove flooring by several workers simultaneously pulling it away from the sheathing.

Where there is no sheathing, siding can be pried away from the studs from the inside of the building. Where the sheathing is stained or covered with a thin coat of paint, it can sometimes be bumped out from the inside, about an inch, and then bumped back in from the outside, revealing the nail head that can then be pulled directly out from the face.

Most exterior trim and siding is coated in lead-based paint. Use care not to generate dust when removing these materials. Avoid using power tools. Assume, even with caution, that some dust will be generated. Workers should wear N100 respirators. Protect the ground with 6 mil poly.

Asbestos shingles are also a possible siding. Shingles may not be friable (subject to become airborne dust). In this case it may not be necessary to use an asbestos contractor. Buildings might have layers of siding hiding asbestos shingles.

Once the exterior finish removal is completed, remove sheathing by prying or hammering it loose from the inside. Make sure exterior walls are diagonally braced before removing exterior sheathing.

## **41. Framing**

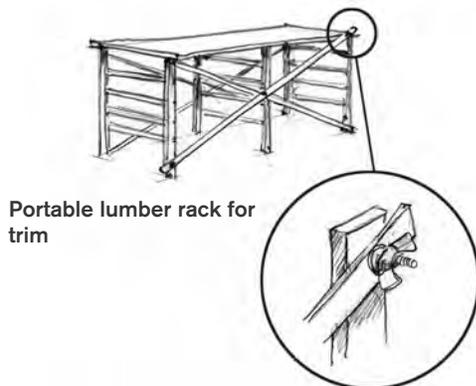
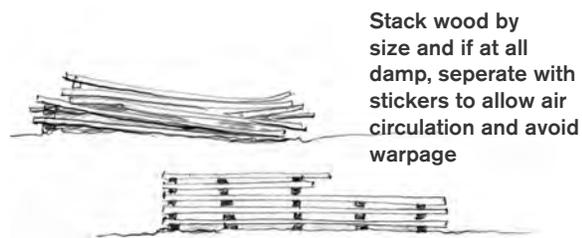
Framed walls can most easily be deconstructed laying flat. Separate framing at corners using a reciprocating saw, and cut into manageable lengths. Large walls can be lowered with complete control using a combination of a rope tied to the top plate and a forked poll against the top plate on the opposite side. Once on the ground, the members of the wall can be separated with a sledgehammer.

## 42. Material Sales

Deconstruction saves valuable historic material that can be used both for the restoration of existing historic houses and enrichment of new houses.

The collection and accumulation of deconstructed material creates a critical mass sufficient to open up material reuse stores. These stores provide a place where companies can gain tax breaks by selling slightly damaged, overstock, and out of catalog materials. These materials can in turn be made available at extremely low cost to low income home renovators and builders.

Frame houses having front, back, and side yards make deconstruction far easier. The value of materials collected is usually marginal, and moving them even once can make sales unprofitable. Having this room allows for material sales on-site. Ideally, material will be sold before the deconstruction so that it gets picked from the site.



Portable lumber rack for trim

Preparation for material sales provides valuable training including:

- Cleaning, repairing, and rewiring electronic fixtures
- Reassembling valuable case goods
- Restoring and refinishing a sample panel door, cabinet, mantel, etc.
- Deconstructing an entire double hung window including the counterweight system for reuse in another house
- Learning to identify woods and learn their different value (i.e., pine from cedar, oak from walnut, etc.)
- Cleaning, trimming, and bundling flooring and lumber so that linear feet are easily measured

Stacking and banding boards on the bed of a flatbed truck eliminates the need for a forklift on-site. Ideally, materials are sold directly off-site avoiding the cost of moving and storing. Whether they are sold on-site or off-site, training can include marketing, inventory, and sales.

# **Instructor Suggestions and Resources**

## **Contents**

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## Instructor Suggestions

There are many ways to structure this training, but at a minimum it requires substantial on-the-job opportunities both during introductory training and post-training field experience.

The training can be customized for participants who are just entering the trades as well as trades people who wish to acquire a new skill. The manual encourages that the majority of each day is spent in hands-on exercises, in all phases of this training. Much of the basic training can be done in a shop environment but it is critical that on-site instruction is integrated.

There have been several good deconstruction documents published over the last decade that focus on frame buildings (listed in the appendix). While this manual includes frame building deconstruction, its emphasis is on urban masonry row-houses. Although experienced trades people require far less time reviewing fundamental skills, issues such as circular saw safety, and ladder and scaffold safety are mandatory. It is hoped this manual will be a work-in-progress that continues to be edited and enhanced based on the experience of its users. Instructors using this book are encouraged to develop his or her own methods of demonstrating information and to add them to the manual.

Because a deconstruction site demands effective cooperation among the crew it is advised that even entry-level people have had some successful work history.

With the exception of buildings containing very valuable materials, most deconstruction is financially marginal and therefore requires subsidies to support the training and preparation of entry-level people.

Each training will be unique in its budget, timeline, and resources. Following is a description of a basic course with some options:

Due to the substantial investment of minimum requirements to put trainees on a deconstruction site, or any job that involves lead paint, it is highly recommended that the program establish a probationary period of time, usually one to two weeks, to evaluate and screen potential trainees. This probationary time could include work done with neighborhood cleanups, landscaping, house painting, etc.

Trainees would also be given some basic academic assignments during this two-week period.

A sixth-grade reading and writing comprehension level might be a minimum requirement. Trainees would also be given homework assignments during this time to determine both their capacity and commitment to the program.

As there will be a substantial investment of minimum requirements to put a trainee on a deconstruction site, or any job that involves lead paint, it's recommended that there be a period of time, between one and two weeks, that allow the program to evaluate and screen potential trainees. This could include neighborhood cleanup, landscaping, painting a house, etc.

During this two-week period trainees would also be given some basic academic assignments. A sixth-grade reading and writing comprehension level might be a minimum requirement. Trainees would also be given homework assignments during this time to determine both their capacity and commitment to the program.

## **Trainee Prerequisites**

### Health

- A pulmonary test, which is required for being fitted with a respirator
- A baseline blood-lead test followed by a six-month, then annual, test (Any on-the-job increase or reading of over 10 micrograms per deciliter [ $\mu\text{g}/\text{dl}$ ] should be of concern)
- Simple eye exam to determine the need for glasses
- Overall health exam
- A strong recommendation against smoking, as it will not be allowed on a deconstruction site and greatly raises cancer risks from most environmental exposures
- Drug testing - optional (There are arguments for and against drug testing. Optionally, instructors may include testing upon entry into the program or withholding testing until there is a suspicion of drug use. In a construction setting, drug use by an individual can compromise the safety of all workers on-site.)

Trainees who show up on time, show strong work ethic and a capacity to cooperate, and have basic academic skills and minimum health requirements would be screened into the second phase of the training.

The second phase would focus on certification, acquiring basic carpentry skills, and safety work protocols. It is recommended that projects be both designed for both individuals as well as teams of two or three.

Once the class composition is established, participants would attend a series of certifications:

- EPA's Lead Renovation, Repair and Painting (RRP) certification
- Lead Abatement Worker Certification training in Maryland:
- A First Aid Course

- The 10-hour OSHA safety course
- Respirator Fit testing (this is a field trip.)

And this time some of the trainees in each class may also go through a Lead Abatement Supervisors course.

Some suggested projects include building sawhorses, scale model trash chutes, a de-nailing station workbench, and a scale model stud wall.

To the degree possible, content of this manual should be taught by active demonstration as opposed to traditional lecture format. For example: have each trainee build two short walls that are perpendicular to each other, are plumb, contain parallel studs, and are braced at 45°.

When discussing the parts of a double-hung window, label an actual window with sticky pads. (Assistance can be offered with pictures; such as a picture of a stool for the window stool, a case of beer for the casing, someone's head for the head jamb, etc.).

Square feet can be demonstrated by laying out part of a room in grid-lines and counting them, then multiplying to get the same number.

Classroom teaching might be restricted to about an hour a couple of times a day interspersed with hands-on activities.

Begin each lesson with a "what do you already know" survey. Based on this, the lesson plan can be specifically designed so that those already familiar with the material can tutor those who are less experienced.

Also begin each day reviewing basic skills, such as reading a tape measure, until everyone is well versed. Trainees could receive a loose-leaf notebook, which can include:

- A daily work log
- Program rules and regulations
- This manual
- An inventory form listing all personal protective equipment and personal tools as they receive them (have trainees write or inscribe their name on every item)
- A check list of completions for each exercise
- A log of test results

The loose-leaf book could be reviewed by the instructor on a weekly basis.

## **Trainee Supplies**

Each program will have different resources. If possible the program will supply trainees with:

### **Protective Clothing**

- Work shoes, pants, and shirts (T-shirts with program logos are desirable)
- Personal protective equipment
- At a minimum, trainees must be supplied with brimmed caps, safety glasses, N100 respirators, hard hats, and protective disposable suits

### **Personal Tools**

- A tool bag for tools, note book, and personal protective equipment
- A tool pouch (this is critical on a construction site to avoid tool loss and lost time looking for hand tools)
- 16 oz rip hammer
- Flat and Philips head screw driver
- Carpenter's pencil
- 16' tape
- Retractable utility knife
- 8" front-end nippers

### **Laborer's Two-Week Training**

If resources allow, sending the class to the two-week Laborers' Training is very valuable. Although the course focuses on commercial construction, most information is useful in a residential project. The training substantially enhances people's employment opportunities, particularly for union jobs. It includes:

- Safety program (OSHA requirements, injury-reporting procedure, stop work order, and weekly safety meeting)
- Electric and fire safety (lock-out, tag-out, flammable material handling, and electrical grounding and cord safety)
- Confined space training including ventilation requirements
- Hazardous substance communication – reading MSDS (material safety data sheets), hazard identification, corrosives, toxins, carcinogens
- Ladder and scaffold erection and safety
- Fall arrest system

- Oxy-acetylene (procedures, tank and torch maintenance, and safety)
- Tool safety and maintenance
- Material handling (lifting, moving, rigging)
- Break area (potable water, toilets, clean-up area, heat, light, shelter, ventilation and personal storage)
- CPR and first aid

# Permitting Process for Buildings in Baltimore City

## Background

This description of the permitting process in Baltimore City is based upon the experience of pulling permits in June 2010 to deconstruct 2104 N. Calvert St., a three story mid-block brick row house owned by the Housing Authority of Baltimore City. This description brings together Baltimore City, State of Maryland, and Federal regulations that are relevant to razing a single residential dwelling. The description is believed to be accurate and thorough for this type of building but caution should be used if a different type of building structure is to be razed.

Between the time that 2104 N. Calvert St. was deconstructed in June 2010 and this documentation was written in February 2011, Baltimore City changed some requirements, modified some forms and moved some offices. The documentation reflects procedures in place as of this writing but the reader is cautioned that additional changes may be made at any time. It is the responsibility of the party seeking permits to follow the procedures and use the forms that are currently in place.

If you are deconstructing a building in a jurisdiction other than Baltimore City you will need to find out the procedures for that jurisdiction. Even though the procedures will be different, you may find it helpful to review the issues that Baltimore City's procedures address. They can be a guideline for exploring what you must consider in your jurisdiction to receive the necessary permits for deconstructing a building.

## Terminology

This manual is about deconstruction. This appendix is about how to get the necessary permits for deconstruction in Baltimore City. But, in Baltimore City there are no deconstruction permits, per se. When you walk in to the One-Stop Center to begin the permitting process you need to tell them that you are razing a building, not deconstructing a building. And, in a somewhat confusing twist on the terminology that is used, the license that the contractor who razes the building (and for whom you are getting a razing permit) must have is a demolition license, not a razing license. The demolition license is what is required for deconstruction; there is not a separate deconstruction license.

## Scope

This documentation is primarily about getting a deconstruction-I mean a razing-permit. However, there will be additional permits that you will need along the way. The row house at 2104 N. Calvert St. adjoined the public sidewalk. We needed a permit to put up temporary fencing along the sidewalk. If we needed to use Jersey Walls in the street, we would have needed a permit for that. If we needed to disconnect the water utilities we would have needed a permit for that. (There are

actually two different water utility permits depending on whether the disconnection will be on private property or on public property.) If electrical utilities need to be moved, temporarily or permanently, you need a permit. Depending upon where you place a dumpster or scaffolding (if you use it) you may need a permit.

This appendix provides as much detail as is possible about the permitting process but it cannot cover every situation. If you have a question about a specific requirement then ask a City employee. No one employee has every answer to every question but they can often steer you in the right direction.

## **Government Offices**

Primarily you will be dealing with Baltimore City offices. You will also need to get approval from the Maryland Department of the Environment (MDE) and perhaps from the Federal Environmental Protection Agency (EPA). Contact information for all these offices is given below.

### **Baltimore City Offices**

The offices are listed in the order in which you will probably visit them.

#### **One-Stop Center**

417 E. Fayette Street  
Room 100  
Baltimore, MD 21202  
410.396.3495

Application are accepted 8:30 am – 3:30 (not 4:30) PM Monday – Friday  
[www.baltimorehousing.org/permit\\_resources](http://www.baltimorehousing.org/permit_resources)

#### **Department of Finance Bureau of Liens**

200 N. Holliday St.  
Room 1  
Baltimore, MD 21202  
8:30 AM – 4:30 PM Monday – Friday  
410.396.3991

[www.baltimorecity.gov/Government/AgenciesDepartments/Finance/LiensFAQ.aspx](http://www.baltimorecity.gov/Government/AgenciesDepartments/Finance/LiensFAQ.aspx)

#### **Maps and Records Section**

200 N. Holliday St.  
Room 6  
Baltimore, MD 21202  
8:30 AM – 4:30 PM Monday – Friday  
410.396.3643

### **Division of Utility Billing**

200 N. Holliday St.  
Room 404  
Baltimore, MD 21202  
8:30 AM – 4:30 PM Monday – Friday  
410.396.5533

### **Division of Utility Engineering**

200 N. Holliday St.  
Room 6  
Baltimore, MD 21202  
8:30 AM – 4:30 PM Monday – Friday  
410.396.3694

### **Bureau of Transportation**

200 N. Holliday St.  
1<sup>st</sup> Floor, Counter 4  
Baltimore, MD 21202  
8:30 AM – 4:30 PM Monday – Friday  
Voice – 410.396.4508  
Fax – 410.396.3350

## **State of Maryland**

### **Maryland Department of the Environment**

Air and Radiation Management Administration / Asbestos Division  
1800 Washington Blvd. Suite 725  
Baltimore, MD 21230-1720  
410.537.3200  
1.800.633.6101  
[www.mde.state.md.us](http://www.mde.state.md.us)

## **Federal Government**

### **Environmental Protection Agency**

EPA Region 3 Regional Office  
1650 Arch Street  
Philadelphia, PA 19103-2029  
800-438-2474  
[www.epa.gov/region3/contact.htm](http://www.epa.gov/region3/contact.htm)

## Pre-Application Activities

To deconstruct a building in Baltimore City you will need, at a minimum, a Razing Permit. To get this go to the One-Stop Center and pick up a Razing Application Packet. However, if you have done the following before you begin the application process it will go more smoothly.

1. Have the name and license number of your contractor. The contractor must be licensed in Baltimore City to do demolition. The license number you need is the Baltimore City Demolition License number.
2. Verify with the Department of Finance Bureau of Liens that there are no outstanding liens on the property. The Bureau's guidelines state that it takes seven days between the time that you submit an Application for Lien Certificate and you receive the certificate. See Exhibit 1 for an example of the application form. The guidelines also state that the Bureau does not have a "Rush" service. However, depending on the workload, sometimes it takes less than seven days. This step with the Bureau of Liens is really critical. In the application process, approvals are needed from many offices but no office will look at the application until the Bureau of Liens has signed off. More information about liens is in Step 6 of the Applying for a Permit section.
3. Purchase a map of the block on which the building you are deconstructing is located. You need to produce a site plan (plot) for the Razing or Moving of Buildings Application form. You may also need to have a site plan for other application forms that you file. The easiest way to get the information you need to draw the plans is to get a map from the Maps and Records Section. Here is what you do:
  - Call or stop by the Maps and Records Section and give them the address of the property for which you need a map.
  - Request the type of map that you want. There are two types. A block plot gives roads, property lines and dimensions but does not show where buildings are on the properties. A block plot is \$15. A planimetric map shows roads, right-of-ways, property lines, dimensions and structures. There are three prices for planimetric maps, depending upon when they were produced. Maps produced in 1980 are \$10. Maps produced in 2000 are \$15. Maps produced in 2008 are \$25. If the area around the building you are deconstructing has not changed since 1980 or 2000 you can save some money by purchasing one of the older maps; otherwise use a 2008 map.

- The Maps and Records Section generally has one-day service. If you call them in the morning they can have the map in the afternoon. When you go to pick up the map you will be given a bill. Pay the bill at the Cashier's Office on the first floor and then return to the Map Section with the receipt to receive the map.
4. If the property that you are deconstructing is owned by a City Agency then, independently of the application process, you may need to provide that Agency with verification that the contractor has a minimum of \$3,000,000 aggregate liability insurance. This is a minimum and it is possible that unique features of the specific job may require more. If so, you will be advised at some point by the City Agency. You may need to provide the Agency with a Certificate of Liability Insurance issued by an insurance company. An example is shown in Exhibit 2 . Note that the General Liability section shows an Aggregate Limit of \$2,000,000 and the Excess/Umbrella Liability section shows an Aggregate Limit of \$1,000,000. Together they combine for a limit of \$3,000,000. The Certificate must also have the following information for the Certificate Holder:

### **Mayor and City Council of Baltimore City**

417 E. Fayette St. Suite 100  
Baltimore, MD 21202  
Attention: Peggy White

## **Asbestos Issues**

Asbestos in buildings, or even the possibility of asbestos in buildings, is the cause of more pre-application activities. Note that if a structure was built in 1980 or earlier there is the presumption that the building contains asbestos.

Asbestos issues get their own heading rather than being buried with the rest of the pre-application activities because asbestos safety is important, complying with asbestos regulations can be time-consuming and if not done correctly can derail the entire project.

### **Applicable Regulations**

The regulations<sup>1</sup> for handling asbestos during demolition fall under the jurisdiction of the United States Environmental Protection Agency (EPA) and are enforced in Maryland by the Maryland Department of the Environment (MDE). Asbestos compliance is complex and this document cannot cover all of the regulations. Rather it provides some basic information so you

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1. See "Demolition Practices Under the Asbestos NESHAP". [www.epa.gov/region4/air/asbestos/demolish.htm](http://www.epa.gov/region4/air/asbestos/demolish.htm). In addition to describing the EPA regulations this document describes current demolition/deconstruction practices for various types of material

can talk knowledgeably with regulators and consultants as together you determine what steps you must take for your project to be compliant. As you talk with them, you may hear three acronyms – ACM (for asbestos containing materials), ACBM (for asbestos containing building materials) and RACM (for regulated asbestos containing materials).

The regulations answer two broad questions – what? And how? Regulations that answer the “what” are given in Asbestos NESHAP.<sup>2</sup> Regulations that answer the “how” are given in AHERA and ASHARA.<sup>3</sup>

NESHAP differentiates between friable (asbestos-containing material that is easily crumbled or pulverized) and non-friable asbestos-containing material. Friable material falls into the category of RACM and must be removed prior to demolition. Non-friable material is further classified into Category 1 and Category 2.

The handling of non-friable material depends upon its category. Category I material is defined as asbestos-containing resilient floor covering, asphalt roofing products, packings and gaskets, and mastic containing more than one percent asbestos. Category II material is defined as all remaining types of non-friable ACM containing more than one percent asbestos not included in Category I that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Nonfriable asbestos-cement products such as transite are an example of Category II material.

Category I materials which are not in poor condition and not friable prior to demolition do not have to be removed, except where demolition will be by intentional burning or where the ACM is to be cut into by a rotating blade. An example is using a circular saw to cut into a roof deck with built-up tar/asphalt that has ACM. This process makes the ACM friable and thus it becomes RACM.

Category II materials that have a high probability of being crumbled, pulverized, or reduced to powder as part of demolition must be removed before demolition begins.

It is not your job to know if a material is ACM, RACM, non-friable, friable, or is a Category 1 or Category 2 material. The only way to determine if a material contains asbestos is for tests to be performed by a licensed

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2. NESHAP stands for the National Emissions Standards for Hazardous Air Pollutants which cover 190 hazardous air pollutants. The standards specific to asbestos are called Asbestos NESHAP

3. Asbestos Hazard Emergency Response Act (AHERA) was signed into law as Title II of the Toxic Substance Control Act (TSCA) in 1986. Asbestos School Hazard Abatement Reauthorization Act (ASHARA), passed in 1990, required accreditation of personnel working on asbestos activities in schools, and public and commercial buildings in 1990.

laboratory. Gathering the samples to be submitted to the laboratory is the responsibility of an accredited asbestos inspector. Once material has been identified as needing to be removed, the proper removal and disposition of the material is the responsibility of a licensed asbestos abatement contractor.

Though you must rely on others to evaluate and remediate ACM it can be helpful to have some knowledge of what to look for when you first evaluate a building as a possible candidate for deconstruction. If there is a high probability that a building has a lot of ACM, which will be expensive to remove, you may want to consider not deconstructing it. Exhibit 3 has two pages from a document published by the EPA<sup>4</sup> that lists asbestos-containing materials found in buildings.

One other thing to be aware of is that the EPA regulations state that it is the responsibility of the building owner, not the contractor, to remediate asbestos. Additionally, it is possible that asbestos remediation will be required for deconstruction but not for demolition. (For example, if you are demolishing a roof you will not be using a rotating blade to cut into it; however, you might use a rotating blade if you are deconstructing it.) Therefore, as you are determining whether it will be cost-effective to deconstruct a building you will need to consider the impact of asbestos remediation.

Since it is the property owner's responsibility to pay for asbestos evaluation and remediation, the owner will be the one who will handle the necessary contracts. However, you may wish to be involved with the process because during deconstruction it is the contractor's responsibility to make sure that **his** workers are not exposed to asbestos in the course of the job. And it is your job site that can be shut down if OSHA finds there are compliance problems. Therefore, you will want the asbestos evaluation and remediation to be done properly.

### **Regulated vs. Non-Regulated Buildings**

According to NESHAP a building is considered to be a regulated building if the amount of ACM is greater than 260 lineal feet, 160 square feet, or 35 cubic feet. If a regulated building is being deconstructed, then the MDE must be notified at least ten working days before remediation begins. If a non-regulated building is being deconstructed then MDE must be notified at least ten working days before deconstruction begins. (See the 10-Day Notification Rule section below.)

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4. This information is from "Guidance for Controlling Asbestos-Containing Materials in Buildings" (Purple Book), appendix A, Page A-1; EPA 560/5-85-024 and is available at [http://wbdg.org/ccb/EPA/epa\\_560585024.pdf](http://wbdg.org/ccb/EPA/epa_560585024.pdf)

If two or more residential units are being deconstructed as part of a redevelopment project then the buildings are considered to be regulated buildings.

### **The Asbestos Remediation Process**

The first step in the process is to have the building evaluated by an accredited inspector who typically is an Industrial Hygienist (IH)<sup>5</sup>. The inspector will take representative samples of material that, in his or her judgment, might be ACM. But, the inspector will not take a sample from, for example, every floor tile. If a floor tile has the characteristics associated with ACM and the same tile is used throughout the building one or two samples of tile may be sufficient.

Those samples will then be sent to a certified laboratory for evaluation.<sup>6</sup> You will then receive a report similar to that shown in Exhibit 4. If the report indicates that there is ACM then that material must be remediated by a licensed asbestos contractor.<sup>7</sup>

Though the owner will contract for any remediation to be performed you may want to make sure that the contractor has a good history of performing quality work. MDE keeps a history of contractors and you can check with them about any fines or citations levied against a potential contractor.<sup>8</sup>

### **10-Day Notification Rule**

If the report indicates the need to remediate asbestos then the MDE must

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5. Often an Industrial Hygienist is on the staff of a licensed asbestos abatement contractor. MDE does not license IHs but does maintain a list of IHs who work in Maryland. The list is available at this URL. <http://www.mde.state.md.us/programs/Marylander/PublicHealthHome/Documents/www.mde.state.md.us/assets/document/Air/Consultant.pdf>

6. Two different methods are used for evaluating samples to determine if they are ACM: polarized light microscopy (PLM) and transmission electron microscopy (TEM). A list of certified PLM laboratories is here, <http://ts.nist.gov/Standards/scopes/plmtm.htm> and a list of certified TEM laboratories is here, <http://ts.nist.gov/Standards/scopes/temtm.htm>. You probably will not be concerned about the testing laboratory, that is the responsibility of the IH who is doing the asbestos inspection, but the hyperlinks are included for completeness sake.

7. The Maryland Department of the Environment's website provides this link to licensed contractors: <http://www.mde.state.md.us/programs/Air/Asbestos/AsbestosandIndustrialHygieneHome/Pages/Programs/AirPrograms/asbestos/home/index.aspx>. This just gets you to a page that has another frequently changed link to a PDF. The link is in the body of the text and is called Asbestos abatement contractors. Rather than trying to key in all of that it is just much simpler to Google MDE asbestos removal contractors. The top hit should give you a link to the PDF.

8. For information contact Asbestos Licensing & Enforcement Section, Timothy O'Hare, Sanitarian (410) 537-3805 [tohare@mde.state.md.us](mailto:tohare@mde.state.md.us)

be notified ten days (exclude weekends and legal holidays in determining the 10-day period) before activity begins<sup>9</sup>. This is to give the MDE time to inspect the building. The Razing Permit packet from the One-Stop Center contains the necessary form for notifying MDE. (see [Exhibit 5](#).) Since the MDE acts as an agent for the EPA no additional notification to the EPA should be needed.

### **3-Day Notification Rule**

In addition to notifying the MDE you must also notify the public before the actual asbestos remediation project begins by posting a sign at the project site at least 3 days prior to the beginning of the project. If questions arise as a result of the posting, let people know that what you are doing is required by Federal and State laws and that it is being done by a licensed asbestos abatement contractor.

### **Implications for the Deconstruction Contractor**

When you get the report from the inspector, no matter what the results are, keep the report. Make copies of that report. Store a copy in a safe place. Do whatever you can to make sure you never lose it. When you deconstruct the building you are going to be making decisions based on that report and these decisions can have legal consequences for you. As a contractor, OSHA holds you responsible for maintaining a safe environment for your workers. If OSHA<sup>10</sup> visits your job site they may ask for a copy of the report. If in the process of deconstructing you uncover some material that the report indicates was not tested, and which could be ACM, you must have the material tested before disturbing it. For example, the accredited asbestos inspector may have sampled only the first layer of flooring but after you take that layer off you discover that underneath it there are 9" X 9" floor tiles that appear to have been laid pre-1970. These have a high probability of being ACM and need to be tested before they are removed. Document what you do with respect to asbestos and keep your documentation with the inspection report in the event that there are questions in the future.

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9. See Code of Federal Regulations Title 40 Protection of the Environment Part 61 National Emission Standards for Hazardous Air Pollutants (CFR 40-61)

10. If there is an issue, someone from Maryland Occupational Safety and Health (MOSH), which is an agent of OSHA, will do the on-site inspection.

## Applying for a Permit

Rome was not built in a day. Getting a permit to raze a building won't happen in a day either. It is best to allow three to six weeks from start to finish, though gratefully, you will not be sitting in City offices the entire time. Some of the time you can sit in your own office and wait for things to get done. Here is what you do.

If you have not already done so as part of the Pre-Application Activities recommended in a prior section, go to the Information Desk at the Baltimore City One-Stop Center and tell them you want to apply for a permit to raze a building. You will be told to push a button – the “D” button (“D” for razing, I mean demolition) to get a ticket to talk with a clerk. Make sure you get a D-numbered ticket. Otherwise you may get a clerk who can't help you and you will start your waiting over again. There is a room full of chairs to sit in while you wait for your D-number to be called so get comfortable and relax; you'll get called when you get called.

When you talk with a permit application processor, he or she will determine which one of two different application packets you will need. One packet is for razing a single-family structure under 5,000 square feet; the other is for razing a commercial structure (or a very large single-family structure). The only difference between the two packets is that the commercial packet includes an affidavit concerning the disposition of recyclable debris. Details of this are given in Step 4 below.

You need a separate packet for each address at which you are deconstructing a building even if they are adjacent. If, however, you are deconstructing a series of buildings as part of a large project for a City Agency, you may be able to get the City to consolidate the properties into one property for purposes of the application. This cannot be done at the One-Stop Center but they should be able to tell you who to talk to<sup>11</sup>.

The first page of both packets is titled Razing (Demolition) Application Guidelines. See Exhibit 6. This gives a one-page summary of some of the information that is in this Appendix. The second page (see Exhibit 7) is a yellow Razing or Moving of Buildings Application form. You must use an original yellow form - copies are not acceptable. After you have completed some fields in the form you will be spending a lot of time carrying this form around to other offices to get approvals. Don't lose it, don't spill coffee on it, and don't let the dog chew it.

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11. There is an advantage and a disadvantage to consolidating properties into one property for the process of getting a permit. The advantage is less paperwork. The disadvantage is that you lose flexibility. If, for example, you are planning to deconstruct four buildings and consolidate this into one application you must pay the permit fee based on all four buildings. If, at a later time, you find that you cannot do all of the buildings you will still have paid a permit fee for all of them.

5. Complete the “Razing or Moving of Buildings Application” form. Since the City does not provide any written documentation concerning the completion of the fields, instructions are given below. The fields on this form that must be completed are marked with an X in Exhibit 7.
- Location – This is the complete street address with zip code
  - Date – The date you are completing the application
  - Raze/Move – Enter “Raze”.
  - Building/Structure – Enter “Building” unless this is a shed or garage in which case enter “Structure”
  - Method of Razing or Moving – Enter “Deconstruction”
  - Method of Protecting Public – Enter “Fencing”. The area around the building being deconstructed must be fenced in. If the building abuts public space such as a sidewalk, a footpath, an alleyway and/or a street the fencing will need to go into the public space and you need a separate permit for this. See Step 9 below.
  - Owner of Building – This must be the owner of record as listed in the database maintained by Maryland Department of Assessments and Taxation. The on-line database is called SDAT (for State Department of Assessments & Taxation) and can be found at [http://sdatcert3.resiusa.org/rp\\_rewrite/](http://sdatcert3.resiusa.org/rp_rewrite/)
  - Address of the building’s owner – This address must be different than the address of the building itself. After all you can only get a permit to raze an unoccupied building.
  - Contractor and License Number– For anything other than a property owner razing a shed or a garage on his own property you must have a contractor who has a demolition license with Baltimore City. Though you do not need to provide a copy of the license with the application you should ask the contractor for a copy and make sure it is current. Licenses must be renewed each year. As part of the application process Baltimore City will confirm in their database that the contractor you have listed has a current permit. If the contractor does not have a current permit the application could be delayed.
  - Size of Building: Stories – This is the number of stories above ground level (i.e. it does not include the basement.)
  - Length, Width, Height of Building – Provide the dimensions in whole feet (i.e. do not include fractions of a foot.) Note that the total cubic feet of the building is one factor that is used to calculate the cost of the permit. (The other factor is the number of dwelling units – see the #

Dwelling Units bullet below.)

- Type of Construction – Enter type such as brick or frame.
- Building Last Used for – Enter the last known use.
- # Buildings – Enter the number of buildings. Since a separate application is required for each address this will generally be one. One exception will be if there are outbuildings on the address (i.e. shed, garage) that are being cleared in which case the total of all buildings must be entered. The other exception will be if the City has agreed to consolidate buildings into one address for the purposes of the permit.
- # Dwelling Units – This is the total number of legally subdivided dwelling units in the building. Note that the number of dwelling units is one factor that is used to calculate the cost of the permit. (The other factor is the total cubic feet of the building – see the Length, Width, Height of Building bullet above.) There is one factor for buildings with one or two units; there is another factor for buildings with more than two units. (See the Total Fee bullet below.)
- Condition of Building – Indicate either “Standard” or Sub-standard”. Unless the building was very recently occupied the condition will probably be sub-standard. It could even be sub-standard if it was recently occupied.
- Estimated Cost of Work – Provide a good faith estimate of the costs directly associated with deconstruction. This cost is not used in calculating the application fee.
- Notification of Adjoining Property Owners
  - (His/Their) – Enter “Their”
  - (Raze/Move) – Enter “Raze”
  - (Building/Structure) – Enter “Building” unless this is a shed or garage in which case enter “Structure”. If a shed or garage is being cleared at the same time as a building, enter “Building”.
- {Front/Rear – Side} {North/East – Side} {South/West – Side} These directions refer to the adjacent buildings. For example, if a building in mid-block faces north or south then it will have adjoining property owners to the north and south. You must provide the names of the owners and the mailing addresses. If a building is vacant you must send notification to the address listed in SDAT. (See the Owner of Building bullet above.)
- Signed – You must get the owner’s signature, current mailing address and telephone number. If the property is owned by the Housing

Authority of Baltimore City then the HABC Commissioner must sign the application. It can take several days to process the application through his office and nothing further can be done on the application until he has signed it.

6. Attach a Site Plan to the Application – If you followed the suggestion in the Pre-Application Fact Gathering section above you will have the information you need to create a Site Plan. If not, now is the time to go to the Map and Record Section and buy a map to use as the basis for creating your Plan. Exhibit 8 has an example of a plan and specific instructions of what the plan must show. Follow these instructions carefully and make sure you use a standard Engineer Scale.
7. Attach Recycling Debris Affidavit to the Application (if applicable) – Section 3303.23 of the Building, Fire and Related Codes of Baltimore City concerns the disposition of recyclable debris. It states that whenever recyclable debris to be cleared from a site exceeds 5 tons, at least 30% of that recyclable debris must be immediately transported to a licensed recycling firm for export out of the City. This requirement does not apply to 1-or 2-family dwellings if all material is disposed of at the City's Quarantine Landfill. For commercial buildings, not only must this code be followed, but the building owner or contractor must sign an affidavit (see Exhibit 9,) and have it notarized stating that this section of the code has been complied with.

Let's commend the City for mandating that material be recycled. But as someone who is deconstructing a building, you will have no problem meeting this requirement. When 2104 N. Calvert St was deconstructed, 95% of the material was diverted from the landfill.

8. Return to the One-Stop Center – It is not mandatory that you return to the One-Stop Center at this point but, depending upon your time-line, it may be a good idea. The primary reason for doing so is to get an Application Number. This number is placed in the upper-right corner of the form and is a number you must have to set up an appointment with a Building Inspector. See Step 11 for more about the Inspector appointment. Another reason to return to the Center is to have your Site Plan, which you prepared in Step 3, reviewed. You will want to find out sooner rather than later if there are any problems with your Site Plan.
9. Approval by Bureau of Liens –The Bureau of Liens must verify that there are no outstanding liens on the property before they will sign off on their section of the Razing or Moving of Buildings Application form. Here is what you do.

- Complete the Application for Lien Certificate. This can be done by completing a paper copy or an on-line application. The on-line application is available at <http://cityservices.baltimorecity.gov/lien/> and requests the same information as the paper copy. When submitting the application on-line, you must pay the fee on-line. The paper application contains instructions for completing the form. Completing the application was suggested as the second step of the Pre-Application Activities; a copy of the application is given in Exhibit 1.
  - Submit the Application with the fee. It can take up to seven days from the time that an application is received until a certificate is issued. There are no accommodations for rushing the process. The fee for a lien search is \$25.00; \$55.00 if you request a violation report as well.
  - Once you receive the certificate (Exhibit 10 shows one), if it has no outstanding liens, then the Bureau of Liens can sign off on the application. If it does show liens they must be satisfied and you must show the Bureau evidence of this before they can sign off on the application. Note that if the property is owned by one City agency it is possible that there can be liens on the property by another City agency. Do not assume that you will be able to quickly resolve a City lien issue even if you are deconstructing the property for the City.
  - Note that no other department will review your application until you first have a signature from the Bureau of Liens. Aren't you glad you followed the suggestion in the Pre-Application Fact Gathering section above and started this process early? But don't start it too early. A lien certificate is good for only 45 days.
10. Approval by Division of Utility Billing –Before you can raze a building, the water has to be turned off (we'll save the water gushers for Yosemite National Park) and any outstanding water bills have to be paid. Utility Billing handles this. Here is what you do.
- Go to the Application Section of the Division of Utility Billing office. If you turn left after getting off the elevator on the fourth floor you will see a big sign for the Application Section.
  - Tell them that you are there to get their sign off on a permit application for razing a building and they will give you an application form, see Exhibit 11. (Ah, so that is why they call it the Application Section.) Enter the address of the property and the water account number. If you don't have the account number they will look it up. Check whether you want the meter left or removed. Removing the meter is referred to as abandoning service. If water is turned off and the meter is left there is no charge. If

water is turned off and the meter is removed there is an abandonment fee; the amount is based on the size of the water service with a minimum fee of \$280. The form also gives you the option to have the water turned off or to not have it turned off. For a building being razed you must select to have the water turned off.

- Before you can get a signature on your Building Razing application form, all outstanding water bills (including the abandonment fee, if it is applicable) must be paid.

11. Approval by Division of Utility Engineering – In the previous step you had the water turned off and (possibly) paid a fee to have service abandoned. In this step Utility Engineering is verifying that the water service has been disconnected. Here is what you do.

- Bring your Building Razing Application form to Utility Engineering. They will use the address on this form to search their database for the status of the water service. If their database shows that the service has already been disconnected breath a (big) sigh of relief, get your form signed, and go on to the next step.
- If the database does not show that the service has been disconnected take a (very) deep breath and plug on. Just because the database does not show the service as being disconnected it does not mean it has not been disconnected. If you can present Utility Engineering with some evidence that the service has been disconnected they will sign off on your Building Razing Application form. Otherwise you will need to get a permit to have the service disconnected and hire a City-approved plumber to do the disconnection.
- There are two types of water utility disconnection: within the property (on-property disconnect) or outside the property (off-property disconnect). If new construction is planned for the site then the water can be disconnected on-property. If no new construction is planned then the water must be disconnected off-property, i.e. at the street.
- For on-property disconnection you need to get a permit from the One-Stop Center, the same place where you picked up the Razing Application packet. The permit application that you need is a multi-purpose application that has a line about 1/3 of the way down the first page for on-site utility contractor. To get the form you don't have to stand in line. The forms are located in the top bin (Bin 1) of a metal shelf to the left of the Information Desk. If you have a two-sided copier you can save yourself a trip by copying and using the form in Exhibit 12.

- For off-property disconnection you need to get a permit from the Bureau of Transportation Right-of-Way Section. Why, I hear you ask, is the Bureau of Transportation issuing a permit for the disconnection of a water meter? When a water meter is being disconnected off-property it is being disconnected either in an alley or in a street, thereby impeding traffic. This is a job for the Right-of-Way section. The same form is used for this permit as is used for getting a permit to put up a fence. The procedure for a fence is described in the next step. So just follow that procedure but check the Utility box on the form rather than the Fence box.

12. Approval by Bureau of Transportation Right-of-Way Section –When you get to this Section tell them that you are razing a building and need a permit to impede the public's right-of-way. They will give you a Temporary Use of a Right-of-Way form, like the one shown in Exhibit 13, on which you can specify exactly how you will be impeding the public. The form is straightforward except for the required sketch which is explained below.

Use the same map that you got in the Map and Records Section, the one used to create a Site Plan for the Building Razing permit. Now you are going to use it to create a Right-of-Way Site Plan. Fortunately, this one doesn't have to be as exact; it only needs to be a sketch. Exhibit 14 shows a map that was drawn for fencing that was erected to deconstruct 2104 N. Calvert St. The map shows the following:

- The position on the block of the building being deconstructed
- The distance between the building and the nearest street intersection
- The locations of the street, the alley and the sidewalks
- The location of the fencing

The fee for the permit is based on the lineal feet of sidewalk being impeded and the length of time that the fence will be erected. In the case of 2104 N. Calvert St., 88 feet of sidewalk was impeded. Though the fence extended an additional 70 feet north and then enclosed a space down to the alley, it did not impede foot traffic beyond 88 feet nor did it impede any vehicular traffic on the alley.

If this is the first time that you are preparing a Temporary Use of a Right-of-Way application, it is best to pick up the application at their office, explain what you are doing and get their instructions. Once you become good at this you can just fax them the application. However,

you should call them before you fax it so they know it is coming. You should allow two weeks to receive your permit.

13. Additional Application Processing – Once all of the above authorizations have been secured return to the One-Stop Center for additional processing of the application. First, the application will be reviewed and if an Application Number has not yet been assigned it will be entered into the upper right corner of the form. Next, the Center will determine if authorizations are needed from one or more of the entities listed below. The need for the first four authorizations is based upon the location of the building. The need for the fifth authorization is based upon the size of the area being razed. If the building is 5,000 sq ft or more you need approval of Sediment & Erosion Control, which requires completion of Baltimore City Sediment Control Agreement which is shown in Exhibit 15 ,.

- Commission for Historical and Architectural Preservation (CHAP)
- Department of Planning
- Baltimore Development Corporation
- Commercial Revitalization
- Sediment and Erosion Control

If authorizations are required from any of the above entities, you will be told which authorizations you need, what information you will need to provide to secure the authorizations and where you will need to go to get the authorization. Once the relevant entity(ies) has (have) reviewed and accepted your application they will approve their portion electronically. You will not get any signature on the Application form but when you return to the One Stop Center the Center will look up on the computer to confirm that authorization has been received.

14. Approval by Building Inspector – When you get an Application Number you will be given a copy of the Building Code Enforcement District Map like the one shown in Exhibit 16 ,. This shows the Districts, the name and telephone number for each inspector and the Quick Track System telephone number of 443.984.2776. Before you can begin deconstruction you must have an on-site meeting with the Inspector. To set up this meeting call the Quick Track System and follow the prompts to schedule an inspection using your Application Number.

At your meeting with the Inspector, you will describe to him your deconstruction plan and he may give you additional guidelines that you must follow. There is no space on the Razing Application for him to sign

off – his sign-off is handled electronically through the Quick Track System. You cannot be issued a Demolition Permit until you have met with him.

15. Notification to Adjoining Property Owners – You must send a letter to the adjoining property owners to let them know that you will be deconstructing the building adjoining their property. Exhibit 17 gives a sample letter. Before you send the letter make a copy to include with your Building Razing application.
16. Rodenticide – Razing a building disturbs the local fauna and in an urban environment, that usually means rats, sometimes very big rats. Neighbors have enough noise and dust to deal with from the razing without having rodents scampering onto their property. So, one of the things that the City requires you to do is to have a licensed pesticide applicator certify that all areas of the structure and its lot are free from rodent infestation. The Certification form and the relevant Baltimore City Codes are given in Exhibit 18. If treatment is required it must be done within 30 days of the issuance of the demolition permit.
17. Public Notice of Demolition – A notice must be posted at least five and not more than ten days before the scheduled beginning of deconstruction. The notice must conform to specific guidelines which, along with a sample notice, are given in Exhibit 19. Once you have posted the notice you must take a picture of it posted on the property, and then attach the picture to the Building Razing application.
18. Pay the fee, pick up the permit – One last step before you get your permit – pay the permit fee. To do this you will need to go back to the One-Stop Center and meet a final time with a permit application processor. He or she will review your application to make sure everything is in order (you do have everything in order, right?) and then create a bill which you pay at the Cashier's window just inside the door.
19. Post the permit – Now is your opportunity to let the world know that you have successfully completed the application process. No, not by letting your 5,000 friends on Facebook know, though you certainly can do that. The one person in the world who really needs to know is the Building Inspector. Posting a copy of the permit on the building is your way of letting him know when he drives by the building and sees it coming down that you have done all the paperwork that the City wants from you. Of course you have already met with him (see Step 4 above).

## Tools, Supplies, and Transportation

- **“Big Wheel Carts”** 4W504 at Granger add rear caster 4X835 - \$260
- **Grundlach** stand-up carpet cutter.
- Strapping tool and crimper
- **The Nail Kicker® Denailer by Reconnx**  
<http://nailkicker.com/joomla/> , \$500 plus
- **Nail Jack makes a family of hand tools for extracting nails, brads and staples. The Jaws of Life**, a hydraulic tool for separating heavy timbers
- Magnetic nail sweeper
- Portable job-site electrical outlet box
- Generator
- **The Duck Prybar** - adjustable angle wrecking bar that straddles joist  
601.408.0285  
[duckprybar.com](http://duckprybar.com)

A deconstruction company needs a vehicle capable of transporting material, and equipment to and from the job site such as a flat-bed truck with rails with a heavy-duty tool lock box, it also needs a van for transporting crew.

However, it is not necessary to purchase vehicles upon start-up. Rather, until a heavy volume of work is achieved, it would be more economical to install an “over-the-cab” lumber/ladder rack on a “dual-cab” pickup truck and use it primarily for deliveries and crew transport. Then you can rent larger trucks as needed. Subsidizing crewmembers to provide their own transportation can also reduce the need for a company van. Sharing a large truck with an existing company can also reduce your overhead.

A single truck can be shared among many on-going jobs reducing overhead and transportation costs. A truck parked in front of a job site is a constant economic loss.

Use a generator only when there is no other option. Where possible, pay a neighbor for power– it’s less noisy, cheaper, safer, and there is less risk of the generator being broken or stolen. Be sure not to overload the neighbor’s circuit.

For large jobs a split trailer (one-half office and one-half changing and break space) would be useful.

## **Heavy Equipment**

Heavy equipment can be owned or rented. Rentals can generally be by the day, week, or month. Two types of equipment to consider are forklifts and front-end loaders.

Shooting Boom Rough Terrain Forklifts are also known as Extended Boom Forklifts and Telescopic Forklifts. Because they can lift at an extended height and extended reach, they can be used as part of a process of cutting a building apart in sections and lowering each section to the ground for further processing. Select a model based on the height of the building. Manufacturers include Gradall, Genie, Lull, and Skytrak.

It is highly recommended that you get foam-filled tires which reduce the likelihood of the machine not being functional due to a tire puncture. (But be cautious: you can still destroy a tire in rough terrain.)

### **Front-end Loaders**

Three types of front-end loaders are Skid-Steer Loaders, Compact Track Loaders and All-Wheel Steer Loaders. In addition to the loader, two attachments that can be useful are grapples and pallet fork. Manufacturers include Bobcat, JCB, and John Deere.

## **Baltimore Area Rental Companies**

### **Sunbelt Rentals**

[www.sunbeltrentals.com](http://www.sunbeltrentals.com)

#### **Branch # 157**

7605 Pulaski Hwy  
Baltimore, Md 21237-2605  
(410) 866-9302

#### **Branch # 180**

8510 Old Harford Rd  
Baltimore, Md 21234-3920  
410.661.0500

### **United Rentals**

1709 Old Sulphur Spring Road  
Baltimore, MD 21227  
410. 242.9600

### **Valley Supply and Equipment**

1109 Middle River Road  
Baltimore, MD 21220-2407  
410.682.2638  
[www.valleysupplyequipment.com](http://www.valleysupplyequipment.com)

## **Local Resources**

### **The Loading Dock**

www.loadingdock.org  
2 North Kresson St, Baltimore MD 21224  
410.558.3625

**Our Mission:** We increase the supply and use of affordable building materials for housing and community improvement by redirecting landfill-bound, reusable materials into productive use.

The Loading Dock, Inc. is Maryland's premier building materials reuse facility, offering great deals and interesting finds to people who need inexpensive housing improvement and building materials and are interested in keeping material out of the waste stream.

The Loading Dock, Inc. has been serving the community since 1984 and is Maryland's premier building materials reuse facility, offering great deals and interesting finds to people who need inexpensive housing improvement and building materials and are interested in keeping material out of the waste stream.

The Loading Dock serves as a national model for communities interested in starting a reuse facility.

### **Second Chance**

www.secondchanceinc.org  
1400 Warner St., Baltimore, MD 21230  
410.385.1101

**Second Chance is a social enterprise with a true triple bottom line focus.**

**Everything we do is:**

- Environmentally sound
- Socially responsible
- Financially viable

Second Chance is a 501(c)(3) nonprofit. We deconstruct buildings and homes, salvage usable materials and make those available to the public through our 150,000 square feet of retail space. In addition, we provide training and workforce development.

Our commitment to sustainable practices is the foundation of our value system. From these values rises opportunity: training and marketable skills, access to valuable materials and reduced landfill deposits.

We are committed to preserving our collective architectural heritage. Second Chance is the only business of its kind in the Baltimore area. We're experts in reclaiming building assets.

At the core of the mission of Second Chance is a commitment to employing the unemployed and underemployed. Training is part of the process but it is only a means to the end. The real goal for Second Chance is to place people in jobs. By offering both training opportunities and jobs in a growing "green collar" industry, the Second Chance model provides a powerful pathway to sustainable careers for Baltimore citizens.

Deconstruction is one of the few triple bottom—line industries; it is socially, financially, and environmentally responsible and sustainable. And this gives Second Chance a way to fulfill its mission. From retrieving materials, to providing jobs and reducing waste, deconstruction is the hub of our business.

## **The Institute For Local Self Reliance**

**www.ilsr.org**

**2001 S Street NW, Ste. 570, Washington, DC 20009**

**202.898.1610**

**1313 5th St. SE, Minneapolis, MN 55414**

**612.276.3456**

The Institute's mission is to provide innovative strategies, working models and timely information to support environmentally sound and equitable community development. To this end, ILSR works with citizens, activists, policymakers and entrepreneurs to design systems, policies and enterprises that meet local or regional needs; to maximize human, material, natural and financial resources; and to ensure that the benefits of these systems and resources accrue to all local citizens.

Since 1974, the Institute for Local Self-Reliance has been working to enable communities with tools to increase economic effectiveness, reduce wastes, decrease environmental impacts and provide for local ownership of the infrastructure and resources essential for community well-being.

## **Program Areas**

### **New Rules Project**

- Big Box Tool Kit
- Community Banking
- Democratic Energy
- Hometown Advantage
- Municipal Broadband

## **Waste To Wealth**

For 33 years ILSR's "Waste to Wealth" program has helped to convert wastes from environmental and economic liabilities into valuable resources that contribute to community development.

- Deconstruction entrepreneurial development
- Encouraging sustainable biomaterials to replace fossil-fuel-based plastics
- Developing green industrial parks
- Sustainable Plastics
- Sustainable Biomaterials

## **Carbohydrate Economy**

Zero Waste-Economic Development deterring waste incineration projects and promoting in their stead zero waste planning and recycling-based economic development (5) establishing a composting program in our home city of Washington, DC.

## **Internet Resources**

These are internet-based building materials exchange sites in which material for sale can be listed.

### **Building Surplus**

[www.buildingsurplus.com](http://www.buildingsurplus.com)

Sell it! – Do you have building materials you want to sell? List them here and find your perfect buyer.

Find it! – Search locally or nationally for the surplus building materials that you are looking for.

### **Planet Reuse**

[www.planetreuse.com](http://www.planetreuse.com)

PlanetReuse makes using reclaimed building materials effortless, expertly matching materials with designers, builders and owners to save projects money, serve LEED efforts and sustain the planet.

#### **PlanetReuse Kansas City**

208 W. 19th Street  
Kansas City, MO 64108  
816.918.1120

#### **PlanetReuse Chicago**

9 W. Washington  
Chicago, IL 60602

## **Associations**

### **Building Materials Reuse Association (BMRA)**

14525 Millikan Way #24940  
Beaverton, OR 97005-2343  
800.990.BMRA (800.990.2672)  
[contact@bmra.org](mailto:contact@bmra.org)

### **Construction Materials Recycling Association**

P.O. Box 122  
Eola, IL 60519  
630.585.7530  
[info@cdrecycling.org](mailto:info@cdrecycling.org)

## **Exhibits for Section B: Permitting Process for Buildings in Baltimore City**

Exhibit 1: Application for Lien Certificate

Exhibit 2: Certificate of Liability Insurance

Exhibit 3: Asbestos-Containing Materials Found in Buildings

Exhibit 4: Suspect ACM Location and Quantity Table

Exhibit 5: Notification of Intent to Demolish

Exhibit 6: Razing (Demolition) Application Guidelines

Exhibit 7: Razing or Moving of Buildings Application

Exhibit 8: Example of a Site (Plot) Plan

Exhibit 9: Recycling Debris Affidavit

Exhibit 10: Application for Lien Certificate

Exhibit 11: Bureau of Water & Wastewater Application

Exhibit 12: Permit for Utilities Disconnection

Exhibit 13: Temporary Use for a Right-of-Way Application

Exhibit 14: Sample Map – Right-of-Way Site Plan

Exhibit 15: Baltimore City Sediment Control Agreement

Exhibit 16: Building Code Enforcement District Map

Exhibit 17: Example of Written Notice to Adjoining Owners

Exhibit 18: Certification of Treatment and Abatement

Exhibit 19: Public Notice of Demolition

Exhibit 1: Application for Lien Certificate

MAYOR AND CITY COUNCIL OF BALTIMORE
DEPARTMENT OF FINANCE
BUREAU OF REVENUE COLLECTIONS
LIEN PROCESSING UNIT
200 HOLLIDAY ST ROOM 1
BALTIMORE, MD 21202
410-396-3991

APPLICATION FOR LIEN CERTIFICATE

- 1. PRINT OR TYPE THE INFORMATION REQUESTED ON THIS FORM.
2. PRINT IN THE SPACES PROVIDED THE EXACT BLOCK AND LOT AND PROPERTY ADDRESS AS RECORDED IN THE BOOKS OF THE MARYLAND DEPARTMENT OF ASSESSMENTS.
\*\*\*\*IF THE ADDRESS AND THE BLOCK AND LOT PROVIDED DO NOT MATCH THE SEARCH WILL BE DONE USING THE PROPERTY ADDRESS PROVIDED ON THE APPLICATION.
3. THIS OFFICE WILL NOT BE RESPONSIBLE FOR ERRORS DUE TO IMPROPER OR INCOMPLETE DESCRIPTION.
4. A SEPARATE APPLICATION MUST BE FILED AND A FEE OF \$25.00 (\$55.00 IF VIOLATION REPORT REQUESTED) FOR EACH PROPERTY OR LOT SEPARATELY ASSESSED IN THE BOOKS OF THE MARYLAND DEPARTMENT OF ASSESSMENTS.

Table with 4 columns: BLOCK, LOT, LIEN REPORT WITHOUT VIOLATION REPORT, and fee (\$25.00). A second row shows LIEN REPORT WITH VIOLATION REPORT with a fee of \$55.00.

LOT AND IMPROVEMENT KNOWN AS: DATE:

ADDRESS:

OWNER:

IF A WATER INSPECTION IS REQUIRED TO COMPLETE THE LIEN SEARCH AND YOU WISH TO WAIVE THE INSPECTION PLEASE CHECK .YES AND SIGN YOUR COMPLETE NAME

IS CURRENT OWNER SUBJECT TO A MARYLAND INDIVIDUAL BUSINESS OR CORPORATE PERSONAL PROPERTY TAX? YES NO

APPLICANT INFORMATION: HOLD FOR PICKUP: YES NO

APPLICANT NAME:

MAILING ADDRESS:

ATTENTION:

CITY, STATE ZIPCODE PHONE #

EMAIL ADDRESS:

MAKE ALL CHECKS PAYABLE TO: "DIRECTOR OF FINANCE" AND MAIL APPLICATION TO:

BUREAU OF REVENUE COLLECTIONS
LIEN PROCESSING UNIT
200 HOLLIDAY ST ROOM 1
BALTIMORE, MD 21202

NOTICE: Request for the partition, consolidation or change of description of any real property WILL NOT BE PROCESSED until all taxes and other liens are paid. A return check charge of \$30.00 will be assessed on each bill which is paid with a check that is returned by the bank or other financial institution on which it is drawn.

**Exhibit 2: Certificate of Liability Insurance**

<b>ACORD™ CERTIFICATE OF LIABILITY INSURANCE</b>		DATE (MM/DD/YYYY)				
PRODUCER		THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.				
INSURED		INSURERS AFFORDING COVERAGE      NAIC #				
		INSURER A INSURER B INSURER C INSURER D INSURER E				
<b>COVERAGES</b>						
THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.						
INSR LTR	ADD'L INSRD	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS
A	X	GENERAL LIABILITY <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR		/ /	/ /	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 100,000 MED EXP (Any one person) \$ 5,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000
		GEN'L AGGREGATE LIMIT APPLIES PER POLICY <input checked="" type="checkbox"/> PRO JEC <input type="checkbox"/> LOC		/ /	/ /	
C	X	AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input checked="" type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON-OWNED AUTOS		/ /	/ /	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$
		GARAGE LIABILITY <input type="checkbox"/> ANY AUTO		/ /	/ /	AUTO ONLY - EA ACCIDENT \$ OTHER THAN EA ACC AGG \$
D		EXCESS/UMBRELLA LIABILITY <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS MADE <input type="checkbox"/> DEDUCTIBLE RETENTION \$		/ /	/ /	EACH OCCURRENCE \$ 1,000,000 AGGREGATE \$ 1,000,000 \$ \$
E		WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? If yes, describe under SPECIAL PROVISIONS below		/ /	/ /	<input type="checkbox"/> WC STATUTORY LIMITS <input checked="" type="checkbox"/> OTHER E.L. EACH ACCIDENT \$ 500,000 E.L. DISEASE - EA EMPLOYEE \$ 500,000 E.L. DISEASE - POLICY LIMIT \$ 500,000
		OTHER		/ /	/ /	
DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/EXCLUSIONS ADDED BY ENDORSEMENT/SPECIAL PROVISIONS						
<b>CERTIFICATE HOLDER</b>				<b>CANCELLATION</b>		
( ) - ( ) - Mayor and City Council of Baltimore City 417 E. Fayette St. Suite 100 Baltimore, MD 21202 Attn: Peggy White				SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 10 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES. AUTHORIZED REPRESENTATIVE		

### Exhibit 3: Asbestos-Containing Materials Found in Buildings

Subdivision	Generic name	Asbestos (%)	Dates of use	Binder/sizing
Surfacing material	sprayed- or troweled-on	1-95	1935-1970	sodium silicate, portland cement, organic binders.
Preformed thermal insulating products	batts, blocks, and pipe covering			
	85% magnesia	15	1926-1949	magnesium carbonate
	calcium silicate	6-8	1949-1971	calcium silicate
Textiles	cloth <sup>a</sup>			
	blankets (fire) <sup>a</sup>	100	1910-present	none
	felts:	90-95	1920-present	cotton/wool
	blue stripe	80	1920-present	cotton
	red stripe	90	1920-present	cotton
	green stripe	95	1920-present	cotton
	sheets	50-95	1920-present	cotton/wool
	cord/rope/yarn <sup>a</sup>	80-100	1920-present	cotton/wool
	tubing	80-85	1920-present	cotton/wool
	tape/strip	90	1920-present	cotton/wool
Cementitious concrete-like products	curtains <sup>a</sup> (theatre, welding)	60-65	1945-present	cotton
	extrusion panels:	8	1965-1977	portland cement
	corrugated	20-45	1930-present	portland cement
	flat	40-50	1930-present	portland cement
	flexible	30-50	1930-present	portland cement
	flexible perforated	30-50	1930-present	portland cement
	laminated (outer surface)	35-50	1930-present	portland cement
	roof tiles	20-30	1930-present	portland cement
	clapboard and shingles:			
	clapboard	12-15	1944-1945	portland cement
siding shingles	12-14	unknown-present	portland cement	
roofing shingles	20-32	unknown-present	portland cement	
pipe	20-15	1935-present	portland cement	
Paper products	corrugated:			
	high temperature	90	1935-present	sodium silicate
	moderate temperature	35-70	1910-present	starch
	Indented	98	1935-present	cotton and organic binder
mill board	80-85	1925-present	starch, lime, clay	
Roofing felts	smooth surface	10-15	1910-present	asphalt
	mineral surface	10-15	1910-present	asphalt
	shingles	1	1971-1974	asphalt
	pipeline	10	1920-present	asphalt

\* The information in this Appendix is taken, with modification, from: Lory EE, Coin DC. February 1981. *Management Procedure for Assessment of Friable Asbestos Insulating Material*. Port Hueneme, CA; Civil Engineering Laboratory Naval Construction Battalion Center. The U.S. Navy prohibits the use of asbestos-containing materials when acceptable nonasbestos substitutes have been identified.

<sup>a</sup>Laboratory aprons, gloves, cord, rope, fire blankets, and curtains may be common in schools.

**Exhibit 3a: Asbestos-Containing Materials Found in Buildings - Continued**

Subdivision	Generic name	Asbestos (%)	Dates of use	Binder/sizing
Asbestos-containing compounds	caulking putties	30	1930-present	linseed oil
	adhesive (cold applied)	5-25	1945-present	asphalt
	joint compound		1945-1975	asphalt
	roofing asphalt	5	unknown-present	asphalt
	mastics	5-25	1920-present	asphalt
	asphalt tile cement	13-25	1959-present	asphalt
	roof putty	10-25	unknown-present	asphalt
	plaster/stucco	2-10	unknown-present	portland cement
	spackles	3-5	1930-1975	starch, casein, synthetic resins
	sealants fire/water	50-55	1935-present	caster oil or polyisobutylene
Asbestos ebony products	cement, insulation	20-100	1900-1973	clay
	cement, finishing	55	1920-1973	clay
	cement, magnesia	15	1926-1950	magnesium carbonate
		50	1930-present	portland cement
Flooring tile and Sheet Goods	vinyl/asbestos tile	21	1950-present	poly(vinyl)chloride
	asphalt/asbestos tile	26-33	1920-present	asphalt
	sheet goods/resilient	30	1950-present	dry oils
Wallcovering	vinyl wallpaper	6-8	unknown-present	
Paints and coatings	roof coating	4-7	1900-present	asphalt
	air tight	15	1940-present	asphalt

**Exhibit 4: Suspect ACM Location and Quantity Table**

**SUSPECT ACM LOCATION AND QUANTITY TABLE  
2104 and 2110 N. CALVERT STREET  
BALTIMORE, MD 21218  
APRIL 15, 2010**

**TABLE I: 2104 N. Calvert Street**

Item No.	Material Description	Location (Where they Exist)	Analytical Result (% , type)	Estimated Quantity	Units	Condition/Comments
1	12"x12" White floor tile	Living room, 1 <sup>st</sup> floor	None Detected		SF	
2	12"x12" White floor tile	Back room, 1 <sup>st</sup> floor	None Detected		SF	
3	Subfloor material	Living room, 1 <sup>st</sup> floor	None Detected		SF	
4	Spray-on/plaster fireproofing	Back room, 1 <sup>st</sup> floor	None Detected		SF	
5	Plaster wall	Back room, 1 <sup>st</sup> floor	None Detected		SF	
6	Plaster ceiling	Basement	None Detected		SF	
7	12"x12" White floor tile	Basement	None Detected		SF	
8	<b>Mold</b>	<b>Throughout Basement</b>		<b>2,7000</b>	<b>SF</b>	<b>Severe infestation</b>
9	12"x12" White floor tile	Living room	None Detected		SF	
10	12"x12" White floor tile	Living room	None Detected		SF	
11	12"x12" Green floor tile	Kitchen	None Detected		SF	
12	Joint compound	Hall Way, 3 <sup>rd</sup> floor	None Detected		SF	
13	<b>Window caulking/window glazing</b>	<b>1<sup>st</sup> floor window</b>	<b>10% Chrysotile</b>	<b>14</b>	<b>Window</b>	

**TABLE II: 2110 N. Calvert Street**

Item No.	Material Description	Location	Analytical Result	Estimated Quantity	Units	Condition/Comments
1	Floor tile Mastic	Front Living Room, 1 <sup>st</sup> floor	None Detected		SF	
2	12"x12" White floor tile	Front Living Room, 1 <sup>st</sup> floor	None Detected		SF	
3	Plaster ceiling	Front Living Room, 1 <sup>st</sup> floor	None Detected		SF	
4	Subfloor material	Front Living Room, 1 <sup>st</sup> floor	None Detected		SF	
5	Plaster wall	2 <sup>nd</sup> Floor Bed Room	None Detected		SF	
6	Plaster wall	2 <sup>nd</sup> Floor Back Room	None Detected		SF	
7	Plaster ceiling	2 <sup>nd</sup> Floor Middle Room	None Detected		SF	
8	Spray-on/plaster fireproofing	3 <sup>rd</sup> Floor Ceiling	None Detected		SF	
9	Shingle –roofing material	Back Roof Area	None Detected		SF	
10	Felt –roofing material	Back Roof Area	None Detected		SF	
11	<b>Tar –roofing material</b>	<b>Back Roof Area</b>	<b>15% Chrysotile</b>	<b>900</b>	<b>SF</b>	
12	<b>Window caulking/window glazing</b>	<b>1<sup>st</sup> floor window</b>	<b>10% Chrysotile</b>	<b>16</b>	<b>Window</b>	
13	Joint compound	1 <sup>st</sup> Floor Hall Way	None Detected		SF	

**Exhibit 5: Notification of Intent to Demolish**

**MARYLAND DEPARTMENT OF THE ENVIRONMENT**  
Air and Radiation Management Administration / Asbestos Division  
1800 Washington Boulevard, STE 725 Baltimore, MD 21230-1720  
(410) 537-3200 • 1-800-633-6101 • [www.mde.state.md.us](http://www.mde.state.md.us)

---

---

***Notification of Intent to Demolish***  
***Project Information***

**Structure Owner**

Name:   
Address:   
City:  State:  Zip:   
Contact Name:   
Phone Number:

**Structure Information**

Building Name:   
Address/Location:   
City:  State:  Zip:   
Age (years):  Size (sq. ft.):   
Present Use of Building:   
Prior Use of Building:

---

---

Demolition Contractor:  Dates of renovation, demolition or fire training burn:  
Address:  Start Date:   
City:  State:  Zip:  End Date:

---

---

Means of Demolition:

*Note: Federal regulations prohibit the intentional burning of any structure, including single-family homes, that have asbestos containing materials (ACMs), including floor tiles and exterior shingles.*

Date of Inspection:

*Note: You must inspect the structure of the presence of ACMs prior to demolition.*

Are any ACMs present?  Yes  No

*Friable materials (can be crumbled under ordinary hand pressure), usually associated with thermal systems or fire-proofing, must be removed by a licensed asbestos contractor before demolition. You may remove exterior shingles, with care, on your own. Call your local Health Department or landfill for disposal instructions.*

---

---

MDE Sign-Off:

MDE Sign-Off Date:

## Exhibit 6: Razing (Demolition) Application Guidelines

### **Razing (Demolition) Application Guidelines**

- Completion of information on application for property to be razed.
- Licensed Demolition Contractor (homeowner can raze a shed or garage on their own property with a razing permit). Contractor is licensed through Baltimore City.
- Owner's signature.
- Maryland Department of The Environment form must be signed off
- Application is submitted and a case is created in Tidemark.
- Applicant is required to have an on-site pre-demolition meeting with the District Inspector.
- Signature/Approval from the following departments located at 200 N. Holliday St. is required:
  - Bureau of Liens – 1<sup>st</sup> Floor, Room 1
  - Division of Utility Billing – Room 404
  - Division of Utility Engineering – 1<sup>st</sup> Floor, Counter 4
  - Bureau of Transportation – 1<sup>st</sup> Floor, Counter 4
- If in an "area" may need signature/approval of: C.H.A.P., Dept of Planning, Baltimore Development Corp., Commercial Revitalization
- If area to be razed is 5000 sq ft or more need signature/approval of Sediment & Erosion Control, which requires completion of Baltimore City Sediment Control Agreement.
- Copies of the notice to adjoining owners must be submitted with the application as outlined in The Baltimore City Building, Fire and Related Codes 2007 **Section 105.9.1.2 Written notice to adjoining owners, etc. and 3303.7 Notice to adjoining owners and others.** The owners of all properties that immediately adjoin the property to be demolished and the owners of any wired or other facilities that might have to be temporarily removed because of the proposed work. The notice must indicate the intent to demolish or move the structure, specify when the work is expected to begin, and identify the contractor scheduled to perform the demolition or moving and the contractor's emergency contact..
- Notarized affidavit under Baltimore City Building, Fire and Related Codes 2007 **Section 3303.23 Disposition of recyclable debris** is submitted with applications with the exception of demolition of single-family dwellings.
- Pest control certificate is submitted with application as described in the Baltimore City Building, Fire and Related Codes 2007 **Section 3313.1 Certification required.**
- A site plan as outlined in **Section 106.2.2 Demolition** of The Building, Fire, and Related Codes 2007 must be submitted with application.
- When all above listed signatures and documents are obtained application is submitted to the permit office for final sign-off.
- Permit fees are paid and permit is issued.
- A sign notifying the public of the demolition must be posted on the premises at least 5 days before the demolition, but not more than 10 days before the demolition. The sign must be as described in **Section 105.9.2.1.1 Sign requisites** of The Baltimore City Building, Fire and Related Codes 2007.

**Exhibit 7: Razing or Moving of Buildings Application**

WARD \_\_\_\_\_  
 SEC. \_\_\_\_\_  
 BLK. \_\_\_\_\_  
 LOT \_\_\_\_\_

This Application Must Be Completely Filled Out in Black Ink or on a Typewriter

Appl. No. \_\_\_\_\_  
 Dist. No. \_\_\_\_\_  
 Date Issued \_\_\_\_\_  
 Permit No. \_\_\_\_\_

**MAYOR AND CITY COUNCIL OF BALTIMORE**  
 DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT  
 CONSTRUCTION AND BUILDINGS INSPECTION DIVISION  
**RAZING OR MOVING OF BUILDINGS APPLICATION**

LOCATION: \_\_\_\_\_ DATE: \_\_\_\_\_

APPLICATION FOR AUTHORIZATION TO \_\_\_\_\_ BY \_\_\_\_\_  
Raze/Move Building/Structure Method of Razing or Moving

INCLUDING \_\_\_\_\_ SHORING, PROPPING, CLEARING OF PREMISES,  
Method of Protecting Public Way  
 AND REBUILDING OR REFINISHING ADJOINING BUILDING WALL AS DIRECTED BY BUILDING INSPECTOR. ALL DEBRIS REMOVED FROM SITE MUST BE DEPOSITED AT AN APPROVED LANDFILL AREA. EPA REGULATIONS MUST BE MET AND AREA RAT-PROOFED PER CODE.

OWNER OF BUILDING \_\_\_\_\_ (Name) \_\_\_\_\_ (Address)

CONTRACTOR \_\_\_\_\_ Lic. No. \_\_\_\_\_

SIZE OF BUILDING: STORIES \_\_\_\_\_ LENGTH, WIDTH, HEIGHT OF BUILDING \_\_\_\_\_ TYPE OF CONSTRUCTION \_\_\_\_\_

BUILDING LAST USED FOR \_\_\_\_\_

# BUILDINGS \_\_\_\_\_ # DWELLING UNITS \_\_\_\_\_ CONDITION OF BUILDING: \_\_\_\_\_ STANDARD \_\_\_\_\_ SUB-STANDARD \_\_\_\_\_

NEW LOCATION OF BUILDING IF MOVED \_\_\_\_\_ (Street Address)

DESCRIBE ROUTE \_\_\_\_\_ ESTIMATED WORK COST \$ \_\_\_\_\_

THE OWNER HEREBY CERTIFIES THAT THE FOLLOWING ADJOINING PROPERTY OWNERS HAVE BEEN NOTIFIED OF \_\_\_\_\_ INTENTION  
His (or) Their

TO \_\_\_\_\_ THE ABOVE \_\_\_\_\_ { FRONT REAR } SIDE { \_\_\_\_\_ (Name) \_\_\_\_\_ (Address)

NORTH EAST } SIDE { \_\_\_\_\_ (Name) \_\_\_\_\_ (Address) } SOUTH WEST } SIDE { \_\_\_\_\_ (Name) \_\_\_\_\_ (Address)

NUMBER OF ADDITIONAL ACCESSORY BUILDINGS TO BE RAZED (IF ANY) \_\_\_\_\_ TOTAL FEE \_\_\_\_\_

WORK COVERED BY THIS APPLICATION TO BE COMPLETED BY \_\_\_\_\_ 20 \_\_\_\_\_ \$ \_\_\_\_\_

The owner of the above described premises hereby approves this application and agrees to comply with all ordinances of the Mayor and City Council of Baltimore and all rules and regulations of all departments thereof insofar as such ordinances, rules, and regulations may be applicable to the work.

ALL TAXES, LIENS AND OTHER CHARGES PAID—BUREAU OF LIENS  
 BY \_\_\_\_\_  
 DATE \_\_\_\_\_

SIGNED \_\_\_\_\_  
(The Application Must Be Signed by Owner)

PRINT NAME \_\_\_\_\_  
(Address of Owner) (Zip Code)

APPROVED — DIVISION OF UTILITY BILLING  
 BY \_\_\_\_\_  
 DATE \_\_\_\_\_

TELEPHONE NUMBER \_\_\_\_\_  
 APPROVED—BUILDING INSPECTOR  
 BY \_\_\_\_\_  
 DATE \_\_\_\_\_

APPROVED — DIVISION OF UTILITY ENGINEERING  
 BY \_\_\_\_\_  
 DATE \_\_\_\_\_

APPROVED—MICHAEL BRAVERMAN  
 Building Official—Permits and Codes Enforcement  
 Construction and Buildings Inspection  
 PER \_\_\_\_\_  
 DATE \_\_\_\_\_

APPROVED - BUREAU OF TRANSPORTATION RIGHT-A-WAY PERMITS SECTION  
 BY \_\_\_\_\_  
 DATE \_\_\_\_\_

DEPARTMENT	DATE	APPR.	REJ.	AREA/PLANNER
C.H.A.P.				
DEPT. OF PLANNING				
BALTIMORE DEVELOPMENT CORP.				
COMMERCIAL REVITALIZATION				
SEDIMENT & EROSION CONTROL				

1151-27-5 REV 11/07

## Exhibit 7: Razing or Moving of Buildings Application - Continued

### EXCERPTS FROM THE BUILDING CODE

#### **108.6.1 k**

Demolition: 1 – and 2 – family dwellings - \$0.030 per cubic foot volume of structure with a Minimum of \$300.  
All others - \$0.075 per cubic foot volume of structure with a Minimum of \$600.  
Accessory structures - \$50 each

#### **108.6.1 m**

Moving buildings: \$50 each

**102.12 Moved structures.** Structures that are moved into or within Baltimore City:

1. must comply with the provisions of this Code for new structures, and
2. may not be used or occupied, in whole or in part, until the Building Official approves an occupancy permit for the structure.

#### **105.9 Special requirements for demolition or moving.**

**105.9.1 Pre-permit requirements.** A permit may not be granted for demolishing or moving a structure unless the applicant complies with the following:

**105.9.1.1 Inspector consultation.** The applicant must have attended an on-site, pre-demolition or pre-moving inspector consultation to discuss and confirm:

1. appropriate hosing/wetting requirements and procedures,
2. notification requirements, and
3. any other matters the Building Official requires.

**105.9.1.2 Written notice to adjoining owners, etc.** The applicant must have given written notice to:

1. the owners of all properties that immediately adjoin the property subject to demolition or moving, and
2. the owners of any wired or other facilities that might have to be temporarily removed because of the proposed work.

**105.9.1.2.1 Contents of notice.** The written notice must:

1. indicate the intent to demolish or move the structure,
2. specify when the work is expected to begin, and
3. identify the contractor scheduled to perform the demolition or moving and the contractor's emergency contact.

**105.9.2 Pre-demolition, moving requirements.** Before beginning any demolition or moving operations, the permit holder must comply with the following:

**105.9.2.1 Posted notice.** Public notice of the demolition or moving must be posted on the premises at least 5 days before the scheduled action, but not more than 10 days before the scheduled action.

**105.9.2.1.1 Sign requisites.** The sign must be:

1. at least 4 feet long and 3 feet high,
2. written in black lettering, at least 2 inches high on a yellow background.
3. posted in a conspicuous manner, clearly visible and legible to the public, not over 10 feet above ground level, and
4. maintained in good condition until the time of the demolition or moving.

**105.9.2.1.2 Proof of posting.** The permit holder must submit to the Building Official photographic evidence of the posting required by this section.

**105.9.3 Inspector presence.** At least 24 hours before beginning the demolition or moving operations, the contractor must contact the Building Official to schedule the presence of an Inspector.

**105.9.4 Failure to comply.** Failure to comply with the requirements of this 105.9 may result in revocation of the permit.

**105.10 Required corrections.** The issuance of a permit does not prevent the Building Official from later requiring the correction of errors in any plans, drawings, work, or operations.

**3303.23 Disposition of recyclable debris.** Whenever recyclable debris to be cleared from a site exceeds 5 tons, at least 30% of the recyclable debris must be immediately transported to a licensed recycling firm for export out of the City.

**3303.23.1 "Recyclable debris" defined.** In this section

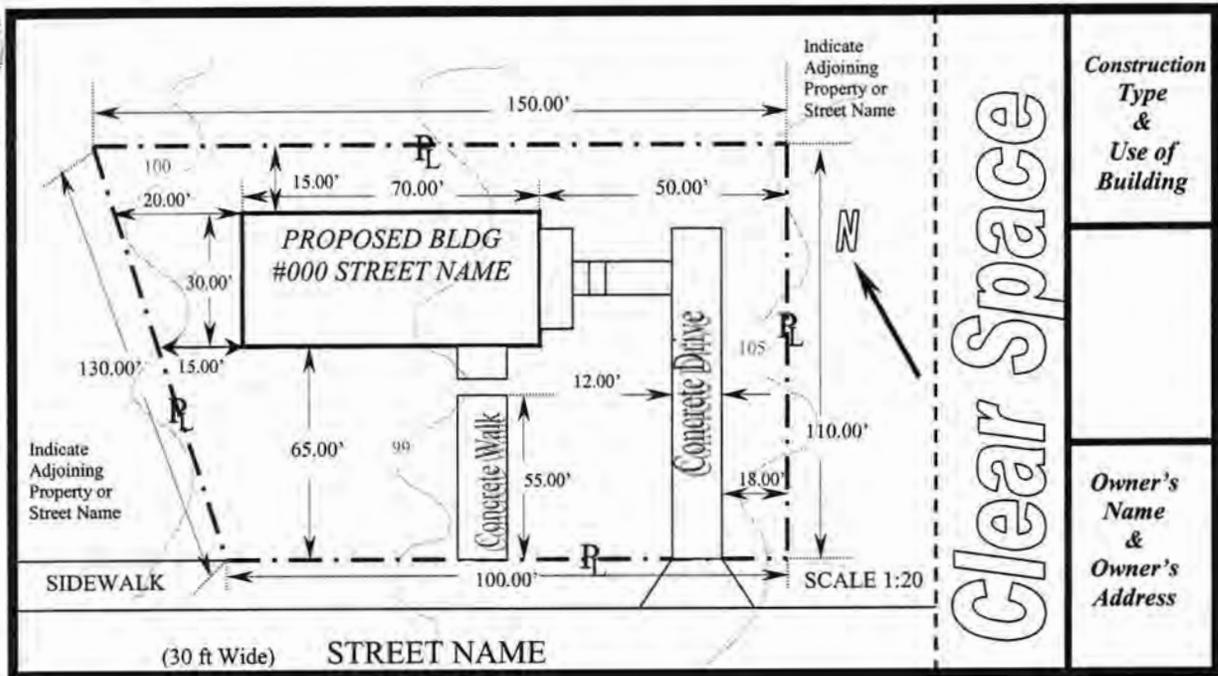
1. "Recyclable debris" means, except as specified in paragraph 2, materials that;
  - a. if not recycled, would become solid waste for disposal in a solid waste acceptance facility, and
  - b. may be collected, separated, or processed and returned to the marketplace in the form of raw materials or products.
2. "Recyclable debris" does not include materials that are:
  - a. derived solely from the demolition of a 1-or 2 –family dwelling, and
  - b. disposed of at the City's Quarantine Landfill.

**3313.1 Certification required.** Before any structure may be demolished, moved to another site, or substantially rehabilitated, the applicant for a permit must provide certification from the pesticide applicator licensed by the State of Maryland that all areas of the structure and its lot are free from rodent infestation. A certification of treatment and abatement of all infestation must accompany the permit application.

**3313.2 Treatment required.** Structures of lots found to be infested must be treated by a licensed pesticide applicator before demolition, moving, or rehabilitation.

**Exhibit 8: Example of a Site (Plot) Plan**

**EXAMPLE OF A SITE (PLOT) PLAN**



**CHECKLIST FOR SITE (PLOT) PLANS FOR OVER-THE-COUNTER PERMITS**

SITE PLANS MUST BE BLUE OR BLACK INK PRINTS ON A WHITE BACKGROUND DRAWN TO SCALE ON A MINIMUM SIZE OF 8 ½" X 11" PAPER AND A MAXIMUM SIZE OF 11" X 17".

**ALL SITE PLANS MUST SHOW THE FOLLOWING INFORMATION:**

- THE OFFICIAL ADDRESS OF THE LOT
- THE NAME AND ADDRESS OF THE OWNER
- THE PROPERTY LINES AND DIMENSIONS OF THE LOT
- THE NAMES AND WIDTHS OF STREETS, LANES, AVENUES AND ALLEYS, ETC. SURROUNDING THE LOT
- THE DISTANCE BETWEEN THE LOT AND THE NEAREST INTERSECTING STREET OR ALLEY
- THE LOCATION AND SIZE OF ALL EXISTING STRUCTURES AND DIMENSIONS OF PROPOSED IMPROVEMENTS WITH SETBACKS
- THE TYPE OF CONSTRUCTION AND USE OF ALL BUILDINGS SHOWN
- THE WIDTH AND LOCATION OF ALL PROPOSED AND/OR EXISTING CURB CUTS AND DRIVEWAYS
- THE SCALE OF THE PLANS (MUST BE DONE TO AN ACCEPTABLE ENGINEER SCALE)
- THE NORTH ARROW

**THE SITE PLANS MAY BE REQUIRED TO SHOW THE FOLLOWING:**

- THE HEIGHT OF ALL EXISTING AND PROPOSED STRUCTURES
- THE LOCATION, SIZE AND HEIGHT OF ALL EXISTING BUILDINGS WITHIN 10' OF THE LOT
- THE TOPOGRAPHY OF THE LOT
- CRITICAL AREA BOUNDARY OR FLOODPLAIN LINES IF APPLICABLE

THERE MAY BE INFORMATION AVAILABLE AT THE RECORD SECTION ON EXISTING CONDITIONS LOCATED IN:  
 THE ABEL WOLMAN MUNICIPAL BUILDING, 200 N. HOLLIDAY STREET, ROOM 7, BALTIMORE, MD 21202  
 PHONE: 410-396-3643

**AFFIDAVIT**

I, \_\_\_\_\_, the owner/authorized representative of \_\_\_\_\_, being at least 18 years of age and competent to testify in the following matter, do hereby solemnly swear and affirm under the penalties of perjury and upon personal knowledge that I have read and understand Building Code § 3303.23 “Disposition of recyclable debris”, and that all contracts and other arrangements needed to comply with the requirements of Section 3303.23 have been made.

By my signature below, I also agree to provide proof as required by the Department of Housing and Community Development that the provisions of Section 3303.23 have been complied with.

\_\_\_\_\_  
Owner/Authorized Representative of Contractor

\_\_\_\_\_  
Date

Subscribed and sworn before me, a Notary Public, the year and date as written above.

\_\_\_\_\_  
Notary Public

\_\_\_\_\_  
Date

My commission expires:

**Exhibit 10: Application for Lien Certificate**

\$25.00  
**CERTIFICATE NUMBER**

BUREAU OF REVENUE COLLECTIONS  
LIEN SECTION  
200 HOLLIDAY STREET  
BALTIMORE, MARYLAND 21202

45 days from issue date.  
Issue Date - Void Date  
06/03/10 07/18/10



Application, now on file in this bureau, has been made for a search of the tax lien record for all cha  
constituting municipal liens upon the assessed property. The amounts shown are inclusive of interest  
penalty to date of this certificate W/S/B/L - 12-08-3811 -015 -(3)

Address:

REAL PROPERTY  
09/10 00/00/00 AMT PD .00 AMT DUE .00 PAID  
09/10 REAL PROPERTY EXEMPT-PROPERTY OF HOUSING AUTH BALTO CITY

SPECIAL BENEFITS  
09/10 00/00/00 AMT PD AMT DUE PAID  
09/10 SPECIAL BENEFIT CHG EXEMPT-PROPERTY OF HOUSING AUTH BALTO CITY

METERED WATER  
ACCT # 04396694004 READING DATE 03/26/10 AMT.  
WATER ACCOUNT MARKED INACTIVE/ABANDONED

PERTINENT INFORMATION  
NO VIOLATION REPORT REQUESTED  
RES REG PD CALL 410-396-3575 MUST OBTAIN REG FORM BEFORE REC DEED/

Important note as to Bankruptcy and or Tax Sale redemption figures. Only written payoff figures will be honored. Figures  
quoted over the phone are not binding. If you need an official payoff for either pre-petition Bankruptcy or Tax Sale you must  
fax a copy of the Lien Certificate to the Delinquent Accounts Section at 410-837-6994 and provide a fax number for a respo

All of which is hereby affirmed and approved.

*Martin Shipley*  
\_\_\_\_\_  
Lien Section Supervisor

This Lien Certificate is issued pursuant to Article VII, Section 10, of the Baltimore City Charter (1964 revision) which  
reads, in part as follows The Department shall maintain at all times a book or books, to be known as the tax lien record. For  
the purpose of recording tax liens and all other municipal liens...after a lien shall have been recorded in the tax lien record, it  
shall remain a lien until paid.

This enumeration of charges and assessments not herein enumerated and which may have been or may hereafter be  
authorized and imposed, all of which shall be liens from the time of their imposition, provided, that no then existing charge  
shall be a lien against any property after the issuance of alien Certificate respecting such property unless such charge be  
SHOWN ON SUCH LIEN CERTIFICATE.

**Exhibit 11: Bureau of Water & Wastewater Application**

CITY OF BALTIMORE

SHEILA DIXON, Mayor



DEPARTMENT OF PUBLIC WORKS

BUREAU OF WATER AND WASTEWATER

Utility Billing Section

404 Abel Wolman Municipal Building

200 N. Holliday Street

Baltimore, Maryland 21202

DATE:

Bureau of Water & Wastewater  
Utility Billing Section  
404 Abel Wolman Municipal Building  
200 N. Holliday Street  
Baltimore, Maryland 21202

To Whom It May Concern:

In connection with the demolition of \_\_\_\_\_,  
I am requesting to retain the water supply service and agree to continue payment on all  
charges against the property.

\_\_\_\_\_ Leave meter

\_\_\_\_\_ Remove meter

\_\_\_\_\_ Do not turn off water

\_\_\_\_\_ Turn off water

Sincerely,

\_\_\_\_\_ Owner/Contractor

\_\_\_\_\_ Address

\_\_\_\_\_ Phone

Account Number \_\_\_\_\_

# Exhibit 12: Permit for Utilities Disconnection

Ward ..... **MAYOR AND CITY COUNCIL OF BALTIMORE** Permit No. ....  
 Sec. .... **DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT** Dist No. ....  
 Blk ..... **CONSTRUCTION AND BUILDINGS INSPECTION DIVISION** Date Issued.....  
 Lot ..... **417 E. Fayette Street, Rm 100, Baltimore, MD 21202** Minor Pr. No. ....

**PERMIT APPLICATION**

**THE FILING FEE MUST BE SUBMITTED WITH APPLICATION**

**\$25 FILING FEE FOR 1-AND 2-FAMILY DWELLINGS  
 \$50 FILING FEE FOR ALL OTHER PROPERTIES**

PLANS NO.
-----------

Official Designation: \_\_\_\_\_  
DO NOT WRITE ABOVE THIS LINE

PROPERTY ADDRESS .....  
 K/A .....  
 OWNER ..... Address ..... Phone .....  
 LESSEE/AGENT ..... Address ..... Phone .....  
 PRIME CONTRACTOR ..... Phone ..... Lic. No. ....  
 ELECTRICAL CONTRACTOR ..... Phone ..... Lic. No. ....  
 PLUMBING CONTRACTOR ..... Phone ..... Lic. No. ....  
 ON-SITE-UTILITY CONTRACTOR ..... Phone ..... Lic. No. ....  
 GAS FITTER ..... Phone ..... Lic. No. ....  
 H.V.A.C.&R. CONTRACTOR ..... Phone ..... Lic. No. ....  
 ARCHITECT OR ENGINEER ..... Phone ..... Lic. No. ....

**TYPE OF PROPOSED WORK** INTERIOR DEMOLITION: CATEGORY I CATEGORY II CATEGORY III  
 (\*\*CHECK ALL THAT APPLY\*\*) ALTERATIONS: STRUCTURAL ALTERATIONS NON-STRUCTURAL ALTERATIONS  
 INTERIOR WORK \_\_\_\_\_ SQUARE FOOTAGE  EXTERIOR WORK  NEW CONSTRUCTION  ADDITION  SPRINKLER

DESCRIPTION OF WORK (Be specific when plans are not submitted): **PRINT ONLY**  
 .....  
 .....  
 .....  
 .....

BUILDING FULLY SPRINKLERED  YES  NO  
 EXISTING USE(S) .....  
 PROPOSED USE(S) .....  
 Estimated total cost of work\$ ..... Expiration Date:  3 Months  6 Months  Other \_\_\_\_\_

DIMENSION	Front (Ft.)	Depth (Ft.)	Height (Ft.)	Stories	Area (Sq. Ft.)	Volume (Cu. Ft.)
Present Building						
Proposed Building						
Lot						

METERS: Electric  Existing ..... New ..... Relocate ..... Enlarge ..... Total .....  
 Gas  Existing ..... New ..... Relocate ..... Enlarge .....

DEPARTMENT	DATE	APPROVED BY	DISAPPROVED	AREA/PLANNER
C.H.A.P.				
DEPT. OF PLANNING				
COMMERCIAL REVITALIZATION				
BALTIMORE DEVELOPMENT CORP.				
CONDEMNED PROPERTY				
MINOR PRIVILEGE				



Exhibit 13: Temporary Use for a Right-of-Way Application



STEPHANIE  
RAWLINGS-BLAKE  
MAYOR

**CITY OF BALTIMORE**  
**DEPARTMENT OF GENERAL SERVICES**

**APPLICATION FOR:**  
**TEMPORARY USE OF A RIGHT OF WAY**

Location: \_\_\_\_\_

(ADDRESS OF ADJACENT PROPERTY AND/OR DISTANCE AND DIRECTION FROM NEAREST INTERSECTING STREET)

Applicant: \_\_\_\_\_  
Name Address City State Zip Telephone #

Contractor: \_\_\_\_\_  
Name Address City State Zip Telephone #

Reason for Use: \_\_\_\_\_

From: \_\_\_\_\_ To: \_\_\_\_\_ Sketch Attached: \_\_\_\_\_  
START DATE-TIME END DATE-TIME YES OR NO

TYPE OF PERMIT		PARKING METER #'S	RELATED APPROVALS
<input type="checkbox"/> Alley Closure	<input type="checkbox"/> Footway	_____	<b>Developer's Agreement:</b>
<input type="checkbox"/> Curb Lane	<input type="checkbox"/> Plumbing	_____	<b>Right of Entry:</b>
<input type="checkbox"/> Curb Repair	<input type="checkbox"/> Scaffolding	_____	<b>City Contract #:</b>
<input type="checkbox"/> Dumpster	<input type="checkbox"/> Test Pit	_____	<b>H.C.D. Permit #:</b>
<input type="checkbox"/> Fence	<input type="checkbox"/> Utility	_____	<b>Other:</b>
<input type="checkbox"/> Street Closure	<input type="checkbox"/> _____	_____	
<input type="checkbox"/> Film Equipment		_____	

Special Conditions:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

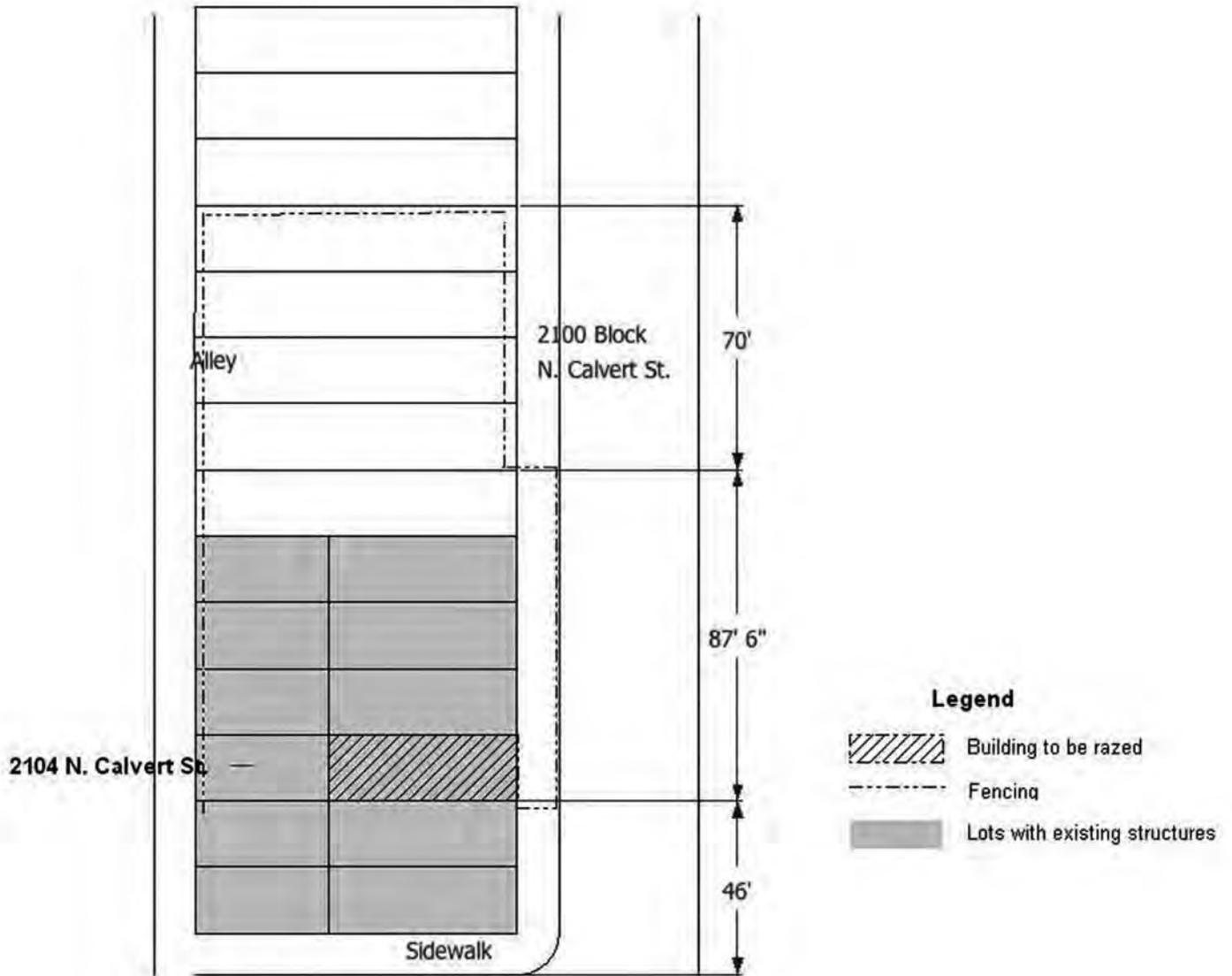
MAIL TO: DEPT. OF GENERAL SERVICES  
PERMITS OFFICE  
200 HOLLIDAY ST., LOBBY  
BALTIMORE, MARYLAND 21202  
ATTN: HELEN MARINELLI

"I declare under penalties of perjury that this application, including any accompanying plans, specifications, etc., has been examined by myself and to the best of my knowledge and belief is a true, correct and complete statement of the work to be covered by this application."

SIGNED: \_\_\_\_\_ DATE: \_\_\_\_\_  
Signature of Applicant Print Name

RECEIVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

**Exhibit 14: Sample Map - Right-of-Way Site Plan**



BALTIMORE CITY SEDIMENT CONTROL AGREEMENT

Title 4, Subtitle 1, Environment Art., Annotated Code of Maryland and Baltimore City Ordinance 1013, require that provisions to control erosion and sediment shall be included for all City land disturbance. As required by State Law, construction permits cannot be issued until such erosion and sediment control provisions are approved.

1. Department of Housing and Community Development  
Division of Construction & Building Inspection, Plan No. \_\_\_\_\_
2. Location Address \_\_\_\_\_

It is up to the discretion of the Baltimore City Sediment Control Representative to determine under which category given below a specific permit application will be considered.

- A. A Standard Erosion and Sediment Control Plan may be used instead of a detailed plan for earth disturbances where all of the following conditions are met:
  1. The owner, builder, or developer is not the same owner, builder, or developer of any contiguous lot undergoing development.
  2. No slopes steeper than three horizontal units to one vertical unit (33%) will be disturbed.
  3. The total disturbed area will not exceed 5,000 square feet and will not involve greater than 100 cubic yards of earth work.
  4. No grading will take place within 100 feet of any watercourse, waterway, or wetland.
  5. Attached plot plan shows the proposed development, with arrows indicating the drainage pattern of the site.
- B. If a Detailed Erosion and Sediment Control Plan is deemed necessary, the Owner/Builder/Developer is to submit for approval a detailed plan including all information on the Checklist for Erosion and Sediment Control Plans. If the Baltimore City Sediment Control Representative feels that the complexity of the situation requires specialized expertise, he will require said control plan to be prepared by Professional Engineer, Land Surveyor, or Landscape Architect or Architect registered in the State of Maryland

Nothing herein relieve the applicant from complying with any and all other Federal, State, or Municipal regulations.

## Exhibit 15: Baltimore City Sediment Control Agreement - Continued

### I. Instructions:

1. For land disturbing activities this permit is granted with the understanding that the following conditions will be met:

#### A. Grading

1. Initial grading will be limited to that necessary to gain entrance to the site, install necessary sediment controls, excavate for foundations and install utilities. No further grading or clearing will be done until the above work has been completed.
2. All disturbed areas shall be protected to control erosion and to prevent sedimentation of adjacent properties, storm sewers and/or streams.
3. Sediment control devices such as; diversion berms, sediment traps, silt fences, vegetative stabilization, etc., shall be used to prevent off-site sedimentation at all times, at every location throughout the site where natural or existing conditions would cause sediment to normally wash off the site.
4. No proposed cut or fill will exceed three feet in depth (cut) or height (fill) without erosion and sediment controls. Exclusive of excavation for foundations.
5. No fill will be placed on any existing slope steeper than 5:1 without erosion & sediment controls.
6. There will be no final graded slope steeper than 2:1.
7. All fills will be free of any organic or other deleterious materials and will be compacted. All areas to receive fill will have the ground surface prepared by removing all existing vegetation and root mat.
8. All borrow and/or spoil material shall only be stockpiled within the limits of the permitted site.
9. The proposed grading will not impair existing surface drainage, constitute a potential erosion hazard, or source of sedimentation to any adjacent property, drainage way or right-of-way.
10. All points of ingress and egress shall be protected to prevent tracking of mud onto public ways.

## Exhibit 15: Baltimore City Sediment Control Agreement - Continued

### B. Drainage Control

1. Storm drainage will be piped into the storm drainage system where required or handled by providing positive drainage onto stable areas at non-erosive velocities and in a manner consistent with established drainage patterns. Sediment laden runoff will not be allowed into the storm drainage system or onto stable areas.

### C. Stabilization

1. As soon as final grading is completed, all disturbed areas will be stabilized with temporary or permanent mulch, including stone, blacktop, concrete surfacing, etc.
2. For vegetating areas steeper than three horizontal units to one vertical unit, adequate mulch, fertilizer and type of seed will be placed to ensure a vigorous ground cover and such application will be repeated, if necessary, until such growth is established.
3. Timing - Following initial solid disturbances or redisturbance, permanent or temporary stabilization shall be completed within:
  - a. Seven calendar days for the surface of all perimeter dikes, swales, ditches, perimeter slopes, and all slopes greater than three horizontal to one vertical (3:1) and
  - b. Fourteen calendar days for all other disturbed or graded areas.
4. For Details regarding temporary and permanent stabilization practices, reference the Maryland Standards and Specifications for Soil Erosion and Sediment Control, or contact the Baltimore City Sediment Control Representative.
5. Sediment control devices are to be removed only after all disturbed areas have been stabilized.

### II. Conditions:

The owner/builder/developer will submit written notification to the Baltimore City Sediment Representative at least three working days before starting any grading activities, stating the following:

Exhibit 15: Baltimore City Sediment Control Agreement - Continued

1. The day he intends to start work
2. The source of all borrow material
3. The disposal site for all excess material
4. The completion day of the work

III. Specific Requirements (Use Back If Necessary) \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Total Lot area: \_\_\_\_\_ square feet  
Total area to be disturbed by development: \_\_\_\_\_ square feet  
IF WATERFRONT LOT—Distance of disturbance from Mean High Water  
Line: \_\_\_\_\_ feet

Distance between disturbed area and any free-flowing stream  
\_\_\_\_\_ feet

I (We) certify that I (we) have the authority to make the fore-  
going application; that the information above and on the attached  
plot plan is correct; and that I (we) have chosen this method to  
satisfy my (our) sediment control obligations based upon the  
physical characteristics of the lot, plans for development and  
my (our) ability to meet all the limitations and conditions set  
forth by this agreement.

SIGNATURE: \_\_\_\_\_ DATE \_\_\_\_\_  
Owner or Authorized Agent

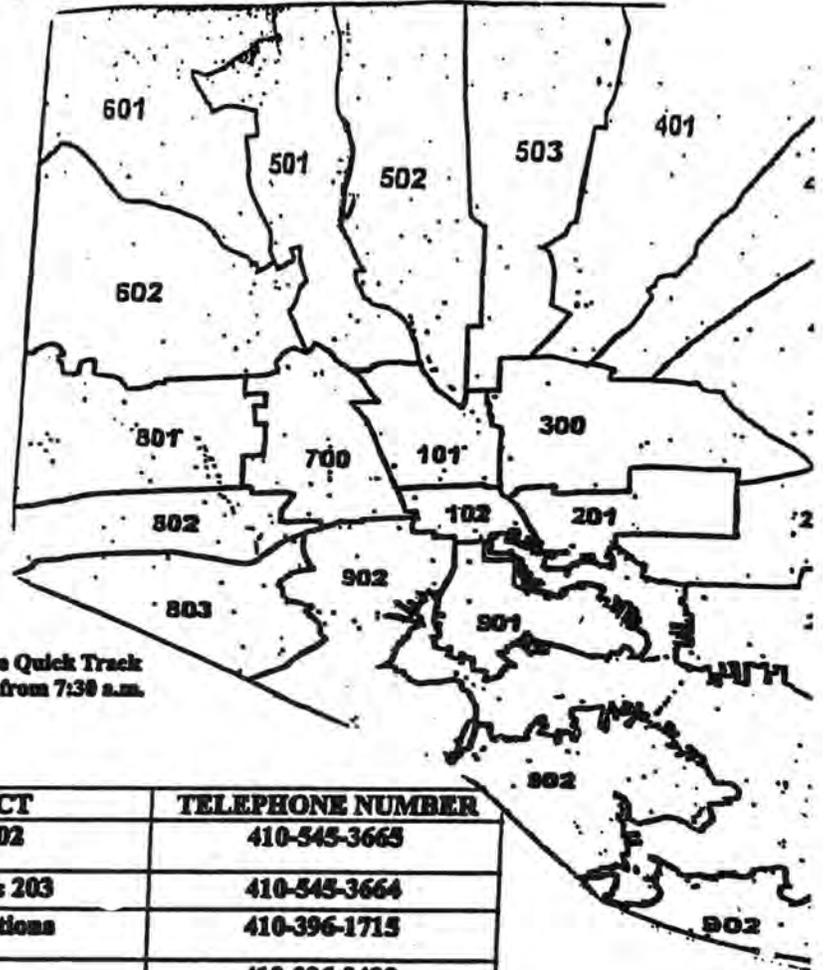
PRINT: \_\_\_\_\_ PHONE NO. \_\_\_\_\_  
Owner or Authorized Agent

APPROVED: \_\_\_\_\_ DATE \_\_\_\_\_  
Sediment Control Representative  
Department of Public Works  
204 Abel Wolman Municipal Building  
Baltimore, Maryland 21202  
Phone - (410) 396-4840

**BALTIMORE CITY BUILDING CODE ENFORCEMENT DISTRICT MAP**

**Eric M. Uttenreither**  
 Superintendent  
 410-361-9271

**Marlene Adams**  
 Inspectors Assistant  
 410-396-3470



Request for inspections must be made through the Quick Track System at 443-984-2776. Inspectors are available from 7:30 a.m. to 8:30 a.m. and 2:30 p.m. to 3:30 p.m.

INSPECTOR	DISTRICT	TELEPHONE NUMBER
Angelo Amari	501 & 502	410-545-3665
James Blaylock	201, 202 & 203	410-545-3664
Willie Broom	Condemnations	410-396-1715
Andre Campbell	503	410-396-3430
Al Checks	803	410-396-3479
William Coakling	300	410-396-3478
Ronnie Edmondson	801 & 802	410-396-1716
John Feaster	401	410-396-3479
Kenneth Gartrell	700	410-545-3353
Thomas Harcum		410-396-3472
Dontrell Jones	402 & 403	410-361-9435
Thomas Lewis	101	410-396-3471
William Mentzer	601 & 602	410-396-3572
Kenneth Morris	102 & 901	410-545-3354
Antonio Santana	Special Ops	410-396-1701
Ayman Shahid	Special Ops	410-396-3477
James Spigner	902	410-396-3480

Exhibit 17: Example of Written Notice to Adjoining Owners

**EXAMPLE OF WRITTEN NOTICE TO ADJOINING OWNERS**

*(Notice is to be sent to all properties that immediately adjoin the property subject to demolition)*

**<Date>**

**<Name of Adjoining Property Owner>**

**<Address of Adjoining Property Owner>**

Subject: **<Address of Property to be Demolished>**

Dear Sir or Madam:

In accordance with the *Baltimore City Building, Fire and Related Codes 2007*, this letter is to inform you that the structure known as **<address of property to be demolished>**, which is adjacent to your property, will be razed in the near future. Within 10 days of the actual demolition, a sign will be displayed on the property scheduled for demolition. **<Licensed Demolition Contractor's name>**, a licensed demolition contractor will perform this work. The contact phone number for this company is **<phone number>**.

***If applicable:***

The adjacent sidewall of your building, which will be exposed as a result of demolition, will be treated in accordance with the above-mentioned Code. A Baltimore City Building Inspector will be assigned to monitor the demolition project.

Should you have questions or concerns, please contact **<name of permit applicant or owner of property to be razed>**.

Sincerely,

**<Applicant or contractor>**

**The Baltimore City Building Fire and Related Codes 2007**

**SECTION 3313 RODENTICIDE PROCEDURE**

- 3313.1**      **Certification required.** Before any structure may be demolished, moved to another site, or substantially rehabilitated, the applicant for a permit must provide certification from a pesticide applicator licensed by the State of Maryland that all areas of the structure and its lot are free from rodent infestation. A certification of treatment and abatement of all infestation must accompany the permit application.
- 3313.2**      **Treatment required.** Structures or lots found to be infested must be treated by a licensed pesticide applicator before demolition, moving or rehabilitation.

## Certification Of Treatment And Abatement

*To be completed by Pesticide Applicator*

Address of Property Being Razed: \_\_\_\_\_

State of Maryland Pesticide Applicator: \_\_\_\_\_

Pesticide Applicator Address: \_\_\_\_\_

Pesticide Applicator Phone No.: \_\_\_\_\_ Pesticide Applicator License No.: \_\_\_\_\_

Was the property checked for rodent infestation?  Yes  No

If yes, on what date was property check done? \_\_\_\_\_

Was evidence of rodents found on the property?  Yes  No

If yes, was the property treated?  Yes  No

On what date was the property treated? \_\_\_\_\_

\_\_\_\_\_  
Signature of Pesticide Applicator

\_\_\_\_\_  
Date

***\*Treatment for rodents must be done within 30-days of the issuance of your demolition, moving or substantial rehabilitation permit.***

# PUBLIC NOTICE OF DEMOLITION

## Sign Requirements from the *Baltimore City Building, Fire and Related Codes 2007*

**§ 105.9.2.1 Posted notice.** Public notice of the demolition or moving must be posted on the premises at least 5 days before the scheduled action, but not more than 10 days before the scheduled action.

**§ 105.9.2.1.1 Sign requisites.** The sign must be:

1. at least 4 feet long and 3 feet high,
2. written in black lettering, at least 2 inches high, on a yellow background,
3. posted in a conspicuous manner, clearly visible and legible to the public, not over 10 feet above ground level, and
4. maintained in good condition until the time of the demolition or moving.

**§ 105.9.2.1.2 Proof of posting.** The permit holder must submit to the Building Official photographic evidence of the posting required by this section.

**THE SIGN CANNOT BE HANDWRITTEN**

**PLEASE SEE REVERSE OF THIS NOTICE FOR AN EXAMPLE OF A SIGN**

