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**ALTERNATIVES TO DEMOLITION FOR
FACILITY REDUCTION**



PWTB 420-49-30
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PWTB 420-49-30
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DEPARTMENT OF THE ARMY
U.S. Army Corps of Engineers
Installation Support Division
7701 Telegraph Road
Alexandria, VA 22315-3862

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FACILITIES ENGINEERING
UTILITIES

ALTERNATIVES TO DEMOLITION FOR
FACILITY REDUCTION

1. Purpose. The purpose of this Public Works Technical Bulletin (PWTB) is to report a process developed by the Engineering Division at Fort McCoy, Wisconsin, for dismantling or deconstructing surplus buildings in cooperation with their host community. This PWTB also describes the 1987 McKinney Homeless Assistance Act and the process by which excess Federal property is made available to the homeless.

2. Applicability. This PWTB applies to all U.S. Army facility engineering activities.

3. References.

a. Army Regulation (AR) 420-49, Facilities Engineering Utility Services, Chapter 3, Solid Waste Management, 28 April 1997.

b. AR 200-1, Environmental Protection and Enhancement, 21 February 1997.

c. 10 US Code 2546, "Stewart B. McKinney Homeless Assistance Act," 1987.

4. Discussion.

a. AR 420-49 establishes policy for efficient and economical solid waste management. Section 3.6.d states, "Construction and demolition debris should be recycled when possible." Despite this acknowledgement, construction and demolition (C/D) debris is generally excluded from environmental management policies because personnel supervising construction projects are separate from environmental staff. However, the Department of Defense (DoD) has a Measure of Merit for 40 percent solid waste diversion by 2005, which includes C/D debris.

PWTB 420-49-30
10 February 2000

b. Due to construction-related initiatives such as Base Realignment and Closure (BRAC), Facilities Reduction, Barracks Modernization, and Motor Pool Modernization, C/D debris can comprise more than 50 percent of the total solid waste stream. This total includes the Army's goal of removing 53.2 million square feet of excess structures by 2003.

c. None of the methods of reducing C/D debris are thoroughly integrated into the military construction process. Installations such as Fort McCoy and Fort Ord, California, have demonstrated the efficacy and cost savings to be had through deconstruction. Other methods include recycling and building relocation.

d. Appendix A details the deconstruction process as administered at Fort McCoy; the potential for building transfer under the McKinney Act; and several sources for further information in section 4.

5. Points of Contact. Questions and/or comments regarding this subject that cannot be resolved at the installation level should be directed to:

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PWTB 420-49-30
10 February 2000

FOR THE DIRECTOR:

GEORGE F. BRAUN
Acting Chief, Installation
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APPENDIX A

Alternatives to Demolition for Facility Reduction

1 Fort McCoy Deconstruction Process

1.1 Introduction

a. Fort McCoy, in various incarnations, has served the military since 1909, as an artillery training site, an ordnance depot, and a supply base for the Civilian Conservation Corps. The Wisconsin installation also housed prisoners of war and detained Japanese-Americans during World War II (WWII). Through most of its history, it was known as Camp McCoy. After several mission changes, the Camp became Fort McCoy and part of Forces Command (FORSCOM) in 1973. Today, it is part of the Army Reserve Command and more than 100,000 personnel train there each year.

b. To meet the increased training requirements of the WWII-era build up, the government added 45,000 acres to Fort McCoy between 1938 and 1942. The familiar triangle-shape cantonment area was built in 1942, designed to house, train, and support 35,000 troops. Eight thousand local workers participated in this massive project, erecting over 1,500 buildings at a cost of \$30 million.

1.1.1 Facility Reduction

a. Throughout the military, the massive buildup required to meet the challenges of WWII has left a legacy of thousands of surplus "temporary" structures, used for barracks, offices, mess halls, etc. Although classified as temporary structures, these wood frame buildings were well constructed with high quality lumber, and many have continued to serve various functions over the nearly 50 years since they were built.

b. With base closings, and general military drawdown since the end of the Cold War, however, the Army has too many unneeded buildings, which require funds, maintenance, and utilities. Therefore, the Department of Defense (DOD) has initiated a Facilities Reduction Program to eliminate surplus buildings and save money in the long run. FORSCOM mandated that Fort McCoy remove 601,737 ft² of WWII temporary buildings, plus a one for one removal for any new MCA construction (i.e., for every square foot of new construction, a square foot of demolition must occur).

c. Unfortunately, the quickest and easiest method of disposal, especially for wood frame buildings, is to knock them down and crush them with heavy machinery, then dump the remains in a landfill. In many instances, these landfills are government owned and filling rapidly. This practice wastes a valuable natural resource (old growth timber) and may cost the government more overall for landfill maintenance and expansion. Secondary environmental costs are not accounted for in demolition contracts.

1.1.2 Fort McCoy Process Summary

a. The Fort McCoy Engineering Division has developed a process for dismantling surplus buildings in cooperation with their host community. Essentially, a private citizen or community group purchases a building on post, disassembles it by hand, and takes the salvaged lumber off post to build homes, garages, barns, etc. Responsibilities of the government and of the individual are clearly spelled out in a simple contract. The installation takes appropriate environmental and safety precautions. Their safety record has been excellent.

b. This process is very simple and driven by the community and Directorate of Public Works (DPW) initiatives. The process has saved the government millions of dollars and huge quantities of landfill space since its inception in 1992. The cost savings come from avoidance of the labor, profit, and equipment amortization costs of a typical commercial demolition contractor. The private citizens donate their labor, do not make a profit, and do not own heavy equipment. They dismantle surplus buildings for the high quality building material they salvage, essentially free.

c. The cost of this method ranges from \$2,000 to \$5,000 (net) per building versus \$40,000 per building under a commercial demolition contract [USACPW 1994].

1.2 Process Description

1.2.1 Contract

a. When initiating this program, the construction managers realized that, for an ordinary citizen to participate, the contract language must be simple and brief.

b. A lengthy bidders list has been compiled, largely on the strength of word-of-mouth advertising for the program. Once the contract for a particular building is awarded, the winning bidder has a specified time to complete work. The installation is usually quite lenient about granting extensions as required.

1.2.2 Hazardous Material (HazMat) Removal

a. Installation personnel inspect each building for hazardous materials before turning it over to the contractor. Government crews remove all friable asbestos. Recently, they began removing all nonfriable asbestos, too, as an added precaution for worker safety. Figure 1 shows a one-story WWII-era building with most of the siding removed. Previously, the individual contractors removed the nonfriable asbestos (e.g., cementitious siding) and placed it in approved dumpsters supplied by the Engineering Division. The contract bid package contains a safety checklist.



Figure 1. WWII building with siding removed.

b. The installation also turns off all utilities to the building, although, they do allow the contractors to access electricity at the pole.

1.2.3 Deconstruction

a. After the contractors take possession of the building, the contract stipulates the order in which to perform the deconstruction. This stipulation is made because the installation does not want contractors to "cherry pick" the most desirable building elements and then disappear. The goal is to remove the entire building. Therefore, the roofing and siding must come off first, because those elements are labor intensive and not desirable as salvage. With this order, if a contractor

should leave in the middle of the process, the remaining structure (with the least desirable building components removed) would be more valuable to the next bidder. Figure 2 shows a mess hall under deconstruction. This process allows access to the desirable structural members such as roof trusses and floor joists.

b. The actual process used by the individual contractors varies widely. The methods depend greatly on the tools available, number of people involved, and personal experience and preferences. Most of the people bidding on deconstruction have some professional construction experience. The more experienced ones help out the less experienced.



Figure 2. Mess hall under deconstruction.

1.2.4 Site Cleanup

a. The typical design of a WWII wood building has a foundation of concrete piers (instead of the more modern continuous poured foundation or blocks). The typical individual contractor has no means to remove these (shown in Figure 3). Therefore, they are not required to do so in the contract. The Engineering Division decided to use troop equipment and labor to remove these piers as part of a training exercise. Using troop labor and equipment is practical if there is a large area

(several acres) of removed buildings with just the piers remaining. In one instance, the training was set up to simulate the construction of an 80-acre airfield. A similar process is used with the bricks from the large chimneys, which are attached to each WWII-era building. The bricks (shown in Figure 4) are ground into landscaping material.

b. Troops also need "stick time" on heavy equipment, so having them contribute to the installation's construction program is a "win-win" arrangement.



Figure 3. Concrete piers from WWII buildings.

c. Figures 5, 6, and 7 show a WWII-era theater building under deconstruction. Two experienced contractors worked on deconstructing this building during the winter, which is their traditional down time. Armed with a lift, skid steer loader, flatbed truck, and years of experience, these two contractors tackled the theater deconstruction. Figure 6 shows the high quality of wood used in vertical structural elements and siding after the interior finishes had been stripped away. Figure 7 shows the heavy roof trusses and other supporting structure. The lumber used in this building, and many other structures at Fort McCoy, is of very high quality. Original grade stamps are

PWTB 420-49-30
10 February 2000

often visible. Lumber of this quality cannot be purchased new today --only acquired through deconstruction.



Figure 4. Bricks from WWII-era building chimneys.



Figure 5. Exterior of WWII-era theater.



Figure 6. Interior wall of theater.



Figure 7. Theater building roof trusses.

1.2.5 Use of Salvaged Material

a. The persons and groups who perform the deconstruction have used the recovered materials for a wide variety of projects. These projects include houses, garages, churches, and barns.

(i) One couple purchased a two-story barracks, and over a period of 10 weeks, they extracted about 30,000 board-feet of high quality lumber, which they used to construct a house. Their cost under the contract amounted to only about 3 percent of the retail cost for new lumber.

(ii) An Amish community took down a two-story barracks in 2 days. They used the salvaged material to construct a church, which they finished in 2 weeks.

(iii) A guest house was turned into a Baptist church at a cost to the congregation of \$1,500. They were able to extract all the material they needed from one story of the building, so they sold the remainder of the material for \$1,250. The net cost of extracting the necessary lumber was \$250, and the total cost for the new church

was \$38,000. The commercial estimate for the same job was \$200,000.

b. The lumber is the primary commodity of the salvages. Little else can be reused. Of course, there are usually some metal products that are easily recycled. While community members acquire lumber for little cost, they do need to purchase everything else that goes into new construction (e.g., nails, drywall, paint, roofing, landscaping, etc.). Such purchases have a positive ripple effect in the local economy.

1.3 Contract

1.3.1 Description

a. The U.S. Army Corps of Engineers Omaha District agreed to delegate demolition contract authority to the Engineering Division to carry out their deconstruction program. The contract used is rather simple. It is intentionally simplified so as to not ward off potential offerors, who, in this case, are average citizens with little legal experience. The contract was last revised in February 1999.

b. The Invitation for Bid/Sale Contract package contains about six pages of general conditions that spell out the bid procedure, terms of payment, liability issues, bidder eligibility, and a warning about friable asbestos.

c. Next are three pages of Specific Terms and Conditions, which list points of contact (POCs), scheduling, safety information, grounds for extensions, and other specific concerns.

d. The actual bid form is next, followed by a safety checklist that the contractor must follow.

e. Finally, the bid package includes a map of the installation.

1.3.2 Document

(Cover Page)

(General Conditions)

SPECIFIC TERMS AND CONDITIONS

1. NOTE: Fort McCoy will provide an area or container on the site for debris disposal.

2. Inspection of the property may be conducted daily between the hours of 8:00am and 3:30pm, Saturdays, Sundays, and Federal Holidays excluded.

PWTB 420-49-30
10 February 2000

3. Removal must be accomplished during daylight hours, no days excluded, unless specifically granted otherwise.
4. & 5. (Bid instructions)
6. (POCs)
7. The Installation Engineer, as used in this IFB, is the Fort McCoy Director of Support Services.
8. A period of sixty (60) days will be allowed for complete salvage and removal of materials, and removal of debris to the satisfaction of the Installation Representative at Fort McCoy. The time period will begin as of the date of written Notice to Proceed. Removal shall start immediately and not stop until complete, excluding any authorized delay documented by written notice for the Contracting Officer's Representative in accordance with the General Conditions of this IFB.
9. Fort McCoy will remove all asbestos in the building prior to bidding. A written notice to stop work will be issued by the Contracting Officer's Representative upon confirmation that asbestos exists. Fort McCoy will promptly remove such material and give written notice to the bidder when to resume salvage and removal work.
10. Exposure of airborne asbestos has been associated with a number of health problems. The bidder specifically agrees to indemnify and hold harmless the United States of America, its agents and officers, from liability of any nature or kind arising out of asbestos exposure to Successful Bidder and/or their associated personnel.
11. The building shall be removed to the concrete floor and foundation including the interior structures and fixtures. Burning of debris or material will not be permitted.
12. The bidder will provide all labor, materials, and equipment needed to complete removal work. Fort McCoy will be responsible for disconnection of all utilities to the building prior to Notice to Proceed and will provide temporary electric service at no cost to the bidder.
13. Prior to commencement of removal of the structure or equipment, the bidder shall schedule a safety briefing with the Fort McCoy Safety Office.
14. The bidder shall take all reasonable precautions to protect the health and safety of workers, and shall comply with all safety, health, security, and fire regulations required by the Installation Engineer.
15. (conditions for extension)
16. The adjacent military street is a main transportation route. The bidder shall not impede or obstruct the flow of traffic except when coordinated with and agreed upon in advance by the Provost Marshall.
17. Maps of the above and below ground utilities will be provided to the bidder upon request.

(Bid Form)

BUILDING DEMOLITION SAFETY CHECKLIST

The following safe work practices must be observed in connection with building demolition.

1. Restrict access to the demolition site around individual buildings by use of engineer tape or rope to maintain a 15-20' section around the building.
2. No children (under 16 years of age) are allowed within the work site.
3. Hard hats are required unless exempted by good cause (the only exemption is due to religion, in which case, an employee/employer relationship must not exist).
4. Demolition Plan - Demolition of exterior walls and floor construction shall begin at the top of the structure and proceed downward after the roof has been removed. Each story of exterior wall and floor construction shall be removed and dropped before commencing removal of exterior walls and floors in the next story below.
5. Structural or load-supporting members on any floor shall not be cut or removed until all stories above such floor have been demolished.
6. Personnel are not allowed underneath where they could be struck when overhead removal is in progress.
7. Electric, gas, and water will remain shut off. No fires in the old heating system are allowed.
8. Glass fragmentation hazards will be prevented, glass materials may not be dropped.
9. When dropping debris through a floor hole, the area on which the material is dropped shall be completely enclosed with barricades of not less than 42".
10. Whenever possible, floor openings should be covered or marked when not in use as material drops.
11. Work will not be conducted on roofs or tops of walls when weather conditions (e.g., lightning, wind, or ice) constitute a hazard.
12. Remove debris and other materials before demolishing the floor arch.
13. Two-story buildings fall protection.
 - a. All personnel when removing shingles on top of a two-story roof must be tied off with a rope or use a commercial retractable lifeline. All other work that requires standing on the roof may be done with this system or the safety monitoring system described below.
 - b. Safety monitor system: A competent person (responsible member of crew) must monitor the safety of all personnel during work on the roof. This person must be on the same roof and within sight, close enough to orally communicate warning of a hazard or unsafe action. All work on the roof must be done with a minimum of two personnel. Mechanical equipment may not be used or stored on the roof.
14. Siding removal procedures. Building siding will contain 5 to 7% non-friable asbestos (i.e., not easily crumbled or reduced to powder) tied up in the cement. Prior monitoring of siding removal and repair indicates no exposure hazard provided no grinding, wire brushing, drilling, or sawing is done to release asbestos from the cement. Start at the top using a pry bar to minimize breakage and place a plastic sheet under the collection area. Use of respirator protection (for asbestos) is recommended as a precautionary measure.

(Note that installation staff now remove siding)

15. If there is an employer/employee relationship between a successful bidder and workers on the demolition site, all work is subject to OSHA regulation.

PWTB 420-49-30
10 February 2000

Failure to follow OSHA-given rules may result in citation/fines and civil/criminal liability.

Signature of Contractor

Signature of Safety Manager

1.4 Recognition

1.4.1 Resource Management Award

a. The Fort McCoy DPW received the 1993 Outstanding Resource Management Organization Award from the Assistant Secretary of the Army (Financial Management) in February 1994 [Ginnetti 1994]. Just a year into the deconstruction program, Fort McCoy had already saved \$1.7 million in demolition costs. These savings were applied to renovating troop barracks.

1.5 Other Deconstruction Programs

1.5.1 Fort Ord, California

a. Fort Ord is an installation that closed in 1994 under Base Realignment and Closure (BRAC). The Fort Ord Reuse Authority sponsored a pilot project in which they disassembled several buildings of different types and carefully analyzed the economics of the deconstruction process and materials recovered. Their findings included:

- (i) 60 to 90 percent of building materials (by weight) could be salvaged
- (ii) materials salvaged from one building sold for \$3,000
- (iii) consumers were willing to pay up to 50 percent of current retail prices for the salvaged lumber.

b. See the extensive report from the Fort Ord Reuse Authority (Cook 1997) or see <http://www.fora.org> on the World Wide Web.

1.5.2 The Presidio of Monterey, California

a. In 1996, two community groups worked to deconstruct a large (9180 ft²) wood frame building at the Presidio of Monterey (Center 1997). A crew of five took 1 month to dismantle the building. They managed to salvage 87 percent of the building materials, including 66,000 board-feet of old growth lumber.

b. The net cost of the deconstruction, after material sales, was \$9,340. The projected demolition cost was \$16,800. Table 1 further breaks down the costs.

Table 1. Presidio case study.

	Deconstruction	Demolition Bid
Expenses		
Labor ¹ (5 people)	\$33,000	—
Logistics (equip. and waste disp.)	\$12,000	—
Administration	\$8,000	
Total Expenses ²	\$53,000	\$16,800
Income		
Sale of Salvaged Lumber	\$43,660	—
Net Cost	\$9,340	\$16,800
1. The prevailing wage of \$32/h was paid due to the Davis-Bacon Act. 2. Total expenses do not include asbestos abatement because the cost was the same for both methods. Source: Center for Economic Conversion (1997).		

1.5.3 Fort Sam Houston, Texas

a. The Fort Sam Houston DPW salvages many items from construction projects as a matter of course. These items include cabinets and fixtures, appliances, and foundation rubble for use in parking lots. One example of a salvaged high value item is a back-flow preventer from housing areas. The preventer costs \$3,000 new.

1.5.4 Twin Cities Army Ammunition Plant

a. The Twin Cities Army Ammunition Plant (TCAAP) is a BRAC installation in Minnesota. Several buildings had to be removed as part of the decommissioning process, including some large timber* frame warehouses. The project managers saw a valuable resource in the old timber and set up their contracts to encourage recycling (*Fine Homebuilding* 1996).

b. The first warehouse dismantled had a floor area of 377,000 ft². Project managers estimated that the warehouse contained 1,250,000 board-feet of timber. Of that, about two-thirds was recycled.

c. The next warehouse at TCAAP was 548,000 ft² and they were

* Architecturally speaking, "timber" means wood members of a large thickness, typically greater than 3"x (e.g., a timber frame house). "Lumber" means dimensional lumber of 1"x or 2"x thickness (e.g., 2"x4"). The case study described here was the dismantling of a timber frame warehouse. They were not removing "lumber" from the structure, but large timbers, which have a high salvage value.

able to recover about 80 percent of the timber for recycling. Deconstruction reduced landfill disposal by 3,850 yd³ for savings of about \$46,000 in tipping fees. Due to high value of the salvaged timber and avoided disposal cost, deconstruction saved a total of \$250,000 over what it would have cost for "smash and trash" landfilling.

1.6 Liability Concerns

a. In our litigious society, fear of future lawsuits has discouraged some potential reuse projects. Anecdotes passed around perpetuate this fear. In one true case, environmental regulators required an installation to pay for the remediation of asbestos in a WWII-era building, which the installation had sold to a private party some 20 years previously. It is easy to see the impetus for acting conservatively.

b. Some managers believe that allowing salvage of building materials exposes the government to lawsuits over safety or material hazard. They think that landfilling all C/D debris will diminish this liability. This philosophy ignores the long-term liability associated with landfill monitoring and closure, as well as the cost of expanding and operating government-owned landfills. As government-owned landfills finally close, the cost of off-post disposal may cause some to rethink their demolition strategy.

1.6.1 Fort McCoy, Wisconsin

a. Fort McCoy has avoided liability in several ways. In a general sense, the contracting mechanism allows the bidder to buy the building in place. The contractor becomes the owner; therefore, they are liable for their own activities. This is regulated just as if the contractor was performing the work in his or her own home. The only exception is if an employee-employer relationship exists between the successful bidder and other workers. In this case, all applicable regulations from the Occupational Safety and Health Administration (OSHA) apply. The Department of Labor (or state designee) becomes the regulator, not the Army.

b. Specific steps for hazard mitigation in the deconstruction process include government employees or government contractors removing all friable asbestos and asbestos-containing siding before turning the building over to the successful bidder. Lead based paint (LBP) is a serious concern when it is exposed on interior finish surfaces such as window sills. All successful bidders must attend a safety briefing that discusses job site safety, but also how to properly handle LBP. LBP-

covered wood is not a hazard when properly handled and installed. LBP-covered wood can safely be used for structural members because it will not be exposed after an interior finish such as flooring or drywall is applied.

c. The installation ensures through interviews that the successful bidders have some construction knowledge. This knowledge helps prevent safety problems. Finally, government employees frequently visit the job site to ensure the workers are following the "Building Demolition Safety Checklist," which is part of the contract and must be followed like any other contract provision.

1.6.2 U.S. Environmental Protection Agency (EPA) Proposed Rule

a. On 18 December 1998 (*Federal Register* 1998), the EPA proposed a rule under the Toxic Substances Control Act (TSCA) to provide new standards for the management and disposal of LBP debris from renovation and remodeling of public and commercial buildings. To date, no further action has been taken on this proposed rule. On the same date, the EPA proposed to temporarily suspend the applicability of regulations under Subtitle C of the Resource Conservation and Recovery Act (RCRA), which currently apply to LBP debris, including the toxicity characteristic leaching procedure (TCLP) for lead. The proposed standards would not address LBP debris generated by homeowners in their own homes. It is intended that the new regulations will be less burdensome, thereby increasing the number of lead abatement projects across the country and reducing the exposure of children to lead.

b. Currently, construction/demolition waste is regulated under RCRA as a hazardous waste if the debris fails the TCLP for lead (or anything else). If it passes TCLP, it can be disposed of in any permitted landfill. The EPA acknowledges by this proposed rule that the TCLP test as applied to demolition debris is not meaningful because of the extreme heterogeneous nature of this material.

c. The proposed rule under TSCA basically says anything with lead paint on it, or presumed to have lead paint on it, will be considered "lead based paint debris." This material can be disposed of in construction/demolition (C/D) landfills (due to the low acidity environment), hazardous waste landfills, and incinerators with appropriate pollution control devices. It cannot be buried in a municipal solid waste (MSW) landfill because of the potential for a high acidity environment.

d. The EPA acknowledges that the reuse of salvaged building components, especially those with architectural significance, is

widely practiced. Therefore, the proposed rule allows the salvage and reuse of such items as long as the LBP is intact. A transfer of salvaged building material between two parties would require an official notice that the material contains LBP. This official form contains warnings about LBP, information about the material being transferred, and the identity of the generator. If the LBP is deteriorating, it must be completely stripped from that building component before the component can be reused.

e. The outcome of this proposed rule may significantly affect the feasibility of building salvage. On the positive side, the rule may encourage salvage as it clearly states the EPA's less burdensome position regarding LBP. It also eliminates the possibility of dealing with a characteristic hazardous waste. On the negative side, managers might be reluctant to allow salvage of paint-covered materials unless they can be absolutely sure the coating is intact. The Army's typical practice of "smash and trash" of surplus buildings would not likely be affected, other than eliminating the possibility of disposing the waste in an MSW landfill.

1.7 Deconstruction Summary

a. The Fort McCoy Engineering Division staff have summarized several key points that they feel have made their deconstruction program such a success (Neitzel 1993):

- (i) Any building a private citizen demolishes is one the government does not have to.
- (ii) The individual demolition contract must be administered by staff onsite. These people have hands-on experience and can better stay focused on removing buildings at least cost, which includes their own overhead.
- (iii) Remove administrative barriers (e.g., requiring concrete removal or a bid bond) that limit the participation of potential smaller customers.
- (iv) To protect the installation's interests, require that the labor intensive deconstruction activities (e.g., roofing removal) be completed before any salvaged material leaves the site.
- (v) Limit the contract duration, with an option to extend the timeframe based on experience with the contractor.
- (vi) Be creative! Keep in mind the goal of removing buildings at least cost.

(vii) Understand the desires and capabilities of the potential user community. Tailor the contract language to meet their expectations and limitations.

The Fort McCoy POCs are Art Davey, (608) 388-3156; Fred Weiner, x3386; and Bonnie Robarge-Owen, x3296. Their address is Commander, Headquarters, Fort McCoy, ATTN: AFRC-FM-SSP-F, 2171 South 8th Avenue, Fort McCoy, WI 54656-5136.

2 Property Disposal Through Homeless Assistance

All government-owned real property (land and buildings) that is underutilized, unutilized, or deemed to be excess or surplus must be reported to the Department of Housing and Urban Development (HUD) for screening for potential use as facilities to assist the homeless in accordance with the Stewart B. McKinney Homeless Assistance Act (10 USC 2546) (hereafter referred to as the McKinney Act).

2.1 Background

a. The McKinney Act was enacted by Congress in 1987 to use excess public resources to meet the critically urgent needs of the homeless. The Act includes a prescribed process by which surplus Federal property is to be made available to assist the homeless. A 1988 lawsuit against five Federal agencies, including DOD, claimed that these agencies had failed to comply with the Act and sought a preliminary injunction. The injunction would prohibit the agencies from disposing of any property eligible for use under the Act until its provisions were properly implemented. The injunction was upheld and remains in effect today. As a result of the injunction, Title V of the McKinney Act was amended. Public Law 101-645, 104 Statute 4673 (effective February 1991) (42 USC 11411) provides that "suitable federal properties categorized as underutilized, unutilized, excess, or surplus may be made available to states, units of local government, and non-profit organizations for use as facilities to assist the homeless in accordance with several guidelines and processes."

2.2 McKinney Process

a. The McKinney "process" begins at the installation. Installations are responsible for compiling and submitting checklists of excess, underutilized, or unutilized facilities

through their chains of command to HUD for suitability screening and to the General Services Administration (GSA) for real property accounting. The installation must identify facilities for screening within 1 year of their disposal. In accordance with the Act, excess facilities reports are to be submitted both annually and quarterly. Installations are continually conducting regular surveys of all real property assets and reporting additions as required.

b. For purposes of accountability, installation submissions are typically made through their Major Army Commands (MACOMs). The MACOMs may authorize direct submission but more typically retain copies of submittals prior to forwarding to the U.S. Army Corps of Engineers Installation Support Division (ISD).

c. The ISD acts as a "clearing house" for Army installations on all matters pertaining to the McKinney Act process, both gathering and collating submittals for forwarding to appropriate agencies and informing installations of all results. The ISD collects all installation checklists and reports the information, as well as any changes of status, to HUD.

d. GSA is responsible for all Federal real property acquisition, disposal actions, and recording. Under the McKinney Act, GSA receives information on excess facilities from all Federal landholding agencies and reports them to HUD for screening to assist the homeless. Once the screening process is complete, GSA is responsible for any subsequent real property transaction, including disposal if warranted.

e. HUD receives information on excess facilities from GSA, determines the suitability of the facilities for homeless assistance, and reports back to the landholding agency. HUD is responsible for developing suitability and only HUD has the authority to make suitability determinations. Once suitability is determined, HUD verifies availability of the property with the landholding agency, ISD, then advertises the available properties in the *Federal Register*.

f. Homeless providers with an interest in any of the properties advertised in the *Federal Register* respond in writing to the Department of Health and Human Services (HHS). HHS accepts and evaluates applications from interested homeless providers such as states, local government, and or private agencies. If approved, HHS notifies the appropriate Federal landholder by forwarding a copy of the homeless provider's intent to apply for a specific property or properties.

g. If a provider is approved by HHS, the Army landholder will enter into the lease or permit agreement with the successful applicant or authorize HHS to convey title under the

McKinney Act. The facilities are made available at no cost to the lessee.

h. On the other hand, if excess property goes through one advertisement cycle and no request for the building/land has been expressed, the building/land can be removed from the availability list. A memorandum of notification must be submitted to ISD by the installation/MACOM, who will in turn request that HUD remove the building from the advertising process. If a memorandum is not received, the building/land will remain in the data base, and be readvertised until it is removed from the availability list.

i. More information on processing excess facilities under the McKinney Act may be obtained from the U.S. Army Corps of Engineers, ISD. The POC is Jeff E. Holste, CEMP-IP, telephone (703) 428-6318, e-mail: jeff.e.holste@usace.army.mil.

2.3 Suitability

a. HUD determines the suitability of a property for use as a facility to assist the homeless during the screening process without regard to any particular use as "suitable," "suitable/to be excessed," or "unsuitable." "Suitable" properties are those screened by HUD to be safe (e.g., not possessing any health or harmful risk to anyone or the environment) but not available for homeless providers use. "Suitable/to be excessed" properties are those screened by HUD to be safe that are to be excessed by the Army to GSA and not needed to support current or future mission requirements. "Unsuitable" properties are those screened by HUD and determined to be inaccessible, within airport safety zones, secured areas, flood zones, within hazardous material safety zones, or have documented deficiencies that represent a clear threat to personal physical safety that may include extensive deterioration or contamination.

b. Although the McKinney Act has been enacted since 1987 and many properties have been determined to be suitable/to be excessed, very few properties have actually been conveyed for use by the homeless on sustaining Army installations. Conveyances of approximately 30 facilities have been made at Forts McCoy, Belvoir, and Meade. In the cases of Forts Belvoir and Meade, these facilities were on the installation's periphery and convenient for use by the homeless. On the other hand, many facilities have been transferred to homeless organizations on installations closed under BRAC. Two troop barracks including all appliances and furnishings and 10 units of family housing with all appliances at the former Fitzsimons Army Medical Center are typical examples. These conveyances are not on the part of

the Army, however, but on the part of the Local Redevelopment Authorities (LRAs) which have been conveyed property by the Army.

c. The lack of conveyance of properties on sustaining installations does not have anything to do with the preferences of the Federal landholding agencies themselves, but rather the preferences of the homeless providers. Providers simply have not seen Army excess facilities as meeting their needs for housing for the homeless. Reasons for this have not been studied but presumably are three-fold:

(i) Army excess facilities are typically old, in a serious state of deterioration, and would require a substantial investment to bring them up to an acceptable level of quality for homeless housing.

(ii) Army excess facilities are not functionally configured for housing for the homeless without extensive reconfiguration and investment.

(iii) The location of Army excess facilities (e.g., on an installation and away from populations in need) makes them less desirable than other alternatives. Homeless providers are simply finding it more economical to meet homeless needs through other alternatives.

2.4 Applicability for BRAC

a. While the provisions of the McKinney Act as outlined above are generally applicable to all surplus Federal real estate, conveyance of property through BRAC has become a special exception. As the BRAC program accelerated in the late 1980s, LRAs began to feel that the McKinney Act requirements were a serious impediment to their goals of economic redevelopment. Subsequent legislation gave exemptions for BRAC installations.

b. The 1993 Base Closure Community Assistance Act specifically gave precedence to an LRA's claim to property over any claims of a homeless assistance program. Further, the 1994 Base Closure Community Redevelopment and Homeless Assistance Act exempts redevelopment actions from the McKinney Act. However, the homeless agencies could compete against other uses and appeal to HUD if they believed that the LRA had neglected their needs.

c. Finally, a rider to the 1996 National Defense Authorization Act removes the appeal authority from HUD and gives DOD the final say in the final disposition of property on closed military installations.

d. It is clear that the Congress heavily values the redevelopment of closed installations and intends to give LRAs every opportunity to do so.

2.5 Deconstruction and Salvage

a. The deconstruction and salvage alternative may effectively meet the needs of the homeless for low-cost housing while providing the Army the means to reduce its excess facilities inventory in an environmentally sensitive manner. Given the barriers to reuse of excess facilities, deconstruction and reutilization of salvaged structural lumber (as a minimum) can substantially reduce the cost of new construction of homeless facilities while greatly reducing the volume of nonhazardous solid waste. In addition, facilities may be constructed with salvaged materials at a site more suitable for the homeless provider away from potential conflicts with an installation's military missions.

3 References

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- Federal Register*, "Management and Disposal of Lead-Based Paint Debris," Proposed Rule; "Temporary Suspension of Toxicity Characteristic Rule for Specified Lead-Based Paint Debris," Proposed Rule, vol 63, p 70189, 18 December 1998.
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- Fort McCoy Public Affairs Office, Fort McCoy Driving Tour and Historic Brochure, Defense Automated Printing Service, undated.
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- Neitzel, Darrell D., "Demolition of WWII Wood Buildings" (submitted to *Public Works Digest*), Fort McCoy Engineering Division, 30 November 1993.
- U.S. Army Center for Public Works, *Public Works Digest*, v VI, n 2, p 19, March 1994.

4 World Wide Web Information Sources

4.1 Case Studies/Processes

Site Name	Universal Resource Locator
Bay Area Action - Arastradero - Salvaging the	http://www.baaction.org/arastradero/update_04_xx_97.html

Future	
Deconstruction Alameda & East Bay	http://www.materials4future.org/deconstruction.html
Recycling & Reuse in Residential Construction	http://www.libertynet.org/macredo/reintro.htm
Fort Ord Reuse Authority	http://www.fora.org/
PCTA's Green Building	http://www.pcta.com/green.html
Oregon Housing Green Building Project	http://www.hcs.state.or.us/data_research/greenbuilding/index.html
Portland Rose Garden Arena	http://www.ci.portland.or.us/energy/bestarena.html
Presidio of San Francisco Building 901	http://www.ciwmb.ca.gov/condemo/casestud/presidio/intro.htm
PTI PRISM: Winter 1994/95	http://pti.nw.dc.us/PRISM/SF95/TABLES/PRISM2.HTM
Seattle Sustainable Building Strategic Plan	http://www.ci.seattle.wa.us/util/RESCONS/susbuild/plan.htm
Sustainable Germantown Plan	http://www.asu.edu/caed/proceedings97/boatwright.html
Sustainable Evansville Indiana	http://www.sustainableevansville.org/
Village Homes	http://www.mother.com/villagehomes/VillageHomes.html

4.2 Homeless Advocates

Site	Universal Resource Locator
Communications for a Sustainable Future - Homeless	http://csf.colorado.edu/homeless/
HomeAid America (NAHB)	http://www.homeaid.org/
Homebuyer's Fair Affordable Housing Contact List	http://www2.homefair.com/readart.html?art=contlist
HomeSight - Comprehensive Guide to Housing Resources	http://www.homesight.org/index.html
National Coalition for the Homeless	http://nch.ari.net/wwwhome.html
National Resource Center on Homelessness	http://www.prainc.com/nrc/
HUD Office of Community Planning & Development Title V	http://www.hud.gov/cpd/titlev.html
HUD Office of Policy Development & Research (PD&R)	http://www.huduser.org/
HUD Military Base Reuse & Homeless Assistance Guidance	http://www.hud.gov/cpd/mbrmain.html
Federal Housing Finance Board	http://www.fhfb.gov/
Federal Home Loan Bank System	http://www.fhlbanks.com/
FHLBanks Office of Finance	http://www.fhfb-of.com/
Habitat for Humanity International	http://www.habitat.org/Default.html

4.3 Materials Exchange, Recycling, Reuse, Marketing

Site	Universal Resource Locator
C & D Waste Web	http://www.cdwaste.com/english/index.html?
California Materials Exchange	http://www.ciwmb.ca.gov/calmax/
CIWMB California Recycling Market Development Strategies	http://www.ciwmb.ca.gov/mrt/mrktrschr/mdplan96/plan/toc.htm
CIWMB C&D Debris Recycling Fact Sheets	http://www.ciwmb.ca.gov/condemo/factsht.htm

CBOT Recyclables Exchange	http://cbot-recycle.com/indexst.html
Duluth Timber Company	http://duluthtimber.com/
Florida Center for Solid & Hazardous Waste Mgt Loading Dock, Inc. (TLD)	http://www.eng.ufl.edu/home/fcshwm/
Loading Dock, Inc. (TLD)	http://www.loadingdock.org/
Market Overview for Reclaimed Lumber	http://www.materials4future.org/Rec.woodworks.html
National Association of Demolition Contractors	http://www.demolitionassn.com/index.html
National Center for Remanufacturing and Resource Recovery	http://www.reman.rit.edu/
ScrapWEB - ISRI Home Page	http://www.isri.org/
Solid Waste Association of North America (SWANA)	http://www.swana.org/
Steel Recycling Institute	http://www.recycle-steel.org/
Triangle J Council of Governments: Solid Waste	http://www.tjcog.dst.nc.us/TJCOG/solidwst.htm
Used Building Materials Association	http://ubma.pangea.ca/
National Wood Recycling Directory	http://www.afandpa.org/Recycling/Wood/PR001.html

4.4 General 'Green' Sources and Pointers

Site	Universal Resource Locator
CIWMB Waste Management Directories & Databases Listing	http://www.ciwmb.ca.gov/database.htm
GEO Web Sites - Green Design Network	http://www.greendesign.net/aboutall.html
Governing: environment/waste management links	http://www.governing.com/env.htm
Guide to Web Sustainable Design Resources	http://viva.lib.virginia.edu/fine-arts/sustain.html
The Oregon Remodelers Association	http://www.llm.com/remodelers.htm
Shaw Contract Carpeting Green Team	http://www.shawcontract.com/recycling/index.html
Sustainable Communities Network	http://www.sustainable.org/
Residential Env Design & Sustainability	http://www.reddawn.com/
AIA Committee on the Environment (COTE)	http://www.e-architect.com/pia/cote/home.asp
Austin TX's Green Building Programs	http://www.ci.austin.tx.us/greenbuilder/
Bay Area Action	http://www.baaction.org/contents.html
Brownfield Realty	http://www.brownfld.com/
California Integrated Waste Management Board	http://www.ciwmb.ca.gov/
California Resource Recovery Association	http://www.crra.com/
CEDAR: Military Base Closure & Reuse	http://www.cedar.ca.gov/military/index.html
Center for Resourceful Building Technology	http://www.montana.com/crbt/
Center of Excellence for Sustainable Development	http://www.sustainable.doe.gov/
Center for Economic Conversion	http://www.conversion.org/
Certified Forest Products Council	http://www.certifiedwood.org/
Cyburbia - Green Architecture	http://www.arch.buffalo.edu/cgi-bin/pairc/grn_arch

<u>Georgia Tech Sustainable Facilities & Infrastructure (SFI)</u>	<u>Http://maven.gtri.gatech.edu/sfi/</u>
<u>Green Building Alliance (GBA)</u>	<u>http://www.gbapgh.org/</u>
<u>GreenClips</u>	<u>http://solstice.crest.org/sustainable/greenclips/info.html</u>
<u>NAHB Research Center</u>	<u>http://www.nahbrc.org/</u>
<u>Materials for the Future Foundation</u>	<u>Http://www.materials4future.org/</u>
<u>Rocky Mountain Institute</u>	<u>http://www.rmi.org/</u>
<u>SmartWood Network</u>	<u>http://www.smartwood.org</u>
<u>UFL Center for Construction & Environment</u>	<u>http://s22.cfaa.ufl.edu/faculty/sustainable/CenterActivities/index.htm</u>
<u>UFL Architecture Centers</u>	<u>http://www.arch.ufl.edu/arc/academics/center.html</u>
<u>University of Illinois Environmental Council</u>	<u>http://www.environ.uiuc.edu/</u>
<u>U.S. Air Force Center for Environmental Excellence</u>	<u>http://www.afcee.brooks.af.mil/afceefrm.htm</u>
<u>U.S. Green Building Council (USGBC)</u>	<u>http://www.usgbc.org/</u>
<u>Waste Reduction and Recycling Information Waste ...</u>	<u>http://www.stopwaste.org/</u>

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