

Section A: Redevelopment Plan
Part II: Assessment Results

2.2: FACILITIES ASSESSMENT REPORT

AUTHOR: WILLIAM DANA, PE

CONTRIBUTORS: STEVE MALLORY, AIA, CSI

DICK WALKER, PE

BERNARD FINEBERG

RAY VOLLERT, PE

TOM BURKHART, PE

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EXECUTIVE SUMMARY: UMATILLA CHEMICAL DEPOT

This report assesses the major facilities across the entire Umatilla Chemical Depot. The assessment looks at the following general areas: Administrative areas, 100, 200 and 400 warehouse areas, K Block facilities, igloos, and the currently operating Umatilla Chemical Disposal Facility (UMCDF) where the remainder of the UMCD chemical weapons is being destroyed. The older Umatilla Chemical Depot (UMCD) facilities span across the entire Army Depot. Depot structures, with the exception of the UMCDF, were constructed to military base standard structures of the 1940's era. Only a small number of structures have been occupied or used for the entire Depot life. Many were or still remain, un-used, un-occupied, or have been neglected for several years. From approximately the early 1970's until September 11, 2001, the Depot operated at a low occupancy level. After September 11, 2001 a large number of the active military personnel were again stationed at the Depot. It was necessary to expedite the extensive refurbishment of many Depot facilities for the needs and use by the military, although these older facilities were never brought up to code.

Conditions of the older major buildings and facilities at the Depot were evaluated by performing technical walkdown surveys, reviews of existing documentation, and interviews of Depot personnel for various architectural and engineering aspects. Overview inspections were conducted for the headquarters and administration buildings, warehouses and warehouses converted to offices, shop facilities, the fire and emergency response facility, on-base housing, military billets, recreational facilities including the gym, swimming pool, and the hall, and the dining hall and other older or deteriorating structures.

Depot facilities are generally located in concentrated areas, which include: Administration area (buildings 1-76); 100 Area warehouses, 200 series warehouses, 400 series warehouses (Magazine Rd); North Operations buildings plus K block laboratory (600+ series), West warehouses rail loading docks (400 series) and other miscellaneous structures such as well houses. The Depot also includes the currently operating Umatilla Chemical Disposal Facility (UMCDF), which consists of modern state of the art systems, structures and components. UMCDF is located in the northeasterly portion of the Depot, and that facility is described in more detail in following sections.

This report should be referenced in combination with separately provided land use, ecosystem status, and cultural resources information and analyses. Contents of this report rely heavily on information gathered from the Depot BRAC coordinator and his knowledge of Depot structures and physical observations and review of documentation, made by the engineers and architect of the Dana Mission Support Team.

The facilities report is primarily a qualitative assessment of structures deemed for possible re-use. Detailed in-depth quantitative analyses of structures are necessary to establish valid re-use alternatives and the levels of required refurbishment and associated costs. For example, specific quantitative data including structural conditions; earthquake resistance; major dimensions, sizes; and strengths of structural members; conditions and code compliance of wiring inside walls; and other data, was not gathered for the purposes of this report. Some building and facility engineering drawings for some facilities were available; however specifications for the facilities were not found nor provided. Military standard design criteria and loads, material specifications, standard details, etc. from the 1940's and 1950's era could not be obtained to support preliminary conclusions.

A team of engineers plus an architect generally walked down each identified structure in this report unless the structure was determined as unavailable for entry by the Army BRAC coordinator. Structural, electrical, mechanical and architectural aspects were reviewed for each structure, and the following criteria were considered:

- ✓ Current Overall Condition
- ✓ Summary of previous facility data
- ✓ Codes and standards; issues found
- ✓ Inspection observations
- ✓ Renovation, expansion and feasibility
- ✓ Surviving re-use alternatives
- ✓ Costs of surviving re-use
- ✓ Recommendations

Available documentation, energy efficiency and environmental conditions were considered, however most of the documentation requested was simply non-existent. Due to the age of the structures and the military nature of the Depot, energy efficiency was not a priority when the structures were designed and constructed. Environmental conditions have been highlighted, especially for conditions where asbestos or lead paint may be present in structures.

Costs of surviving re-uses will depend upon the type of re-use selected, the decisions on the level of code compliance, and will require detailed quantitative building assessments for the intended reuse. In some cases there may be existing data on recent upgrades such as for the 200 series warehouse and 400 series warehouse upgraded by Washington-URS. Approximate ranges of costs per square foot for renovation have been provided, however this should not be used as a substitute for detailed cost estimates of proposed future upgrades.

The following sections summarize key observations and recommendations:

- **UMCDF:** The UMCDF represents a significant facility investment and that may be appropriate for new industrial applications. The UMCDF facility and equipment are constructed in accordance with current standards and requirements. The technical information about the systems and structures is current and detailed. Although some of the facility and equipment will need to be removed because of potential contamination or other reasons, much of the value of facility can be recovered if suitable reuse alternatives can be identified and developed.

It is recommended that a follow-up study be conducted to examine other potential re-use concepts of all or portions of the UMCDF. An offsite technical, marketing and industrial user interest and marketing surveys should be performed due to the facility high value (estimated >\$700 Million) as well as the expected high future reuse employment potential.

- **Administrative Area:** In general, the roofs and skin are in marginal but maintained condition. Many windows have been replaced with double pane. Significant amounts of asbestos products are found (cementitious) throughout. No observation of friable asbestos was found. Safety devices are installed (smoke alarms, exit signs, sprinklers) in some buildings. The structures are approaching the end of their useful life without increased remodeling and maintenance. Electrical systems and plumbing systems are generally those originally installed when the buildings were constructed in the 1940's. In most buildings, renovation and remodeling will necessitate changes that affect code compliance. Renovation or remodeling should assume that it will be necessary to bring areas up to compliance with current codes, unless modifications are strictly cosmetic. These structures are suitable for continued similar uses. Provisions for occupant safety (including fire suppression systems) and handicap accessibility are recommended. Some of the buildings are of potential historical value. Prior to reuse these buildings will require comprehensive structural assessments, electrical inspections, and plumbing inspections.
- **100 & 200 Series Warehouses:** The warehouses range from 12,000 to about 24,000 square feet in size. In all between the 100 and 200 series warehouses there appears to

be about 250K square feet of useable space. Except for buildings 202 and 203 there is no electrical connections to the warehouses. These structures are generally in very poor condition because they have been abandoned in place for many years. The old electrical systems are unusable. Some areas require extensive biological decontamination due to bird habitation over many years. In most cases the exterior siding and roofing systems have been compromised. The structural condition of the metal warehouses is questionable because the extent of oxidation is not known. If these facilities were stripped of their outer shells and decontaminated the remaining skeleton structure could be reused.

Samplings of structural wood elements in these warehouses were preliminarily examined to determine their integrity. It was determined that before any reuse alternative can be justified, there will need to be a more in-depth structural analysis of the facilities. These facilities will continue to degrade if no actions are taken to preserve them. Upgrading of most of these facilities will most likely be costly and detailed cost estimates would be recommended before determining viability of reuse. Demolishing and removing warehouses that are built on concrete loading docks could possibly free up those loading dock pads for use in handling cargo containers. Some 100 series structures may be salvageable depending on reuse alternatives. Upgrades to the facilities are estimated to be between \$20 and \$25 per square foot. Specialized engineering and construction are necessary to upgrade the structures to be code compliant.

- The following upgrades would be recommended if the 100 series warehouses were to be reconditioned for reuse:
 - Replace garage doors and frames
 - Dispose of siding and entirely re-side buildings
 - Retain original structural members
 - Rebuild electrical
 - Refurbish fire sprinklers and re-test
 - Replace portions of roof boards as required and install new roofing
 - Re-do the vents new siding
 - Other actions similar to the 200 series warehouses
- The following upgrades would be recommended if the 200 series warehouses were to be reconditioned for reuse:
 - Install new roof boards in damaged areas;
 - Replace roofing throughout;
 - Replace all wiring and lighting throughout,
 - Add wall insulation;
 - Add propane fueled unit heaters;
 - Redo fire protection systems (and re-test);
 - Replace doors and windows;
 - Add motorized doors where required;
 - Connect to upgraded power infrastructure.
- **400 Series Warehouses:** The 400 series warehouses are currently being used for storage. These warehouses are brick construction. There is looped railroad access and the structures have functioning lightning protection systems. Building 402 has been refurbished and is in good condition. It is the only 400 series facility with a septic system. In addition, the building panels have been replaced along with adding new

lighting and 3-phase electrical panels. It is also the only warehouse in the 400 series with operable warehouse electric roll-up doors. The remaining facilities are in acceptable condition.

- **400 Series Other Operations Structures:** With one exception, other miscellaneous buildings in the area are very poor condition and not considered to be salvageable for reuse. The exception is Building 450. This building is non-compliant to codes and standards. The building was a process building for composting of soils through bio-remediation. The building is currently used for RV storage. The structure is a pre-engineered metal building constructed in the 1980s. No heating is available in the building and no insulation is in the ceiling or the walls. The sky lights in the roof give some lighting for RV Storage. The building has no exit lights or egress light and can only be accessed at night time with a flashlight. There are receptacles found next to the power panel on the Northwest corner. There is also a 1 ½" fire pipe connection and a hose connection which did not appear to be charged with water. There are extensive outdoor parking spaces. The roads to this facility are in poor condition but are passable. The building is a candidate for many uses such as commercial, industrial, storage, shop, multi-use building.
- **K block facilities (600+ series):** Information for these buildings is contained in Appendix A, "For Official Use Only".
- **Igloos:** Igloos at the Umatilla Chemical Depot are not considered facilities by many; however the function of the UMCD igloos competes with other facilities for potential reuse. There are a total of 1001 igloos at UMCD. All igloos have internal dimensions of 26 feet wide and 13 feet high at the centerline. Igloo lengths are primarily 60 feet and 80 feet long. Only about 16 to 18 igloos contain double doors and the rest are single doors which still allow fork lift access. Many of the Igloos are already being used for storage, while the majorities are empty.

Most igloo doors are tight igloos and can be used for other purposes; however some igloos do not have tight doors, allowing rodents to enter. This is a problem that can be fixed. Very few of the igloos have power. Year around internal temperature of the igloos remains in the mid 50's to low 70's. Igloos can be slightly adapted or improved for re-use. It is judged that Igloos can be re-used for a variety of different types of storage and for certain agricultural uses, such as mushroom growing. The basic concrete igloo cannot be redeveloped or added on to. No costs were estimated for the igloos. According to the Army representative, the cost of igloo removal has been previously estimated to be in the range of \$100,000 per igloo, but no supportive data was given for this figure.

It is recommended that following decontamination and certification, igloos can be reused either for storage or agricultural options.

UMATILLA CHEMICAL DISPOSAL FACILITY (UMCDF)

UMCDF provides incineration systems and adjacent support facilities for the purpose of disposing of chemical weapons. This section describes specific buildings and systems. At the time of this writing (November 2009), reuse ideas for the UMCDF are still being captured. A website survey was posted on www.MissionUmatilla.com to capture interest and ideas about potential re-use of UMCDF facilities.

Present value estimates of the UMCDF exceed \$700 Million, and the value to the community in terms of employment and tax revenues is extremely significant. Therefore, although some preliminary ideas for re-use of UMCDF are contained within this report, it is recommended that a follow-up study be considered to examine other potential re-use concepts of all or portions of the UMCDF, by conducting offsite technical, marketing and industrial user interest and marketing surveys.

Due to Security Sensitive material, the DMST has provided an assessment of the facility in full detail in Appendix A: For Official Use Only. Upon security release, we will include the full report within Part 2: Assessments, Section 2.2 Facilities for the final Redevelopment Plan. The Appendix includes the following information:

Item	Building Name	Square Footage
1	The Personnel and Maintenance Building (PMB)	20, 550
2	The Medical Clinic	Not stated
3	The UMCDF Laboratory	9,465
4	The Maintenance Support Building (MSB)	12,000
5	The Container Handling Building (CHB)	Not stated
6	The Non-Toxic Maintenance Area (NMA) Building	17,600
7	The Munitions Demilitarization Building (MDB)	Not stated
8	The Process Support Building	12,567
9	The Administrative Support Building (ASB)	7,500
10	The Protocol and Environmental Compliance (PEC) Building	5,040
11	Modules 5 – 7 interconnected	10,800
12	Modules 8 – 10 interconnected	10,800
13	Modules 11-13 interconnected	10,800
14	Modules 1-4 interconnected	10,800
15	The Medical Laboratory Module (MLM)	948
16	The Operations Waste Management (OWM) Building	960
17	The Mask Storage Facility (MSF)	Not stated
18	The Sprung Structure	Not Stated

Table 1: UMCDF Appendix A: Assessment List

A detailed brochure with color photos has been prepared by URS-Washington and submitted to the LRA entitled “UMCDF Structures” and is also contained in Appendix A. This brochure contains an incomplete high level description of office and support facilities; however, *it **does not address the operational and industrial functions, capacities, capabilities and features of individual waste process and ancillary process support units. It also does not address re-use concepts.***

UMATILLA CHEMICAL DEPOT STRUCTURES

[Excluding the Umatilla Chemical Disposal Facility (UMCDF) above]

This report incorporates a list of facilities provide by the Army, entitled “Facility List for the UMCD” (file: *HD0012-UMCD Facility Data_Armyrevrlw.xls*). That list was used as a starting point for the preparation of this report. Conditions of buildings were reviewed by a team of engineers and architect to consider various aspects, including architectural, structural, electrical, communications, HVAC, Water, Plumbing, propane distribution system, and boiler/heat system. Infrastructure systems such as sewer, potable water, communications, storm drain, streets, and others are separately addressed in the “Infrastructure Report” (Task 5).

Observations and photographs of specific buildings and structures are contained in the next section. The following are “General Comments” observed during physical walkdowns:

Umatilla Chemical Depot- General Comments:

Architectural (Administration Area)

- Roofs and skin in marginal but maintained condition
- Ceilings low/ hallways narrow
- Carpeting shows signs of wear but has been maintained
- Many windows replaced with double pane
- Significant amounts of asbestos products (cementitious) throughout. No observation of friable asbestos.
- Safety devices installed (smoke alarms, exit signs, sprinklers) in some buildings
- Structures approaching the end of their useful life without increased remodeling and maintenance
- In most buildings, renovation and remodeling would necessitate changes that would affect code compliance. Any renovation or remodel should consider bringing areas up to compliance with current codes, unless modifications are strictly cosmetic.
- Specific building architectural comments are provided in the following sections

Structural

- Most commercial/industrial buildings are structurally sound
- Structural members of west warehouse area are exposed and subject to accelerated deterioration without complete skin (roof and siding) replacement
- Columns and beams are structural steel, reinforced concrete and large timbers. Most are in good condition.
- Many clear-span trusses are observed in warehouses
- Specific building structural comments are provided in the following sections

Electrical

- Considerable amount of original construction wiring is buried in walls. Asbestos wiring insulation was noted at some locations. Age of some structures and wiring indicates aging 2-wire feeds requiring replacement. Wiring insulation was observed to be very old and defective.
- Many panels have been replaced, estimated in the 1970's
- Wiring in 100 and 200 Area warehouse is out of service and would generally require complete replacement
- Power panel replacements were evident in some shop buildings with older wiring still in service, some about 50 years old

- Many breakers are old and possibly unreliable other than switches
- Lighting fixtures are mostly older less energy efficient types, some with incandescent bulbs which do not give the lumens/watt output values required
- Kitchen appliances appear to be functional with no signs of overheating
- Some original panels have obsolete and non-obtainable replacement parts
- Most buildings have a dedicated diesel generator backup and there are also many portable generators available
- Energy efficiency has not been a priority at UMCD, and most of the buildings were installed to the 1940 standards for military purposes
- Specific building electrical comments are provided in the following sections

Plumbing

- Many fixtures are old and replaced on a required basis
- Galvanized piping was used during the original construction and its condition is questionable. If it hasn't been previously replaced with copper or plastic it will need to be during any renovation
- As a facility generally constructed starting in the 1940s, and with limited additions and modifications since that time, the plumbing systems within the buildings range from galvanized supply lines, intermixed with copper and PVC in some areas, coupled with cast iron building waste lines. In those areas where modification and repair has taken place, all different combinations of supply piping material may be present and mixed as was necessary to perform the modification, maintenance, or repair.
- In some buildings, water pressure in the distribution systems was poor at best. This may be due to plugging of galvanized lines as a result of deterioration.
- A number of buildings have some sort of sprinkler system available. These range from automatic systems to fire department connection only types, based on the original use and requirement.
- Cast Iron piping was used during the original construction and its condition is questionable. If it hasn't been previously replaced with copper or plastic it will need to be during any renovation
- Plumbing systems generally seem to meet standards for the time frame they were installed. Specific re-use or modification or remodel of any building would require that the plumbing system be evaluated for use and compliance.
- In order to keep costs to a minimum, existing purpose and use of facilities should remain as-is, or as close as possible. Major changes in building occupancy or loading density will require modifications to the plumbing and waste systems that may prove costly. In each case, new use will necessitate a more complete review of fire protection requirements. This will likely cause major changes in fire suppression systems in individual buildings.
- Specific building plumbing comments are provided in the following sections

Propane/Natural Gas Distribution System

- The only natural gas usage is at the UMCD the rest of the base uses propane
- There are 37 propane tanks on site used for heating and emergency generators
- There is no natural gas distribution system in the administration area
- The closest natural gas source is at the northeast corner of the base
- Specific building propane distribution comments are provided in the following sections

Boiler/Heating and Ventilation Systems



- Original construction provided for a boiler in the administration area with a hot water piping network to the various buildings
- The boiler has been replaced with small boilers at each building or group of buildings
- The original boiler is no longer operated and may be no longer operational
- Most buildings with the exception of warehouses have forced air ventilation which includes capabilities for heating and cooling.
- Individual building boilers are in various states of operational readiness and repair
- Some occupied office and barracks have air conditioned systems, while others are fitted with window air conditioning units

Building #1 – Administrative Headquarters



East Elevation



North Elevation

Current Overall Condition: 1 2 3 4 **5** 6 7 8 9 10 Poor-Excellent

Comments:

Year Built: 1942

Sq Ft: 10,861

Asbestos: Previously detected

Biological Hazard: No

Lead Paint: Not previously detected

Previous Notes: Previous Radon detected, expect lead paint

Brick Exterior with a Red Clay Tile Hip roof– Considered a Category 3 Historic property. Not listed on the National Historic Registry, but an important local work of significance. The category 3 designation recommends upkeep in good condition and preservation (US National Park Service, Guidelines for Rehabilitating Historic Buildings 1983, and Army Regulation 420-40 Historic preservation). This building has a fallout shelter/vault addition on the south end, otherwise this building remains unaltered.



Documents Available: None

Codes & Standards, Issues Found

Architectural:

Handicap Accessibility issues throughout including the building approach, main floor access, lack of elevator, handrails at stairwells, accessible restrooms, fixtures and stalls, access to rooms in the basement, door hardware, no fire-rated doors/closers, exiting, no sprinklers, and protected stairwells.

Structural:

This appears to be the Depot Headquarters Building designed and constructed according military base facilities and structural standards in the early 1940's era.

The structural design, fabrication details, and many of the materials in-place are not contemporary. Accordingly, it is expected that the buildings are out of conformance with the current applicable building codes. For refurbishment and re-use, specialized engineering and construction are necessary to demonstrate that the upgraded structures are code compliant.

Electrical:

NFPA 70, NEC is the code that was followed at the time of upgrades probably in the 1980's.

Mechanical:

Window air conditioners are used. Building has older plumbing throughout and has no fire sprinkler system.

Inspections & Observations

Architectural:

Long-lasting building, kept in good shape.

No front accessible access, Not handicap accessible, Vinyl Asbestos Tile, Concrete and terrazzo floors, cast-in-place concrete construction throughout, interior Concrete Masonry Unit (CMU) in basement, vault in basement. Red clay tile roof, copper flashing and gutters in good condition.

Building at the west end of the parade grounds.

Structural:

No quantitative data on the structural conditions, major dimensions and sizes, strengths, or degradation were obtained, or were available.

The Headquarters Building appears to have been kept in service throughout the Depot life.

The building is a Colonial style brick masonry two-story structure.

It has a cast-in-place concrete basement.

There is a below ground cast-in-place concrete attached vault on the south side. The entrance to this vault is in the basement of the main building.

There are hardwood floors on the second floor that appear in acceptable condition. The interior stairs, banisters, and railings are sound.

The two story building has been re-modeled and upgraded regularly and recently to stay as functionally up-to-date as practical.

The roof appears to be asbestos composite or red clay tile (original). The roof condition, with some visible weathering, could remain acceptable indefinitely.

The overall style, room layout, and architecture are dated. This is a unique facility for the area, but not luxurious.

Electrical:

The building has been kept fairly well maintained and has recent power panels but could use more energy efficient overhead lighting. Inspection showed that the electrical system seemed up to date with fairly modern Square D power panels and mostly conduit or MC metal covered flexible wire was used. The original wire was not inspected but if the old insulation is still installed it is beyond its life cycle and has been known to crack and flash to ground when moved. The window-mounted air conditioners probably need to be replaced due to age. It has a break kitchen in the basement, which appears to be functional.

Mechanical:

Older plumbing is prevalent throughout. There is no sprinkler system. The air conditioning system is inadequate, requiring window air conditioners. Radon has been previously detected in the basement, and for this reason the basement is now well ventilated.

Renovation, Expansion & Feasibility

Expansion Capability is not warranted. This type of structure and the configuration greatly limits or precludes code compliant expansion. The primary use of an office building should be retained. Significant costs would be incurred for upgrading the structure. More detailed inspection is needed to assess the wiring condition.

Secondly, the building should not be expanded due to Category 3 Historic property status.

Surviving Re-use Alternatives

Best used as an office building. Change of use would require all code upgrades and this would be very expensive. For example, to meet current electrical code, this building should be upgraded to NFPA 70, NEC 2008 which would be very expensive.

For revitalization and re-use, the historical nature of the Colonial masonry structure would require specialized engineering and contractors.

Costs of Surviving Re-Use

Could be very high if required to be brought up to code. Electrical upgrades would be very high, maybe \$10-\$20/square foot but would basically provide a more reliable building for future usage.

Recommendations

No changes are recommended other than handicap and occupant safety upgrades.

Contact State of Oregon Historical Preservation Organizations, and determine their possible interest to acquire and maintain the building. (Note: Depot security limits public viewing of the building)

A comprehensive structural evaluation is needed to qualify the building for re-use. Electrically this building needs to be inspected for updated electrical wiring and panels plus the replacement of old fixtures, receptacles, switches and the addition of new capacity for the addition of newer office equipment which may require surge protection and additional capacity.

Building #2 – Firehouse



East Elevation



West Elevation

Current Overall Condition: 1 2 3 4 **5** 6 7 8 9 10 Poor-Excellent

Comments:

Year Built: 1941

Sq Ft: 10,842

Asbestos: Previously detected

Biological Hazard: No

Lead Paint: Previously detected

Other/Previous Notes: Expect lead paint

This is a fully equipped 3-bay fire house with building code conditions as noted. Upstairs offices are carpeted on concrete and contain bedrooms at the south end and offices at the north end.

The building has a brick exterior with a red clay tile hip roof. The building is considered a Category 3 Historic property. The building is not listed on the National Historic Registry, but an important local work of significance. The category 3 designation recommends upkeep in good



condition and preservation (US National Park Service, Guidelines for Rehabilitating Historic Buildings 1983, and Army Regulation 420-40 Historic preservation). This building has an addition on the south end of an extra fire engine bay, later enclosed the two southern bays for a day room and protected armory, otherwise this building remains unaltered.

Documents Available: None

Codes & Standards, Issues Found

Architectural:

There are Handicap Accessibility issues throughout including the following: building approach, main floor access, lack of elevator, handrails at stairwells, accessible restrooms, fixtures and stalls, access to rooms in the basement, door hardware, no fire-rated doors/ closers, exiting, corridor lengths and lacking protected stairwells.

Structural:

This appears to be the Depot Fire Station designed and constructed according military base facilities and structural standards in the early 1940's era.

The structural design, fabrication details, and many of the materials in-place are not contemporary. Accordingly, it is expected that the buildings are out of conformance with the current applicable building codes. For refurbishment and re-use, specialized engineering and construction are necessary to demonstrate that the upgraded structures are code compliant.

Electrical:

NFPA 70, NEC revision date not found.

Mechanical:

No sprinklers are installed.

Inspections & Observations

Architectural:

Typical red tile roof and brick. Copper flashing and gutters.
Engine bays are very tight and constricted, minimal clearances throughout, asbestos flooring (VAT found throughout, especially in basement), encapsulated asbestos and lead paint expected throughout the entire building. No fire-rated doors, all surfaces worn. Not sprinklered. Dormitory on second floor. Very little insulation in walls and minimal in roof

Structural:

No quantitative data on the structural conditions, major dimensions and sizes, strengths, or degradation were obtained, or were available. The Building appears to have been kept in service as the fire station and emergency response facility throughout the Depot life. The station includes a Colonial style brick masonry two story structure, with a cast-in-place concrete basement. The one story brick masonry engine house is attached. The first floor above the basement is a concrete slab on concrete joists. The engine house has a concrete floor on grade. The engine house has a flat built-up roof on timber beams.

The two story building has timber trusses. The roof on the two story building appears to be asbestos composite or red clay tile (original). The two story building roof condition, with some visible weathering, could remain acceptable indefinitely.

The two story building has a command center, rooms for some training, equipment storage, and dormitory rooms upstairs. The two story building and the engine house have been re-modeled and upgraded regularly and recently to stay as up-to-date, and as well equipped as practical.

Mechanical:

The firehouse building is air conditioned. Older plumbing is observed with typical galvanized piping and typical cast iron drain piping. The building has no fire sprinklers.



Renovation, Expansion & Feasibility

Expansion Capability: Only limited expansion of this facility could be warranted. This type of structures and the configurations greatly limits or precludes code compliant expansion. It is possible to expand to south with additional bays but not in other directions due to building configuration and Category 3 Historic property status.

Feasibility & Techniques for Adaptive Redevelopment: Primary use of Fire station should be kept as-is due to area and structures served.

Surviving Re-use Alternatives

The building could be reused as an office building/ garage. For revitalization and re-use, the historical nature of the Colonial masonry structures would require specialized engineering and contractors. As needed electrical updates would be required to maintain the function of this facility.

Costs of Surviving Re-use

This was a qualitative walkdown only. Depending on the reuse alternative selected, there would be substantial costs to bring up to code or for change-of-use.

Recommendations

A comprehensive structural evaluation is needed to qualify the building for re-use. Address handicap requirements and occupant safety upgrades. Maintain the current Fire Station use as long as the Depot requires.

An electrical review of the wiring and the alarm system should be done to bring this firehouse into compliance with current electrical codes and one of the potable diesel generators should be connected to this emergency building to provide emergency power on loss of site power. This building is currently covered by the 750KW diesel but in the revised configuration it needs to be at least covered by itself since it is an emergency building. The fire alarm system will need to be revised to future configurations.

Contact State of Oregon Historical Preservation Organizations, and determine their possible interest to acquire and maintain the building.

Building #3 – Guardhouse



South Elevation

Current Overall Condition: 1 2 3 4 **5** 6 7 8 9 10 Poor-Excellent

Comments:

Year Built: 1942

Sq Ft: 594

Asbestos: Previously detected

Biological Hazard: No

Lead Paint: Detected

Other/Previous Notes: Expect lead paint

Brick exterior with a red clay tile hip roof. Bound on all sides by street.

Documents Available: None

Codes & Standards, Issues Found

NFPA 70, NEC date of revision not found.

Inspections & Observations

The Guardhouse building is used for a server room, the exterior of the building remains unaltered. Very little insulation in walls and minimal in roof. The building must have cooling for the server room with internally dominated load.

This building is backed by the Administrative Area's Diesel Generator.

Renovation, Expansion & Feasibility

Expansion Capability: None

Feasibility & Techniques for Adaptive Redevelopment: None, retain as is.



Surviving Re-use Alternatives

This building is only housing the security assess control server and may not be needed in the future. It is not used as the guard gate and controls the road barrier and traffic lighting for the gate.

Costs of Surviving Re-use

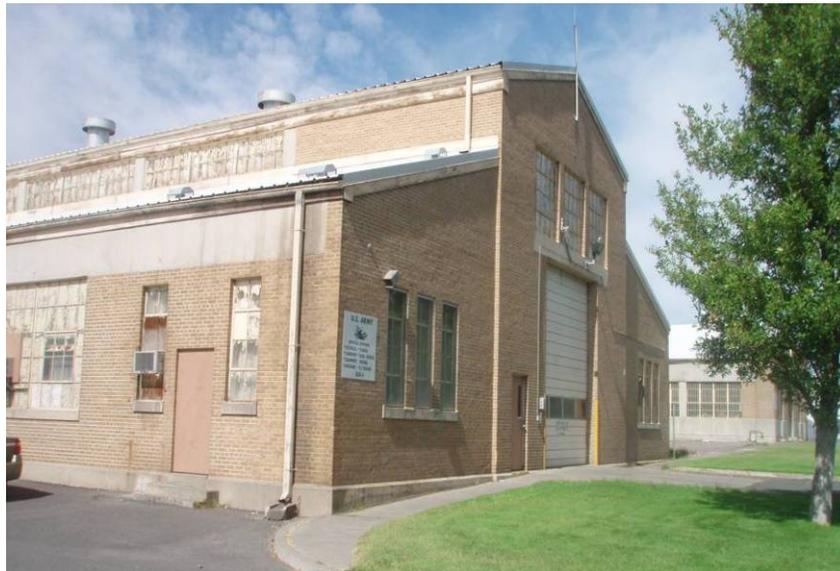
Minimal

Recommendations

This building may need inspection on the wiring inside the conduits to see if it needs replacement. Depending on the future usage a UPS may be needed to keep continuous power on the access control and personnel accountability system with additional equipment cooling.

Handicap and occupant safety upgrades may be required.

Building #4 – Maintenance Shop



MaintenanceShop Building



Maintenance Shop Machines



Maintenance Shop Building – Interior looking west

Current Overall Condition: 1 2 3 4 5 **6** 7 8 9 10 Poor-Excellent

Comments:

Year Built: 1942

Asbestos: Previously detected

Lead Paint: Previously detected

In overall good condition.

Sq Ft: 21,994

Biological Hazard: No

Other: n/a

Documents Available: None

Codes & Standards, Issues Found

Architectural:

Non- Handicap restrooms, exterior door threshold, no ramp on east end



Structural:

This appears to be a Depot shop building designed and constructed according to military base structural standards in the early 1940's era.

The structural design, fabrication details, and many of the materials in-place are not contemporary. Accordingly, it is expected that the building is out of conformance with the current applicable building codes. For refurbishment and re-use, specialized engineering and construction are necessary to demonstrate that the upgraded structure is code compliant.

Electrical:

NFPA 70, NEC dates of revisions not found. Building lighting is excellent.

Mechanical:

The building comes with a 10 Ton P&H double girder overhead crane to service equipment and vehicles. The building contained a sprinkler system and has insulated walls. Numerous pieces of large machine shop equipment are installed for maintenance activities. A large service bay with rails exists for bringing in mobile equipment into the building.

Inspections & Observations

Architectural:

Crane fills length with partial pit, Heavy concrete construction with heavy wood trusses

Heavily used building

Insulated, sprinklered

Stock also stored on racks outside on racks just outside the west end.

Foil faced insulation.

Structural:

No quantitative data on the structural conditions, major dimensions and sizes, strengths, or degradation were obtained, or were available. The building is a currently used maintenance shop. The center portion of the building is a high bay area. There is a low bay area on one side.

The high bay has structural timber roof trusses. Concrete columns with a wall on top support the trusses. The columns also have corbels that support a bridge crane. The low bays have concrete roof beams supported on concrete columns. The exterior walls are brick masonry.

The building floor has a center longitudinal pit originally for personnel access to the underside of vehicles. It is now out-of-service and securely covered with steel plates.

The building appears to have been kept in service and maintained throughout the Depot life. Some parts of the low bay area show neglect.

Electrical:

Electrically this building has been upgraded with new power panels and been maintained fairly well. There are some questions about the status of the wiring but the raceway appears to be Rigid Galvanized Steel Conduit. The lighting should be looked at to be more efficient types. It appears the pad mounted transformers for the area were also replaced when the distribution went from 4160 V to 12.5 KV. The shop electrical machine tools were also functional and appeared to be in good shape.

Mechanical:

A 10 Ton P&H double girder bridge crane is installed above the bay for maintenance activities. Sprinklers are installed. The building is insulated and heated. Rail access enters the west end of the building. Plumbing is typical mostly galvanized piping.

Environmental Conditions & Compliance

Architectural:



No evidence of signs of environmental spills was observed. The building has been kept clean and in service.

Renovation, Expansion & Feasibility

This type of structure and the configuration greatly limits or precludes code compliant expansion. The building could expand to the west if necessary but the current usage of the space is not in need of expansion and is not warranted and the code issue would still exist.

For revitalization the historical nature of this structural timber, concrete, and masonry building would require specialized engineering and contractors. Upgrades to lighting and fixtures would help the buildings usage for training.

Surviving Re-use Alternatives

With fairly limited updates this building could be a functional shop or a training shop easily in the future. This is a permanent large structure that could not be relocated.

Costs of Surviving Re-use

Minimal cost would be involved for continued re-use of this building. To upgrade the building electrically is estimated to be between \$5-\$10 per sq ft.

Recommendations

Use as is as a maintenance shop and revise as needed for the future mission. This could easily be a part of a technical school training program. It is recommended to keep the shop in use, update the doors, and provide access and handicap restroom fixtures. A comprehensive structural engineering evaluation is needed to qualify the building for re-use.

Building #5 – Motor Pool Vehicle Shop



East Elevation



Typical: Admin Area Steam Unit Heater



Monorail Hoists for Servicing Vehicles



Old Main Breaker and Distribution Panel Eastside

Current Overall Condition: 1 2 3 4 5 **6** 7 8 9 10 Poor-Excellent

Comments:

Year Built: 1942

Asbestos: Previously Detected

Lead Paint: Previously Detected

Sq Ft: 19,300

Biological Hazard: No

Other: n/a

In overall good condition. The building is a currently used vehicle maintenance shop.

Documents Available: None

Codes & Standards, Issues Found

This Depot shop building is designed and constructed according to military base structural standards in the early 1940's era. Therefore, the structural design, fabrication details, and many of the materials in-place are not contemporary. Accordingly, it is expected that the building is out of conformance with the current applicable building codes. For refurbishment and re-use, specialized engineering and construction are necessary to demonstrate that the upgraded structure is code compliant. The electrical NFPA 70, NEC date of revision not known. Code compliant handicap restrooms and doors are not installed.

The building is not insulated. Electrical breakers are old and would require re-test or replacement. Engine exhaust tubes extend down from the ceiling to exhaust vehicle exhaust, which should be investigated if a safety issue exists.

Inspections & Observations

Architecturally, the building is in overall in good condition. The concrete in good condition. The building could use new coating on interior vertical surfaces. Interior and exterior wash bays exist (south). Windows are single glazed windows. The exterior walls are brick masonry. The building appears to have been kept in service and maintained throughout the Depot life.

Structurally, no quantitative data on the structural conditions, major dimensions and sizes, strengths, or degradation were obtained, or were available.

The building has structural timber roof trusses and a lumber roof deck. Concrete columns and bearing walls support the trusses.

Electrically the main panels and breakers on the eastside need replacement. Some of the original electrical service is still in service and is far beyond service life. The lighting is in need of replacement. Local starters are past life and should be replaced and the wiring probably is original and is far past life cycle. The insulation needs to be inspected/tested.

Mechanically, the heating is typical steam heated fan powered unit heaters. The building has typical plumbing, galvanized piping with some updates noticed. The building has a sprinkler system.

Renovation, Expansion & Feasibility

Only minimal renovation would be recommended. Some upgrades could be done to continue a similar usage., however structural expansion of this facility is not warranted. This type of structure and the configuration greatly limits or precludes code compliant expansion.

Surviving Re-use Alternatives

The mechanic shop has been used for doing vehicle and mechanical repairs to mobile equipment. With some upgrades this space could continue to function in that capacity or as part of the technical training campus.

The historical nature of this structural timber, concrete, and masonry building would require specialized engineering and contractors. It cannot be concluded it could be profitable to dismantle the roof trusses and market them off-site.

Costs of Surviving Re-use



Costs of surviving re-use are minimal. Electrical upgrades could cost in the range of \$10 / sq-ft.

Recommendations

Keep in current use, update restrooms and accessibility issues. Upgrade could be made for future training usage. This building was designed and constructed as a single purpose shop. It is not a candidate for new functions and uses. A comprehensive structural engineering evaluation is needed to qualify the building for re-use

Building #6 – Gas Station



Gas Station looking north



Gas Station looking south

Current Overall Condition: 1 2 3 4 5 6 7 8 9 10 Poor-Excellent

Comments:

Year Built: 1942

Sq Ft: 410

Asbestos: Previously Detected

Biological Hazard: No

Lead Paint: Not Detected

Other/Previous Notes: Petroleum products

Poor unused condition

Documents Available: None

Codes & Standards, Issues Found

None

Inspections & Observations

The gas station is in very rough condition. Above ground tanks are located to the north, and pumps are currently used for depot vehicles. Electrically, the gas station is not updated and in poor shape.

Renovation, Expansion & Feasibility

The number of pumps could be expanded. It is possible to rebuild the building and replace the pumps.

Surviving Re-use Alternatives

The facility could be re-used as a gas station if tanks and piping are up-to-code. The station could possibly become a credit card installation.

Costs of Surviving Re-use

Architectural:

It is judged that cost of re-use of this station would be moderate to expensive not economically feasible.



Recommendations

Conduct further inspection, salvage and removal of hazardous materials and waste, as applicable prior to acceptance. If and when demand exists, the building needs to be removed and replaced with a package Gas Station which can function for public access with totally new electrical components and explosion proof raceways.

Depending on demand and code compliance, this gas station could be kept operational for the short term, since the nearest gas station is at quite a distance.

Building #7 – Carpenter Shop (foreground)



**Buildings #8 and 9
(background)**

NOTE: According to the Army reuse representative, Buildings #8 and #9 are constructed identically to building #7 except for loading docks. Buildings #8 and #9 are currently used primarily for pesticide storage.



North elevation of buildings 7, 8, & 9



Interior of Carpenter Shop

Weil Mclain Boiler

Current Overall Condition: 1 2 3 4 **5** 6 7 8 9 10 Poor-Excellent

Comments:

Year Built: 1942

Sq Ft: 4,300

Asbestos: Previously Detected

Biological Hazard: No

Lead Paint: Previously Detected

Other/Notes: The building is a currently used the carpenter's or wood shop. Single story Brick with Concrete window and door headers. This building is similar to Storage Bldgs 8 and 9, which are a dock level. The building appears to have been kept in service and maintained throughout the Depot life.



Documents Available: None



Codes & Standards, Issues Found

Accessibility issues exist. The structural design, fabrication details, and many of the materials in-place are not contemporary. Accordingly, it is expected that the building is out of conformance with the current applicable building codes. For refurbishment and re-use, specialized engineering and construction are necessary to demonstrate that the upgraded structure is code compliant. The NFPA 70, NEC revision date not known.

Inspections & Observations

Architecturally, the building is heavily used, “2x4 end grain” floor in production area; Inside is rough but usable. Mechanical room is rough and office in rough shape. There is little storage room for stock. Single glazed windows exist. Noted mechanical boiler and steam heating system and minimal lighting.

Structurally, no quantitative data on the structural conditions, major dimensions and sizes, strengths, or degradation were obtained, or were available. The building has concrete columns and exterior brick masonry walls. The roof trusses (not visible) are likely timber. The building shop floor is laminated end grain lumber.

Electrically, some electrical upgrades done but wiring and lighting were in question. The dust removal system needs to be inspected and tested.

Mechanically, the building has sprinkler system and steam unit heaters. Machine exhausters are installed to control airborne particulate. A 2.7 Million BTU Weil Mclain boiler is installed in building. Boiler would have to be internally inspected along with review of maintenance records to determine overall condition and expected life. Piping appears to be in good condition.

Renovation, Expansion & Feasibility

Architectural:

Expansion Capability: Expansion of this facility is not warranted. This type of structure and the configuration greatly limits or precludes code compliant expansion.

Feasibility & Techniques for Adaptive Redevelopment: n/a

Building lighting fixtures need to be replaced with more efficient and better output overhead light fixtures. Probably mechanical systems need to be replaced with more modern equipment for better access to spare parts and more reliable operations.

Surviving Re-use Alternatives

The building could be used for either shops or storage. For revitalization and re-use, the historical nature of this structural timber, concrete, and masonry building would require specialized engineering and contractors. The building could be re-used for a technical training classroom or shop.

Costs of Surviving Re-use

Cost of surviving reuse is estimated to be approximately \$30 to \$40 / sq-ft.



Recommendations

The building structure in good shape, needs interior remodel and new windows. Continue the current carpenter shop use as long as the Depot requires. This building was constructed as a single purpose shop. Building 7 could possibly be re-used as a technical training facility. A comprehensive structural engineering evaluation is needed to qualify the building for any re-use requiring a change of structural use.

The mechanical systems should either continue to be maintained and used in their present configuration or otherwise replaced for any desired new configuration usage.

Building #10 – Roundhouse (Decontamination Vehicle Storage)



Roundhouse ceiling, north main bay looking southeast



Roundhouse ceiling, North main bay



Roundhouse- South bay

Current Overall Condition: 1 2 **3** 4 5 6 7 8 9 10 Poor-Excellent

Comments:

Year Built: 1942

Sq Ft: 6,748

Asbestos: Previously Detected

Biological Hazard: No

Lead Paint: Previously Detected

Other/ Notes: Now used for recreation and truck storage. Was used as a railroad maintenance building.

Documents Available: None



Codes & Standards, Issues Found

Architectural:

Door, restroom, and access issues.

Structural:

This appears to be a facility designed and constructed according military base structural standards in the early 1940's era.

The structural design, fabrication details, and many of the materials in-place are not contemporary. Accordingly, it is expected that the building is out of conformance with the current applicable building codes. For refurbishment and re-use, specialized engineering and construction are necessary to demonstrate that the upgraded structure is code compliant.

Electrical:

The electrical system is original 1940's and is past life: NFPA 70, NEC date of revision probably 1940's.

Mechanical:

No sprinkler system is installed.

Inspections & Observations

Architectural:

Brick and Concrete building with wood trusses and there are three past railroad engine bays with an overhead catwalk. The south bay is separate and used to store a large chemical accident response vehicle. The remaining two (north bays have been converted into a basketball court (the rails remain below the court surface. The building does not actually house a railroad turntable. Bathrooms are rough but usable; offices and other areas inside are used for storage and are in rough condition. Brick building with 6:12 sloped roof.

Structural:

No quantitative data on the structural conditions, major dimensions and sizes, strengths, or degradation were obtained, or were available. The building, originally the Depot railroad round house, currently stores the Decontamination vehicle.

The center high bay area has concrete columns that support timber trusses. The timbers for the truss likely were procured as a high structural grade. They are clear and appear sound, but this overview was insufficient to confirm the absence of serious degradation.

The overhead catwalk has no hand or guardrails. There does not appear to be a capability for OSHA compliant fall arrest provisions for the catwalk.

The exterior walls are brick masonry.

Electrical:

The building is a brick shell with very old electrical components installed that are past life.

Mechanical:

Exhausters are present for diesel smoke. There are two rails in the large bay and one rail in the smaller bay.

Renovation, Expansion & Feasibility

Expansion of this facility is not warranted. This type of structure and the configuration greatly limits or precludes significant code compliant structural expansion.

Redesign and replace the existing electrical system depending on future needs.



Surviving Re-use Alternatives

Reuse as original purpose but for training technicians. Other uses would include storage or a shop. For revitalization and re-use, the historical nature of concrete, brick and timber structures of this type would require specialized engineering and contractors. It cannot be concluded that it would be profitable to dismantle the timber structural members and market them off-site. A comprehensive structural engineering evaluation is needed to qualify the structure for re-use.

Costs of Surviving Re-use

The architect has estimated that the cost of surviving reuse would be in the range of \$30 / sq-ft.

Recommendations

With a community college in Hermiston and the Union Pacific interested in the track system this, along with other maintenance buildings, could be utilized for technical training of various railroad car and engine maintenance crafts. With the exception of structural, the building can be easily redone to current codes and standards. Other recommendations include keeping the building as storage or a shop.

Until needed, continue the current Decontamination vehicle storage use as long as the Depot requires.

Building #11 – Medical Clinic and Offices



Building 11 Exterior looking Northeast



**Building 11 Converted Warehouse to Offices
Medical and Engineering Offices Looking East**



Building 11 West Ambulance Bay



Piping Code Violation- Building 11 Basement



Plumbing Code Violation- Building 11



Current Overall Condition: 1 2 3 4 5 6 7 8 9 10 Poor-Excellent

Comments:

Year Built: 1942

Sq Ft: 30,660

Asbestos: Previously Detected

Biological Hazard: No

Lead Paint: Not Detected

Other/Notes: The condition of various parts of the building ranges from 2 to 5. Concrete building with continual dock on south side.

Documents Available: None

Codes & Standards, Issues Found

Architectural:

Handicap issues are apparent throughout the facilities.

Structural:

This appears to be a Depot warehouse unit designed and constructed according to military base structural standards in the early 1940's era.

The structural design, fabrication details, and many of the materials in-place are not contemporary. Accordingly, it is expected that the building is out of conformance with the current applicable building codes. For refurbishment and re-use, specialized engineering and construction are necessary to demonstrate that the upgraded structure is code compliant.

Electrical:

NFPA 70, NEC rev. date not available.

Mechanical:

Basement restroom plumbing and other piping is out of code compliance and unusable.

Inspections & Observations

Architectural:

A few handicap restrooms were evident but only a small portion. Stairs and rails not to code. Offices on the east side are finished offices.

No fire doors or fire separations between uses. Construction was concrete floors and columns, with exterior wall brick infill panels, partitions of plywood and gypsum wall board, mix of doors.

Lead paint and asbestos are expected. Asphalt shingles rough with some heavily rust stained. Minimal insulation.

Structural:

No quantitative data on the structural conditions, major dimensions and sizes, strengths, or degradation were obtained, or were available.

This warehouse, on an expedited basis, has been converted or refurbished for military uses, including offices, a medical clinic, and a decontamination facility.

This is a concrete frame warehouse structure. It has concrete columns that support concrete beams and roof slabs. The building has brick masonry exterior walls. It has exterior concrete loading docks.

The building appears to have been continuously used and maintained.

The visible concrete structure members and masonry walls appear sound.

Electrical:



The warehouse has been converted into offices and a Medical Clinic with new panels and electrical fixtures. The condition varies depending on the area of the building.

Mechanical:

Building uses central boiler heating with forced air heating and air conditioning throughout. Steam unit heaters are installed in the ambulance bay. Building has a fire sprinkler system and motorized rollup bay doors. The furnace and ducting are in good condition.

Renovation, Expansion & Feasibility

Expansion capability is limited to adjacent building proximities. This type of structure and the configuration greatly limits or precludes code compliant expansion.

Feasibility & Techniques for Adaptive Redevelopment: Gut the inside partition walls to structure. Revise and build to new use that can be applied to the column spacing. Many overhead coiling doors exist.

Surviving Re-use Alternatives

This building can continue to be used for storage, warehouse, and offices. For revitalization and re-use, the historical nature of this structural concrete and masonry building would require specialized engineering and contractors.

Costs of Surviving Re-use

The architect estimates cost of surviving re-use to be in the range of \$30 / sq-ft.

Recommendations

For the immediate future, the building can be used for office space, medical or dental clinic. Some electrical and plumbing revisions are judged to be necessary when the building is upgraded for office and medical uses.

Longer term it recommended to gut and reuse existing structure for warehouse/ storage. This building was originally designed and constructed as a single purpose warehouse. A comprehensive structural evaluation is needed to qualify the structure for re-use.

Buildings #15A, 15B, 16A, 16B, 70 - Duplexes and Detached Garage



Duplex 15 from west



Duplex 16 from south



Detached Garage

Current Overall Condition: 1 2 3 4 5 6 7 8 9 10 Poor-Excellent

Comments:

Year Built: #15 Duplex - 1941
#16 Duplex - 1955
#70 Garage - 1942

Sq Ft: #15 - 4,370 s/f
#16 - 4,370 s/f
#70 - 935 s/f

Asbestos: Previously Detected
Lead Paint: Not Detected

Biological Hazard: No



Other/Previous Notes: Expect lead paint; 2 story with basement

Previous Documents Available: Site plan

Codes & Standards, Issues Found

Structural:

These appear to be Depot housing units designed and constructed according to military base housing and structural standards in the early 1940's era.

The structural design, fabrication details, and many of the materials in-place are not contemporary. Accordingly, it is expected that the buildings are out of conformance with the current applicable building codes. For refurbishment and re-use, specialized engineering and construction are necessary to demonstrate that the upgraded structures are code compliant.

Electrical:

Probably installed to NFPA 70 prior to 1970's and updated to a later revision using a grandfather clause.

Mechanical:

No direct mechanical code violations were noted.

Inspections & Observations

Architectural:

This is a duplex housing building. The duplex single family housing units are Colonial style brick masonry two story structures. Each unit contains living room, dining room, fire place, family room. Brick and Red tile roofs were old but still in fair to good condition. The original red clay tile roof has held up for a very long time. Even though the floors were very squeaky the condition was fair and livable.

There are kitchen additions, and recent modest low quality interior refurbishments, including repainting and kitchen flooring. There are hardwood floors that appear in acceptable condition. The interior stairs, banisters, and railings are sound. The masonry fireplace and chimney appear to be safely useable.

The 4-bay garage building was small and although it is the same brick it had a red clay with a French tile pattern.

New mechanical fireplace, likely little insulation in the attic and nearly none in the walls. There were front door vestibules. Good for south side. Overheating likely without trees to shade the south and west, Windows had double pane glass.

Structural:

Only one unit, 15-B, and the four place garage (one place/unit) were inspected. No quantitative data on the structural conditions, major dimensions and sizes, strengths, or degradation were obtained, or were available. Basements are cast-in-place concrete construction with some cracking observed in concrete floor.

The roof appears to be asbestos composite or red clay tile (original). The roof condition, with some visible weathering, could remain acceptable indefinitely.

The garage is a brick masonry structure. The walls between units are 2x4 lumber framed. The roof is cement tile (original). The units are small and narrow (one compact vehicle). The doors for each unit may only be 8 ft wide.

Electrical:

The original power panel/meter had been gutted and a more modern panel was installed. The wiring was two wires ungrounded to receptacles and the new meter was outdoors on a rack for all four units.

Mechanical:



Plumbing has older galvanized piping with updates. The units were of original construction with newer gas fired boiler and hot water tank. The propane fired furnace and air conditioner system appear to be in good condition. Heating is via hot water recirculation to radiators plus forced air. Water piping is galvanized. The basement (15B) was tight and free of evidence of water leakage.

Renovation, Expansion & Feasibility

For renovation, extensive interior updating, including new fixtures, doors and lever hardware is recommended. Handicap ramps and plumbing are required. New windows, wall and roof insulation is recommended. Replacement of old past end of life wiring, lighting fixtures and receptacles is recommended. Replacement of the power panels might also be necessary.

Expansion of these units is not warranted. This type of structure and the configuration greatly limits or precludes code compliant expansion

Surviving Re-use Alternatives

The duplex units can continue to be used as housing with moderate updates. Structural modifications are not recommended, since for revitalization and re-use, the historical nature of these Colonial masonry duplex housing units would require specialized engineering and contractors. Potential fire danger exists unless wiring inspection/replacement is done due to arcing to ground potential in the old insulation when moved.

Costs of Surviving Re-use

The architect has estimated that cost of a modern update would be in the range of \$50/ft².

Recommendations

Update interior including new fixtures, doors and lever hardware, maintain brick, add accessibility features and maintain roof as it has been over the years and do not modify. Check flashing. Detached garage in good condition, however it may require rated walls if used by separate owners. A comprehensive structural evaluation is needed to qualify the duplex units for re-use. Upgrade electrical as required to make for safe usage.

It is suggested to contact State of Oregon Historical Preservation Organizations, and determine their possible interest to acquire and maintain the units.

Buildings #17, 18, & 19 – Central Receiving and Warehouse



Building 17 Warehouse (Outside)



Building 18 Warehouse converted to office Similar to Building 11



Building 17 Warehouse (Inside brightened photo)



**Building 19 Warehouse (background)
Not toured- similar to Bldg 17)**

Current Overall Condition: 1 2 3 4 5 6 7 8 9 10 Poor-Excellent

Comments:

Year Built: #17 Warehouse – 1942
#18 Offices – 1942
#19 Warehouse – 1942

Sq Ft: #17 – 13,591 s/f
#18 – 13,641 s/f
#19 – 12,120 s/f

Asbestos: Previously Detected
Lead Paint: Not Detected

Biological Hazard: No

Other/Previous Notes: Radon detected, expect lead paint

The conditions of various parts of the building range from 2 to 5. Concrete building with continual dock on south side. Low slope roofs.

Documents Available: None

Codes & Standards, Issues Found

Handicap issues are identified throughout the facilities. This Depot warehouse unit designed and constructed according to military base structural standards in the early 1940's era and not per current code. For refurbishment and re-use, specialized engineering and construction are necessary to demonstrate that the upgraded structure is code compliant.
The electrical NFPA 70, NEC rev. is not known; probably 1940's.

Inspections & Observations



Architectural:

Stairs and rails not to code. No fire doors or fire separations between uses. Construction is concrete floors and columns, with exterior wall brick infill panels, partitions of plywood and gypsum wall board, mix of doors.

Lead paint and asbestos expected. Asphalt shingles rough with some heavily rust stained.

Overall the building is in good condition.

Structural:

No quantitative data on the structural conditions, major dimensions and sizes, strengths, or degradation were obtained, or were available.

This warehouse is structural steel industrial type structure. The steel columns support structural steel trusses. Steel trusses, and steel wide flanges with brick infill panels type construction. The exterior walls are brick masonry.

The building appears to have been continuously used as a warehouse and maintained. The structural condition appears good, but this overview was insufficient to confirm the absence of serious degradation.

Electrical:

The building is 1941 installation without any upgrades of panels, wiring or fixtures. Lighting is low in Building 17 (photo electronically enhanced to show the inside).

Mechanical:

Building 17 is unheated and is not insulated, with the exception of a very small enclosed supervisor's boxed office which is insulated and heated. Heating steam comes from the central plant. Vents are observed in the roof. The building has a sprinkler system. During the winter this system could freeze.

Renovation, Expansion & Feasibility

Expansion is limited by adjacent building proximity and not practical. If redevelopment is desired, gut the inside partition walls to structure. Revise and build to new use that can be applied to the column spacing. Many overhead coiling doors. Expansion of this facility is not warranted. This type of structure and the configuration greatly limits or precludes significant code compliant expansion.

Surviving Re-use Alternatives

This building is only practical to be reused for storage, warehouse, and offices.

Costs of Surviving Re-use

The architect estimated that cost of surviving re-use would be in the range of \$30 per sq-ft.

Recommendations

Architectural:

Building 17 and 19 can continue to be used for storage, but is recommended that this building be insulated, additional electrical capacity added and lighting improved. Some electrical upgrading will be needed as the wiring is probably beyond life. Unit heaters should be installed and roof vents regulated. These warehouses were designed and constructed as a single purpose warehouse. It is therefore not a candidate for new functions and uses. If re-use involves a different type of usage, a comprehensive structural engineering evaluation is needed to qualify the building for re-use.

Building #30 – Dunnage Shop



Dunnage – South Elevation



Building 30 Dunnage –Interior

Current Overall Condition: 1 2 **3** 4 5 6 7 8 9 10 Poor-Excellent

Comments:

Year Built: 1942

Asbestos: Previously Detected

Lead Paint: Previously Detected

Sq Ft: 15,787

Biological Hazard: No



Other/Notes: The west half of the building is occupied by the Army and the east half is occupied by the National Guard. Only the west half was available to the DMST for the walkdown. The building was refurbished on an expedited basis in late 2001.

Documents Available: None

Codes & Standards, Issues Found

Architectural:

The building has newer metal siding over an old wood framed building. Handicap accessibility is not available.

Structural:

This appears to be a Depot warehouse unit or shop designed and constructed according military base structural standards in the early 1940's era.

The structural design, fabrication details, and many of the materials in-place are not contemporary. Accordingly, it is expected that the building is out of conformance with the current applicable building codes. For refurbishment and re-use, specialized engineering and construction are necessary to demonstrate that the upgraded structure is code compliant.

Electrical:

NFPA 70, NEC revision not available.

Inspections & Observations

Architectural:

Expect both lead paint and asbestos board siding. The interior well sprinklered, but in otherwise very run down condition. Roof leaks, traffic paint coatings, and plywood wainscoting with gwb above were noted. The building is generally poor shape. Asbestos (cement asbestos board (CAB) and lead paint are likely to occur during demolition. The building has generally poor energy efficiency.

Structural:

This Dunnage shop has been refurbished for military use. No quantitative data on the structural conditions, major dimensions and sizes, strengths, or degradation were obtained, or were available. This is a wood structure (single story). The 8 in x 8 in timber columns support 8 in x 12 in roof beams. The roof joists and deck is lumber. It has sheet metal siding. The timber columns and beams likely were procured as a high structural grade. They are clear and appear sound, but this overview was insufficient to confirm the absence of serious degradation.

Electrical:

Some electrical upgrades but not up to current codes and standards. Old overhead lighting fixtures beyond life.

Mechanical:

The west portion of the building has fire sprinklers, lunchroom and insulated ceiling.

Renovation, Expansion & Feasibility

Expansion Capability: None

Feasibility & Techniques for Adaptive Redevelopment: Not feasible

Expansion of this facility is not warranted. This type of structure and the configuration greatly limits or precludes code compliant expansion. The building is adequate for storage.



Surviving Re-use Alternatives

Structurally, for revitalization and re-use, the aging nature of this structural timber building would require specialized engineering and contractors. A comprehensive structural evaluation is needed to qualify the structure for re-use.

It cannot be concluded it could be profitable to dismantle the timber columns and beams and market them off-site.

Costs of Surviving Re-use

The building could continue to be used for storage, therefore with this use the costs would be minimal.

Recommendations

Use for storage or tear down. It is judged not cost effective to upgrade unless a new function can be found. Recognize this building was designed and constructed as a single purpose shop or warehouse. It is not a candidate for new functions and uses.

Building #31 – Warehouse and Offices



Building 31, North Side



Building 31 East Half (West Half is Offices)



Building 31 East Warehouse Entrance



Building 31 N.E. Corner

Current Overall Condition: 1 2 3 4 5 6 7 8 9 10 Poor-Excellent

Comments:

Year Built: 1942

Sq Ft: 18,000

Asbestos: Previously Detected

Biological Hazard: No

Lead Paint: Detected

Other/Notes: Concrete building with metal roofing over wood trusses, metal siding.

Documents Available: None

Codes & Standards, Issues Found

Architectural:

Handicap issues found throughout the facility. No fire separations between uses

Structural:

Original design was a Depot warehouse designed and constructed with wooden beams according military base structural standards in the early 1940's era.

The structural design, fabrication details, and many of the materials in-place are not contemporary. Accordingly, it is expected that the buildings are out of conformance with the current applicable building codes. For refurbishment and re-use, specialized engineering and construction are necessary to demonstrate that the upgraded structures are code compliant.

Inspections & Observations

Architectural:

Building is in good condition and insulated. There are two east-west parallel hallways for the west half offices, one on the north side and one on the south side of those offices.

Structural:

The building has been refurbished for military security offices and storage.

No quantitative data on the structural conditions, major dimensions and sizes, strengths, or degradation were obtained, or were available.

These are wood structures (single story) with timber columns and roof trusses. The roof joists and deck is lumber. The walls are 2 x 6 lumber framed.

The timber columns and beams likely were procured as a high structural grade. They are clear and appear sound, but this overview was insufficient to confirm the absence of serious degradation.

Electrical:

Limited upgrades would be required to keep the building in service. Further inspections would be necessary to verify the wiring status, but if it is gutted it could be redesigned for future uses and power needs as required.

Mechanical: Roof is insulated. Fire sprinklers are installed.

Renovation, Expansion & Feasibility

Expansion Capability: Possible, but the building has a very long axis, limited end extensions

Feasibility & Techniques for Adaptive Redevelopment:

Although expansion is possible, the building has a very long axis, with limited end extensions. From an electrical standpoint, if the building were to be expanded, first the inside partition walls to structure would have to be gutted, and then revised and rebuilt to current electrical codes and standards. From a structural aspect, this type of structure and the configuration greatly limits or precludes code compliant expansion.

Surviving Re-use Alternatives

Architectural:

The existing building reuse could continue for storage, warehouse and offices.

Structural:

For revitalization and re-use, the older nature of these structural timber buildings would require specialized engineering and contractors.

It cannot be concluded it could be profitable to dismantle the timber columns and beams and market them off-site.

Costs of Surviving Re-use



The architect has estimated that cost of upgrades for reuse could be in the \$20/sq-ft range.

Recommendations

The existing building is recommended to be continued for use as storage, warehouse and offices. A comprehensive structural evaluation is needed to qualify either structure for re-use. Building 31 could also be used as part of a technical training campus for classrooms and/or offices.

Building #32 – Operations Center / BRAC Office



Operations Control Center looking West



Operations Control Center looking Southwest

Current Overall Condition: 1 2 **3** 4 5 6 7 8 9 10 Poor-Excellent

Comments:

Year Built: 1942

Sq Ft: 9,094

Asbestos: Previously detected

Biological Hazard: No

Lead Paint: Previously detected

Other/Notes: One story vinyl sided building over cement asbestos building and asphalt shingle roof.

Documents Available: None

Codes & Standards, Issues Found

Architectural:

Access ramp to 1st floor on east end complies with code. Cementitious asbestos was noted underneath exterior siding.

Electrical:

NFPA 70, NEC needs to detail inspect the wiring and fixtures to identify any areas that may be a fire issue.

Inspections & Observations

The building appears to have been maintained and updated probably in the 1980's. The panels were current but the wiring needs further inspection. The lighting is older and doesn't appear to be energy saver type. The receptacles probably need replacement and the panels need to be retightened due to loosening over time of the wires. The building is currently an office building with operations monitoring room and a large conference room for meetings. It does appear to be maintained and houses some historical displays near the front entry hallway. The building has central air conditioning.

Renovation, Expansion & Feasibility

Feasibility & Techniques for Adaptive Redevelopment: Renovation would include new doors, windows, insulation, and asbestos abatement of the entire structure. Electrical upgrades would be required depending on future usages.



Surviving Re-use Alternatives

Continue to use as an office or training classrooms for technical training.

Costs of Surviving Re-use

The architect has estimated that costs of surviving uses could vary widely from \$20-\$50/ sq-ft.

Recommendations

The building can be used as commercial space, offices or shops after the communications equipment is removed along with the antenna and walls are modified to the new application. Otherwise remove the structure.

This building might be a good visitor center for historical depot information about the area from Lewis and Clark to Oregon Trail to Army Depot days.

Building #33 – Recreation Center



Building 33 East elevation



Building 33 South Entrance



East elevation

Current Overall Condition: 1 2 **3** 4 5 6 7 8 9 10 Poor-Excellent

Comments:

Year Built: 1962

Sq Ft: 8,509

Asbestos: Previously detected

Biological Hazard: No

Lead Paint (previous note): 1st Survey

Other/Previous Notes: Grease trap wastes previously noted.

Two story vinyl sided building over cement asbestos building and asphalt shingle roof. Recreation areas and kitchen on the first floor and offices are on the second floor. The first floor is now a multi-use recreation hall and meeting spaces mainly for military personnel. The south half of the first floor is hardwood floor with a big kitchen and bar. The second floor has offices (in use).

Documents Available: None.



Codes & Standards, Issues Found

Architectural:

Access ramp to 1st floor on south end. There is a closed exterior stair to 2nd floor. The North exit stairway appears to be unsafe. Likely no draftstops. No protected stairwell from south end of second floor. Vinyl asbestos tile (VAT) was noted on second floor and (CAB) cement asbestos board noted under vinyl siding.

Structural:

This is a two story building, originally for the Depot Administration, designed and constructed according to military base structural standards in the early 1940's era.

The structural design, fabrication details, and many of the materials in-place are not contemporary. Accordingly, it is expected that the building is out of conformance with the current applicable building codes.

Electrical:

NFPA 70, NEC needs to detail inspect the wiring and fixtures to identify any areas that may be a fire issue.

Mechanical: The kitchen likely needs up to code ventilation upgrades. There is no sprinkler system which could be a code issue depending on future uses. The heating boiler does not meet code. It needs backup water level indication and dual gas valves installed in series (double block and bleed).

Inspections & Observations

Architectural:

There is no dishwasher in the kitchen and the kitchen may need to be licensed. No fire doors observed. Vinyl Asbestos Tile (VAT) may be under floor layer and lead paint is likely. The north end of first floor is very rough. There is no elevator to the second floor. Roofing is part metal roofing and part composite.

Structural:

No quantitative data on the structural conditions, major dimensions and sizes, strengths, or degradation were obtained, or were available. This is a wood frame two story structure. The building was refurbished on an expedited basis in late 2001. It is not a modern building.

The building has replacement vinyl siding.

Prior to the 2001 refurbishments, the structure had limited use for a long time.

Electrical:

Needs updates to the kitchen and other rooms as needed for the new functions. The electrical panels have been replaced like similar buildings but an inspection for tightness of wires and proper loading should be done prior to adding new loads. A fire panel is installed in the boiler room to transmit "indication" of fire in the building only (no sprinkler system installed).

Mechanical:

Building 33 is cooled with window shaker air conditioning units only. There is no fire sprinkler system. The heating boiler is noted as having only one automatic shut off valve with only one water level indicator.

Renovation, Expansion & Feasibility

Expansion Capability: Expansion of this facility is not warranted. This type of structure and the configuration greatly limits or precludes code compliant expansion. For refurbishment and re-use, specialized engineering and construction are necessary to demonstrate that the upgraded structure is code compliant. For example, cement asbestos board (CAB) at exterior walls would require removal.



Feasibility & Techniques for Adaptive Redevelopment: New doors, windows, insulation, abate asbestos from the entire structure. Air conditioning should be installed throughout the building.

Surviving Re-use Alternatives

The building had limited use for a long time, prior to the expedited recreation hall and other refurbishments in 2001. It is not certain that any pending near future re-use alternative will develop sufficient to warrant follow-on re-modeling and structural revitalization. The building could be reused for housing.

Costs of Surviving Re-use

The architect has estimated that cost of surviving re-use could be in the range of \$50 / sq-ft. Adding an Elevator for ADA compliance would be a costly addition. Adding forced air ventilation would also be costly and require further estimates. Removal of asbestos products creates a high negative salvage value for this building.

Recommendations

Reuse as low cost housing or tear down. Bring kitchen and ventilation requirements up to code. Install fire doors where required. If future reuse involves a change in the type of building use, a comprehensive structural evaluation may be needed to qualify the structure for extended use or re-use.

From an electrical standpoint, the installation needs limited upgrades depending on other revisions, but the lighting and electrical systems seem functional. More detailed electrical inspection would be required depending on the redesigned configuration.

Costs for upgrading the boiler to code and adding a sprinkler system throughout the building, and removal of asbestos products does not bode well for reuse of this building.

Building #34 – Barracks



East elevation

Current Overall Condition: 1 2 3 **4** 5 6 7 8 9 10 Poor-Excellent

Comments:

Year Built: 1950

Sq Ft: 6,162

Asbestos: Previously Detected

Biological Hazard: No

Lead Paint: Previously Detected

Other/Notes: Two story vinyl sided building over cement asbestos building and asphalt shingle roof. Living areas on the first floor and second floor. Building 34 was unavailable for internal walkdown since the Army stated that it is currently occupied. The internal layout 13 bedrooms, 4 living rooms, and 7 bathrooms. There are no individual bathrooms per room (substandard). The living quarters do not match up-to-date military living quarters. The plumbing and electrical have been upgraded according to Army personnel.

Documents Available: None

Codes & Standards, Issues Found

Architectural:

Access ramp to 1st floor. New south exterior stair to 2nd floor. Back exiting stairs signed unsafe. North exit stairs appear to be unsafe. Likely no draft-stops are installed. No protected stairwell



from south end of second floor. Vinyl asbestos tile (VAT) noted on second floor and (CAB) cement asbestos board noted under vinyl siding.

Structural:

This is a two story building, originally a military living quarters unit (billet), designed and constructed according to military base structural standards in the early 1940's era.

The structural design, fabrication details, and many of the materials in-place are not contemporary. Accordingly, it is expected that the building is out of conformance with the current applicable building codes.

Electrical:

NFPA 70, NEC probably 1999, but not verified.

Inspections & Observations

Architectural:

The interior of this building was not inspected. Cement asbestos board (CAB) was noted at exterior walls the building has replacement vinyl siding covering the CAB. Window shaker air conditioning units are installed. This exterior of this building appears to be kept in better shape than the Recreation Center

Structural:

This is a wood frame two story structure. It is not a modern building. No quantitative data on the structural conditions, major dimensions and sizes, strengths, or degradation were obtained, or were available.

The building was refurbished on an expedited basis in late 2001. There is an outdoor structural steel stairway from the second story, which was added in 2001 and is likely OSHS compliant. Prior to the 2001 refurbishments, the structure was un-used for a long time.

Electrical:

The electrical panels were upgraded in the laundry rooms. The dryers are new and appear not to have much use. The rooms are multiple bunk beds with receptacles for decks. The lighting is adequate but the hallways have low ceilings.

Mechanical:

Building was not accessible and mechanical systems were therefore not reviewed.

Renovation, Expansion & Feasibility

Expansion Capability:

This type of structure and the configuration greatly limits or precludes code compliant expansion. New doors, windows, insulation, asbestos abatement of the entire structure would be required. For refurbishment and re-use, specialized engineering and construction are necessary to demonstrate that the upgraded structure is code compliant.

Surviving Re-use Alternatives

Reuse alternatives include housing only. It is not certain that any pending near future re-use alternative will develop sufficient to warrant follow-on re-modeling and structural revitalization.

Costs of Surviving Re-use

The architect has estimated that cost of upgrades for reuse would be in the range of \$50/sq.-ft.

Recommendations



Reuse as low cost housing or tear down. A comprehensive structural evaluation is needed to qualify the structure for extended use or re-use. Bring kitchen and ventilation requirements up to code. Install fire doors where required. Some electrical upgrades and future inspection may be necessary.

Building #35 – Single Family Residence



House #35- Southeast corner



House #35 Northwest corner



Kitchen at three steps up from utility room

Current Overall Condition: **1** 2 3 4 5 6 7 8 9 10 Poor-Excellent

Comments:

Year Built: 1941	Sq Ft: 1,240
Asbestos: Detected	Biological Hazard: No
Lead Paint: 1 st Survey	Other/Notes: n/a

The house is in very poor condition, with the interior in bad shape. The house is currently vacated. There are no landscaping and outdoor yards with fenced privacy.

Documents Available: None

Codes & Standards, Issues Found

Architectural:

Vinyl siding over unknown flooring. Newer asphalt shingle roof. May not be feasible or worthwhile to bring up to code and provide accessible functions.

Structural:

This appears to be an original Depot housing unit designed and constructed according to military base structural standards in the early 1940's era.



This 1940 wood frame house is not contemporary construction. Accordingly, it is expected that it is out of conformance with the current applicable building codes. For refurbishment and re-use, specialized engineering and construction are necessary to demonstrate that the upgraded house is code compliant.

Mechanical:

A large portion of the house is allocated to an old heating system.

Inspections & Observations

Architectural:

Molding and interior paint are poor condition. It has replacement vinyl siding. The roof is composition shingles (new). House has double pane windows. Hard floors have vinyl tile containing asbestos. Garage may have value as a storage shed. It has hardwood floors that appear in acceptable condition. There have been recent modest low quality interior refurbishments, including repainting, and kitchen flooring. On the negative side, the property is infested, and has reached the end of its service life.

Structural:

No quantitative data on the structural conditions, major dimensions and sizes, strengths, or degradation were obtained, or were available. This is a wood frame one story, 2-bedroom, single family house. There is a wood frame single car garage.

Electrical:

The house was electrically updated with a new panel probably in the 1980. It has some EMT conduit in the laundry room but it doesn't appear to have been maintained well. Further inspection is needed to access the condition of the original wiring as it probably is 2 wire ungrounded and beyond life cycle. It also has some risk to people for shocks.

Mechanical:

The house is heated by a propane furnace in the basement.

Renovation, Expansion & Feasibility

Expansion Capability: The house does not warrant revitalization or expansion, due to the aging current condition, and basic out-of-date military standard quality.

Feasibility & Techniques for Adaptive Redevelopment: Somewhat feasible to do major remodel, but likely not worth the effort to only gain a small amount of square footage. Major upgrades are not cost effective.

Surviving Re-use Alternatives

There are no re-use alternatives. The quality of the house is insufficient for relocation.

Costs of Surviving Re-use

Not Applicable

Recommendations

Plan and schedule demolition. Tear down and could use external services for a mobile home reconnection.

Building #36 – Dining Hall



East entry



Dish Washing Area



Cafeteria



Kitchen Grill

Current Overall Condition: 1 2 3 4 **5** 6 7 8 9 10 Poor-Excellent

Comments:

Year Built: 1943

Sq Ft: 5,383

Asbestos: Previously Detected

Biological Hazard: No

Lead Paint: Not Detected

Other/Previous Notes: Previously observed grease trap wastes

The building appears to be in good condition. This is a group of small buildings combined into a single story dining facility. The building and kitchen were refurbished on an expedited basis in late 2001, in order to re-establish its use as a military dining hall. The dining hall is now inactive.

Documents Available: None



Codes & Standards, Issues Found

Architectural:

Appears to be up to code.

Structural:

This is a single story building, originally the dining or mess hall, designed and constructed according to military base structural standards in the early 1940's era.

The structural design, fabrication details, and many of the materials in-place are not contemporary. Accordingly, it is expected that the building is out of conformance with the current applicable building structural codes.

Electrical:

Electrical panels appear to be code compliant but further wiring inspection would be required for a different usage.

Inspections & Observations

Architectural:

Wall substrate may be cab and these could be lead paint encapsulated under newer coatings. The kitchen with the exception of the Formica counters appears to be in very good shape. The walk-in freezer and refrigerator are located outside the kitchen on the south side. The dining area is nice and pleasant. The building has replacement vinyl siding with composition shingle roofing. Restrooms are upgraded and in good condition.

Structural:

No quantitative data on the structural conditions, major dimensions and sizes, strengths, or degradation were obtained, or were available. It is a wood frame single story structure.

Electrical:

Electrical panels are in good condition.

Mechanical:

The building is air conditioned.

Renovation, Expansion & Feasibility

Expansion Capability: The building could expand in each direction but would have to work with roof slopes

Feasibility & Techniques for Adaptive Redevelopment: Wood-framed additions.

Surviving Re-use Alternatives

Re-use could be Kitchen/ Dining hall, Meeting room, Pizza parlor, or small family restaurant. If the building were to be structurally modified, a comprehensive structural evaluation would be needed to qualify the structure for extended use or re-use.

Costs of Surviving Re-use

The architect has estimated that cost of reuse would be in the range of \$30/sq-ft.

Recommendations



The building has a very nice kitchen, intact and is ready for use. Structurally, the building is recommended not to be modified.

Building #38 – Swimming Pool



Swimming Pool



Pool Pumping & Filtration System

Current Overall Condition: 1 2 **3** 4 5 6 7 8 9 10 Poor-Excellent

Comments:

Year Built: 1969

Sq Ft: 360

Asbestos: Previously Detected

Biological Hazard: No

Lead Paint: Not Detected

Other/Notes: This swimming pool with a hot tub, mechanical room, change rooms, and restrooms were installed in the late 1960's. It has been refurbished since 2001, mainly for use by military personnel. Very small Concrete Masonry Unit (CMU) pool house for changing/restrooms and mechanical room.

Documents Available: Site plan

Codes & Standards, Issues Found

Architectural:

Code issues identified include: handicap accessibility, site access, general clearances in changing rooms, facility entrances and floor level, fixtures, undersized changing/ restrooms, undersized mechanical room and grade level changes. The pool drain was updated to Graeme Baker Pool and Spa Safety Act requirements and is per code.

Structural:

The necessary requirements to update and qualify the pool and buildings as compliant with current applicable codes and standards have not been determined.

Electrical:

NFPA 70, NEC clearance in front of panels cannot be made with the current layout of the Mechanical room without expansion.

Mechanical:

The pool pump and filtration system appear to be code compliant.

Inspections & Observations



Architectural:

The rooms were very tight, even for non-handicap people and the floor levels changed within the small spaces. The pool building and pool area are in generally rough condition. Beetle infestation was noted. The pool was upgraded to new drain configuration requirements. The pool and concrete deck in good condition. The hot tub is filled with sand and not used. The pool has space for poolside relaxation, including covered picnic tables and benches. The storage building is in poor condition. The restrooms and changing rooms are in poor condition, very tight with floor elevation changes, very poor restroom layouts and accommodations for swimmers. The shelter is in good condition. There is no insulation.

Structural:

No quantitative data on the conditions, major dimensions and sizes, or degradation for the pool and ancillary buildings were obtained, or were available. This is a permanent in-ground functioning community swimming pool. It has a concrete block building for the change rooms and the mechanical room. There is a storage building for poolside accessories and maintenance items.

Electrical:

Pool lighting outdoors is limited and the machine room needs to be rebuilt to allow for code compliance.

Mechanical:

Mechanical systems are functional except for the hot tub.

Renovation, Expansion & Feasibility

Expansion Capability: Swimming Facility expansion would require a replacement pool and mechanical equipment. The expansion requirements would also include a change and mechanical room building replacement. Building expansion could occur to the west with larger changing/ locker/restrooms.

Feasibility & Techniques for Adaptive Redevelopment: Replace the building, infill bottom of hot tub with Gunite and reuse.

Surviving Re-use Alternatives

If extended use or re-use of the pool at the Depot is forecast, minimum size replacement change room, mechanical room, and storage buildings that are codes and standards compliant could be justified.

Costs of Surviving Re-use

The electrical engineer has estimated that cost of refurbishment for re-use could cost in the range of \$30 / sq-ft.

Recommendations

Replace or add to existing building to accommodate swimmers. Rewire the new building to house the new mechanical room and change rooms plus add outdoor lighting around the pool area for safety. Reinstall the main panel to comply with the electrical clearance issues. The potential for covering this pool with an air inflated cover for winter use might also be considered for year round use if that is to be considered. Also a pre-engineered metal building covering could also be considered.



Building #51 – Commanding Officer Residence

A photograph was not taken of the Commanding Officer Residence. The residence was also not available to be entered by the DMST inspection team.

Current Overall Condition: 1 2 3 **4** 5 6 7 8 9 10 Poor-Excellent

Comments:

Year Built: 1941

Sq Ft: 10,861

Asbestos: Previously Detected

Biological Hazard: No

Previous Lead Paint: 1st Survey

Other/Notes: Two story vinyl sided building over cement asbestos building and asphalt shingle roof. The Commander’s residence is not available for tour, per Army.

Documents Available: None

Codes & Standards, Issues Found

Electrical:

NFPA 70. NEC probably in the 1980’s but not verified.

Inspections & Observations

Architectural:

Did not inspect the interior of this building

Renovation, Expansion & Feasibility

Architectural:

Expansion Capability: Cement asbestos board (CAB) at exterior walls.

Feasibility & Techniques for Adaptive Redevelopment: Install new doors, windows, insulation, and abate the entire structure.

Surviving Re-use Alternatives

This housing can be for multiple families after upgrading to an apartment building. To do this would require electrical upgrades to allow for multiple meters and panels when reconfigured.

Costs of Surviving Re-use

The architect has estimated that refurbishment of this building would cost in the range of \$50/sq-ft.

Recommendations

Reuse s low cost housing or tear down. Consider reconfiguring to a museum for displays of historical objects. This will require upgrading the electrical system for the new application of the building but it may be costly.

Building #53 – Dormitory Barracks



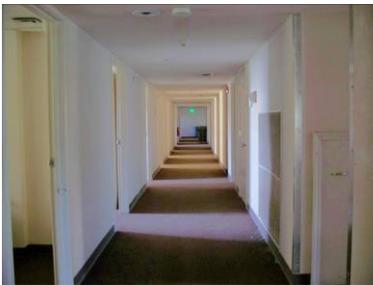
Looking northeast



Looking northwest



Looking southwest



Barracks Hallway



Typical 2 bed room
(also multi-bunk bed rms)



Common restroom

Current Overall Condition: 1 2 **3** 4 5 6 7 8 9 10 Poor-Excellent

Comments:

Year Built: 1941

Sq Ft: 23,332

Asbestos: Previously Detected

Biological Hazard: No

Lead Paint: Previously Detected

Other/Notes: Heavily used – near end of service life. Two dormitory buildings linked with a common corridor Two-Story Buildings w/ newer vinyl siding and delta rib metal roof. The building was refurbished on an expedited basis in late 2001 to be the current active military barracks or billet. The barracks do not match up-to-date military living quarters.

Documents Available: None

Codes & Standards, Issues Found

Architectural:

Accessible fixtures and toilet partitions. Newer restrooms in the corridor linking the two. The remainder of the buildings has non-handicap accessible restrooms. Some rooms may have been accessible. Ceilings low on the first floor main corridor. Likely Cement Asbestos Board (CAB) and lead paint. Floors very rough, stairs need work. West stairwells may be too narrow for occupant load on the second floor. Stairwells are not protected. Exit widths are possibly not adequate. Exposed PLASTIC sprinkler piping (orange) is noted. Day room and laundry rooms are located off of the connector corridor on the east side of the building. There are no fire doors.

Structural:



This is a two story building, originally a military barracks unit (billet), designed and constructed according to military base structural standards in the early 1940's era. The structural design, fabrication details, and many of the materials in-place are not contemporary. Accordingly, it is expected that the building is out of conformance with the current applicable building codes.

Electrical:

NFPA 70, NEC probably 1999 but not verified.

Inspections & Observations

Architectural:

Surfaces rough and much worn. Would need a major upgrade for private population. Signage indicating un-sized piping to handle amount of fixture units. Windows are single glazed and walls have minimal insulation.

Structural:

No quantitative data on the structural conditions, major dimensions and sizes, strengths, or degradation were obtained, or were available. This is a wood frame two story structure. The building has a replacement sheet metal roof, and vinyl siding.

Electrical:

The electrical panels located in the laundry rooms were updated around 2001. The building electrically is functional and maintained but not used extensively at this time. Further updates could help the lighting levels and verify the safety of the wiring in the walls/raceways. The overhead lights are not energy saver types and could be replaced.

Mechanical:

This building has its own boiler. One small air conditioning unit was noted on the outside of the building, but the building at large does not have air conditioning. Mechanical plumbing is not exposed for inspection, however restrooms and laundry are functional.

Renovation, Expansion & Feasibility

Expansion Capability: Expansion is not likely. The existing building has a large footprint. This type of structure and the configuration greatly limits or precludes code compliant expansion. For refurbishment and re-use, specialized engineering and construction are necessary to demonstrate that the upgraded structure is code compliant.

Feasibility & Techniques for Adaptive Redevelopment: None

Surviving Re-use Alternatives

Consider opening up the interior into apartment suites if it is determined that future re-use alternative will develop sufficient to warrant follow-on re-modeling and structural revitalization. A comprehensive structural evaluation is needed to qualify the structure for extended use or re-use.

Costs of Surviving Re-use

The architect has estimated that the cost of refurbishment could be in the range of \$50/sq-ft.

Recommendations

Code upgrades must be made before consideration for re-use. The building could be used as a school dormitory or reconfigured for low cost apartments for the homeless.

Building #54 – Training Center



North and west elevations

Current Overall Condition: 1 2 3 **4** 5 6 7 8 9 10 Poor-Excellent

Comments:

Year Built: 1951

Sq Ft: 5,433

Asbestos: Previously Detected

Biological Hazard: No

Lead Paint: Previously Detected

Other/Notes: One- story Vinyl sided over Cement asbestos board wood framed building and composition shingle roof. Handicap ramp at front entrance.

Documents Available: None

Codes & Standards, Issues Found

Architectural:

An access ramp to 1st floor is provided and up to coded. Cement asbestos board (CAB) noted as likely under vinyl siding. Install fire doors where required.

Inspections & Observations

Architectural:

This building is used as an office building and command center. The meeting room is upscale and wired for conferences. The command center is also in good condition. The north half is comprised of offices and a break-room. Most areas have nice finishes but expect Vinyl Asbestos Tile (VAT) typical with the other similar buildings. Also noted was Cement Asbestos Board (CAB) at exterior walls. The building was used to house a bowling alley. The building has been kept in good condition.

Electrical:

The building has been updated with new panels and appears to be in good shape. Further inspection is needed to inspect the condition of the wiring. Surge protection may be needed to protect office computers from transient peaks.

Mechanical:



The building is heated by propane fired hot water heat.

Renovation, Expansion & Feasibility

Expansion Capability: Capability for expansion is good. The building could be expanded to the west direction.

Feasibility & Techniques for Adaptive Redevelopment: Can be changed to other uses without much cost.

Surviving Re-use Alternatives

Building 32 could be reused for housing, offices, or business.

Costs of Surviving Re-use

The architect has estimated that cost of upgrades for re-use could be in the range of \$40/sq-ft.

Recommendations

It is recommended that the building be re-used similar to current use, or revised as needed to fit a new application.

Building #55 – Environmental Office Building



South and east elevation – entry with ramps

Current Overall Condition: 1 2 3 **4** 5 6 7 8 9 10 Poor-Excellent

Comments:

Year Built: 1941

Sq Ft: 1,794

Asbestos: Previously detected

Biological Hazard: No

Lead Paint: 1st Survey

Other/Notes: n/a

One- story Vinyl sided over Cement asbestos board wood framed building and composition shingle roof. Converted from a single family residence. Handicap ramp is at the side entrance.

Documents Available: None

Codes & Standards, Issues Found

Architectural:

Code compliant access ramp is installed. Cement asbestos board (CAB) noted as likely under vinyl siding.

Electrical:

NFPA 70, NEC unknown which revision for the latest upgrades.

Inspections & Observations

Architectural

This building was converted into an office building and has been maintained in good condition. Cement Asbestos Board (CAB) was noted at exterior walls.

Structural:

The building is a wooden structure originally built as housing. The internal structural was not available for inspection



Electrical:

This building was built as a housing unit and converted to office space. It is likely that it needs additional inspection to see the condition of the wiring and if it is conduit of residential wiring. I assume it is similar to the inactive housing unit east of it and has been rewired some with a newer panel.

Renovation, Expansion & Feasibility

Expansion Capability: Expansion capability for this building is good. The building could be expanded in all but the west direction.

Feasibility & Techniques for Adaptive Redevelopment: Can be changed to other uses without much cost. The building would have to be rewired to become a commercial building which would be costly.

Surviving Re-use Alternatives

The building could be used for housing, offices, or business. Adding office machinery would require some surge protection and may have some need for newer lighting than is presently installed. UPS backup may be needed depending on what the loss of data will cost to recover. The addition of fire alarm equipment may also be considered to protect high dollar equipment.

Costs of Surviving Re-use

The architect has estimated that cost of upgrading the building for re-use would be in the \$40/sq-ft range.

Recommendations

Re-use, similar to current use. Putting this unit back to housing usage would be a cheaper option depending on the needs.

Building #62 – Fitness Center



Lower Exercise Room



Racket Ball Court Locker



Restroom

Current Overall Condition: 1 2 3 4 5 **6** 7 8 9 10 Poor-Excellent

Comments:

Year Built: 1993
Asbestos: Unknown
Lead Paint: Not Detected

Sq Ft: 10,097
Biological Hazard: No

Other/Notes: This is a pre-Engineered metal building with 2nd floor and racquetball court. Since 2001, there have been building additions including the second floor. It has been further refurbished and outfitted as a fitness center, mainly for use by military personnel.

Documents Available: Site plan

Codes & Standards, Issues Found

Architectural: Restroom/ Locker/ Shower rooms are not to code. Showers are not at floor level; no handicap stalls; and fixtures are not handicap accessible. Corridors are very narrow. Exiting from second floor is not to code. There are exiting code issues on both floors. The stairway is not to code (second floor exiting is also not likely not to code – not a mezzanine).

Structural: Structurally, the building is sound.

Electrical: NFPA 70, NEC probably 1990.

Inspections & Observations

Architectural: Expanding the Restroom/ Locker/ Shower rooms would be difficult. Many issues surround these rooms. The building is new, but the interior layout is rough, especially the restrooms.

Structural: No quantitative data on the conditions, major dimensions and sizes, strengths, or degradation were obtained, or were available. This is a modern structure and appears to be in good condition, but this overview was insufficient to confirm the absence of serious degradation. The building is a light-weight steel frame structure with metal siding. This type building is usually procured from the manufacturer and assembled on-site. This type of metal building is commonly used for light industrial service.

Electrical: The electrical power panels, lighting fixtures, and other equipment are newer and appear to be well maintained. Outdoor lighting could be improved. Lighting fixtures could be changed to energy saver types to reduce power demand and have a longer life.

Mechanical: The building has modern forced air conditioning throughout. Mechanical systems appear to be good. The building is insulated.

Renovation, Expansion & Feasibility

Expansion Capability: The building is capable of being expanded, however, the necessary requirements to update and qualify the building, with the additions, as compliant with current applicable codes and standards have not been determined. Structurally, this light-weight structure has little more capacity for expansion and additions.

Feasibility & Techniques for Adaptive Redevelopment: Yes, this building could be redeveloped into many uses with a major interior remodel. Additional mechanical systems would have to be installed for expansion.

Surviving Re-use Alternatives

Many uses such as commercial, industrial, storage, shop, multi-use building. If extended use or re-use of the fitness center at the Depot is forecast, the necessary requirements to update and qualify the building, with the additions, as compliant with current applicable codes and standards could be justified. A comprehensive structural evaluation is needed to qualify the structure for extended use or re-use.

Costs of Surviving Re-use

The architect has estimated that cost of re-use for this building could be in the ranges of \$50/sq-ft.

Recommendations

Architectural: Continue with current use as a fitness center and remodel restroom/ locker rooms to south. Add second stair from 2nd floor. The building could be adapted to many commercial applications with adequate power to remodel easily. It has EMT conduit which can be revised depending on future usage. One idea is that the building could be easily adapted to an emergency open bay housing center during a disaster event.

Building #100 Series – Metal Warehouses



Deteriorating Building



100 Series – Metal – looking south



Munitions Paint Booth

Year Built: 1942
Asbestos: Previously Detected
Lead Paint: Previously Detected

Current Overall Condition:

1 2 3 4 5 6 7 8 9 10 Poor-Excellent

Comments: The buildings are large area warehouses, originally with some significant furnishings and equipment.

Sq Ft: varies
Biological Hazard: Yes (on some)

Other/Notes: Very poor condition, extremely poor interior and exterior – hazardous.

Documents Available: Site plan



Codes & Standards, Issues Found

Architectural:

Restrooms and facilities generally decrepit and/ or missing

Structural:

These appear to be facilities designed and constructed according military base structural standards in the early 1940's era.

The structural design, fabrication details, and many of the materials in-place are not contemporary. Accordingly, it is expected that the building is out of conformance with the current applicable building codes. For refurbishment and re-use, specialized engineering and construction are necessary to demonstrate that the upgraded structure is code compliant.

Electrical:

Electrical systems are not in service and not per code.

Mechanical:

Mechanical systems are not in service and not per code.

Inspections & Observations

Architectural:

Extremely hazardous conditions were encountered, structural steel may be recyclable but the remainder of the building and equipment condition is extremely poor. (Note, other pictures available). The building is open to the outside in many places. These buildings have been unused and neglected for a long time. The metal siding and roofing are in unsuitable condition. Large openings in the roofs and walls exist due to weather damage. The doors remain in place but their overall functioning condition is unknown.

Structural:

No quantitative data on the structural conditions, major dimensions and sizes, strengths, or degradation were obtained, or were available. Only one of these buildings was entered for this structural overview. The buildings have a center high bay, with a low bay on each side. The high bay areas have structural steel trusses supported on steel columns. The center columns have corbels that carry bridge crane rails. The low bay areas have structural steel roof beams. The wall siding and roofing is sheet metal. The buildings have concrete interior floors. There are railroad rails centered on the floor under the high bay areas. Originally, these buildings could have accommodated industrial type functions of a scope that exceeds warehouse receiving and storage. The deterioration rate for these neglected structures will increase. The buildings are unsuitable for warehouse or very similar uses in the current condition.

Electrical:

Electrical systems are non-compliant and cannot be reused.

Mechanical:

Mechanical systems are non-compliant and cannot be reused.

Renovation, Expansion & Feasibility

Expansion Capability: Expansion of these facilities is not warranted. This type of structure, the neglected conditions, and the configuration greatly limits or precludes code compliant expansion.

Feasibility & Techniques for Adaptive Redevelopment: None



Surviving Re-use Alternatives

Revitalization for these structures is prohibitive, due to the neglected conditions. Further, the aging nature of these steel structures once capable of industrial functions would require specialized engineering and contractors for revitalization. A comprehensive structural engineering evaluation is needed to qualify any of these structures for re-use.

It cannot be concluded it could be profitable to dismantle and recycle the structural steel members.

These buildings are currently without power and would need to be totally rewired at a high cost beyond what is cost effective. The main incoming transformers have been removed and the panels have been destroyed by the weather.

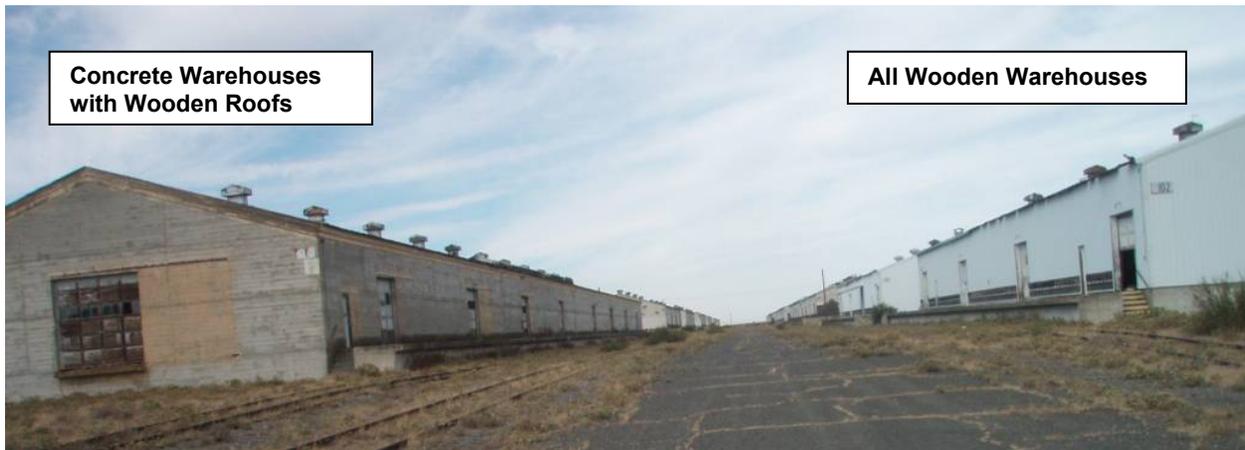
Costs of Surviving Re-use

Not applicable

Recommendations

The structural condition of the metal warehouses is questionable because the extent of oxidation is not known. If these facilities were stripped of their outer shells and decontaminated the remaining skeleton structure could be reused provided that a thorough structural analysis and inspection was conducted.

Building #100 Series Warehouses: Concrete & Wooden



100 Series Warehouses Looking North



100 Series Warehouses



Concrete Warehouse (typ. of 3: built 1957-1960)

Current Overall Condition:

1 2 3 4 5 6 7 8 9 10 Poor-Excellent

Comments: These buildings have been un-used and neglected for a long time. Along with the 200 building series approximately one quarter million square feet of storage space may be salvageable.

Year Built: 1942

Sq Ft: 12,000 – 30,000 avg.

Asbestos: Previously Detected

Lead Paint: Previously Detected

Other/Notes: Poor condition, open to atmosphere
Typical 100 Series Warehouse Interior
poor interior and exterior.



Documents Available:

Site plan

Codes & Standards, Issues Found

Architectural:

Lighting and electrical supply is very low to each building

Structural:

These appear to be facilities designed and constructed according military base structural standards in the early 1940's era. The structural design, fabrication details, and many of the materials in-place are not contemporary. Accordingly, it is expected that the building is out of conformance with the current applicable building codes.

Electrical:

No electrical services are connected to these warehouses.

Mechanical:

Mechanical systems in the 100 Series Warehouses generally do not meet current building codes and would require a more detailed inspection and testing to determine if any portions of the systems (such as dry fire sprinkler system) could be reused.

Inspections & Observations

Architectural:

Hazardous environmental conditions encountered, structural trusses, purlins (horizontal structural members in roof) and walls are possibly reusable with new sheathing and metal building skin. Abatement would be required for bird dropping and Cement Asbestos wall sheathing. The wood structures including the trusses generally appear to be in very good shape. Areas of sheathing and roofing are missing and blown off by the wind. The buildings are open to the outside in many places

Structural:

No quantitative data on the structural conditions, major dimensions and sizes, strengths, or degradation were obtained, or were available.

Wooden structures are timber trusses supported on timber columns. The roof purlins are timbers (est. 4" x 12"). The timber columns, truss members, and purlins likely were procured as a high structural grade. They are clear and appear sound, but this overview was insufficient to confirm the absence of serious degradation. The roof and wall sheathing is lumber. The roofing is composition shingles. The buildings have concrete interior floors, and outside loading docks.

The siding and roofing are in unsuitable condition. Large openings in the roofs and walls exist due to weather damage. The doors are damaged, some are open or collapsed.

Electrical: Little or no electrical is evident. Wiring for power and lighting would require complete replacement.

Mechanical:

Dry Sprinkler systems are in place but operability would have to be proven after considerable refurbishment. Motorized and manual mechanical doors would have to be replaced.

Renovation, Expansion & Feasibility

Expansion Capability:

This type of structure, the neglected conditions, and the configuration greatly limits or precludes code compliant expansion

Feasibility & Techniques for Adaptive Redevelopment:

The deterioration rate for these neglected structures will increase if not maintained. The buildings are un-suitable for warehouse or very similar uses in the current condition. A huge

amount of storage space could potentially be recaptured with an investment to fix up the existing facilities. Rail and road access is available. Specialized engineering and construction are necessary to upgrade the structures to be code compliant. A comprehensive structural engineering evaluation is needed to qualify any of these structures for re-use. The salvage value to get to the timbers after removing and dismantling the buildings is estimated to be a negative salvage value and not cost effective.

The following upgrades would be recommended if the 100 series warehouses were to be reconditioned for reuse:

- Replace garage doors and frames
- Dispose of siding and entirely re-side buildings
- Retain original structural members
- Rebuild electrical
- Refurbish fire sprinklers and re-test
- Replace portions of roof boards as required and install new roofing
- Re-do the vents

Surviving Re-use Alternatives

Extensive cleaning to retain concrete floors and docks, which are in good condition, may be able to make a re-use scenario by the Port of Murrow, Boeing or surrounding commercial or farming concerns. The primary use would most likely be mass bulk storage. Each individual structure would require a cost-benefit analysis to determine whether reuse would be cost effective.

It cannot be concluded that it would be profitable to dismantle the timber structural members and market them off-site.

Costs of Surviving Re-use

The architect has estimated cost of refurbishment of these warehouses would be in the range of \$20-\$25 per sq-ft, plus the costs of cleanup/abatement. The electrical engineer states that these buildings would be expensive to completely rewire. Detailed cost estimates would be required to determine cost of upgrades depending upon future use.

Recommendations

These buildings could possibly reused after redoing the following: new siding, new roof boards in damaged areas; replace roofing throughout; replace all wiring and lighting throughout, add wall insulation; add propane fueled unit heaters; redo fire protection systems (and re-test); replace doors and windows; add motorized doors where required; connect to upgraded power infrastructure.

If not reused it is recommended that these structures be torn down and removed. If that alternative was selected, the buildings concrete foundations and loading docks could still be used for other purposes such as outdoor container storage.

Building #200 Series – Warehouses



200 Series Warehouses



200 Series Warehouse, West Side



Typical interior without upgrades



Re-used 200 Series Warehouse (New Lighting & Partition)



Re-used 200 Series Warehouse- (New Rollup Doors) -



Re-used 200 Series Warehouse (New Unit Heater)



Current Overall Condition (without upgrade): 1 2 3 4 5 6 7 8 9 10 Poor-Excellent

Current Overall Condition (with upgrades): 1 2 3 4 5 6 7 8 9 10 Poor-Excellent

Comments:

Year Built: 1942

Sq Ft: 86,400 each

Asbestos: Previously detected

Biological Hazard: Yes on most

Lead Paint: Previously detected

Previous Notes: Hazardous materials, automotive wastes

Other:

Prior to improvements: Poor condition, open to atmosphere poor interior and exterior. Wood framed wood trusses with wood sheathing covered with transit siding. Buildings have low slope roof. Along with the 100 series buildings, approximately one quarter million square feet of storage space that may be salvageable.

Documents Available: Site plan

Codes & Standards, Issues Found

Architectural:

Lighting is inadequate.

Structural:

These warehouses are designed and constructed according military base structural standards in the early 1940's era. The structural design, fabrication details, and many of the materials in-place are not contemporary. Accordingly, it is expected that the building is out of conformance with the current applicable building codes. For refurbishment and re-use, specialized engineering and construction are necessary to demonstrate that the upgraded structure is code compliant.

Electrical:

NFPA 70, NEC various revisions not found. Wiring and lighting would require replacement. Electrical supply is insufficient this group of warehouses if several warehouses at once have significant electrical demand.

Mechanical:

As-found mechanical systems do not meet code. Dry Sprinkler systems are in place but operability would have to be proven after considerable refurbishment. Motorized and manual mechanical doors would have to be replaced.

Inspections & Observations

Architectural:

The buildings are open to the outside in many places. Hazardous environmental conditions exist for these buildings. Structural trusses, purlins and walls are possibly reusable with new sheathing and metal building skin. Extensive cleaning is required to retain concrete floors. Concrete floors are in good shape. The roofing is composition shingles. Areas of sheathing and roofing are missing and blown off by the wind.

Structural:

No quantitative data on the structural conditions, major dimensions and sizes, strengths, or degradation were obtained, or were available.

The structures are timber trusses supported on timber columns. The roof purlins are timbers (est. 4" x 12"). The wood structures including the trusses and purlins generally appear to be in very good shape except where there is water damage. The timber columns, truss members, and purlins

likely were procured as a high structural grade. They are clear and appear sound, but this overview was insufficient to confirm the absence of serious degradation. The roof and wall sheathing is lumber. The buildings have concrete interior floors.

These buildings have been un-used and neglected for a long time. The metal siding and roofing are in unsuitable condition. Large openings in the roofs and walls exist due to weather damage. The doors are damaged, some are open or collapsed. If not maintained, the deterioration rate for these neglected structures will increase.

Electrical:

All warehouse Buildings but 202 & 203 which are being used by WGI are disconnected. Panels are out of service and appear to be destroyed by the weather. Overhead transformers are gone and the lighting is destroyed. Little or no electrical is evident.

Mechanical:

A dry Sprinkler system is in place for each building inspected but would have to be thoroughly tested and maintained to be again operable. There are no heating systems and no insulation in the buildings.

Renovation, Expansion & Feasibility

Expansion Capability:

This type of structure, the neglected conditions, and the configuration greatly limits or precludes code compliant expansion. Each building is boxed in on 3 sides by adjacent buildings and expanding the buildings is not feasible.

Feasibility & Techniques for Adaptive Redevelopment:

The deterioration rate for these neglected structures will increase if not maintained. The buildings are un-suitable for warehouse or very similar uses in the current condition. A huge amount of storage space could potentially be recaptured with an investment to fix up the existing facilities. Rail and road access is available. Specialized engineering and construction are necessary to upgrade the structures to be code compliant. A comprehensive structural engineering evaluation is needed to qualify any of these structures for re-use.

Surviving Re-use Alternatives

Extensive cleaning to retain concrete floors and docks, which are in good condition, may be able to make a re-use scenario by the Port of Murrow, Boeing or surrounding commercial or farming concerns. The primary use would most likely be mass bulk storage. Each individual structure would require a cost-benefit analysis to determine whether reuse would be cost effective.

It cannot be concluded that it would be profitable to dismantle the timber structural members and market them off-site.

Costs of Surviving Re-use

The architect has estimated cost of refurbishment of these warehouses would be in the range of \$20-\$25 per sq-ft, plus the costs of cleanup/abatement. The electrical engineer states that these buildings would be expensive to completely rewire. Detailed cost estimates would be required to determine cost of upgrades depending upon future use. It is recommended that actual costs of the 200 building upgrades could also be retrieved from URS-Washington who upgraded one of the 200 series warehouses.

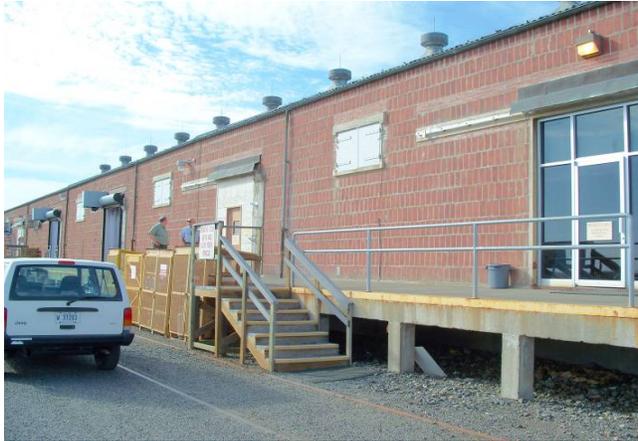
Recommendations



These buildings could possibly be reused after redoing the following: new siding, new roof boards in damaged areas; replace roofing throughout; replace all wiring and lighting throughout, add wall insulation; add propane fueled unit heaters; redo fire protection systems (and re-test); replace doors and windows; add motorized doors where required; connect to upgraded power infrastructure. A comprehensive structural engineering evaluation is needed to qualify any of these structures for re-use.

If not reused it is recommended that these structures be torn down and removed. If that alternative was selected, the buildings' concrete foundations and loading docks could still be used for other purposes such as outdoor container storage. Upgrade power poles and lines for multiple warehouses operating at the same time, and replace any poles damaged by fire. Add security lighting to the 200 Series warehouse area.

400 Series Buildings (13 total)



400 Series Buildings- Un-refurbished



402 Building- Storage + Office -Refurbished



402 Building- Refurbished (Insul, ventil, lights) outward



402 Building- Magazine Walls designed to blow outward



Building Motorized Roll-up Door (unused)



All 400 Buildings have looped rail access



Current Overall Condition: (all except 402) 1 2 **3** 4 5 6 7 8 9 10 Poor-Excellent

Current Overall Condition: (402) 1 2 3 4 **5** 6 7 8 9 10 Poor-Excellent

Comments:

Year Built: 1941

Sq Ft: 11,227

Asbestos: Previously detected

Biological Hazard: No

Lead Paint: Not Detected

Other/Notes: Buildings have red clay brick structure with a metal roof. The buildings are used for storage. Building #402 has been refurbished and occupied by Washington (URS), and has been upgraded with insulation, lighting, heat, new doors (some motorized), added office, handrail. WDC-URS controls the two south rows of these warehouses. Other 400 series building have manual locking doors.

Documents Available: Site plan

Codes & Standards, Issues Found

Architectural:

The 402 building has been improved with ramps and handrails. Other 400 series buildings remain in an unimproved condition. 402 building restrooms, doors and hardware not handicap accessible.

Structural:

The structural design, fabrication details, and many of the materials in-place are not contemporary. Accordingly, it is expected that the buildings are out of conformance with the current applicable building codes.

Mechanical:

The 402 building has been upgraded with forced air ducted ventilation and appears to be code compliant. Other 400 series buildings have only roof vents.

Inspections & Observations

Architectural:

The 400 series buildings are now used for storage. Building roofs are the old metal roofing. The clay block is designed for explosion disintegration. We understand that there is quite a bit of bird droppings in most buildings.

Overall appearance of the 402 building is good. Concrete floors are clean and smooth. New overhead coiling doors used and are well sealed. New doors are installed in the 402 building.

Structural:

The 400 series buildings were designed and constructed according military base structural standards in the early 1940's era. These "magazine" buildings were designed to blow outward in the event of munitions explosion; thus the low structural strength design of the brick walls. Buildings could be susceptible to earthquake.

The 402 building steel trusses are painted and sealed. The building is weather tight.

Electrical:

The 400 series buildings have functional lightning protection on the peak of the roofs for spark mitigations. All 400 series buildings, with the exception of the 402 building, were inaccessible but appear to be unimproved.

The 402 building panels have been replaced along with adding new lighting. 3-phase electrical panels are installed. Operable warehouse electric roll-up doors are installed only on the 402 building.

Mechanical:

All 400 series buildings were locked and therefore not available for tour by the Army, with the exception of the 402 building. The 402 building has been upgraded with forced air ducted ventilation, insulated ducts and walls and other upgrades as noted above. All 400 series buildings have rotating ventilating roof vents. The 402 building is the only 400 series building that is connected to septic.

Renovation, Expansion & Feasibility

Expansion Capability: Buildings could possibly be connected with a slight grade change.

Feasibility & Techniques for Adaptive Redevelopment: Rail and road access. For refurbishment and re-use, specialized engineering and construction are necessary to demonstrate that the upgraded structure is code compliant (including earthquake resistance). Some upgrade can be effective for reuse, as demonstrated with the 402 building.

Surviving Re-use Alternatives

Architectural:

The 400 warehouses can continue to be used for storage or long-term vehicle storage. At considerable expense these warehouses can be converted to more habitable environment such as the 402 building. Even after upgrading, these structures may not fully comply with building codes, however continuing the same type of use (storage). Discussions with county officials have indicated that as long as the type of use is not changed, there would not be a requirement for upgrading to current building codes.

Costs of Surviving Re-use

Depending on the type of re-use selected, the cost of re-use could be minimal to significant (402 building example). It is recommended that actual costs of the 402 building upgrade could be retrieved from URS-Washington who upgraded and is currently using that building.

Recommendations

Architectural:

Continue the current warehouse, receiving and storage (low occupancy). Recognize that in the event of earthquake, due to the type of fragile brick construction of the 400 series building walls, ground motions could threaten the occupants and passersby. A comprehensive structural evaluation is needed to qualify the structure for re-use.

Building #415, 416, 420 – Surveillance Workshop, Boiler Bldg, Breakroom Bldg



Surveillance Workshop #415
#415



Surveillance Workshop (failing roof & insulation)



Breakroom Building



Breakroom Building



Boiler Building



Current Overall Condition: **1** 2 3 4 5 6 7 8 9 10 Poor-Excellent

Comments:

Year Built:	#415 Ammo Surveillance – 1942	Sq Ft:	4,640
	#416 Heat Plant – 1942		240
	#420 Breakroom – 1953		2,360

Asbestos:	Previously Detected	Biological Hazard:	Yes
Lead Paint:	Previously Detected		

Other/Notes: Poor condition

Documents Available: None

Codes & Standards, Issues Found

Buildings are in extremely poor condition. Numerous violations of codes and standards are prevalent throughout. The Surveillance Workshop and old Breakroom building are not accessible.

Inspections & Observations

Buildings are very rough and not useable. Surveillance building could be used with extensive upgrading, but the Boiler Bldg and the Break room are structurally and environmentally hazardous. Leaky roofing and failing siding and windows has led to intrusion of the elements and pigeons resulting in widespread deterioration. Electrical systems are very poor condition and not feasible to re-energize.

Renovation, Expansion & Feasibility

Expansion Capability: None

Feasibility & Techniques for Adaptive Redevelopment: None

Surviving Re-use Alternatives

There are no surviving re-use alternatives for these buildings.

Costs of Surviving Re-use

Not applicable

Recommendations

These buildings should be completely torn down and removed.

Building #419 – Ammo Operations Breakroom Building



Ammunition Operations Breakroom Building – South



Ammunition Operations Breakroom Building – North

Current Overall Condition: 1 2 3 4 5 6 7 8 9 10 Poor-Excellent

Comments:

Year Built: 1942

Sq Ft: 5,548

Asbestos: Previously detected

Biological Hazard: Yes

Lead Paint: Previously detected

Other/Notes: Unsound per Public Works Director. Poor condition

Documents Available: None

Codes & Standards, Issues Found

Building 419 is in extremely poor condition. It is expected that numerous violations of codes and standards are prevalent throughout. Building 419 was not accessible and is not in use.

Inspections & Observations

Building 419 is very rough and not useable. According to the Army representative, the building has new siding but is otherwise in very bad condition inside. It was used as breakroom and laundry. The building had a wash-down area, chemical cleanup before K-Block and old showers. The building likely possesses a mix of hazardous chemicals, lead paint and asbestos. It was used up to 9/11 and then used for siege practice, and contains lots of paintball paint on the walls.

Renovation, Expansion & Feasibility

Expansion Capability: None

Feasibility & Techniques for Adaptive Redevelopment: None

Surviving Re-use Alternatives

Building 419 is not recommended for repair or reuse.

Costs of Surviving Re-use

Not applicable

Recommendations

The Ammunition Operations Breakroom Building Building 419 should be torn down and not reused.

Buildings #431, 434 #433 – Ammo Bldg, Less Than a Truckload Bldg & Steam Bldg



Ammo Operations Building
(West bldg- North side)



Less Than A Truckload & Boiler Plant Building
(East bldg- inside)

Current Overall Condition: 1 2 3 4 5 6 7 8 9 10 Poor-Excellent

Comments:

Year Built: #431 & 434 - 1953
#433 – 1942

Sq Ft: 10,824 ea.
1,860

Asbestos: Previously Detected

Biological Hazard: Yes

Lead Paint: Previously Detected

Other/Notes: The “Ammo Operations Building”, “Boiler Building” and “Less than a truckload” Building” are all in very poor condition.

Documents Available: None

Codes & Standards, Issues Found

Buildings are in very poor condition and codes and standards cannot even be considered. Electrical is not in service. Structurally and environmentally, the buildings are hazardous.

Inspections & Observations

Buildings are very rough and not useable. Metal, Concrete wood trusses and asbestos has been noted.

Renovation, Expansion & Feasibility

Expansion Capability: None

Feasibility & Techniques for Adaptive Redevelopment: None

Surviving Re-use Alternatives

There are no surviving re-use alternatives for these buildings.

Costs of Surviving Re-use

These buildings cannot be reused.

Recommendations

Buildings 431, 434 and 433 (“Ammo Operations Building”, “Boiler Building” and “Less than a truckload” Building”) should be torn down.

Building #450 – RV Storage Building (Former Composting Building)



Bldg #450 West elevation



Bldg #450 (Skylighting only; automatic roof vents)



Bldg #450 Typical RV Storage

Current Overall Condition: 1 2 3 4 5 6

7 8 9 10 Poor-Excellent

Comments:

Year Built: 1984
Asbestos: Not tested
Lead Paint: Not tested

Sq Ft: 18,000
Biological Hazard: No

Other/Notes: This is a pre-engineered metal building which was part of a bomb washout process. Bombs were washed out with water flowing to a pink water pond. This soil under the old pond was contaminated. The solution was a soils composting process installed inside building #450 for bioremediation of the soils. Ground water from the pond is still being treated through a pump and treat groundwater process. Building #450 was emptied of remediated soils, cleaned up, and re-used for RV storage. Consequently the building was never designed for electrical service, human occupation, or for warehousing. Structurally this building lends itself for other types of uses.

Documents Available: Site plan

Codes & Standards, Issues Found
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This building is non-compliant to codes and standards. The building was a process building for composting of soils through bio-remediation.

The building has limited electrical services with a small external rack mounted panel and meter. It was installed in the 1980's and the only power inside the building is for vent louver control motors in the roof and the side walls.

Inspections & Observations

This building is used for RV storage only. The current structure is a pre-engineered metal building. No heating is available in the building and no insulation is in the ceiling or the walls. The sky lights in the roof give good lighting for RV Storage. The building has not exit lights or egress light and can only be accessed in night time with a flashlight. The only receptacles found are located next to the power panel on the Northwest corner. There is also a 1 ½" fire pipe connection and a hose connection which did not appear to be charged with water. There is a potential for RV spills on the floor spaces. There is also a fire potential from stored vehicles. There are extensive outdoor parking spaces. The roads are in very poor condition but passable.

Renovation, Expansion & Feasibility

Expansion Capability: Yes

Feasibility & Techniques for Adaptive Redevelopment: Yes, this building could be renovated and expanded since this is a multi-purpose metal building that could easily be added on to.

Surviving Re-use Alternatives

The building is a candidate for many uses such as commercial, industrial, storage, shop, multi-use building

Costs of Surviving Re-use

The architect has estimated that cost of building upgrades may be in the range of \$50/sq-ft.

Recommendations

Continue with current use or remodel for new use, storage, warehouse, offices with high-bay. At a minimum exit light and limited egress lighting for night access should be added.



The following assessments (K Block facilities) have been included in their entirety in Appendix A.

Buildings include:

- ▶ Building 654: Ammo Maintenance Building
- ▶ Building 655: Dress-out and Mask-Fit Building
- ▶ Building 656: Laboratory
- ▶ Building 659: Ammo Storage Building

Umatilla Chemical Depot Igloos



UMCD Typical Igloos



80' x 26' "Show and Tell igloo"

Igloo Summary

Igloos at the Umatilla Chemical Depot are not considered facilities by many, however the function of the UMCD igloos competes with other facilities; therefore this section addresses the re-use potential of igloos.

There are a total of 1001 igloos at UMCD. UMCD igloos were built during the years of 1941 and 1942. The following is a summary of igloo sizes:

Number of Igloos	Igloo Length (aprox)	Width (aprox)	Height	Floor Area	# Double Door Igloos	# Single Door Igloos
356	80 ft	26 ft	13 ft	2147	16 or18	aprox 340
643	60 ft	26 ft	13 ft	1608	0	0
2	40 ft	26 ft	13 ft	1104	0	0

Igloo Uses per the “Facility List for UMCD”

UMCD igloos are presently used for a variety of uses. The UMCD igloos facility list stated the igloos are used for the following purposes:

• Civil defense evacuation shelter	• Chemical protective equipment
• Chemical operations storage	• UMCD Fire department storage
• Oregon health dept storage	• County disaster control storage
• Security storage	• American Red Cross storage
• Services division storage	• SETH storage
• Public works division	• DRMO storage
• Small arms storage	• SWRI storage
• WGI storage	• Empty
• Show and tell	• Support and inspection
• Oregon National Guard	• WGI agent related waste
• 3X storage	• UMCD agent related waste storage
• Chemical agent storage	•

Inspections & Observations

Igloos were not inspected as part of this report. Only the “show and tell” igloo was entered.

Most igloo doors are tight Igloos can be used for other purposes, however some igloos do not have tight doors, allowing rodents to enter. This is a problem that can be fixed. Very few of the igloos have power. The rest of the igloos at UMCD do not have power. Single door igloos are wide enough to allow entry of a fork lift. Year around internal temperature of the igloos remains in the mid 50’s to low 70’s according to the Army representative.

Renovation, Expansion & Feasibility

Expansion Capability: The igloos cannot be expanded.

Feasibility & Techniques for Adaptive Redevelopment: Igloos can be slightly adapted or improved for re-use. The basic concrete igloo cannot be redeveloped or added on to.

Surviving Re-use Alternatives

Igloos can be re-used for a variety of different types of storage and for certain agricultural uses, such as mushroom growing.

Costs of Surviving Re-use

No costs were estimated for the igloos. According to the Army representative, the cost of igloo removal has been previously estimated to be in the range of \$100,000 per igloo, but no supportive data was given for this figure.

Recommendations

Decontaminate and certify all igloos for reuse. Develop storage and agricultural options.



APPENDIX A: FOR OFFICIAL USE ONLY

Documents identified as Official Use Only have been provided in Appendix A. These documents will be distributed in Hard Copy Only until they have been released from UMCD Security Operations.