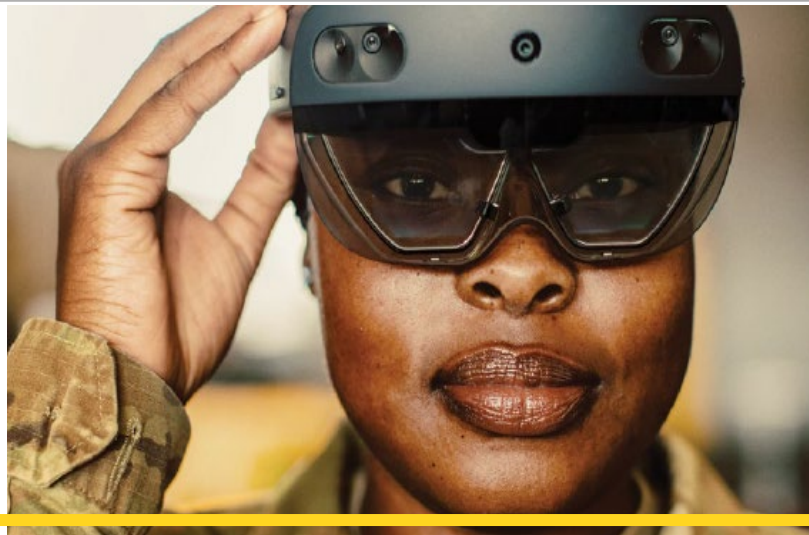




U.S. ARMY

SUPPLEMENTAL INFORMATION BRIEFING:

PROGRAM COMMENT FOR THE PRESERVATION OF PRE-1919 HISTORIC ARMY HOUSING, ASSOCIATED BUILDINGS AND STRUCTURES, AND LANDSCAPE FEATURES



UNCLASSIFIED

OVERARCHING ISSUE: Quality of life, health, and safety issues are prevalent in pre-1919 Army housing and include obsolete electrical, plumbing, and HVAC systems, asbestos and lead-based paint hazards, and structural deterioration, restrictive and outdated floorplans, and a backlog of deferred maintenance, repairs, and improvements.

PURPOSE: Provide supplemental information to inform consultation regarding the proposed *Program Comment for Preservation of Pre-1919 Historic Army Housing, Associated Buildings and Structures, and Landscape Features*.

AGENDA:

- I. FACTS BEARING ON THE ISSUE
- II. HISTORIC HOUSING IS MORE COSTLY TO OPERATE, MAINTAIN, AND REHABILITATE
- III. SUBSTITUTE MATERIALS CASE STUDIES
- IV. CONGRESSIONAL ACTION ON PRE-1919 HOUSING
- V. PROGRAM COMMENT FOR PRE-1919 HOUSING: A 21ST CENTURY APPROACH

* Learn more about Department of the Army historic preservation and cultural resources by visiting www.denix.osd.mil/army-cr/home/.

I. FACTS BEARING ON THE ISSUE:

ARMY INSPECTOR GENERAL REPORT (2019) HISTORIC HOUSING FINDING AND RECOMMENDATION:

- Finding: The NHPA consultation process with SHPOs under the privatized housing PAs is highly procedural and time-consuming, creates a misperception that the SHPO has approval authority over renovations, historic homes are more costly to operate and maintain, are less energy efficient and require special materials and specially trained craftsmen, and health and safety concerns are present such as lead-based paint and asbestos. Historic homes are very costly to renovate due to strict rules about the craftsmanship and types of materials that can be used such as custom windows and custom roofing that complicate repair and renovation projects and increase costs and the time to complete the work. The Army Inspector General also found that the rules and restrictions are variable both by individual home and by installation.
- Recommendation: Assess the feasibility of continuing the installation-level PAs for historic housing.

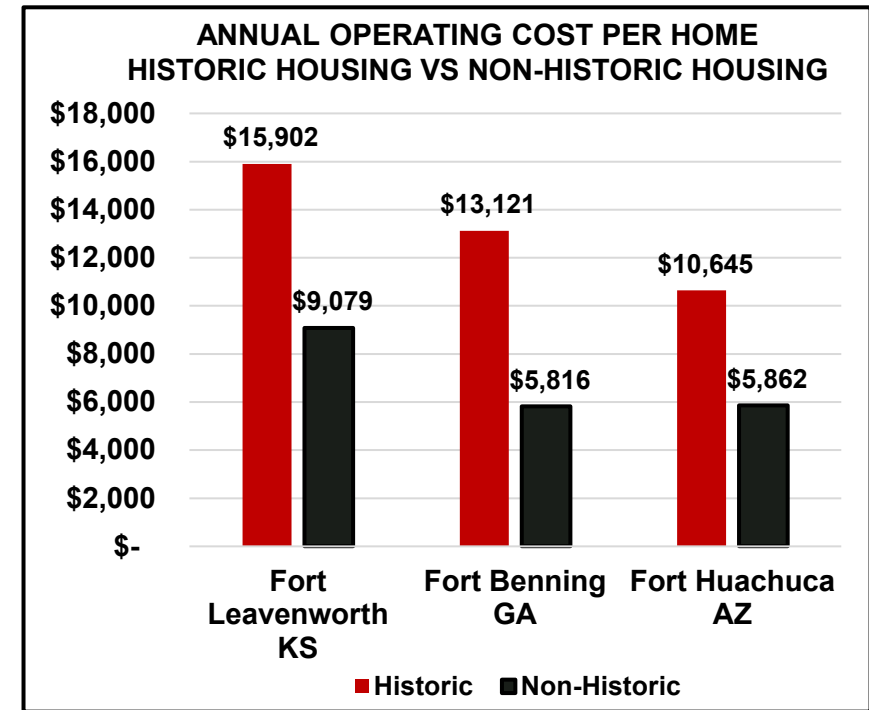
PRE-1919 HISTORIC ARMY HOUSING FORUM, 15 JUNE 2023, FORT MCNAIR, WASHINGTON DC:

- The Assistant Secretary of the Army for Installations, Energy and Environment hosted a meeting to discuss pre-1919 Army housing NHPA compliance issues and program alternatives with other senior leaders including the Chairman, Advisory Council on Historic Preservation (ACHP); Assistant Secretary of the Interior; Associate Director, National Park Service; Executive Director, ACHP; and Executive Director, National Conference of State Historic Preservation Officers. There was general agreement that a nationwide programmatic NHPA compliance approach to pre-1919 Army housing is needed.

CONGRESSIONAL REQUIREMENT FOR DEMOLITION OF PRE-1919 HOUSING: The Fiscal Year 2023 National Defense Authorization Act requires the Army to demolish three pre-1919 homes at Fort McNair.

II. HISTORIC HOUSING IS MORE COSTLY TO OPERATE, MAINTAIN, AND REHABILITATE

- The annual costs to operate historic Army housing far exceeds the cost to operate non-historic privatized homes.
- When compared to non-historic homes, historic homes require additional funds for both maintenance and turn-over of between 20% to 100%, and an additional 30% to 40% in capital improvement funds.*
- Homes turn over every two to three years as soldiers and their families are reassigned.



* Source: Army Privatized Housing Consultant to Capitol Ventures Directorate, ASA IE&E

** Source: Army Privatized Housing Partner

HISTORIC HOUSING IS MORE COSTLY TO OPERATE, MAINTAIN, AND REHABILITATE

Deep Dive - Fort Leavenworth Privatized Housing Costs:

- Fort Leavenworth’s historic pre-1919 homes have a negative cash flow after debt service.

Year	2019	2020	2021	2022	2023	2024 (Budgeted)
Revenue from Pre 1919 Historic Homes	\$3,019,999	\$2,604,907	\$2,895,869	\$3,115,625	\$3,531,945	\$4,322,325
Historic Homes Operating Expenses	\$2,626,479	\$2,566,332	\$3,154,224	\$3,513,413	\$3,429,252	\$3,620,814
Historic Homes Net Operating Income	\$393,520	\$38,575	(\$258,355)	(\$397,788)	\$102,693	\$701,511
Historic Homes Cash Flow After Debt Service	(\$1,916,185)	(\$2,271,129)	(\$2,568,059)	(\$2,707,492)	(\$2,207,011)	(\$1,608,194)
Historic Homes CFADS \$/unit	(\$7,123)	(\$8,443)	(\$9,547)	(\$10,065)	(\$8,205)	(\$5,978)

- High-cost historic materials contribute to high operating expenses and capital expenses.
- Total capital expense needs for Fort Leavenworth’s pre-1919 housing (major rehabilitation work) is \$92M using historic materials. Use of substitute building materials as proposed in the Program Comment for Pre-1919 housing reduces that cost by \$14 million.

Revenue includes income from soldiers’ Basic Allowance for Housing (BAH)
Operating Expenses are the costs to maintain the property, includes maintenance and repair, utilities, insurance, etc.
Net Operating Income (NOI) is Revenue less Operating Expenses
Cash Flow After Debt Service (CFADS) – Money remaining after the debt service (mortgage) is paid.

HISTORIC HOUSING IS MORE COSTLY TO OPERATE, MAINTAIN, AND REHABILITATE

Deep Dive - Fort Leavenworth Privatized Housing Costs:

- **Fort Leavenworth’s non-historic homes** cost less to maintain and improve, replacement parts and materials are less costly, easier to obtain and install, and no abatement of lead-based paint or asbestos is needed.
- Due to lower operating costs, non-historic homes have a positive cash flow after debt service.

Year	2019	2020	2021	2022	2023	2024 (Budgeted)
Revenue from Non-Historic Homes	\$26,043,280	\$25,713,982	\$26,714,341	\$28,150,180	\$32,090,772	\$34,186,483
Non-Historic Homes Operating Expenses	\$11,906,231	\$11,682,645	\$13,552,372	\$15,429,414	\$15,411,546	\$15,331,259
Non-Historic Homes Net Operating Income	\$14,137,049	\$14,031,337	\$13,161,969	\$12,720,766	\$16,679,226	\$18,855,224
Non-Historic Homes Cash Flow After Debt Service	\$1,893,040	\$1,787,328	\$917,961	\$476,758	\$4,435,218	\$6,611,215
Non-Historic Homes CFADS \$/unit	\$1,328	\$1,253	\$644	\$334	\$3,110	\$4,636

Revenue includes income from soldiers’ Basic Allowance for Housing (BAH)
Operating Expenses are the costs to maintain the property, includes maintenance and repair, utilities, insurance, etc.
Net Operating Income (NOI) is Revenue less Operating Expenses
Cash Flow After Debt Service (CFADS) – Money remaining after the debt service (mortgage) is paid.

HISTORIC HOUSING IS MORE COSTLY TO OPERATE, MAINTAIN, AND REHABILITATE

Deep Dive - Fort Leavenworth Privatized Housing Costs:

Example of porch replacement costs and materials durability on 94 pre-1919 NHL homes:

- The estimated cost for replacement of failing porches using a substitute composite material on 94 pre-1919 homes at Fort Leavenworth is \$7.8M. The estimated cost for replacement with in-kind wood is approximately the same. However, the long-term durability of the substitute material is greater than the in-kind wood.* The substitute composite porch material will last 20+ years, with minimal upkeep required. The in-kind wood will last 8-10 years and requires biennial waterproofing. The in-kind wood porches are twice as expensive to maintain.
- To put the significance of the durability of the substitute composite porch material into an overall cost perspective, the expected cash flow generated by all the ~1700 homes at Fort Leavenworth over the next 5 years is \$16.8M. This means that if in-kind wood porch materials are used, approximately 46% of the total cash flow over the next 5 years would need to be kept in reserve just for another set of porch replacements beginning as early as 2032.
- **Example of pre-1919 housing rehabilitation planned for the Rookery and the Syracuse House:**
Rehabilitation plans include repairing window frames and windowpanes, repairing exterior cracked plaster, 100% repaint of the exterior, repairing gutters, repairing fascia, water-proofing basement, exterior porch and stairs replacement to include decking, railing and ceiling. Additional work includes electrical, water heater, HVAC, kitchen and bathroom renovations, fireplace renovation, and interior paint.

*As stated in National Park Service Preservation Brief 16, *The Use of Substitute Materials on Historic Building Exteriors*, the poor quality of available commercial lumber no longer provides the denser, more decay-resistant wood of old-growth forests.

HISTORIC HOUSING IS MORE COSTLY TO OPERATE, MAINTAIN, AND REHABILITATE

Examples From Installation Programmatic Agreements:*

- Roofs – clay tiles of a specific size no longer manufactured but required by SHPO increased costs \$100k per home to manufacture and install.
- Siding – An additional \$50K per home spent to manufacture and install wooden cedar shake siding of specific size that is no longer manufactured. Modern faux cedar shake siding was not acceptable to SHPO.
- Gutters – SHPO required replacements in copper cost up to ten times more than similar aluminum gutters.
- Windows – rehabilitating historic windows has \$50K to \$100K per home in additional costs.
- The average estimated additional preservation-related cost to renovate historic homes under current installation PAs is approximately \$100K-150K per housing unit.
- Historic Architect Services – Partners have spent over \$100K for historic architect services.

*Source: Army Privatized Housing Partners

HISTORIC HOUSING IS MORE COSTLY TO OPERATE, MAINTAIN, AND REHABILITATE

Examples From Installation Programmatic Agreements:*

- “The PA process is cumbersome and costly, negatively impacts customer service, and ironically, has a negative effect on the overall condition of the properties.”
- “The original scope of the renovation was much more extensive, but it had to be dialed back because of required Marvin wood windows with true divided lite which cost between \$40K-\$50K on some homes. There was also wood panels with LBP on the exterior that could have been removed and replaced, but the renovation couldn’t afford that scope after the window selection.”
- “The exterior of the home must remain true to the historic materials. Therefore, we are being required to go back with copper gutters (\$70-\$100/l.f.) and flashing (approx. \$20K add). The roofs took approx. 2 ½ years of negotiations.”
- “Housing has wood siding that has tested positive for lead based paint. The average budget for the renovation was approximately \$50K per house. It would have cost double or triple that to remove the siding and replace it with a similar wood siding as SHPO required. If we were permitted to encapsulate the siding with a vinyl shake it would have cost a fraction of what the wood would cost and be significantly less for Operations to maintain.”

* Source: US Army Installation Housing Managers.

III. SUBSTITUTE MATERIALS CASE STUDIES:

PROGRAM COMMENT FOR ARMY INTER-WAR ERA HOUSING (1919-1940)

- The Army's implementation of the Program Comment for Army Inter-War Era Housing (1919-1940) and its criteria and process for selection of building materials is proof of concept for application to pre-1919 housing, see Annual Reports submitted to the ACHP since 2020 at <https://www.denix.osd.mil/army-pchh/>.
- The Program Comment for Army Inter-War Era Housing includes criteria and procedures for repair of historic building materials and, if replacement is necessary, procedures for selection and use of either in-kind building materials or substitute building materials. This process has resulted in millions of dollars in savings in rehabilitation of Inter-War era Army housing, improved the quality of life, health and safety of occupants, upgraded climate resiliency and energy efficiency while preserving the historic character of Inter-War Era housing and historic districts.
- When historic materials require replacement, both in-kind and substitute building materials have been used as replacement materials under the Program Comment for Army Inter-War Era Housing. The substitute building materials used for roofing, windows, and other applications are **reversible** and can be replaced with in-kind building materials at any point in the future.
- The Program Comment for Army Inter-War era housing also has reduced the lengthy project-by-project review processes required in the installation-specific PAs that was impacting Soldiers and families waiting to occupy the housing.

CASE STUDY FORT BELVOIR, VA: PROGRAM COMMENT FOR INTER-WAR ERA HOUSING (1919-1940)

Substitute Building Materials: The use of substitute building materials follows a Program Comment materials selection procedure that implements the Secretary of the Interior Standards for Rehabilitation and treats quality of life, health, safety issues in balance with preservation goals.

Fort Belvoir Inter-War Era Housing Window Replacement*

Fort Belvoir Window Type	Cost per Home	Completion Time per Home	Warranty
Historic window repair	\$120,000	120 days	None
In-kind wood replacement	\$80,000	30-45 days	20-year
Vinyl replacement	\$30,000	14 days	40-year



- **Cost Effective:** Total Project Cost Savings of \$5.0 million for Fort Belvoir window replacement project using substitute vinyl windows.
- **Benefits:** Substitute vinyl windows have significantly lower initial cost, reduce the time homes are off-line, lower long-term maintenance cost, eliminate the lead-based paint hazard, improve energy efficiency, and preserve the historic character of the Colonial Revival housing.

* Source: Army Privatized Housing Partner

CASE STUDY FORT BLISS, TX: PROGRAM COMMENT FOR INTER-WAR ERA HOUSING (1919-1940)

Fort Bliss Inter-War Era Housing Clay Tile Roof Replacement With Metal Tile Roofing:* Metal tile roofing is a climate resilient substitute building material used at Fort Bliss, TX to replace deteriorated historic clay tiles on 98 Spanish Revival style Army Inter-War Era homes.

- **The substitute roofing material maintains historic character and is more climate resilient and cost effective than in-kind materials.**
- **Climate Resiliency:** The metal tile roofing is more durable in extreme weather events with a Class 4 impact rating vs Class 3 rating for clay tile.
- **Cost Effective:** Saved \$2.2 million by using metal tile roofing vs use of higher-cost historic clay tile roofing.
- **Equivalent Life Cycle:** The metal tile roof has a 50-year warranty, same warranty period as a clay tile roof.
- **Lower Life Cycle Costs:** Result from lower maintenance requirements for metal tile roofing vs clay tile roofing.
- **Preserves Historic Character** of the Spanish Revival housing and historic district.
- **Implements ACHP's *Climate Change and Historic Preservation Policy*:** Incorporates the latest technological innovations and material treatments to improve climate resiliency while preserving the historic character of the housing.



Metal Tile Roofing on Spanish Revival Homes, Fort Bliss, TX



* Source: Army Privatized Housing Partner

IV. CONGRESSIONAL ACTION ON PRE-1919 HOUSING

FY2023 NATIONAL DEFENSE AUTHORIZATION ACT:

“DEMOLITION OF DISTRICT OF COLUMBIA FORT MCNAIR QUARTERS 4, 13 AND 15.

Not later than one year after the date on which all the individuals occupying District of Columbia Fort McNair Quarters 4, 13 and 15, as of the date of the enactment of this Act, have moved out of such Quarters, the Secretary of the Army shall demolish such Quarters.”



V. PROGRAM COMMENT FOR PRE-1919 HOUSING: A 21ST CENTURY APPROACH

- The Army's proposed Program Comment for Pre-1919 Housing is a 21st century approach to 21st century issues of climate resiliency, energy efficiency, costs, and the quality of life, health, and safety of the occupants of historic homes. It reflects a shift to a more humanistic preservation approach that prioritizes the needs of people living in and managing historic homes equally with preservation of material integrity.