PRIVATE INVESTMENT FEASIBILITY ASSESSMENT FOR THE LEASING OF BRICK QUARTERS HISTORIC DISTRICT HOUSING UNDER SECTION 111 OF THE NATIONAL HISTORIC PRESERVATION ACT

Executive Summary

A range of possible scenarios for upgrading and restoring 90 housing units in the Brick Quarters Historic District (BQHD) under a Section 111 lease are identified and analyzed using standard investment feasibility analysis. Given a series of assumptions regarding operations and maintenance costs, renovation and upgrade costs, vacancy rate, and escalation rates, and the type and cost of financing likely to be available to a potential lessee, two BQHD occupancy profiles and their associated revenue streams - base allowance for housing (BAH) for 60 units, the addition of BAH for 30 and 50 key and essential (K&E) personnel - and a delay in the construction schedule, are analyzed. Assuming U.S. Air Force personnel would be forthcoming to live in BQHD units, regardless of the level of restoration or upgrading undertaken, and the validity of construction cost estimates, there are numerous options that would provide profitable investment opportunities for potential Section 111 investors, allowing the United States Air Force (USAF, or Air Force) to safeguard the future of the majority or all of the units in the BQHD, both as historical assets, and as unique housing capacity that would address Air Force housing objectives at Wright-Patterson Air Force Base (WPAFB).

Introduction

The Air Force recently prepared a Draft Environmental Impact Statement (EIS) to examine alternatives for providing housing for 30 K&E personnel at the required Air Force Instruction (AFI) 32-6001 standard for meeting Air Force housing demand under existing and projected WPAFB mission requirements in a cost-effective manner, and for satisfying historic preservation obligations under the National Historic Preservation Act (NHPA).

Under Section 111 of the NHPA, the Air Force, as a federal agency, is required to assume responsibility for the preservation of historic properties which it owns or controls, and that to the extent practicable, establish and implement alternatives for historic properties, including adaptive use, that are not needed for current or projected Air Force purposes; the Air Force may lease an historic property to any person or organization if it determines that the lease will adequately insure the preservation of the historic property. The proceeds of any lease may be retained by the Air Force and used to defray the costs of administration, maintenance, repair, and related expenses. A Section 111 lease would require the listing of historic properties which are owned by, or are under the jurisdiction or control of, the Air Force, on the *National Register of Historic Places* (NRHP). The Air Force may enter into contracts for the management of historic property with such terms and conditions as the Air Force deems necessary or appropriate to protect the interests of the United States and ensure adequate preservation of historic property.

The findings of a cost-benefit analysis (CBA) recently completed by the Air Force (Allison, Wescott and White 2019) were that the alternatives which produce the largest overall net benefits are those that emphasize renovation and upgrading and leasing of a large number of units under privatization

(Alternative 8), or, once restoration is completed by the Air Force, those that allow privatization (Alternative 4) and Section 111 leasing through a property manager (Alternative 5). The financial viability of leasing under privatization or Section 111 was not addressed either in the EIS or in the CBA. Under privatization, property developers would be expected to arrange financing to cover the cost of restoration, undertaken according to predetermined building standards, with federal and state credits used to reduce capital costs. It is not known, however, if sufficient military or civilian renters would be found to cover cost and profit margin, and whether the need to cover upfront restoration costs, with the consequent risks to developer profitability, would affect the likelihood of attracting suitable candidate developers.

To address the financial viability of Section 111 leasing, a recently completed report by JLL (JLL 2016) evaluated a single Section 111 leasing option based on the average cost of upgrading 60 BQHD units not occupied by K&E personnel. The report was based on various assumptions, including an upgrading cost of $145,011 per unit, an annual operations and maintenance (O&M) costs of $10,684 per unit, a vacancy rate of 15%, monetized state and federal tax credits, an escalation rate of 2% for both O&M and revenue, and a property management fee of 4% per year. The report found that the single upgrading scenario fell slightly below industry standards for a feasible investment on internal rate of return, and slightly higher than the industry standard on debt service ratio, making the scenario "marginally feasible." No restoration scenarios were considered.

To provide a potential investor with a wider range of options for the leasing of BQHD housing under Section 111 than those in the JLL Report, the analysis provided in this document uses standard industry investment finance evaluation methods to assess the financial viability of a number of BQHD upgrading and restoration combinations, and occupancy and construction schedule scenarios to indicate how the largest number of BQHD housing units might be restored and maintained under Air Force supervision.

Housing Inventory

The current BQHD housing inventory includes 100 government-owned houses retained to provide consolidated housing for individuals designated as K&E personnel and other officers in one on-base location to enhance security, and for various other ranks, including but not limited to General Officer and Senior Officer. K&E personnel have duties requiring their immediate availability on an installation because of military necessity or operational requirements, or emergencies that could impact installation readiness, safety and security, or health and welfare of the Base population, as determined by the Commander (Air Force Instruction (AFI) 32-6001 (USAF 2002). K&E housing must meet current life safety codes and base security requirements and provide a comfortable and appealing living environment comparable to the off-base community for quality of life and floor space requirements (AFI 32-6001;USAF 2002).

The BQHD inventory includes 89 one-and-a-half and two-and-a-half-story brick residential housing units with half-timber detailing in a Tudor revival style built between 1935 and 1937 as a planned community. The units, as well as the district in which they are located, were listed on the NRHP in October 2018. As part of the renovation program considered in the EIS for the 89 Tudor revival style houses, units were assigned to groups according to size (ft^2) and other amenities (number of bedrooms, size of garage).

Other government-owned homes in the BQHD include the historic Foulois House constructed in 1874, which is eligible as a contributing element of the Fairfield Air Depot Historic District. In 2016, only two units (Quarters 1 and Foulois House) in the WPAFB housing inventory met the requirements for K&E personnel, while the remaining housing inventory did not meet current Air Force standards, including standards for square footage and/or building layout.

Assumptions Used in the Analysis

A number of assumptions were made in the analysis, including those relating to BQHD occupancy, the size and scope of Basic Allowance for Housing (BAH) for investor revenue, operations and maintenance (O&M) costs, renovation and upgrade costs, vacancy rates, and escalation rates.

BQHD Occupancy

Occupancy of the 30 K&E BQHD housing units is currently restricted to general officers (O-7, 12), senior officers (O-6, 9), field grade officers (O-4, 4) senior NCOs (E-9, 1) and command chiefs (E-7, 4). The current proposal for the occupancy of the remaining 60 BQHD units is to allocate 10% of the units to each of top ten WPAFB ranks, O-7 through O-1 (42 units), and E-9 through E-7 (18 units).

Basic Allowance for Housing

Military personnel assigned to permanent duty within the 50 United States that are not provided with government housing are eligible for a BAH, which is based on the member's rank, dependency status, permanent duty station ZIP Code, and current local rental market conditions. Current residential vacancies, identified in local newspapers and real estate rental listings, are selected at random, and subjected to a multi-tiered screening process to ensure accuracy and reliability. Telephone interviews establish the availability and exact location of each residential unit sampled, the sample designed to obtain a statistical confidence level of 95 percent or higher. Yellow page listings of apartments and real estate management companies are employed to identify rental costs. Real estate professionals in a locality are also consulted to obtain important confirmation and additional sources of data. When available, fort/post/base housing referral offices are contacted to access local military expertise and gain insights into the local concerns of uniformed members. Finally, DoD and the Services conduct on-site evaluations at various locations to confirm and ensure reliability and accuracy of the cost data.

BAH at WPAFB for general officers is between $1,713 per month for officers with no dependents, and $2,004 per month for officers with dependents (MilitaryRates.com 2019), while rates for other officers, senior NCOs and command chiefs vary between $1,158 per month for personnel with no dependents, to $1,989 per month for those with dependents.

Operations and Maintenance Costs

Operations and maintenance costs were based on extant USAF data provided by the Air Force (WPAFB 2018a) including annual budgetary support data for BQHD housing, and data from the 2018 Housing Community Profile (WPAFB 2018b), which details renovation, construction, and repair and maintenance costs for BQHD housing while the 100 existing BQHD houses remain in USAF ownership. Costs borne by developers with Section 111 leasing were assumed to be the same as those currently borne by the USAF on a per house basis. In 2018 dollars, annual O&M costs averaged $6,605 per house for the period 2000 to 2018 (WPAFB 2018a).

Renovation and Upgrade Costs

Renovation and upgrade cost estimates were taken from the Adaptive Reuse and Cost Estimates report (WPAFB 2016), which includes a low- and a high-level renovation case for nine types of housing unit in the BQHD (five K&E and four non-K&E), and the costs of upgrading the four non-K&E building types to modern standards. These costs are based on conceptual designs intended to correct deficiencies found in a Facility Condition Assessment (FCA; WPAFB 2014) performed on the interior and exterior of select units. Building Information Models were used to verify material and labor quantities and provide accurate floor plans, and estimates of cost used standard published cost estimating data, RS Means Online, and contractors and manufacturers for custom assemblies or locally available material. Standard cost estimating practices (Parametric Cost Engineering System Software [PACES]) were used for estimating replacement housing costs, and commercial pricing was used for custom installations, preservation, architectural salvage costs, and demolition costs (WPAFB 2016).

Renovation costs for the four non-K&E housing types (E, F and G and H) averaged $369,547 for a low case, and $749,560 for a high case. Renovation costs reflect an emphasis on preserving the structure of the housing units and extending their useful lives, as well as resolving safety issues (abatement costs of removing asbestos and lead-based paint). The analysis uses the low renovation cost estimate as the basis for estimation.

Upgrade costs averaged $148,106 for the four non-K&E housing types (E, F, G and H), which includes the cost of providing grounded electrical receptacles, correcting safety issues on stairways, repairing copper gutter systems, and adding powder rooms to the first floor of some unit types.

Property Management Fee

A property management fee of 4% of total revenues was assumed.

Vacancy Rate

Given the likely near-term increase in demand for BQHD housing for retired officers and for distinguished visitors, the analysis assumed vacancy rate would be 5%.

Timeline

It was assumed that a Section 111 lease would be provided to a qualified applicant for a period of 50 years.

Escalation Rates

Monthly BAH rates at WPAFB have grown steadily on average between 2010 and 2018, by 0.7% for all ranks with dependents, and 1.1% for all ranks with no dependents (MilitaryRates.com 2019). There have been slightly lower average increases for officers over the same period, with rates increasing 0.6% for O1 to O7 with dependents, and 0.7% for O1 to O7 with no dependents, and slightly higher average increases for enlisted men, whose rates have increased by 1.1% for E1 to E9 with dependents, and 1.5% for E1 to E9 with no dependents. Given these trends, an escalation rate of 1.25% was assumed for revenues from BAH.

An escalation rate of 2% was assumed for all other applicable items - O&M costs and tax credits.

Financing

Various aspects of financing that might be available to potential investors was considered, including commercial loans, and state and federal tax credits.

Commercial Loans

Based on a review of relevant commercial banking websites, financing for the upgrading and restoration of BQHD housing units was assumed to entail a 5-year, interest-only construction loan, the current market interest rate for which was between 5.5% and 6.5% (with a mean value of 6.0% assumed), followed by a 20-year mortgage, the current market interest rate for which was between 3.0% and 8.5% (with a mean value of 5.75% assumed).

It was assumed that the developer equity contribution would be 20% of the total investment cost in each renovation and upgrade scenario.

In addition to commercial loans, military departments can provide additional financing, and the Air Force generally provides financing through direct loans to the developers, limited by the Military Housing Privatization Initiative (MHPI) to not more than 33 percent of the value of the investment, or 45 percent if land or facilities are also part of the investment.

Tax Credits

Leased BQHD units would be eligible for tax credits at the state level and federal level for the rehabilitation of historic, income-producing buildings that are determined by the Secretary of the Interior, through the National Park Service (NPS), to be “certified historic structures.”

At the state-level, an eligible applicant would be either the owner of the historic building(s) or a qualified lessee with an executed lease agreement for a term equal to or exceeding 27.5 years for residential rental property (WPAFB 2017). A project may include more than one building, provided there is historical evidence that the buildings functioned together during their time period of significance to serve an overall purpose, are in close proximity or in within the same neighborhood and jurisdiction, will have the same primary end use, and the rehabilitation activities and costs are undertaken by the same applicant. The Ohio Development Services Agency (ODSA) accepts applications, and successful applicants are eligible for 25% of qualified rehabilitation expenditures (QREs) in the rehabilitation, with a cap of $5 million in tax credits per project.

At the federal level, a 20% Rehabilitation Tax Credit applies to any project that the Secretary of the Interior designates a *certified rehabilitation* of a *certified historic structure.* Applications would be submitted to the State Historic Preservation Office (SHPO) along with the State tax credit application.

SHPO reviews the application and then forwards it to the National Park Service (NPS) with a recommendation.

The level of state and federal support for renovation of BQHD properties in the form of income tax credits for property developers and lessors was assumed to be based on current standards, under which state and federal tax credits are applicable.

The developer typically carries the initially approved tax credit amount until the credits are issued, which are then sold to an investor, typically at $0.90 - $0.95 cents on the dollar. Because the five-year construction period adds an element of uncertainty when seeking to monetize the credits, both the state and federal tax credits are included at $0.90 cents on the dollar. The proceeds from the sale would then offset the amount the developer carried at the outset of the project.

Methods for Assessing Financial Feasibility of BQHD Leasing Under Section 111

The financial feasibility of an investment project is typically measured using annual projected cash flows, i.e., all cash inflows and cash outflows associated with the project. Cash flows are used in order to consider the time value of money, whereby a premium is included to represent the postponement of the repayment of funds by the investor until some point in the future of the project. Although there are several different cash flow-based methods, the Internal Rate of Return and the Debt Service Coverage Ratio are used in this analysis.

The Internal Rate of Return (IRR) calculation produces a discount rate where the Net Present Value (NPV) of all cash flows from a particular project equal zero. The discount rate is an interest rate, or annual return the investor expects in order to invest in the project. Present value is the current value of a future stream of cash flows discounted at the discount rate. The higher the discount rate, the lower the present value of the future cash flows. NPV is the difference between the present value of all cash inflows and cash outflows associated with an investment project, and establishes whether or not the investment project is an acceptable investment.

The Debt Service Coverage Ratio (DSCR) is a measure of the cash flow available to pay debt obligations and is used by lenders to assure that the prospective borrower will have sufficient funds to pay their debts. DSCR is the ratio of operating revenues to the cost of financing debt, and compares the cash flow available for debt service (interest and principal repayments) to the debt service for the same period. The higher the DSCR, the easier it would be for an investor to pay the debts incurred in order to invest in the project.

Investment Feasibility Criteria

Typically, for an investment to be feasible, its IRR would be above 10%, and its DSCR above 1.5.

Leasing Scenarios

To provide a potential investor with a range of foreseeable options for the leasing of BQHD housing, a number of leasing scenarios were evaluated (Table 1-1). As it was assumed that the restoration of the largest number of BQHD housing units was the most important objective with any given revenue stream, followed by the upgrading of as many of the remaining units as possible, the maximum number of restored and upgraded units with an IRR and DSCR still attractive to potential investors was used for each scenario, rather than for combinations of restored and upgraded units which produced the largest IRR and DSCR.

Table 1-1. Selected BQHD Section 111 Restoration Scenarios Meeting Market Thresholds for Private Investment Feasibility

Scenario	Units Renovated	Units Upgraded	Units Not Addressed	IRR (%)*	DSCR*
Renovation and Upgrades (60 units)	3	48	9	10.3	3.0
	6	41	13	10.1	3.0
	9	34	17	10.1	3.0
	12	27	21	10.1	3.0
	15	20	25	10.1	3.0
	18	12	30	10.3	3.0
	21	5	34	10.3	3.0
	23	0	37	10.4	3.0
Renovation and Upgrades with a 5-Year Delay in the Construction Period (60 units)	23	5	32	10.2	2.8
Upgrades only (60 units)	--	56	4	10.1	3.0
BAH from 30 USAF-renovated K&E Units included (90 units)	65	5	20	10.2	2.9
BAH from 50 USAF-renovated K&E Units included (90 units)	87	3	0	10.2	2.9
BAH from 50 USAF-renovated K&E Units included, with a 5-Year Delay in the Construction Period (90 units)	90	0	0	10.5	2.7
* Typically, for an investment to be feasible, its IRR should be above 10%, and its DSCR above 1.5.					

For the 60 units not occupied by K&E personnel, it was assumed that 10% of the BQHD units would be allocated to each of the top ten WPAFB ranks. Three scenarios are considered - renovation and upgrades in combination, and upgrades only, where construction occurs in Year 1 through Year 5, and a delayed construction period, whereby renovation and upgrades occur between Year 5 and Year 10.

To make Section 111 leasing more attractive, and assuming any legal restrictions would be overcome, BAH revenue from renovated BQHD housing units allocated to K&E personnel was also added to the potential lessee revenue stream, meaning all 90 units were included in the analysis. The analysis assumed that restoration costs associated with the 30 K&E units have been borne by the Air Force, and the 30 units would still be allocated to general officers, senior officers, field grade officers, senior NCOs and command chiefs, with the remaining 60 units allocated to each of the top ten WPAFB ranks. An additional scenario assumes that the 30 units continue to be allocated to general officers, senior officers, field grade officers, senior NCOs and command chiefs, with an additional 20 K&E units allocated to the same personnel ranks as with the initial 30 K&E units, with BAH available to the lessee. The remaining 40 units are allocated to each of the top ten WPAFB ranks. Both scenarios assume that legal approval for providing BAH for K&E personnel to pay for BQHD housing previously provided free of charge would be forthcoming.

Results

The analysis shows that various renovation and upgrade options producing an IRR of more than 10% and a DCR of more than 1.5 would be available to an investor.

As the average cost for renovations is $286,177, and the average cost for upgrades $148,106 per unit, for the occupancy profile and BAH for the 60 non-K&E units, increasing the number of renovations disproportionately reduces the number of upgrades and increases the number of units without any renovation or upgrades, in order to maintain an IRR and DCR above the minimum thresholds. With three units renovated, for example, 48 units can be upgraded leaving nine units not addressed; with six units renovated, the number of upgraded units falls to 41 and the number of units not addressed increases to 13. With additional increments of three renovated units, the number of upgraded units possible above IRR and DCR thresholds would fall, and the number of units not addressed would increase. With 23 units renovated, none could be upgraded and 37 units would not be addressed for the project to exceed IRR and DCR minimum thresholds.

In each of the renovation and upgrade scenarios, construction occurs in Year 1 through Year 5. In order to make Section 111 leasing more attractive, a Section 111 lease may allow a delayed construction period, where renovation and upgrades could occur between Year 5 and Year 10. Although the maximum number of renovated units under this scenario would still be 23, with the delayed schedule, an additional five units could be upgraded, with 32 units unaddressed, and still exceed IRR and DCR minimum thresholds.

If the lessee chooses only to upgrade housing units in Year 1 through Year 5, with no renovation undertaken, then 56 of the 60 units could be addressed and still exceed IRR and DCR thresholds.

Although there a number of renovation and upgrade scenarios that exceed the minimum IRR and DSCR thresholds, the cost of financing construction over only a five-year period may prove prohibitive to potential investors, and adversely affect Air Force safeguarding of all housing units and limit WFAFB housing objectives. Accordingly, in order to make Section 111 leasing more attractive, assuming any legal restrictions would be overcome, revenue from the BQHD housing units allocated to K&E personnel could be collected by the Section 111 lessee, with revenue from all 90 units included in the calculations, with restoration costs for the 30 K&E units already borne by the Air Force. With revenue from 30 K&E units and the remaining 60 units, with the lessee required only to fund restoration and upgrading of the 60 units in Year 1 through Year 5, 65 of the 90 units would be renovated (30 by the Air Force and 35 by the lessee), 5 units upgraded and 20 units left unaddressed, the scenario would exceed IRR and DCR minimum thresholds. If 50 units are renovated by the Air Force, and the lessee collects revenue from all 90 units, and is responsible for funding construction in Year 1 through Year 5 on the remaining 40 units, 87 units of the 90 units could be renovated (30 by the Air Force and 57 by the lessee) and 3 upgraded, with no units left unaddressed, the scenario would exceed IRR and DCR thresholds.

Finally, with a delayed construction period, where renovation and upgrades occur between Year 5 and Year 10, all 90 units could be renovated, and still exceed IRR and DCR minimum thresholds.

Conclusions and Recommendations

The analysis presented has identified a range of possible scenarios for the upgrading and restoration of housing units in the BQHD under a Section 111 lease. Given a series of assumptions applied to all the scenarios, including renovation and upgrade costs, O&M costs and vacancy rate and escalation rates, the type and cost of financing, the impact of different BQHD occupancy profiles and their associated revenue streams from BAH, including the addition of BAH for 30 and 50 K&E personnel to the Section 111 lessee revenue stream, and a delay in the construction schedule, were used to determine investment feasibility. Assuming U.S. Air Force personnel would be forthcoming to live in BQHD units, regardless of the level of restoration or upgrading that would be undertaken, and the validity of construction cost estimates, there are numerous Section 111 lease options that would provide clear opportunities for potential investors by exceeding investment feasibility thresholds, allowing the Air Force to safeguard the future of the majority or all of the units in the BQHD, both as historical assets, and as unique housing capacity that would address Air Force housing objectives at Wright-Patterson Air Force Base.

The importance of the Air Force maintaining control over housing in the BQHD under a Section 111 lease cannot be underestimated. While three of the alternatives identified in the EIS, and fully analyzed in the CBA, consider continued Air Force ownership rather than leasing, the funding of restoration and upgrades of some or all of the units is only assumed. To address the real potential for Air Force construction and O&M funding shortfalls in the near future, and the increasing unsuitability of housing for senior and K&E personnel, the EIS therefore identified five privatization alternatives under which BQHD housing would be leased to a suitable private developer, where it was assumed a combination of BAH revenues and bank loans would be used to renovate and upgrade BQHD housing according to predetermined building standards, with federal and state credits used to reduce capital costs, or to demolish some portion of the BQHD inventory when maintaining and renting were not financially viable. The CBA found that the alternative under which the most renovation and upgrading would occur, Alternative 8, produced the largest overall net benefits. However, this was also the only privatization Alternative that would preserve all 90 housing units, with the remainder of the privatization alternatives calling for demolition of varying portions of the BQHD housing inventory.

The risk of funding shortfalls for O&M expenditures with continuing Air Force ownership, and the risk of the loss of a significant portion of the historic asset inventory in the BQHD with leasing under privatization, would both be removed if the restoration of the K&E housing units were to be undertaken using USAF funds, and the remaining units leased out for restoration and upgrading under a Section 111 lease. Although the cost of restoration for the 30 K&E units would be borne by the Air Force under a Section 111 lease scenario, depending on the stipulations of the lease, with continued Air Force ownership much of the risk of adverse financial viability of BQHD leasing projects after privatization affecting the disposition of BQHD housing would be avoided, and with the Section 111 lessee able to use BAH revenues and private funding for upgrades and restoration, BQHD housing would be retained under Air Force supervision, and the risk of ongoing Air Force funding shortfalls for much needed housing upgrades would be avoided.

Standard investment feasibility analysis shows that there are numerous options available to the Air Force in structuring a Section 111 lease to ensure that the adequate restoration and upgrading of BQHD housing can be profitably undertaken by a suitable lessee using private funds to cover construction and O&M costs. Applying BAH revenues to combinations of upgrades and restoration of a portion of the 60 non-K&E units exceed IRR and DCR thresholds, while allowing the lessee to additionally collect BAH revenues from personnel in the 30 or 50 K&E units once they are renovated by the Air Force, assuming any legal restrictions would be overcome, and varying the construction schedule under each scenario, all provide clear opportunities for potential investors to become Section 111 lessees. Additional benefits in the form of infrastructure upgrades in the BQHD would also reduce O&M costs and improve the livability of the District, making Section 111 leasing even more attractive to potential investors.

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