

Culver House

Heritage Statement

Introduction

This Heritage Statement has been prepared by Theis and Khan architects and the owners of the house as part of a previous planning application. The current listed building consent application is for proposed replacement of damaged and single glazed glass at Culver House, a grade II listed building located near Penhurst, Kent.

In accordance with the requirements of Paragraph 128 of the National Planning Policy Framework (2012) this statement describes the significance of the listed building as a designated heritage asset.

History

Culver House, located in Penshurst, formerly called Culver Hill, was built for the eminent landscape painter F. R. Lee, R.A. in 1848. The plan of the original house was “T” shaped (fig 3) and largely comprised of the existing north elevation overlooking the drive and the all brick gable facing the garden. This original all brick house is relieved by diapered brickwork in blue bricks.

In 1857 Culver Hill was bought by James Nasmyth, the inventor of the steam hammer. He retired here to concentrate on his hobby, astronomy. He renamed the house Hammerfield and employed the architect George Devey to extend the house. Devey proposed filling in the “T” shape to form a rectangular house and adding the tower feature at the front.

Devey’s work was completed in 1859 and can best be seen from the garden (fig 2). Devey’s main addition was the main three storey gable which features an eclectic mixture of golden stonework, including the ornate stone bay window to what was the dining room, surmounted by half-timbered and tile hung work. Devey also created the adjacent garden room with its oak double doors and arcade of windows above.

At this time Devey constructed what used to be a separate building to the west, which formed Nasmyth’s workshop, gallery and observatory – the latter occupying the upstairs room at the southern end of this wing. This room used to have a rotating wooden observatory roof, similar to an oast, under which he had his telescope mounted on a large stone block. “my telescopes, my home stock of tools, the instruments of my own construction, made from the very beginning of my career as a mechanic, and associated with the most interesting and active parts of my life. I lovingly treasured them and gave them an honoured place in the workshop which I added to my residence.”

To the side of this building away from the main house, and now part of a neighbouring property, there is a large cast iron framed Victorian greenhouse, described by Nasmyth as being “120 feet long by 32 feet wide”

The house was further extended in the early 1900’s by the addition of the large single storey room which linked the main building to the workshop and observatory room. Finally, in the mid 1950’s the property was split into the four properties we see today.

The house is now divided into 4 residences. Hammerfield Cottage, at the west end, was the former observatory and workshop, the other dwellings form the original house and outbuildings. The building takes on an irregular style, typical of Devey’s work.



fig 1) proposed garden elevation by George Devey 1859. The ultimate construction deviates from the drawing in several key aspects, most notably the portico and the western section.



fig 2) current view from culver house garden

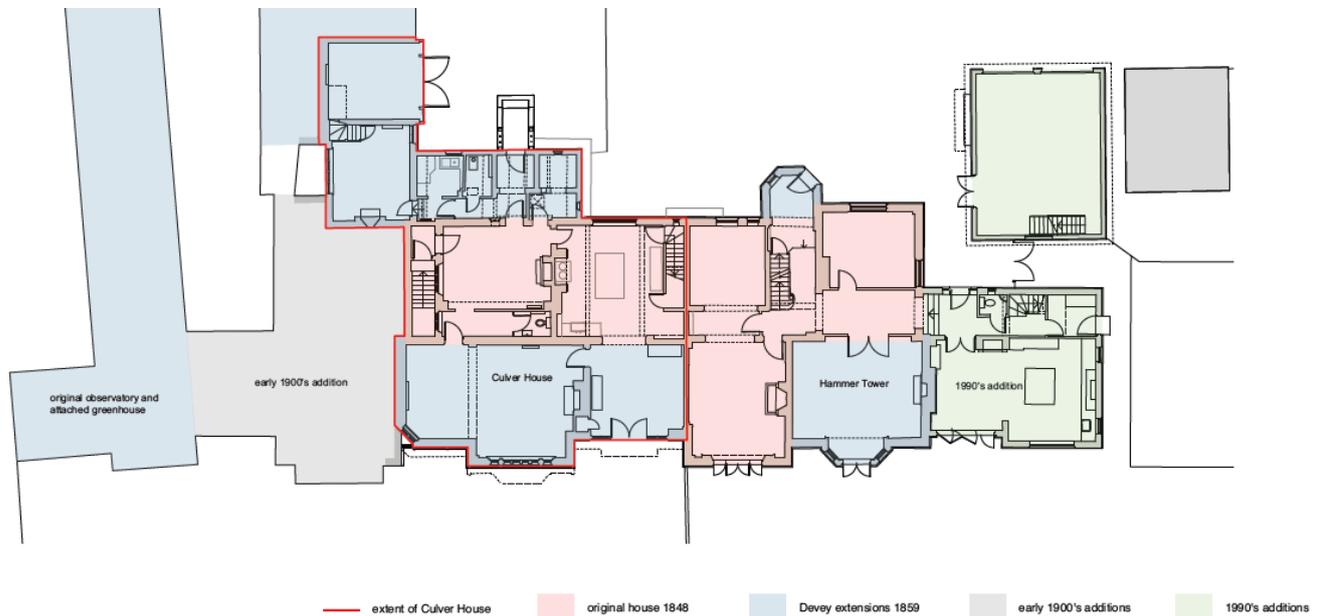


fig 3) development of culver house

“From my hereditary regard for hammers — two broken hammer-shafts being the crest of our family for hundreds of years I named the place “Hammerfield” and so it remains to this day. The improvements and additions to the house and the grounds were considerable. A greenhouse was built, 120 feet long by 32 feet wide. Roomy apartments were added to the house. The trees and shrubs planted about the grounds were carefully selected.”

Nasmyth also commissioned Joseph Paxton, the designer of the gardens at the Crystal Palace, to lay out the gardens, which originally extended to 13 acres and reached down to Doubleton Lane (fig 4).

Paxton is also credited with the large ornate stone feature which now stands on the rear lawn of neighbouring Hammertower and was a pond or fountain. Another feature of the gardens and woodland are the extensive brick pathways, which are also Victorian, and are reputed to have been built to enable a bedridden owner to be pushed around the grounds in a bath chair. The woods and gardens feature many large trees, including some Sequoias (now in the neighbouring property’s garden at Hammerfield House), which date from Nasmyth’s time, as do the numerous rhododendrons and azaleas.

The gardens are an integral part of the heritage of the property and will remain unchanged as part of the proposed scheme.

fig 4) plan from 1937 showing Hammerfield

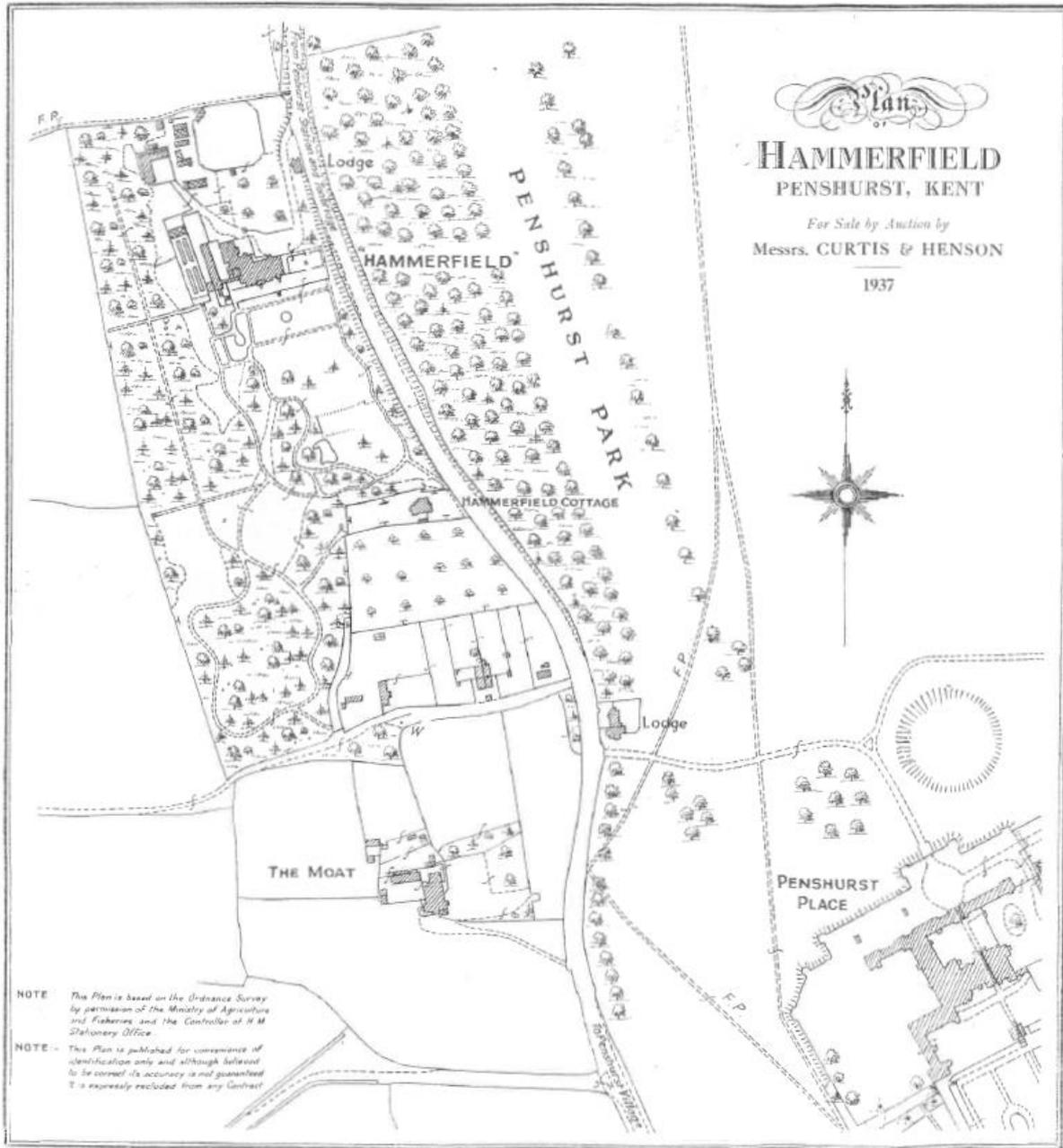


fig 4) plan from 1937 showing Hammerfield

Internal Alterations

The glass currently in place is heavily scratched and cracked in several places. Replacement is therefore recommended. In line with the government's commitments under the Paris Climate accord, we wish to upgrade the glazing to heritage double glazing (Albion Crowne) with the aim to improve the energy efficiency of the property. Based on a recent EPC assessment Culver House currently produces approximately 27 tonnes of carbon dioxide every year, 4.5 times as much as the average household in the UK. The three main recommendations that can practically be applied to the property in order to reduce its carbon footprint were:

- Replace single glazed windows with low-E double glazed windows
- Install photovoltaic panels (not part of this application)
- Increase loft insulation (already completed in parts)

Making these alterations can bring the EPC up from its current rating of F30 to at least E40. Though this is still well below the average UK rating of D60, there are limits to what can be achieved in an older dwelling while ensuring that the character of the building is not affected. The house is currently heated predominantly through central heating running on heating oil (kerosene) and electricity (night storage heaters and electric AGA). Electricity is drawn from the mains power grid.

In line with Historic England guidance the first course of action is to reduce energy consumption. We have, over the course of the last year replaced almost all light bulbs with LED bulbs, in an effort to reduce energy consumption for lighting. We have placed additional loft insulation in some of the accessible lofts, to further reduce the energy needs of the house. The installation of double glazing and the corresponding repair to damaged glass will likely have the largest positive impact.

Double glazing

During a previous visit from Historic England in relation to a previous Listed Building Consent request, the officer visiting the house noted that none of the glass seems to be original to the house, and therefore suggested that double glazing could be installed in the property, subject to planning permission being obtained. The property currently has a large amount of damaged (cracked or scratched) single glazing. Using central heating and log fires causes condensation, which furthermore damages some of the timber window frames and putty seals. See the photos in the appendices.

Damage to walls and window sills is, for now, limited to a few isolated locations. However, as most of the existing window frames are poorly sealed, leading to water ingress and a build-up of condensation, the outdoor and indoor structure is likely to be impacted in the long-term if left in place. The proposal is to replace the single glazing panes with heritage standard double glazing. For the avoidance of doubt, we only propose the replacement of the glass. No changes or replacements are proposed for the casements. The original stone casements are in an acceptable state of repair. Timber window frame will require replacement of seals, but the frames themselves are in an acceptable state of repair, though damage and signs of age does exist.

The following is a brief description of the proposals and the proposed contractor. Further information on the contractor can be found in the attached brochure and on their website <http://www.touchstoneglazing.co.uk/home/>.

In terms of aesthetic value, fenestration often forms an integral part of the design of the building and contributes to a building's visual interest, internally and externally.

Culver House has a mixture of window styles, all being currently single glazed, with some two windows having broken pvc secondary glazing. Casements are timber or stone throughout. Some of the opening windows are made of metal frames, most of which have deformed over time, making closing the windows difficult. When closed many of these windows leave visible gaps for draughts to come through. All glass is late 20th century float glass, which is not original to the building.

The contractor undertaking the proposed work will be Touchstone Glazing Solutions, a UK manufacturer and installer of with experience in undertaking glazing projects in Grade II and Grade II* listed buildings approved by Historic England.

The contractor proposes that the best approach for the windows at Culver House would be a minimum impact solution, where the windows are almost invisible and, therefore, they will have very little impact on the look and style of the building as a whole, allowing the mullions and original fabric of the building to form the narrative.

The proposed replacement opening casements would be made from high-grade stainless steel which is all but immune to corrosion, therefore preventing future damage to the fabric of the building from rust and expansion. Albion Crowne glass which gives the appearance of hand drawn glass avoiding modern flat glazing.

Only materials in keeping with the building's history such as steel, glass and lead would be used.

The Insulead/Steelyte glazing system proposed (see attached brochure) is fully drained and fitted without any alteration to the fabric of the building it is designed specifically with the protection of historic buildings in mind, being fully reversible and although double glazed designed to allow the building to breath. These windows are BFRC "A" Rated for thermal efficiency. Touchstone is an ISO9001 accredited company.

The contractor writes "In our experience the modernisation of such buildings including central heating, insulation and modern water appliances need to be considered as a whole. If the windows are single glazed it creates a situation whereby an area of the room is acting as a 'heat sink' and this can cause unforeseen problems. Double glazing will help prevent this as well as reducing the potential for extremely damaging condensation and subsequently mould form which is deleterious and damaging to the surrounding historic fabric as well as being a health hazard to the occupants."

Touchstone Glazing can make themselves available to present the proposed work *in situ* with a representative of Historic England, if required. Please provide some notice because Touchstone is based in Yorkshire, not Kent.

Neighbouring properties:

Parts of the larger Hammerfield House, as it was known prior to being split into several dwellings in the 1950s, have had double glazing installed. Notably, we refer to planning application 15/02024/HOUSE in relation to the replacement of entire timber window frames. Slim line double glazing was installed here subsequent to approval having been granted in 2015.

External Alterations

No external alterations are proposed.

Summary.

The current thermal efficiency of Culver House is well below standard (with an EPC rating of F), leaving a significant carbon footprint. The proposed improvements are an effort to bring the house closer to acceptable energy efficiency standards, while also reducing its dependence on carbon generated electricity. Current government policy aims to make the UK carbon neutral by 2050. A large part of that will need to be delivered by more sustainable housing. There are limits to what can be achieved in an old house. The proposed improvements are specifically designed to protect the character of the property while delivering the necessary climate change efficiencies. By replacing twentieth century glass with heritage double glazing, designed and installed by a company dedicated to installing glass in listed buildings in the UK, the house will reduce its currently unsustainable 27 tonnes p.a. carbon emission substantially.

In addition, the proposed improvements will address the water and condensation damage that is apparent in some parts of the house, minimising future impact to the fabric of the building.

The proposed work is sympathetic to the existing fabric of this Grade II listed property. No demolition or removal of original features is envisaged and every effort has and will be made to retain any original features and avoid inadvertent damage to the property.

No demolition of the building is required to improve the energy efficiency with the proposed measures. The work proposed within this report does not significantly affect and will not be detrimental to the appreciation of the special architectural or historic interest of Culver House.

Initial indications are that the EPC rating of the house, with the measures herein proposed, can be brought to at least E40, if not higher than that. Through these efforts we hope to contribute to the UK's overall climate change goals, lowering the house's need for energy.

Photo Appendices

A. Sample existing windows



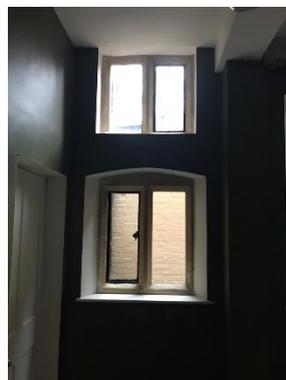
Stone window casements in the drawing room



Timber window frames and leaded lights in dining room and kitchen



Timber window 1st floor



Stone window casements ground floor library



B. Examples of scratches and damage



Water damage from condensation impacting the window frame



Condensation damaging painted surfaces of the timber door and windows



Excessive scratches on the glass, representative of a large section of the glass.



Broken glass pane in the leaded lights at the front of the property



Modern cat flap installed by previous owners (to be removed)

C. examples of other listed properties glazed by Touchstone Glazing



Stone window casement similar to the windows found in Culver House



Though constructed of a different type stone, the construction of the windows is similar to that at Culver House. (source: Touchstone Glazing Solutions)



The Coombes, Market Harborough: Property with similar brick work and window construction, albeit from a different architect. (source: Touchstone Glazing Solutions)

Bibliography

Online Sources

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