

HERITAGE IMPACT ASSESSMENT

The Glade, The Glade, Letchworth GC, Herts SG6 3LN

Proposed replacement double glazed windows

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1. Introduction

This Heritage Statement supports a planning application for the proposed replacement of the crittall windows with new heritage style double glazed units. The document outlines the design rationale, site context, and demonstrates how the revised scheme addresses and aligns with relevant planning policy.

2. Site & Context

Site History:

The Glade is grade 2 and was listed on the 07.09.1979 and lies within the LGC conservation area. It was constructed in 1906 and designed by Charles Harrison Townsend for Sir John Gorst. The house consists of 2 storeys with small plain tiled roofs swept down over the 3 bay verandah on the main south front elevation. It has a linear plan with the central hall flanked by the lounge and dining room. It has irregular fenestration with gabled bays and dormers. It has 'smooth' roughcast rendered walls to the GF, with tile hung first floor walls and dormer gable walls. It has exposed brick stacks with moulded caps. The windows are white painted timber casement windows with mullions and leaded lights. The main east entrance and doorway lead to the garden on the south side with wide arched entrances turned in thin tiles. The GF interior has exposed ceiling beams and brick chimney pieces.

It had a large greenhouse and Quaker meeting house in the rear garden.

It was left unoccupied for some time after the death of the previous owner.

Current Use: The building currently functions as a residential property within the large plot. It is currently unoccupied and has been so for some time.

Planning History

The Glade, The Glade, Letchworth GC has been subject to the following planning application:

- **77/00805/1 – Erection of detached garage and tool shed involving demolition of existing garage.**
Approved: 8th July 1977
- **90/01123/1 – Erection of pool house over existing swimming pool.**
Approved: 8th October 1990

Heritage & Designations:

Heritage Statement

The Glade, LGC

The House is listed and lies within the conservation area. This building was the most significant historical contribution of Architect Charles Harrison Townsend to Letchworth GC. He was a leading figure of the Arts and Crafts Movement, known for blending organic, flowing shapes with traditional materials. His work in the Glade reflects the early 20th-century "Garden City" ideals of uniting nature with domestic life.

Character of the Conservation Area within the Glade:

The Letchworth GC Conservation Area in the Glade was defined by the design principles of Parker & Unwin to the Arts and Crafts movement of the time. Each house reflects these ideas but each one was designed by separate Architects who interpreted these in their own way.

Impact of Proposal:

- 1). The proposal involves the existing single glazed leaded light Crittall windows which are in poor condition and unrepairable, being replaced with matching new double glazed ones to ensure the building fabric is fully maintained to ensure longevity of the grade 2 listed asset. The existing historic timber frames will be retained and repaired. These new windows and doors will also reduce the heat loss and reduce fuel consumption and thus the building energy impact on the environment.

Conclusion:

The proposal will preserve the character and appearance of the Letchworth GC Conservation Area in line with Section 72 of the Planning (Listed Buildings and Conservation Areas) Act 1990, as well as relevant policies of the NHDC Local Plan. By ensuring that no external changes are made to the facade of the building and that materials are consistent with the existing fabric, the scheme has a neutral impact on the Grade 2 significance. The works are intended to replace the existing Crittall frames within the timber window frames with heritage style new ones and to restore the building to its original design.



Entrance windows (retained)



Internal view of original front door (retained)



Front elevation



Terrace elevation



Verandah door & windows (retained)



Rear elevation



Rear elevation



Rear Elevation



Verandah internal elevation



Side elevation



Side courtyard elevation



Rear courtyard elevation

Surrounding Character:

- Individually designed large houses set in 1acre plots using similar materials as per the design guide lines.

Constraints

- Protected trees, Conservation area, Grade 2 listed building. No known flood risks.
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3. Proposed Development**The proposal seeks planning permission for:**

- Replace single glazed Crittall frames with double glazed Crittall heritage windows to the property while retaining the existing timber frames.

No external alterations are proposed to the original façade elevations facing onto the access road.

4. Design Principles**4.1 Layout**

- The plot will provide the facility for 7 car parking spaces within the front garden, with the entrance off the service road.
- The building will not alter in shape or size and there will be no change to its relationship with the surrounding buildings. The plot perimeter is tree lined with the rear and garage side boundary's marked by 1800 high close board fences. The boundaries to the front and side of the house formed by the road are open.

4.2 Scale & Proportion

- The building will not alter in size and scale, and will be unaffected in its relationship within the site. The new windows and doors will match the existing in size and scale.

4.3 Appearance & Materials

All materials remain consistent with existing House character:

- White entrance door with glazing panels with black frame.
- White window frames with black Crittall casements with leaded light finish.

4.4 Landscaping

This will be unaffected.

5. Access

- Primary access: From service road adjacent front elevation via the old entrance door.
 - Vehicular access: From the above.
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6. Transport & Connectivity

The site benefits from excellent public transport accessibility:

- Letchworth train Station : 40 minute walk.
- Bus stop; 10 minute walk.
- Road access: Via the access road leading onto the Baldock Road.

This ensures residents have sustainable travel options, reducing reliance on private cars.

7. Local Amenities

The site is within walking distance of:

- Retail & Services: superstores and local shops in the town centre.
 - Healthcare: In the town centre.
 - Education: Schools and nurseries within 2–3 miles.
 - Recreation: Local parks and community facilities nearby.
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8. Impact Considerations

- Neighbouring Impact: No overlooking or loss of light given scale and orientation.
 - Housing Contribution: Provides a compliant family dwelling in line with national space standards.
 - Sustainability: The installation of double glazed windows will reduce heat loss within the dwelling thus reducing fuel consumption.
 - Policy Compliance: Meets NHDC requirements for unit size, daylight, and access to amenities.
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9. Existing single glazed Crittall windows & new Crittall double glazed heritage units

The existing crittall frames/windows are beyond reasonable repair both structurally & economically. They are displaying fatigue & corrosion, with 'rust heave' which is distorting the frame profile, structurally compromised, cracking glass panes, and severe pitting has structurally thinned the metal frame.

The 1906 timber subframes are highly significant, structurally sound, and entirely salvageable. However, they are currently being actively degraded by the failure of the single-glazed metal inserts.

The single-glazed Crittall windows suffer from severe "cold bridging," causing heavy interior condensation (sweating). This moisture pools on the historic timber sills, leading to localized rot, mold, and paint failure. Upgrading to a thermally stable 12mm unit stops this condensation, actively preserving the 1906 timber fabric for the future.

The steel has oxidized, expanded, and distorted. This structural distortion puts uneven pressure on the glass, causing the historic leaded panes to bow, leak, and crack. Crittall frames installed in 1906 will last between 40-80 years dependent on how they have been maintained. They are now past their predicted life span which is clearly evident.

The metal frames have thinned past the point where they can structurally hold new leaded lights safely, making exact replication the only viable path to protect the property from water ingress.

Historic England's updated Advice Note 18 explicitly dictates that the installation of slim-profile double glazing within historic frames is generally acceptable provided it causes no visual harm.

The naked eye cannot distinguish between a single-paned 1906 window and the proposed new 12mm Crittall Heritage configuration. I have compiled data comparing the existing to the proposed as detailed below:-

Feature	Original 1906 Specification	Proposed 12mm Crittall Heritage Setup	Conservation Justification
Subframe	Original 1906 structural timber.	Retained, repaired, and re-treated insitu.	Zero loss of primary historic fabric.
Glass Thickness	~3mm single-pane historic float glass.	12mm overall slimline unit (3mm Outer + 6mm Krypton Cavity + 3mm Inner).	Prevents the bulky, unnatural profile of standard 24mm units. Fits entirely within the original shallow timber/metal rebates.
Sightline & Spacer	Seamless metal margins.	7mm ultra-low sightline spacer in Solid Black .	The spacer is completely hidden inside the rebate. The solid black absorbs light, eliminating modern metallic glint and double-reflections.
Leaded Lights	Hand-soldered square leaded panes.	Authentically scaled, genuine external applied lead matrix on both faces, hand-soldered at junctions.	Exactly replicates the Arts & Crafts irregular shadow lines and hand-crafted texture of Townsend's original facade.
Gas Insulation	None.	Premium Krypton Gas .	Achieves a U-value of ~1.4 W/m²K across a tiny 6mm gap, satisfying energy targets without altering the building's profile.

As The Glade is an Arts & Crafts building the units will be structurally face-bedded using an authentic, sculptured, hand-beveled hybrid polymer compound (e.g. *Hodgson Heritage Putty*). This exactly replicates the traditional angled putty-line face of the 1906 originals while remaining chemically safe for the modern edge seal.

Secondary glazing is not practical for the reasons as set out below:-

The Arts & Crafts Interior: Charles Harrison Townsend's design relies on a cohesive interior identity, including exposed timber ceiling beams and distinctive brick fireplaces. The internal frame bulk required for effective secondary glazing would obscure the historic timber mullions, internal moldings, and decorative Arts & Crafts ironmongery (original peg stays and latches) when viewed from inside the room.

The window boards do not project far enough from the back of the window frames to allow sufficient width to allow a secondary glazing frame to be installed.

The secondary glazing would restrict the operation of the windows, creating a trapped, unventilated air void that could accelerate hidden rot in the original timber subframes you are trying to save.

Crittall heritage style double glazed units

Multi-Layer Construction & Precision Alignment

- **The "Sandwich" Method:** To replicate the profile of a traditional structural leaded light window across a single double-glazed pane, high-performance, self-adhesive square lead strips are fixed to **both the external face (Pane 1) and internal face (Pane 2)** of the glass.
- **Shadow-Line Prevention:** Specialized digital lasers or alignment jigs are used to align the external and internal square lead strips to ensure they sit in an identical layout down to the millimetre. This ensures no light will pass through the window negating a double-shadow line, which instantly exposes the modern double-glazed system.
- **Concealed Spacer Bars:** Inside the slimline unit, black or dark-matrix internal dummy spacer bars are placed directly between the external and internal lead layout. This completely blocks light from passing through the hollow cavity, hiding the double-glazing cross-section.

Soldering the Structural Grids

- **Hand-Soldered Joints:** True to traditional Arts & Crafts architecture, the square lead strips are not simply overlapped or butt-jointed. Every intersecting point of the square grid is **fluxed and hand-soldered** using a traditional iron and lead-tin solder wire.
- **Perimeter Framing:** The internal vertical and horizontal square grids are soldered cleanly into a slightly wider **perimeter border lead** that runs around the very edge of the glass pane, providing a authentic, self-supporting look.

Fixing into the Crittall Steel Frame

- **Structural Weight Management:** Original steel frames were built to hold 3mm single glass. Slimline heritage double glazing (typically 11mm–14mm thick) or vacuum-insulated glass (such as LandVac which is only ~6mm–8mm thick) is carefully bedded into the original or replication Crittall steel rebate.
- **Specialist Bedding Compounds:** Standard linseed oil putty expands and chemically attacks the edge seals of insulated glass units, causing premature failure. Instead, the units are bedded using **heritage-grade structural metal-window glazing compounds** (like modified polymer putties or non-setting butyl sealants) designed to look exactly like historic putty lines while remaining flexible against steel movement.

Chemical Ageing (Patination)

- **Oxidation Treatment:** Shiny, newly applied lead is treated with an acidic **chemical patination oil or darkener**. This cures the lead instantly into a flat, non-reflective gunmetal grey or matte charcoal black, matching the natural oxidation found across Letchworth's original 20th-century metal casements.

The 12mm Heritage IGU Glass Specification

The 12mm insulated glass unit (IGU) must be engineered to match the narrow structural channels of modern heritage steel profiles:

- **Glass Composition:** **3mm Toughened Outer + 6mm Gas Cavity + 3mm Low-E Inner**. (Toughened glass is mandatory for safety and structural stiffness within thin metal panels).
- **Thermal Performance:** Must use **Krypton Gas** to bridge the tight 6mm gap. This achieves a center-pane **U-Value of ~1.4 W/m²K**, satisfying Part L conservation targets.
- **Aesthetics:** **7mm ultra-low sightline** spacer bar in **Solid Black**. This conceals the spacer within the shallow metal profile and stops metallic glinting.

The Replacement Metal Frame Specification

Standard modern double-glazing frames are too deep to fit into historic wooden openings.

We will use the Crittall window Heritage slim line system:

- **System Choice:** Specify a hot-rolled steel profile like the [Crittall Homelight Plus or W20 range](#) (engineered specifically to accept slim double glazing up to 16mm while preserving the original slim sightlines).
- **Thermal Break:** The new metal frame features an integrated **polyamide thermal break**. Single-glazed frames suffered severely from "cold bridging" and interior condensation; a thermally broken frame prevents this completely.
- **Factory Finish:** Hot-dip galvanized to BS EN ISO 1461 and marine-grade polyester powder-coated (typically in traditional Black or Anthracite Grey) to ensure it never rusts.

Timber-Subframe Integration & Rebate Specs

Because the existing timber subframe is being saved, the new metal window will be custom-manufactured to sit perfectly within the old wooden rebate:

- **Rebate Profiling:** The existing timber subframe will be cleaned, scraped free of old lead paint, treated, and checked for depth. If the new metal frame is slightly deeper than the old single-glazed frame, the timber must be **routed out slightly** to create a wider, flush rebate. In this case we should not require this work.
- **Fixing Method:** The new metal frame is secured directly into the timber frame using stainless steel countersunk wood screws driven through pre-drilled fixing holes in the metal frame's perimeter fin (flange).
- **Perimeter Weatherseal:** EPDM rubber gaskets will line the gap between the new metal frame and the old timber.

Putty and Glazing Bead Specification

- **Glazing Finish:** Rather than traditional structural face-putty, modern double-glazed metal systems generally use **clip-in metal glazing beads** on the interior and an external weather-seal compound.
- **The Sealant Spec:** Any contact point between the metal frame and the timber subframe will be bedded in a **low-modulus, neutral-cure hybrid polymer sealant** (such as *Hodgson Silversil* or *Heritage Putty*). Traditional oil-based putties will break down the glass seal, and cheap silicone can react poorly with wood treatments.

10. Conclusion

The proposal represents a sensitive and policy-compliant modification of the existing Building into a high-quality dwelling within the conservation area.

The design:

- Respects the scale, character, and appearance of the surrounding houses.
- Provides high-quality accommodation that complies with space standards.
- Benefits from excellent access to public transport and local amenities.
- Contributes positively to local housing supply.

The development preserves the character of the grade 2 listed building within the Letchworth garden City Conservation Area and delivers a well-designed, sustainable home in an accessible and well-served location.