

**THE ELMS FITZROY PARK LONDON N6 6HS**  
**PRELIMINARY DESIGN & ACCESS STATEMENT**  
**FOR THE REINSTATEMENT WORKS**



**FINAL VERSION**

Alan Power Architects Ltd  
13 Needham Road  
London W11 2RP  
Tel: 020 7229 9375  
Email: [alan@alanpowerarchitects.co.uk](mailto:alan@alanpowerarchitects.co.uk)

August 2013

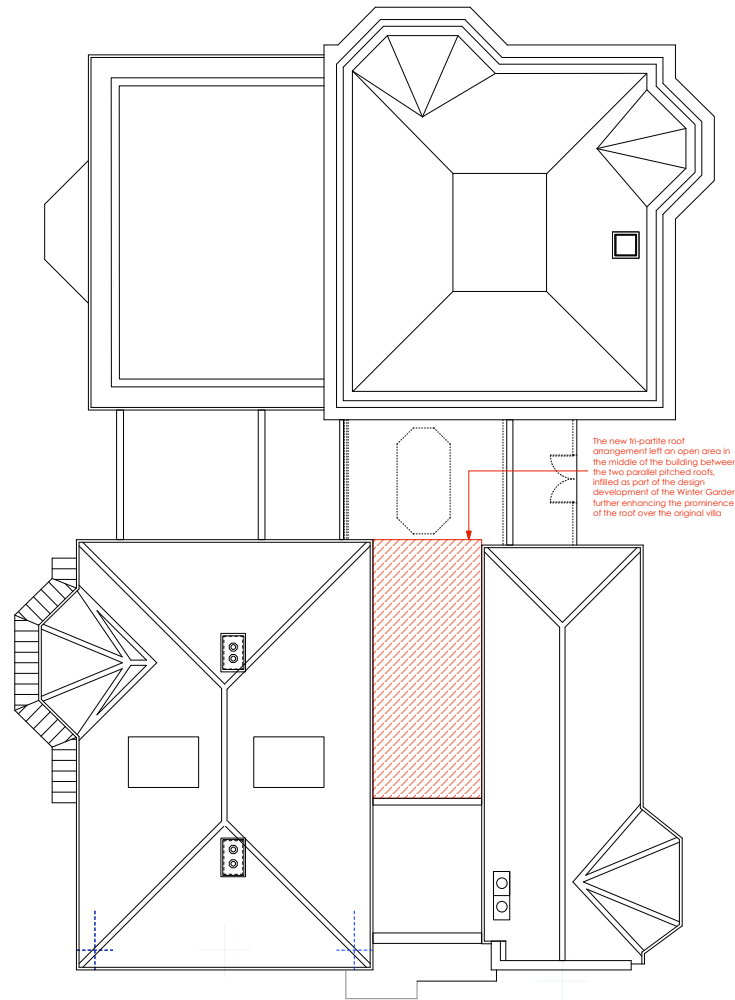
## **CONTENTS**

Section 1	:	Introduction
Section 2	:	The Form Of The Original Building
Section 3	:	Relevant Recent Planning History
Section 4	:	Review Of Work Already Undertaken
Section 5	:	Proposals For The Reinstatement Works
Section 6	:	Reinstatement Of The Retained Joinery
Section 7	:	The Design Development Of The Winter Garden
Appendix I	:	Site photographs from 2001 and 2002
Appendix II	:	English Heritage photographs dating from 1988
Appendix III	:	Site photographs from December 2012
Appendix IV	:	Stucco Specification

## **7 THE DESIGN DEVELOPMENT OF THE WINTER GARDEN**

- 7.01 The way in which the design of the Winter Garden developed is set out in paragraph 4.02 above. This section of the Design & Access Statement revisits the key influences on the Winter Garden design, with specific reference to the recent report commissioned by the applicant from Price & Myers Structural Engineers, and it also considers historical references for the form of the Winter Garden.
- 7.02 The design intent for the Winter Garden granted permission in 2003 was to create as minimal an enclosure as possible, to allow the original 1840's building to read completely separately from the new extension on the west side. The 2003 scheme also created a new east 'wing', opposite the original 1840's building, which comprised the later 19<sup>th</sup> south-east corner, with a new 'wing', completing the east façade between the south-east corner and the Winter Garden. This arrangement was seen as a much more successful resolution to the problem of extending The Elms than previous consents allowed by Camden Council, which subsumed the original 1840's elements in a much larger ersatz composition (see Section 3 above for further details).
- 7.03 It should be borne in mind that the consent granted in 2003 provided for a monolithic roof over what might be described as the original and extended listed building (which we will refer here to as the 'listed elements'). This extended roof, which had an over-hanging eaves as per the original 1840's building, was in contrast to the roof of the new extension, which had an inset roof, with a rendered parapet. Clearly separated by the glazed Winter Garden, this allowed the original roof form to pre-dominate in the final composition. This monolithic roof can now be seen as a hangover from the consents given in the 1990's, and was reviewed when work to the listed elements was considered in more detail once the construction of the new extension had started on site.
- 7.04 The review of the original 2003 consent raised the possibility of creating three separate roofs over the listed elements, with one of the roofs sitting over the original villa, a separate, and smaller, dual pitched roof sitting over the new east 'wing', and a short section of roof in between on the south side. This approach would establish a clear form for the 1840's villa in the overall roof-scape, probably for the first time since the 1840's.
- 7.05 The contrast between the 2003 consent and the new tri-partite arrangement is shown in illustrations 3.06 and 3.07 above.
- 7.06 The tri-partite roof arrangement left an open area in the middle of the building between the two parallel pitched roofs, which could be infilled as part of the design development of the Winter Garden. This would further enhance the prominence of the roof over the original villa; in fact, once the tri-partite arrangement of roofs was established as a viable idea, the Winter Garden form was the only one that worked with the intent of defining as clearly as possible the original villa in the overall roof-scape – i.e., a lightweight glazed structure would emphasise the prominence of the original villa – and also make is legible internally - whereas a conventional pitched roof over this area would be in conflict with the original villa roof form. Refer to illustration 7.01; also refer to illustrations 3.06 and 3.07.

- 7.07 The new tri-partite roof arrangement was proposed in tender documents issued in March 2004 to the LPA and to English Heritage, and discussed with both organisations; the approach was welcomed as a considerable improvement to the 2003 consented arrangement. Part of the new tri-partite roof arrangement (over the original villa) was also shown on the drawings approved on appeal for the new west side basement<sup>1</sup> – architect's drawings nos. 365/712, 714 and 715 refers.



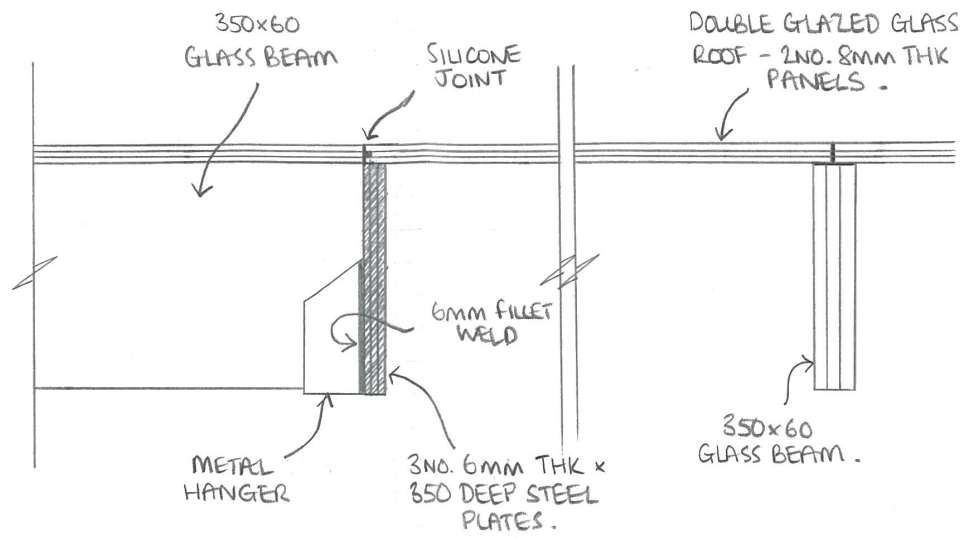
*Illustration 7.01 Roof plan of the 2003 consented scheme, showing the design development in early 2004, with the original single monolithic roof over the listed elements now broken down into a 'tri-partite' roof, thereby making legible the roof form of the original Basevi villa for the first time since the 1840's.*

- 7.08 A pitched form of the roof to the Winter Garden was initially proposed, in order to maintain reasonable headroom on the first floor of the Winter Garden, where there was quite restricted headroom, due to the level of the eaves to the original building in relation to the general first floor level. However, it was felt that the dual pitched glass roof competed with the original villa roof, particularly since the geometry required of the pitched glass roof raised the ridge above the eaves of the original building.

<sup>1</sup> Appeal reference APP/X5210/A/05/1193175 dated 21 March 2006

- 7.09 The revised brief to structural engineers Elliott Wood for the form of the Winter Garden, and as discussed with the LPA and EH, was that it should sit within the over-hanging eaves of the original villa, and that the highest point should be below the eaves of the original villa. This, combined with the need to provide some form of a slope to ensure good rainwater runoff, and also the need to establish reasonable headroom at first floor, created a design challenge, and several structural solutions were considered.
- 7.10 Further design studies were undertaken by EW for the support system to the Winter Garden, and the generic structural solutions considered were: a predominantly glass form, including glass beams, and a combination of steel in both tension and compression, and glass. The conclusion was that the typical depth of beam required for the spans involved would have created a very low, and unacceptable, headroom at first floor. In addition, these structural solutions provided for a flat glass roof, with no provision for rainwater run-off.
- 7.11 Consequently, EW considered a very shallow curved form to a tubular steel lattice grid with a diagonal pattern of structural members. The diagonal geometry creates a stiffer form than an orthogonal geometry, providing torsional stability, and assists with keeping the overall depth of the structure to a minimum. The use of the 'flat curve' in conjunction with the diagonal geometry is also critical in maintaining a minimal form.
- 7.12 This geometry would not only allow the size of the structural members to be greatly reduced, but the form itself allowed for rainwater run-off in both directions. With the shallow curved geometry employed, and with torsional stiffness being provided by the diagonal pattern of the steel members, the size of the steel members involved could be reduced to 60mm circular steel. This is an extremely small structural element for the spans required, and it represents the smallest – i.e. minimalist – structural form for the space to be enclosed, which was the requirement right from the very beginning when the Winter Garden was first mooted as the mediating form between the listed elements and the new extension.
- 7.13 This final design form was incorporated into the up-dated EHTS drawings and reissued to the LPA and EH in early 2005.
- 7.14 In 2013, as part of the current discussions with the LPA concerning work undertaken to date, the applicant has appointed Price & Myers Structural Engineers to undertake a separate assessment of the Winter Garden as built, and also to undertake their own design review of the options for the structure. Their findings are included with the current pre-application submission to the LPA as a stand- alone document.
- 7.15 The original assumption was that the structure to support the glass roof might be composed predominantly of glass, although there were concerns regarding the spans involved, and the extent of steel plates and bolted splices that might be required. P&M's assessment confirms that steel shoes and steel splices plates would be required, greatly diminishing the appearance of lightness of the structure. In addition, P&M's design study confirms that the depth of beam required, when combined with the thickness of the roof glass, would, at an overall depth of circa 380mm, create an unacceptably low headroom (around 2.15m above the finished floor level in the Winter Garden).

- 7.16 An additional, and very critical, concern is that the beams would be well within one's eye-line in perspective. This, combined with the very low headroom, would create a very oppressive feel to the Winter Garden.



SECTION X-X  
OPTION 1 - GLASS BEAMS  
(1:10 @ A3)

Illustration 7.02 Extract from Price & Myers review of structural options for the Winter Garden, showing the deep beams required for either a glass beam or steel plate option

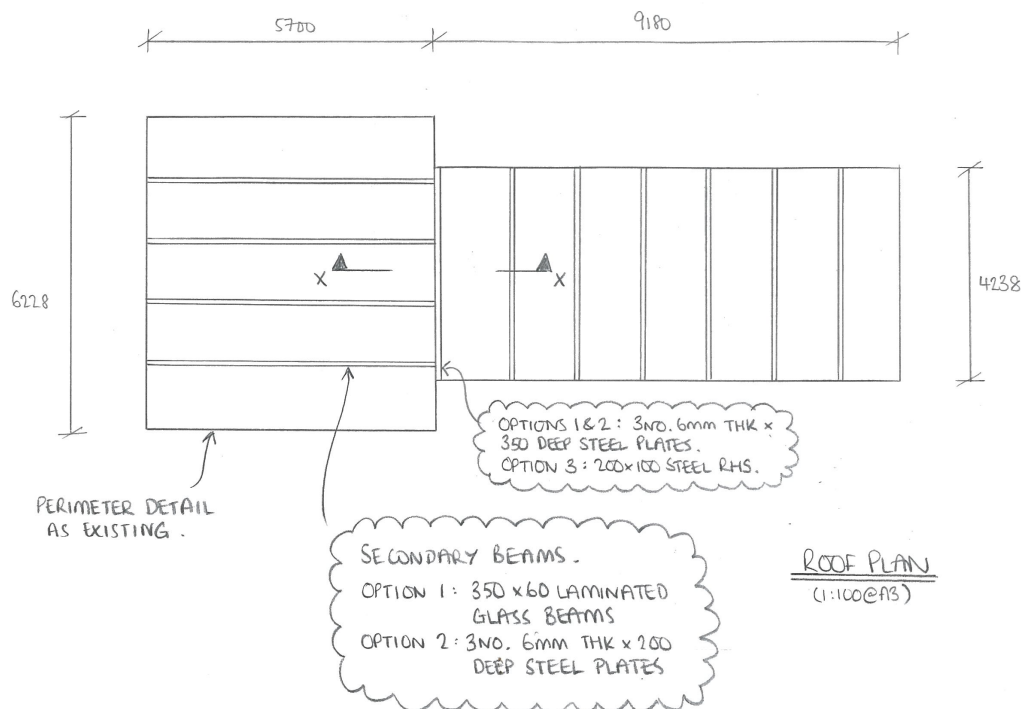


Illustration 7.03 Extract from Price & Myers review of structural options for the Winter Garden, showing a typical plan of the primary beams

- 7.17 Another reasonably lightweight option considered by P&M, was a cable truss system, which combines 60mm diameter compression elements with cables in tension. However, in order to make this work structurally, the depth of the compression members needed to be 300mm, which, when combined with the thickness of the glass roof panels, also created an unacceptably low headroom on the first floor.
- 7.18 The cable truss option would also have a very busy appearance, with a criss-cross grid of cables supporting a network of compression members, all tied with cables running perpendicular to the cables, with the cables themselves tied to the compression chords via a series of 'I' bolts. This visual busyness was contrary to the intention to have a minimal appearance for the Winter Garden. There was also the same issue with regard to low headroom and a disrupted eye-line as the laminated glass beam and plate option.

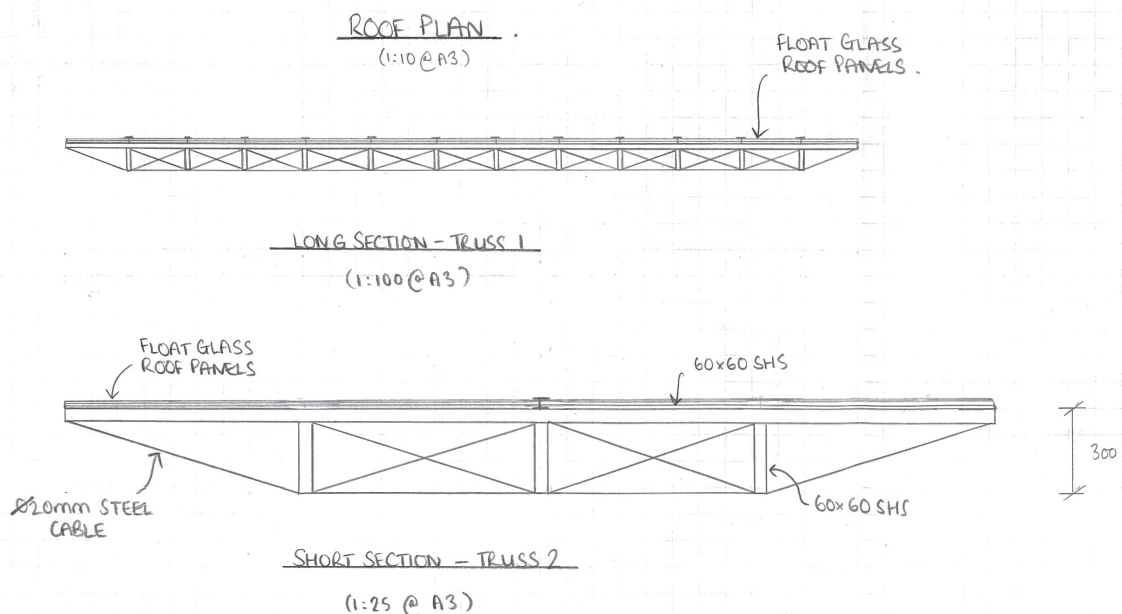


Illustration 7.04 Extract from Price & Myers review of structural options for the Winter Garden, showing the cable truss option, with multiple connection points required within each truss

- 7.19 The other generic solution considered by P&M – that of rolled hollow section (RHS) steel, or a combination of the RHS with triple steel plates bolted together – represent a very basic structural form. It was considered because it could achieve the spans, and fulfilled the P&M brief of revisiting all the options, but it comes at considerable visual cost. It would have consisted of rows of heavy section steels spanning across the Winter Garden in two directions. As with the glass beam and cable truss arrangements, this option would be within one's eye-line in perspective, due to the level at which the beams would have to be installed.
- 7.20 The actual fabrication of both steel box options that incorporate RHS's would exacerbate their unsightly appearance. The RHS sections would have to be welded together with 12mm full fillet welds; the variant using three lots of 6mm steel plate would require the plates to be bolted together at circa 300mm centres top and bottom.

- 7.21 Overall, the crude appearance of this variant of this option would be more appropriate for a warehouse or factory, rather than for an elegant, predominantly glass enclosure in a house.
- 7.22 All the options considered by P&M would result in a flat surface to the roof, across the whole of the 'T' of the Winter Garden. This would not have provided for any rainwater run-off. Price & Myers' suggested solution was to have a mono-pitch arrangement (i.e. setting each element at an angle, and not flat), but this would have exacerbated the headroom problem. In addition, there would be a very difficult, and probably un-resolvable, junction at the intersection of the 'T', where two mono-pitches going in different directions come together.
- 7.23 A final, and crucial, issue is that of deflection. P&M refer to this in their report, and although the solutions they considered were developed to minimise deflection, all of them will involve some deflection. The rule of thumb of  $1/500^{\text{th}}$  of the span suggests deflection up to 12mm. This would exacerbate the problem of rainwater run-off, and would result in water ponding in the central section of each part of the roof.
- 7.24 After completing their assessment of other options for the structure to the Winter Garden, Price & Myers conclude:
- "The original design brief was to make the new glazed roof to this area as structurally minimal as possible. We are confident that the as-built solution of a curved tubular lattice roof complies with this requirement and produces a roof of minimum section depth in comparison to alternative structural solutions."*
- 7.25 In summary, the solution adopted, using a very shallow, 'flat' curving geometry, without the effect of a dual pitch, but lifting the roof above the eye-line in perspective, and allowing a very small steel section to be used, creating stiffness and torsional stability in all areas of the roof due to the diagonal geometry, and at the same time creating good rainwater run-off conditions, is an exceptional and elegant solution to the need to enclose this predominantly glazed space.
- 7.26 The external appearance on the east side – i.e., the appearance from the conservation area as seen from Fitzroy Park – was intended to be of a minimal glass enclosure, and this intent has been achieved.
- 7.27 The diagonal geometry of the structure of the Winter Garden creates a stiffer form than an orthogonal geometry, and assists with keeping the overall depth of the structure to a minimum. The use of the 'flat curve' in conjunction with the diagonal geometry is also critical in maintaining a minimal form.
- 7.28 The very shallow curving form of a roof combined with a diagonal structural form or decorative pattern is a characteristic of the interiors of Basevi's mentor John Soane. This device is used, for example, in the Breakfast Room in Soane's own house, and also in the lantern over the central gallery space in the same building (see illustration 7.05). It is also used in the entrance hall at Pittshanger Manor (see illustration 7.06).
- 7.29 George Basevi – "Soane's most brilliant pupil" – uses a similar approach in one of his most important commissions, the Fitzwilliam Museum in Cambridge (see



illustration 7.07) The layered domed ceiling over the main staircase, the diagrid form for both structure and decoration, most effectively in the upper section, creating a visual and spatial dynamic to the space



*Illustration 7.05 Central lantern light in the Soane Museum, Lincoln's Inn Field, by John Soane*



*Illustration 7.06 The entrance hall at Pittshanger Manor, by John Soane, showing the shallow curved ceiling with diagonal pattern structure and decoration*



*Illustration 7.07 Layered domed ceiling over the main staircase in the Fitzwilliam Museum, Cambridge, designed by Geroge Basevi. Basevi uses the diagrid form for both structure and decoration, most effectively in the upper section, creating a visual and spatial dynamic to the space*

- 7.30 The form of the Winter Garden is a modern interpretation of the Soanean innovation, carried forward by Basevi, and combines Soane's and Basevi's use of geometry and form with modern glass and steel technology, to create a minimal and elegant compliment to the original neo-classical villa.
- 7.31 The infilling of spaces adjacent to, or within, historic buildings with a contrasting minimal steel and glass structure that allows the original building to remain clearly defined is an accepted contemporary approach to developing within an historic environment. A recent example within the London Borough of Camden, and granted consent by Camden Council, is the Great Court at the British Museum.
- 7.32 The element of the Winter Garden installation that did not have the design intent and constraints as discussed above is the 'cupola' on the west side at ground floor. This is both structurally and spatially a separate element, and reads separately to the main Winter Garden form.
- 7.33 On a 'without prejudice' basis, and in the interests of reaching an agreement with the LPA to allow completion of this project to move forward in all its aspects, the applicant is proposing to remove the single storey cupola structure on the west side of the Winter Garden at ground floor.
- 7.34 In its place, to enclose the west side of the Winter Garden at ground floor, a new simple full height glass wall is proposed, to be constructed along the original line of the Winter Garden as shown on the 2003 consent drawings. Refer to architect's drawings nos. 492/212, showing the west elevation, and 492/213, showing a section through the Winter Garden, included as part of the second pre-application submission.
- 7.35 The design approach to this new element is to create a simple double-glazed all-glass lean-to, within which are located two sliding doors, providing access

onto the garden. The lean-to rises up to cover the exposed edge of the first floor floor structure, so that when viewed from the garden, and when seen in context with the original Basevi villa, all that reads is glass. The joint between the vertical glass and the short length roof glass is silicone mastic. Refer to architect's drawings nos. 492/212 and 213.

- 7.36 The two sliding doors are formed of structural glass, bonded and hung from the sliding track over, with a minimal stainless steel frame bonded to the glass: the ss frame allows for a weather seal to the doors. The adjacent fixed panes of glass are set into the floor and walls adjacent, without a supporting frame. The shallow balcony at first floor is protected by a simple structural glass balustrade, set back from the glass lean-to.
- 7.37 On the east side at ground floor, the new modern entrance is to be of similar construction, except that the doors are to be side hung, and the glass wall sits below the first floor slab over. The exposed edge of slab thus exposed is to be finished in painted, insulated render to match the new extension. Refer to architect's drawings nos. 492/210, showing the east elevation, and 492/213, showing a section through the Winter Garden, included as part of the second pre-application submission.
- 7.38 At first floor on the west side, the same approach is adopted as to the west side glass wall at ground floor. A new glass wall incorporates a pair of sliding doors that give access onto a shallow balcony, which in turn provides access to the main roof terrace over the single storey part of the new extension. Refer to architect's drawings nos. 492/212, showing the west elevation, and 492/213, showing a section through the Winter Garden, included as part of the second pre-application submission.