PRICE & MYERS

12 Keats Grove

Summary of house roof structural design development

Following receipt of conditional Listed Building Consent for the replacement of the existing timber roof structure [Camden Planning Ref: 2021/1480/L: Approved June 9th 2021] we have developed the detailed design of the roof structure along the lines set out on our original 28412 / Keats Grove Existing Roof Structural Inspection Report dated March 2021.

As in the Listed Building Consent granted, the new structure retains the general layout of the existing arrangement of rafters & purlins. The beam and raking strut structure on the west and east facades is also retained in its form and arrangement. The supporting function of the central spine wall is retained. The dormer windows are reframed slightly after it was discovered that the previous dormer roofs were supported directly on the window frames. These are now framed into the side cheeks of the dormers.

An important addition to the new roof is raking timber strutting in the plane of the rafters that give the roof in plane stiffness and reinstates the original truss action that was lost when the dormers were originally installed sometime in the 1920's. These struts are located on either side of each dormer window. The wall plate on the north and south facades have been detailed to tie these struts onto the general roof.

The new structure provides the opportunity to reuse existing timber where it is in good condition. This is in the form of blocking and strutting for the dormers, as these members are short and can be cut down from the longer members, which are heavily distorted. The wall plates are to be retained, the long rafters and purlin will need to be replaced as they have previously been cut short or have failed and need replacing. Apart from this, we have not explicitly specified which further members will be made from reused timber, however, we will exercise careful and detailed joint discretion with the carpenter doing the work on which elements are suitable for reuse.

Structural connection details have been fully designed and detailed based on traditional carpentry and joinery detailing and techniques. Replacement timber is specified as high quality sawn timber rather than machine planed or preservative-treated softwood. Connections are through traditional details rather than modern galvanised metal strapping systems.

The resulting roof design respects the spirit of the original construction with a new structure that is traditionally crafted to match the existing adjacent work as closely as possible, reuses original timber where possible and is engineered to perform structurally.

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