THE OLD MALT HOUSE, ST JOHN'S ROAD, BANBURY

Proposed insulation of roof

DESIGN

1. Use

1.1. The Old Malt House is located on a residential street on the southern outskirts of the town centre of Banbury. It is a large palladium style building built in 1830 by the Austin Brewery Company. Although currently vacant, the last use of the property was as commercial offices.

1.2. The building has an imposing brick built façade with a raised parapet which restricts views of the roof from St. John's Road. The roof is half hipped, with slate covered slopes rising to a flat roof plateau finished with a single ply membrane.

1.3. The building is Grade II listed and is situated in the Calthorpe 19th century suburb of the Banbury Conservation Area.

1.4. The applicant intends to purchase the property and re-establish the previous office use. In a pre-application advice report issued by the Local Planning Authority (19/00045/PREAPP) the case officer stated that:

"The proposal to retain the building in use as offices is welcomed by the Council and would help support a strong and prosperous economy."

1.5. This application proposes internal insulation works to the roof slopes in order to:

a. Vastly reduce heat loss through the roof;
b. Improve year round comfort levels for occupants;
c. Ensure that the significant existing roof trusses are exposed to the first floor office accommodation.

1.6. The works will be carried out to a high standard, using appropriate materials, helping to secure the long term future of the building.

1.7. External alterations are limited to the installation of ventilation slates to the roof slopes and mushroom vents to the flat roof. In the pre-application advice report the case officer noted that:

"The proposal is to use 200mm Kingspan insulation, which would be set down from the roof structure allowing an air gap above the insulation so that there would be a flow of air (from tile vents in the roof) to prevent the roof structures suffering from damp. This is welcomed."

2. Amount

2.1. The scope of the proposed works is limited to the installation of a new internal roof insulation system with plasterboard and skim finish, along with ventilation slates/flat roof vents added externally.

3. Layout

3.1. The proposed first floor office accommodation will be open plan with a vaulted roof to ensure that the existing roof trusses are visible.

4. Scale

4.1. The roof over the building is extensive and the insulation works proposed would amount to approximately 800 square metres.

5. Landscaping

5.1. No landscaping works are proposed by this application.

6. Appearance

6.1. The flush ventilation slates and flat roof vents will be low profile discrete additions to the roof.

6.2. There will be minimal visual impact internally, as the vast vaulted roof will remain with the existing imposing trusses exposed.

6.3. The thickness of insulation required to be effective will result in the existing purlins being obscured from view. However they will remain in-situ and the proposed works are reversible.

ACCESS

7. Vehicular & Transport Links

7.1. The site has 29 existing car parking spaces, 9 at the front of the property and the remainder within the building at ground floor level. Banbury is conveniently positioned at Junction 11 of the M40 motorway, with easy access to London and Birmingham.

7.2. Banbury is a large market town with a full range of facilities and employment opportunities available within easy walking distance of the site.

7.3. There is an extensive range of public transport available from Banbury bus and train stations. Services to Birmingham, London and other major cities and towns are widely available.

8. Inclusive Access

8.1. The proposed works will have no affect on existing access arrangements.

JUSTIFICATION

9.1. The proposed insulation works will greatly improve the energy efficiency of the building, significantly reducing heat loss and air leakage in cold weather. The insulation will also help to reduce heat gains in warmer weather – an important consideration for office space under a vaulted roof.

9.2. Thermal comfort will be improved, providing a more stable temperature throughout the year and a more pleasant indoor environment to work in.

9.3. The risk of condensation and mould growth will be reduced, helping to protect the roof structure and improve indoor air quality.

9.4. The proposed solution enables the roof to remain vaulted, ensuring that the existing trusses are exposed.

9.5. The works can be carried out without harming historic fabric. The existing rafters and purlins will be covered with insulation but will remain in situ and the works are fully reversible if required in the future.

9.6. All new works will be completed carefully and with high quality materials.

9.7. In the pre-application report the case officer stated that:

"The thickness of the insulation would, however, mean that the outer purlins would be obscured from view and hidden behind the insulation (although they will remain in situ). It is understood that there are products on the market which would require a lesser depth of insulation and therefore allow the purlins to remain visible, but these are considered to be cost prohibitive. It is requested that evidence be provided to support this claim. Provided the proposed form of insulation only results in visual harm to the building (as opposed to harm to the ongoing maintenance of the historic fabric), and subject to this evidence being provided, it is considered proportionate in this instance in order to realise the benefit of finding a new active use for the building."

9.8. The building is only viable for occupation if the roof is insulated. This is a substantial task due to the grand scale of the roof, resulting in considerable expense. The applicant has carried out research, compared alternatives and established that the proposed method of insulation is the most cost effective and the most suitable, providing the best balance of thinness, cost and energy performance. Other affordable alternatives (e.g. mineral wool or wood fibre insulation) would require additional thickness, covering up more of the existing trusses. Alternative solutions which would require a lesser depth of insulation are extremely expensive in comparison with the preferred specification:

Preferred Solution – *Kingspan Kooltherm*
The overall depth of Kingspan Kooltherm required to achieve the desired energy efficiency is approximately 200mm, installed in two layers. 120mm K107 would be fitted between the purlins and 82.5mm K118 insulated plasterboard would be fixed under (covering the purlins to limit thermal bridging). Although more expensive than thicker alternatives, the cost of this insulation is not considered prohibitive. The total cost of materials would be approximately £36,000, based on £45 per square metre.
Cost prohibitive alternative – *Kingspan Optim R*
The depth of Optim-R required to reach the same level of energy efficiency is considerably less than all other alternatives. At less than 150mm this would allow the roof purlins to be expressed internally. However, the purlins would act as a thermal bridge, reducing energy efficiency and potentially increasing the risk of condensation in these areas, possibly causing long term damage to the timbers. The material cost alone for Kingspan Optim-R is prohibitive and the applicant could not proceed with the development on this basis. At 100mm thick, Optim-R is approximately £400 per square metre. The total cost of materials would be around £320,000.

Cost prohibitive alternative – *Spacetherm (Aerogel)*
The depth of the Spacetherm is slightly more than Optim-R, but should allow a small amount of the existing roof purlins to be expressed internally. However, like Optim-R, the applicant would have concerns with this option due to thermal bridging. The material costs for Spacetherm are even more expensive and would make the development unviable. The cost per square metre for just 20mm is £85.20. The project would require 145mm which means the price is around £620 per square metre. The total cost of materials for the building would be approximately £496,000.

HERITAGE STATEMENT

10. Nature of the asset

10.1. The building is Grade II listed and the site lies within the designated Banbury Conservation Area.

10.2. The listing description is as follows:

BANBURY ST. JOHN'S ROAD SP4540SW (South side) 9/204 Appliance House (Rare Spares) 07/10/69 and The Old Malt House (Special Libraries Book Service) (Formerly listed as Engineering Works (Improved Hinges Ltd.) - II

Malthouse, now offices. c.1830. Red brick with painted stone dressings. 2 storeys; 7-window range altogether, divided by pilasters. Central pedimented bay has tall C20 plank doors with small window above. 2 sets of flanking pilasters. To either side of central bay are 3 sashes with glazing bars, some with inward pivotting lights. Similar window arrangement to first floor. Keyblock surrounds. Pilasters flank end bays. Moulded stone eaves cornice below brick parapet. known as Austin's malthouse. Interior not inspected. (Buildings of England: Oxfordshire, 1974, p.442; V.C.H.: Oxfordshire, Vol.X, p.39).

Listing NGR: SP4544840094

11. Significance of the asset

11.1. In the LPA's pre-application advice report the case officer outlined the core significance of the building:

"The Conservation Officer has previously noted that the core significance of the building lies in its roof structure with its trusses spanning the width of the building and the 'surprisingly grand design' of the façade of the building. The design is unusual for a maltings in having just two floors, a large number of windows and an elaborate façade. Given the changes to the buildings over the years there is minimal surviving visible evidence of the functional operation as a maltings. However, Banbury Civic Society and the Association for Industrial Archaeology have highlighted in the earlier applications that the still largely open plan nature of the building also contributes to its significance as this preserves some of the character of its commercial use."

11.2. The proposal maintains the open plan nature of the building and ensures that the imposing roof trusses remain visible. No changes are proposed to the elaborate façade. No historic fabric will be removed or disturbed, other than with the replacement of a small number of slates for ventilation purposes. The existing rafters and purlins will be covered with insulation, but these works could be reversed in the future if required.