Heritage Impact Assessment

Guiding Conservation Principles:

1. ***The historic environment is a shared resource***
2. ***Everyone should be able to participate in sustaining the historic environment***
3. ***Understanding the significance of places if vital***
4. ***Significant places should be managed to sustain their values***
5. ***Decisions about change must be reasonable, transparent and consistent***
6. ***Documenting and learning from decisions is essential***

General location of work to be carried out with OS grid reference:

Dyrham House ST 74166 75734

Specific location of work proposed:

West Range roof

Is the development site (please underline)

A listed building
A scheduled monument
A site of archaeological interest
Within a designated conservation area
Within a registered historic park or garden
Within a registered battlefield
In the setting of/adjacent to one of the above
A non-designated heritage asset

The Nature and Significance of the Asset
Please describe the history, character and appearance of the heritage asset, eg listed building, conservation area or scheduled monument. You should refer to the statutory list description, scheduled monument description or conservation area character appraisal, CMP or Statement of Significance if available.

Dyrham House is described within the Conservation Management Plan (CMP) as:
'Dyrham Park comprises a country house, garden, and parkland. The house that existing today is baroque mansion of considerable architectural interest, which was built between 1692-1704 by William Blathwayt, Secretary of State and Secretary at War for William III, replacing an older Tudor manor house which stood on the same site. Around it lies 4-acre garden deer park of 100 acres and an additional 75 acres of estate land. […] The baroque mansion was built in three phases; the west range was built by Samuel Hauduroy between 1692-4 the Stables were built by Edward Wilcox in 1698 and the East front was built by William Talman, Comptroller of the Royal Works between 1698-1704.'

Source: Volume 1, Dyrham Park Conservation Management Plan V1.0

Further detailed within the CMP is the summary of significance for the Architecture and Buildings on the estate:

'Architecturally the mansion, greenhouse and stable block, designated as Garde I listed buildings, are all of exceptional significance underlining the importance of the design, architectural period and cultural position of the building's patron William Blathwayt.'

The area within which the alterations are proposed is in the west range roof void. We understand from the CMP that this section of the mansion was built circa 1692 – 4. This is further supported by an archaeological assessment of the roof structures undertake in April 2015 by Michael Heaton Heritage Consultants who describe this section of the roof as:

'Bi-partite queen strut structure characterised by a pair of longitudinal 250mmx300mm beams 2530mm apart, with short 130mmx280mm interrupted tie beams tenoned into their outer faces. The tie beams are tenoned into the edges of the 130mmx280mm principal rafters that extend downwards beyond the ceiling level to an un-observed wall bearing, and support the ends of the slightly cambered 130mmx240mm queen posts tenoned into chamfered inner edge of the axial beam. As with Roof 'A', the trusses are braced longitudinally by axial, eaves and side purlins, with the eaves purlins displaying a distinct asymmetric profile. All the primary timber is pit sawn oak, there is no evidence of salvage in the primary timbers and all primary connections are fixed by octagonal oak pegs.

They go on to suggest the significance of the roof as:
'The significance of the roof structure is technological and archaeological and resides in their structural members and their layout – as opposed to the coverings. Their technological significance is contingent on their date of construction. Assuming they were designed and assembled between 1689 and 1702, they straddle the technological transition form the customary or vernacular forms of the Middle Ages to the engineered forms of the 18th and 19th centuries. […] these roof structures are not engineered, and, despite their superficial appearances, they are not Queen Post Trusses or, indeed, 'trusses' at all. They are adaptations of vernacular Principal Rafter Trusses to the quasi-mansard roof required by Hauduroy, which the local builders achieved by cutting-off the tops of the principals and tying them together with a modified collar. [….] The roof structures, therefore, are of considerable significance, in that they illustrate how vernacular craftsmen of the late 17th and early 18th century adapted their inherited skills to the foreign architectural forms foisted upon them.'

Source: Dyrham House South Gloucestershire, archaeological and historical assessment of the roof structures April 2015 (Ref: 3684-1) Michael Heaton Heritage Consultants

Current condition of heritage asset: Include photographs/illustrations if possible.

The section of wall within the roof void which is to be altered is in fair condition. Please see below photos from survey in 2022, as well as figures from the aforementioned Michael Heaton Heritage Consultants document.

View north of wall to which fire stopping alterations are proposed.

Close up on view to side of wall showing roof slope with modern battens.

View along top of wall head demonstrating gap between wall head and underside of roof coverings.

View to side of gap between wall head and underside of roof coverings.

Example of fire stopping installed in 2015 as part of roof works in other areas of roof space.

Composite view of Truss No. 6 from the north

Figure photo stitch showing the wall to the far end visible that is to be altered to accommodate the fire stopping proposed within this HIA.

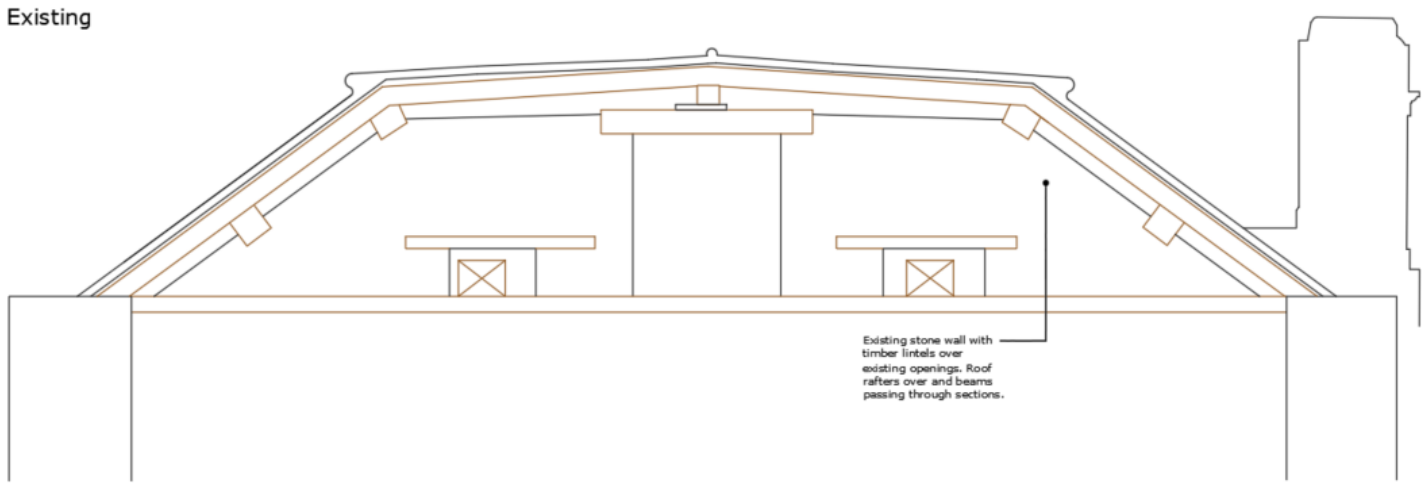


Diagram showing wall to which alterations are proposed.

Proposed Works

Proposed works are to make the existing stone division wall within the west range roof void capable of resisting fire. These works have been advised by a fire risk assessor and stem from the use of the space below as an escape stair by staff and public on a main visitor route. The aim of these works is to reduce the risk of loss of life in the event of a fire.

The proposed works are to install a timber framed partition with fire stopping boarding to the top of the existing stone division wall within the west range roof void to enclose the space between the head of the wall and the underside of the roof coverings. Effectively creating a compartment which is capable of containing fire and reducing the risk of spread.

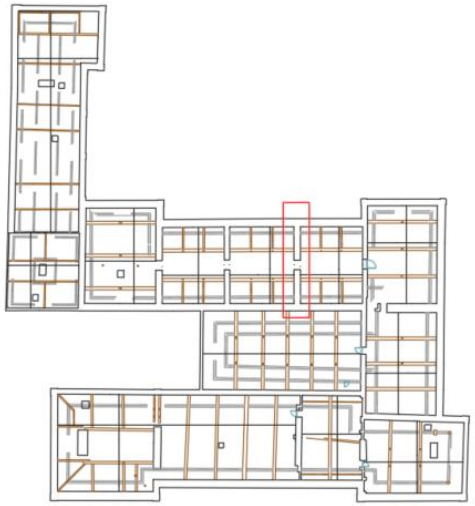
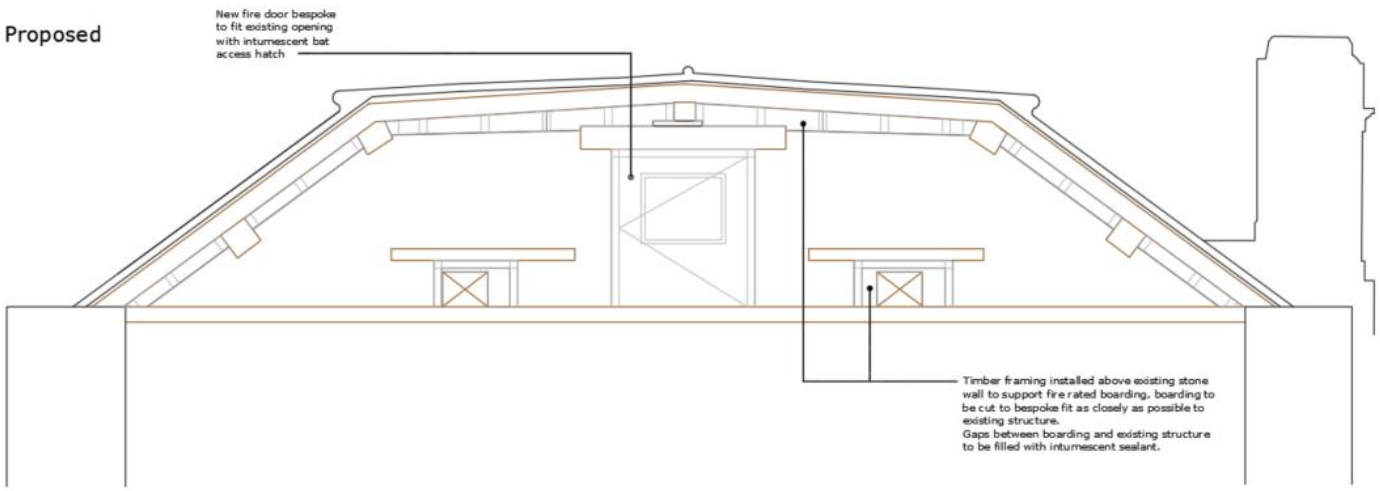


Figure showing roof layout with wall highlighted in red (north points to right of figure).

The diagram below shows the areas above the wall that would be fitted with timber framing to fit as closely as possible the areas between the wall head and underside of the roof coverings. To this framing fire retardant boarding would then be bespoke cut and installed, ensuring as small a gap as possible between the existing materials and the new. The space between the existing materials and the new would be sealed with an intumescent sealant to ensure as complete a seal as possible to form the compartment wall. The openings around the existing beams would be treated in a similar manner, whereby the spaces would be framed out in timber, boarded, and sealed.

As new fire door is proposed to the existing opening, this would match those seen elsewhere within the roof void with the addition of a hatch to enable bat access between the spaces. Four fire doors and one roof access hatch within the roof void are due to be replaced which contain asbestos. These are modern items and are not of significance therefore their replacement will positively impact the building by removing a hazardous material.



Secondary to this to comply with Approved Document B, Fire Safety Volume 2, diagram 8.2 (Junction of compartment wall with roof) it is proposed to install a woven fire-retardant fabric to the underside of the roof slope extending as far as the next roof truss on either side or the compartment wall. This has been installed previously in other areas within the roof void during the 2015 roof works between the rafters and the roof coverings. The proposed is to install the fabric to the underside of the rafters so as not to disturb the existing roof coverings whilst still achieving a similar coverage to either side of the compartment wall.

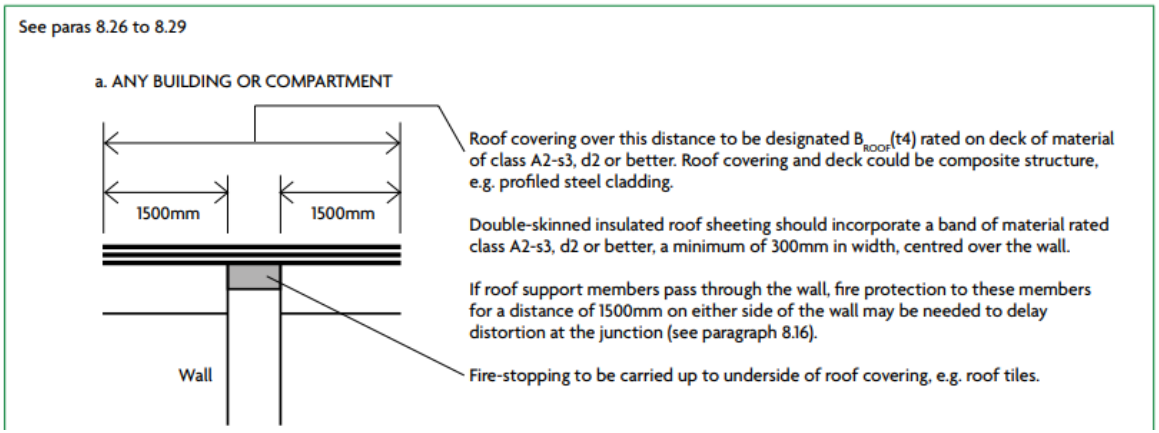


Figure from Approved Document B

Managing change to significant places – Risk Assessment

Question	Response	Risk High, Medium, Low	Mitigation?
Do you have sufficient information? Please list the documents referenced ie CMP, listing descriptions and key consultations ie Curator, Subject Specialists	Yes, CMP, Listing and documentation relating to the roof voids and their historic significance.	Low	Range of sources used to inform design decisions.
The Impact on the Asset Please describe the impact the proposals will have on the significance of the asset or its setting. This may include example loss or concealment of key features or historic fabric, blocking key views, impact on relationships between buildings, or effect on authenticity or integrity.	The impact of the proposal on the historic significance of the building is minimal. This is due to no removal of historic fabric, the use of an existing partition and the alterations being as minimal as practicable whilst still achieving the aim of compartmentation. The impact on the space will be visual as well as material. These aspects will be controlled by the use of modern materials, denoting the difference between old and new with no form of pastiche. The proposed will be mostly reversible leaving minimal trace on the existing materials, so if a more suitable solution is found in the future this could be installed in its place.	Low	Use of materials with precedent within the roof space, as well as being modern and not copying the historic materials. Proposal will be mostly reversible leaving little trace on the historic materials.
Preserve, Enhance, Mitigate? How does the proposal preserve or enhance the heritage asset or better reveal its significance? What steps have been taken to mitigate any harm?	The proposal enhances the property as a whole by continuing a compartmentation line from the floors below allowing an escape staircase to be fully protected. This has the aim of protection of life. The mitigation of harm has been described in the box above.	Low	Enhancement of the building through better protection from fire.
How have you considered sustainability – **For Ever**	**For Ever** has been taken into consideration in that the proposal is mostly reversible, as well as aiming to reduce the impact of a fire should one occur.	Medium	Products are not easily recyclable.
Are the changes reversible?	Mostly, however residue from the	Low	Mostly reversible

What options are there?	No installation – not undertaking the works would mean the wall is not fire stopped and therefore not in line with our fire risk assessment advisories. This has the potential to impact the passive capability of the building to react to fire, as such impacting the risk to visitors. Installing small amounts of fire stopping materials around an existing compartment wall – using an existing wall and installing small amounts of material to make the existing wall capable of resisting fire. Fulfilling the advisories from the fire assessment whilst retaining the character and feel of the property as much as practicable. Installing a new compartment wall – Creating a new wall within the roof space to compartment a section of the building, this would include boarding out a section of floor from the existing compartment below, as well as forming a new wall within the roof space. This would drastically change the space within the roof but would achieve the advisories from the fire risk assessment.	Low	Compromise made on affect on historic fabric whilst achieving fire risk assessment advisories.