PLANNING & LISTED BUILDING APPLICATION FOR THE BRITISH MUSEUM

THE WHITE WING REFURBISHMENT – REPLACEMENT OF ALL BUILDING SERVICES AND THE REFURBISHMENT OF INTERIOR SPACE

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4	Chiller info updated	Lisa Clifton	Simon Douch	09/06/2020

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Introduction

In March 2020 Planning Permission and Listed Building Consent was secured for the refurbishment of the White Wing. This application is supplementary to that application. As the detailed design has developed into construction documentmentation for the building services (MEP) design assumptions have been validated with actual manufacturers' sizes. As a consequence, it has been necessary to modify the 2019 design assumptions.

The refurbishment of the White Wing is an important aspect of the British Museum's Essential Infrastructure Works (EIW) programme. This design, access and conservation statement addendum has been prepared to support an application for Planning permission amendment and Listed Building consent.

The application is made on behalf of the Trustees of the British Museum as directed by the British Museum's Capital Planning and Programme Management team. The application will be submitted by the Planning Lab with HOK International acting as the Museum's agents for architecture and historic building conservation.

The previous applications, 2019/6434/L and 2019/6311/P were granted on 9th March 2020. This statement refers to following proposed changes:

1. Amended ductwork arrangement in the courtyard
2. Amended height of chiller plant on roof deck
3. Removal of bookshelves at various locations, specifically partial removal on Level 2 offices B/2/014 & B/2/037
4. Reinstatement of an external window in the east courtyard wall in a blocked-up window opening on Level 1

All other aspects of the scheme are as previously approved under the original application.

Background Information

For the description of the White Wing, Conservation Approach, Building Significance and Access Statement, please refer to the original Heritage, Design & Access Statement document number: BMWW-HOK-XX-XX-RP-0001 revision P02.

This addendum will focus on the design principles and heritage impact assessment of the four proposals.

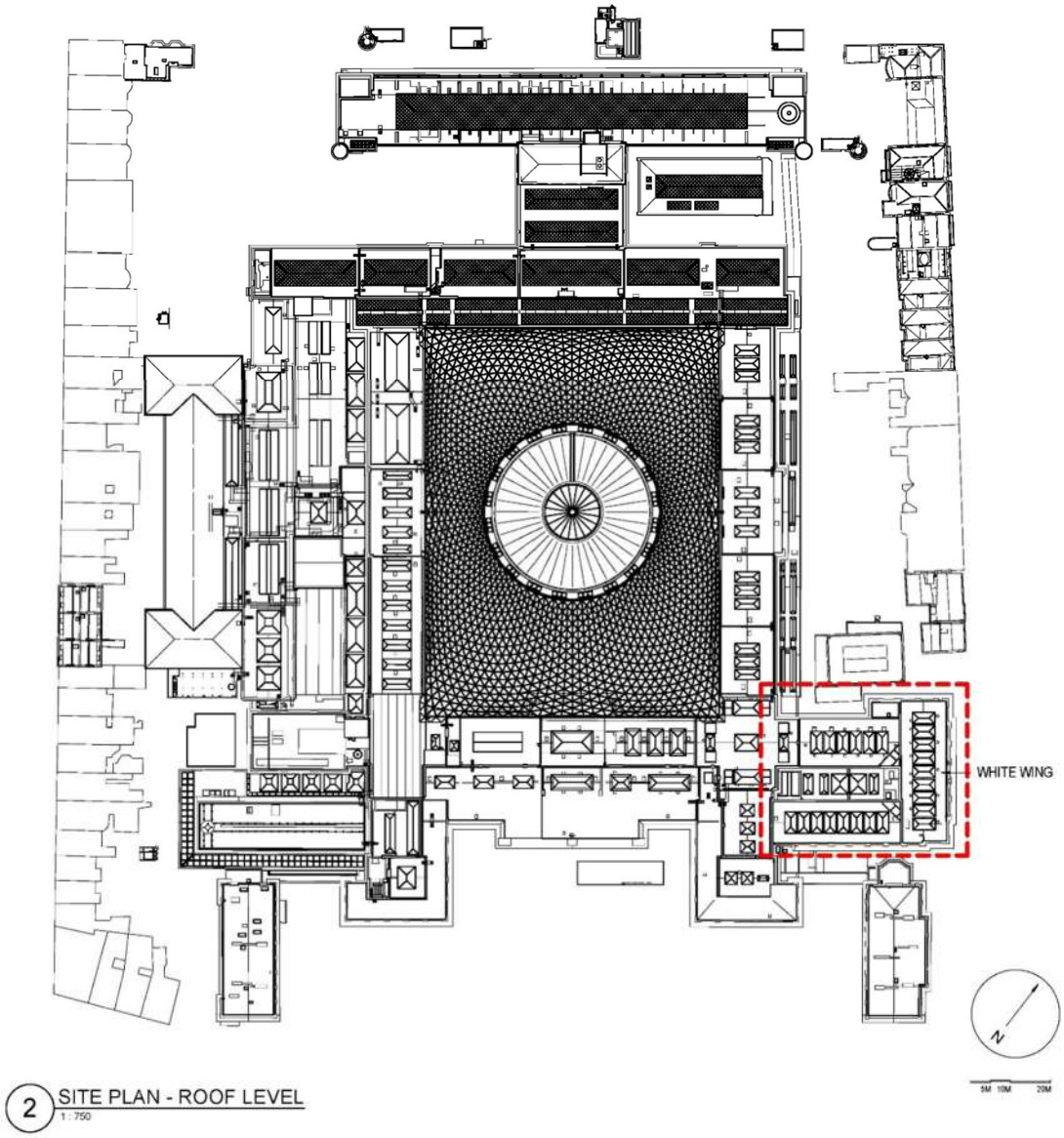

Figure 1 BRITISH MUSEUM; WHITE WING SITE LOCATION PLAN

Design Statement

Amended height of chiller plant on roof deck and ductwork arrangement in the courtyard

The project is, essentially, a comprehensive replacement of the building services within the White Wing. Today, looms of disused cables and a plethora of pipework and ductwork that have accumulated over time. The rationalization and creation of a larger plantroom on the ground floor (Level 01 at the British Museum), the six-level riser built adjacent to the Crawford staircase with a plant deck on Level 07, created in 2017 provided the capacity for future services installation.

The proposals to install a chiller at the Level 07 plant deck and ductworks from the new plantroom to serve the north zone of the White Wing via the courtyard, were granted permission in applications, 2019/6434/L and 2019/6311/P. This application refers to the minor amendment of the duct routes design and the size of the chiller plant, as the overall dimensions of a suitable plant is now determined based on the engineer's performance specification. The chiller's size is changed to 2500H x 1300W x 4500L to allow better access. The equipment will be mounted on a support platform, which will lift the base of the equipment up 450mm above roof finish level.

Due to the chiller's enclosed location by the surrounding parapets, an additional 500mm high cowl is recommended by the manufacturer to be fitted to the top of the chiller. This to assist with dispersion and rejection of waste heat. The cowl will be a galvanised steel fabrication and can be painted in a suitable colour to help it blend in with the background white render colour. The chiller will not be taller than the three parapet walls at the north, south and west, but will be higher than the east, courtyard-facing screen walling parapet built as part of the approved 2017 Albukhary Foundation Gallery of the Islamic World project. The increase will not impact on visibility from the neighbouring estate as it is still within the volume of the courtyard. The addition of the cowl will not affect the chiller noise output.

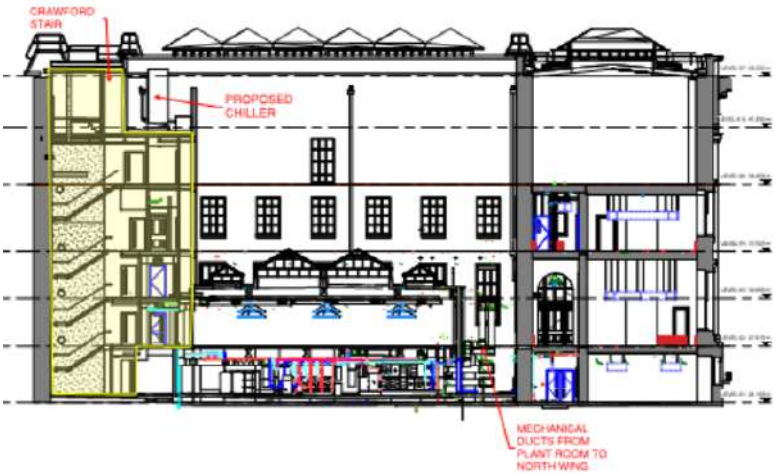

Figure 2 LONG SECTION ACROSS WHITE WING COURTYARD

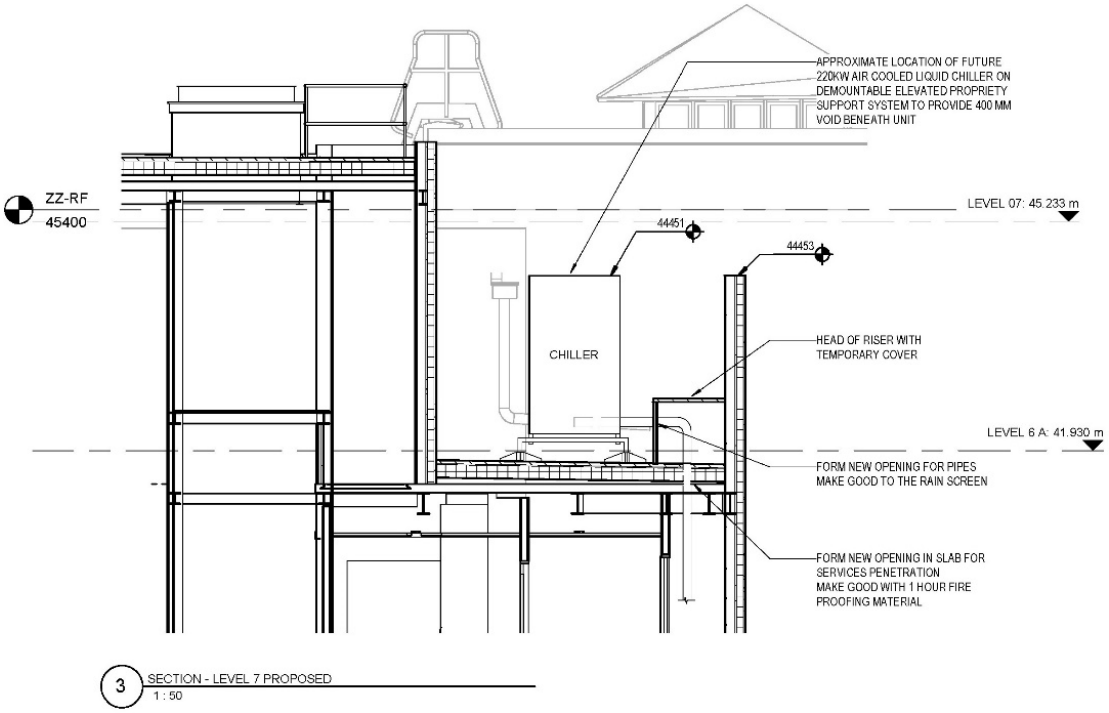

Figure 2 SECTION OF PLANT ON ROOF DECK AS SUBMITTED IN 2019/6434/L and 2019/6311/P

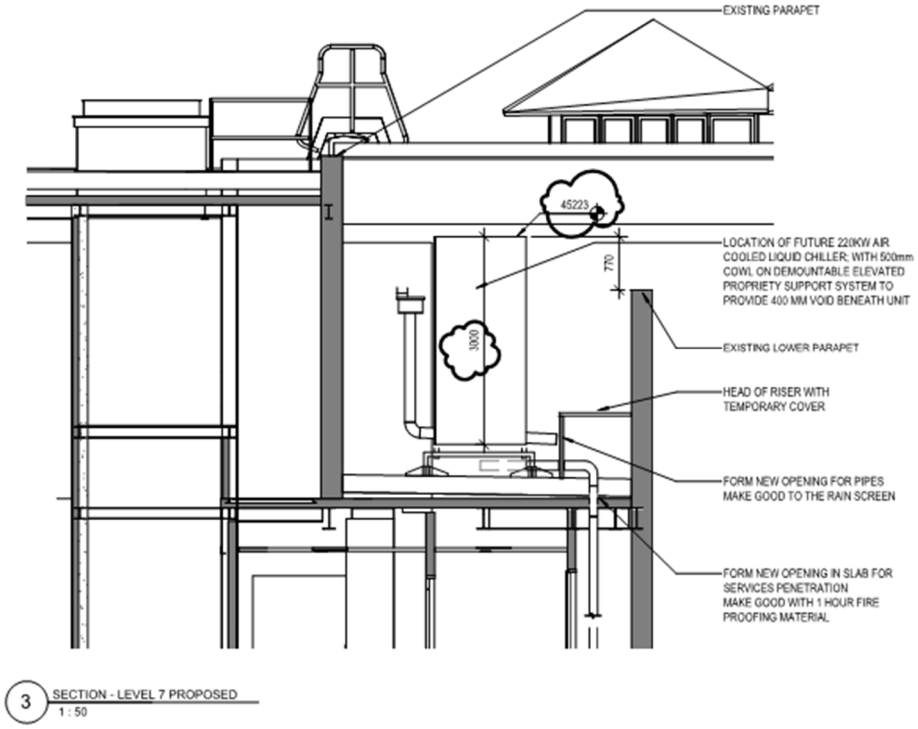

Figure 2 PROPOSED SECTION OF A HIGHER PLANT ON ROOF DECK

Partial removal of bookshelves at Level 2 offices B/2/014 & B/2/037

Throughout the White Wing, book shelving has been added over time but generally well made and of a hardwood. They are populated in most rooms and corridors on Levels 02 and 04. As these floors are rationalized for departmental offices, some smaller rooms with bookshelves are no longer required. The offices B/2/014 and B/2/037 will be smaller offices and the partial removal of the book shelves are required to release some area to fulfill the operational requirements for six staff.

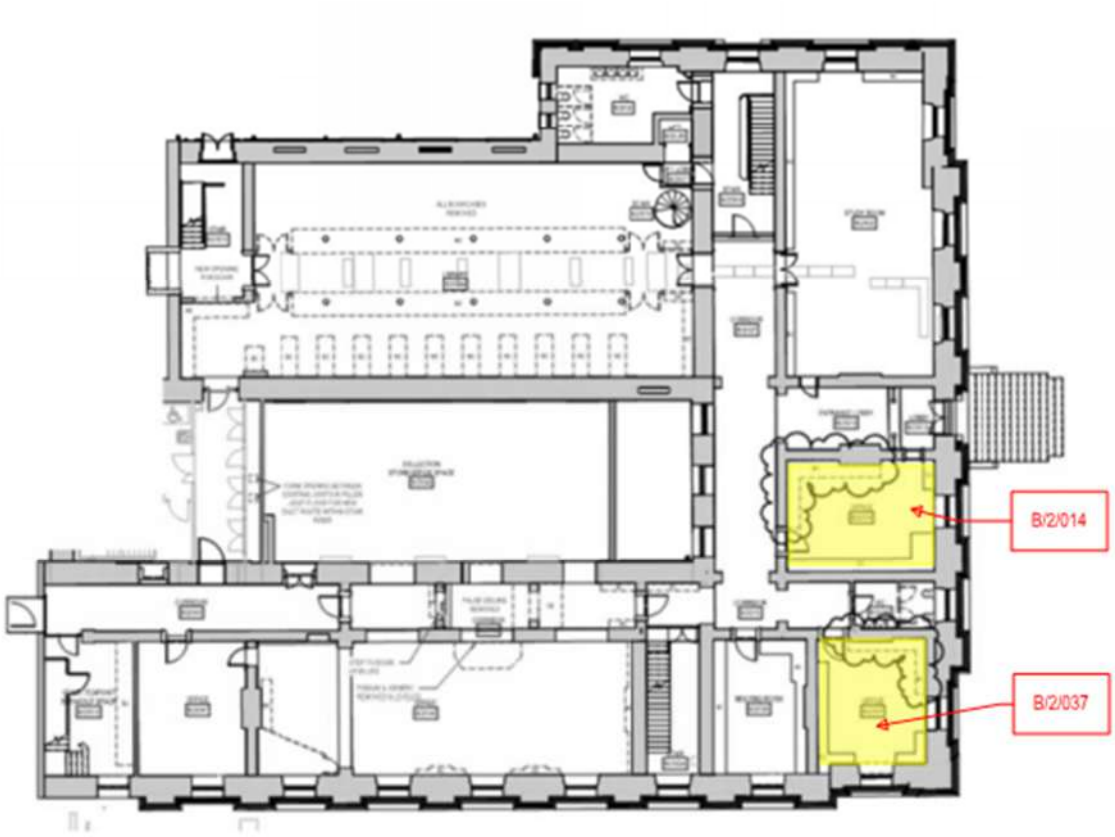

Figure 3 PROPOSED DEMOLITION DRAWING LEVEL 02 – PROPOSED REMOVAL HIGHLIGHTED

Reinstatement of an external window in the east courtyard wall in a blocked-up window opening on Level 01

The consolidation of plant from existing Level 01 smaller rooms at the east wing to a central, larger plant meant that the existing services route via a blocked-up window at the east courtyard façade is no longer required after the removal of the services and the lean-to in the courtyard. This provides an opportunity to reinstate a timber sash window in the original location to allow daylight into the much-needed corridor space. The profile and material of the proposed window will match the adjacent window in the corridor.

Figure 4 LEVEL 01 EAST CORRIDOR & EXISTING BLOCKEDUP WINDOW FOR SERVICE ROUTE

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HIA SUMMARY OF INTERVENTION

The White Wing has been identified within the Conservation Plan as being of High Significance in that Taylor's building makes a highly significant contribution to the British Museum. However, within the White Wing there are interventions that are of low, neutral or detrimental to the significance of the White Wing. The very nature of a wholesale replacement of building services is that wires, pipes and ductwork affect all spaces within the White Wing. The proposed interventions include the amended distribution of mechanical services from the new plant room to service the White Wing, revised height of the proposed chiller on roof deck, partial removal of bookshelves in Level 02 rooms and the reinstatement of window on Level 01.

A matrix has been prepared as part of the Heritage Impact Assessment that identifies the key interventions proposed against its form; fabric and function. It then articulates any mitigation measures that can be taken.

ID number:	HIA-0006 (continued from the main statement document)
Space/element:	British Museum, White Wing Refurbishment, Essential Infrastructure Works programme Levels 01, 02, and courtyard
Interventions:	Amended height of chiller plant on roof deck and ductwork arrangement in the courtyard; partial removal of bookshelves in Level 02 offices; reinstatement of Level 01 window facing east courtyard

Reference Material:
British Museum Conservation Plan; 2007; Purcell Architects

1.0 AMENDED HEIGHT OF CHILLER PLANT ON ROOF DECK AND DUCTWORK ARRANGEMENT IN THE COURTYARD

During the works to construct the Crawford staircase and lift a new services riser was constructed with an area identified to house a new air-cooled chiller unit. London Borough of Camden planning 2016/3083/P and listed building reference 2016/4254/L dated 19th October 2016. The infill walling to the service riser was built to a height to enclose a future chiller unit. This riser runs from the Level 01 plant room to the roof as illustrated below. The structure was designed to receive the unit which will sit on a proprietary support system. The chiller unit size has now been confirmed based on the performance specification and it sits higher than the lower parapet. However, it will not be silhouetted as it is lower that the higher surrounding parapets in the courtyard. The equipment will not exceed the pre-existing background noise levels. A recent background noise survey was included with the previous application, the change of chiller height does not affect noise level.

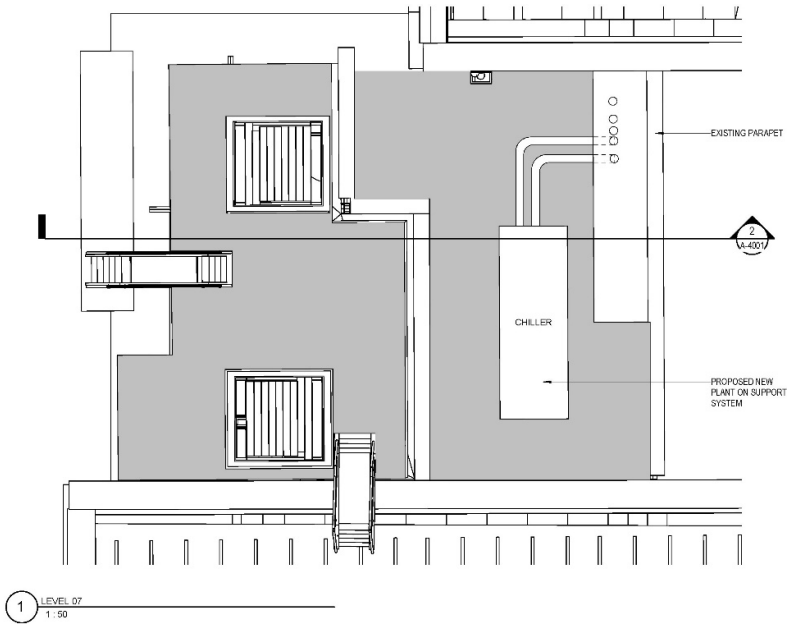

Figure 7 Plan showing mechanical plant

Figure 1 VIEW OF COURTYARD TOWARDS CRAWFORD STAIR & EXISTING DUCTS IN COURTYARD

The courtyard flat roof has been used for mechanical distribution, vertically and horizontally, connecting the north wing spaces to the Level 01 plantrooms via routing though window openings. The design strategy aims to minimise the number of penetrations by consolidating the plant equipment in a newly created plant room below the existing staff training room. The courtyard space is the only route for vertical distribution at the east side of the White Wing. The existing

sash window openings of the north courtyard elevation will be re-used for duct route; however, the horizontal distribution is proposed within the offices, rather than along the flat roof, allowing the smaller timber windows to be re-instated.

The ductwork design has been updated since the application as the plant room layout was redesigned; however, the design principle has not changed and nor has the number of proposed penetrations.

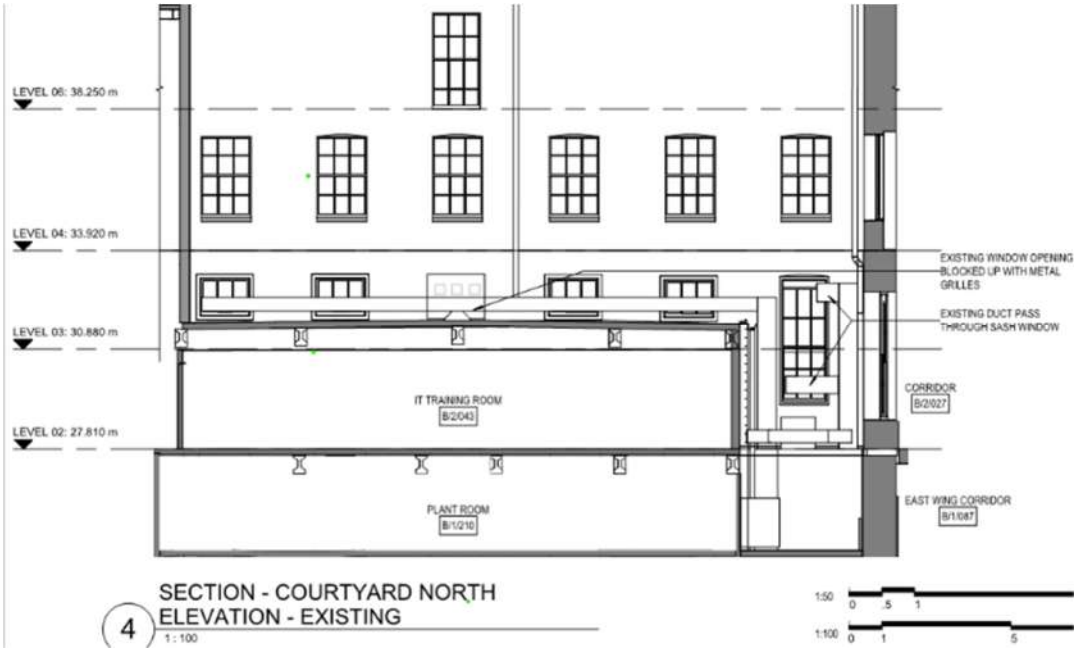

Figure 4 EXISTING COURTYARD NORTH ELEVATION – EXISTING DUCT ROUTES

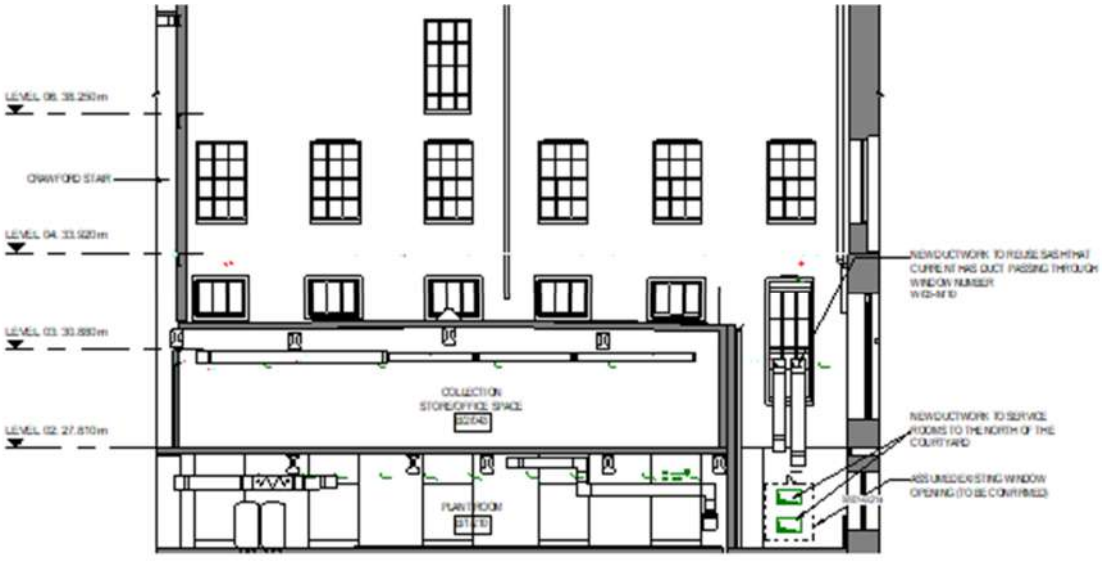

Figure 4 PROPOSED COURTYARD NORTH ELEVATION – PROPOSED DUCT ROUTES

1.1 NATURE DEGREE, AND SCALE OF IMPACT (COURTYARD)

Function:
Generally, the function of the White Wing will be enhanced with more attractive and better designed working spaces created. The function of the courtyard and roof plant deck remain the same.

Form:
The replacement of the building services will allow for better use of the original form and will allow for the modern brick structure to be demolished and consolidation of new services routes.

Fabric:
The installation of a low temperature hot water system is environmentally friendlier than installing a mechanical supply and extract system such as comfort cooling which requires mechanical equipment and associated ductwork and control systems. The new ductwork route will reuse the existing window openings in the north elevation to minimise the loss of fabric.

2.0 PARTIAL REMOVAL OF BOOKSHELVES AT LEVEL 2 OFFICES B/2/014 & B/2/037

Throughout the White Wing there is book shelving for the Departmental users. The book shelving has been added over time but generally well made and of a hardwood. In terms of heritage asset, the shelves are seen as fixed removable in that they could be disassembled with a screw driver and relocated anywhere upon the estate.

The proposed partial removal of bookshelves in offices are due to operational requirements of the British Museum. As these smaller rooms will be occupied as offices, the bookshelves are no longer in need and their partial removal can free up valuable area for occupancy. It is proposed that those in front of the original chimney breasts are to be removed; the rest will remain.

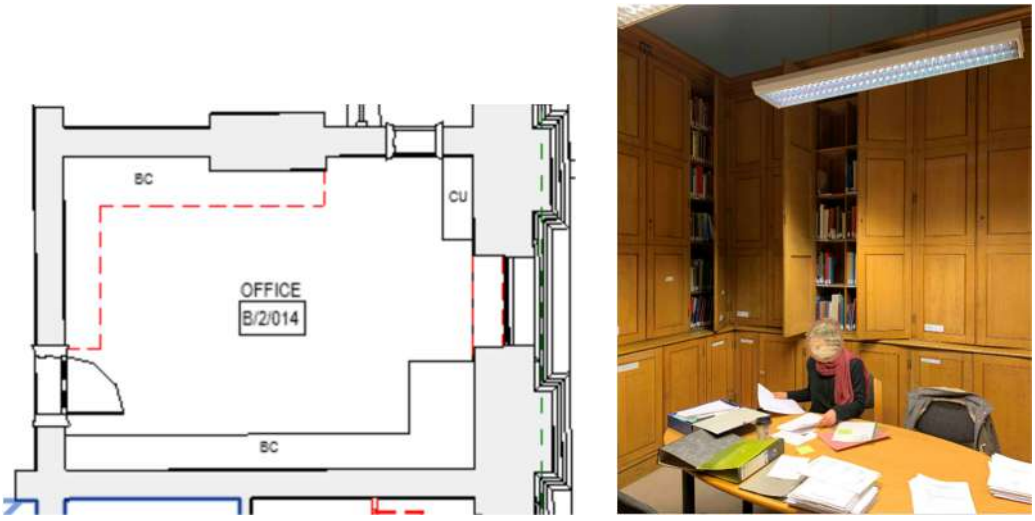

Figure 4 PROPOSED PARTIAL REMOVAL OF BOOK SHEVLES IN B/2/014

The bookshelves are made with good quality hardwood; office B/2/014 bookshelves have paneled doors and those in office B/2/037 have glass fronts.

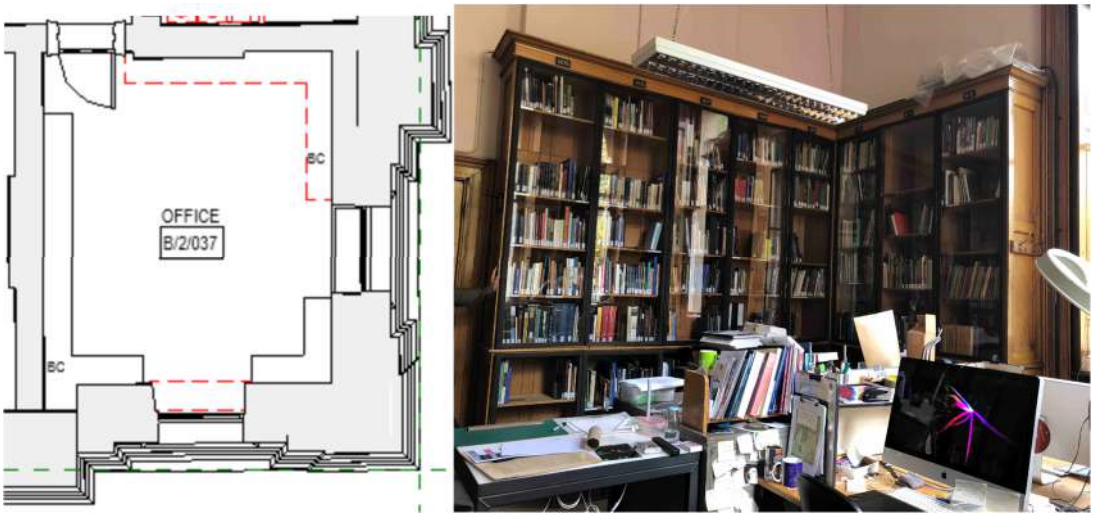

Figure 4 PROPOSED PARTIAL REMOVAL OF BOOK SHEVLES IN B/2/037

In discussion with the Museum it has been agreed that the best examples will be retained. The following will be retained – on Level 02 B/2/032; and 038 and on level 04 B/4/ 007- 015 inclusive; 020 and 025.

2.1 NATURE DEGREE, AND SCALE OF IMPACT

Function:
The use of these rooms will largely remain unaltered with Departments occupying the rationalised office space. The removal of bookshelves will lead to a much more efficient use of space in terms of occupancy level.

Form:
There would be no change to the rooms form from the removal of the book shelves.

Fabric:
There will be a moderate impact on the heritage fabric as the book shelves will be disposed of. The remaining bookshelves will be in use and retained as part of the building fabric.

3.0 REINSTATEMENT OF WINDOW AT LEVEL 1 COURTYARD

One of the original window openings at corridor B/1/087 at the east wing is currently blocked up and served as a route for services between plant room B/1/085 and the calorfier plant room B/1/93. The creation of a large plant room B/1/210 consolidates the equipment and it is proposed that a new window is to be reinstated in the original window opening. The new timber sash window shall match the profile of an existing adjacent window, W/01-B/21, along the same corridor.

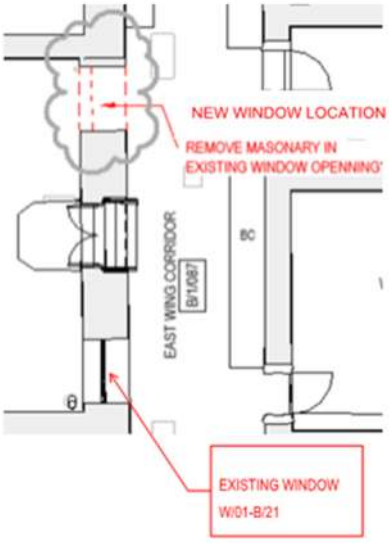

Figure 11 REMOVAL OF EXISTING SERVICES AND STORE CUPBOARD IN ORIGINAL BLOCKED UP WINDOW OPENING

Figure 11. PROFILE OF NEW WINDOW WILL MATCH THIS EXISTING WINDOW W/01-B/21

3.1 NATURE DEGREE, AND SCALE OF IMPACT

Function:

The function of the window opening will be able to revert to its original purpose; to let light into the Level 01 corridor.

Form

Currently the opening is filled with joinery and services above. Their removal will allow the window reveal to be read again and achieve the symmetry originally intended.

Fabric:

Reinstate a matching sash window will be a positive impact to the fabric of the White Wing.

4.0 SUMMARY OF LEVEL OF IMPACT

- Green *positive, overall neutral/minor impact*
- Yellow *moderate impact*
- Red *major impact*
- White *unknown/TBD*

For a comparative analysis of various options, these are presented as follows:

Intervention	Overall Impact	Function	Form	Fabric
MECHANICAL PLANT ON THE ROOF				
DUCTWORK COURTYARD SERVING THE NORTH WING				
REMOVAL OF FIXED REMOVABLE BOOK CASES				
NEW TIMBER SASH WINDOW AT LEVEL 1 CORRIDOR B/1/087 IN ORIGINAL WINDOW OPENING				

5.0 HERITAGE CONSERVATION CONSIDERATIONS & POTENTIAL RISK MITIGATION

The opportunity to consolidate the White Wing's building services has an overall positive and desirable impact. The White Wing has suffered as building services accumulated over the years to occupant's needs.The White Wing rehabilitation has allowed for the building services to be looked at holistically. This approach has allowed the design team to select systems that have the lowest impact and to control and consolidate ductwork and routing.

Design activities in 2017 future proofed the need for roof level plant and an enclosure was selected that provided visual and acoustic masking. The 2017 approved and constructed screen wall employed Sto render wall will now see the proposed chiller plant installed at this phase of work, within the overall courtyard volume of the White Wing.

The office space within the White Wing is inefficient. The loss of the joinery must be seen in the wider goals of the White Wing refurbishment programme which are to create a better working environment; better facilities and keeping the building in operational use.

6.0 HERITAGE IMPACT ASSESSMENT CONCLUSION

In conclusion when measured against NPPF clause 195 we believe the proposed interventions described in this application will not lead to substantial harm. The proposals under the NPPF policy in our opinion lead to “less than substantial harm” . The works proposed in this application create optimal conditions for both collection storage and Departmental work which is imperative for the Museum. Interventions have been carefully considered and selected after the impacts have been fully understood. The works described for the White Wing reflect its unique place within the British Museum which serves as plant room; workshops; library; department offices; collection storage; staff welfare and galleries with both the galleries of the Albukhary Foundation Gallery of the Islamic world and Europe 1400 -1800. The works in this application once completed will be beneficial to both the public and the museum.