

ROUND READING ROOM - TEMPORARY EXHIBITION SPACE

DESIGN STATEMENT FOR THE LISTED BUILDING APPLICATION

Introduction

TGA Services Consultants are retained by the British Museum and have a detailed knowledge of the mechanical and electrical services. We have looked at the principle of adapting the Round Reading Room for a 'one off' season of temporary exhibitions. The conclusion is that a good deal of work will need to be done, particularly to the air handling plant, to achieve comfortable conditions for 400 visitors. We conclude, however, that this is all perfectly feasible and can be completed in a manner which is fully reversible and which will have no impact on the fabric of the building.

The main challenge will be to increase the flow of fresh air and to increase the cooling capacity to deal with the number of visitors and the much higher lighting load. All the work will be carried out in plant rooms outside the Round Reading Room area or as temporary and removable work under the floor void created by the new deck.

Mechanical

A mechanical ventilation and partial air conditioning system is proposed to meet the following objectives:

- To maintain temperature and relative humidity conditions at a suitable level for the historic fabric and for existing books.
- To maintain comfortable conditions for visitors.
- To provide an adequate rate of fresh air exchange for the anticipated number of visitors.

The principle that has been adopted is to retain existing provisions and to supplement them where necessary. In this way there will be no interference with the historic fabric or furniture and any supplementary items can easily be removed at the end of the exhibition.

Conditioned fresh air will continue to be supplied through the Reading Room desks into the void between the Reading Room floor and the temporary mezzanine floor. Some temporary modifications are proposed to the recent air handling plant and ductwork in "The Spider" below.

Some temporary air handling plant would be located on the Reading Room floor. The furniture and the floor would be well protected from accidental damage as a precautionary measure. The temporary plant would supply a mixture of conditioned fresh air, from existing plant, and re-circulated air, from the exhibition space, into the raised access floor void of the mezzanine.

High induction "swirl" diffusers would be integrated into the temporary floor to supply air to the space above.

MECHANICAL & ELECTRICAL SYSTEMS, ADVICE BY TGA SERVICES CONSULTANTS

A supplementary chiller may be required, depending on the anticipated number of visitors. The chiller would be mounted externally on the roof of the Sector D Energy Centre. This location has already been prepared to receive an additional chiller adjacent existing units.

Insulated flexible hoses would be used to convey chilled water between the chiller and temporary plant. The hoses and any other temporary services such as cables would be routed through former or existing openings in the Reading Room floor which would be made good on removal. No new penetrations are proposed.

Electrical

It is proposed that the existing low voltage electrical distribution system that serves the Round Reading Room will be extended to provide power for the exhibition. This will be achieved by installing new sub-main cables from existing fuseboards located in the "Spider" beneath the Reading Room. The new sub-main cables will be routed through existing builders work holes that rise through the floor of the Reading Room into desks at Level 2 above, and will serve new lighting and power distribution boards from which the exhibition and its associated services will be powered.

It is anticipated that the exhibition fit out contractor will derive lighting and power circuits from these new distribution boards, routing the new wiring beneath the new temporary platform and rising through the platform to serve display cases or high level lighting.

New lighting will be provided beneath the platform to enable safe access to the resultant void for both installation and maintenance purposes. This will take the form of fluorescent batten type luminaires, fixed to the underside of the platform and fed from the new lighting and power distribution boards. The luminaires will be fitted with robust diffusers to minimise the risk of lamp breakages in the relatively low space that will be created.

Lighting will also be provided on the stairs and ramps that serve the new exhibition platform, using luminaires selected for their architectural qualities, again mounted off the platform and fed from the new distribution boards.

The existing general lighting in the Reading Room, provided by uplighters at high level, will be retained. The control of these luminaires will be investigated during the detail design process with a view to saving energy during periods of high natural daylight and allowing lower lighting levels to be achieved within the Reading Room when appropriate.

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The existing automatic fire detection system in the Reading Room will be retained. It will be enhanced by adding further manual call points adjacent to the exit points from the space. Additionally, automatic fire detection systems, probably in the form of aspirating detectors, will be installed below the platform to protect the space formed by its construction. All new equipment and associated wiring will be fixed from the new platform construction.

New voice alarm speakers will be provided in the screen that surrounds the new platform as well as below the platform. Again, all new equipment and associated wiring will be fixed from the new platform construction.

The existing emergency lighting system in the Reading Room will be retained. It will be enhanced by adding further escape signs adjacent new formed exit points from the space and by adding further emergency lighting to the ramps and staircases. It is possible that further luminaries may also be needed within the exhibition space, depending upon the layout and density of the exhibition itself. If necessary, it is anticipated that this requirement may be met by installing luminaries in the pedestals of selected display cases. Additionally, emergency lighting will be provided below the platform to protect the space formed by its construction. All new equipment and associated wiring will be fixed from the new platform construction.

New electrical supplies will be provided for 4 No. platform lifts from the distribution fuseboards in the Spider below in much the same manner as described for the general lighting and power distribution systems. It is anticipated that the lifts will incorporate local battery backup systems enabling a degree of continued operation in the event of a mains power failure.

All works to the electrical services will be completely reversible and will not cause damage to the historic fabric of the Reading Room, its surrounds or its contents.