

ROUND READING ROOM - TEMPORARY EXHIBITION SPACE

DESIGN STATEMENT FOR THE LISTED BUILDING APPLICATION

Structural Considerations

Installing a new floor above the level of the existing readers' desks will potentially give rise to a series of point loadings on the floor. The structural engineers, Alan Baxter Associates, have considered the existing floor construction. They conclude that the most likely construction of the floor is mass concrete over the brick vaulting which is supported on the radial walls in the basement "spider". There are no major concerns over the additional loading created by a temporary floor installed above the reading desks. It will be necessary to ensure that the loads from the floor are transmitted directly above the radial walls themselves. These fall either side of the readers' desk positions and so are readily accessible. Baxter's recommendations are given in more detail in the following section.

The design of the raised desk itself has been considered by the specialist engineers Atelier One. Their conclusion is that there is no particular difficulty in installing a raised deck over the whole of the area of the Reading Room. The new deck would be a lightweight temporary structure of the sort used for temporary staging. This would be brought in to the Museum broken down in small elements and would then be erected in the space. The deck would be purpose designed for the space and the support structure can be readily accommodated between the fitted furniture and loads can be transmitted to the floor over the radial walls.

The entrance stair at the south end of the Room does not present a problem as there is plenty of clear floor space available. The stair at the north end of the Room will be constrained by the fitted furniture of the 'key hole' of the librarians desk. Some removal of loose furniture will be necessary in this area but this is not furniture of high significance, being modern additions.

Escape stairs will be necessary at both the east and west doors. These will be accommodated either side of a boxed in section of one of the readers desks. There is sufficient space for two 1 metre wide stairs to be provided without any interference with the furniture which can be left in position.

Emergency Escape

The necessary provisions for emergency escape have been looked at by Lawrence Webster Forrest, the Fire Engineers for the Museum. The assumption has been made that all four doorways out of the Round Reading Room will be available for use. Escape provision has been calculated on the basis that one of these doors will not be available. The basic calculations suggest that it would be possible to evacuate 480 people in a 2.5 minute period. This allows 1 minute for pre – movement time and 1.5 minute for evacuation. This is on the assumption that the deck is 1.8m above existing floor level and that good staircases are available.

The Museum's Fire Advisors have advised that there are a number of conditions that will need to be fulfilled for the Round Reading Room to be used in this way:

- *A high specification automatic fire detection system is needed.* In practice the existing beam detectors which will remain in use fulfil this requirement.
- *Best practice will need to be enforced in fire prevention measures and routine maintenance.* This is already part of the standard museum practice.
- *A high ratio of staff to visitors will be needed in the exhibition area.* The nature of the exhibition is such that there will be a high ratio of staff needed for visitor management, education and security purposes.
- *A fully developed emergency plan will be needed.* The emergency plan for the whole museum will be extended to cover the Temporary Exhibition.
- *The fire load in the space will need to be minimised.* The fire load in this space is already low and it is anticipated that the structure of the new floor deck and the display cases will all be non-combustible. Close attention will be paid to the design of the protection to the desks and to the services in the new floor void to minimise any additional fire load.

The general visitor will use the new stairs to gain access to the 1.8 metre high inserted floor. The use of the stairs for escape purposes is not a cause for concern with much more time available in an emergency situation than will be required for evacuation.

Visitors in wheelchairs or with very limited mobility will use the platform lifts in an emergency situation. The platform lifts will be provided with back up power supply to ensure that they are usable in an emergency. In the worst case scenario only two of the four lifts will be available. Lawrence Webster Forrest calculate that in these circumstances there would be ample time to evacuate 12 wheelchair users with two lifts. Access to the exhibition will be by timed tickets and this enables the overall numbers of visitors in the exhibition to be controlled to ensure visitor comfort and an enjoyable visitor experience. Twelve wheelchair users (or 3% of the total visitor number) at any one time would be unusually high judging by the experience of all recent exhibitions in the Museum.

Environmental Control

TGA, the mechanical and electrical services consultants, have considered the best way to improve the level of environmental control in the Round Reading Room to enable a temporary exhibition to be mounted in there. The general standards achieved in the Round Reading Room at present are related to its original Victorian design rather than present-day standards. The number of air changes are approximately 50% of what will be desirable for an exhibition.

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It will be possible to carry out some alterations to the air handling plant which will increase the flow of air through the space by approximately 20%. This will have the effect of slightly raising the noise levels in the Round Reading Room. This increased flow will substantially improve the comfort conditions in the space, and given that this is an exhibition not a library the noise levels should not be a concern.

The air distribution in the space is through the cast iron ducts in the floor from the "spider" below. The ducts pass through the reading desks and air is distributed through grilles in the top of the upper section of the desks. It is proposed to treat the space under the temporary floor as plenum chamber by sealing the perimeter. This will allow transfer grilles in the floor to be located at convenient points for the exhibition design rather than being obliged to position them directly over the ducts in the reading desks.

Any sensitive objects that are on display will be within new display cases. There will be ample space underneath the floor void to provide localised conditioning into the display cases where necessary.

Lighting

It is assumed that the general space lighting in the Round Reading Room will be the primary source of lighting for the space for all maintenance and cleaning purposes, escape etc. As the temporary exhibition space will not have any form of ceiling, the full volume of the dome will be visible and the present lighting will be satisfactory.

There will be provision for lighting around the perimeter of the display space. This will be fixed to the vertical cantilevered screen wall. There is no intention to fix any lighting to the permanent fabric of the Round Reading Room. The bulk of the new lighting will be in association with the new display cases either lighting the interior of the cases or providing lighting from the top of the cases to the surrounding area.

The engineers, TGA, have checked the likely power requirements of the proposed exhibition and they conclude that there is ample power for the additional lighting and cooling load.

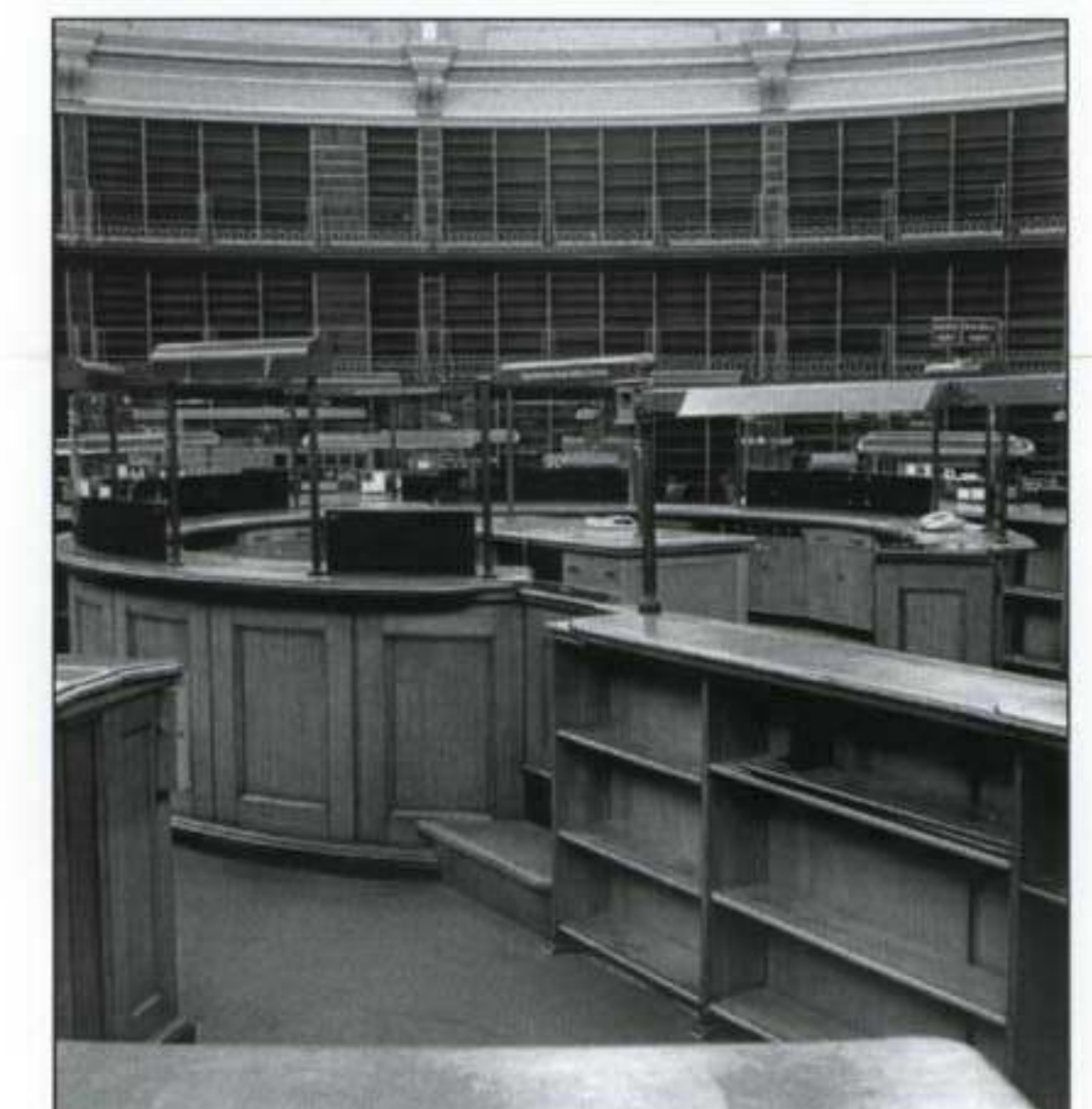
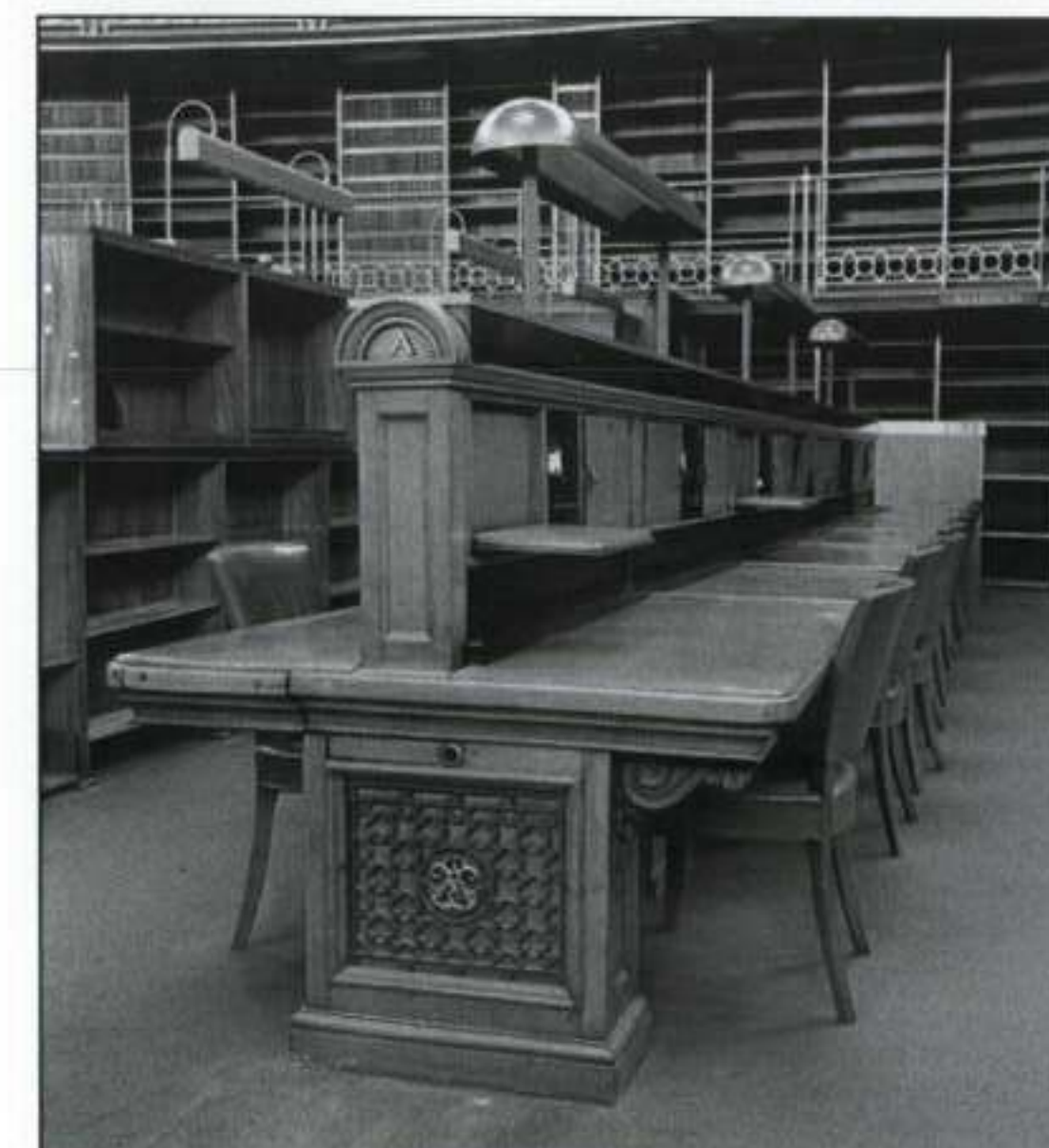
All the work to the services will be fully reversible. The air handling plant can be derated back to its current level. Wiring for lighting and wiring and pipework to chillers will all be laid loose in the temporary floor void or will be fixed to the temporary structure itself.

The light levels in the Round Reading Room will need to be reduced for the period of the exhibition. It is proposed to use light reducing film on the glazing of all the windows and either light reducing film or black out for the central glazed skylight in the dome. All the film will be removed when the temporary structure is removed at the end of the season of exhibitions.

Existing Library

At present the Round Reading Room houses the Hamlyn Library. This is an information and general reference library available to all visitors to the Museum. No appointment is needed, any visitor can walk in and make use of the computer database or of the reference books with librarians in attendance to help visitors find what they need. This facility has not been as heavily used in the past as the Museum would like. It is felt that this is due, at least in part, to the rather daunting nature of the Round Reading Room itself.

During the period of the temporary exhibition the Hamlyn Library facility will be rehoused in the 'Middle Room' (a space at the main floor level immediately south of Room 2). The Middle Room was the original Reading Room for the Museum Library prior to the construction of the Round Reading Room and is therefore already fitted with historic bookshelves. The Hamlyn Library will return to the Round Reading Room immediately after the exhibition closes and the temporary work is removed.



Sydney Smirke's Round Reading Room, the readers' desks and the catalogue tables around the 'keyhole'