

## ROUND READING ROOM - TEMPORARY EXHIBITION SPACE DESIGN STATEMENT FOR THE LISTED BUILDING APPLICATION

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### TEMPORARY STRUCTURE DESIGN, ADVICE BY ATELIER ONE

The existing Reading Room is formed from an enclosure approximately 42m in diameter.

The ground floor is supported on a series of radial walls at basement level. These sleeper walls then support brick vaults/arches which taper towards the centre of the space.

The Reading Room floor above the arches consists mainly of mass concrete (Portland cement) with a screen finish. However, underneath the raised podium and ramp the mass concrete does not exist and stone pavers span between the extended sleeper walls. The desks within the Reading Room are also arranged radially and align with the basement structure. The alignment was designed for load carrying but also to aid the services/environmental strategy. The air conditioning supplied from the basement is distributed up through the floors and from the desks.

To utilise the capacity of the ground floor and substructure the proposed super structure has to transfer loads over as much of the existing support structure as possible therefore the principle is to create a transfer structure at floor level which distributes the load of exhibition, exhibition deck and public into the radial walls beneath.

Certain key criteria have to be considered in configuring the structure:

- 1 No significant point loads are permissible.
- 2 Any loading should sit over areas as close to the existing basement sleeper walls as possible.
- 3 No support should be taken at mid span of the barrel arches as this could lead to instability.

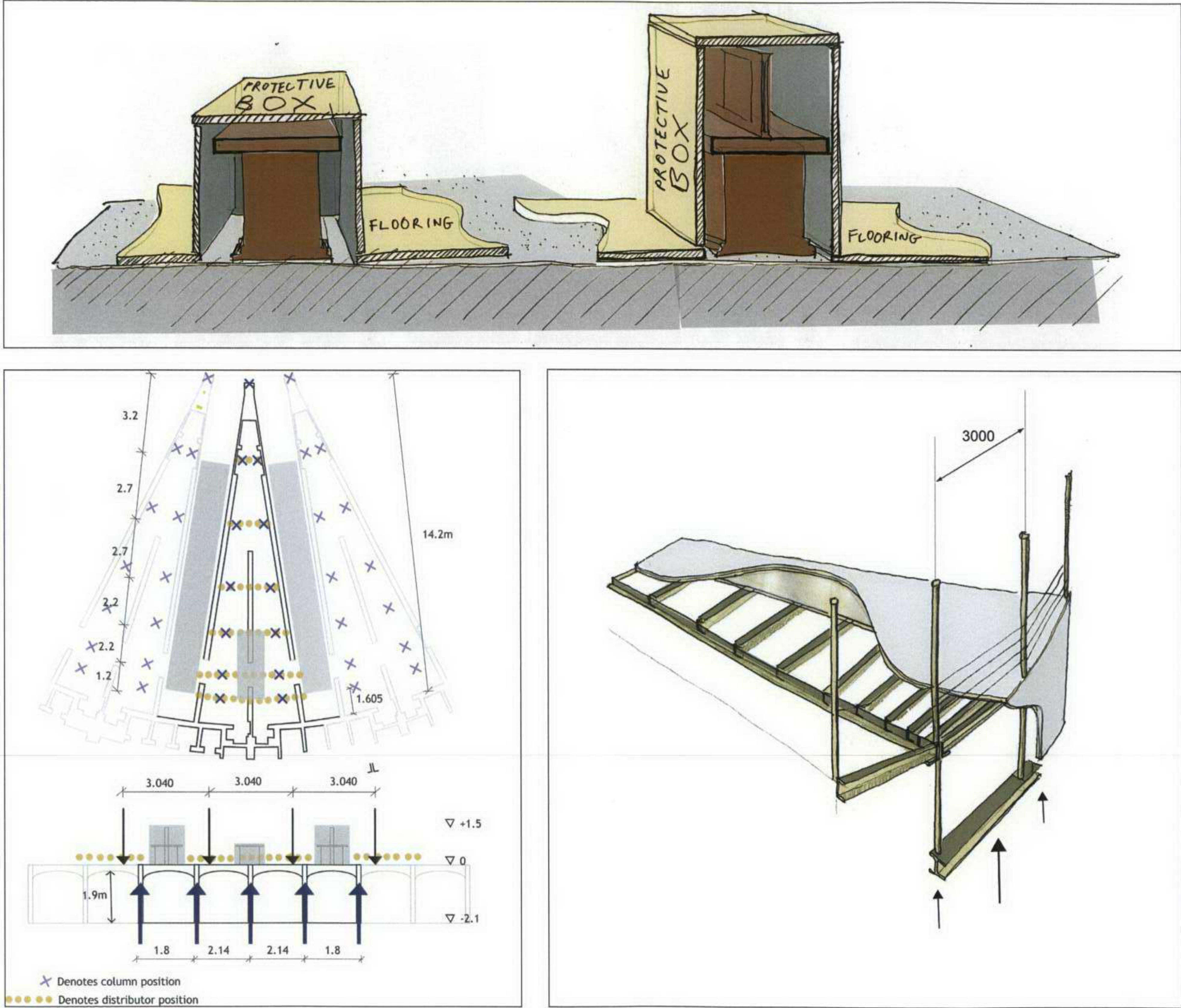
The diagrams on page 21 endeavour to incorporate a structure for the exhibition deck within the existing desks/furniture and then transfer loads directly to the basement sleeper walls.

In an attempt to utilise as much of the capacity of the building as possible the distribution steel transfers loads to all radial walls. This is then combined with a deck structural grid, different from that of the structural walls but rationalised to keep costs of the proposed structure to a minimum.

All materials used for the exhibition will be non-flammable or made non-flammable by using an impregnation.



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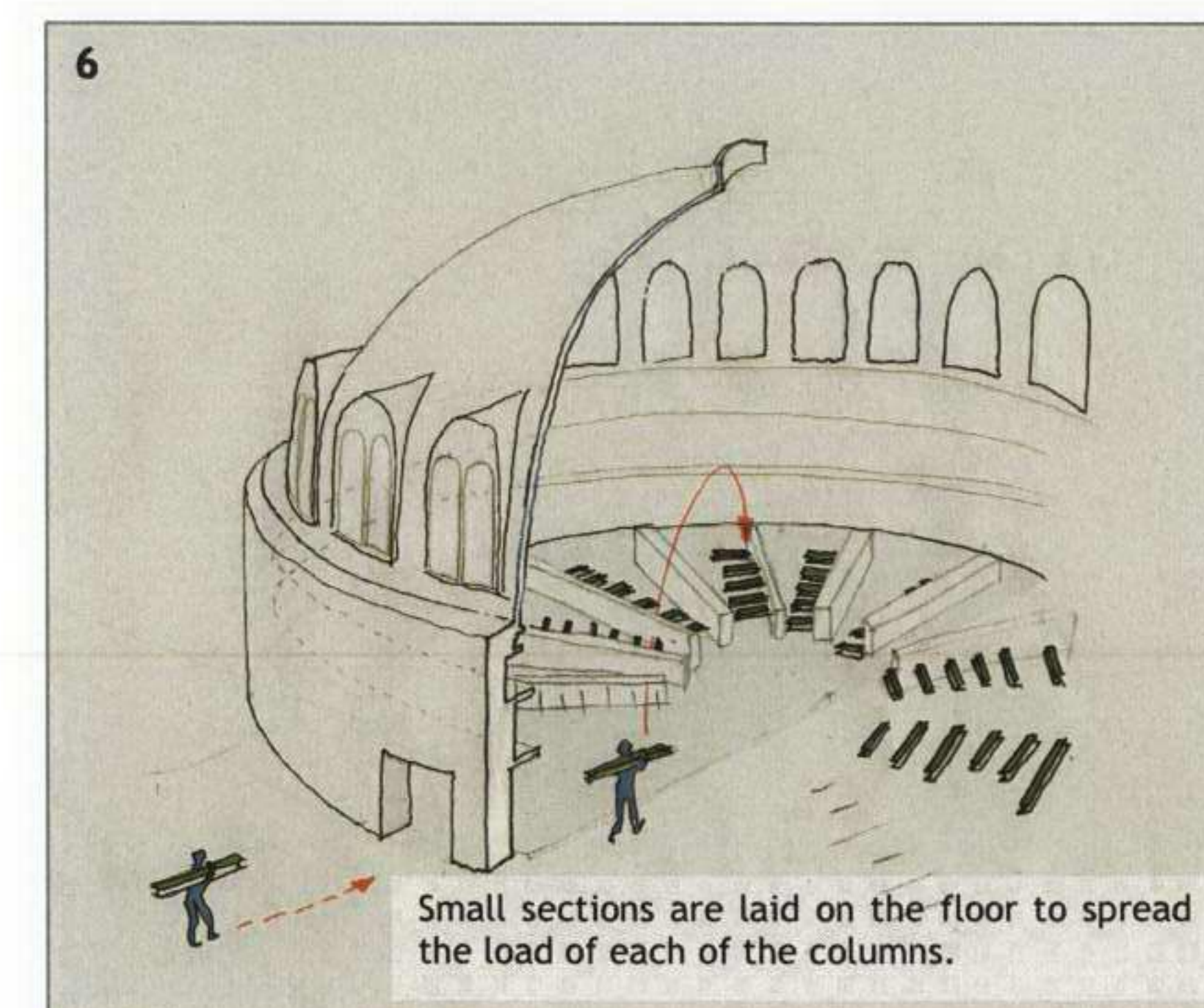
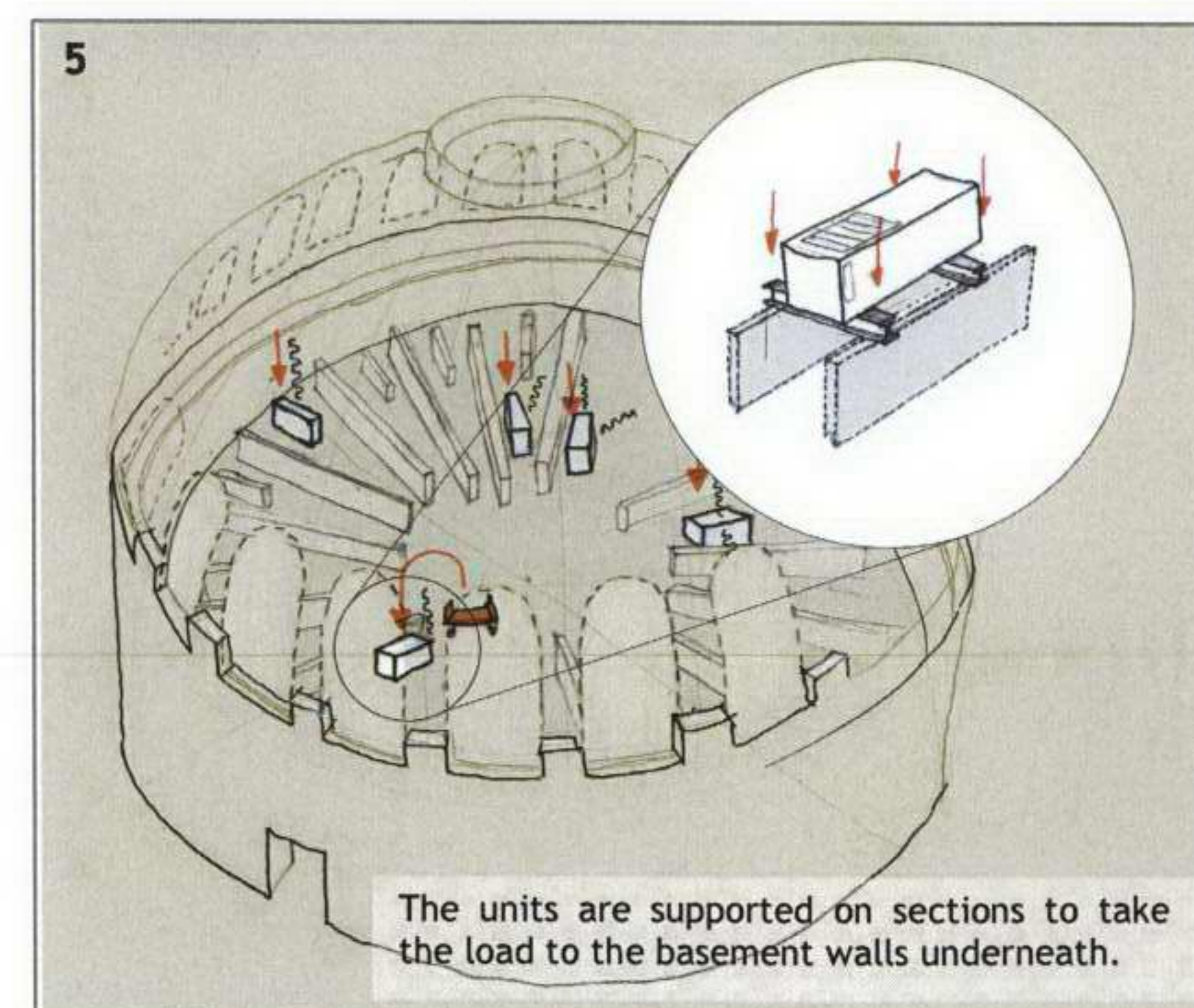
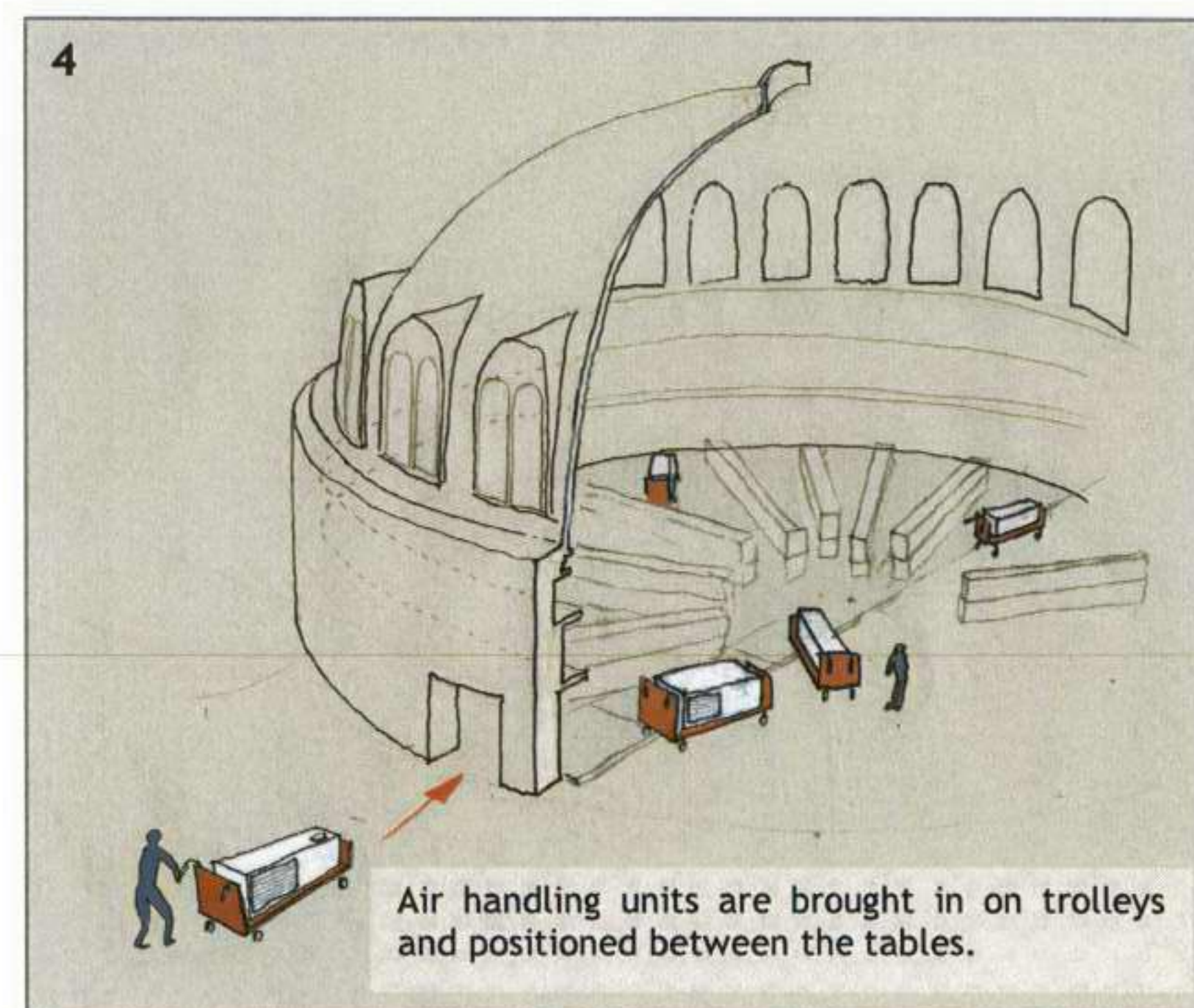
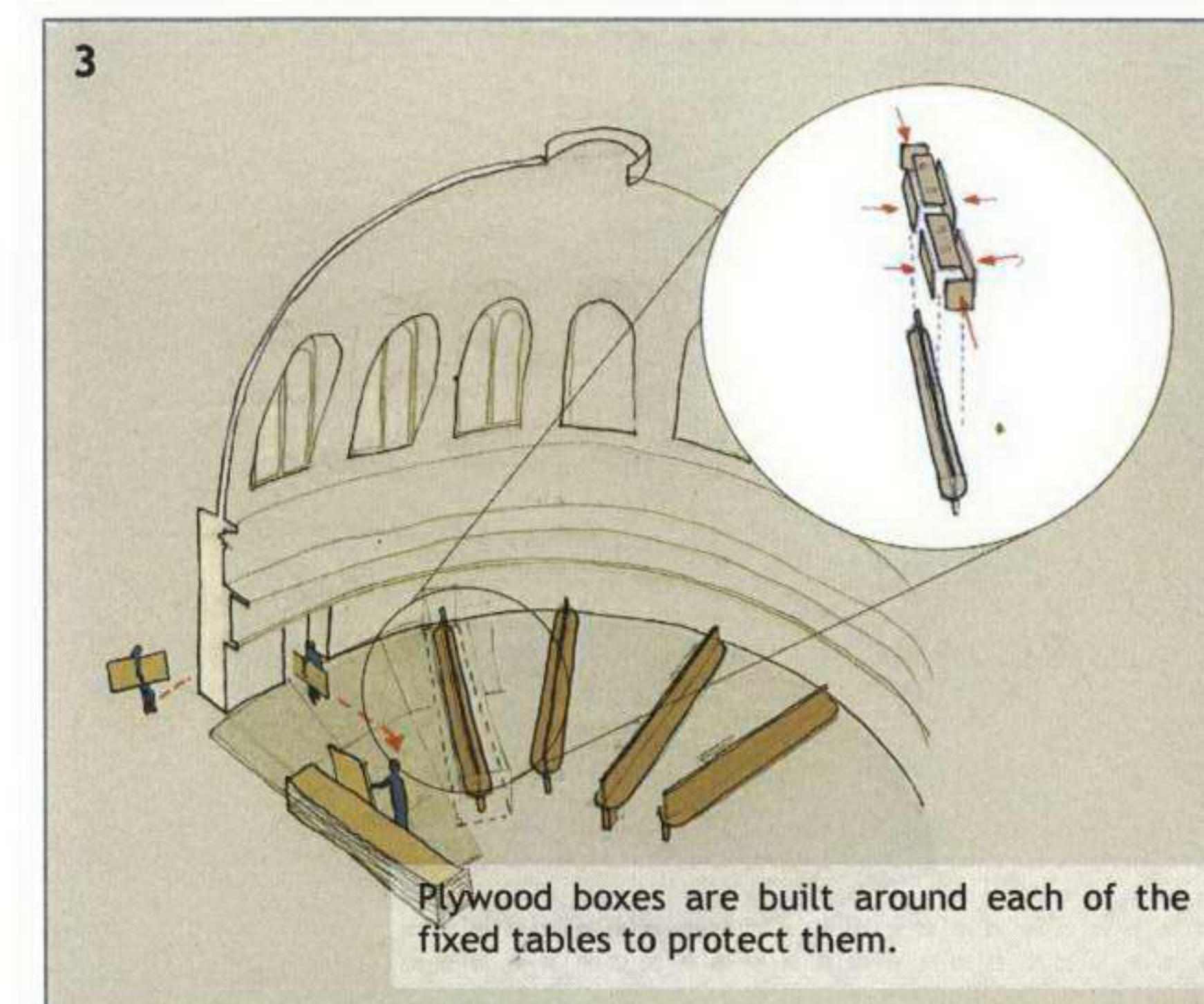
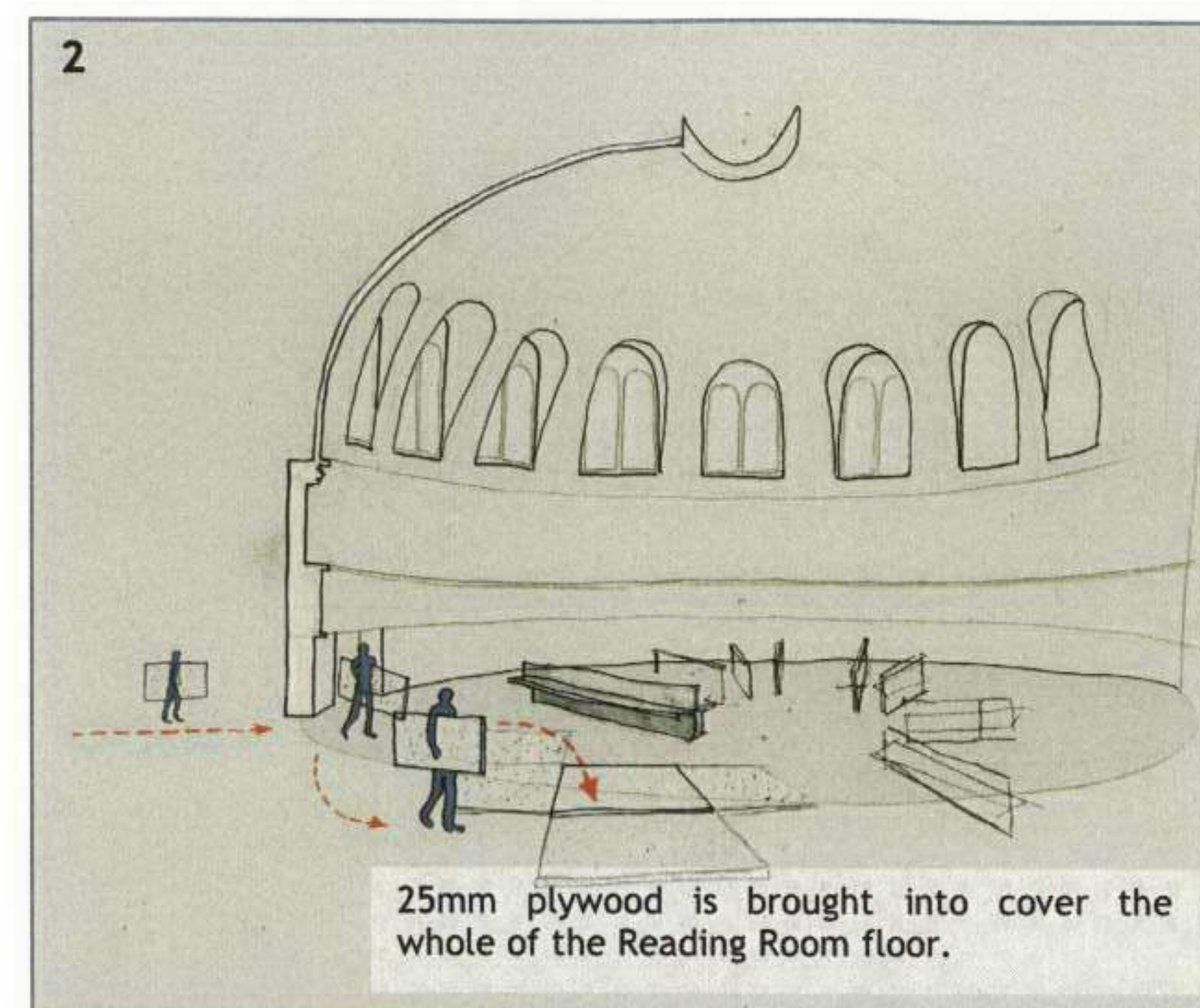
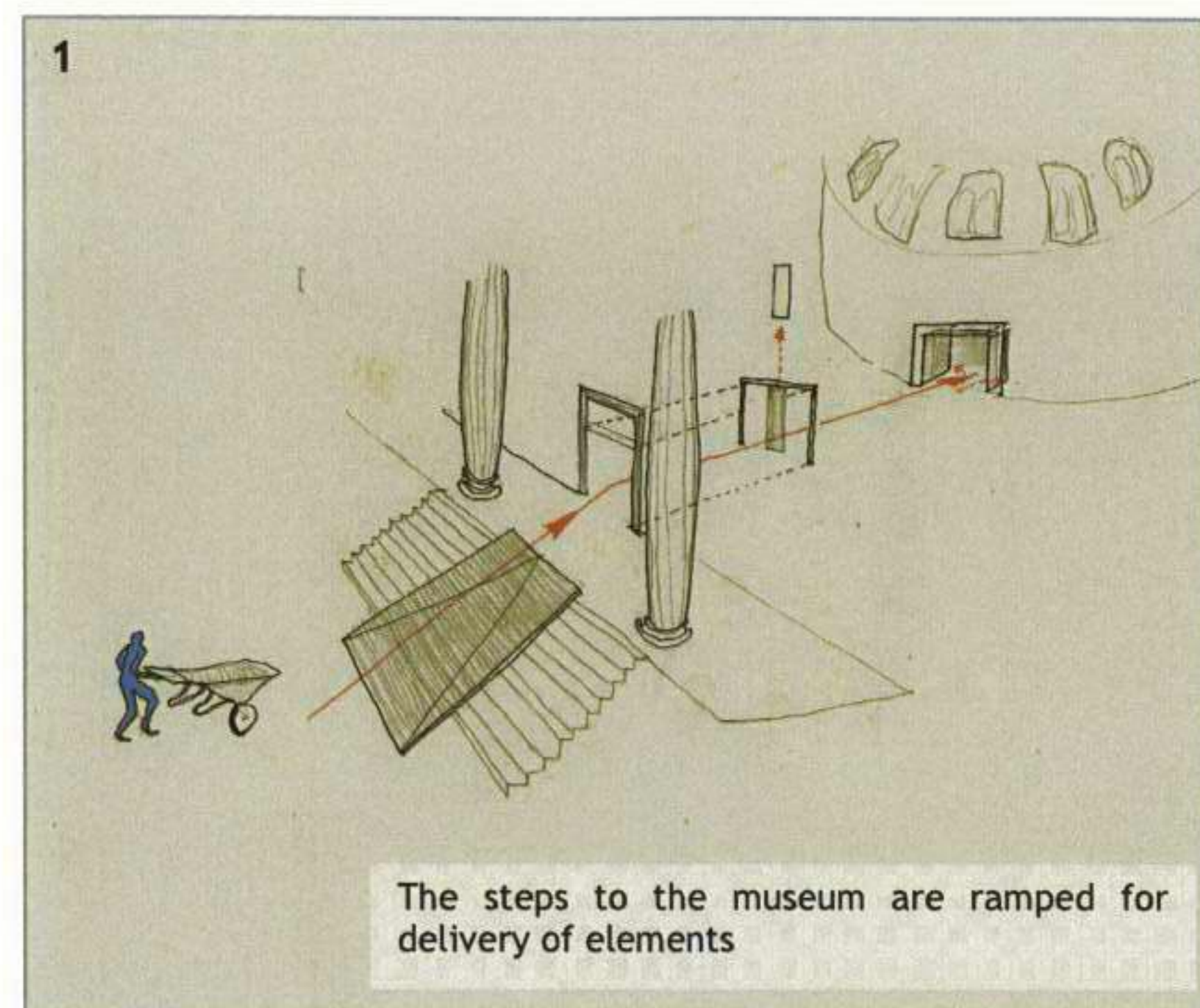


Sketch by Atelier One showing the principles of protection and the structural grid for the floor



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First Emperor Project

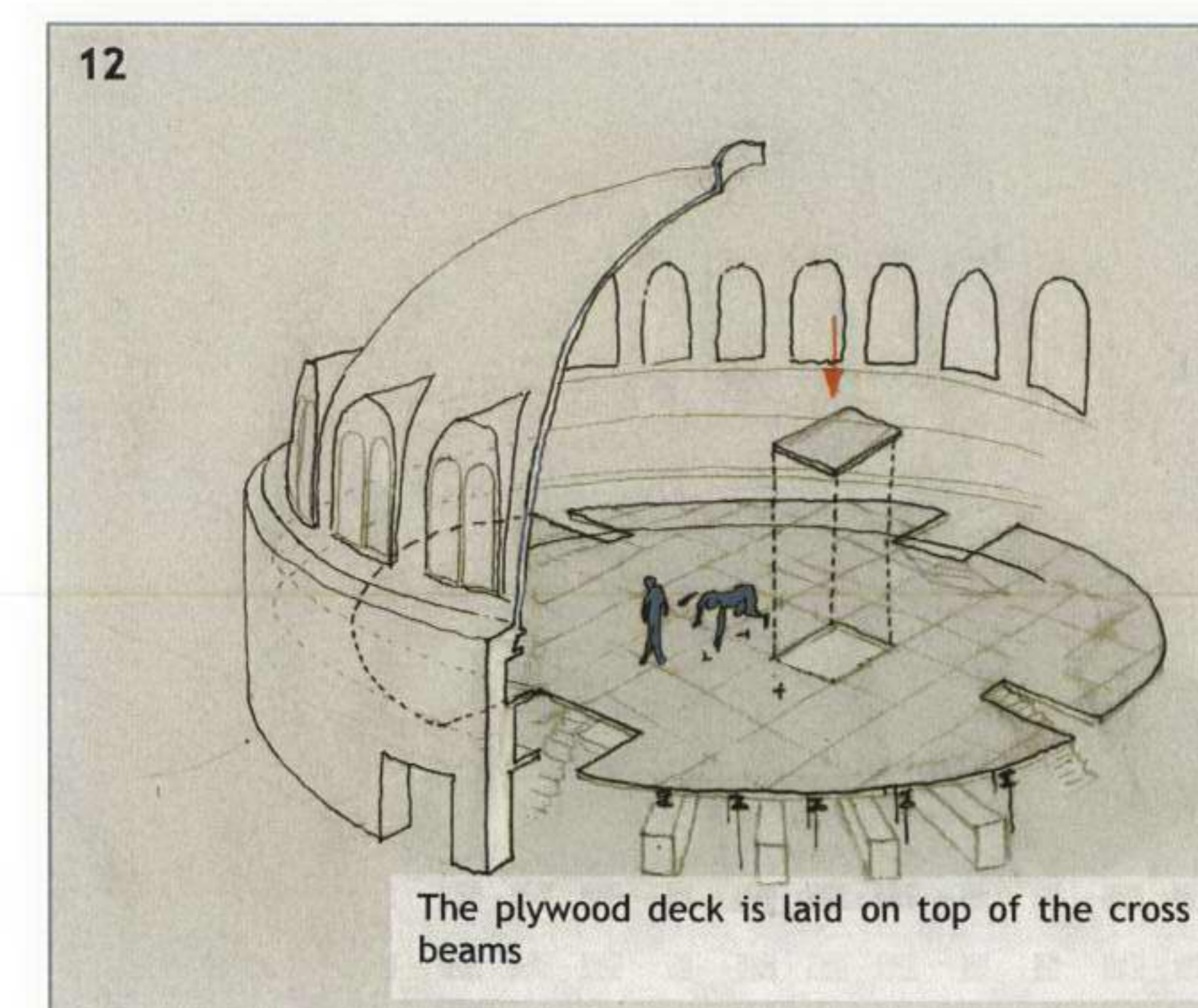
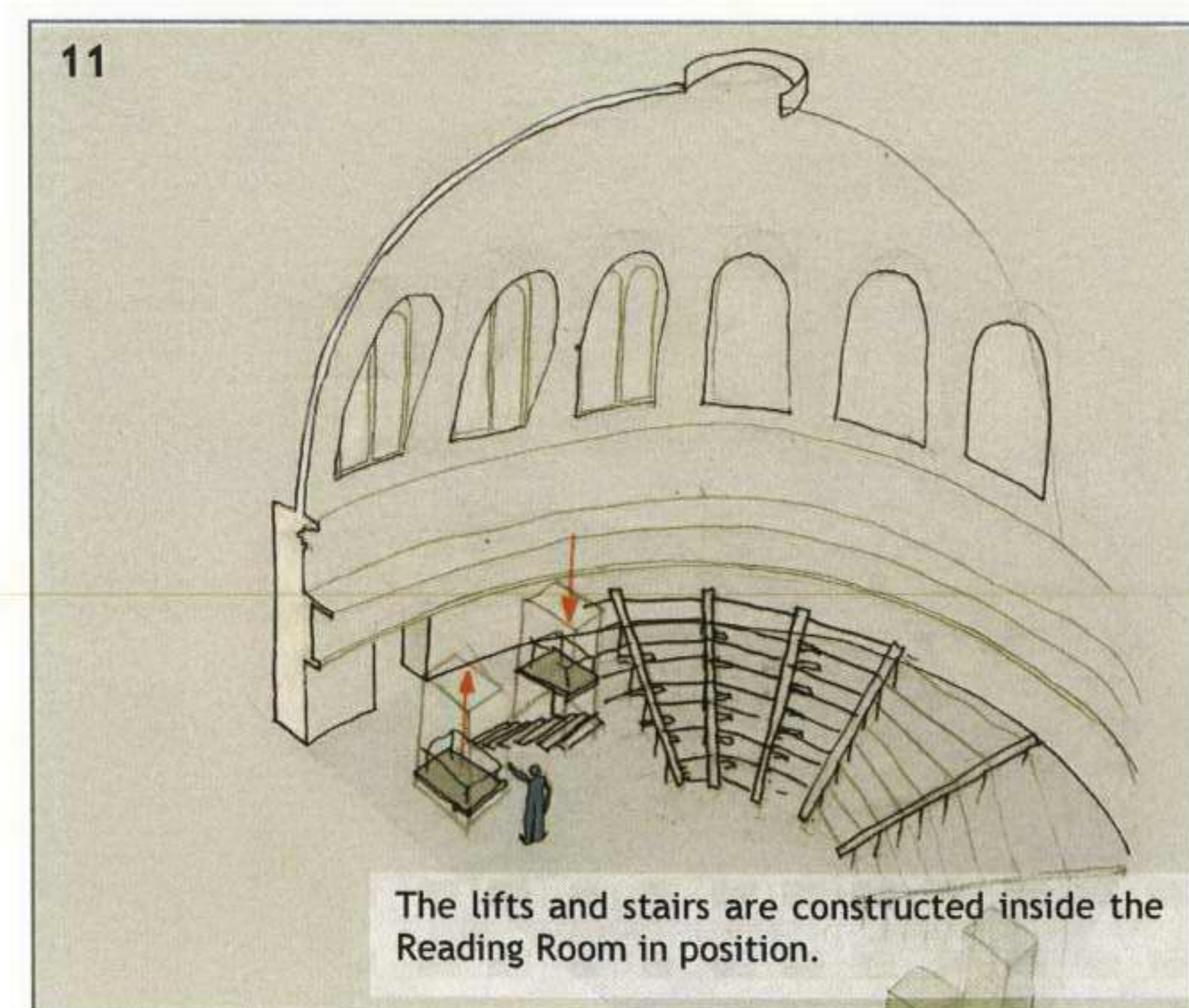
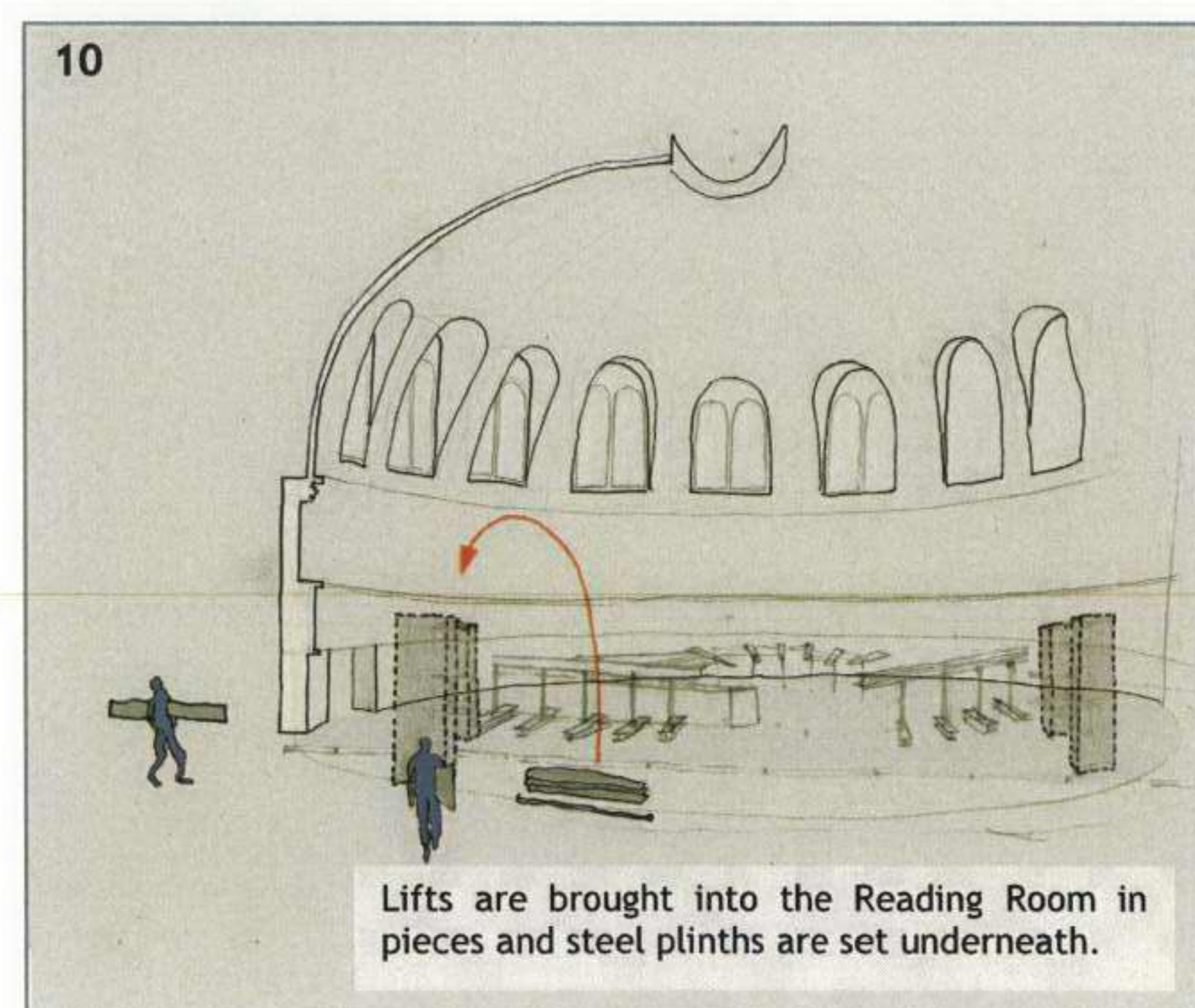
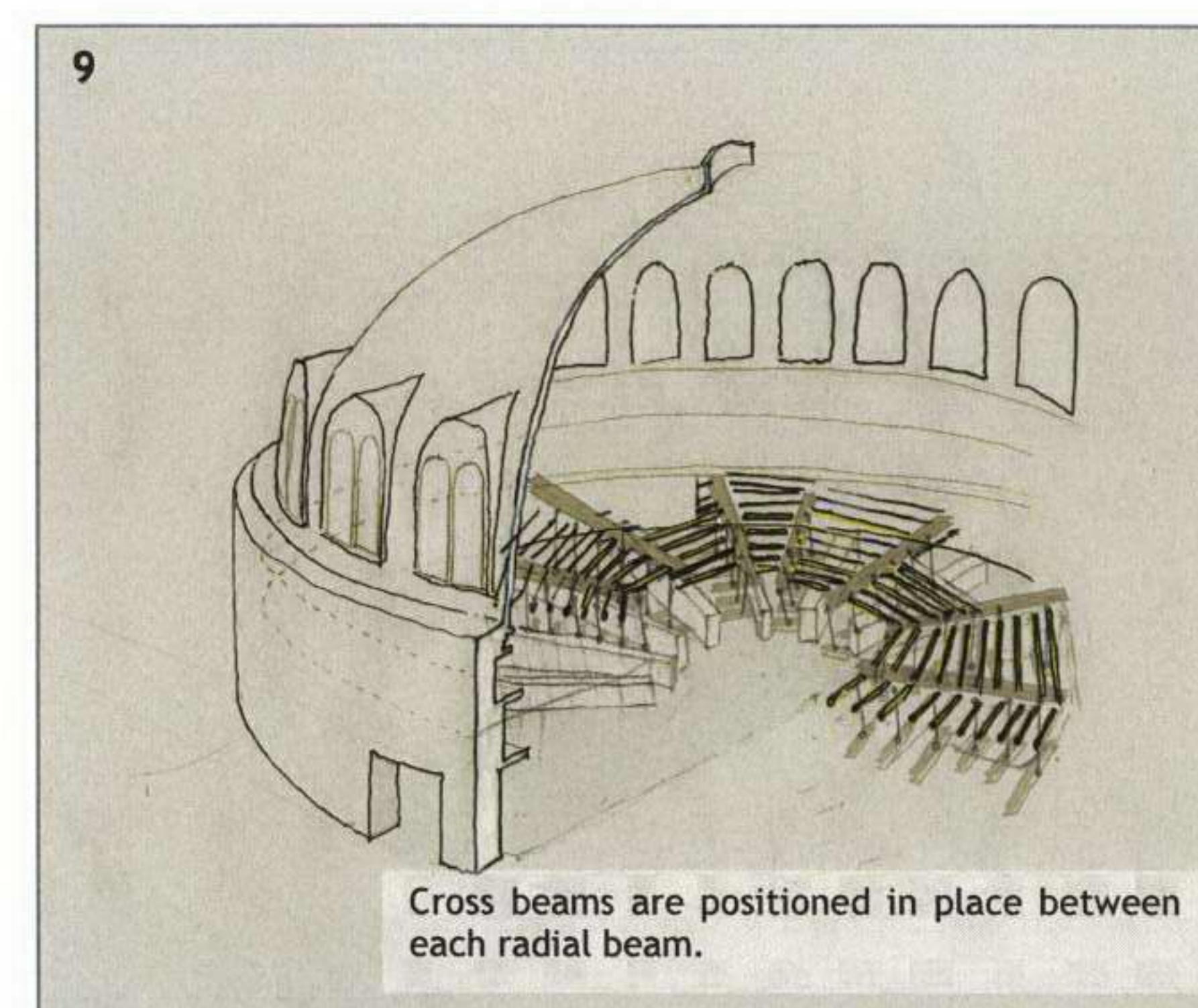
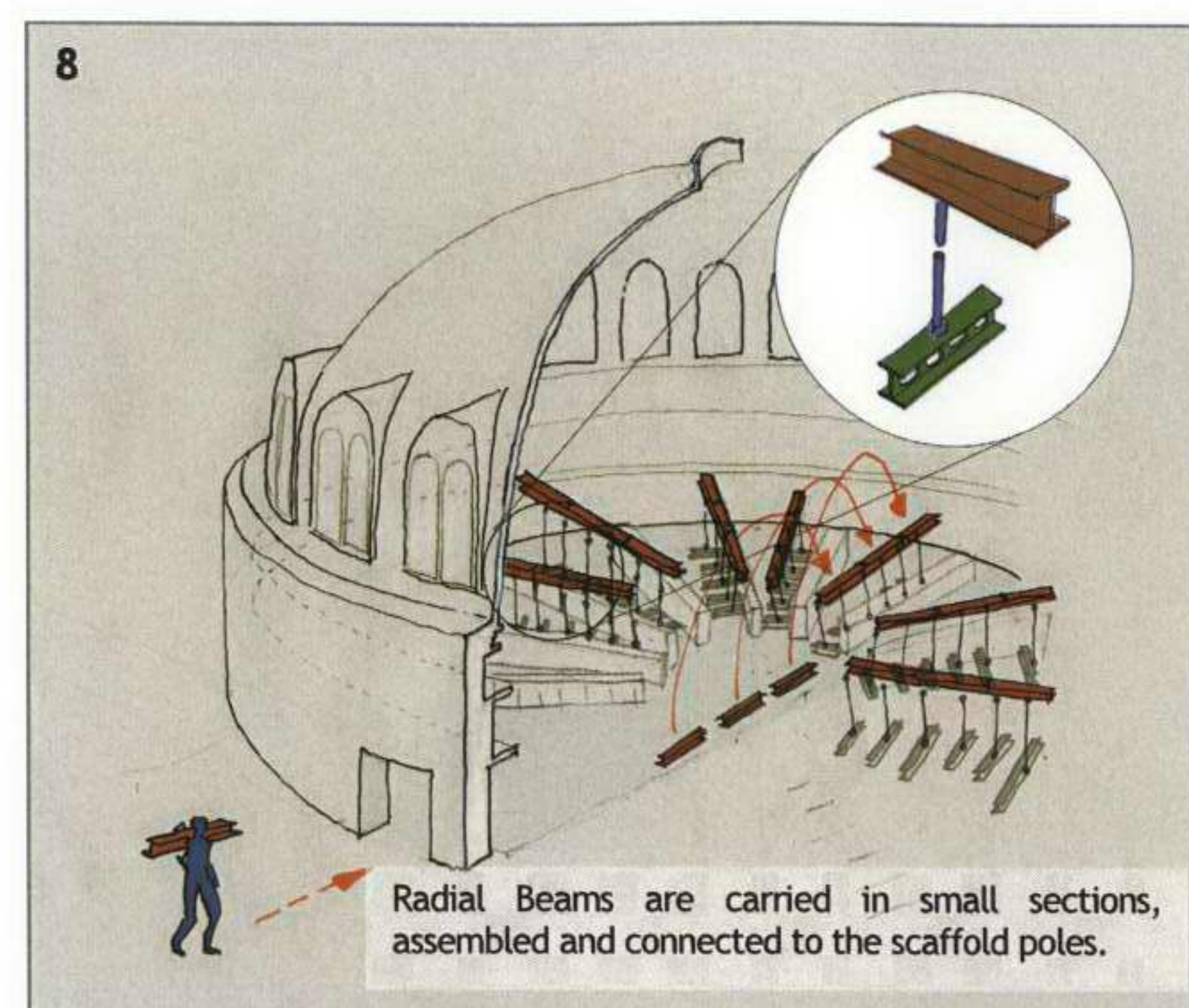
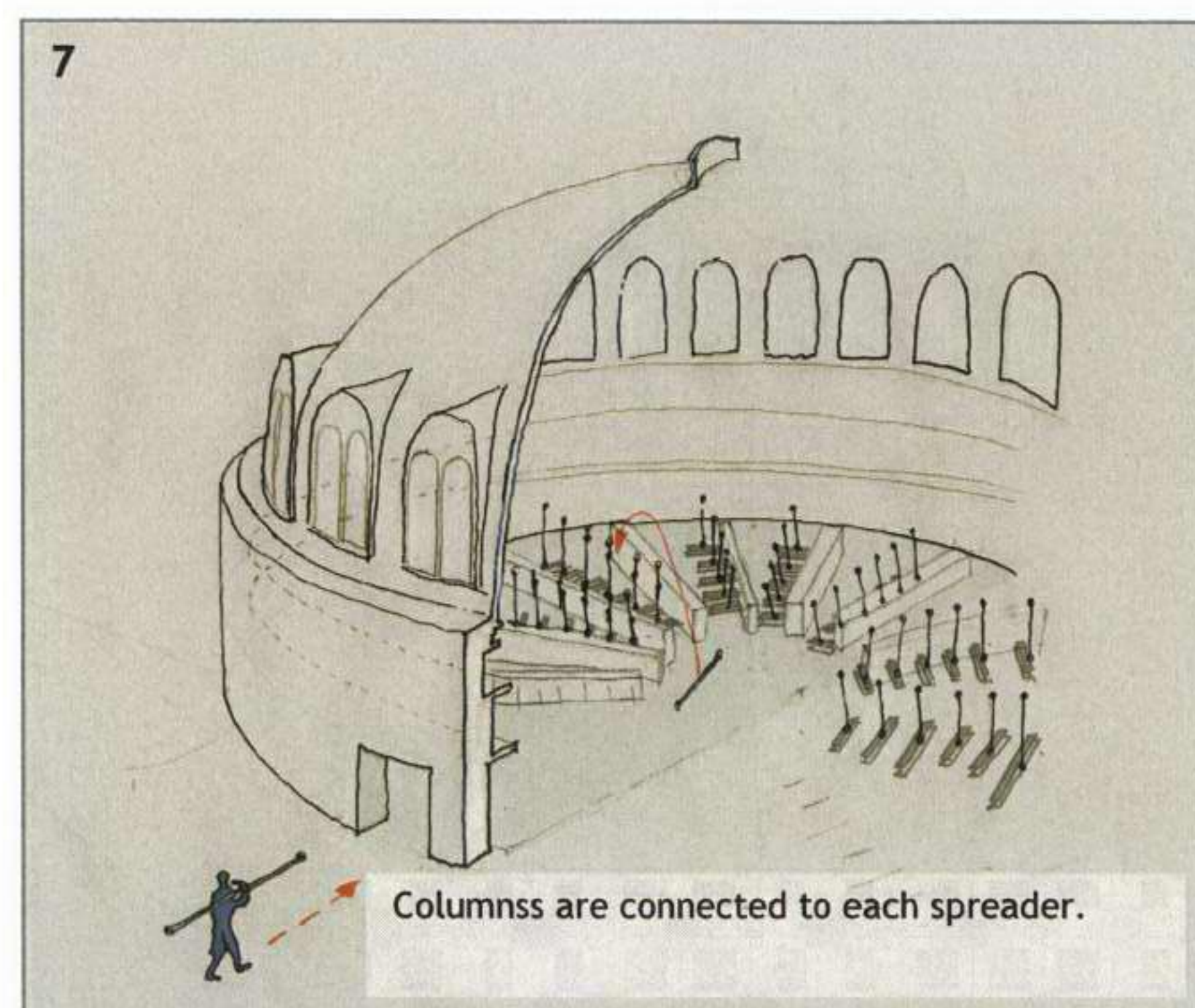
Feasibility Report

atelier one

The following sketches by Ateleir One outline the building of the exhibition inside the reading room



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Continuing sequence of sketches by Atelier One showing the building sequence