

Horniman Aquarium Chiller Enclosure Building

Timber Frame Structural Performance Specification

This Specification is to be read in conjunction with Harley Haddow Minimum Requirements of Designers document and all relevant Architect's drawings and specifications.

The timber frame superstructure shall be designed and fabricated by a specialist manufacturer in accordance with the following: -

1. All aspects of the timber frame structure shall be designed to comply with BS 5268 Structural Use of the Timber: parts 2, 3 & 6, BS 6399 Loadings for Buildings: parts 1, 2 & 3 and all other relevant British Standards, Building Regulations and, if required, NHBC standards in all respects.
2. General arrangement and detail drawings showing every aspect of the construction, together with supporting structural calculations and a Timber Frame specification shall be submitted to the Engineer and the Architect for review prior to fabrication.
NOTE - additional information may require to be prepared by the timber frame supplier for submission to Building Control to allow issue of a Building Warrant or issue of an Amendment of Warrant.
3. Disproportionate Collapse – a statement on the Design Methodology and all necessary calculations and details are to be provided to confirm that the timber frame structure is sufficiently robust to sustain a limited extent of damage or failure without a disproportionate level of collapse occurring.
4. Stability criteria shall be in accordance with relevant design standards. Structural stability for the building may be achieved by any of the acceptable methods, which can include:
 - a. Sheathed timber frame shear/racking walls.
 - b. Portal frame action.
 - c. Bracing.
 - d. Attachment, by bolting, to the existing building.
5. The Design shall demonstrate that adequate provision for stability will be achieved in both the temporary and permanent states.
6. Where the wind load used to calculate the forces to be resisted by the timber frame walls is derived using the modification factor K100 in accordance with BS5268: Part 6, due account should be taken of any movement joint locations when determining the value of K100. It is the timber frame designer's responsibility to ascertain the proposed locations of all movement joints prior to carrying out the timber frame design.

7. The timber frame or any of its component parts, shall not rely on any other structural or non-structural elements for support or restraint. The design should take account of the following:
 - a. Wall panels to parapets, barriers, balconies, balustrades etc. shall be designed to resist the horizontal imposed loadings and/or wind loadings set out in BS 6399: parts 1 & 2.
 - b. Stability of dado wall panels to conservatories etc. shall be designed to resist the vertical and lateral loads imposed by the conservatory superstructure.
8. The Timber framed structure shall be securely tied/bolted down to the floor slab/substructure to prevent uplift/overturning/sliding under the worst possible wind loading case.
9. Joist Hangers:
 - a. Joist hangers shall be suitable for the joist width and depth and the required load.
 - b. All joist hangers shall be specified on the timber frame drawings.
 - c. Joist hangers for engineered timber I-joists shall be proprietary framing connectors appropriate to the joist size specified.
 - d. All proprietary timber connectors including joist hangers, framing anchors and truss clips shall be nailed in full accordance with the Manufacturer's recommendations. All holes in each fixing should be nailed.
10. Wind loads are to be assessed in accordance with BS 6399 Part 2 using the following:-
 - a. Site Wind Speed: 24.5 m/s
 - b. Site altitude: 106m at ground level
 - c. Ground Roughness: Town
 - d. Topography: Non-Significant