

General Notes

Ove Arup & Partners drawings are to be read in conjunction with the Architectural drawings. Contractor to notify Architect of discrepancies between structural drawings or other drawings.

All dimensions are in millimeters unless noted otherwise.

Do not scale from the drawings or the computer digital data. Only figured dimensions are to be used.

See Architect's drawings for:

- Setting out dimensions not shown on structural drawings.
- Details of all rebates, arrises, chamfers and fixings.

The Contractor shall be responsible for the design, fabrication, erection and removal of all temporary works and shall provide all temporary bracing and back propping necessary to maintain structural stability during construction. Read in conjunction with Arup suggested construction sequence requirements.

Loading:

Dead Loads
1.05 kN/m²

Imposed Loads
2.5 kN/m² + 1 kN/m² (Partitions)

Timber Notes

Softwood shall be: Stress graded to BS 4978 or the grading rules of the Canadian NLGA or the USA NGRDL, and so marked.

Strength classification to BS 5268: Part 2.

Maximum service moisture content: Internal - 15% the moisture content is to be maintained to within 3% of the maximum specified during fabrication, transportation and storage.

Plywood as specified shall be: Manufactured in accordance with the relevant British, American, Canadian, Finnish or Swedish standards as listed in BS 5268: Part 2, and so marked.

Chipboard for flooring shall be in accordance with BS 5669: Type 2.

Fastenings and Accessories
General: Anti-corrosive finish to be:
a) Galvanizing to BS EN ISO 1461, or
b) Zinc or cadmium plating to BS 1706: Class A, or appropriate requirements of BS 3382: Parts 1 and 2, or
c) Sheradizing to BS 4921: Class 1 anti-corrosive finishes to fastenings used to secure hangers, anchors, and straps to be compatible.
Nails to BS 1202: Part 1.
Wood screws to BS 1210.
Coach screws to BS 1494: Part 2.
Bolts and nuts to BS 4190.
Washers to BS 4320.
Purpose made metal plate fastenings, gusset plates, framing anchors, joist hangers to BS 6178: Part 1 or in pressed or seam welded mild steel to BS EN 10025 or BS EN 10113.

Applied treatments: Timber in the following locations shall be treated to BS 5268: Part 5 as specified: Battens, floor joists etc.
General: All applied treatments shall be compatible with each other and with the metal components and adhesives. All treatments are to be applied before delivery to site.

All joints shall be formed in accordance with the appropriate recommendations of BS 5268: Part 2 and any other requirements stated.

Notches and holes in structural timber will not be permitted without agreement by OAP Structural engineer.

Masonry Notes

The Contractor shall allow for the special category of manufacture as detailed in clause 27.2.1.2 of BS 5628: Part 1.

The Contractor is responsible for the safe handling and installation of all lintels and padstones and is to ensure sufficient lifting equipment is available to avoid manhandling.

All junctions between load bearing masonry walls are to be fully bonded UNO.

All blocks in load bearing blockwork construction to be 10N UNO.

All bricks in load bearing construction to have min. crushing strength of 27.5N/mm².

Mortar designation to be: Class iv

Above DPC class iii.

All ancillary products to be stainless steel grade 304 UNO.

Block densities to be:

100 block 2000kg/m³ (maximum).

Suggested Construction and Work Operations

The following is a suggested sequence of construction and work operation for the proposed remedial works.

It has been prepared to assist the contractor in understanding the many constraints imposed on the works by the condition of the existing building, the proposed works and the restriction of the site.

It is not a definitive sequence of structural operations that must be undertaken, but rather a guide to help the contractor prepare a tender and plan the work. The contractor can propose an alternative sequence of operations or sequence of work. The responsibility for the phasing sequence of works for the removal of the existing timber floor and the installation of the new structural steel beams and timber joists will be the Contractor's

Currently the ceiling of the MBB room is supported on a scaffold structure within the room. The majority of the floor boards, partitions in the rooms above have been removed to allow full access to the failed oak beam.

- The Contractor should undertake a full dimensional and level survey of the failed timber beam and floor structure to identify precise positions and levels. This information is required to allow the steel beams, etc, to be fully fabricated before delivery to site.
Note - Hot works, welding, etc, must **NOT** take place within the building as it is considered too great a fire risk.
- The Contractor should survey the existing support scaffold to assess its adequacy and suitability for the proposed installation of the steel beams. The Contractor should provide written confirmation of his acceptance of the existing scaffold structure. If the Contractor does not accept the existing scaffold he should propose and alternative support system for the works.
- The existing and any new scaffold structure **must** be propped down through the building to ground or to a structure that is capable of carrying the loads and forces from the proposed works. The Contractor is to submit his proposal in writing to the Architect at least 14 days before any works to remove the existing scaffold or install an alternative support system before any works are carried out.
- The Contractor must ensure that damage to existing finishes is prevented by providing adequate measures to ensure a safe distribution of loads and the prevention of local or intense point loads. Measures such as double scaffold boards in two directions, in conjunction with ply sheeting to distribute loads should be considered by the contractor.
- The failed oak timber beams and floor structure of the rooms above are to be removed. The Contractor's proposals for the removal should be submitted to the Architect.
- It will not be possible to take the sections of the steel beams through the building. Installation must be through the windows of the rooms above the MBB room, or if preferred through two windows of the MBB room. The former will require the beams to be lowered into position, the latter will require the beams to be lifted into position. A scaffold platform constructed outside the building should be considered to assist in the installation and maneuvering of the sections of the steel beams into the rooms.
- Placing of the steel beams onto the decking should be possible by direct craneage from

the access road in front of the east elevation of the House. Alternatively, the sections could be lifted over the steps up to the higher ground level in front of south elevation of the house onto trolleys and then to the base of the platform scaffold, and then winched / hoisted up to window level before being hoisted into the rooms. The platform and scaffold will need to be designed for the loads imposed by the placing of the steel beams.

- The two sections of the steel beams should be positioned and supported until the full strength splice connection has been completed and support can be achieved on the padstones.
- Construction of the padstones will involve opening up large pockets in the existing masonry walls. The formation of the holes may destabilize the surrounding masonry. The Contractor should locally prop the masonry to prevent movement unit the beams have been installed and the wall made good.
- When the beams have been installed and **ALL** loads safely transferred the propping system can be removed.
- Note:-** Fire is considered to be a significant risk during the installation of the beams, and consequently all hot works with in the building have been banned. It may be necessary for some drilling of the steel member to take place. If drilling is necessary **ALL** drill arisings **MUST** be captured and immediately removed from the building, and the area dampened down immediately after the drilling operations and again at the end of the day.
- The remedial work requires the oak beam to be cut through in several locations. Drilling or cutting of the oak beams will create significant hot arisings. All timber arisings **MUST** be captured and immediately removed from the building, and the area dampened down immediately after the drilling operations and again at the end of the day.
- There is a risk that dust and debris within the cracks and shakes and chases within the existing oak beams may ignite. In addition to the dampening down all shakes and chases in the oak beam and the secondary beams should be thoroughly wetted immediately after cutting to ensure that the internal areas of the beams are saturated. The cut sections of beam must be immediately removed from the building.

Steelwork Notes

All steelwork is to comply with the National Structural Steelwork Specification for building construction.

Unless noted otherwise, steel grades shall be:

- Universal beams and columns - Grade S275
- Rolled joists, channels, tees, angles - Grade S275
- Hollow sections - Grade S355
- Fittings (plates, angle cleats etc.) - Grade S275

to BS 5950.

Ordinary bolts and nuts shall be grade 8.8 to BS EN 20898, unless noted otherwise.

HSFG bolt assemblies shall be in accordance with BS 4395.

Full strength splice connections are to be designed by the Steelwork Contractor. Where connections are detailed on the drawings, the Steelwork Contractor is to confirm in writing his acceptance of the design for fabrication purposes.

Steelwork Contractor design work is to be submitted for review by OAP Structural engineer.

Steelwork Contractor is to submit design calculations, shop drawings, welding procedures prior to commencing any fabrication.

Site welding is not to be carried out. All fabrication welds are to be:

- All welds 6mm PFW UNO.

Steelwork Contractor to supply and install grout around and under base plates. Grout to be SBD 5 Star or similar approved.

Steelwork is to be corrosion protected with the following systems:

Blast clean to SA 2 1/2.

75 microns of two pack zinc rich epoxy primer complying with BS 4652. Steel embedded in walls is to have two coats (125 microns/coat) of high build bitumen paint.

NO hot working will be allowed within the building. All welding must be carried out before the steelwork is placed within the building. The Contractor is to carry out a detailed survey of all timbers to be supported by the new steel beams to allow **FULL** fabrication of the beams prior to delivery.

Steel surfaces in contact are not to be painted until contact has been made and the connections completed, when a full compliant coating is to be placed.

T2	19/04/12	WH	DS	DS
Tender Issue				
T1	23/12/11	LC	DS	DS
Tender Issue				
Issue	Date	By	Chkd	Appd

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Client
**Northern College MBB Room
Wentworth Castle**

Job Title
Michael Barrett Brown Ceiling

Drawing Title
General Notes

Scale at A2
NTS

Discipline
Structural

Drawing Status

Tender

Job No PP-10787	Drawing No S-GN-01	Issue T2
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