## Design Standards

- EC1: Actions on structures.
- EC2: Design of concrete structures.
- EC3: Design of steel structures.
- EC5: Design of timber structures.
- EC6: Design of masonry structures.

#### 2. Ke

- U.N.O. = Unless noted otherwise
- All dimensions in mm (U.N.O)

## 3. Steelwork

- Exact dimensions for of all new steelwork to be determined by fabricator/ builder on site prior to fabrication.
- Steelwork fabrication is to be in accordance with the NSSS for Building Construction 6th Edition CE Marking Version and include CE marking.
- Minimum Grade S275JO.
- All new steel beams supporting existing masonry walls to be predeflected by driving steel wedges between the bottom of the wall and the top flange of the beam and packing with dry pack mortar.
- Twin beams to be bolted back to back via M20 bolts at 0.5m max horizontal centres, aligned centrally.
- · All steelwork to be hot dip galvanised.
- Elements exposed within external wall cavities to receive 2 additional coats of bituminous emulsion locally.
- All beams bearing onto masonry to have a minimum end bearing of 225mm (see also padstones)
- All bolts to be grade 8.8. Minimum 2 No M12 bolts per steel to steel connection. Hot dip spun galvanised.
- All welds to be 4 mm fillet weld or full strength butt weld.
- Provide 30 minute fire protection to internally exposed steel beams via 15 thick 'Firecase' system by British Gypsum (or similar approved).
- Existing bearings to be enhanced and used where possible (as opposed to breaking out additional brickwork to create new bearings).

## 4. Masonry

- All new brickwork to have a minimum compressive strength of 20 N/mm²
- Depth of any chases in walls not to exceed 30mm.
- All mortar below dpc: Designation (ii)/ Strength Class M6.
- All dry pack mortar: 1:3 OPC:Sharp sand.

## 5. Concrete

- All concrete to conform to BS 8500-2
- · All mass concrete below ground: Designated mix GEN3.
- All mass concrete above ground: Designated mix RC25/30 (1:2:4 by volume OPC/ Sand/ Aggregate).
- All reinforced concrete: Designated mix RC25/30. Minimum 300kg/m<sup>3</sup> cement, 0.6w/c, 3.5% air entrainment with freeze/thaw resistant aggregate.

# 6. Precast Concrete

- Profiled galvanised steel composite deck at ground floor level to specialist detail.
- Design Loadings:
- o DL (finishes) = 1.75kN/m<sup>2</sup>
- o IL (flooring) = 5.00kN/m² UDL or 60kN-CL
- New composite slab at ground level to be 150mm thick RC25/30 concrete on Kingspan Multi deck 50, 0.9mm thick. A98 mesh top, 35mm cover.
- New pavement lights to cater for 60kN point load. Use Luxcrete P150-100 or similar.

## 7. Construction/ proprietary products

- All construction products used in the works are to carry the CE mark in accordance with the Construction Products Regulation (CPR).
- All proprietary products to be installed in accordance with manufacturer's recommendations.

### B. Lintels

- Minimum end bearings 150 mm placed onto full brick/ block.
- All proprietary steel lintels to be hot dip galvanised & insulated.
- All fabricated steel lintels to be hot dip galvanised and insulated.

#### Padstones

- Mass concrete padstones to be cast in-situ as bearings for all new steel beams supported on masonry.
- Padstones to be 460mm long, 200mm (min.) wide & 225mm high (LLNO)
- Pre-fabricated concrete padstones (if used) must be bedded onto full bricks or blocks and depth increased accordingly. Bearing onto cut bricks/blocks less than 65mm thick will not be acceptable.

### 10. Drainage

All rainwater drainage to connect to existing mains drainage.

## 11. Existing services

- All existing services to be re-routed temporarily (not all services are shown on drawings).
- Gas to be cut off temporarily & pipe route purged in accordance with suppliers health and safety requirements where required.

## 12. Miscellaneous

All proposed works are subject to intrusive investigation during the remedial works phase. All elements to be removed or altered should be fully exposed as soon as possible once works begin on site and proposals reviewed. The existing construction may require modifications to proposals shown. If required, refer back to Perega for further advice.

