2.4.4 DESIGN CODES

1. BS 8110: 'Structural Use of Concrete'
2. ACI 318: 'Building Code Requirements for Structural Concrete'
3. ACI Manual of Concrete Practice – the latest edition.
4. AISC 360
5. UBC 1997, Volume 2, 'Structural Engineering Design Provisions'
6. BS 8004: 'Foundations'
7. BS 5950: 'Structural Use of Steelwork in Buildings'
8. BS 8007: 'Design of concrete structures for retaining aqueous liquids'
9. BS 5628: 'Code of Practice for Use of Masonry'
10. IBC 'International Building Code', excluding seismic design provisions.

2.5 PERFORMANCE CRITERIA

The following modelling and design criteria shall be followed.

2.5.1 DESIGN LIFE

1. Unless otherwise specified, 50 year design life of the structure shall be adopted.

2.5.2 COMPUTER MODELS, STRUCTURAL ANALYSIS AND DESIGN REQUUIREMENTS

2.5.2.1 STRUCTURAL ANALYSIS AND DESIGN

The designer shall submit detailed design criteria as well as design assumptions and should contain at minimum, the following information (Wherever is applicable):

1. Description of the site: Location, BU name, plot number, project ID, etc
2. Description of building: Building size, height, basements, podium floors, typical floors, setbacks, floors use, etc
3. Description of structure: Foundation type, vertical members, lateral forces resisting system, floor slabs scheme, building separations, etc

4. Applied standards in loading and design.
5. Materials properties: Concrete & reinforcement grades, modulus of elasticity, shear modulus, density of block works, etc
6. Fire resistance requirements: Fire rating, concrete cover to reinforcement, minimum reinforcement, etc
7. Durability requirements: Design life of the structure, concrete quality for sub and super structure, minimum cover to reinforcement, protection measures for concrete below and above ground, crack width & deflection control.
8. Robustness requirements as per relevant standards.
9. Damping: Proposed damping value for seismic design, damping value for wind loading and occupancy comfort control.
10. Analysis and design Software, spreadsheets used for design or/and verification, etc
11. Detailed calculations shall include:
    a. Gravity loads correspond to different floors.
    b. Basic seismic parameters estimate.
    c. Weight of the building for seismic calculations.
    d. Static base shear.
    e. Vertical component of seismic loads.
    f. Discontinuity and vertical irregularity considerations.
    g. Accidental torsion calculations.
    h. Directional effect of seismic loads.
    i. Scale factors calculations.
    j. Interconnection requirements
    k. Wind loads parameters and coefficients or wind tunnel study report.
    l. Basic load combinations for ultimate and service states design.