

31253- BUILDING SERVICES - II

DETAIL SYLLABUS

UNIT I MECHANICAL SERVICES

MECHANICAL SERVICES - Lifts – Location — Components – Types of Lifts – Sizes – Lift Well - Escalators – types – standards – uses – conveyers - Preparing the provision in construction and sections through lift-well and escalators.

UNIT II HVAC (HEATING, VENTILATION & AIR CONDITIONING)

VENTILATION – Natural and Mechanical Ventilation, Conditions of Comfort, Principle of Refrigeration. Comfort conditions, temperature control, humidity control, air filtration - Mechanical ventilation in buildings - Fans, blowers and air filters.

HEATING - Heating of spaces – local and central heating – Heating equipments - Comfort conditions, temperature control, humidity control, air filtration

AIR CONDITIONING – refrigeration and air cycle - Various systems of air conditioning - Window A.C Unit, split, Package, Direct Expansion, Chilled water System - Scope – Layout of Ducts –, Fan Coil System – Blowers & Diffusers, Cooling Towers – air conditioning layout, fittings and fixtures

UNIT III FIRE HAZARDS, SAFETY & DESIGN REGULATIONS

Fire, causes of fire and spread of fire - Fire fighting, protection and fire resistance - Firefighting equipment and different methods of fighting fire - Code of safety, fire regulations - Combustibility of materials - Fire escape routes and elements – planning and design Wet risers, dry risers, sprinklers, smoke detectors, fire dampers, fire - doors, water and curtains etc.

UNIT IV ACOUSTICS

Acoustics of Buildings – Characteristics of Audible Sound – Principles of Acoustics – Acoustic Defects – Sound Absorption Materials Acoustics Treatment of Buildings such as Cinema Theatre, Radio Broadcasting Studios, Concert Halls, Cold storage units, Conference Hall, Seminar and Lecture Hall Sound Insulation of Buildings – Sound Insulation and Sound Absorption – Practical consideration of Noise Control and Sound Insulation of Buildings Preparation of layout for the above rooms

UNIT V 5.1. MAINTENANCE OF BUILDINGS:

Introduction - Maintenance works in buildings - Painting - Flooring – Doors and windows - Sanitary appliances - Water supply and drainage system -Cracks in concrete - Types - Common methods of crack repair – preventive maintenance - special precautions for repairs of building

5.2. DEFECTS AND REPAIR WORKS IN BUILDINGS:

Defects in buildings - Prevention of defects in buildings - Major causes of defects - Treatment of toilet sunken portion - Improper laying of weathering course - Maintenance works - Specification for weathering course – Lime jelly concrete with

tiles - Thermal insulation combined with water proofing for flat concrete roofs -
Expansion joints- water proofing - Repair of rainwater leakage in buildings.

REFERENCES

1. Fire Safety in Building – London – Thomas Adam and Charles Black, London.
2. Designing for Fire Safety – E.G. Bucher & A.C. Parhall – John Wiley & sons.
3. Fire & Human Behaviors – David Gunter – John Wiley & sons.
4. National Building Code of India, 1983