3.3NATIONAL BUILDING CODE OF INDIA

The National Building Code of India (NBC) is a comprehensive set of guidelines and standards for the planning, design, construction, and maintenance of buildings across India. The latest version is NBC 2016, issued by the Bureau of Indian Standards (BIS).

It serves as a model code that state and local authorities adopt (with modifications if needed) as their building bye-laws.

Purpose of NBC

- Ensure safety, health, comfort, accessibility, and sustainability in buildings.
- Provide minimum standards for structural design, fire protection, sanitation, and building use.
- Promote uniformity in building practices across the country.

Structure of NBC 2016

NBC is divided into 12 parts and further sub-divided into chapters (sections). Each part deals with a specific aspect of building planning and construction.

Key Provisions from NBC 2016

1. Part 0 – Integrated Approach

- Emphasizes **coordination between architects, engineers, fire experts, and planners**.
- Promotes inclusive design, safety, and sustainability.
- Encourages **green building practices**.

2. Part 1 – Administration

- Deals with **development control rules**, permits, approval processes.
- Lays down responsibilities of professionals.
- Discusses **occupancy certificates**, enforcement, and penalties for violations.

3. Part 2 – Development Control Rules and General Building Requirements

Feature	NBC Guidelines Example
FAR (FSI)	Depends on plot size, zone, and road width
Setbacks	Min. setbacks based on plot area and height
Building height	Linked to road width and FAR
Plot coverage	Max 60–75% in residential areas
Staircase width	Min. 1.0–1.5 m depending on occupancy
Room sizes	Min bedroom: 9.5 m²; kitchen: 5.0 m²

4. Part 3 – Fire and Life Safety

- Fire-resistant construction materials
- Minimum **number and width of staircases**
- **Fire exits** with illuminated signs
- **Sprinklers and smoke detectors** in high-rise and assembly buildings

- **Fire lifts** in buildings above 15 m height
- Firefighting shafts, wet risers, fire alarms, and hydrant systems

5. Part 4 – Structural Design

- Based on **IS codes** (e.g., IS 456 for concrete, IS 800 for steel)
- Considers:
  - **Dead and live loads**
  - **Wind loads** (IS 875)
  - **Seismic loads** (IS 1893)
- Requires design by qualified structural engineers

6. Part 5 – Building Materials

- Specifies **standards for materials** used in construction:
  - Concrete, steel, timber, glass, etc.
- Covers **material testing**, **durability**, and **fire resistance**

7. Part 6 – Building Services

- **Plumbing**: water supply, drainage, sanitation
- **HVAC** systems
- **Electrical installations**
- **Telecommunication** and IT infrastructure
- Includes rainwater harvesting, solar heating, and waste management

8. Part 7 – Construction Practices and Safety

- Construction site safety for workers
- Scaffolding, hoisting, material storage
- Health and hygiene facilities on site

9. Part 8 – Building Services (Special Requirements)

- **Lighting and ventilation** standards
  - Natural ventilation: min. window area = 10% of floor area
  - Artificial lighting levels
- **Acoustics**, **sound insulation**, and **daylighting** guidelines
- Thermal comfort and indoor air quality

10. Part 9 – Plumbing Services

- Water supply system design (pressure, pipe sizing)
- Sanitary drainage and venting
- Septic tanks and sewage treatment
- Rainwater harvesting systems

11. Part 10 – Landscape Development

- Guidelines for:
  - Site grading
  - Tree planting

- Soil erosion prevention
- Water conservation

12. Part 11 – Approach to Sustainability

- Recommends:
  - **Use of recycled materials**
  - **Solar passive design**
  - **Low-energy systems**
  - **Green roofs and walls**
  - **Energy-efficient lighting and appliances**

13. Annex – Accessibility (Barrier-Free Design)

- Ramps with 1:12 slope and handrails
- Tactile paths and Braille signage
- Accessible toilets, elevators, and corridors
- Required in all public buildings (educational, commercial, institutional)