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The Gazette of Meghalaya

PUBLISHED BY AUTHORITY

No. 12 **Shillong, Thursday, March 25, 2021** **4th Caitra, 1943 (S. E.)**

Separate paging is given on this part in order that it may be filed as a separate compilation.

PART-IIA

GOVERNMENT OF MEGHALAYA

NOTIFICATION

The 9th March, 2021.

No.UAU.73/2016/Pt/402. - In exercise of the powers conferred under Section 74 of the Meghalaya Town and Country Planning Act, 1973 as amended (Assam Town Planning Act, 1959) and the National Building Code 2016, the Government of Meghalaya is pleased to notify the **Meghalaya Building Bye-Laws, 2021** and the same is published under Sub-section 2 of Section 72 of the said Act.

The Meghalaya Building Bye-Laws, 2021 shall come into force with immediate effect.

M. R. SYNREM,
Commissioner & Secretary to the Govt. of Meghalaya,
Urban Affairs Department.

No.UAU.73/2016/Pt. - In exercise of the powers provided under Section 74 of the Meghalaya Town and Country Planning Act, 1973 as amended (Assam Town Planning Act, 1959) and the National Building Code 2016, the Government of Meghalaya is pleased to notify the Meghalaya Building Bye-laws, 2021, namely:-

SECTION – A
ADMINISTRATION

A1 SHORT TITLE, EXTENT AND COMMENCEMENT

A1.1 **Short title**:- These byelaws may be called the Meghalaya Building Bye-Laws 2021.

A1.2 **Extent:**- These bye-laws shall apply to all the Master Plan Areas, Municipal areas and Scheme Areas within the State.

A1.3 **Commencement**:- These bye-laws shall come into force with effect from the date of Notification in the Official Gazette.

A1.4 **Applicability**:- They shall apply to the building activity or land given in A1.4.1 to A1.4.4 below:-

A1.4.1. When a building is newly erected, the bye-laws shall apply to the designs and construction of the building.

A1.4.2. Where the whole or any part of the building is dismantled/repaired.

A1.4.3. Where the whole or any part of the building is demolished.

A1.4.4. Where the occupancy or use of the building is changed.

A2 DEFINITIONS

A2.0. For the purpose of the Bye-laws the following definitions shall have the meaning indicated against each.

A2.1. **'Act'** Means the (i) Meghalaya Town and the Country Planning Act, 1973 and or as amended from time to time (ii) United Khasi and Jaintia Hills District (Establishment of Town Committees) Act, 1960 (iii) Jaintia Hills Autonomous District (Establishment and Administration of Town Committees) Act, 1975 and (iv) Garo Hills District (Administration of Town Committees) Act 1950.

A2.2. **'Alteration**:' - Means a change from one occupancy to another or a structural change or change of any component of the building.

A2.3. **'Approved'** - Means approved by (1) the Chairperson of Meghalaya Urban Development Authority or any Officer to whom the power has been delegated by the Chairperson of the Authority, (2) Agency or officers appointed by the Autonomous District Councils.

A2.4. **'Applicant'**: - Means every person who writes to the Authority of his or her intention to erect or re-erect or alter a building.

A2.5. **'Authority**:' - Means the Meghalaya Urban Development Authority / Autonomous District Councils as applicable.

A2.6. **'Balcony'** :- Means the horizontal projection of a building including handrail, balustrade or a parapet to serve a passage or a sit-out place.

A2.7. '**Basement(s)'-** Means the lower storey / floor(s) of a building, partly below the ground level. It shall be applicable only in flat terrain.

A2.8 '**Cellar(s) or Underground floor(s)' -** Means a room or floor which may be wholly underground.

Lower ground floor(s) - Means the floor(s) of a building below the ground floor which may be closed on at least one side.

The basement / lower ground floor / cellar / underground floor can be put to any of the following uses:

(a) Storage of house-hold or other goods of non- flammable materials;

(b) Dark room;

(c) Strong-rooms, bank cellars, service floors etc.

(d) Air-conditioning equipment and other machines used for services, hotel infrastructure and utilities of the building, e.g. Air conditioning Plant and Equipment, Water storage, Boiler, Electric Sub-Station, HT and LT panel rooms, Transformer Compartment, Control Room, Pump House, Generator Room, Staff Locker Room, Staff Changing Room, Staff Dining facilities without Kitchen, Back Office of Hotel (BOH), mechanical services, installation of electrical and fire fighting equipments and other services like kitchen store, housekeeping store, laundry, serving & store pantries and other essential services required for the maintenance / functioning of the building, etc.

(e) Parking places and garages;

(f) Note: Uses of basement / lower ground floor / cellar / underground floor from A2.7 and A2.8 (a) to (e) shall not be reckoned for the purpose of FAR.

(g) The cellar / underground floor shall not be used for living purposes. The use of Basement / Lower Ground floor for living purpose or functional use will be permitted provided the requirement of proper lighting, ventilation are complied and minimum floor height is 3.0 metres. In such cases the basement shall be reckoned for the purpose of FAR.

(h) Every basement / lower ground floor / cellar / underground floor shall have a minimum height of at least 2.4m from the floor to the underside of the roof slab or ceiling.

(i) Adequate lighting / ventilation shall be provided for the basement / lower ground floor / cellar / underground floor. Any deficiency may be met by providing adequate mechanical ventilation in the form of blowers, exhaust fan (one exhaust fan for 50 sq.m. of cellar / under ground floor area), air-conditioning system etc.

(j) Adequate arrangement shall be made such that surface drainage does not enter the basement / lower ground floor / cellar / underground floor.

(k) The walls and floors of the basement / lower ground floor / cellar / underground floor shall be water-tight and be so designed that the effect of the surrounding soil and moisture, if any, are taken into account in design and adequate damp proofing treatment is given.

(l) There shall be access to the basement / lower ground floor / cellar / underground floor providing access and exit. Ramps shall be permitted if they are proposed for construction.

(m) Bathroom and toilet shall be permitted in the basement / lower ground floor / cellar / underground floor with proper system for disposal of waste.

(n) The area of bathroom and toilet so permitted in the basement / lower ground floor / cellar / underground floor shall be counted towards FAR calculations.

(o) Where cellar / under ground floor is proposed to be constructed, it shall be allowed after leaving the mandatory setbacks and the area beyond the covered area shall be exempted from calculation of Plot Coverage.

A2.9. **'Chajja'**:- Means a projection or horizontal structure overhang usually provided over opening of external walls to provide protection from sun and rain or for architectural consideration.

A2.10 **'Chimney'**:- Means an upright shaft containing one or more flues provided for the conveyance to the outer air of any product of combustion resulting from the operation of any heat producing appliance or equipment employing solid or gaseous fuel.

A2.11 **'Clinic'**:- Means a diagnostic centre where patients are examined and investigated for diagnosis and relevant advices are given for management but the patients are not admitted as indoor patients as in a hospital or nursing home. "Polyclinic" means an institution of a group of Doctors for examinations, diagnosis and advice to the patients belonging to various specialties in medicine. The basic difference of a Clinic from a hospital or a nursing home is that the patients are not kept in its premises for diagnostic or other therapeutic purposes as is done in a nursing home or hospital.

A2.12 **'Covered Area'**: - Means the area of any floor of a building, but does not include the space covered by:

a. Compound wall, gate, slide/ swing door, open ramp, canopy, porch, pergolas, verandahs, balconies which are open on at least 3 sides and areas covered by chajja or similar projections and secondary / emergency / fire exit staircases which are uncovered and open at least on three sides and also open to sky.
b. Drainage culvert, conduit, catch-pit, gully-pit, chamber, gutter and the like.
c. Garden, rockery, well and well structures, plant nursery, water pool, swimming pool (if uncovered), platform round a tree, tank, fountain, bench, platform with open top and/or unenclosed on sides by walls and the like.
d. Sentry sheds, transformer / sub- stations sheds.
e. Access to the basement / lower ground floor / underground floor, if uncovered.

Note: *secondary / emergency / fire exit staircases: If more than 1(one) such staircases are provided, then 1 (one) staircase with the highest area will be considered for the purpose of covered area.*

A2.13 **'Plot Coverage'**: - Means the quotient obtained in terms of percentage, by dividing the area of a floor having maximum covered area by plot area, i.e.

$$\text{Plot Coverage (PC)} = \frac{\text{Area of a floor having maximum covered area x100}}{\text{Plot area}}$$

A.2.14 **'Compliance'** – Means a verification of the properties of construction materials based on test data and verification of the strength and structural adequacy for various components of buildings and structures.

A.2.15 '**Canopy or Porch'**: - Means a roof cover supported on pillars or cantilevered for the purpose of pedestrian or vehicular approach to a building.

A.2.16 **'Drain'**: - Means a conduit, channel or pipe for carriage of storm water, sewage, waste water or other water borne wastes in a building drainage system.

A.2.17 **'Demolished'**: - Means total dismantling of an existing building to erect a new structure.

A2.18 **'Drainage'**: - Means the removal of any liquid by a system constructed for this purpose.

A2.19 **'Exit':** - Means a passage channel or means of egress from any building or floors area to a street or open space.

A2.20 **'Floor'**: - Means the lower surface in a storey one which one normally walks in a building.

A2.21 **'Floor' Area Ratio'** (F.A.R):- The quotient obtained by dividing the total covered area of all floors by the area of a plot, i.e.

$$\text{F.A.R.} = \frac{\text{Total covered area of all floors}}{\text{Plot area}}$$

FAR Exemptions –

(a) Mumty (Stair cover) over staircase on top floor, ducts / cut-outs, machine room for lift on top floor as required for the lift machine room installation shall not be taken for FAR calculations.

(b) (i) Area under emergency / secondary / fire exit staircases shall not be taken for FAR calculations.
(ii) Only one floor of the area under primary staircases/ escalators / lifts / atrium shall be accounted for calculations for FAR.
(iii) Area under lift shaft(s)/ escalators shall not be taken for FAR calculations.
(iv) Area used for Sentry sheds and transformer / sub- stations shall not be taken for FAR calculations.
(v) Access to the basement / lower ground floor / cellar / underground floor, if uncovered shall not be taken for FAR calculations.

(c) Rockery, well and well structures, plant, nursery, water-pool, swimming pool (if uncovered), platform around a tree, water tank, fountain, bench, ramps, compound wall, gate, slide, steps outside building, domestic washing place, swing, overhead water tank on top of buildings, underground suction tank having roof slab 0.50m above ground level, cooling tower of A.C. plant resting above the top roof slab and drainage culvert, conduit,catch-pit, chamber, gutter, culvert on drains shall not be taken for FAR calculations.

(d) Open projections such as balconies, chajjas, canopy, porch, verandahs, and architectural features serving no other function except that of decorations shall not be taken for FAR calculations.

(e) The use of basement / lower ground floor / cellar / underground floor for the uses as per A.2.7 and A 2.8 (a) – (e) and podium shall not to be taken for FAR calculations.

(f) Roof top machineries/towers, pantry services of open terrace restaurant, laundry services and any other appurtenant structure, etc., on the terrace shall not be taken for FAR calculations.

(g) Service floors in hotels, special buildings/projects, high rise buildings etc., shall not be taken for FAR calculations.

(h) Open to sky swimming pool & shower/changing rooms and open terrace restaurant shall not to be taken for FAR calculations.

A2.22 **'Ground Floor'**:- Means the floor from where the main entrance to the building is taken with reference to the primary road / footpath adjacent to the plot. The Floor(s) beneath the ground floor shall be termed as 'basement(s) / lower ground floor(s) / cellar(s) / underground floor(s)' etc., as the case may be.

A2.23 **'Ground Level'** - Means the surface(s) after formation cutting of the site from where the plinth of the building starts. In case of sloping site there may be 2 (two) or more such levels.

A2.24 **'Guest House or lodge'** – Means a building or a part of a building comprising not more than 10 (ten) rooms in all used for the purpose of boarding of persons with or without meal which shall include lodging dormitories;

A2.25 **Hotel -** Means a building or a part of the building comprising of more than 10 (ten) rooms and used for the purpose of boarding of persons with or without meal.

A2.26 **Home Stay:-** Means a part of a building comprising of not more than 5 rooms in all used for the purpose of boarding for tourists with or without meal.

A2.27 **'Habitable floor/room'**: - Means a floor/room of minimum height 3.0 metres occupied or designed for occupancy by one or more persons either for study, living, sleeping, eating, cooking, working but not including bathrooms, water closet compartments, laundries, serving & store pantries, corridors, cellars, attics, household, storage spaces etc., and space that are not used frequently or during extended period.

A2.28 '**Height of floor/room'**:- Means the vertical distance measured from the finished floor surface to the finished slab surface.

Minimum height of floors in building at any point shall be 3.0 Mts.

Provided that in case of sloping roofs (pitched, gabled, folded, etc.) the minimum height at the lowest part of roof shall not be less than 2.2 metres from the floor surface.

Provided that for verandah, Bathroom, W.C., passages, puja room, store room, stair cabin, minimum height shall be 2.20 mts.

A2.29 **'Height of Building':** Means the vertical distance(s) measured from the plinth(s) of the building to the terrace of the last floor of the building in the case of flat roofs; and in the case of pitched roofs, up to the point where the external surface of the outer wall intersects the finished surface of the sloping roof; and in the case of gables facing the road, the mid-point between the eaves level and the ridge.

Architectural features serving no other function except that of decoration or requirement as per architectural design for e.g. roof of churches, steeples / bell- tower / turrets / spires / domes, sloping roofs, etc., shall be excluded for the purpose of measuring heights. However,

where an attic is proposed within the roof, the height of the roof shall be reckoned for the purpose of building height.

Height Exemptions:-

The following appurtenant structures shall not be included in the height of the building:

(a) Roof tanks and their supports (with total height not exceeding 3m);

(b) HVAC, lift rooms and similar service equipment;

(c) Stair cover (MUMTY) not exceeding 3 m in height;

(d) Chimneys, parapet walls and architectural features not exceeding 1.5 m in height.

(e) Soft roofing erected on steel, wooden, composite frame on the terrace mentioned in byelaw A2.58.

(f) Roof Top Towers (RTTs)/machineries.

(g) Open terrace swimming pools & shower/changing rooms with deep end not more than 1.8m in depth.

A2.30 **"High Rise Building"** – Means a building exceeding 15 meters or more in height irrespective of occupancy.

A2.31 **'Lifeline Building'** – Means those buildings which are of post earthquake importance such as hospital building, power house building, telephone exchange building and the like.

A2.32 **'Multi-level car parking'** - means a building or structure designed specifically for the purpose of automobile parking having more than one floors or levels on which parking takes place by means of either static, automated or mechanical process comprising in the same building or structure, fully or in a part of it or any other independent structures like deck, steel frame, floors of the building or the structure as the case may be;

A2.33 **Multiplex –** Means the Cinema halls existing along with other activities like shopping mall, cafeteria, restaurant etc., in one campus with not less than 2 separate cinema screens in two different halls under the same complex having seating capacity as prescribed by the Government;

A2.34 **'Mezzanine floor'**: - Means an intermediate floor between any two floors above ground floor in all types of buildings, provided the same is counted as part of total permissible floor area ratio and height of the building. Mezzanine floor may be permitted with the maximum height of 2.40m and a maximum area of $^{1}/_{3}^{rd}$ the floor area of that particular floor.

A2.35 **'Materials Alteration'**: - Means a change of use in building materials in any existing building.

A2.36 **'Natural Hazard'** - Means the probability of occurrence, within a specific period of time in a given area, of a potentially damaging natural phenomenon.

A2.37 '**Natural Hazard Prone Areas'** - Means areas likely to have moderate to high intensity of earthquake or cyclonic storm, or significant flood flow or inundation or land slides/mud flows/avalanches, or one or more of these hazards.

Note: Moderate to very high damage risk zones of earthquakes are given as in Seismic Zones III, IV and V specified in IS:1893; moderate to very high damage risk zones of cyclones are those areas along the sea coast of India prone to having wind velocities of 39 m/s or more as specified in IS:875(Part 3;) and flood prone areas in river plains (Unprotected and protected) are indicated in the Flood Atlas of India prepared by the Central Water Commission, besides, other areas can be flooded under conditions of heavy intensity rains, inundation in depressions, back flow in drains, inadequate drainage, etc., as to be identified through local surveys in the development plan of the area and landslide prone areas as to be identified by State Government.

A2.38 **'Non-Structural Component'** - Those components of buildings, which do not contribute to the structural stability such as infill walls in RCC frame buildings, glass panes, claddings, parapet walls, chimneys etc.

A2.39 **'Open Space'**: - Means an area forming an integral part of the plot, left open to sky.

A2.40 **'Owner'**: - Means a person who receives the rent for use of land or building, or would be entitled to do so if they were let.

A2.41 **'Occupancy'**: - Means the change of function or use of the building.

A2.42 **'Parapet'**: - Means a low wall or railing built along the edge of a roof or floor not less than 90cm in height.

A2.43 **'Plinth'**: - Means the portion of a structure between the level of the ground and the floor immediately above the ground.

A2.44 **'Podium':-**Means a continuous projecting base or pedestal around a building, generally used for parking and movement of vehicles, as specified in these byelaws which may be partly or fully above ground level. It can be used for landscaping, plantation, tot-lot, swimming pool, deck, assembly space, movement, building tower etc.

A2.45 **'Quality Control'** - Means construction quality and to control variation in the material properties and structural adequacy. In case of concrete, it is the control of accuracy of all operations, which affect the consistency, and strength of concrete, batching, mixing, transporting, placing, curing and testing.

A2.46 **'Quality Audit'** - Means a requirement for an independent assessment by a third party, of the quality and seismic or cyclone resistant features of all the high rise building having covered area above 500 sqm, special buildings, special projects.

A2.47 **'Quality Assurance'** – Means that all planned and systematic actions necessary to ensure that the final product i.e. structure or structural elements, will perform satisfactorily in service life.

A2.48 **'Refuge Area'** - Means an area within the building for a temporary use during egress. It generally serves as a staging area which is protected from the effect of fire and smoke.

A2.49 **Registered Architect / Engineer / Town Planner / Firm etc.'** - Means a qualified Architect/Engineer/Town Planner/Firm etc., who has been given registration by the Authority.

Note: Presently, the legislation for profession of architecture is applicable in the country in the form of Architects Act 1972. Accordingly, the qualifications of architects, competence and service conditions followed in the profession of architecture are in accordance of the provision of the said Act and the rules made there under. Whereas, for other professions and professionals like engineers, developers/promoters for taking up any project there is no legislative framework available/applicable in the country.

In the absence of any such legislation, the appropriate qualifications, service conditions, professional fees and charges in the engineering profession etc., are varying and are not based on any uniform formula. Keeping the above in view, the qualifications/responsibilities and duties of Professionals are given in Appendix A.

A2.50 **'Retrofitting'** - Means upgrading the strength of an unsafe building by using suitable engineering techniques.

A2.51 **'Residual floor'** - Means a floor below the ground floor/ lower ground floor(s) not exceeding 1.65 metres in height from the floor to the underside of the slab or ceiling arising out of technical compulsions during construction in the case of sloping sites. This floor which may or may not have tie/plinth beams shall be used for non-habitable purposes and shall not be reckoned for the purpose of calculation of FAR or building height.

A2.52 **'Sanctioned Plan'**:- Means the set of plans and specification submitted under byelaw A4 in connection with a building and duly approved and sanctioned by the Authority.

A2.53 **'Set back'**: - Means the open space from the proposed building to the plot boundaries and laid down in each case by the Authority.

A2.54 '**Site or Plot'**: - Means a piece of land enclosed by the boundaries.

A2.55 **'Storey'**: - Means the portion of building included between the surface of any floor and the surface of the floor next above it.

A2.56 **'Service Floor(s)' -**– Means a non-habitable floor(s) generally provided in high-rise buildings and especially in hotels where services are co-ordinated / maintained like water supply, sewerage disposal system, electricity, staff locker room, staff changing room, staff dining facilities without kitchen, Back Office of Hotel (BOH), mechanical services, installation of electrical and firefighting equipments and services like kitchen store, housekeeping store, laundry, serving & store pantries and other essential services required for the maintenance / functioning of the building. Height of such floor shall not be more than 2.10m from floor to floor level and shall not be taken for FAR calculation but taken for building height calculation. Service floor(s) may be located at any level of a building.

A2.57 **'Service apartment'** -– Means a premise in which rooms are let out on short term basis.

A2.58 **'Soft Roofing Structures on Terrace**' :- Means of soft roofing structures on the terrace of a building with structural members like Steel members, Composite member, Wooden member frames and the like, and roofing sheets like CGI, PPGI, Tensile membrane, Canvas, etc., with no permanent fixtures of any type, are permitted subject to the following conditions:

1. In the case of commercial occupancy

(a) The maximum height of Soft Roofing Structures on the Terrace shall be 3.0 metres.

(b) Soft Roofing Structures on the Terrace should not exceed 50% of the terrace area inclusive of serving & store pantries, kitchen and water closet compartments, mumty, lift machine room, over-head water tanks, appurtenant structures, AC cooling towers, etc.

(c) Soft Roofing Structures on the Terrace should be open on at least 2(Two) sides of the terrace floor except for serving & store pantries, kitchen and water closet compartments.

(d) Parking requirements for the commercial uses under Soft Roofing Structures on the Terrace shall be provided within the plot/ building as per relevant provisions of the building byelaws.

(e) The overall FAR including Soft Roofing Structures on the Terrace shall not exceed the Compoundable FAR limit and it shall be exempted from building Height but not building permission fees.

(f) In case of High Rise Buildings, reasonable safety measures and provisions as per Part IV of NBC 2016 shall apply.

(g) An undertaking in the form of an affidavit should be furnished stating that the terrace shall not be used for habitable purposes.

2. The use of Soft Roofing Structures on the Terrace for the following occupancies are as under:

Sl. No.	**Type of Occupancy**	**Permissible limit of Soft Roofing Structures on Terrace / Covered Terrace**	**Permissible Use**
(a)	**(b)**	**(c)**	**(d)**
1	Residential Bungalow	40% of the terrace area	Covering for roof top machineries, laundry services, drying of linen, water tanks or any other activity required for such occupancy, covered storage, etc.
2	Residential Apartment	40% of the terrace area	As per 1(d) above.
3	Institutional	40% of the terrace area	As per 1(d) above + pantry services if deemed required.
4	Public or Semi-Public Business	40% of the terrace area	As per 1(d) above
5	Assembly	40% of the terrace area	As per 1(d) above.

(a) The maximum height of Soft Roofing Structures on the Terrace shall not exceed 2.40 metres and are exempted from FAR, building Height and building permission fees.

(b) In case of High Rise Buildings, reasonable safety measures and provisions as per Part IV of NBC 2016 shall apply.

(c) An undertaking in the form of an affidavit should be furnished stating that the terrace shall not be used for habitable purposes.

A2.59 **'Special Building'** – These are:

(1) hotel, commercial, industrial, storage, hazardous and mixed occupancies, where any of these buildings have covered area more than 500 sqm;

(2) educational / institutional/ public & semi public buildings having 9m height or more with covered area more than 500 sqm;

(3) all assembly buildings with covered area more than 500 sqm;

(4) buildings with basements/ lower ground floor/ Cellar/ underground floor with covered area more than 500 sqm.

(5) buildings, having area more than 300 sqm of incidental assembly occupancy on any floor.

A2.60 **'Special Projects'** – Means those projects / buildings with large scale activities such as Hotels, Public Institutions, Healthcare, Shopping Malls, Multiplexes, ICT / BPO's, Educational Institution having a minimum plot area of 50,000 sq.ft and a minimum single covered area of 40% of the plot area.

A2.61 **'To erect'**: - Means

(a) To erect a new building on any site whether previously built upon or not;

(b) To re-erect any building of which portion have been dismantled, burnt or destroyed;

(c) Conversion from one occupancy to another; and

(d) To carry out alterations.

A2.62 **'Travel distance'**: - Means the distance an occupant has to travel to reach the exit.

A2.63 **'Verandah'**: - Means a covered area with at least one side open to the outside.

A3 PROCEDURE FOR BUILDING PERMISSION

A3.1 Application for building permission

Every person who intends to erect, re-erect, or make material/structural alteration shall obtain building permit by giving an application in writing to the Authority in the prescribed form given in Form I & I(A). Application shall be accompanied by five copies of building plans and structural drawings and one copy shall be retained in the office of the Authority for record after issue of permission or refusal.

Building plans and structural drawings are to be submitted in minimum of A3 size paper.

A3.2. All Government Departments including Central and Semi- Government Departments shall forward copies of their plans to the Authority for sanctioning except Defence Department.

A4 INFORMATION ACCOMPANYING APPLICATION FOR BUILDING PERMISSION

A4.1 The application for building permission shall be accompanied by documentary evidence of plot ownership, the site plan, the building plan, general specification, Seismic certificate, Structural drawings, any other information/documents which may be sought by the Authority etc.

A4.1.1. Site Plan: - Shall be drawn to a scale not less than 1:200 and shall show

(a) Boundaries of the plot with dimensions

(b) Position of the plot in relation to the neighboring streets.

(c) Position of the building proposal in relation to North direction of the site.

(d) Plot area, plot coverage and F.A.R.

(e) Surface drains, position and sizes of septic tank and soak pit in cubic dimensions of length, breadth and depth.

(f) Roof with all projections, setback dimensions, surface drain, Soft Cover, Landscape, Parking, Rain Water Harvesting, Sentry-shed, Transformer / sub station, etc.

(g) Structural Sufficiency Certificate from the registered Engineer in case of existing buildings.

(h) Any other particulars as prescribed by the Authority.

A4.1.2. Building Plans, Site Plan, Sections and Elevations accompanying the application shall be drawn to a scale not less than 1:100 and shall:

(i) include floor plans of all floors, indicate the use of each floor of the building.

(ii) shall indicate height of the building and parapet.

(iii) give dimensions of the projected portions.

(iv) include a roof plan indicating drainage and roof slope in case of building proposal having pitch roof(s).

(v) Specify total floor area of the building.

A4.1.3. Building Plans for High Rise Buildings having covered area more than 250 sqm, Special Buildings / Projects, the building sanction shall be done in two stages:

Stage 1: First stage for planning clearance

The following additional information shall be furnished / indicated in the building plans in addition to the item (i) to (v) of Building Bye Law 4.1.2

(a) Access to fire appliances/vehicles with details of vehicular turning circle/and clear motorable access way around the building;

(b) Size (width) of main and alternate staircase along with balcony approach, corridor ventilated lobby approach;

(c) Location and details of lift enclosures;

(d) Location and size of fire lift;

(e) Smoke stop lobby/door where provided;

(f) Refuse chutes; refuse chamber, services duct, etc.

(g) Vehicular parking spaces

(h) Refuge area if any;

(i) Details of building service-air conditioning system with position of dampers, mechanical ventilation system, electrical services, boilers, gas pipes etc.

(j) Details of exits including provision of ramps, etc. for hospitals and special risks.

(k) Location of generator, transformer and switchgear room;

(l) Smoke exhauster system if any;

(m) Details of fire alarm system network;

(n) Location of centralized control, connecting all fire alarm system, built in fire protection arrangements and public address system, etc.

(o) Location and dimension of static water storage tank and pump room along with fire service inlets for mobile pump and water storage tank;

(p) Location and details of fixed fire protection installations such as sprinklers, wet risers, hose reels, drenchers etc. and

(q) Location and details of first- aid firefighting equipment / installations.

(r) Features relating to accessibility for the elderly and differently abled.

Stage 2: Second stage for building permit clearance

After obtaining the sanction for planning (Stage 1) from the Authority, a complete set of structural plans, sections, details, design calculations duly signed by registered engineer / agency along with the complete set of details duly approved in Stage 1 and any other documents required by the Structural Design Review Panel (S.D.R.P) shall be submitted. The building plans/details shall be deemed sanctioned for the commencement of construction only after obtaining the permit for Stage 2 from the Authority.

(a) Service Plans

The services plans shall include all details of building and plumbing services, and also plans, elevations and sections of private water supply, sewage disposal system and rainwater harvesting system, if any as per NBC 2016.

(b) Specifications

Specifications, both general and detailed, giving type and grade of materials to be used, duly signed by the registered architect/engineer, shall accompany the plans.

(c) Structural Sufficiency Certificate

The plans shall be accompanied by structural sufficiency certificate signed by the registered engineer / agency and the owner jointly to the effect that the building is safe against various loads, forces and effects including due to natural disasters, such as, earthquake, landslides, cyclones, floods etc., as per National Building Code 2016 and other relevant Codes. The registered engineer / agency shall also have the details to substantiate his design for high rise buildings / projects, special buildings having covered area above 500 sqm.

(d) Supervision

The notice shall be further accompanied by a certificate from the registered architect / Technical Personnel undertaking the supervision.

A4.1.4. No notice and building permit, is necessary for renovation or the following alterations, which do not otherwise violate any provisions regarding general building requirements, structural stability and fire safety requirements of these Bye-Laws;

(a) Plastering and patch repairs;

(b) Re-roofing or renewals of roof including roof of intermediate floors at the same height;

(c) Flooring and re-flooring;

(d) Opening and closing of windows leaves, ventilators and doors not opening towards other's properties and (or) public road/property;

(e) Replacing fallen bricks, stones, pillars, beam, wooden truss, joists, etc.

(f) Re-construction of sunshade as per provisions of these byelaws.

(g) Re-construction of parapet not more than 1.2 mt. in height and also re-construction of boundary wall as permissible under these Bye-Laws;

(h) White-washing, painting, etc. including erection of false ceiling in any floor at the permissible clear height provided the false ceiling in no way can be put to use as a loft etc;

(i) Reconstruction of portions of buildings damaged by storm, rains, fire, earthquake or any other natural calamity to the same extent and specification as existed prior to the damage provided the use conforms to provisions of Master Plan/Zonal Plan;

(j) Erection or re-erection of internal partitions provided the same are within the purview of the Bye-Laws.

A4.1.5. **Colour Scheme**: - The plans accompanying the applications may have the colour scheme as described by the consultant architect / engineer in the legends of the drawings.

A4.1.6. **Structural Design Basis Report and Seismic Certificate**: - (a) Seismic Certificate from the registered engineer / agency that the design is relevant to Indian Standard Code of Practice as well as compliant to earthquake resistant design shall accompany the application on the body of the structural drawings. (b) The structural design basis report mentioned in Appendix B shall accompany the application wherever required.

A4.1.7. **Ownership Title**: - Application shall also be accompanied by the attested copy of the Patta/ Sale/ Lease Deed etc.

A4.1.8. **Signing of the Plan**: - All plans and drawings shall be duly signed by the applicant and technical personnel having registration with the Authority (The qualification of technical personnel are indicated at Appendix 'A'). The qualified technical personnel or agency shall be registered with the Authority and the registration shall be valid for one calendar year after which it shall be renewed annually. Registration shall be issued on submission of an Affidavit cum Undertaking (sample attached to the byelaws). For Government projects, prepared and signed by a competent authority of the Central/State government departments or a public sector undertaking, registration is not required. However, where the projects are being prepared by external consultants, registration of the consultants/ firms is required. Also, where the applicant himself/herself is a qualified engineer he/she may prepare the building plans and supervise the construction for his/her own building or that belonging to his spouse and family members (own siblings, parents and children) and registration will not be required in case he / she is a Govt. employee.

A5 DURATION OF SANCTION OF BUILDING PERMISSION

The sanction once accorded shall remain valid up to 3 (three) years from the date of payment of the building permission fees. Fees for revalidation shall be ¼ of the fees paid earlier for a period of 3 years. In case of revalidation, the building permission shall be governed by the norms prevailing at the time the building permission is being issued. However, where there is

litigation, the building owner shall immediately bring to the notice of the Authority the outcome of such judgements.

A6 NOTICE FOR COMMENCEMENT OF BUILDING WORK

The owner and the RTP / CAR / CMAR before commencement of the work shall give a prior notice of 14 days to the Authority in prescribed Form II and the Authority will inspect the work following the receipt of the notice to verify the same.

A7 DEVIATION DURING BUILDING CONSTRUCTION

(i) For any deviation from the sanctioned plan during any stage of construction, permission of the Authority shall be obtained if the construction is not according to the approved plan.

(ii) The Authority has the power to stop any construction if it is not as per the approved building plans and the permission holder shall have to comply with the directions served by the Authority. If the permission holder fails to comply with the notice served by the authority, the Authority is empowered to cancel the building permission and start proceeding against the permission holder as per provisions of Meghalaya Town and Country Planning Act, 1973 and as amended from time to time.

(iii) Any building or part thereof constructed unauthorizedly, with or without obtaining the sanction of building plan and / or Occupancy Certificate, can be regularized, if the same is within the ambit of the byelaws and payment of the requisite fees and charges. In case the unauthorized development is beyond the permissible/ compoundable limits of these byelaws, the Authority shall take suitable action as prescribed in A11(OFFENCES AND PENALTIES) below.

(iv) Neither granting of permission nor approval of the building plans, nor the inspection of the Authority during erection of the building, shall in any way relieve the owner of such building from full responsibility for carrying out the works in accordance with the building byelaws and in case of any violation, the owner shall be liable for action as per prevailing laws.

A8 GRANT OR REFUSAL OF BUILDING PERMISSION

The Authority may either sanction or refuse the permission or may sanction after modification as it may deem necessary and shall communicate its decision to the applicant in writing.

(a) The Authority on receiving the application within 20 working days seek for modification, if any, required to be made in the proposal.

(b) On receiving all the modifications that have been sought for, the Authority must intimate the grant/refusal of the building permission in writing within 10 working days after the receipt of the modified proposal. The Authority shall as far as possible advice on all the objections and modification so as to ensure their compliance.

(c) In case all or any modifications have not been complied with, the refusal must be issued in writing and fresh application is to be sought for consideration.

(d) On fulfillment of 8(b) by the applicant, no further additional modification/clarification are to be sought from the applicant however, the Authority may attach terms and conditions thereon (except where it affects the structural design).

(e) For building proposals requiring no modifications the grant of building permission must be intimated by the Authority within 30 working days after receipt of the application or else it will be deemed that the permission has been granted, subject that the proposal complies with all the applicable bye-laws.

Note for 8(a): within the 20 working days period, the Authority shall visit / inspect the site after intimating to the applicant.

(f) Notwithstanding anything stated in the above byelaws, it shall be incumbent on every person whose plans have been approved to submit modified/ revised (amended) plans for any architectural/ structural/ alterations/ redevelopment/ deviations/ rectifications etc. proposed to be made during the course of construction of the building work and the procedure laid down for approval of plans mentioned here to before shall apply to all such modified/ revised plans.

(g) For existing building(s) which exceeds the permissible plot coverage prescribed in the byelaws and a vertical extension is proposed, such proposal shall be considered to the extent that the covered area of the proposal is within the permissible plot coverage, F.A.R. and other provisions of the byelaws. In case, the vertical extension comes under the Highrise /special buildings/projects categories the same shall be examined as per such provisions of the byelaws.

(h) Revocation of Sanction – The Authority may revoke any building permission issued, wherever there has been any false statement, suppression or any misrepresentation of material facts in the application on which the building permission was based.

A9 COMPLETION CERTIFICATE

On completion of the building, the applicant and the supervising registered architect/ technical personnel as the case may be shall give notice to the Authority in prescribed form as given in Form III.

A10 OCCUPANCY CERTIFICATE

(i) Occupancy Certificate shall be mandatory for all buildings. No person shall occupy or allow any other person to occupy any building or part of a building for any purpose unless such building has been granted an Occupancy Certificate by the Authority.

(ii) The owner shall submit a notice of completion through the supervising registered architect / technical personnel along with prescribed documents to the Authority. The Authority on receipt of such notice of completion shall undertake inspection and shall communicate the approval or refusal of the Occupancy Certificate within 15 working days or may issue the same after levying and collecting compounding fee, if any.

(iii) For all highrise buildings / Special buildings / Special projects, the work shall be subject to inspection by the Fire Services Department and the Occupancy Certificate shall be issued only after clearance from the Fire Services Department with regard to Fire and Life safety requirements.

(iv) The functional / line agencies dealing with electric power, water supply etc. shall not give regular connections to the building unless such Occupancy Certificate is produced.

(v) The financial agencies/institutions shall extend loan facilities only to the permitted built up area as per the sanctioned building plan.

A10.1. After completion of the building, an Occupancy Certificate shall be issued by the Authority to confirm that such building is fit for occupation.

A10.2. Partial Occupancy Certificate may be issued upon request by the applicant and the registered architect / technical personnel provided that completed portion(s) of a part of the entire work may be occupied safely without endangering life or safety of the occupants.

A10.3 The Authority issuing Occupancy Certificate before doing so shall ensure that wherever applicable, the following are complied with -

(i) A certificate of Competent Authority or Lift Inspector / Lift Company has been procured and submitted by the owner, regarding satisfactory erection of lift.

(ii) A Certificate of Competent Authority from the Fire Department has been procured and submitted by the owner.

(iii) If any project consists of more than one detached or semi detached building / buildings in a building unit and any building / buildings thereof is completed as per provisions of Building Bye-Laws (such as Parking, Common Plots, Internal roads, Height of the Building, Infrastructure facilities, lift and fire safety measures), the Authority may issue Occupancy Certificate for such one detached or semi detached building / buildings in a building unit. The Occupancy Certificate shall not be issued unless the information is supplied by the Owner and the supervising registered Architect / technical personnel concerned in the schedule as prescribed by the Competent Authority from time to time.

A11 OFFENCES AND PENALTIES

Any person who violates the building permission sanction issued by the Authority or contravenes with the provisions of the bye-laws or who interferes or obstruct any authorized personnel in the discharge of his duties shall be guilty of an offence. The Authority shall: -

(i) Punish the person by a fine as fixed by the Authority or as per the Meghalaya Town and Country Planning Act, 1973.

(ii) Take suitable action as may deem fit which may include demolition of un-authorized works, sealing of premises/ building or any part thereof, filling, any mitigating measures such as disconnection of essential services, utilization of space for non habitable purposes, dismantling of non structural components of the floor / building etc. or otherwise etc., prosecution and criminal proceeding against the offender in pursuance of relevant laws in force as decided by the Authority.

(iii) Take suitable action against registered technical personnel and registration may be withdrawn in case of an offence as decided by the Authority. In case of Architect matter shall be taken up with the Council of Architecture.

(iv) The Authority reserves the right to take action and to debar/blacklist the consultant/technical personnel, if found to have deviated from professional conduct or to have made any misstatement or on the account of misrepresentation of any material fact or default either in

authentication of a plan or in the supervision of the construction against the building byelaws and the sanctioned building plans.

(v) If the Authority finds at any time any violation of the building byelaws or misrepresentation of fact, or construction at variance with the sanction or building byelaws, inclusive of the prescribed documents, the Authority shall be entitled to revoke the sanction and take appropriate action against such professional and such professional shall not be authorized or permitted to submit anymore fresh plans/ building proposals for any other applicant till finalization of the case.

(vi) Before debarring or blacklisting a professional if found to be indulging in professional misconduct or here she/he has misrepresented any material fact as per (iv) and (v) above, the Authority shall give him / her a show cause notice with personal hearing, if desired and shall pass an order to debar him/her for submission and supervision of the construction with full justification for the same. An appeal against this order shall lie with the Apellate Authority.

A12 UNSAFE BUILDING

Any building reported to be unsafe or damaged shall be examined by a Technical Committee to be constituted by the Authority and shall make a written record of its finding. The Authority shall give notice to the owner or occupier to complete the specified repairs or improvements or to demolish the building within a stated time. An appeal shall lie with the Structural Design Review Panel.

A12.1 **DISREGARD OF NOTICE**

If the owner fails to comply with the notice, the Authority can itself demolish or remove the structure and realize the cost of demolition through suitable method, or the Authority may direct the Police department to remove the structure as it deem fit.

A12.2 **BUILDING TO BE VACATED**

The Authority may on *prima facie* evidence of inspections/findings that structural elements in a building or building construction appear to be unsafe, may declare the building to be vacated until such records and evidences are produced by the applicant and his/her consultant engineer. The Authority shall keep a record of its findings in detail.

A12.3 **MAINTENANCE OF BUILDINGS**

In case of building older than fifty years, it shall be the duty of the owner of a building, to get his building inspected by a Registered Engineer within a year from the date of coming into force of these byelaws. The Structural Inspection Report as given in Appendix–C, shall be produced by the owner to the Authority. If any action, for ensuring the structural safety and stability of the building is to be taken, as recommended by Registered Engineer, it shall be completed within five years.

A13 RESTRICTION ON BUILDINGS SURROUNDING OFFICE BUILDINGS AND QUARTERS OF CONSTITUTIONAL HEADS OF GOVERNMENT

The architectural design of buildings surrounding the office buildings and quarters of Constitutional Heads of the Government built by the Government and located in Government properties shall be such that there are no direct openings of doors, windows and ventilators facing directly towards the said buildings. No balconies shall also be permitted and any other direction to be issued in this regard.

A14 PROTECTIVE MEASURES IN NATURAL HAZARD PRONE AREAS

In natural hazard prone areas identified under the land use zoning regulations, structures, buildings and installations which cannot be avoided, protective measures for such construction / development should be properly safeguarded based on the suggestion given in Section- C.

A15 FEES FOR BUILDING PERMISSION

A15.1. The building permission fees for residential, commercial, institutional, apartmental, educational, storage, industries, major proposals etc., shall be decided by the Authority and approved by the Government from time to time.

A15.2. For erection of Reception & Transmission Towers, an installation fee shall be charged and subsequently annual renewal fee shall be chargeable as per the rates approved by the Government from time to time.

A15.3. No fees for building permission is required for plot area less than 50 Sq.m if falling in LIG/EWS categories.

A15.4. The fees for No Objection Certificates shall be decided by the Authority and approved by the Government from time to time.

A15.5. The fixation of these fees shall be governed by the following: -

(i) For erection of new building shall be as per Schedule of Fees.

(ii) For re-erection of existing building the fees chargeable shall be the same as for erection of new building.

(iii) For addition and alteration in the existing building, the fees shall be chargeable on the added portion only.

(iv) For modified/ revised plan etc. of an already sanctioned building a processing fee of 10% the fees paid during sanction of building permit shall be paid by the applicant.

(v) For change of use and variation of rates, the fees chargeable shall be the difference between the two, subject to the conditions that

(a) The revised plan is in conformance with the building bye laws applicable for that particular use and the building plans are compatible for that use.

(b) No fees to be refunded in case there is change of use of higher rate to lower rate, e.g. Commercial to residential use.

(vi) For renewal of building permission, ¼th of the fees shall be paid on the remaining portion only, and the validity shall be 18 months.

A16. INSPECTION

All development work for which permission is required shall be subject to inspection by the Authority at the following stages of building construction: -

(a) on receipt of notice for commencement of building work as per Form II, where alignment and setbacks of the building shall be given, confirmed and recorded. Any deviation thereafter shall solely be the responsibility and risk of the owner or authorized representative and the supervising consultant.

(b) on completion of work after receipt of completion certificate as per Form III.

(c) any other stages of construction, as desired by the owner or authorized representative and the supervising consultant requiring the advice of the Authority after receipt of such notice.

(d) when the supervising consultant intimates to the Authority his/her disassociation in the supervision of the building construction where the status of the building construction is recorded. No further construction will be permitted till appointment of a new supervising consultant.

It is incumbent and bounded, therefore for the supervising consultant to ensure that the building construction shall be as per the following parameters: -

(i) all terms and conditions mentioned in the building permission sanction and/or approved building plans; and in particular,

(ii) setbacks for the building and septic tank are maintained as per approved building plans.

(iii) number of floors, closed and open projections and use of building are as per approved building plans.

(iv) parking spaces shall be provided and maintained as per approved building plans.

(v) provision of septic tank & soak pit, emergency exit(s) are provided as per approved building plans.

(vi) All structural members of the building shall be as per approved drawings.

(vii) Safe and Sound Civil Engineering practices as per all the relevant I.S. Codes to be adopted.

Non compliance on the part of the owner and/or the registered architect/technical personnel to comply with the above provisions would result in the Authority declaring the building "Unauthorized Building" and necessary action against the offenders will be initiated by the Authority.

It is incumbent on the owner and the registered architect/technical personnel to intimate to the Authority of the association of the consultants involved in the building construction and the substitutions thereof during the period of construction till its completion.

SECTION – B
GENERAL BUILDING REQUIREMENTS

B1. REQUIREMENT OF SITES

Any piece of land shall be used as a site for construction provided:

(i) The proposed use conforms to the Master Plan, Scheme Area Plan, Zonal Plan under Meghalaya Town & Country Planning Act, 1973.

(ii) The site is properly drained or capable of being drained.

(iii) The site have proper means of access.

(iv) The site is not prone to land slide.

(v) Where a plot is located along a stream or river, the following are to be complied with:

a) The septic tank and soak pit shall be located as far away as possible from the stream/river depending upon the slope and specific site conditions.

b) The minimum stilt height shall be minimum 1.20m above the Highest Flood Level in case of sloping sites. In case of flat sites, the plinth height shall be minimum 0.90m.

c) Retaining wall/protection walls shall be constructed as per site requirement.

(vi) A soil investigation report along with Form IV from a geotechnical expert has to be submitted in areas where the soil condition/ soil bearing capacity is known to be of weaker nature.

(vii) Generally, earth cutting shall be limited to a maximum of 3.00m only. However, the Authority may relax the same owing to site conditions and the maximum earth cutting height shall be upto the crest of the RCC wall being limited to 6.00m only. Any proposal beyond 6.00m, a report from the Geological Survey of India shall be required.

B1.1 NO LAND SHALL BE USED AS A SITE FOR THE CONSTRUCTION OF BUILDING-

(i) If the site is found to be liable to liquefaction as per soil survey report under the earthquake intensity of the area, except where appropriate protection measures are taken.

(ii) If the Authority finds that the proposed development falls in the area liable to flooding, except where protection measures are adopted to prevent flooding damage.

B2. EXTERIOR OPEN SPACE

The exterior open spaces shall be governed by the following minimum clear open space and setbacks:-

(i) **Front setback**

(a) Every building abutting a street / footpath shall have a front setback as prescribed in these byelaws.

(b) Where a building is abutting a non-motorable footpath/street/lane, but has the feasibility for road widening in future, setback shall be 3.00m from such footpath/street/lane.

(c) If a building abuts on two or more streets of different widths, the building shall be deemed to face upon the street that has the greater width.

(d) No staircase or ramp shall start from the edge to the front setback.

(ii) **Side and Rear setback**

(a) Every building shall have a minimum clear side and rear setbacks as prescribed in these byelaws. Where the sides/rear setbacks are more than 2.50 m for buildings upto 4 storeys and

the sides/rear setbacks are not facing a road/street/motorable footpath, parking spaces for vehicles shall be permitted. In case of High rise buildings, special buildings/projects etc. parking spaces shall be allowed on the long setback of the plot if it is 7.00 meters or more and on the other short and rear setbacks if they are not facing a road/street/motorable footpath.

(b) When a plot abuts two or more roads, the provisions of the minimum sides/rear setbacks shall be arrived at depending upon the category of roads, traffic volume etc. and the reasons thereof shall be recorded.

(c) When a plot abuts a stream/river, the setback(s) towards the stream/river shall be 2.40 meters or when the plot width is less than 10m the entire ground level floor shall be left open for locating septic tank/E.T.P., parking spaces etc. No habitable room(s) shall be permitted.

B3. PROJECTIONS:

In addition to canopy, porch etc. the following projections in the upper floors of building shall be allowed:

(i) Closed projections which form part of a room(s).

(ii) Open projections for balconies which are open on the least three (3) sides.

The permissible maximum projections are as per table below:

Table B-1: Projections in mandatory Setbacks

Setbacks (in meters)	**Closed projections** (in meters)	**Open projections** (in meters)
1.00	0.30	0.45
1.20	0.45	0.60
1.80	0.60	0.75
2.40	0.75	1.00
3.00	0.75	1.20
4.50	0.75	1.50

Note: (i) Closed projections will be taken into PC & FAR calculations.

(ii) Open projections will be exempted from PC & FAR calculations.

(iii) Measurement of the closed & open projections shall be from the centre of the columns.

(iv) Open projections with walling on two or three sides shall be counted for PC & FAR calculations.

(v) Where the setbacks provided are more than the minimum prescribed, projections shall be allowed subject to architectural and structural designs.

B4. MINIMUM PLOT SIZES

(i) **For commercial**: The minimum plot size shall be 50 Sq.m with a minimum width of 6 metres.

(ii) **For services, light, cottage and handloom industries**: The minimum size of plot shall not be less than 50 Sq.m. For automobile workshop a minimum plot size shall be 300 sq.m.

(iii) **For medium industry**: The minimum size of the plot shall be 10,000 sq.m.

(iv) **For auditorium, Museum**: The minimum size of the plot shall be 1,000 sq.mts.

(v) **For LIG/EWS Income Housing**: The minimum plot size shall be 50 sq.m. For categories falling under LIG/EWS, an income certificate from the respective Deputy Commissioner is also required to be enclosed.

(vi) **Residential**: The minimum plot size shall be 50 sq.m. In case of Govt. Lease properties the minimum plot size shall be as determined by the Govt. from time to time.

B5. DISTANCE FROM ELECTRICITY LINES

No verandah, balcony or the like shall be allowed to be erected or re-erected or new addition or alteration made to a building within a distance quoted in Table-B-2 below in accordance with the current Indian Electricity Rules and its amendments from time to time.

Table B -2

		Vertically	Horizontally
a)	Low and Medium Voltage lines and services lines	2.5 meter	1.2. meter
b)	High voltage lines upto and including 33,000 V.	3.7 meter	2.0 meter
c)	Extra high voltage lines beyond 33.00 V	3.7. meter	2.0 meters (plus 0.3 meter for every additional 33KV or part thereof)

B6. REQUIREMENT OF PARTS OF BUILDING

Minimum size and width of different component of residential premises

Table B-3

Sl. No.	Component of Building	Minimum requirements
1.	Habitable Room	Area 7.50 sq.mt. Width 2.10 mt.
2.	Kitchen	Area 3.30 sq.mt. Width 1.50 mt.
3.	Bathroom	Area 1.20 sq.mt. Width 1.00 mt.
4.	W.C.	Area 1.00 sq.mt. Width 0.90 mt.
5.	Combined Bath & W.C.	Area 2.80 sq.mt. Width 1.20 mt.

Table B-4

Sizes and area requirement				
Sl.No.	Type of room	Maximum floor area	Minimum floor area	Maximum height
1	Mezzanine floor	Max. coverage of 1/3rd the covered area of that floor.		2.40m
2	Parapet			0.90m – 1.20m
3	Staircase			a) Max. No. of steps in one single flight is 16, for residential bungalow (Max. ht. of riser = 15 - 17.5cm: Min. length of tread = 25 - 30cm) b). Dimension of riser & tread for all other types of buildings shall be 15cm & 30cm respectively

B7. OTHER REQUIREMENT OF PARTS OF BUILDING

B7.1. **Kitchen, Bathroom and Water closet:**
Every kitchen, bathroom and water closet shall:-

(i) be so planned that one of its wall shall open to external air by ventilator/exhaust fan etc.;

(ii) A flue, if found necessary for a kitchen and;

(iii) In case of high-rise building, a refuse chute may be provided. They shall be constructed with the I.S. 6024-1973 Code of practice.

Table B-5

Combined Ventilation Shaft for Kitchen and Toilet

Height of the building (m)	Minimum size of ventilation shaft (sq.m.)	Minimum width of shaft(m)
Up to 10.00	1.20	0.90
Up to 12.00	2.80	1.20
Up to 18.00	4.00	1.50
Up to 24.00	5.40	1.80
Up to 30.00	8.00	2.40
Above 30.00	9.00	3.00

Provided further that no chajja shall be allowed in any ventilation shaft.

Provided also that no ventilation shaft may be required for fully air-conditioned building, or mechanically ventilated toilet, kitchen, bath and water closet.

B7.2. **Mezzanine Floor:**

In case of a Mezzanine floor the following conditions shall be provided:-

(i) It is so constructed so as not to interfere under any circumstances with the ventilation of the space over and below it;

(ii) Such mezzanine floor is not sub-divided into small compartments in case of residential buildings;

(iii) Such mezzanine floor or any part of it shall not be used as a kitchen.

B7.3. **Plinth:**

The plinth of any part of a building shall be raised above ground level or road level provided adequate drainage of site is assured. In no case, this shall be less than 0.45 meter.

B8. PROVISION OF LIFTS

Provision of lifts shall be mandatory for Hospitals, Nursing Homes having more than one storey.

a) Provision of the lifts shall be mandatory for all high-rise buildings. However, in the case of high-rise buildings with apartmental occupancies located on a sloping site where the ground level(s) are below the primary road level, provision of lift shall not be mandatory except where

(i) the plot is bounded by 2 or more roads/motorable paths, or

(ii) the plot has an approach ramp to the lower floor level(s) for car parking purposes, or

(iii) No. of floors does not exceed 3 floors above the car parking floor at the primary road level.

b) All the floors shall be accessible for 24 hrs. by lift. Lift provided in buildings shall not be considered as means of escape in case of emergency.

c) Collapsible gates shall not be permitted for lifts and shall have solid doors with fire resistance of at least 1 hour.

B9. EXITS AND MEANS OF ACCESS

B9.1 All exits and means of access shall be as per provisions of National Building Code 2016

B9.2 **Minimum width provisions for Stairways**

The following minimum clear width provisions shall be made for each stairway:

a)	Residential buildings	-	1.00 mt.
	Apartments	-	1.20 mt.
	Other residential buildings e.g. hostels, group housing, guest houses, etc.	-	1.50 mt.
b)	Assembly buildings like Auditorium, theatres and cinemas.	-	2.00 mt .
c)	All other buildings including hotels	-	1.50 mt.
d)	Institutional building like hospitals	-	2.00 mt .
e)	Educational buildings	-	1.50 mt.

B9.3 **Minimum width provisions for passageway/corridors**

The following minimum clear width provisions shall be made for each passage way/corridor:

a)	Residential buildings	- 1.00 mt.
	Apartments	- 1.20 mt.
	Other Residential buildings, e.g. hostels, group housing, guest houses, etc.	- 1.50 mt.
b)	Assembly buildings like Auditorium, theatres and cinemas	- 2.00 mt.
c)	All other buildings including hotels	- 1.50 mt
d)	Hospital, Nursing homes etc.	- 2.40 mt.
e)	Educational buildings	- 1.50 mt.

B9.4 EXIT REQUIREMENT:

B9.4.1 **General-The following general requirements shall apply to exits-**

a) An exit may be a doorway, corridor, passageway(s) to an internal staircase, or external staircase, or to a verandah or terrace(s), which have access to the street, or to the roof of a building or a refuge area. An exit may also include a horizontal exit leading to an adjoining building at the same level;

b) Lifts and escalators shall not be considered as exits;

c) Every exit, exit access or exit discharge shall be continuously maintained free of all obstructions or impediments to full use in the case of fire or other emergency;

d) Every building meant for human occupancy shall be provided with exits sufficient to permit safe escape of occupants in case of fire or other emergency;

e) No building shall be altered to reduce the number, width or protection of exits to less than that required;

f) All exits shall provide continuous means of egress to the exterior of a building or to an exterior open space leading to a street and;

g) Exits shall be so arranged that they shall be reached without passing through another occupied unit.

B9.4.2 **Types of exits –**

Exits shall be either of horizontal or vertical type. An exit may be doorway, corridor, and passageways to an internal staircase or external staircase, ramps or to a verandah and/or terraces which have access to the street or to roof of a building. An exit may also include a horizontal exit leading to an adjoining building at the same level.

B9.4.3 **Arrangement of Exits –**

Exits shall be so located so that the travel distance on the floor shall not exceed 22.5m for residential, education, institutional and hazardous occupancies and 30m for assembly, commercial, industrial & storage occupancies. Wherever more than one exit is required for a floor of a building, they shall be placed as remote from each other as possible. All the exits shall be accessible from the entire floor area at all floor levels.

B9.4.4 **Provision for Staircase –**

All buildings having height more than ground floor shall have provision of staircase except in the case where the floors can be accessed from their respective ground levels through external steps. All Highrise buildings, Special buildings, Special Projects shall have two staircases out of which one shall be fire escape staircase. At least one of them shall be on external walls of buildings and shall open directly to the exterior, interior open space or to an open place of safety.

Further, in case high rise buildings with apartmental occupancies, all units shall have access to an fire escape/emergency staircase.

In case of apartmental buildings upto 4 (four) storeys,

(i) with covered area on any floor not exceeding 1,500 sq.ft. an additional staircase shall not be insisted if the minimum clear width of the staircase is 1.50 mt. and Bye-law B9.9.3 shall also not be applicable, or

(ii) where there is a single dwelling unit per floor, an additional staircase shall not be insisted.

B9.5 Doorways:

(i) Every exit doorway shall open into an enclosed stairway, a horizontal exit or a corridor or passage way providing continuous and protected means of egress.

(ii) No exit doorway shall be less than 90 cm. in width in case of residential and 100 cm. in width in case of other buildings. Doorways shall be not less than 200 cm. in height. Doorways for bathrooms, water closet, stores etc. shall be not less than 75 cm. wide.

(iii) Exit doorways shall open outwards, that is away from the room but shall not obstruct the travel along any exit. No door, when open, shall reduce the required width of stairway or landing to less than 90 cm. Overhead doors shall not be installed;

B9.6 Stairways:

(i) Interior stair shall be constructed of non-combustible materials throughout;

(ii) Interior staircase shall be constructed as a self-contained unit with at least one side adjacent to an external wall and shall be completely enclosed;

(iii) A staircase shall not be arranged / built / constructed around a lift shaft;

(iv) Hollow combustible construction shall not be permitted;

(v) Handrails shall be provided with a minimum height of 100 cm. Balusters / railing shall be provided such that the width of staircase does not reduce;

(vi) The minimum headroom in a passage under the landing of a staircase shall be 2.2 m;

(vii) No living space, store or other fire risk spaces shall open directly into the external staircase;

(viii) External exit door of staircase enclosure at ground level shall open directly to the open spaces or should be reached without passing through any door other than a door provided to form a large lobby;

(ix) In the case of assembly, institutional, hotels, industrial and hazardous occupancies, the exit sign with arrow indicating the way to the escape route shall be provided at a height of 0.5m. from the floor level on the wall. All exit way marking signs should be flush with the wall.

B9.7 Secondary/Emergency/Fire exit staircase(s) or external stairs:

The above staircase(s), when provided, shall comply the following:

(i) They shall always be kept in sound operable conditions;

(ii) They shall be directly connected to the ground;

(iii) Entrance to the stairs shall be separate and remote from the internal staircase;

(iv) Care shall be taken to ensure that no wall opening or window opens on to or close to the staircase;

(v) The route to the stairs shall be free of obstructions at all times;

(vi) The stairs shall be constructed of non-combustible materials, and any doorway leading it shall have the required fire resistance;

(vii) No external staircase, used as a fire escape, shall be inclined at an angle greater than 45 degree from the horizontal;

(viii) They shall have straight flight not less than 750 mm wide with 250 mm treads and risers not more than 190 mm. The number of risers shall be limited to 15 per flight;

(ix) Handrails shall be of a height not less than 1000 mm and not exceeding 1200 mm. There shall be provisions of balusters with maximum gap of 150 mm.

(x) In the case of high rise developments, fire escape staircase(s) should be provided beyond the mandatory setbacks as prescribed in these bye-laws.

B9.8 Corridors and passageways:

(i) Exit corridors & passageways shall be of width not less than the aggregate required width of exit doorways leading from them in the direction of travel of the exterior/stairways;

(ii) Where stairways discharge through corridors & passageways the height of the corridors & passageways shall not be less than 2.40 mt;

(iii) All means of exit including staircases, lifts, lobbies & corridors shall be adequately ventilated.

B9.9 SPIRAL STAIRCASE

1. The use of spiral staircase shall be limited to low occupant load and building of 4 (four) storeys.

2. A spiral staircase of 1.20m - 1.50m in diameter and shall be designed to give the adequate headroom.

3. Where there are 2 or more dwelling units per floor, emergency staircase/exit has to be provided.

B9.10 Refuge Area:

The requirement for provision of Refuge Area in Highrise buildings, Special buildings, Special Projects, etc., shall be as per recommendations of the National Building Code, 2016.

B9.11 COMPOUND GATE

No compound gate(s) shall open towards the public property i.e. road/ footpath etc.

B10. LOCATION AND SIZES OF SEPTIC TANKS / EFFLUENT TREATMENT PLANT

(i) No septic tank / ETP shall be located under a building/ room, unless the floor height is more than 1.20 meters.

(ii) Location of septic tank/ETP is permitted beneath a parking space and setback area. The minimum setback of a septic tank from the plot boundary is 1.0 m. in case of side setback area when the side is not a footpath/road and 1.20 m. in the case of rear setback area.

Table B-7: Sizes of Septic Tank

No. of user	Length (in Meter)	Width (in Meter)	Liquid depth (in Meter)
5	1.50	0.75	1.00
10	2.00	0.90	1.00
15	2.00	0.90	1.30
20	2.30	1.10	1.30
50	4.00	1.40	1.30
For Housing Colonies			
100	8.00	2.60	1.00
150	10.60	2.70	1.00
200	12.40	3.10	1.00
300	14.60	3.90	1.00
Hostels, Boarding Schools			
50	5.00	1.60	1.30
100	5.70	2.10	1.40
150	7.70	2.40	1.40
200	8.90	2.70	1.40
300	10.70	3.30	1.40

B11. SANITATION REQUIREMENTS

The Sanitary Requirements of for different uses are as per Tables prescribed below:

Table B-8: Sanitation requirements for Shops and Commercial Occupancy

Sl. No.	Sanitary Unit / Fittings	For Personnel
1.	Water closet	One for every 25 persons or part thereof exceeding 15 (including employees and customers). For female personnel 1 for every 15persons or part thereof exceeding 10
2	Wash Basin	One for every 25 persons or part thereof.
3	Urinals	Nil upto 6 person 1 for 7-20 person 2 for 21-45 person 3 for 46-70 person 4 for 71-100 person From 101 to 200 add @3%; For over 200 person add @2.5%

Note: *For the purpose of the above calculation, 50% of the total floor area shall be calculated to arrive at the sanitary requirements. For male-female calculation a ratio of 1: 1 may be assumed.*

Table B-9: Sanitary Requirements for Hotels

Sl. No.	Sanitary Unit	For Residential staff	For non-residential Staff	
			For male	**For female**
1	Water Closet (W.C.)	One per 8 Persons omitting occupants of the attached watercloset minimum of 2 if both sexes are lodged	1 for 1-15 persons 2 for 16-35 persons 3 for 36-65 persons 4 for 66-100 persons	2 for 1-12 persons 4 for 13-25 persons 6 for 26-40 persons 8 for 41-57 persons 10for 58-77 persons 12for78-100 persons Add 1 for every 6 persons or part thereof.
2	Urinals	Nil	Nil upto 6 persons 1 for 7-20 persons 2 for 21-45 persons 3 for 40-70 persons 4 for 71-100 persons	Nil
3	Wash Basins	One per 10 persons omitting each basin installed in the room / suite	1 for 15 persons 2 for 16-35 persons 3 for 36-65 persons 4 for 66-100 persons	1 for 1-12 2 for 13-25 3 for 26-40 4 for 41-57
4	Baths	One per 10 persons, less occupants of room with bath in suite	Nil	Nil
5	Kitchen Sink	One in each Kitchen	One in each Kitchen	One in each Kitchen

Table B-10: Sanitation Requirements for Educational Occupancy

Sl. No.	Sanitary Unit	Boarding Institution		Other Educational Institution	
		For Boys	For Girls	For Boys	For Girls
1	Water Closet (W.C.)	One for 8 boys or part thereof	One for 6 girls or part thereof	One for 40 boys or part thereof	One for 25 girls or part thereof
2	Urinals	One per every 25 pupils or part thereof	-----	One per every 20 pupils or part thereof	-----
3	Wash Basins	One for every 8 pupils or part thereof	One for every 6 pupils or part thereof	One for every 60 pupils or part thereof	One for every 40 pupils or part thereof
4	Baths	One for every 8 pupils or part thereof	One for every 6 pupils or part thereof	-----	-----

Table B-11: Nursery Schools

Sl.No.	Sanitary Unit	Requirement
1	Water Closet (W.C.)	One for 15 boys, one for 6 girls
2	Urinals	One for 12 boys
3	Wash Basins	One for every 15 pupils or part thereof

Note:

1. *One water tap with draining arrangements shall be provided for every 50 persons or part thereof, in the vicinity of water closets and urinal.*
2. *For teaching staff, the schedule of sanitary units to be provided shall be the same as in case of office building.*

Table B-12: Sanitation Requirements for Institutional (Medical) Occupancy- Hospital

Sl. No.	Sanitary Unit	Hospitals With indoor Patient Ward For Males & Females	Hospitals With outdoor Patient Wards	
			For Males	For Females
1	Toilet Suite (1WC+1Washbasin+ 1shower)	Private room upto 4 persons	For upto 4 patients	
2	Water Closet (W.C.)	One for every 8 beds or part thereof	One for every 100 persons or part thereof	One for every 25 persons or part thereof
4	Wash Basins	Two upto 30 beds; add one for every additional 30 beds; or part thereof	One for every 100 persons or part thereof	One for every 25 persons or part thereof.
5	Baths with Shower	One bath with shower for every 8 beds or part thereof.	---	---

6	Bed pan washing Sink	One for each ward	---	---
7	Cleaner' Sinks	One for each ward	One per floor minimum	One per floor minimum
8	Kitchen sinks & dish Washers (where Kitchen is provided)	One for each ward	---	---
9	Urinals	One for 30 beds (male wards)	One for every 50 persons or part thereof	---
10	Drinking water fountain	One for each ward	One for 500 persons or part thereof	

Table B-13: Administrative Buildings

Sl.No.	Sanitary Unit	For Males	For Females
1	Toilet Suite (1WC+1Wash basin+ 1shower)	For individual doctor's/officer's rooms	
2	Water Closet (W.C.)	One for every 25 persons or part thereof	Two for every 25 persons or part thereof
3	Wash Basins	One for every 25 persons or part thereof	One for every 25 persons or part thereof
4	Kitchen sinks & dish Washers (where Kitchen is provided)	One for each floor	One for each floor
5	Urinals	Nil upto 6 persons 1 for 7-20 persons 2 for 21-45 persons 3 for 46-70 persons 4 for 71-100 persons From 101 to 200 persons add at the rate of 3%; for over 200 persons add at the rate of 2.5%.	-----

Table B-14: Sanitation Requirements for Assembly Buildings (Art, Galleries, Libraries and Museums)

Sl. No.	Sanitary Unit	For Public		For Staff	
		Male	Female	Male	Female
1.	Water Closet (W.C)	One for 200 persons upto 400 persons. For every 400 persons, add at the rate of 1 per 250 persons or part thereof.	Four for every 100 persons upto 200 persons. For every 200 persons add at rate of 1 per 50 persons or part thereof.	One for 1-15 persons. Two for 16-35 persons.	Two for 1-12 persons. Four for 13-25 persons, add at the rate of 1 per 6 persons.
2.	Urinals	One for 50 persons or part thereof.	--	Nil upto 6 persons. One for 7-20 persons Two for 21-45 persons	--
3.	Wash Basins	One for every 200 persons or part thereof. For every 400 persons, add at the rate of 1 per 250 persons or part thereof.	One for every 200 persons or part thereof. For over 200 persons add at the rate of 1 per 150 persons or part thereof.	One for 1-15 persons Two for 16-35 persons.	One for 1-12 persons. Two for 25 persons.

Note: *It may be assumed that two thirds of the numbers are males and one third females.*

Table B-15: Sanitation Requirements for Restaurants

Sl. No.	Sanitary Unit	For Public		For Staff	
		Male	Female	Male	Female
1.	Water Closet (W.C)	One per 50 seats upto 200 seats. For every 200 seats, add at the rate of 1 per 100 seats or part thereof.	One per 25 seats upto 200 seats. For every 200 seats, add at the rate of 1 per 50 seats or part thereof.	1 for 15 persons. 2 for 16-35 persons. 3 for 36-65 persons. 4 for 66-100 persons.	2 per 1-12 persons. 4 for 13-25 persons. 4 for 26-40 persons. 8 for 41-57 persons. 10 for 58-77 persons 12 for 78-100 persons
3.	Urinals	One for 50 persons or part thereof.	--	Nil upto 6 persons. 1for 7-20 persons 2 for 21-45 persons 3 for 36-65 persons 4 for 66-100 persons	--
4.	Wash Basins	For every water closet			
5.	Kitchen Sinks & Dish Washer	One for each Kitchen			

Note:

i) It may be assumed that two thirds of the numbers are males and one- third females.

ii) One water tap with draining arrangements shall be provided for every 50 persons or part thereof in the vicinity of water closets and urinal.

Table B-16: Sanitation Requirements for Factories

Sl. No.	Sanitary Unit	For Male Personnel	For Female Personnel
1.	Water Closet	1 for 15 persons. 2 for 16-35 persons. 3 for 36-65 persons. 4 for 66-100 persons. For 101 to 200 persons add at rate of 3%. From over 200 persons add at the rate of 2.5%.	2 for 1-12 persons. 4 for 13-25 persons. 6 for 26-40 persons. 8 for 41-57 persons. 10 for 58-77 persons. 12 for 78-100 persons. For 101 to 200 persons add at the rate of 3%. From over 200 persons add at the rate of 2%.
3.	Urinals	Nil upto 6 persons. 1 for 7-20 persons. 2 for 21-45 persons. 3 for 46-70 persons. 4 for 71-100 persons. From 101 to 200 persons add at the rate of 3%; for over 200 persons add at the rate of 2.5%.	--
3.	Washing Taps with draining arrangement	One for every 25 persons or part thereof.	

Note:

i) One water tap with draining arrangement shall be provided for every 50 persons or part thereof in the vicinity of water closet and urinal.

ii) Creche where provided shall be fitted with water closets (1 for 10 persons or part thereof) wash basins (One for 15 persons or part thereof) and drinking water tap with drinking arrangement for every 50 persons or part thereof.

Table B-17: Sanitation Requirements for Public and Semi Public Occupancy and Offices

Sl. No.	Sanitary Units	For Male Personnel	For Female Personnel
1.	Water Closet (W.C)	One for 25 person or part thereof	Two for 15 persons or part thereof
2.	Urinals	Nil upto 6 person 1 for 7-20 person 2 for 21-45 person 3 for 46-70 person 4 for 71-100 person From 101 to 200 add @3%; For over 200 person add @2.5%	--
3.	Wash Basins	One for every 25 person or part thereof	One for every 25 person or part thereof

Table B-18: Sanitary Requirements for Assembly Occupancy Building (Cinema, Theatres, Auditoria, etc.)

Sl. No.	Sanitary Units	For Public		For Staff	
		Male	Female	Male	Female
1.	Water Closet	One for 100 person upto 400 person. For over 400 persons, add the rate of 1 per 250 persons or part thereof	Four for 100 person upto 200 persons. For over 200 persons, add the rate of 1 per 50 persons or part thereof	One for 15 persons. Two for 16-35 persons	Two for 1-12 persons. Four for 13-25 persons, add at the rate of 1 per 6 persons or part thereof
2.	Urinals	One for 50 persons or part thereof	--	Nil upto six persons. One for 7-20 persons. Two for 21-45 persons	--
3.	Wash Basins	One for every 200 persons or part thereof	One for every 200 persons or part thereof	One for 1-15 persons Two for 16-35 persons	One for 1-12 persons Two for 13-25 persons

SECTION-C

STRUCTURAL SAFETY AND SERVICES

C1 STRUCTURAL DESIGN

For any building construction work under the jurisdiction of these bye-laws, structural design/retrofitting shall only be carried out by a Registered Engineer/ Structural Design Agency on Record (SDAR). Proof checking of various designs / reports shall be carried out by the Authority wherever applicable.

Generally, the structural design of foundations, elements of masonry, timber, plain concrete, reinforced concrete, pre-stressed concrete and structural steel shall conform to the provisions in PART 6: Structural Design of the National Building Code (N.B.C) 2016; Section 1- Loads, forces and effects, Section 2 -Soil and foundation, Section 3 Timber and Bamboo, Section 4 - Masonry, Section 5 – Concrete (Plain, Reinforced & Prestressed), Section 6 – Steel and Section 7 – Prefabrication, System Buildings and Mixed/Composite Construction and also adhering to the Standard Specifications and Regulations laid down as per I.S Codes given below.

C1.1 **For General Structural Safety:**

i) IS: 456:2000 “Code of Practice for Plain and Reinforced Concrete”

ii) IS: 800:2007 “Code of Practice for General construction in Steel”

iii) IS: 801-2975 “Code of Practice for Use of Cold formal Light Gauge Steel Structural Members in General Building Construction”

iv) IS 875 (Part 2): 1987 Design Loads (other than earthquake) for buildings and structures Part 2 Imposed Loads

v) IS 875 (Part 3): 2015 Design Loads (other than earthquake) for buildings and structures Part 3 Wind Loads

vi) IS 875 (Part 4): 1987 Design Loads (other than earthquake) for buildings and structures Part 4 Snow Loads

vii) IS 875 (Part 5): 1987 Design Loads (other than earthquake) for buildings and structures Part 5 special Loads and Load Combination

viii) IS: 883:1994 “Code of Practice for Design Structural Timber in Building”

ix) IS: 1904:1987 “Code of Practice for Structural Safety of Buildings: foundation”

x) IS: 190:1987 “Code of Practice for Structural Safety of Buildings: Masonry Walls”

xi) IS: 2911 (Part I): Section 1: 1979 “Code of Practice for Design and Construction of Pile Foundation Section 1”

Part 1: Section 2 Based Cast-in-situ Piles

Part 1: Section 3 Driven Pre-cast concrete Piles

Part 1: Section 4 Based Pre-cast Concrete Piles

Part 2: Timber Piles

Part 3: Under Reamed Piles

Part 4: Load Test on Piles

C1.2 **For Cyclone/Wind Storm Protection:**

i) IS: 875 (3)-1987 "Code of Practice for Design Loads (other than earthquake) for Buildings and Structures, Part 3, Wind Loads"

ii) Guidelines (Based on IS 875 (3)-1987) for improving the Cyclonic Resistance of Low rise houses and other building.

C1.3 **For Earthquake Protection:**

i) IS: 1893-2016 "Criteria for Earthquake Resistant Design of Structures (Fifth Revision)''

ii) IS: 13920-2016 "Ductile Detailing of Reinforced Concrete Structures subjected to Seismic forces-Code of Practice"

iii) IS: 4326-1993 "Earthquake Resistant Design and Construction of Buildings-Code of Practice (Second Revision)"

iv) IS: 13828-1993 "Improving Earthquake Resistant of Low Strength Masonry Buildings-Guidelines"

v) IS: 13827-1993 "Improving Earthquake Resistant of Earthen Buildings-Guidelines"

vi) IS: 13935-1993 "Repair and Seismic Strengthening of Buildings-Guidelines"

C1.4 **For Protection of Landslide Hazard:**

i) IS: 14458 (Part 1): 1998 Guidelines for retaining wall for hill area: Part 1 Selection of type wall.

ii) IS: 14458 (Part 2): 1997 Guidelines for retaining wall for hill area: Part 2 Design of retaining/breast wall.

iii) IS: 14458 (Part 3): 1998 Guidelines for retaining wall for hill area: Part 3 Construction of dry stone walls.

iv) IS: 14496 (Part 2): 1998 guidelines for preparation of landslide-Hazard zonation maps in mountains terrains: Part 2 Macro-zonation.

Note: *Whenever an Indian Standard including those referred in the National Building Code or the Indian National Building Code is referred; the latest revision of the same shall be followed except specific criteria, if any, mentioned above against that code.*

C2 Structural Design Basis Report:

In compliance of the design with the above Indian Standard, the Registered Structural Engineer / SDAR will submit a structural design basis report for all highrise buildings, special buildings / projects in the format given in Appendix-B covering the essential safety requirements specified in the Standard.

C3 Seismic Strengthening/Retrofitting:

Prior to seismic strengthening/retrofitting of any existing structure, evaluation of the existing structure as regards vulnerability in the specified wind/seismic hazard zone shall be carried out by a Registered Engineer/Structural Design Agency. If as per the evaluation of the Registered Engineer/Structural Design Agency, the seismic resistance is assessed to be less than the specified minimum seismic resistance as given in the note below, action will be initiated to carry out the upgrading of the seismic resistance of the building as per applicable standard guidelines.

Note: *(a) For masonry buildings reference is to be made to IS:4326 and IS: 13935 and*
(b) For concrete buildings and structures reference to be made to BIS code on evaluation and seismic strengthening for retrofitting of RCC buildings under preparation at present.

C4 Review of Structural Design:

i) The Authority shall create a Structural Design Review Panel (SDRP) consisting of Senior Structural Design Engineers and Structural Design Agencies on Record, whose task will be to review and certify the design prepared by Registered Engineer/Structural Design Agency on Record for high rise buildings having covered area more than 250 sqm, special buildings/projects or whenever referred by the Competent Authority.

ii) The Reviewing Agency shall submit addendum to the certificate or a new certificate in case of subsequent changes in structural design.

C5 Supervision:

All construction shall be carried out under supervision of the Architect on Record, Construction Engineer on Record (CER) or Construction Management Agency on Record (CMAR) as per the Table below: -

TABLE-C.1

Sl.No.	Type of Structures	Supervisor
1	High rise buildings, Special buildings, Special projects & various buildings having covered area above 500 m^2.	AR & CER/CMAR
2	High rise buildings/Special buildings & various buildings having a *covered area* of upto 500 m^2.	AR & CER/CMAR
3	High rise buildings/Special buildings & various buildings having a *covered area* upto 250 m^2.	(i) AR & CER OR; (ii) CER
4	Buildings having *total floor area* of upto 400 m^2.	(i) AR & CER OR; (ii)CER
5	Buildings upto G + 2 Floors having *total floor area* of upto 200 m^2.	(i) AR & CER OR; (ii)CER
6	Buildings upto G + 1 Floors having *total floor area* of upto 150 m^2.	(i) AR & CER OR; (ii)CER

C6. Structural Requirements of Low Cost Housing:

Notwithstanding anything contained herein, for the structural safety and services for development of low cost housing, the relevant provisions of applicable IS Codes shall be enforced.

C7. QUALITY OF MATERIALS AND WORKMANSHIP

All materials and workmanship shall be of good quality conforming generally to accepted standards of Bureau of Indian Standards Specification and as per National Building Code of India 2016.

C8. QUALITY CONTROL AND INSPECTION

a) **Inspection:** - All the High rise buildings having covered area above 500 sqm. Special buildings and Special projects construction shall be carried out under quality inspection program prepared and implemented under the Quality Auditor on Record (QAR) or Quality Auditor Agency on Record (QAAR).

b) **Certification of safety in quality of construction**: - Quality Auditor on Record (QAR) or Quality Auditor Agency on Record (QAAR) shall give a certificate of quality control as per proforma given in Appendix D. Quality Inspection Programme to be carried on the site shall be worked out by Quality Auditor on Record/Quality Audit Agency on Record, in consultation with the owner, builder, Construction Engineer on Record/Construction Management Agency on Record.

C9. BUILDING SERVICE

(i) The Authority while according permission shall follow the Code of Practice and Standards of Requirements recommended in the National Building Code of India.

(ii) The planning, design and installation of lifts and escalators shall be carried out as per National Building Code of India 2016.

C10. PLUMBING SERVICES

The planning, design, construction and installation of water supply, drainage and sanitation and gas supply system shall be in accordance with the National Building Code of India, 2016.

C11. FIRE SAFETY DETECTION AND EXTINGUISHING SYSTEM

Fire protection and extinguishing system shall conform to accepted standards and shall be installed as recommended in the National Building Code of India and to the satisfaction of Directorate of Fire and Emergency Services.

C12. PROTECTION AGAINST HAZARDS

C12.1 PROTECTION OF AREAS FROM EARTHQUAKES

i) In those areas where there are no dangers of soil liquefaction or settlements or landslides, all building structures and infrastructures in such areas should be designed using the relevant Indian Standards as provided in the Building Regulations and the National Building code.

ii) Soils subjected to liquefaction potential under earthquake shaking can be improved by compaction to desired relative densities, so as to prevent the possibility of liquefaction.

iii) Buildings and structures could be founded on deep bearing piles going to non- liquefiable dense layers.

iv) Steep slopes can be made more stable by terracing and construction of retaining walls and breast walls, and by ensuring good drainage of water so that the saturation of the hill slope is avoided.

v) Any other appropriate engineering intervention to save the building structures or infrastructure from the fury of the earthquake.

C12.2 PROTECTION FROM CYCLONIC WIND DAMAGE

a) Buildings, structures and infrastructures in the cyclone prone areas should be designed according to the Indian Standards and Guidelines as provided in the Regulations and the National Building Code.

b) Light utility structures used for electrical transmission and distribution and towers for communications, chimney stacks of industrial structures require special design considerations against the cyclonic wind pressure, suctions and uplifts.

c) In case the buildings, structures and infrastructures are founded on marine clay deposits it will be advisable to adopt either under-reamed or long piles which should penetrate the marine clay layer and rest on dense sandstratum, or individual column footing with a reinforced concrete beam located at the level of the ground, or a continuous reinforced concrete strip footing, using a very low bearing pressure.

d) Wherever the topsoil could become slushy due to flooding, the top layer of 30 cm depth of soil should not be considered for providing lateral stability.

e) In storm surge prone areas, it will be preferable to construct the community structures, like schools, cyclone shelters, etc. by raising the level of the ground protected by provision of retaining walls at sufficient distance away from the building taken to such depth that no erosion takes place due to receding storm surge. Alternatively, construct the community structures on stilts with no masonry or bracing upto the probable maximum surge level.

C12.3 PROTECTION OF AREAS FROM FLOODS

This may require one or more of the following actions:

a) Construction of embankments against the water spills from the source of flooding like rivers, large drains etc.

b) Construction of high enough embankments/bund around the planning area.

c) Raising the planning area above the high flood level.

d) Construction/improvement of drainage paths to effectively drain the water from the planning area.

e) Construction of buildings and structures on deep foundations going below the depth of scour or on stilts with deep enough foundations under water.

f) Flood proofing works such as the following:

Providing Quick Drainage facility, consisting of

- Revitalization of secondary and primary drainage channels after establishing the drainage blockage points;
- Provision of additional waterways;
- Clearing of clogged cross drainage works;
- Providing Human and Animal Shelters for population living within embankments in the form of raised platform or use of available high ground.

g) Anti-erosion actions in affected areas.

h) Any other suitable measure.

SECTION – D
MINIMUM SETBACKS, PARKING SPACES & HEIGHT STIPULATION FOR ALL TYPES OF BUILDINGS

D1. Parking Space

(a) No off-street parking space shall be less than 2.50 m in width and 5.00m in length, with a minimum head room of 2.4 m measured at the bottom of beam, if parked in a covered area.

(b) The minimum width of circulation driveway to be provided for adequate maneuvering of vehicles shall be 3.0m for cars and 5.00 m for trucks exclusive of parking space referred to in (a) above. However, a projection from a height above 5.50 m from the ground level may be permitted keeping the mandatory open space open to sky.

(c) Mechanical/ stack car parking arrangement will be allowed in such a way that the lower level is reserved for visitors while upper platforms are mostly for permanent users i.e. Hotels, Institutions, Educational, Public & Semi-Public Buildings etc. For shopping malls, multi brand / departmental stores, large scale retail activities and shopping complexes $^{1}/_{3}^{rd}$ of the car parking requirement shall be allowed by mechanical/ stack parking arrangement.

(d) Minimum gradient for a driveway ramp shall be 1:6.

(e) The parking requirements shall comply as given in these byelaws. The location of parking spaces shall be well ventilated. Parking will be permitted at any / all of the following:
i. Basement/Lower Ground Floor/Under Ground Floor
ii. Podium
iii. Stacked/ Multi-level/ Automated parking.
iv. Ground Floor or at any floor (s)

(f) For building with different uses, the area of parking space shall be worked out on the basis of respective uses separately and parking space to be provided for the total number of vehicles thus required.

(g) In case of a plot containing more than one building, parking requirement for all buildings shall be calculated on the basis of consideration of the area of respective uses.

(h) The Parking spaces shall be located beyond the mandatory setback spaces (open or covered) as provided in these Bye-Laws and read with byelaw B2(ii)(a). Parking can be at any floor(s) if not met within the plot area and shall be exempt from F.A.R. calculations. The approved parking and circulation spaces shall not be converted to any other use (habitable or non habitable), space for generator sets, sentry sheds etc. The permission holder shall submit an Affidavit cum Undertaking (sample attached to the byelaws) that the parking and circulation spaces shall not be converted or blocked or used for any other activity.

(i) For horizontal or vertical building extension proposals, in addition to conformity of all the relevant byelaws, the parking requirements of the extension will have to be met.

D1.1. **The Minimum Parking Spaces shall be as shown in Table-D-1 below.**

Table- D-1

Sl. No.	Occupancy	One parking Space for every
(a)	(b)	(c)
1	Residential Bungalow	At least one parking space beyond mandatory setback
	Residential Apartment	100 sq.m. of floor area.
2	(i) Lodging establishments tourist homes, hotels with lodging accomodation.	3(three) guest rooms.
	(ii) Restaurants	75 sq.m. of floor area.
3	Institutional (Hospitals, Medical Institutions)	75 sq.m. floor area.
4	Assembly (Theatres, cinema houses, concert halls, auditoria, assembly halls, including those of college and hostels for working men / women)	25 sq.m floor area.
5	Banquet Halls, Cultural Halls, places of worships	10 sq.m. floor area.
6	Sport facility / Stadiums	50 sq.m.
7	Educational	100 sq.m. floor area.
8	Public and semipublic, private business buildings etc.	75 sq.m. floor area.
9	Commercial (markets, departmental stores, shops and other commercial users) including wholesale markets.	75 sq.m. floor area.
10	Industrial	300 sq.m. floor area.
11	Storage (any type)	300 sq.m. floor area.

Note1: *For plots upto 1000 sq. ft. parking spaces need not be insisted.*

Note 2: *In addition to the parking spaces provided for building of Commercial use like market, departmental store, shopping mall and building of industrial and storage, loading and unloading spaces shall be provided at the rate of one space for each 1000sq.m. of floor area or fraction thereof exceeding the first 200sq.m. of floor area, shall be provided. The space shall not be less than 3.75m x 7.50m.*

D2. The specific Floor Area Ratio and Plot Coverage stipulations shall be as per the table below:

TABLE D – 2

Sl. No.	Type of Occupancy	Maximum permissible F.A.R	Maximum permissible Plot Coverage	Maximum no. of Permissible Floors (Inclusive of Basement / Lower Ground Floor / Underground Floor / Cellar)	Maximum Building Height in metres (Inclusive of Basement / Lower Ground Floor / Underground Floor / Cellar/mezzanine floor / Service Floor)
				Motorable plots	Motorable plots
1	2	3	4	5	6
1	Residential Bungalows	2	50%	4	13
2	Residential Apartments	2	50%	6	19
3	Commercial	2	60%	6	21
4	Institutional	1.5	40%	5	17
5	Public & Semi-Public Buildings	2.0	50%	6	21
6	Mixed Use Buildings	2.0	Coverage of predominant use to be adopted.	6	19
7	Assembly	1.5	50%	5	21
8	Industrial	1.5	40%	3	14
9	Storage	2.0	60%	3	14
10	Hazardous	1.2	30%	2	8
11	Special Projects	3.0	40%	7	27
12	Industrial Zone (factory)	1.0	40%	As per functional requirement	

Note: ***No high rise buildings or development shall be permitted in non motorable areas and /or plots with non motorable access.***

D2.1. The minimum setbacks shall be as per the table below:

TABLE D – 3

Plot size (in Sq ft.)	Minimum Front Setback (in Mts.) Abutting Road width					Minimum Setbacks for other sides (in Mts.)	
	Non-motorable Footpath	Single Lane / Motorable Footpath	Double Lane	Four Lane	Six Lane	Rear side	Other sides
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Less than 2000	1.80	3.00	3.00	4.50	4.50	1.80	1.00/1.00
Above 2000 & width <10m	2.40	3.00	3.00	4.50	4.50	1.80	1.20/1.20
Above 2001 & upto 5000	3.00	3.00	3.00	6.00	9.00	2.10	1.80/1.80
Above 5001 & upto 7500	3.00	3.00	3.00	6.00	9.00	2.40	2.10/1.80
Above 7501 & upto 20000	3.00	4.00	4.00	6.00	9.00	3.00	3.00/2.40
Above 20001 & upto 35000	3.00	4.50	5.00	6.00	9.00	3.00	4.50/3.00
Above 35001 & upto 50000	3.00	6.00	6.00	6.00	9.00	6.00	5.00/5.00
Above 50001	6.00	6.00	6.00	6.00	9.00	6.00	6.00/6.00

GENERAL NOTES:-

Note 1:- *For plots of land, whether having motorable or non motorable access, of area less than 1000 sqft with plot width less than 7m, the maximum number of floors permissible shall be limited to 3 (three) only.*

Note 2:- *For plots of land, whether having motorable or non motorable access, of area above 2000 sqft with plot width less than 10m, the maximum number of floors permissible shall be limited to 4 (four) only.*

Note 3:- *Transfer of setbacks from one side to another is permissible subject to specific local site conditions, and decision of the Authority shall be final in this regard.*

Note 4:- *In case reduced setback proposal is received from an applicant, such proposal may be considered only when (i) there is neighbours NOC duly signed and witnessed on the body of the drawings, (ii) the Plot coverage and F.A.R. shall not exceed the permissible limits and (iii) subject to structural design which shall not affect the structural stability of the proposed structure/building and the neighboring structure(s)/building(s).*

D2.2. **Special Exemption**: In case of special project where the plot coverage of the proposed building is within the maximum permissible coverage, additional floor/floors above the maximum permissible floor may be permitted by the government provided the proposed total floor area is within the permissible F.A.R. limit.

D3. PROVISIONS FOR HIGHRISE DEVELOPMENT

(i) For plots between 2001 and 35000 sq feet, the longest side of the plot shall have a minimum setback of 4.50 meters with no balconies or closed projections allowed on the setback area except for chajja of maximum 0.60 meters measured from the centre of columns which can be allowed only after two floors from the ground/road level corresponding to the longest side.

(ii) Other than the setbacks specified in these byelaws, the building shall adopt reasonable safety measures and provisions for fire and life safety as per Part IV of the National Building Code of India 2016 and as per recommendations of the Fire and Emergency Services Department, Government of Meghalaya.

(iii) Such buildings shall be undertaken by owners by engaging registered architects/ technical personnel/ CMAR/ developers. The designs and building plans shall be signed by the owner / registered developer, registered architect / technical personnel who shall be responsible for the supervision, structural safety, earthquake safety, fire safety and specifications compliance of such buildings. Buildings shall be designed for compliance with earth quake resistance and resisting other natural hazards. The Completion Certificate shall mention that the norms have been followed in the design and construction of buildings for making the buildings resistant to earthquake, compliance with structural safety and fire safety requirements.

(iv) The work of the building services like sanitation, plumbing, fire safety requirements, lifts, electrical installations, and other utility services shall be executed under the planning, design and supervision of qualified and competent technical personnel.

D3.1. Glass Facade opening

In case of external laminated glass facades, openable portions have to be left at regular distances for firefighting and smoke exhaust. This portion should be of toughened (safety tempered) glass and clearly indicated by suitable visible marking.

a) An Opening to the glass facade of min. width 1.5 m and height 1.5m shall be provided at every floor at a level of 1.2 m from the flooring facing compulsory open space as well as on road side. Construction that complies with the fire rating of the horizontal segregation and has any gap packed with a non-combustible material to withstand thermal expansion and structural movement of the walling without the loss of seal against fire and smoke.

b) Mechanism of Opening: The openable glass panel shall be either left or right shall have manual opening mechanism from inside as well as outside. Such openable panels shall be marked conspicuously so as to easily identify the openable panel from outside.

c) Fire seal to be provided at every floor level between the external glazing and building structure.

d) The glazing used for the façade shall be of toughened (tempered) safety glass as per I.S. 2553.

e) To avoid fire propagation vertically from one floor to another floor, a continuous glass I must be separated internally by a smoke/fire seal which is of non-combustible material having a fire resistance rating of not less than 2 hours.

f) Alternate vertical glass panels of the façade shall be openable type with the mechanism mentioned above in order to ventilate the smoke.

g) Refuge areas covered with the glass façade shall have all the panels fully openable (either left or right hinged) both from inside as well as outside.

D3.2. **Podium**

Podium means a continuous projecting base or pedestal around the building, generally used for parking and movement of vehicles, as specified in the bye laws which may be partially or fully above ground level. It can be used for recreational spaces, landscaping, plantation, tot-lot, swimming pool, deck, assembly space, movement, building tower(s) etc.

i. Fire and building services / utilities in accordance with reasonable safety measures and provisions of NBC – 2016 and as per recommendation of the Fire & Emergency Services Department, Government of Meghalaya shall be complied with.

ii. Podium for parking of vehicles may be permitted when the height of the Podium is at least 2.40m from the floor to the bottom of beam.

iii. Podium shall be permissible for plots measuring 15000 sq. ft and above.

iv. Podium shall be permissible for joining two or more separate buildings in a plot. Buildings or wings of buildings subjected to availability of manoeuvring space for Fire Engine, in such case the distance between two buildings / wings of buildings shall be minimum 4.50m.

Note: *The Podium area is exempted from the Plot Coverage (P.C) calculations and its construction is allowed after leaving the mandatory setbacks.*

D.3.3 **Fire & Life Safety**

Reasonable safety measures and provisions for fire and life safety as per Part IV of the NBC 2016 and as per recommendation of the Fire & Emergency Services Department, Government of Meghalaya shall apply to the following:-

1) hotel, commercial, industrial, storage, hazardous and mixed occupancies, where any of these buildings have covered area more than 500 sq.m;

2) educational/institutional/public & semi-public buildings having 9m height or more with covered area more than 500 sq.m;

3) all assembly buildings;

4) buildings with basements/lower ground floor/ Cellar/underground floor with covered area more than 500 sq.m.

5) highrise buildings.

6) special projects.

7) buildings, having area more than 300 sq.m of incidental assembly occupancy on any floor.

Note: *Considering the irregular plot shapes and sizes, slope profile, local topography of building sites, road widths and means of access available etc., the Authority may consider the building rear and short side setbacks on a case to case basis with justifications as per local site conditions but however shall not be less than those prescribed in these byelaws.*

D4. REQUIREMENTS FOR INDUSTRIAL BUILDINGS (FACTORIES, WORKSHOPS ETC.)

D4.1. The relevant provisions contained in the Factory Act, 1948 shall apply for the construction of factory buildings. The minimum internal height of workrooms shall not be less than 4.5 mt. measured from the floor level to the lowest point in the ceiling provided that this bye-law shall not apply to room intended for storage, godowns and the like purposes but only in rooms occupied by workers for purposes of manufacture.

In case of small factories, employing less than 50 workers for purposes of manufacturing and carrying on a class of manufacturing covered under the flatted factories and service industries, the Authority may allow minimum height upto 3.60m.

D4.2. Requirements of water supply, drainage shall be as per National Building Code 2016 and as per sanitation requirements as per byelaw B11.

D4.3. (i) Each working room shall be provided with adequate number of exits not less than two in number.

(ii) No exit shall be less than 1.20 m in width and 2.10 m in height and doors of such exit shall be so arrange that it can be opened easily from inside.

D4.4. No staircase, lobby corridors or passage shall be less than 1.20 m in width.

D4.5. There shall be provided at all time for each person employed in any room of factory at least 3.50 sq. m of the floor space exclusive of that occupied by the machinery and a breathing space of at least 15 cum. (Further the provision on lighting and ventilation of National Building Code of India shall be followed).

D4.6. The effluent from industries (industrial and biological in nature) shall be treated and shall be of quality to the satisfaction of the Meghalaya State Pollution Control Board before letting out the same into a watercourse or drain.

D5. EDUCATIONAL BUILDING (SCHOOL/COLLEGES)

D5.1. No basement or cellar room shall be designed, constructed, altered, converted or used for the purpose of study or instructions.

D5.2. Every study room shall have minimum ventilation to the extent of $1/5^{th}$ of its floor area.

D5.3. A minimum of 1.00 sq. m of net floor space per student shall be provided. A central hall will not be counted in the accommodation, nor will a class room for cookery, laundry, manual instruction, drawing or science. The number of students in such building shall be calculated on this basis for the purpose of this clause.

D5.4. Every assembly room, gymnasium shall have a minimum clear height of 3.60 m except under a girder which may project 0.60 m below the required ceiling height. A clear internal height under balcony or a girder shall not be less than 3.00 m. A minimum room height for classroom in all schools and other institutions shall not be less than 3.00 m. The minimum head room under beams shall be 2.75 m.

D5.5. Exit requirements shall conform to National Building Code 2016. No door shall be less than 1.20 m in width and 2.20 m in height.

D5.6. Requirement of water supply, drainage and sanitary installation shall conform to National Building Code 2016 and as per sanitation requirements as per byelaw B11.

D5.7. Total no. of floors permissible is only 4 (four), Additional floor(s) shall be permitted only for non academic purposes i.e. no classroom/boarding/dining/recreational space or extra – curricular activity will be allowed.

D6. AUDITORIUMS

In addition to the requirements specified under Building byelaws, the following byelaws shall also be applicable.

D6.1. **Minimum Requirements**: The following requirement shall be provided:

D6.1.1. The aggregate area of foyer exclusive of all passages shall be provided at every sitting-level at the rate of 0.1 sq.m per seat at that level, subject to minimum foyer width of 4.50 m.

D6.1.2. Entry and exit passages of minimum 3 meters width shall be provided.

D6.1.3. The booking-office shall always be so located that intending purchasers of tickets does not have to queue up in open space.

D6.2. **Plinth:** The plinth shall be measured at the foyer level and it shall not be less than 0.45 m.

D6.3. **Corridor:** No landing, lobby, corridor or passage, not being an internal passage between and/or across rows of seats, intended for use as an exit; shall be less than 3m in width and there shall be no recess or projections in the walls of such passages or corridors within 1.80m of the ground.

D6.4. **Doors:** The auditorium doors shall be provided at the rate of not less than one door of a dimension of 1.50 m in width and 2.10 m in clear height for every 150 seats or part thereof. All outside doors for the use of the public shall be made to open outwards and in such manner that when opened, they shall not obstruct any gangway, passage, stairway or landing. These doors shall be provided in such a way that they open in aisles or cross-aisles provided under these byelaws.

D6.5. **Balcony, its height, floor of an auditorium and arrangement of seats:**

D6.5.1. The height of the bottom balcony of the gallery shall be less than 3m from the floor of the auditorium.

D6.5.2. The clear distance between the backs of two successive rows shall not be less than 1m. But for seats with rocking backs it may be 0.90m.

D6.5.3. The minimum width of balcony steps shall be 0.80m provided that for the front and rear steps this distance shall be 0.90m.

D6.5.4. The minimum height of the roof or ceiling at the highest steps of the balcony shall be 3.00m and at no place the distance between the nodding and the lowest projection ray shall be less than 2.40m.

D6.5.5. The minimum width of the seat shall be 0.50m provided that 25 percent of the total seats may permitted upto the width of 0.45m to adjust the staggering of the seats. The width of the seats shall be measured from centre of hand rails or arm rests.

D6.6. **Aisles:** Clear aisles not less than 1.20m in width shall be formed at right angles to the line of seating in such number and manner that no seat shall be more than 3.80m away from any aisles measured in the line of seating. Where all these aisles do not directly meet the exit doors, cross aisles shall be provided in such number and manner that no row of seats shall be more than 7 meters away from cross-aisles. The width of cross aisles shall be 1.20m provided further that in computing the number of cross-aisles, the door connecting the aisles with foyer shall be considered as cross-aisles.

Explanation: The first cross-aisles in such a case shall be provided after the fourteen rows from the door.

D6.7. **Visibility requirement:**

D6.7.1. The seat nearest to the screen shall not be nearer than the effective width of the normal picture (ratio 1:1.33). This distance shall be ¾ in case of cinema scope and other wide angles techniques and one half in case of 70 mm presentations.

D6.7.2. The elevation of the balcony seats shall be such that line of sight is not inclined more than 30^{O} to the horizontal.

D6.7.3. The seats should preferably be staggered side-ways in relation to those in front, so that a spectator in any rows is not looking directly over the head of the person immediately in front of him.

D6.7.4. The position and height of the screen shall be regulated in such a way that the maximum angle of the line of vision from the front seat to the top of the screen shall not exceed 50.

D6.8. **Ventilation:** Every auditorium shall be lighted and ventilated by doors, ventilators and windows abutting on an interior or exterior open space which shall not be less than $1/5^{th}$ of the total floor area provided that if exhaust fans are installed or if the auditorium is air-conditioned, the requirement of this clause may be suitably relaxed.

D6.9. **Minimum Requirement of Stairs:**

D6.9.1. Except where otherwise provided under these bye-laws, the minimum clear width of all the stairs shall be 1.50m.

D6.9.2. No stair-case shall have a flight of more than 15 steps or less than 3 steps and width of the landing between such flights shall be of the same width of the stair-case. The tread of the step shall not be less than 30 cms. The riser shall not be higher than 15cms.

D6.9.3. No space less than 2.40m in height shall be allowed under the floor of auditorium.

D6.9.4. Except for a double-decker cinema or theatre, the access to the auditorium from the ground floor, if it is on upper floor or on stilts shall be provided by not less than three stairs: two of which shall be exit stairs. The clear width of these next stairs shall not be less than 2m.

D6.9.5. The access to balcony floor from auditorium floor shall be provided by not less than three stairs, two of which shall be exit stairs provided that if one exit stair is to be provided instead of two, its minimum width shall be 2.40m.

D6.9.6 In case of double-decker cinema or theatre:

- The access to upper class auditorium from ground floor shall be provided by at least three stairs out of which two shall be exit stairs with minimum clear width of 2Mts.
- The access to lower class auditorium from ground floor shall be provided by at least two stairs, one of which shall be exit stair.

D7 Private Nursing Homes, Hospitals etc.

Total No. of floors permissible is 4 (four) only. Additional floor(s), if any, shall only be allowed for any uses of the hospital/staff only other than public activity. The additional floor(s), shall not be allowed for any patients' activities viz. waiting rooms, doctors consultation rooms, bedrooms, recovery rooms, blood banks, labour rooms, ICUs, laboratories, pharmacies or any other activity that would require a person to climb or walk more than 4 storeys.

D8 City Centre Zone:

D8.1 Government may notify prime commercial zones in cities of the state as 'City Centre Zones'. Commercial buildings in this zone can be permitted up to a maximum building height of 27 metres (inclusive of parking floor, basement/lower ground floor, underground floor/cellar, mezzanine floor, service floor, if any) with 7 (Seven) maximum number of permissible floors (inclusive of parking floor, basement/lower ground floor, underground floor/cellar), 2.5 maximum permissible FAR and 50% maximum permissible plot coverage.

D8.2 **New Buildings:** Notwithstanding the provisions of these bye-laws, such new buildings shall have the following requirements.

1. The building shall meet all parking requirements.
2. The building shall adopt safety measures and provisions for fire & life safety as per the National Building Code of India 2016.
3. The building shall have a minimum plot size above 7500 sq.ft.
4. The building shall have a minimum front setback of 5.0 metres.
5. The building shall adopt Green Building provisions.
6. The building shall adopt measures for proper disposal of solid waste.
7. The building shall have provisions for treatment of waste water and recycling of the same for non-potable use.
8. The building shall adopt rain water harvesting systems.
9. 30% of the plot should be earmarked for open space with soft cover and landscaping.
10. Requirements of high-rise buildings.

D8.3 **Existing Buildings:** Existing buildings (excepting proposals for only an additional soft roofing structure) within a City Centre Zone may be allowed to be extended provided they obtain a certification to the structural safety/sufficiency of the existing building and any extension thereto from NIT, IIT & government engineering colleges and also fulfil all the following requirements.

(a) Where the plot coverage of the existing building has exceeded the maximum permissible limits as prescribed in these bye-laws, extension of additional floor(s) shall be as per bye-law D8.1 with setbacks as prescribed in these bye-laws.

(b) The plot or the proposed extension shall have at least 20% open space.

(c) The existing building shall have the capacity to be redesigned for accommodating the required parking spaces.

(d) The existing entry/exits and means of access in the building are adequate in numbers and size or have the capacity to be augmented to satisfy fire and life safety requirements.

(e) The existing building shall have the capacity to meet the requirements of high-rise buildings.

(f) The existing building shall be located on a motorable plot accessible by a fire engine.

(g) The existing building shall have proper documented details in relation to its permit, structural design / construction details, completion, etc.

(h) In case of plots where the buildings (self/neighbour) have been constructed in close proximity to the plot boundaries, the proposed building/extension shall have a minimum setback of 3 metres from such plot boundaries.

Where any of the above requirements are not fulfilled, the matter shall be referred to the Government for its decision.

D8.4 For projects under City Centre Zone buildings permission fees shall be decided by the Authority and approved by the Government from time to time.

D8.5 Buildings under City Centre Zone shall be required to obtain clearance(s) from the concerned government departments in respect of sanitation, power supply, fire & emergency services, traffic etc.

D9 General Notes:

a. Architectural elements such as louvers, pergolas, other sun shade materials are free from F.A.R.

b. Any architectural roof top structures would also be permitted free of F.A.R. if not used for habitable or commercial purposes.

c. Building elements such as sky bridges and landscape terraces shall be permitted free of F.A.R.

d. Services can be permitted on roofs with adequate screening for the same.

e. Scissor stair-case would be permitted provided all travel distance and fire norms are adhered to.

f. Multilevel car parking with car lifts would be permitted with adequate fire safety.

g. Provision of lift shall be made for all high-rise buildings having a height of 15.0 meters and above.

h. A stair-case shall not be arranged round a lift shaft.

i. Collapsible gates shall not be permitted for lifts and shall have solid doors with fire resistance of at least 1 hour.

j. Provide for rain water harvesting/recycling of waste water in the building as prescribed in these bye-laws.

SECTION E

FACILITIES FOR THE ELDERLY & DIFFERENTLY ABLED

E1. Applicability:

These bye-laws shall be applicable to all buildings and facilities used by the public such as, institutional, assembly, commercial, business, public and semi-public buildings constructed on plots having a covered area of more than 400 sq.m. For buildings with covered area less than 400 sq.m. basic facilities shall be provided *viz.* ramp access and toilets/washrooms/ facilitation office room shall be provided.

It shall not apply to residential buildings.

E2. Definitions:

E2.1 Ambulant Disabled People: Disabled who are able to walk but who may depend on prostheses (Artificial Limbs) orthoses (Calipers), Sticks, crutches or walking aids.

E2.2 Non - Ambulant Disabled People: Disabled people with impairments that confine them to wheelchair.

E2.3 Wheel Chair: Chair used by Disabled for mobility.

i) Size of small wheel chair: 750mm x 1050mm.

ii) Size of large wheel chair: 800mm x 1500mm.

E3. BUILDING DESIGNS:

E3.1 **Buildings to be designed for Ambulant Disabled People**

Higher Secondary Schools, Conference Hall, Dance Halls, Youth Centers, Youth Clubs Sport Centers, Sport Pavilions, Boat Club Houses, Ice Rinks, Bowling Centers, Swimming Pools, Police Stations, Law Courts, Courts Houses, Sport Stadiums, Theatres, Concert Halls, Cinemas, Auditoria, Small Offices (maximum covered area 1400 sq.mt) Snack Bars, Cafes and Banqueting Rooms (for capacity above 50 dinners).

Note:

a. In sport stadiums provisions shall be made for non-ambulant spectators (small wheel chair).

b. @ 1:1000 up to 10,000 spectators and @ 1:2000 for spectators above 10,000.

c. In Theatres, Concert Halls, Cinemas and Auditoria provisions shall be made for non-ambulant spectators (Small Wheel Chairs) @ 1/250 up to 1000 spectators and 1/500 for spectators above 1000.

E3.2 **Buildings to be designed for Non-Ambulant Disabled People**

Schools for differently abled, Botanical Gardens, Religious Buildings, Elderly People Clubs, Village Halls, Day Centers, Junior Training Centers, Post Offices, Banks, Dispensaries, Railway Stations, Shops, Super Markets, and Departmental Stores.

Note: *Large wheel chair criteria shall be applicable on ground floors of the following building, post offices, banks, dispensaries, railway station, shops, supermarkets, and departmental stores.*

E3.3 **Buildings to be designed for Non-Ambulant People (using small wheel chairs)**

Public lavatories in Tourist Spots, Clubs Motels, Professional and Scientific Institution, Museum, Art Galleries, Public Libraries, Laboratories, Universities, College for further Education, Teachers Training Colleges, Technical College, Exhibition Halls, Dentist Surgeries, Administrative Department of the Hospitals, Service Stations, Car Parking, Buildings Airports Terminals, Bus Terminals, Factories Employing differently-abled for sedentary works, Large Offices, (with covered

area above 1400 sq.mt.), Tax Offices, Passport Offices, Pension Offices, and Labour Offices, Cafes, Banqueting Rooms and Snack Bars (for capacity above 100 dinners).

E4 **Site planning and Building Requirements:** As per National Building Code 2016.

E5 **Parking**

For parking of vehicles the following provisions shall be made:

E5.1 Surface parking for two car spaces shall be provided near entrance for the persons with disabilities with maximum travel distance of 30m from building entrance.

E5.2 The width of parking shall be a minimum of 3.60m.

E5.3 The information stating that the space is reserved for wheel chair users shall be conspicuously displayed.

E5.4 Guiding floor materials shall be provided for a device, which guides visually impaired persons with audible signals, or other devices, which served the same purpose, shall be provided.

E6. **Building requirements**

The specified facilities for the building for persons with disabilities shall be as follows:-

1. Approach to plinth level.
2. Corridor connecting the entrance/exit for the handicapped.
3. Stairways.
4. Lift.
5. Toilet.
6. Drinking water.

E6.1 **Approach to plinth level**

Every building should have at least one entrance accessible to the disabled and shall be indicated by proper signage. This entrance shall be approached through a ramp together with the stepped entry.

E6.2 **Ramped Approached**

The ramp shall be finished with non-slip materials. Minimum width of ramp shall be 1000mm with maximum gradient 1:12 length of ramp shall not exceed 9.0m having 800mm. high handrails on both sides.

E6.3 **Exit/Entrance Door and Entrance Landing**

(a) The minimum clear opening of the entrance door shall be 900mm.

(b) The entrance landing shall be provided adjacent to ramp with a minimum dimension of 1800mm x 2000mm. finishes shall have a non-slip surface with a texture traversable by a wheel chair.

E6.4 **Lifts Provisions:** Wherever lifts is required, provision for at least 1 lift shall be made for the wheel chair user with the following cage dimensions:

Clear internal depth - 1100mm

Clear internal width - 2000mm.

Entrance door width - 900mm.

(a) A handrail not less than 600mm long at 900mm – 1000mm above floor level shall be fixed adjacent to the control panel.

(b) The time of an automatically closing door should be minimum of 5 seconds and the closing sipped should not exceed 0.25 metre/sec.

(c) The Cage interior should be provided with a device that audibly indicates the floor the cage has reached and indicates that the cage door for entrance/exit is either open or closed.

E6.5 **ACCESS TO TOILET FACILITY:**

E6.5.1 Unisex Accessible Toilets (multi-use).

Unisex accessible toilet allows Persons with Disabilities to be assisted by carers of the same or opposite gender. In all public buildings, one unisex accessible toilet should be provided in each toilet block. Apart from this all toilet blocks must have one cubicle suitable for use by persons with ambulatory disabilities.

The unisex toilet should have: -

- The layout of the fixtures in the toilet should be such that there is a clear maneuvering space of 1800mm x 1800mm in front of the water closet and wash basin in the accessible toilet unit (Figure E6-1);
- Minimum internal dimensions of 2200mm x 2000mm minimum (Figure E6-2);
- All fixtures and utilities should provide a clear space of 900mm x 1200mm for wheelchair users to access them;
- Have clear space of not less than 900mm wide next to the water closet;

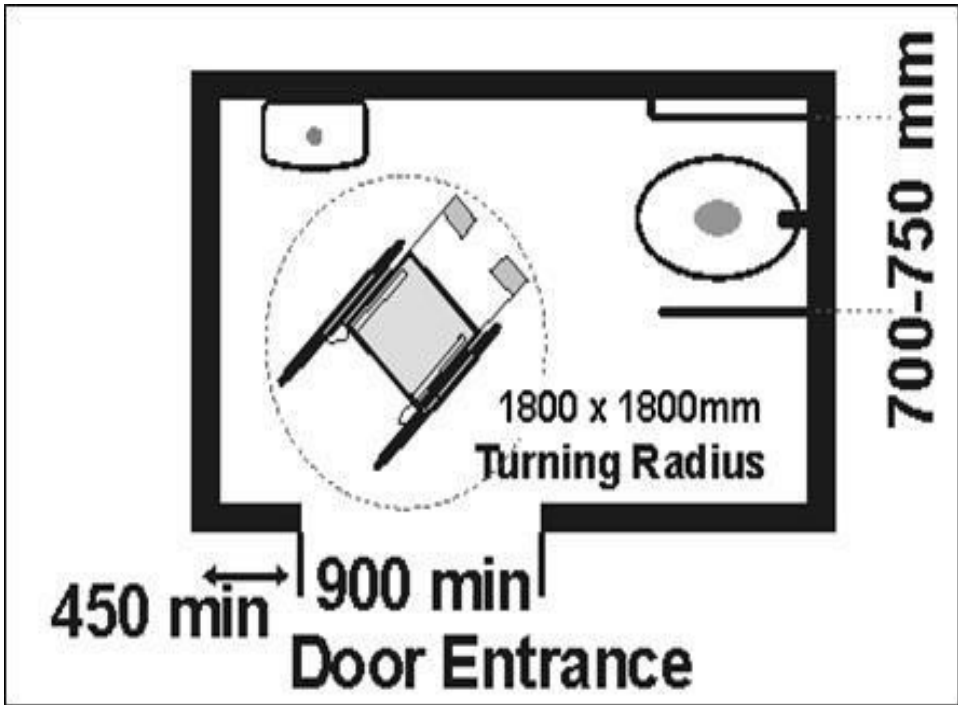


Figure E6-1: Wheelchair maneuvering space in toilet

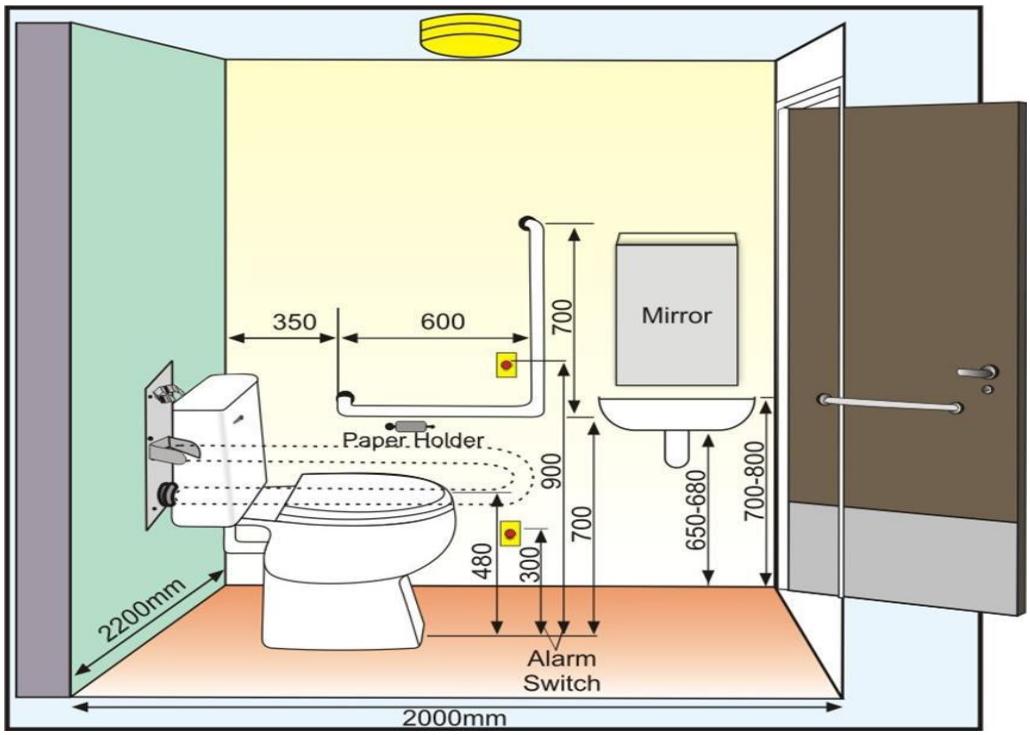


Figure E6-2: Suggested Plan WC Compartment for the Ambulant Disabled

E6.5.2 Toilet Cubicle for Wheelchair Users.

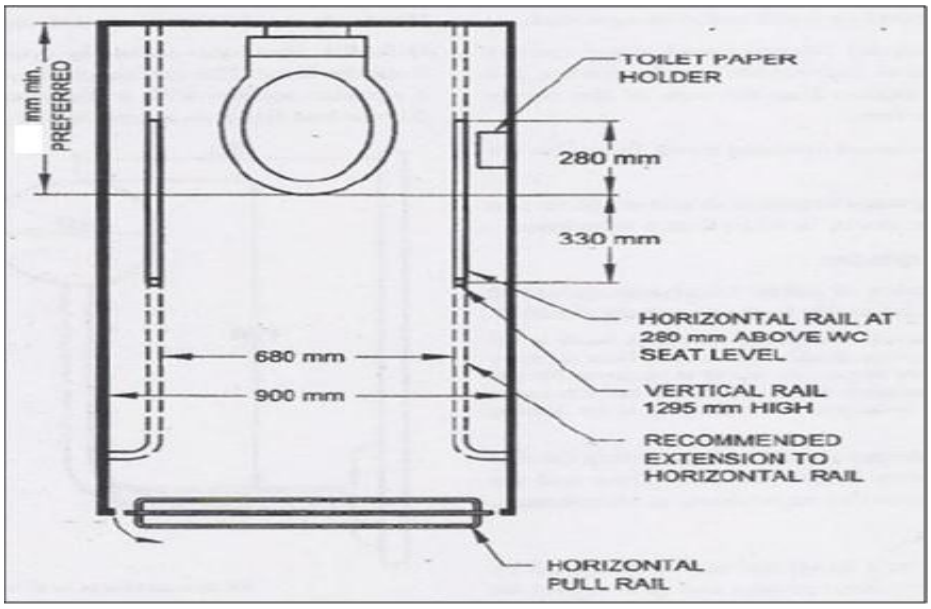
Where a toilet cubicle for the wheelchair user is provided, it should conform to the dimensions as given in figure E6.1.

E6.5.3 Toilet cubicle for Ambulatory Disabled.

In a set of toilets (for ladies or for gents), there shall be one WC for the use of the ambulant disabled persons as per Figure E6-2 and E6-3.

E6.5.4 **Toilet Doors**

The toilet door should be either an outward opening door or two-way opening door or a sliding type and should provide a clear opening width of at least 900mm.



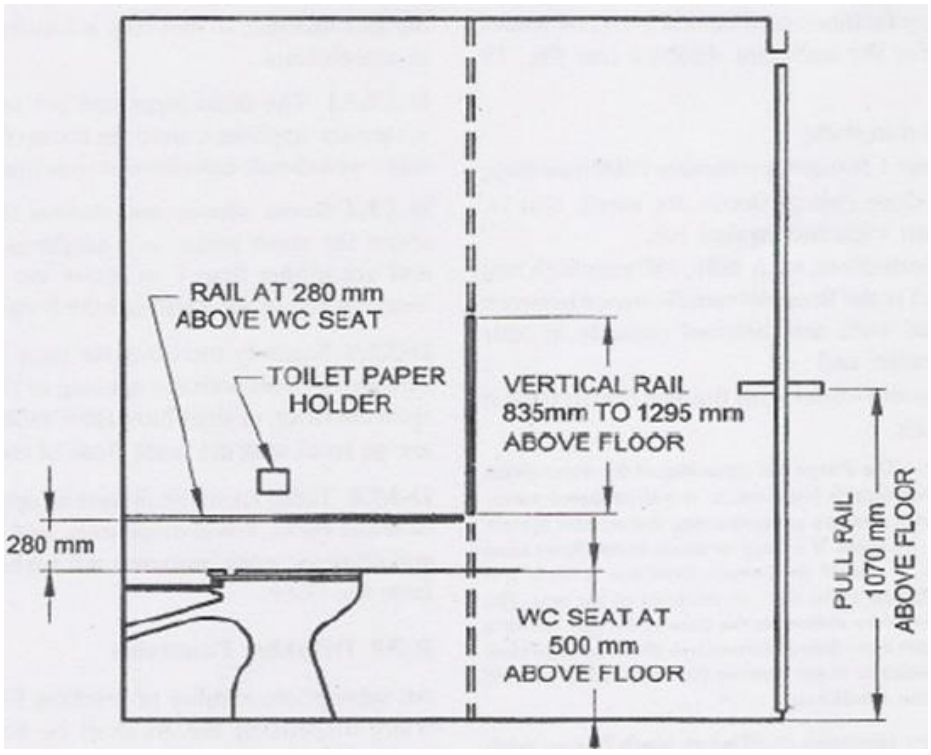


Figure E6-3: WC Compartment for the Ambulant Disabled

E6.6 **Water Closet**

Be located between 460mm to 480mm from the centreline of the water closet to the adjacent wall;

It should have a clear dimension of 750 mm from the front edge of the water closet to the rear wall to facilitate side transfer;

The top of the water closet seat should be 450 to 480mm from the floor as shown in the figure E6-2; when the water closet does not have the required height, the necessary height may be obtained by providing a circular base under the water closet. The base so provided must not protrude beyond the circumference of the base of the water closet;

There should be an adequate clear floor space of at least 1350mm depth and 900mm width, both in front and on the transfer side, adjacent to the water closet;

Have a suitable back support to reduce the chance of imbalance or injury caused by leaning against exposed valves or pipes;

Where more than one accessible toilet is provided, a left and right hand transfer option should be made available.

E6.6.1 Water Closet Grab Bars

Water closets should be provided with grab bars, be mounted at a height between 200mm and 250mm from the water closet seat;

One L-shape grab bar: 600mm long horizontal and 700mm long vertical should be mounted on the side wall closest to the water closet (Figure E6-4);

A hinged type horizontal grab bar should be installed adjacent to the water closet; at a distance of 320mm from the centre-line of the WC, between heights of 200mm - 250mm from the top of the water closet seat and extending 100mm to 150mm beyond the front of the water closet.

An emergency alarm cum call switch should be provided within easy reach on the wall near water closet at two levels: at 300mm and 900mm from the floor level to allow user to call for help in case of an emergency.

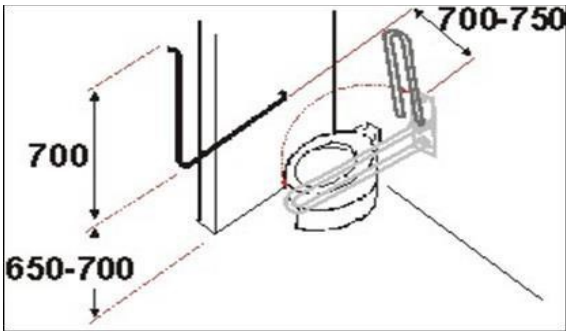


Figure E6.4: Grab bars specifications

E6.6.2 Washroom Accessories

Washroom accessories should comprise the following:

- A mirror installed in a way to have the bottom edge at a height of not more than 1000mm from the floor and mirror should be tilted at an angle of 300 for better visibility of wheelchair user

- Accessories should be placed in close proximity to the basin, to avoid a person with wet hands wheeling a chair.

E6.6.3 Additional Considerations

There should be adequate colour and tonal contrast between the fixtures, walls and the flooring. This is to enable easy recognition by persons with visual impairments.

There should be a visual emergency alarm in the toilet.

E6.6.4 Urinals

At least one of the urinals in the Gents toilets on each floor should have grab bars (Figure E6-5); installed on each side and in the front of the urinal to support ambulant Persons with Disabilities (for example, crutch users).

The front bar is to provide chest support; the sidebars are for the user to hold on to while standing.

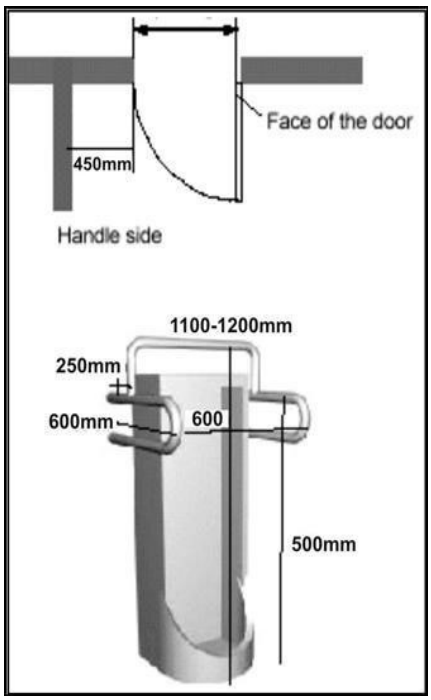


Figure E6.5: Urinal with chest support grab bar

Urinals shall be stall-type or wall-hung, with an elongated rim at a maximum of 430 mm above the finish floor.

A clear floor space 760mm by 1220mm should be provided in front of urinals to allow forward approach. Urinal shields (that do not extend beyond the front edge of the urinal rim) may be provided with 735mm clearance between them
Flush controls should:

- Be located not more than 1200mm from the floor.

Where urinals for the ambulatory disabled are provided, they should comply with the following as illustrated in the figure E6-6.

E7 **Categories of buildings for Person with Disabilities facilities:**

i. Assembly Halls, Sports centre etc.

Under this category fall movie theatres, lecture halls, spectator seating in sports centres, and other assembly halls with fixed seating. The number of spaces designated for wheelchair users in a seating area can be estimated according to Table E7-1:

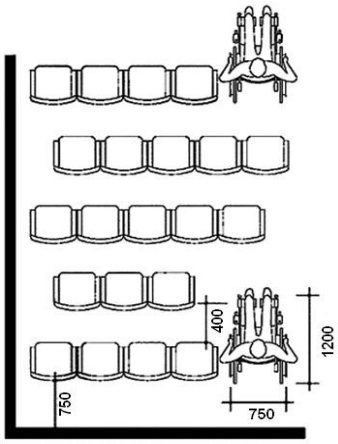


Figure: E7-1: Wheelchair sitting in a hall

Table E7-1: Seating for wheelchair users in Halls/theatre/stadiums

Number of seats in a seating area	**Number of required spaces for wheelchair users**
up to 600	6 i.e. 1/100
up to 1000	6 + 2
over 1000	8+1 for each additional increment of 1000 seats

Some seats with removable or flip-up armrests should be provided at row ends to accommodate a wheelchair user or a person with limited ambulatory mobility. A level floor area for wheelchair users should be placed at row ends and should be scattered on different levels so as to have a variety of seating and viewing locations (Figure E7-1).

ii. Cafeterias and Restaurants

New restaurants or parts of new restaurants and eating spaces should be accessible and Persons with Disabilities and elderly should use facilities and services.

In self-service restaurants, tray slides and counters should be mounted at 800mm from the floor for wheel chair users. Food shelves should be mounted at a maximum height of 1200mm and aisle space of minimum 900mm should be provided (Figure E7-2).

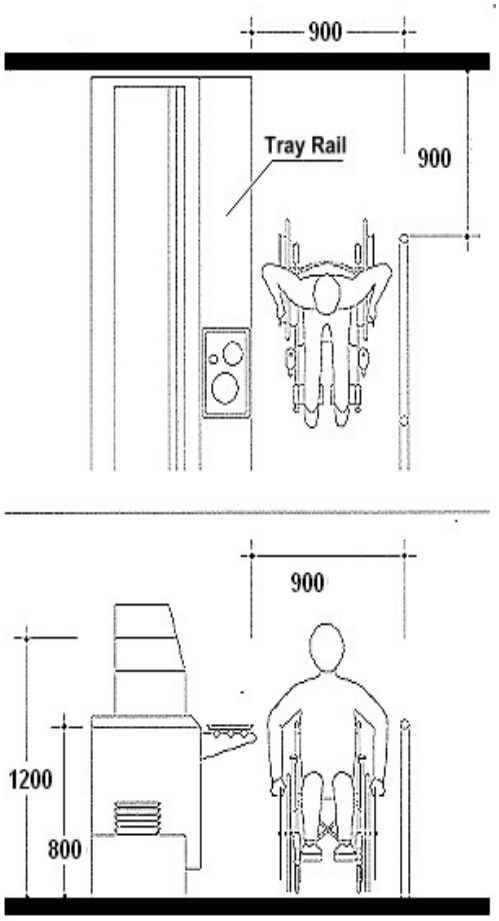


Figure E7-2: Wheel chair, aisle and reach height

iii. Hotels, Motels, Guest Houses and Dormitories.

Minimum 5% of the total rooms should be compliant for the differently abled.
Bathrooms and water closets etc. connected to these rooms have to be fully equipped. Rooms designated for wheelchair users should, where possible, be placed at ground level so as to have a direct means of escape in case of fire.

**Figures E6-1 to E7.2 are for illustrative purposes only.

SECTION F

REQUIREMENTS OF GROUP DEVELOPMENT, GROUP HOUSING/ CLUSTER HOUSING/ RESIDENTIAL ENCLAVES AND ROW HOUSING SCHEMES

F1. **General Requirement:** Such developments shall be considered where the site is developed together with building constructions and all amenities and facilities and not disposed as open plots.

I. Applications shall in addition to the requirements under these byelaws, be accompanied by:

II. A Services and Utilities Plan as per standards for water supply system, drainage and storm water disposal system, sewerage system, rain water harvesting structures, and for other utilities.

III. A landscaping plan including rain water harvesting/water recycling details.

IV. Parking & internal Circulation Plan along with Common pool parking area plan, if any.

V. The minimum plot size of EWS/LIG category = 50 sq.m.

VI. The minimum plot size of MIG category = 240 sq.m.

The above shall be drawn on suitable scale with relevant details.

VII. The guidelines and requirements as given in the National Building Code for Low Cost Housing/ Government orders shall be followed.

F2. **GROUP DEVELOPMENT SCHEMES & GROUP HOUSING SCHEMES**

Minimum site area: **4000 sq.m**

Group Housing Schemes are reckoned as Apartment blocks in two or more blocks. These could be high-rise or simple walk-up units. Group Development Schemes are reckoned as Building in two or more blocks in a campus or site, and could be normal height buildings or high-rise blocks or combination of both.

F2.1 **The open spaces/setbacks for such type of development shall be as follows:**

Table F- 1

Sl. No	Height of the Building (m).	Exterior open spaces to be left on all sides in m. (front rear and sides in each plot)
1	10	3
2	15	5
3	18	6
4	21	7

I. Common amenities and facilities like shopping center, community hall or center / club house etc. are required to be provided in up to 5 % of the area and shall be planned and developed in cases where the units are above 50 in number.

II. A through public access road with 2-lane black-topped is to be developed on any one side as per suitability and feasibility for the convenience of accessibility of other sites and lands located in the interior.

III. Minimum of 10 % of site area shall be earmarked for organised open space and be utilized as greenery, tot lot or soft landscaping, etc. and shall be provided over and above the mandatory open spaces. This space may be in one or more pockets.

F3. ROW TYPE HOUSING:

I. Minimum site area : **300 sq.m**

II. Minimum size of individual house : 50 sq m.

A minimum of 2 but not more than 8 houses shall be developed in a row/block.

Separation between two blocks shall not be less than 6 mt, which may be an open space or an alley

III. Internal cul-de-sac road 5 m with max. length 50 mt. is allowed.

IV. Minimum open space :10 % of site area

V. Minimum setbacks: As per byelaws.

The setbacks in a row can be interchangeable.

VI. Duplex/Triplex etc. house: Shall be permitted with separate entrances/staircases for the individual dwelling units.

VII. In case of very large projects more than 5 acres, common amenities and facilities like shopping center, community hall/club house etc. are required to be provided in 5 % of the area.

VIII. 2 or more plots adjacent to each other may be mutated for the purpose of developing row housing. However, the Authority shall not be part of any arbitration arising out of any discrepancy in relation to the mutation of plots.

F4. CLUSTER HOUSING

I. Minimum site area: **1000 sq m**

II. Minimum plot size for cluster house: 25 sq m with maximum number of 20 houses in a cluster

III. Minimum size of cluster open space: 36 sq m with a minimum width of 6m

IV. Minimum access road to the Cluster Housing Complex: 5 m. Internal access may be through pedestrian paths of 3.5 m

V. Minimum space between two clusters: 6m which may be utilised as pathway/alley

VI. Building setbacks: No setbacks are needed for interior clusters as the lighting and ventilation is either from the central open space of cluster and the surrounding pedestrian pathway/ access road of the cluster. However, interior courtyards may be provided for larger plots and building areas to facilitate lighting and ventilation. For end clusters sides that are abutting peripheral thoroughfare roads, setback shall be as given in Table F-1.

F5. RESIDENTIAL ENCLAVES:

I. These would be allowed as gated development that are exclusive housing areas with common compound wall with access control through gates and having their own facilities and amenities. The housing units may comprise of row houses, semi-detached, detached or Apartment blocks or a mix or combination of the above. The building requirements would be as per the given type of housing.

II. Minimum size of site: **2000 sq.m.**

III. Size of plots and height permissible: as per type of housing and requirements as given above for the respective type of housing.

IV. Minimum Common Open space: 10 % of site area.

V. Building setbacks: As per type of housing & requirements given above for the said type of housing and as per Table F- 1.

SECTION – G

GREEN BUILDINGS & SUSTAINABILITY PROVISIONS

G.1 All buildings while submitting the building plans for sanctions, shall mandatorily include the complete proposal for green buildings and sustainability norms as indicated in the table below:-

Table G1

Plot Category	Plot Area (Sq feet)	Provision for Home Stays, Residential Developments	Provision for Commercial Institutions, Hospitals, Public Buildings, Hostels, Guest Houses
I	< 5000	1. Rain Water Harvesting. 2. Segregation of Waste. 3. Soft cover provision of minimum 10% plot. 4. "Primary ETP" for building having more than 8 dwelling units area.	1. Rain Water Harvesting. 2. Segregation of Waste. 3. Soft cover provision of minimum 10% plot area. 4. Waste Water Management as per recommendations of the MSPCB
II	5001 – 25000	1. Rain Water Harvesting. 2. Primary ETP for building having more than 8 dwelling units 3. Reduction of Hardscape (minimum of 20% should be soft cover). 4. Segregation of Waste. 5. Ground water recharge for covered area more than 3000 sqft.	1. Rain Water Harvesting. 2. Waste Water above recycle and re-use. (for covered area more than 5000 sqft). 3. Installation of Solar assisted water heating system. (Optional) 4. Reduction of Hardscape (minimum of 20% should be soft cover). 5. Segregation of waste. 6. Lighting of common areas (for covered area more than 5000 sq. feet) by SPVP/ LED devices.

III	Above 25000 sqft.	1. Rain Water Harvesting. 2. Primary ETP 3. Installation of SPVP. 4. Installation of solar assisted water heating system. (optional). 5. Reduction of Hardscape (minimum of 20% should be soft cover) 6. Low Water consumption plumbing fixtures. 7. Low energy consumption lighting fixtures. 8. Energy efficiency & HVAC system. 9. Lighting of common areas by solar energy / LED devices. 10. Reduction of Hardscape for minimum 20%. 11. Segregation of wastes. 12. Organic Wastes Management.	1. Rain Water Harvesting. 2. Waste Water recycle and re – use. 3. Installation of SPVP /LED devices. 4. Installation of solar assisted water heating system. (optional). 5. Low Water consumption plumbing fixtures. 6. Low energy consumption lighting fixtures. 7. Energy efficiency & HVAC system. 8. Lighting of common areas by solar energy / LED devices. 9. Reduction of Hardscape. 10. Segregation of wastes. 11. Organic Wastes Management.

Note: *Primary ETP shall be used for treatment of waste water generated from rooms, kitchens laundry and bathrooms.*

G2 INCENTIVES FOR OWNERS LEAVING MORE SETBACKS/RAIN WATER HARVESTING/RECYCLING OF WASTE WATER:

G2.1. The following incentives in terms of rebate in building permission fees will be given by theAuthority for owners or their successors-in-interest who:

G2.1.1. Construct the building /blocks by leaving more setbacks than the minimal stipulated in these byelaws:

Leaving 1.5 times or more the minimum setbacks in all sides: 10 % rebate on building permission fees will be allowed provided the setbacks has to be on all sides to qualify for the rebate. Leaving more on one side and the minimum on other sides would not qualify for such rebate.

G2.1.2. Undertake both recycling of waste water and rain water harvesting structures:
10 % rebate of building permission fees.

G2.1.3. Where owners provide at least 25% additional parking space over and above the minimum they would be allowed for a rebate of 10 % in building permission fees.

G3. Energy Conservation Building: Building or building complexes having a connected load of 100 KW or more will be regulated as per the Energy Conservation Code 2017 for commercial buildings.

SECTION – H

MISCELLENEOUS PROVISIONS

H1. INSTALLATION OF COMMUNICATION TOWERS

H1.1. **Definition:** Communication tower shall include antennae fixtures, fabricated antenna, tower to install the telephone lines and transmission towers. This will not include the antennas installed for domestic purpose, namely television antennas or dish antennas.

H1.2. Application for permission

H1.2.1. Location: The telecommunication Infrastructure shall be either placed on the building roof tops or the ground or open space within the premises.

H1.2.2. Type of structure:

(i) Steel fabricated tower or antennas on M.S. pole

(ii) Pre-fabricated shelters of fibre glass or P.V.C. on the building roof top/terrace for equipment.

(iii) Masonry Structure/Shelter on the ground for equipment.

(iv) D.G. Set with sound proof cover to reduce the noise level.

H1.2.3. Requirement: Every applicant has to furnish the following -

(i) Obtain/procure the necessary permission from the "Standing Advisory Committee on Radio Frequency Allocation" (SACFA) issued by Ministry of Telecommunications.

(ii) Site plan in the scale of 1:200

(iii) Agreement with the owner of the land/building containing his consent along with proof of ownership.

(iv) Drawing of tower with complete details including specifications of foundations and design parameters.

(v) Height of the tower along with its elevation.

(vi) In case the tower is in the vicinity or adjoining to high or low tension line then the distance from the same shall be clearly indicated in the drawings. NOC from the MeECL has to be furnished accordingly.

(vii) Produce the structural sufficiency certificate from the registered engineer which shall be the liability of both parties i.e. the engineer and the company erecting the tower.

(viii) In case it is a RTT, the applicant has to produce/submit approved buildings plans along with the structural sufficiency certificate from the registered engineer that the building can take the additional load of the tower.

(ix) For GBTs, a soil test report has to be submitted.

(x) Indemnity bond to take care of any loss or injury due to accident caused by the tower (including a declaration to the effect that the application shall take special precaution for fire safety and lightning and he shall be solely responsible for paying all kinds of compensation and damages and would be responsible for any civil or criminal case arising there from).

(xi) Mobile companies shall indicate the capacity of tower or antenna in megawatt.

(xii) In case the tower is proposed in residential areas or in the vicinity thereof or near public or semi-public buildings, NOC from owners of adjoining buildings and requisite stakeholders shall have to be obtained.

(xiii) No towers shall be permitted to be erected within 100m radius of schools, colleges, hospitals, nursing homes, religious institutions, lifeline buildings and the like. No tower/antenna should face any building, hospital, nursing homes, religious institutions, lifeline buildings etc.

(xiv) In case the mobile tower is proposed to be installed in the vicinity of any airport, NOC from the Airport authorities shall be submitted.

H1.2.4. Projections:

(i) No Pager and/or Telephone Tower shall project beyond the existing building envelop of the building on which it is erected in any direction.

(ii) The distance of the tower from the electric line or pole or tower thereof shall not be less than the height of tower plus requisite distance from respective high or low tension line.

H1.2.5. Any other information / data required by the Authority

H1.3. Sharing of tower:

The telecom operators may share the towers for fixing their respective antennas. The same are required to adhere to the prescribed technical requirements, so as to curtail multiplicity of towers as well as to optimize the use of the existing ones.

H2. ACQUISITION OF LAND

The Authority may refuse to grant permission for any construction or addition or alteration of building if any site is intended to be acquired by the Government for any public purpose for which a Notification under section 11(1) of the Right to Fair Compensation & Transparency in Land Acquisition, Rehabilitation & Resettlement Act 2013 (Act 30 of 2013) has been published.

H3. New Plot

H3.1. **Addition to existing Plot**: When one or more new plots of land are added to one or more premises by way of amalgamation through purchase or by separate Land title deed(s) belonging to the same owner or otherwise, the existing buildings on any such plots may be considered to be in accordance with these byelaws at the material time when the building/buildings was/were sanctioned are satisfied considering amalgamated plot to be one parcel of land. Addition and alteration to the sanctioned building or addition of a new building or new block or newly added land/lands may be permitted as per prevailing byelaws considering amalgamated land to be one parcel of land.

H3.2. **Linking of two blocks**

If there are two adjacent plots or adjacent buildings belonging to the same owner, gangways between these two buildings may be permitted at any level, subject to the condition that it does not obstruct movement of vehicles or fire vehicles, as the case may be, the minimum width of the gangway being not less than that of a stairway.

H4 Sub-Division of Plots

When a plot has fully utilised its coverage & F.A.R., further sub division is not permissible. However, if some percentage of coverage & F.A.R. is left after sub-division, the sub-divided plots are entitled only the balance coverage & F.A.R.

H5. GASOLINE (MOTOR FUEL) FILLING STATIONS AND GASOLINE FILLING *CUM* SERVICE STATIONS

H.5.1. DEFINITIONS

H5.1.1. The term "Filling station" is a piece of retail business engaged in supplying and dispensing of Gasoline (Motor Fuel) and motor oil essential for the normal operation of automobiles.

H5.1.2. The term "Filling cum Service Station" is a place of retail business engaged in supplying goods and services essential for the normal operation of automobiles. These include dispensing Gasoline and Motor oil the sales and services of tyres, batteries and other automobiles accessories and replacement item and washing and lubrication. They do not include the body of tender work, painting or other major motors repairs and over hauling.

H5.2. Clearance of installation of the Petrol Pump under provisions of the Petroleum Act, 1934 *read* with Petroleum rule, 1973 rules 155 of the Petroleum Rule 1937 is to be sanctioned by the District Magistrate

H5.3. N.O.C., is to be obtained from Public Works Department for all proposals whether in the National Highway, State Highway etc., While N.O.C. is issued, due consideration are to be given on factors like congestion of the locality, movement of vehicles traffic in the particular road etc.

H5.4. Layout plans for installation of the facilities at the retail outlet such as underground tank, pipeline, dispensing pump. Sales room / office. Drainage, toilets, electrical layout are to be approved by the Explosive Department, Government of India.

H5.5. The distance to be kept from the dispensing pump of the three side i.e., side and rear should not be less than 15 meters distance from a residential house. The frontage should conform as per the Indian Road Congress 13 – 1967 (IRC – 13. 1967). For installation of Petrol Pump the recommended practice for location and layout of roadside, motor filling and motor fuel filling-cum-service station should conform as per the Indian road congress 12-1983 and 13-1967 (IRC – 12 – 1983), (IRC – 13 – 1967).

H5.6. The following shall be applicable for locating the petrol pump *cum* service stations.

H5.6.1. Minimum distance from the road intersections.

(a)	For minor roads having less than 30 mt. R/W	:	50 mt.
(b)	For major roads having R/W 30 mt. or more	:	100 mt.

H5.6.2. The minimum distance of the property line of pump from the center line of the Road should not be less than 15 meters on roads having less than 30 mt. R/W. In case of roads having 30 mt. or more R/W the R/W or the road should be protected.

H5.6.3. Plot Size

(a) Only filling stations 30 mt. x 17 mt. and small size 18 mt. x 15 mt. (for two and three wheelers)

(b) Filling-*cum*-service station minimum size 36 mt. x 30 mt. and maximum 45 mt. x 33 mt.

(c) Frontage of the plot should not be less than 30 mt.

(d) Longer side of the plot should be the frontage.

H5.6.4. Other Controls

H5.6.4.1. Filling-*cum*-service station (size 30 mt. x 36 mt. x 45 mt.)

i.	Ground coverage	:	20%
ii.	FAR	:	20
iii.	Max. Height	:	6 mt.
iv.	Canopy Equivalent to permissible ground coverage within setback line.		
v.	Front Setback	:	Min. 6 mt.

H5.6.4.2. Filling Station (size 30 mt. x 17 mt. and 18 mt. x 15 mt.)

i.	Ground coverage	:	10%
ii.	FAR	:	10
iii.	Max. Height	:	6 mt.
iv.	Canopy Equivalent to permissible ground coverage within setback line.		
v.	Front Setback	:	Min. 3 mt

H5.6.5. Other Regulations

(i) Shall be acceptable to explosive/Fire Deptt.

(ii) Ground coverage will include canopy area

(iii) Mezzanine if provided will be counted in FAR

H5.6.7. Compressed Natural gas (CNG) Mother Station

(i)	Plot Size (Max.)	:	36 mt. x 30 mt.
(ii)	Maximum ground coverage	:	20%
(iii)	Maximum Height	:	45 mt. (single storey)
(iv)	Building Component Control room/office/Dispensing room Store, pantry and W.C.		

H6. PROVISIONS OF VENDOR SPACES IN BUILDINGS (UNDER SECTION 3 OF THE MEGHALAYA STREET VENDORS (PROTECTION OF LIVELIHOOD AND REGULATION OF STREET VENDING) ACT 2014 AND CLAUSE 33 OF THE MEGHALAYA STREET VENDORS (PROTECTION OF LIVELIHOOD AND REGULATION OF STREET VENDING) SCHEME 2017)

Where provision of vendor spaces is proposed in a plot or building, the following requirements are to be complied with: -

a) A formal deed of agreement between the plot/building owner and the Local Authority i.e. the Deputy Commissioner of the District, has to be submitted to the Authority on such terms and conditions that are mutually agreed upon between them.

b) Based on the above, (i) the plot coverage of the open space shall be exempted from plot coverage calculations (ii) the FAR for the floor area shall be exempted and compensated by way of additional area/additional floor of equal floor area only. Where basic amenities like toilets/bathrooms are being provided exclusively for use of vendors, such area will also be exempted and added accordingly.

H7. Occupancy:

The occupancy of any building or part thereof shall be governed by the following provisions. The usage of plots proposed for development/re-development shall be governed by the provisions contained in the Development Plan of the Town or City or any detailed Town Planning Scheme prepared for the locality, provided where no such Plan exists, the Usage of Plots shall be approved by the Authority.

The description of the Occupancies are given below: -

H7.1. Residential Building: Means a single-family dwelling unit.

H7.2. Residential Apartments (Flats): These shall include two or multi-family dwellings with residential accommodation.

H7.3. Institutional buildings: - These shall include any building or part thereof used for Schools, Colleges upto and beyond Graduate level, Primary and Nursery Schools, clinics, hostels, homes for the aged and infirm convalescent homes and orphanages, mental hospital, educational institutes for research purpose, hospitals etc.

H7.4 Commercial Buildings: These shall include any building or part of the building, which is used for display and sale of merchandise such as shops, stores, markets etc., either wholesale or retail, banking and financial institutions, Private business houses and professional establishments of doctors, dentists, tailors etc. beauty parlour, barber shops, news stands, milk booths, lunch counters, restaurants, guesthouses etc. These shall include any building which is used for Hotels, Shopping malls, Multiplexes, Multibrand stores or large-scale retail activities, multi-level parking lots etc.

H7.5 Public and Semi-Public Buildings: These shall include any building or part of building, which is used for the transaction of public business, for records keeping, accounts and similar purposes. Local, Estate and Government Offices, court Houses. Public utility buildings including slaughterhouse, jails and prisons etc., will be covered by this use.

H7.6 Assembly Buildings: These shall include any building or part of a building, where group of people (exceeding 100) congregate or gather for amusement, recreation, social, religious patriotic civil, travel and similar purposes for example, Theaters, cinemas, Assembly Halls for Educational, Dramatic or theatrical presentation, Auditorium, Exhibition Halls, Art Galleries, Museums, Libraries, stadiums etc.

H7.7 Industrial Buildings: These shall include any building or part of a building or structure in which products or materials of all kinds and properties are fabricated, assembled or processed e.g., Workshops, Assembly Plants, Laboratories, Handicrafts, Laundries, Dairies, Saw Mills, Power Plants etc.

H7.8 Storage Buildings: These shall include any building or part of building used primarily for the storage or sheltering (including servicing, processing or repairs) of goods, wares or Merchandise except those that involve highly combustible or explosive products or materials. Example like Warehouses, Freezing Plants, Freight etc.

H7.9 Hazardous Buildings: These shall include any building or part of a building, which is used for the storage, handling, manufacture or processing of highly combustible, explosive, poisonous, irritants, toxic or noxious materials or products or materials producing dust.

H8. For structures such as labour / storage / office sheds in construction sites, dwelling houses with ekra / wooden / bamboo / tin / thatch walling and light roofing materials, poultry and animal shelters, etc. no building permission / NOC is necessary.

H9. **Penalties to be levied for violations of provisions of Master Plan & Byelaws**.

(i) All the provisions of these Byelaws except those given below shall not be compounded / regularized and shall have to be rectified by alteration/demolition at the risk and cost of owner.

Compoundable Items:

(1) Coverage - Maximum of 5%. For Projects of the Government, additional relaxation shall be given upto a limit as approved by it.

(2) F.A.R. - Maximum of 10%

(3) Unauthorized construction, if the same is within the norms of Building Byelaws subject to satisfaction of the Authority.

Non-compoundable Items:

(1) Parking norms

(2) Projection/ encroachment of public land.

(ii) Compoundable Items

If a building or any part thereof has been constructed unauthorisedly i.e. without obtaining the required building permit from the Authority as required by Building Byelaws the same shall be compounded at the following rates provided the construction conforms to the provisions of Building Byelaws & Master Plan. For this, applicant shall have to submit the request for permission in the prescribed procedure as per byelaws.

(iii) Rates for compounding shall be as given in the Schedule-I.

(iv) The Authority shall initiate action as per provisions of these byelaws and the Meghalaya Town & Country Planning Act 1973 or as amended for buildings constructed in deviation from the approved plans.

Note: *The Authority may however refuse regularisation of construction even with penalties as specified in the above provisions if in the opinion of the Authority this may infringe public safety and general environment of adjoining area.*

SCHEDULE – I:

Sl. No.	Type of compoundable Item	Rate of Compounding
1	Coverage	The rate for every unit area under compoundable coverage & FAR shall be (i) 5 (five) times the plinth area rate of Meghalaya PWD Schedule of Rates prevailing at the time of compounding in the case of commercial buildings. (i) 2.5 (Two and half) times the plinth area rate of Meghalaya PWD Schedule of Rates prevailing at the time of compounding in the case of other buildings.
2	F.A.R.	
3	Unauthorized construction, if it is within the norms of Building Byelaws subject to satisfaction of the Authority.	The rate for every unit area under compoundable unauthorized construction shall be 5(five) times the rate of building permission fees as applicable.

H10 Applicability of the Bye Laws to the existing building

H10.1 The provisions of these bye-laws shall not apply to the existing buildings. However, in case of any addition, alteration, erection or re-erection in the existing building, the provisions of these bye laws shall also apply.

H11. Discretionary Powers:

H11.1 **Interpretation.**

In conformity with the intent and spirit of these byelaws, the Government may by order in writing –

(i) decide on matters where it is alleged or disputed that there is an error in any order and/or determination of interpretation made by the Authority in the application of these byelaws.

(ii) authorise erection of a building or use of premises/land where it finds such authorisation to be reasonably necessary for the public convenience and welfare, even if it is not permitted in any Land Use Classification.

(iii) In these Byelaws, the use of present tense includes the future tense. The masculine gender includes feminine and the neuter gender, the singular includes the plural and the plural includes the singular, and "Signature" includes thumb impression made by a person who cannot write if his name is written near to such thumb impression.

H11.2 **REMOVAL OF DIFFICULTIES**:

If any difficulty arises in interpreting or giving effect to any provision of these Byelaws, the Authority may as the occasion requires, take any action not inconsistent with the spirit and

provisions of these Byelaws which may appear to it necessary for the purpose of removing such difficulty.

If any question or dispute arises with regards to interpretation of any of these byelaws, the matter shall be referred to the Government, who after considering the matter and after giving hearing to the parties, if necessary, shall give a decision on the interpretation of the provisions of these byelaws. The decision of the Government, shall be final and binding on the concerned party or parties.

H11.3 **Relaxation:**

Due to the slope profile, topography and irregular plot shapes and sizes prevalent in the State, the Authority is at liberty to exercise discretion in the side and rear setbacks without affecting the P.C & FAR. Such order shall be given in writing with justifications.

Further, in specific cases, where a clearly demonstrable hardship is caused, the Authority by order in writing may permit any of the dimensions / provision prescribed by these byelaws to be modified provided the relaxation sought does not violate the health safety, fire safety, structural safety and public safety of the inhabitants of the buildings and the neighbourhood. However, no relaxation for the setbacks required from the front setback (road boundary), and footpaths shall be granted under any circumstances, unless otherwise specified in these byelaws.

H12 Provision with respect to National Building Code (NBC)

Any aspect not covered in these byelaws, the NBC shall be the reference document regarding the various aspects as required.

H13 Repeal and Savings: The Meghalaya Building Byelaws 2011 and Meghalaya Building (Amendment) Byelaws 2015 is hereby repealed.

H13.1 Notwithstanding such repeal, anything done or any action taken under the provisions of the repealed Bye-laws shall be deemed to have been done or taken under the provisions of this Bye-law.

APPENDIX-A

A.1. QUALIFICATIONS OF THE TECHNICAL PERSONNEL

The qualifications of the technical personnel and their Competence to carry out different jobs for building permit and supervision for the purpose of licensing by the Authority shall be as given below.

A.1.1. *ARCHITECT:*

The qualifications of Architect eligible for license will be the Associate Membership of the Indian Institute or Architect or such Degree or Diploma, which makes him eligible for such membership, or such qualifications listed in Scheduled XIV of Architect Act `1972 and shall be registered under the Council of Architects. Practice of profession of Architecture by the registered architect should be strictly as per provision of the Architects Act,1972 and their competence be as per comprehensive services as specified in Architect (Professional Conduct) Regulation, 1989.

A.1.2. REGISTERED TECHNICAL PERSONNEL (RTP)

On the basis of their academic qualifications and experience, Civil Engineers shall be "Registered" in six "Grades". The eligibility criteria for registration in each "Grade" and the "Scope of Work" which can be entrusted to the Civil Engineer of each "Grade" are given below. This registration shall be renewed every year. The registration may be cancelled permanently or for a specified period for unprofessional conduct.

TABLE – 1

Competence of Technical Personnel (RTP) for preparations of Structural Drawings for Building Permit / Construction and Supervision				
Sl.No.	***Grade***	***Qualifications & Experience***		
1	I	(i)	M.E. Structures/Earthquake Engineering or Ph.D in Structural Engineering with minimum 10 years of experience (after attaining the degree) in structural design work at a responsible position as structural designer OR;	To prepare structural design and structural drawings of High rise buildings, Special Buildings having *covered area* above 500m^2 and special projects
		(ii)	B.E. Civil or equivalent with minimum 15 years experience (after attaining the degree) in structural design work at a responsible position as a structural designer.	
2	II	(i)	M.E. Structures/Earthquake Engineering or Ph.D in Structural Engineering with minimum 7 years of experience (after attaining the degree) in structural design work at a responsible position as structural designer OR;	Preparation of all plans, structural design, structural drawings & information connected with building permit of various buildings including High rise buildings / Special buildings having a *covered area* of upto 500 m^2.
		(ii)	B.E. Civil or equivalent with minimum 10 years experience (after attaining the degree) in structural design work at a responsible position as a structural designer.	

3	III	(i)	M.E. Structures/Earthquake Engineering or Ph.D in Structural Engineering with minimum 5 years of experience (after attaining the degree) in structural design work at a responsible position as structural designer OR;	Preparation of all plans, structural design, structural drawings & information connected with building permit of various buildings including High rise buildings/Special buildings having a *covered area* of upto 250 m^2.
		(ii)	B.E. Civil or equivalent with minimum 7 years experience (after attaining the degree) in structural design work at a responsible position as a structural designer.	
4	IV	(i)	M.E. Structures/Earthquake Engineering or Ph.D in Structural Engineering with minimum 2 years of experience (after attaining the degree) in structural design work at a responsible position as structural designer OR;	Preparation of all plans, structural design, structural drawings & information connected with building permit of various buildings having *total floor area* of upto 400 m^2.
		(ii)	B.E. Civil or equivalent with minimum 5 years experience (after attaining the degree) in structural design work at a responsible position as a structural designer.	
5	V	(i)	M.E. Structures/Earthquake Engineering or Ph.D in Structural Engineering OR;	Preparation of all plans, structural design, structural drawings & information connected with building permit of various buildings upto G + 2 floors and a *total floor area* of upto 200 m^2.
		(ii)	B.E. Civil or equivalent with minimum 3 years experience (after attaining the degree) in structural design work at a responsible position as a structural designer.	
		(iii)	Diploma in Civil engineering + AMIE with minimum 5 years experience (after attaining the degree) in structural design work at a responsible position as structural designer.	
		(iv)	Diploma in civil engineering + 10 years experience.	
6	VI	(i)	M.E. Structures/Earthquake Engineering or Ph.D in Structural Engineering OR;	Preparation of all plans, structural design, structural drawings & information connected with building permit of various buildings upto G + 1 floors and a *total floor area* of upto 150 m^2.
		(ii)	B.E. Civil or equivalent.	
		(iii)	Diploma in Civil engineering + AMIE with minimum 3 years experience (after attaining the degree) in structural design work at a responsible position as structural designer.	
		(iv)	Diploma in civil engineering + 5 years experience.	

A.2. **REGISTRATION OF PROFESSIONALS:**

The Authority shall register Town Planners (RTP), Architects (RA), Engineers (RE), Structural Design Agencies (RSDA), Geo-Technical Engineers (RGE), Construction Management Agency (RCMA), Quality Audit Agencies (RQAA), Developers (RD), wherever applicable, till such time there is no legislative frame for the professionals like engineers and others similar to Architects Act 1973. Application for registration shall be submitted by these professionals to the competent authority.

A.2.1. REGISTERED ENGINEER:

Registered Engineers are those Engineers who are registered by local bodies to prepare drawings and other documents for obtaining development permission. They shall also mean structural engineers, construction/supervising engineers, geo-technical engineers etc. and their competence to practice shall be as per TABLE – 1. Registration shall be valid for a period of one year and shall be renewable.

A.2.2. REGISTERED CONSTRUCTION MANAGEMENT AGENCY (RCMA)

(A) The requirement for registration shall be

(i) A Registered Class I Contractor with the State PWD/UAD/PHE etc. / Central PWD who shall have under him or her Registered Technical Personnel with the requisite experience.

(ii) Owner of a proprietary firm who shall be a Registered Technical Personnel.

(iii) A Partnership firm where Fifty percent partners of a partnership firm shall be Registered Technical Personnel.

(iv) A designated officer of a limited company shall be a Registered Technical Personnel

(B) The registration shall be renewed every one year.

(C) The registration may be cancelled for unprofessional conduct permanently or for a specified period

A.2.3.1 REGISTERED QUALITY AUDITOR

(A) The requirements for registration shall be:

i) B.E. (Civil); or equivalent with five years experience in testing of building materials including concrete and/or experience in quality control work.

ii) M.E. (Civil) or equivalent with two years experience as above.

iii) The experience as stated above shall be under one or more registered quality auditor/inspector or construction agencies with certifications for quality auditing from government departments of minimum ten years of standing, from within or outside the area of jurisdiction of the Authority.

(B) The registration shall be renewed after every three years.

(C) The registration may be cancelled for unprofessional conduct permanently or for a specified period.

A.2.3.2 REGISTERED QUALITY AUDIT AGENCY (RQAA)

(A) The requirement for registration shall be

i) Owner of a proprietary firm shall be QAR

ii) Fifty percent partners of a partnership firm shall be QAR

iii) A designated officer of a limited company shall be QAR

(B) The registration shall be renewed every three years

(C) The registration may be cancelled for unprofessional conduct permanently or for a specified period

A.2.4. REGISTERED GEO-TECHNICAL AGENCY (RGA)

(A) The requirement for registration of a Geo-Technical Agency on Record shall be

i) Owner of a propriety firm shall be ME/MTech in Geo-Technical Engineering with minimum 3 years of experience or ME/MTech in Civil Engineering with 5 years of experience or BE/BTech in Civil Engineering/Geo Technical Engineering with 7 years of experience

ii) Fifty percent of a partnership firm shall have educational qualifications as in (i)

iii) A designated officer of a limited company shall have qualifications as (i)

iv) Such agencies are established within or outside the area of jurisdiction of the Authority.

v) The agency has a Registered Laboratory. Any individual possessing qualifications as in (i) and hiring services of either GAR or Registered Testing Laboratory shall also be eligible for registration.

(B) The registration shall be renewed every one year.

(C) The registration may be cancelled for unprofessional conduct permanently or for a specified period.

A.2.5. TOWN PLANNER ON RECORD (TPR)

The qualifications, responsibility and the professional charges shall be applicable as prescribed by the Institute of Town Planners, India for their members for rendering professional services. Registration shall be valid for a period of one year and shall be renewable.

B.1 APPOINTMENT OF PROFESSIONALS:

The Owner/Developer shall appoint Town Planner on Record (TPR), Registered Architect/Engineers, Construction Management Agency on Record (CMAR), and Quality Auditor on Record (QAR) and Quality Audit Agency on Record (QAAR) as required a proper written agreement(s), in a standard format(s), should be entered upon with such professional(s) engaged.

B.2 APPOINTMENT OF PROFESSIONALS

B.2.1 The Owner/Developer shall appoint the following professionals, out of the registered professionals described in B.1 above for every project as required.

-Town Planner on Record (TPR)

-Architect on Record (AR)

-Engineer on Record (ER)

-Structural Engineer on Record (SER)

-Structural Design Agency on Record (SDAR)

-Geo-Technical engineer on Record (GER)

-Construction Engineer on Record (CER)

-Construction Management Agency on Record (CMAR)

-Quality Auditor on Record (QAR)

-Quality Audit Agency on Record (QAAR)

B.2.2. The Owner/Developer shall submit a list of the appointed professionals on Record with the application for building permission to the Authorities. (Consent/undertaking from these professionals needed in the standard format at the time of seeking building permission)

B.2.3. In case the Owner/Developer changes any of the professional on Record intimation to that effect shall be sent to the competent authorities, along with a no-objection certificate from the professional who is being changed.

B.3 GENERAL DUTIES AND RESPONSIBILITIES APPLICABLE TO ALL PROFESSIONALS:

A) Each professional shall clearly indicate on every plan, document and submission, prepared by him the details of his/her designation with registration number and date, full name and his/her address below the signature for identification.

B) The Structural Engineer on Record and Architect on Record shall be responsible for adhering to the provisions of the relevant and prevailing 'Indian Standard Specifications' while designing the building for approval only. They will not be held responsible for the severe damage or beyond the design forces provided in the above 'Indian Standard Specifications'.

B.3.1. STRUCTURAL ENGINEER ON RECORD (SER)/STRUCTURAL DESIGN AGENCY ON RECORD:

Duties and Responsibilities:

(A) At the time of seeking permission from Authority for starting construction, the SER or SDAR shall

i) prepare and submit structural designs / drawings

ii) submit a certificate of undertaking that the design are as per relevant national building codes or relevant IS specifications and good engineering practice.

(B) In the case of high-rise buildings, special buildings/projects, SER/SDAR shall

i) submit a structural design basis report (SDBR) giving salient features of the structure, loads and soil characteristics and capacity, etc. in the prescribed format.

ii) prepare preliminary/ detailed structural design of the structure in addition to (i) above.

iii) get required soil (geo-technical) investigation done from an approved laboratory and submit the report concerning the same in prescribed format to the Authority.

iv) submit the structural details of existing structural members for horizontal / vertical extension.

v) get the Structural Design for Special Buildings / projects proof checked & vetted by NIT / IIT / Government Engineering College /a civil engineer with M.E. Structures/Earthquake Engineering or Ph.D in Structural Engineering with minimum 10 years of experience (after attaining the degree) in structural design/ a member of Structural Design Review Panel (SDRP) other than the officials of the Authority and submit a certificate concerning the same to the Authority.

Note:- *Where the structural design is prepared or proof checked and vetted by the Civil/ Structural Engineering Deptt. of a NIT/IIT/Govt. Engineering College, Stage 2 (Second stage of building permit clearance) of byelaw A4.1.3 read with byelaw C4 (Review of Structural Design), the above requirement is exempted and the competent Authority can take appropriate decision in sanctioning the building permission application on submission of all the required documents and plans.*

(C) All Reports and other submissions to the Authority by and on behalf of the SDAR shall only be signed by Registered Structural engineer (SER) as a proprietor, partner or as a designated officer of the company.

(D) To prepare a report of the structural design

i) To prepare detailed structural design and to prescribe the method and technique of its execution strictly on the basis of National Building Code or relevant Indian Standard Specifications.

ii) To prepare detailed structural drawings and specifications for execution indicating thereon, design live loads, safe soil bearing capacity, assumptions made in design, special precautions to be taken by the CMAR to suit the design assumptions etc whatever applicable if not submitted.

iii) To supply two copies of structural drawings to the CER/CMAR.

iv) To advise the Owner/Architect/Engineer for arranging for tests and their reports for soil, building material etc. for his evaluation and design consideration.

v) To prepare the revised calculations & drawings in case of any revision with reference to the earlier submission of drawings & design in a particular case.

vi) To inform in writing the Authority within 7 days, if for any reason, he/she is relieved of his appointment/responsibilities as the registered structural designer for the development.

B.3.2. CONSTRUCTION MANAGEMENT AGENCY ON RECORD (CMAR)

Construction work for a High rise buildings having covered area above 500 sqm, Special buildings and Special projects shall be carried out by a Construction Management Agency on Record.

Duties and responsibilities:

(A) Before the commencement of construction of a high-rise building special buildings / projects, the Owner shall submit an undertaking from CMAR that

i) The CMAR is agreeable to accept the assignment to execute the project as per designs, drawings and specifications

ii) The CMAR shall install a Quality Assurance programme by retaining an independent Quality Audit(or)/Agency on Record (QAR/QAAR) and submit a certificate concerning the same to the Owner/Developer as well as to the Authority. The appointed QAAR shall be acceptable to the Owner/Developer.

(B) Upon completion of the construction work the CMAR shall intimate to the Owner/Developer that the work has been carried out according to the design drawings and specifications and written instructions of SDAR / SER.

(C) The CMAR shall submit a report and certificate in the prescribed format (Appendix D) from the QAAR that the quality assurance programme has been satisfactorily carried out on the construction work. This report and certificate shall be submitted to the Owner/Developer for final submission to the Authority.

B.3.3. QUALITY AUDITOR/ AGENCY ON RECORD (QAR/QAAR)

For all High Rise Building having covered area above 500 sqm, Special buildings / projects, it will be necessary to have an Independent Quality Inspection Programme, which will be determined and executed by an Independent Quality Audit(or)/ Agency on Record (QAR/QAAR).

B.3.4. GEO-TECHNICAL AGENCY ON RECORD (GAR)

All high-rise buildings, special buildings/projects shall engage the services of a Geo-technical Agency on Record for soil investigations / testing.

Duties and Responsibilities:

a) To carry out soil investigation at proposed locations as per specifications of Structural Engineer on Record (SER) of Structural Design Agency on Record (SDAR).

b) To recommend various type foundation for proposed structure and loading with supporting calculations

c) To list out precautionary measures so that there is no damage to adjacent property

d) To mention the SBC of the soil, location of bore holes & Bore log tables in the Soil Test Report.

e) To submit the above results to the Authority along with Form IV.

C. DEVELOPER:

Duties and responsibilities:

1) To obtain and submit to the Authority, along with application for development permission, each progress report and application for occupation certificate.

2) To appoint an Architect on Record/Engineer on Record and Structural Engineer on Record.

3) To appoint a registered CER as site supervisor.

4) To obtain and adhere to the quality assurance procedure prepared by the registered site supervisor.

5) To adequately enable the site supervisor to carry out his responsibilities.

6) To certify along with the site supervisor that construction of the real estate development has been carried out as per the design, detailed drawings and specifications provided by the Architect on Record/Engineer on Record and Structural Engineer on Record.

7) To obtain building permission from the Authority prior to commencement of construction of the real estate development.

8) To regularly submit progress reports and certificates as required by the Authority.

9) To inform in writing the Authority within 7 days, if for any reason he ceases to be the developer or is relieved of his responsibilities as the developer of the real estate development.

10) To inform in writing the Authority within 7 days, if for any reason any of the registered professionals appointed by him have been relieved of their responsibilities or have resigned.

11) The appointment of the registered Architect/Engineer on Record shall mean that he (the Developer) has authorized the Architect on Record/Engineer on Record to do all things necessary and to take all adequate measures for preparing the design, drawings and specifications for the project and to appoint on his behalf appropriate persons to act as registered, clerk of works site supervisor, required for the proper execution of the project and to retain on behalf of the owner any other specialist or expert required on the work of the project.

12) He shall not cause or allow any deviations from the approved drawings in the course of the execution of the project against the instruction of Architect on Record/Engineer on Record/Site Supervisor on Record/Clerk of Works on Record/Structural Engineer on Record and shall bear all responsibility for any irregularity committed in the use and function of the building or its parts for which the approval has been obtained.

13) When no registered construction contractor or site supervisor is required to be appointed he shall be responsible for their duties and responsibilities under the bye-laws.

14) He shall not commence the use of building or shall not give the possession to occupy the building to any one before obtaining the occupancy certificate from the Authority.

15) He shall provide adequate safety measures for structural stability and protection against fire hazards likely from installation of services like electrical installation, plumbing, drainage, sanitation, water supply etc., wherever required under the regulations.

16) He shall exhibit the names of registered persons only on site and no additional names will be exhibited/displayed.

17) He shall explain the construction design and its intended use as per approved plan only, to the prospective purchaser of the premises under construction.

18) He shall make available copies of titles for the land, approved plans and all certificates issued to the Authority under these Bye-laws.

D. OWNER:

"Owner": in relation to any property, includes any person who is for the time being, receiving or entitled to receive, whether on his own account or on account of or on behalf of, or for the benefit of any other person or as an agent, trustee, guardian, manager or receiver for any other person or for any religious or charitable institution, the rents or profits of the property, and also includes a mortgaging possession thereof.

APPENDIX - B

STRUCTURAL DESIGN BASIS REPORT

1. This report to accompany the application for Building Permission.

2. In case information on items 3, 10, 17, 18 and 19 cannot be given at this time, it should be submitted at least one week before commencement of construction.

Part 1	General Data		
S. No.	Description	Information	Notes
1	Address of the building • Name of the building • Plot number • Subplot number • TPS scheme a. Name b. Number • Locality / Township • District		
2	Name of the owner		
3	Name of builder on record		
4	Name of Architect/Engineer on record		
5	Name of Structural Engineer on record		
6	Use of the building		
7	Number of storeys above ground level (including storey to be added later, if any)		
8	Type of structure • Load bearing • R.C.C frame • R.C.C frame and shear walls Steel frame		
9	Soil data • Type of soil • Design safe bearing capacity		IS: 1893 Cl.6.3.5.2 IS: 1904
10	Dead load (unit weight adopted) (iii) Earth (iv) Water (v) Brick masonry (vi) Plain cement concrete (vii) Reinforced cement concrete (viii) Floor finish (ix) Other fill materials (x) Piazza floor fill and landscape		IS:875 Part 1

11	Imposed (Live) loads • Piazza floor accessible to Fire Tender • Piazza floor not accessible to Fire Tender ♥Floor loads ♦Roof loads		IS: 875 Part 2
12	Cyclone / Wind • Speed • Design pressure intensity		IS: 875 Part 3
13	Seismic zone		IS: 1893 (2016)
14	Importance factor		IS: 1893 (2016) Table 6
15	Seismic zone factor (Z)		IS: 1893 Table 2
16	Response reduction factor		IS: 1893 Table 7
17	Fundamental natural period -approximate		IS: 1893 CL. 7.6
18	Design horizontal acceleration spectrum value ($A_{h)}$		IS: 1893 CL. 6.4.2
19	♠ Expansion / Separation joints		

♥ Enclose small scale plans of each floor on A4sheets

♦ In case terrace garden is provided, indicate additional fill load and live load

♠ Indicate on a small scale plan on A4 sheet

APPENDIX-B (continued)

Part 2	Load bearing masonry buildings		
S. No.	Description	Information	Notes
1	• Building category		IS: 4326 CL. 7 read with IS: 1893 Zone / Bldg. | II III IV V Ordinary | B C D E Important | C D E E
2	Number of floors including Ground floor (all floors including stepped floors in hill slopes)		
3	Type of wall masonry		
4	Type and mix of mortar		IS: 4326 CL. 8.1.2
5	Re: size and position of openings (see note No.1) • Minimum distance (b5) • Ratio $b_1 + b_2 + b_3)/l_1$ or $(b_6 + b_7)l_2$ Minimum pier width between consequent opening (b_4)		IS: 4326 Table 4, Fig. 7

	• Vertical distance (h_3) • Ratio of wall height to thickness 4 • Ratio of wall length between cross wall to thickness		
6	Horizontal seismic band i. At plinth level ii. At window sil level iii. At lintel level iv. At ceiling level v. At eave level of sloping roof vi. At top of gable walls vii. At top of ridge walls	IP TP NA ☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐	(See Note No. 2) IS: 4326 CL 8.4.6 IS: 4326 CL 8.3 IS: 4326 CL 8.4.2 IS: 4326 CL 8.4.3 IS: 4326 CL 8.4.3 IS: 4326 CL 8.4.4
7	Vertical reinforcing bar • At corners and T junction of walls • At jambs of doors and window openings	☐☐☐ ☐☐☐	IS: 4326 CL 8.4.8 IS: 4326 CL 8.4.9
8	Integration of prefab roofing / flooring elements through reinforced concrete screed	☐☐☐	IS: 4326 CL. 9.1.4
9	Horizontal bracings in pitched truss (xi) In horizontal plane at the level of ties (xii) In the slopes of pitched roofs	☐☐☐ ☐☐☐	

Notes:

1. *Information in item 6 should be given on separate A4 sized sheets for all walls with large number of openings*
2. *IP. indicated "Information Provided"*
   TP indicates "Information to be provided"
   NA indicates "Not applicable"
   Tick mark one box.

APPENDIX-B (continued)

Part 3	Reinforced concrete framed buildings		
S No.	Description	Information	Notes
1	Type of building • Regular frames • Regular frames with shear walls • Irregular frames • Irregular frames with shear walls • Soft storey		IS: 1893 CL. 7.1
2	Number of floors including ground floor		
3	Horizontal floor system • Beams and slabs • Waffles		

	• Ribbed floor • Flat slab with drops • Flat plate without drops		
4	Soil Data • Type of soil • Recommended type of foundation - Independent footings - Raft -Piles • Recommended bearing capacity of soil • Recommended, type, length, diameter and load capacity of piles • Depth of water table • Chemical analysis of ground water • Chemical analysis of soil		IS: 1498
5	Foundations • Depth below ground level • Type ▪ Independent ▪ Interconnected ▪ Raft ▪ Piles		
6	System of interconnecting foundations • Plinth beams • Foundation beams		IS: 1893 Cl.7.12.1
7	Grades of concrete used in different parts of building		
8	Method of analysis used		
9	Computer software used		
10	Torsion included		IS: 1893 CL. 7.9
11	Base shear a. Based on approximate fundamental period b. Based on dynamic analysis c. Ratio of a/b		IS: 1893 CL. 7.5.3
12	Distribution of seismic forces along the height of the building		IS: 1893 CL. 7.7 (provide sketch)
13	The column of soft ground storey specially designed		IS: 1893 CL. 7.10
14	Clear minimum cover provided in • Footing • Column • Beams • Slabs • Walls		IS: 456 CL. 26.4

15	Ductile detailing of RC frame • Type of reinforced used • Minimum dimension of beams • Minimum dimension of columns • Minimum percentage of reinforcement of beans at any cross section • Maximum percentage of reinforcement at any section of beam • Spacing of transverse reinforcement in 2-d length of beams near the ends. • Ratio of capacity of beams in shear to capacity of beams in flexure • Maximum percentage of reinforcement in column • Confining stirrups near ends of columns and in beam-column joints a. Diameter b. Spacing • Ratio of shear capacity of columns to maximum seismic shear in the storey		 IS: 456 CL. 5.6 IS: 13920 CL. 6.1 IS: 13920 CL. 7.1.2 IS: 456 CL. 26..5.1.1. (a) IS: 13920 CL. 6.2.1 IS: 456 CL. 26.5.1.1. (b) IS: 13920 CL. 6.2.2 IS: 13920 CL. 6.3.5 IS: 456 CL. 26.5.3.1 IS: 13920 CL. 7.4

General Notes

1. The SDBR shall be submitted along with the application for Building Development Permission.

2. In addition to the completed report following additional information shall be submitted, at the latest, one month before commencement of construction.

2.1 Foundations

2.1.1 In case raft foundation has been adopted indicate K value used for analysis of the raft.

2.1.2 In case pile foundations have been used give full particulars of the piles, type, diameter, length, capacity, pile shoe.

2.1.3 In case of high water table indicate system of countering water pressure, and indicate the existing water table, and that assumed to design foundations.

2.2 Idealization for Earthquake analysis.

2.2.1. In case of a composite system of shear walls and rigid frames, give distribution of base shear in the two systems on the basis of analysis and that used for design of each system

2.2.2 Indicate the idealization of frames and shear walls adopted in the analysis with the help of sketches

2.3 Submit framing plans of each floor

3. All IS codes to be considered for designing as given in the report above shall be of the latest publication.

APPENDIX-B (continued)

Part 4	Buildings in structural steel		
1	Adopted method of Design	○ Simple ○ Semi-rigid ○ Rigid	IS: 00; CL. 3.4.4 IS: 800; CL. 3.4.5 IS: 800; CL 3.4.6
2	Design based on	○ Elastic analysis ○ Plastic analysis	IS: 00; Section-9 SP: 6(6)
3	Floor construction	○ Composite ○ Non composite ○ Boarded	
4	Roof construction	○ Composite ○ Non-composite ○ Metal ○ Any other	
5	Horizontal force resisting system adopted	○ Frames ○ Braced frames ○ Frames and shear walls	Note: Seismic force As per IS:1893 would depend on system
6	Slenderness ratios maintained	Members defined in Table 3.1,IS: 800	IS: 800; CL. 3.7
7	Member of deflection limited to	Beams, Rafters Crane Girders Purlins Top of columns	IS: 800; CL. 3.13
8	Structural members	○ Encased in concrete ○ Not encased	IS: 800; Section-10
9	Proposed materials	○ General weld-able ○ High strength ○ Cold formed ○ Tubular	IS: 2062 IS: 8500 IS: 801, 811 IS: 806
10	Minimum metal thickness Specified for corrosion protection	○ Hot rolled sections ○ Cold formed sections ○ Tubes	IS: 800; CL. 3.8 CL. 3.8.1 to CL 3.8.4 CL. 3.8.5 CL. 3.8.5
11	Structural connections	○ Rivets ○ CT Bolts ○ SHFG Bolts ○ Black Bolts ○ Welding-field Shop (Specify welding type proposed) ○ Composite	IS: 800; Section-8 IS: 1929, 2155, 1149 IS: 6639, 1367 IS: 3757, 4000 IS: 1363, 1367 IS: 816, 814, 1395 7280, 3613, 6419 6560, 813, 9595
12	Minimum fire rating Proposed with method	○ Rating…… hours ○ Method proposed- - In tumescent painting -Spraying -Quilting -Fire retardant boarding	IS: 1641, 1642, 1643

APPENDIX-C

(For Maintenance of Existing Building as per Bye Law No. A.12.3)

STRUCTURAL INSPECTION REPORT

(This Form has to be completed by registered Structural Designer after his site Inspection and verification regarding compliance of all recommendation by the owner, which in the opinion of the registered structural designer are necessary for safety of the structure)

I. Description by title and location of the property:

II. Name of the present owner:

III. Description of the structure:

Class I or Class II (Briefly describe the property in general and the structure in particular)

(a) Function	(b) Framed construction							
	Residence (with or without shops)	Apartments (with or without shops	Office bldg.	Shopping centre	School, college	Hostel	Auditorium	Factory
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
A. Load bearing masonry wall construction								
B. Framed structure								
Construction and structural materials	Critical load bearing element	Brick	RCC	Stone	Timber	Steel		
	Roof Floor	RCC	Timber	RBC	Steel	Jack-arch		

IV. Year of construction

Year of subsequent additions or rectification's (Please describe briefly the nature of additions or rectification's).

V. Date of last inspection report filed: Last filed by whom (This does not apply to the first report).

VI. Soil on which building is founded :

i) Any change subsequent to construction

ii) Nearby open excavation

iii) Nearby collection of water :

iv) Proximity of drain :

v) Underground water tank :

vi) R.W. Pipes out – lets :

vii) Settlements :

VII. The Super – structure (R.C.C. Frame structure) :

i) Crack in beam or column nature and extent of crack

probable causes. :

ii) Cover spell :

iii) Exposure of reinforcement :

iv) subsequent damage by user for taking pipes,

conduits, hanging, fans or any other fixtures, etc. :

v) Crack in slab

- o Spalling of concrete or plaster of slab
- o Corrosion of reinforcement :

vi) Loads in excess of design loads

VIII. The Super – Structure (Steel Structure) :

i) Paintings :

ii) Corrosion :

iii) Joint, nuts, bolts, rivets, welds, gusset plates :

iv) Bending or buckling of members

v) Base plate connections with columns or pedestals :

vi) Loading :

IX. The Super – Structure (Load bearing masonry structure) :

Cracks in masonry walls).

(Please describe some of the major cracks, their nature, extent and location, with a sketch, if necessary).

X. Recommendation if any

This is to certify that the above is a correct representation of facts as given to me by the owner and as determined by me after Site Inspection to the best of my ability and judgement.

The recommendations made by me to ensure adequate safety of the structure are complied with by the owner to my entries satisfaction.

(Signature of the Registered Structural Engineer)
Date: _____

Name of the Registered Structural Engineer:

Registration No. Address:

APPENDIX-D

MODEL PROFORMA FOR TECHNICAL AUDIT REPORT

1. Design

	COMMENTS
1.1. Design/Drawings available?	Y/N
Design category Type design? ***Specific design?***	 **Y/N** Design to be collected to refer to Design Consultant/H.O.
Drawings prepared / checked by competent Authority?	Y/N
Design drawings / details Structural detailed included Earthquake/cyclone resistant features included?	 Y/N Y/N
Design verified/vetted by Dept./Govt. approved agency/competent authority?	Y/N
Design changes approved by Dept./Govt. approved agency/competent authority?	Y/N

2. Foundation

2.1. Foundation used Existing/New

2.2.1 If existing foundation used

2.2.1.1 Depth of foundation below ground : <50cm/50-70/>70cm

2.2.2. Type of masonry : Stone/brick/PCC blocks

2.2.3. Thickness of masonry (above ground) : 23cm/35/>35

2.2.4. Mortar used : Cement-sand/Lime/Mud

2.2.5. Mix of cement mortar : 1:4/1:6/Leaner

2.2.6. Height upto plinth : _____cm

2.2.7. If stone mason

2.2.7.1 Through stones : Yes/No, if Yes Adequate/inadequate

2.2.7.2 Corner stones : Yes/No, if Yes Adequate/Inadequate

2.3. If new foundation used

2.3.1. Depth of foundation below ground : _____<50/50-70/>70cm

2.3.2. Type of masonry blocks : stone/bricks/PCC

2.3.3. Thickness of masonry above plinth : 23cm/35/>35cm

2.3.4. Mortar used	:	Cement-sand/lime/mud
2.3.5. Mix cement mortar (1:4)	:	Yes/No
2.3.6. Height up to plinth	:	<60/>60cm
5.1.1 If stone masonry		
2.3.7.1 Through Stones	:	Yes/No, if yes Adequate/Inadequate
2.3.7.2 Corner Stones	:	Yes/No, if yes Adequate/Inadequate
2.4. Vertical reinforcement in foundation	:	Yes/No
3. Walling		
3.1 Type of masonry	:	Stone/Brick/PCC Blocks
3.2 Mortar used	:	Cement-Sand/Lime/Mud
3.3 Mix of cement mortar	:	1;4/1;6/Leaner
3.4 Thickness of wall	:	>23cm/23cm/23cm
3.5 Mixing of mortar	:	OK/Not OK
3.6 Joint Property filled	:	OK/Not OK
3.7 Wetting of bricks	:	Good/Medium/Poor
3.8 If stone masonry		
3.8.1 Through Stones	:	Yes/No
3.8.2 Corner Stones	:	Yes/No
3.9 Overall workmanship	:	Good/Medium/Poor
4. Roofing		
4.1 Type of roof	:	Flat/Sloping
4.2 If sloped	:	Morbid tiles/A.C. sheet/G.I. sheet
4.3 Purlins	:	Angle-Iron/Timber/NA
4.4 Truss type	:	_____
4.5 Anchorage with wall	:	Adequate/Inadequate/NA
5. Materials		
5.1 Cement		
5.1.1 Source	:	Authorised Dealer/Market
5.1.2 Type of cement	:	OPC/PPC/PSC
5.1.3 If OPC	:	Grade (33/43/53)
5.2 Sand		
5.2.1 Type of sand	:	River sand/Stone dust
5.2.2 Presence of deleterious material	:	Mild/Moderate/High
5.3 Coarse Aggregates		

5.3.1	Type coarse Aggregates	:	Gravel/Crushed Stone
5.3.2	Presence of deleterious material	:	Mild/Moderate/High
5.4	P.C.C. Blocks (Applicable for onsite production)		
5.4.1	Type of P.C.C. Blocks	:	Solid blocks/Hollow blocks
5.4.2	Ratio of concrete in blocks	:	_____
5.4.3	Interlocking feature	:	Yes/No
5.4.4	Coarse aggregates used	:	Natural/Crushed stone
5.5	Bricks Blocks, Stone etc.		
5.5.1	Strength (field assessment)	:	Low/Medium/High
5.5.2	Dimensional accuracy	:	Yes/No
5.6	Concrete		
5.6.1	Mix of concrete	:	(1:1 ½:3)/(1:2:4)/Design Mix
5.6.2	Batching	:	Weigh batching/Volume batching
5.6.3	Compaction	:	Vibrators/Thappies and rods
5.6.4	Workability	:	Low/Medium/High
5.6.5	Availability of water	:	Sufficient/Insufficient
5.6.6	Curing	:	Satisfactory/Unsatisfactory
5.7	Reinforcing Steel		
5.7.1	Type of Steel	:	Plain mild steel/HYSD bars
5.7.2	Source	:	Authorised Dealer/Market
5.7.3	Whether IS marked	:	Yes/No
5.7.4	Conditions of bars	:	Clean/Corroded
5.7.5	Fixing of reinforcement as per drawings	:	Yes/No
5.7.6	Suitable cover	:	Yes/No
5.7.7	Spacing of bars	:	Regular/Irregular
5.7.8	Overlaps as per specifications	:	Yes/No
5.8	Form Work		
5.8.1	Type of Form Work	:	Timber/Ply board/Steel
5.8.2	Use of mould oil	:	Yes/No
5.8.3	Leakage of cement slurry	:	Observed/Not observed
5.9	Source		
5.9.1	Cement		
5.9.2	Sand		

5.9.3 Coarse Aggregates

5.9.4 Bricks

5.9.5 PCC blocks

6 Seismic resistance features

Masonry Structures

Provision of bands at

	Provided	Adequate
6.1.1.1 Plinth level	Yes/No	Yes/No
6.1.1.2 Sill level	Yes/No	Yes/No
6.1.1.3 Lintel level	Yes/No	Yes/No
6.1.1.4 Roof level (if applicable)	Yes/No	Yes/No

If sloped Roof, whether seismic bands are provide at

6.1.2.1	Gable wall top	Yes/No	Yes/No
6.1.2.2	Eaves level	Yes/No	Yes/No

Provision of vertical steel in masonry at

	Provided	Adequate
6.1.3.1 Each corner	Yes/No	Yes/No
6.1.3.2 Each T-junction	Yes/No	Yes/No
6.1.3.3 Each door joint	Yes/No	Yes/No
6.1.3.4 Around each window	Yes/No	Yes/No

Openings

6.1.4.1 Total width of openings : <50% / 50*-60% / >60%
(*-42% for double storey)

6.1.4.2 Clearance from corner : OK / Not OK

6.1.4.3 Pier width between two openings: OK / Not OK

Framed Structures

Ductile detailing

6.2.1.1 Spacing of stirrup	:	OK /Not OK
6.2.1.2 Sizes of members	:	OK / Not OK
6.2.1.3 End anchorage	:	OK / Not OK
6.2.1.4 Lapping (length, location etc.)	:	OK / Not OK
6.2.1.5 Angle of stirrup hook	:	90 / 135 degrees

Any testing carried out by Owner / Engg. Supervisor on

Testing done		Testing results	
6.3.1	Water	Yes/No	OK / Not OK
6.3.2	Cement	Yes/No	OK / Not OK
6.3.3	Bricks / PCC blocks / Stones	Yes/No	OK / Not OK
6.3.4	Aggregate	Yes/No	OK / Not OK
6.3.5	Mortar	Yes/No	OK / Not OK
6.3.6	Concrete	Yes/No	OK / Not OK
6.3.7	Reinforcement	Yes/No	OK / Not OK

FORM I

Form for Application to Erect, Re-Erect or to make material Alteration in any Place in a Building

To,

_____

The Authority
Sir/Madam,

I hereby give notice on behalf of Shri. ..... (owner) that the owner intends to erect/demolish or make alteration the building situated at ..... and in accordance with the building Bye-law No..... and I forward herewith, the following plans and specification duly signed by me and by the owner.

1. Site plan, Building Plan, Section, Elevation.
2. Ownership Title (lease/Conveyance/Sale Deed, etc.).
3. Statement of Proposal and Certificate as per Form I (A).
4. Structural Design Basis Report / Structural Drawings.
5. Other document, as required Service Plan, Parking and circulation plan, Landscape Plan.
   (i) The building plan has been prepared strictly as per the approved building Bye-laws.
   (ii) Certified that the Building Plans submitted for approval will satisfy the safety requirements as stipulated in the Building Bye-Laws & the structural design including safety from hazards based on soil conditions has been duly incorporated in the design of the building.

.....
.....
Signature of the Owner(s)

Name of owner(s) .....
Address of the owner(s)

(Signature of Registered
Architect/Technical Personnel)
Registration No. of the
Architect/Technical Personnel
Address of the Technical Personnel

Encl. : As stated above

Dated .....

FORM I (A)

Statement of the Proposal and Certificate

By the Owner and Registered Architect / Technical Personnel

Classification of the Proposal ..... (To erect / re-erect / demolition)

Building of ..... situated at .....

Plot Area ..... sq.mt. / feet (Size)

Area Statement

Description	**Permissible**	**Existing (sq.mt./ft.)**	**Proposed (sq.mt./ft.).**	**Remarks (sq.mt./ft.)**
Max.Ground coverage				
LGF/UGF/Basement				
Ground Floor				
First Floor				
Second Floor				
Third Floor				
Fourth Floor				
Fifth Floor				
Sixth Floor				
Total Floor area				
Floor Area Ratio				
No. of Dwelling Units				

Maximum height (in meters)

Setbacks	**Permissible (m)**	**Proposed (m)**
Front		
Rear		
Left		
Right		

Parking spaces

Open Parking	Covered parking	Total Parking (sq.mt.)

(a) Approximate number of inhabitants proposed to be accommodated .....

(b) The number of latrines, Urinals, Kitchens, Baths to be provided .....

(c) The source of water to be used in the construction .....

(d) Distance from public drain .....

We hereby certify that

1. Plot is lying vacant and no construction shall be started before sanction.
2. The plot is free from all encumbrances (owner responsibility).

Signature of Owner(s) Signature of Registered Architect/Technical Personnel

Name ..... Name .....
(in block letters) (in block letters)

Dated ..... Dated.....

FORM II

FORM FOR NOTICE FOR COMMENCEMENT OF BUILDING WORK

To,

The Authority,
Meghalaya.

Sir,

I/We hereby certify that the erection, re-erection or material alteration in/of building belonging to ..... situated ..... at will be commenced on _____ at ..... AM / PM as per your building permission sanction No._____ dated _____.

(a) The construction shall be carried out in accordance with the approved building plans and I shall be completely accountable for any lapse on my part after obtaining Occupancy Certificate of the building.

(b) I am aware that in the event of building being constructed in violation of the approved building plan, the Authority shall have the right to take action against me as it may deem fit.

Signature of Owner (s)

_____

Name (s) of the Owners (in block letters)

Address:

CERTIFICATE OF UNDERTAKING OF ARCHITECT / CONSTRUCTION ENGINEER ON RECORD / CMAR

1. Certified that I am appointed as Registered Technical Personnel / AR / CER / CMAR for the above mentioned work and that all the works under my charge shall be executed in accordance with the sanctioned building plans and specifications prepared for the work.
2. I am fully conversant with the provisions of the Building Bye-Laws which are in force and about the duties and responsibilities under the same and I undertake to fulfil them in all respect, and in case of any deviation in the sanctioned building plans or the owner dispenses with my services at any stage whatsoever, I shall inform the authority within 48 hours.

3. I shall be present at site on the above date and time and alignment will be given as per the approved building setbacks.
4. That I have personally inspected the site. The plot has been demarcated at site and the size, shape and area of plot available at site tallies with the land document.
5. That no construction shall be started without submission of this Form to the Authority.
6. That there is no encroachment on the Public property / road / other property.
7. That in case anything contrary to the above is found or established at any stage of construction, the Authority shall be at liberty to take any action as it may deem fit including revocation of sanction of building plans and debarring me from supervising the construction work.

Signature of AR / CER / CMAR _____

Name and Registration No. _____

FORM III

Form of Notice of Completion

To

The .....

..... Authority,

Sir,

I/We hereby give notice that I / We have completed the erection of building/execution of my building situated at ..... in pursuance of the sanction granted by the Authority *vide* BPS No. ..... dated ..... I/We are attaching the Certificate of the Architect / Registered Technical Personnel.

Permission to occupy or use the building may be granted.

Yours faithfully,

Signature of owner(s) with date .....

Name of owner .....

Address of the owner .....

Form For Certificate of AR / RTP/CMAR/

(To be submitted along with notice of completion above)

To

The .....

.....Authority,

Sir,

We hereby certify that the erection, re-erection or material alteration in/at building of Shri/Smt.....situated at ..... has been supervised by me and has been completed on ..... according to the plans sanctioned, vide BPS No .....dated ..... The work has been completed to our best satisfaction, the workmanship and all the materials (type & grade) have been used strictly in accordance with general and detailed specifications. No provisions of the Building Bye-Laws and condition prescribed or order issued thereunder have been transgressed in the course of the work. The building is fit for use for which it has been erected/re-erected or altered/constructed and enlarged.

1. Certificate:

(i) Certified that the building(s) has been constructed according to the sanctioned plan and structural design which incorporate the provisions of structural safety as specified in relevant prevailing IS codes standards/Guidelines.

(ii) Further certified that green buildings & sustainability/energy conservation provisions have been provided as per the sanctioned building plan.

2. Permission to occupy the building may be granted.

3. Any subsequent change from the completed building & use will be the responsibility of the owner(s)

Signature of the RTP/AR/CMAR with date
Seal and Address.

Form IV

FORM FOR CERTIFICATE FOR SUBSURFACE INVESTIGATION

With respect to the building work of erection, re-erection or for making alteration in the building of Shri / Smti..... on/in Plot No. ..... at..... we certify that we have carried out subsurface investigation at site and have performed various tests required to determine engineering properties of soil substrata and ground water based on which we have given recommendations about the type of foundation, soil bearing capacity and the depth at which the foundations shall be placed to enable the engineer/structural engineer to design the foundations and other structures below ground, as stipulated in National Building Code of India and its Part 6 'Structural Design, Section 2 Soils and Foundations' and other relevant Codes.

I am enclosing a copy of the report of subsurface investigation carried out as above and submitted to the Structural Engineer.

(a) Signature of the owner
Address.

(b) Signature of the
Geotechnical Engineer / Firm
and registration No. with date
Address.

Dated: .....

FORM V

Form for Application to erect Roof Top Tower (R.T.T) or Ground Base Tower (G.B.T.) in any place:

To,

The ……
……. Authority

Sir / Madam,

I hereby give notice on behalf of …… that I / We intend to erect :-

(i) R.T.T. on the building of …… situated at …….
(ii) G.B.T at ……..

In accordance with the Meghalaya Building Bye-Laws-2011 under Section - H the following drawings and documents are forwarded herewith:-

1. Site plan in the scale of 1:200.
2. Ownership Title (lease / conveyance / sale deed, etc).
3. Approved building plans (in case of R.T.T.) with Structural Sufficiency Certificate.
4. Soil Test Report (in case of G.B.T).
5. Permission from the "Standing Advisory Committee on Radio Frequency Allocation" (S.A.C.F.A) issued by Ministry of Telecommunication.
6. Agreement between the owner & the Company / Indemnity Bond.
7. Detail drawing of tower.
8. NOC from MeECL.
9. Structural Sufficiency Certificate from the registered structural engineer.
10. NOC from owners of adjoining buildings.
11. NOC from the airport authorities if required.

…… ……
Signature of owners (Signature of Head of Company / representative)
Name : ……
Address: …….. Address: …….....
…… ……
Contact No: …….. Date: …….

Encl.: As stated above

AFFIDAVIT CUM UNDERTAKING BY OWNER OF BUILDING

1. That I / We ..... S/o / W/o ..... Age ..... R/o ..... do hereby solemnly affirm and declare as under:-
2. That the deponent(s) is/ are competent / authorized to submit this Affidavit.
3. That the deponent has submitted the building plan application for sanction of building plan of the plot at …….
4. That Parking provision/ residual floor / soft roofing structure is proposed for the building as per the submitted building plans and accepts any modification made there to by the Authority.
5. That the residual floor / soft roofing structure/parking space sanctioned shall not be used for any other purpose except as specified in the byelaws.
6. The approved parking and circulation spaces shall not be converted to any other use (habitable or non habitable), space for generator sets, sentry sheds etc. The parking and circulation spaces shall not be converted or blocked or used for any other activity.
7. That the Authority will be free to take any action if the parking spaces / residual floor / soft roofing structure are being occupied by the deponent(s) in case of violation of this undertaking. This stipulation shall also be applicable on such person to whom it is sold / transferred.

DEPONENT

Verification :

Verified at ..... on this .....day of ..... that the contents of the above affidavit are true and correct to the best of my knowledge and belief and nothing has been concealed therefrom.

DEPONENT

AFFIDAVIT CUM UNDERTAKING BY REGISTERED PERSONNEL / FIRM

That I / We _____ *S/O / D/O/W/O*_____

*Age R/O*_____ *do hereby solemnly affirm and declare as under:-*

1. That I have been issued a Registration as a Technical Personnel / Firm by the Authority whose validity is one year.
2. That I shall renew it annually so long as I practise.
3. That I am not a Govt. employee. If I am appointed as a Govt. employee in the future, I shall inform the Authority & I shall surrender my registration.
4. That I am fully conversant with all the provisions of the Meghalaya Building Bye-laws which are in force, and aware of my responsibilities and scope of work as prescribed in the Meghalaya Building Bye-laws.
5. That I shall advice my clients and will not do anything that is contrary to the provisions of the Meghalaya Building Bye-laws.
6. That in case I am appointed / engaged for supervision of construction works, I shall intimate to the Authority and be physically present at the building construction site (s) at various inspection stages and as and when desired by the Authority.
7. That in case any deviation in the sanctioned building plans or the owner dispenses with my services at any stage whatsoever, I shall inform the Authority within 48 hours.
8. That in case anything contrary to the above is found or established at any stage of construction, the Authority shall be at liberty to take any action as it may deem fit by debarring me suspending me from supervising the construction work and even cancellation of my registration.

DEPONENT

Verification :

Verified at ..... on this .....day of ..... that the contents of the above affidavit are true and correct to the best of my knowledge and belief and nothing has been concealed therefrom.

DEPONENT