

# EXTRAORDINARY PUBLISHED BY AUTHORITY

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# OFFICE OF THE KAKCHING MUNICIPAL COUNCIL MANIPUR

## NOTIFICATION

Kakching, the 27th February, 2023

No.8/4/KMC-BP/2023: Whereas, the notification of "Draft Kakching Municipal Council Building Bye- Laws, 2023" as notified by the Kakching Municipal Council under notification of even no. dated 03/02/2023 has been published in the Manipur Gazette Extra-ordinary No. 466 dated 13<sup>th</sup> February,2023 upon the adoption of the Building Bye-Laws of Imphal Municipal Corporation published in the Manipur Gazette Extra-ordinary No. 13, dated 08-04-2013, No. 21, dt. 04-05-2019 and No. 347, dt. 14-10-2022 respectively for Imphal Municipal Corporation as required under the provisions of section 211(1) of the Manipur Municipalities Act. 1994.

And whereas, the Government of Manipur has approved implementation of Imphal Municipal Corporation Building Bye-Laws in all ULBs of Manipur vide Government order No. 6/344/2014-DIR/MAHUD dt.04-03-2015.

And whereas, the "Draft Kakching Municipal Council Building Byelaws 2023" were published as required under Section 211 of the Manipur Municipalities Act 1994, vide this office notification No. 8/4/KMC-BP/2023-441 dt 03-02-2023, read with Manipur Gazette Extraordinary No. 466 dated 13<sup>th</sup> February, 2023 inviting objections /suggestions/opinions from the interested persons likely to be affected thereby within 7 (seven) days from the 13<sup>th</sup> February 2023.

And whereas, no objections/opinions/suggestions has been received by the Kakching Municipal Council within the stipulated period.

Now, the "Kakching Municipal Council Building Byelaws 2023" is finally published under section 212 of Manipur Municipalities Act 1994. The Byelaws shall come into force from the date of Publication of the Byelaws in the Official Gazette.

SALVADOR T. BAITE, Executive Officer, Kakching Municipal Council, Manipur.

# THE KAKCHING MUNICIPAL COUNCIL BUILDING BYE-LAWS, 2023 CHAPTER-I PRELIMINARY

(Under Section 209(1) (iv to vii) of the Manipur Municipalities Act. 1994 (Act No.43 of 1994)

- 1. (1) These bye-laws may be called "The Kakching Municipal Council Building Bye-Laws, 2023."
  - (2) It extends to the whole of the Kakching Municipal Area.
  - (3) These Bye-Laws shall come into force from the date of notification of the Bye-Laws in the official Gazette.
- 2. In these Bye-Laws unless there is anything repugnant in the subject or context:
  - (1) "Advertising sign" means any sign, either free, supported attached to a building or their structure which advertise an individual, a firm, a society or any establishment. It does not include signs of size 0.3 sq.m. or less.
    - (1a) "Access" A clear approach to a plot or a building.
    - (1b) "Act" The Act of the Local Body / Authority concerned.
    - (1c) "Addition and Alteration" A change from one occupancy to another or a structural change including an addition to the area or change in height or the removal of part of building or any change to the structure such as the construction or removal or cutting into any wall or part of wall, partition, column, beam, joist, floor including a mezzanine floor or other support or a change to or closing of any required means of access ingress or a change to fixtures or equipment as provided in these Bye Laws.
    - (1d) "Air Conditioning" The process of treating air so as to control simultaneously its temperature, humidity, purity, distribution and air movement and pressure to meet the requirements of the conditioned space.
  - (2) "Alley" means a secondary public thoroughfare which affords a means access to the abutting property.
    - (2a) "Amenity" Includes roads, street, open spaces, parks, recreational grounds, play grounds, gardens, water supply, electric supply, street lighting, sewerage, drainage, public works and other utilities, services and conveniences.
  - (3) "Antenna" means any structure or device used to receive or transmit electromagnetic waves, including both directional antennas, such as panels, micro wave dishes and Omni-directional antennas such as whips but not the satellite earth stations. This definition does not include any structure erected solely for residential or non-commercial individual use

such as television antennas, satellite dishes etc.

- (3a) "Application" An application made in such form as may be prescribed by the Authority from time to time.
- (3b) "Architect" A person holding a graduate degree in Bachelor of Architecture from any institute recognized by the Council of Architecture (COA) and has his/her name entered in the register of COA for the time being, with a valid COA Registration number. (Please see Appendix A Qualification and competence of Technical Personnel for preparation of Schemes for Building Permit and supervision.)
- 3(b)(i) "Architect/Professional on Record" An Architect/Competent professional who is brought on record to represent his/her client for construction project to act on their behalf regarding building permits and process of construction (as detailed at Section and competence given as per Appendix A).
- 3(c) "Area" In relation to a building means the superficies of a horizontal section thereof made at the plinth level inclusive of the external walls and of such portions of the party walls as belong to the building.
- 3(d) "Authority" The Authority which has been created by a statute and which for the purpose of administering the Code/Part may authorize a committee or an official or an agency to act on its behalf herein after called the "Authority". Authority can be any Urban Local Body /Urban Development Authority/Industrial Development Authority or any other Authority as notified by the State Government as the case may be.
- (4) "Authorized Officer" means officer of the council duly authorized by the Council for the purpose of these Bye-laws.
- (5) "Approved" means approved by the Council.
  - 5(a) "Balcony" A horizontal projection, cantilevered or otherwise including a parapet, handrail, balustrade to serve as passage or sit out place.
  - 5(b) "Barsati" A habitable room/rooms on the roof of the building with or without toilet/kitchen.
- (6) "Basement" means the lower storey of a building which is minimum 2/3rd of the floor height below the finished ground level.
- (7) "Bazar" means a 'market' which is defined under Section 2(32) of the Manipur Municipalities Act, 1994.
  - (7a) "Bazar area" means the area bounded on the

North - By (Along) the Burma Sugnu Road (BSR), Both Sides.

South :- By Old Market Dag No. 41,42 (i/c Budhiraj Road).

East- By BSR upto Ksh. Beikul Singh Filling Station.

West- By BSR upto Langmeidong Road Crossing (i/c Market No.1, Old Hospital Campus).

(8) "Council" means the Kakching Municipal Council.

- (9) "Building" A structure constructed with any materials whatsoever for any purposes whether used for human
  - habitation or not and includes:
    - i) Foundation, Plinth, walls, floors, roofs, chimneys, plumbing and building services, fixed platforms etc.
    - ii) Verandahs, Balconies, cornices, projections etc.
    - iii) Parts of buildings or anything affixed thereto;
    - iv) Any wall enclosing or intended to enclose any land or space, sign and outdoor display structures; etc.
    - v) Tanks constructed or fixed for storage of chemicals or chemicals in liquid form and for storage of water, effluent, swimming pools, ponds etc.
    - vi) All types of buildings as defined in (a) to (q) below, except tents, shamianas and tarpaulin shelters erected temporarily for temporary purposes and ceremonial occasions shall be considered to be buildings.
- (9A) Types of buildings based on use of premises or activity:
  - a) "Residential Building" includes a building in which sleeping and living accommodation is provided for normal residential purposes with cooking facilities and includes one or more family dwellings, apartment houses, flats and private garages of such buildings.
  - b) "Educational Building" includes a building exclusively used for a school or college, recognized by the Appropriate Board or University or any other competent Authority involving assembly for instruction, education or recreation incidental to educational use and including a building for such other uses as research institution, it shall also include quarters for essential staff required to reside in the premises and building used as a hostel captive to an educational institution whether situated is its campus or outside.
  - c) "Institutional Buildings" includes a building constructed by Government, Semi Government Organizations or Registered Trusts and used for medical or other treatment or for an auditorium or complex for cultural and allied activities or for an hospice, care of persons suffering from physical or mental illness, handicap, disease or infirmity, care of orphans, abandoned women, children and infants, convalescents, destitute or aged persons and for penal or correctional detention with restricted liberty of the inmates ordinarily providing sleeping accommodation and includes dharamshalas, hospitals, sanatoria, custodial and penal institutions such as jails, prisons, mental hospitals, houses of correction, detention, and reformatories etc.
  - d) "Assembly Building" A building or part thereof, where groups of people (not < 50) congregate or gather for amusement, recreation, social, religious, patriotic, civil, travel and similar purposes and this includes buildings of drama and cinemas, theatres, drive in theatres, assembly halls, city halls, town halls, auditoria, exhibition halls, museums, mangalkaryalayas, skating rinks, gymnasia, restaurants, eating or boarding houses, places of worship, dance halls, clubs, gymkhanas, and road, railways, air, sea, or other public transportation stations and recreation piers.
  - e) "Business Building" includes any building or part thereof used principally for transaction of business and or keeping of accounts and records including offices, banks, professional establishments, court houses etc, if their principal function is transaction of business and or keeping of books and records.

- f) "Mercantile Building" includes a building or part thereof used as shops, stores or markets for display and sale of whole sale, and or retail goods, or merchandise, including office, storage, and service facilities incidental thereto and located in the same building.
- g) "Industrial Building" includes a building or part thereof wherein products or material re-fabricated, assembled, or processed such as assembly plants, laboratories, power plants, refineries, gas plants, mills, dairies, and factories. etc.
- h) "Storage Building" A building or part thereof used primarily for storage or shelter of goods, wares, merchandise, and includes a building used as a warehouse, cold storage, freight depot, transit shed, store house, public garage, hanger, truck terminal, grain elevator, barn and stables.
- i) "Hazardous Building" includes a building or part thereof used for:
  - i. Storage, handling, manufacture of processing of radioactive substances or highly combustible or explosive materials or of products which are liable to burn with extreme rapidity and /or producing poisonous fumes or explosive emanations.
  - ii. Storage, handling, manufacture or processing of which involves highly corrosive, toxic or noxious alkalis, acids, or other liquids, gases or chemicals, producing flame, fumes, and explosive mixtures etc. Or which result in division of matter into fine particles capable of spontaneous ignition
- j) "Mixed Land Use Building" A building partly used for nonresidential activities and partly for residential purpose.
- k) "Wholesale establishment" An establishment wholly or [partly engaged in whole sale trade and manufacture, wholesale outlets, including related storage facilities, warehouses and establishments engaged in truck transport including truck transport booking agencies.

#### (9B) Types of buildings based on design and height:

- a) "Detached Building"- includes a building with walls and roofs independent of any other building and with open spaces on all sides within the same plot.
- b) "Multi- Storied Building or High Rise Building"- A building above 4 storeys and/or a building exceeding 15 meters or more in height (without stilt and 17.5 m (including stilt).
- c) "Semi Detached Building"- A building detached on three sides with open space as specified in these regulations:

# (9C) Types of Buildings based on other features:

- a) "Special Building"- includes all buildings like assembly, industrial, buildings used for wholesale establishment, hotels, hostels, hazardous, mixed occupancies with any of the aforesaid occupancies and centrally air conditioned buildings having total built up area exceeding 500 sqm.
- b) "Multi level car parking" A building partly below ground level having two or more basements or above ground level primarily to be used for parking of cars, scooters or any other type of light motorized vehicle.

#### (9D) Types of Buildings based on safety due to use/maintenance level:

- a) "Slum" Buildings that are in poor condition of maintenance or have compromised habitability due to poor ventilation, sanitation or otherwise are termed slums. These are generally declared or notified as slums under relevant legislation by competent authority.
- b) "Unsafe Building" Includes a building which:
  - i. Is structurally unsafe, or
  - ii. Is insanitary, or
  - iii. Is not provided with adequate means of ingress or egress or
  - iv. Constitutes a fire hazard or
  - v. Is dangerous to human life or
  - vi. In relation to its existing use, constitutes a hazard to safety or health or public welfare by maintenance, dilapidation or abandonment.

Note: All unsafe buildings are required to be restored by repairs, demolition or dealt with as directed by the Authority. The relevant provisions of the Act shall apply for procedure to be followed by the Authority in taking action against such buildings.

- (9E) "Building Envelope"- The horizontal spatial limits up to which a building may be permitted to be constructed on a plot.
- (9F) "Building Height"- The vertical distance measured
  - i) In the case of flat roofs from the average level of the front door and continuance to the highest point of the building.
  - ii) 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
  - iii) In the case of gables facing the road midpoint between the eaves level and the ridge.

Architectural features serving no other function except that of decoration shall be excluded for the purpose of measuring heights. The height of the building shall be taken up to the terrace level for the purpose of fire safety requirements.

- (10) "Building line" means the line upto which the plinth of a building adjoining on a street or on an extension of a street or on a future street may lawfully extend. It includes the lines prescribed, if any, in any scheme.
  - (10a) "Cabin"- A non residential enclosures constructed of non-load bearing partitions.
  - (10b) "Canopy"- shall mean a cantilevered projection from the face of the wall over an entry to the building at the lintel or the slab level provided that
    - i) It shall not project beyond the plot line.
    - ii) It shall not be lowered than 2.3 m or 7'6" when measured from the ground.
    - iii) There shall be no structure on it the top shall remain open to sky.
    - (10c) "Carpet Area"- The covered area of the usable rooms of a dwelling Unit at any floor (excluding the area of the walls)
- (11) "Ceiling Height" means the vertical distance between the floor and the ceiling.

- (12) "Chajja" means a slopping or horizontal structural overhang usually provided over opening on external wails to provide protection from sun and rain.
- (13) "Chairperson" means Chairperson of the Kakching Municipal Council.
- (14) "Chimney" means an upright shaft containing and encasing one or more flues.
  - (14a) "Cornice" means a sloping or horizontal structural overhang usually provided over openings or external walls to provide protection from sun and rain.

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- (14b) "Corporation 'means Imphal Municipal Corporation.
- (14c) "Courtyard"- A space permanently open to sky, enclosed fully or partially by buildings and may be at ground level or any other level within or adjacent to a building.
- (15) "Conversion" means the change of occupancy or premises to an occupancy or use requiring additional occupancy permit.
- (16) "Covered Area" means ground area covered by the building immediately above plinth level, but does not include the space covered by:
  - (a) garden, rocker}-; well and well structures, plant nursery, water pool, swimming pool, (if uncovered) platform round a tree, tank, fountain, bench, chabutra with open top and unenclosed on sides by walls and the like;
  - (b) Drainage, culvert, conduit, catch-pit, gully-pit, chamber, gutter and the like and
  - (c) compound wall, gate, un-storeyed porch and portico, slide swing uncovered staircases, areas covered by chajja and the like.
  - (16a) "Damp proof Course"- A course consisting of some appropriate water proofing material provided to prevent penetration of dampness or moisture.
  - (16b) "Density"- The residential density expressed in terms of the number of dwelling units per hectare.
  - (16c) "Development"- Development with grammatical variations means the carrying out of building, engineering, mining or other operations in or over or under land or water, on the making of any material change, in any building or land, or in the use of any building, land and includes re-development and layout and sub- division of any land "to develop" shall be construed accordingly.
- (17) "Drain" includes a sewer, pipe, ditch, channel and any other device for **carrying** off sewage, offensive matter, polluted water, sludge, waste water, fain water or sub-soil water, and any ejectors, compressed air mains, sealed sewage mains and special machinery or apparatus for raising, collecting, expelling or removing sewage or offensive matter to the sewage outfall.
- (18) "Drainage" means act, process, method or means or drainage, mode of discharge of water, the system of drains.

- (19) "Dwelling" means a building or a portion thereof which is designed or used wholly or principally for residential purposes.
  - (19a) "Empanelled Architect" A person empanelled by the Authority as per rules under the bye laws as an authorised person to sanction building plans of residential buildings up to 15 m height and for plot sizes up to 500 sqm forming part of any approved layout plan.
  - (19b) "Enclosed Staircase" means a staircase separated by fire resistant walls and doors from rest of the building
  - (19c) "Encroachment" means an act to enter into the possession of rights either of permanent or temporary nature on a land or built up property of local body or State/Central Government
  - (19d) "Existing Building" A building or structure existing authorised with the approval of the Authority before the commencement of these Bye-Laws.
  - (19e) "Existing Use"- Use of a building or structure existing authorised with the approval of the Authority before the commencement of these Bye –Laws.
- (20) "Exit" means a passage or means of egress from any building storey or floor area to a street or other open space of safety.
  - i. Horizontal exit means an exit which is protected opening through or around a fire well or bridge connecting two or more buildings.
  - ii. Outside exit mean a exit used from building to an open area leading to a public way or to an enclosed fire resistant passage leading to public way.
  - iii. Vertical; exit means an exit used for ascending or descending between two or more levels including stairway, fire towers, ramps and fire escapes.
  - (20a) "External wall" An outer wall of a building not being a party wall even though adjoining to a wall of another building and also means a wall abutting on an interior open space of any building.
  - (20aa) "EVCI" means Electric Vehicle Charging Infrastructure.
  - (20b) "Floor"- The lower surface in a storey on which one normally walks in a building and does not include a mezzanine floor. The floor at Ground level with direct access to a street or open space shall be called the ground floor, the floor above it shall be termed as floor -1 with the next higher floor being as floor -2 and so on upwards.
  - (20c) "Floor Area Ratio" The quotient obtained by dividing the combined covered area (plinth area) of all floors excepting areas specifically exempted under these regulations, by the total area of the plot viz.:

#### Floor Area Ratio = Total covered area on all floors / Plot Area

- (20d) "Fire and Emergency Alarm System" Fire Alarm system comprises of components for manually or automatically detecting a fire, initiating an alarm of fire and initiating other actions as appropriate.
- (20e) "Fire Hazard Industries"

- i. "Low fire Hazard industries" includes engineering industries using/processing or assembling non-combustible materials i.e. lathe machines, steel works, steel components.
- ii. "Moderate Fire Hazard industries" includes industries using/processing combustible materials but not flammable liquid etc., plastic industries, rubber, and PVC Industries, textile, paper, furniture, flour mills etc.
- iii. "High Fire Hazard industries" includes industries using/processing flammable liquids, gases, chemicals petroleum products, plastic or thermo setting group etc.
- (20f) "Fire Lift" means a special lift designed for the use of fire service personnel in the event of fire or other emergency.
- (20g) "Fire Proof Door" Means a door or shutter fitted to a wall opening and constructed and erected with the requirement to check the transmission of heat and fire for a period.
- (20h) "Fire Pump" Means a machine, driven by external power for transmitting energy to fluids by coupling the pump to a suitable engine or motor which may have varying outputs/capacity but shall be capable of having a pressure of 3.2 kg/cmsq. at the topmost level of multi storey or high rise building.
- (20i) "Fire Resistance" Fire Resistance is a property of an element of building construction and is the measure of its ability to satisfy for a stated period some or all of the following criteria:
  - a. Resistance to collapse
  - b. Resistance to penetration of flame and hot gases and
  - c. Resistance to temperature rise on the unexposed face up to a maximum of 180 degree Celsius and /or average temperature of 150 degree Celsius.
- (20j) "Fire Resistance Rating" The time that a material or construction will withstand the standard fire exposure as determined by fire test done in accordance with the standard methods of fire tests of materials/structures.
- (20k) "Fire Separation"- Means the distance in meters measured from any other building on the site or from another site or from the opposite side of a street or other public space to the building.
- (201) "Fire Resistance Building" means a building in which material which has appropriate degree of fire resistance is used.
- (20m) "Footing"- A foundation unit constructed in brickwork, stone masonry or concrete under the base of a wall or column for the purpose of distributing the load over a larger area.
- (20n) "Foundation" A substructure supporting an arrangement of columns or walls in a row or rows transmitting the loads to the soil.
- (200) "Gallery" An intermediate floor or platform projecting from a wall of an auditorium or a hall providing extra floor area, and additional seating accommodation and includes the structure provided for seating in stadia.
- (20p) "Garage -Private" A building or a portion thereof, designed and used for the parking of vehicle.

- (20q) "Garage- Public" —A building or portion thereof, designed other than as a private garage, operated for gain designed and used for repairing, servicing, using, selling or storing or parking motor driven and other vehicles.
- (20r) "Ground Floor"- shall mean storey which has its floor surface nearest to the ground around the building.
- (20s) "Group Housing"- means a building unit constructed or to be constructed with one or more floors having more than two dwelling units having common service facilities where land is owned jointly (as in the case of co-operative societies or the public agencies such as local authorities or housing boards etc) and the construction is undertaken by one Agency.
- (20t) "Habitable Room"- A room occupied or designed for occupancy by one or more persons for study, living, sleeping, eating, kitchen if it is used as living room, but not including bathrooms, water—closet compartments, laundries, serving and store pantries, corridors, cellars, attics, and spaces that are not used frequently or during extended periods.
- (21) "Height of Building" means the vertical distance measured in the case of flat roots, from the average level of the centre line of the adjoining street to the highest point of the building adjacent to the street wall; and in the case of pitched roots, up to the point where the external, surface of the outer wall intersects the finished surface of the sloping roofs 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 shall be excluded for the purpose of taking heights. If the building does not abut on a street, the height shall be measured above the average level of the ground-around the contiguous to the building.
  - (21a) "Illuminated Exit Signs"- A device for indicating the means of escape during normal circumstances and power failure.
  - (21b) "Layout Plan"- means a Plan indicating configuration and sizes of all use premises. Each use Zone may have one or more than one layout Plan depending upon the extensiveness of the area under the specific Use Zones and Vice –Versa. A layout Plan shall have at least two use premises (apart from recreational utilities and transportation and a minimum area of 1 hectare.
- (22) Licensed Architect/Engineer/Town Planner/Firm etc, Means a qualified Architect/'Engineer/Town Planner/Firm etc who has been given license by Kakching Municipal. Council and the license shall be valid for one calendar year after which it shall be renewed annually"
  - Note: Presently, the legislation for profession of architecture is applicable in the country in the form of Architects Act. 1972. 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, tire qualifications/responsibilities and duties of Professionals are given in Appendix A.
- (22a) "LTP" means Licensed Technical Person as per Section 2(22) of the Principal Law.

- (23) "Lifetime Building" means those buildings which are of post earthquake importance such as hospital building, powerhouse building, telephone exchange building and the like.
  - (23a) "Lift" An appliance designed to transport persons or materials between two or more levels in a vertical or substantially vertical direction by means of a guided car or platform. The word "elevator" is also used synonymously for "lift".
  - (23b) "Lobby" means a covered space in which all the adjoining rooms open.
  - (23c) "Loft" An intermediate floor between two floors or a residual space in a pitched roof above normal level constructed for storage with maximum clear height of 1.5 metres.
  - (23d) "Masonry" An assemblage of masonry units properly bound together by mortar.
  - (23e) "Masonry Unit" -A unit whose net cross sectional area in every Plane parallel to the bearing surface is 75% or more of its gross cross sectional area measured in the same plane. It may be either of clay, brick, stone, concrete, sand lime brick or any other construction material.
  - (23f) "Master Plan"- A master plan formulated under any relevant Act (Town and Country Planning or Development Act or Municipal Act) for any town, approved and notified by the State Government
  - (23g) "Means of Escape" An escape route provided in a building for safe evacuation of occupants.
  - (23h) "Mezzanine Floor" An intermediate floor between two floors of any storey forming an integral part of floor below.
- (24) "Multi-storeyed Building or High Rise Building" means a building above 4 storeys, and/or a building exceeding 15 meters or more in height. However, chimneys, cooling towers, boiler rooms/lift machine rooms, cold storage and non working areas in case of industrial buildings and water tanks and architectural features in respect of other bandings may be permitted as a non. high rise building. Building less than 15 meters including stilt/basement/packing floors stand excluded from the definition, of high rise buildings.
  - (24a) "Mumty or stair cover"- A structure with a covering roof over a staircase and its landing built to enclose only the stairs for the purpose of providing protection from weather and not used for human habitation.
  - (24b) "Non-Combustible material"- A material which is not liable to burn or add heat to a fire when tested for combustibility in accordance with the latest code of Bureau of Indian Standards Method of Test for combustibility of Building Materials.
  - (24c) "Occupancy or Use"- The principal Occupancy/use for which a building or a part of a building is intended to be used. For the purposes of classification of a building according to occupancy, an occupancy shall be deemed to include the subsidiary occupancies which are contingent upon it.
  - (24cc) "OBPS" means Online Building Permission System.
  - (24d) "Mixed Occupancy"- buildings being those in which more than one occupancy is present in different portions of the buildings.
  - (24e) "Onen Space"- An area forming an integral part of a site left open to the sky.

- (24f) "Owner"- Person or body having a legal interest in land and/or building thereon. This includes free holders, leaseholders or those holding a sub lease which both bestows a legal right to occupation and gives rise to liabilities in respect of safety or building condition. In case of lease or sub-lease holders, as far as ownership with respect to the structure is concerned, the structure of a flat or structure on a plot belongs to the allottee/lessee till the allotment / lease subsists.
- (24g) "Parapet"- A low wall or railing built along the edge of a roof or a floor.
- (24h) "Parking space"- An enclosed or unenclosed covered or open area sufficient in size to park vehicles. Parking spaces shall be served by a driveway connecting them with a street or alley and permitting ingress and egress of vehicles.
- (24i) "Partition" An interior non local bearing barrier, one storey or part storey in height.
- (24j) "Partition wall includes"
  - i. A wall forming part of a building and being used or constructed to be used in any part of the height or length of such wall for separation of adjoining buildings belonging to different owners or constructed or adopted to be occupied by different persons;

or

- ii. A wall forming part of a building and standing in any part of the length of such wall to a greater extent than the projection of the footing on one side or ground of different owners.
- (24k) "Permanent Open Air Space"- Air space permanently open:
  - i. If it is street
  - ii. If its freedom from encroachment is protected by any law or contract ensuring that the ground below it is either a street or is permanently and irrevocably appropriated as an open space.
- (25) "Foundation" means that part of a structure which is below the lowermost floor and which provides support for the superstructure and which transmits loads of the superstructure to the bearing materials.
- (26) "Permissible building line" means a line upto which the plinth of a building adjoining on a street or on a extension of a street or on a future street may lawfully extend. It includes the lines prescribed, if any, in any scheme.
  - (26a) "Permission or permit" A valid permission or authorization in writing by the competent Authority to carry out development or a work regulated by the Bye -Laws.
  - (26b) "Plinth" The portion of a structure between the surface of the surrounding ground and surface of the floor immediately above the ground.
  - (26c) "Plinth Area" The built up covered area measured at the floor level of the basement or of any storey.
  - (26d) "Plotted development"—Type of development layout wherein a stretch of developed land is divided into regular sized plots for uniform controlled building volumes.

- (26e) "Porch"- A covered surface supported on pillars or otherwise for the purpose of a pedestrian or vehicular approach to a building.
- (26f) "Prohibited Area" means any area specified or declared to be a prohibited area under section 20A of the AMASR (Ancient Monuments Archaeological Sites and Remains Act) Act, 2010.
- (26g) "Protected Monument" means an ancient monument which is declared to be of national importance by or under the AMASR Act, 2010.
- (27) "Public building" means a building used or intended to be used either ordinarily or occasionally as a church, chapel, temple, mosque or any place of public worship, dharmashala, college, school, theatre, cinema, public concert room, public hall, Mandob, public bath,-hospital, hotel, restaurant, lecture room or any other place of public assembly.
  - (27a) "Regulated area" means any area specified or declared under section 20B under the AMASR Act, 2010.
- (28) "Residential building" means a building used or constructed or adopted to be used wholly or principally for human habitation, and excludes garages, stables and -other outhouses appurtenant thereto.
  - (28a) "Road Street"- Any Highway, street, lane, pathway, alley, stairway, passageway, carriageway, footway, square, place, or bridge whether a thorough fare or over which the public have a right of passage or access or have passed and have access uninterruptedly for specified period, whether existing or proposed in any scheme and includes all bends, channels, ditches, storm water drains, culverts and railing within the street lines.
  - (28b) "Road street level or grade"-The whole extent of space within the boundaries of a road when applied to a new road/street as laid down in the city survey or development plan or prescribed road lines by any act of law and measured at right angles to the course or intended course of direction of such road.
  - (28c) "Road/Street Line" The line defining the side limits of a road/street.
  - (28d) "Road width or Width of Road/street"- The whole extent of space within the boundaries of a road when applied to a new road/street as laid down in the city survey or development plan or prescribed road lines by any Act of Law and measured at right angles to the course or intended course of direction of such road.
  - (28e) "Row Housing"- A row of houses with only one front, rear and interior open spaces.
  - (28f) "Room Height"- The vertical distance measured from the finished floor surface to the finished ceiling surface. Where a finished ceiling surface is not provided, the underside of the joists or beams or tie beams shall determine the upper point of measurement for determining the head room.

- (29) "Side yard" means a yard between the building and the side line of the plot and extending from the front line of the rear line of the plot and being the minimum horizontal distance between a side boundary line and the sides of the building or another than steps unenclosed balconies or unenclosed porches.
  - (29a) "Service Road" A road/lane provided at the front, rear or side of a plot for service purpose.
  - (29b) "Site or Plot"- A parcel or piece of land enclosed by definite boundaries.
  - (29c) "Site Corner" A site at the junction of and fronting on two or more intersecting roads or streets.
  - (29d) "Site Depth" The mean horizontal distance between the front and rear site boundaries.
  - (29e) "Site Plan"- A detailed Plan showing the proposed placement of structures, parking areas, open space, landscaping and other development features on a parcel of land as required by specific sections of the development code.
  - (29f) "Site with double frontage"- A site having frontage on two streets other than corner plot.
  - (29g) "Site, Interior or Tandem"- A site, access to which is by a passage from a street whether such passage forms part of the site or not.
- (30) "Set-back line"- A line usually parallel to the plot boundaries or corner line of a road and laid down in each case by the Authority or as per recommendations of Master/Zonal Plan, beyond which nothing can be constructed towards the plot boundaries excepting with the permission of the Authority.
  - (30a) "Settlement"- A human settlement whether urban or rural in character. It includes habited villages, towns, townships, cities and the areas notified under the control of the Authority
- (31) "Special building" means those buildings with large scale activities at a time such as hotel of 3 Star categories and above, public institutions, hospitals, shopping malls & multiplexes, educational institutions having a plinth area of 1000 sq. meter or more/educational buildings above Ground +1 storey irrespective of the size of the plinth area etc.
  - (31a) "Spiral Staircase"- A staircase forming continuous winding curve round a central point or axis provided in an open space having tread without risers.
  - (31b) "Storey"- The portion of a building included between the surface of any floor and the surface of the floor next above it, or if there be no floor above it, then the space between any floor and the ceiling next above it.
  - (31c) "To abut" To be positioned juxtaposed to a road, lane, open space, park, building etc.

# (32) "To erect" means

- i To erect a new building on any site whether previously built upon or not
- ii To re-erect any building of which portion have been down, burnt or destroyed.
- iii. Conversion from one occupancy to another; and
- iv. To carry out alterations
- (33) "To make alterations" means to make any modifications in any existing building byway of addition or alterations or any other change in the roof, window, door compound, sanitary and drainage system in any respect whatsoever. Providing a window and providing inter communication doors shall be considered to be material alterations. It is further included:

Conversion of any building or any pan thereof for human habitation as one dwelling house into more than one dwelling house or vice-versa.

- i. Conversion of a building or part thereof suitable for human habitation into a dwelling house or vice versa.
- ii. Conversion of a dwelling house or a part thereof into a shop, warehouse or factory or vice versa, and
- iii. Conversion of & building used or intended to be used for one purpose such as shop, warehouse or factory etc. into one or another purpose.

# (34) "To re-erect" means

- i. A construction for a second time
- ii. A construction of a building or part thereof for subsequent further times on the same plan as has been previously sanctioned.
- (34a) "Un-authorised construction" means the erection or re erection, addition or alterations which is not approved or sanctioned by the Authority.
- (34b) "Underground/Overhead Tank" An installation constructed or placed for storage of water.
- (34c) "Ventilation" Supply of outside air into, or the removal of inside air from an enclosed space.
  - a. Natural Ventilation-Supply of outside air into a building through window or other openings due to wind outside and convection effects arising from temperature or vapour pressure differences (or both) between inside and outside of the building.
  - b. Positive Ventilation- The supply of outside air by means of a mechanical device such as a fan.

- c. Mechanical Ventilation-Supply of outside air either by positive ventilation or by infiltration by reduction of pressure inside due to exhaust of air, or by a combination of positive ventilation and exhaust of air.
- (34d) "Verandah"- A covered area with at least one side open to the outside with the exception of 1m high parapet on the upper floors to be provided on the open side.
- (34e) "Water Closet (W.C)"- A water flushed plumbing fixture designed to receive human excrement directly from the user of the fixture. The term is used sometimes to designate the room or compartment in which the fixture is placed.
- (34f) "Window"- An opening to the outside other than a door, which provides all or part of the required natural light or ventilation or both to an interior space and not used as means of egress/ingress.
- (34g) "Zonal Plan"- A plan detailing out the proposals of Master Plan and the layout Plan. It may contain a site Plan and land use plan with approximate location and extent of land uses such as public & semi public buildings/works, utilities, roads, housing, recreation, industry, business, markets, schools, hospitals, open spaces etc. It may also specify standards of population density and various components of development of the zone.

# CHAPTER - II ADMINISTRATION

- 3. "OBPS" Online Building Permission System:
  - 1) All the applications for buildings located within Kakching Municipal Council Area shall be submitted through Licence Architects or Firms registered in the name of a Licence Architect who are registered with Kakching Municipal Council.
  - 2) The LTP shall make necessary site verification, examine the documents and submit the Application online to KMC along with the Building Plans in AutoCAD format and documents required as per the Building Bye-law at Chapter II of the Principal Law. The Online Building Permission System (OBPS) shall auto scrutinize the proposals. On finding the proposal as per the provisions of the Building Bye-laws and the Master Plan for Kakching, the system shall generate challan for requisite fees and penalty wherever applicable.
  - 3) On payment of requisite fees etc. the system shall auto generate instant Planning Permit and Building Permit along with approved drawing and forward the same to empaneled LTP and the Applicant with SMS and email alert. The approved drawings, the Planning Permit and Building Permit shall be in a downloadable format by the empaneled LTP and Applicant.
  - 4) In case the proposal is not as per the provisions of the Building Bye-laws and the Master Plan for Kakching, the system shall return the same to empaneled LTP with email and SMS alert to the applicant with detail.
  - 5) Authorities shall carry out post approval inspection of the proposals as and when required to ensure the adherence of the Building Bye-laws and Master Plan. Any discrepancies found during the inspection, shall be treated as unauthorized as per the provisions of this Bye-law, and the Planning Permit/ Building Permit issued shall be withdrawn.
  - 6) The buildings constructed under these clauses shall also obtain instant Occupancy Certificate on submission of all the documents as per provisions given in these bye-laws duly certified by the empaneled LTPs.
- 4. Every government department, as far as possible shall comply with all the provisions of these bye-laws. They shall also notify with plans, their intention, to the Chairperson but may not wait for the permit for starting the work. Where objections have been pointed out by the Board/Council, it shall be obligatory for the department to take necessary action to obviate the objections as laid down in the Government Building Act, 189 (4 of 1899).
- 5. Plans accompanying Notice: The following shall accompany the notice:-
  - (1) Site plan-The site plans sent with an application for permit shall be drawn to a scale of not less than 8 m to I cm {or 64 ft. to I in) and shall show:
    - (a) the boundaries of the side and of any contiguous land belonging to the owner thereof:
    - (b) the position of the site relating to neighboring streets;

- (c) the name of the street in which the building is proposed to the situated; all existing building standing on the site;
  - (d) the position of the building and of all other buildings, if any, which the applicant intends to erect upon his contiguous land referred to in (a) in relation to;
    - (i) the boundaries of the site, and in case where the site has been partitioned the boundaries of the portion owned by the applicant and also of the portion owned by the other owners;-
    - (ii) all adjacent streets, buildings and premises within a distance of 12 m(or 40ft.) of the site and of the contiguous land, if any referred to in. (a); and
    - (iii) if there is no street within a distance of 12 m. (or 40 ft) of the site, the nearest existing street;
  - (f) the means of access from, the street to the building and to all other buildings, if any, which the applicant intends-to erect upon his contiguous land referred to in (a);
  - (g) the position and the number of storeys of all other buildings within 12 m.(or 40 ft.) of the site.
  - (h) the position, forms and dimensions of kitchens, staircases, privies, urinals ,drams, cesspools, stables, cattle sheds, cow-houses, wells and other appurtenances of the buildings;
  - (i) free passage or way in .front of the building;
  - (j) space to be left about the building to secure a free circulation of air, admission of light and access for scavenging purposes;
  - (k) the width of the street, if any, in front of the building, if any. at the side or rear of the building: and
  - (i) such other particulars as may be prescribed by the Road;
  - (m) north point; and

and stair rooms;

- (n) the width of front, side and rear yard, existing road side trees, lamp and Telephone posts,
- (2) Building plans:-The plans of the building and elevations and sections accompanying the notice shall be accurately drawn to a scale of 1m to 1cm (or 8 ft. to 1 in) and coloured. Adequate arrangement for proper drainage shall also be indicated. The plans shall include;
  - (a) floor plans of all floors together with the covered area, access to buildings and basement plan. Such drawing shall clearly indicate the sizes and spacing of all supporting members, sizes of room. Sizes of windows, ventilators, door openings
  - (b) exact location of essential services e.g. WC, sink, bath and the like;
  - (c) sectional drawing showing clearly the sizes of footing, thickness of basement walls

and all roof slabs and floor slabs, wall construction, sizes and spacing of framing members, ceiling heights and parapet heights with their materials. The section should indicate the drainage and slope of the roof. At least one section should be taken through the staircase,

- (d) all street elevation
- (e) details of served privy, if any;
- (f) dimensions of the projected portions beyond the permissible building line;
- (g) terrace plan indicating the drainage and the slope of the roof; and
- (h) indication of the north line;
- (i) The plans of the building and elevations and sections accompanying the notice shall be accurately drawn to scale of 1 m. to I cm. (or 8ft. to 1 inch) and coloured showing different types of works. Adequate arrangement for proper drainage shall also be indicated.
- (j) building plans for bamboo houses, huts and sheds may have no sections and elevations.
- (3) Private Water supply and Sewage Disposal System- Plan and sections of Private water supply and sewage disposal system, if any, shall also be included,
- (4) livery person who intends to erect, re-erect or make material/structural alteration shall obtain building permit by giving an application in writing to the Council is the prescribed form given in Form I to VI duly signed by the "Licensed Architect/Engineer/Town Planner etc.
- (5) Specifications:- Specifications, both general and detailed, giving kind and grade of materials to be used, duly signed by the registered architect/engineer, shall accompany the notice.
- (6) Building Plans for Lifeline and Special Buildings:- The following additional information shall be furnished/indicated in the building plans in addition to the item specified 5(1),5(2) and 5(3);
  - i. Access to fire appliances/vehicles with details of vehicular turning circle/and clear motorable access way round the building.
  - ii. Size (width) of main and alternate staircase along with balcony approach, corridor ventilated lobby approach;
  - iii. Location and details of lift enclosure;
  - iv. Location and size of fire lift;
  - v. Smoke stop lobby/door where provided;
  - vi. Refuse chutes: refuse chamber, services duct, etc.
  - vii. Vehicular parking spaces
  - viii. Refuge area if any;
  - ix. Details of building service-air conditioning system with position of dambers, mechanical ventilation system, electrical services, boilers, gas pipes etc.
  - x. Details of exits including provision of vamps etc. for hospitals and special risks,
  - xi. Location of generator, transformer and switchgear room;

- xii. Smoke exhauster system if any;
- xiii. Details of fire alarm system network;
- xiv. Location of centralized control, connecting all fire alarm system, built in fire protection arrangements and public address system etc.
- xv. Location and dimension of static water storage tank and pump room;
- xvi. Location and details of fixed fire protection installations such as sprinklers, wet risers, hose reels, drenchers, CO<sub>2</sub> installation etc. and
- xvii The proper signs/symbols and abbreviation of all fire fighting systems shall be
- xviii. Service Plants: 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 (Part 8 'Building Services' and Part 9 'Plumbing Services' of the National Building Code).
- xix. Specifications: Specifications, both general and detailed, giving type and grade of materials xo be used, duly signed by the registered architect, structural engineer shall accompany the plans.
- xx. Structural Sufficiency Certificate: The plans shall be accompanied by structural sufficiency certificate signed by the structural engineer and the owner jointly to the effect that the building is safe against various loads, forces and effects the building is safe against various loads, forces and effects including due to natural disasters, such as, earthquake, landslides cyclones, floods, etc. stipulated under chapter VII of this Bye-law, Part 6 'Structural Design' of the National Building Code and other relevant Codes in Form IV. The structural engineer shall also have the details to substantiate his design.
- 6. Deviations during construction:—(i) If during the construction of a buildings any deviation of a substantial nature from the sanctioned plan is intended to be made, sanction of the Council shall be obtained before the change is made.
  - (ii) The Council may arrange from time to time, during the course of construction of a building for such inspection as the council may consider necessary.
- 7. Fees-
  - (1) No notice as referred to above in bye-law 3 shall be deemed valid unless and until the person giving notice has paid the fees given below to the Council and an attested copy of the receipt of such payment is attached with the notice:

Fo	For R.C.C., masonry & brickworks:				
1.	Cost of the application Form (Form I-	Rs. 100/-per set			
2	Buildings of plinth area upto 200	Rs. 100/- per square metre			
3.	Building of plinth area from 200	Rs. 120/- per square metre			
	square metre and above				
4.	For additional storey above Ground +1	Rs 100/- per square metre			
	Application Fees for Cinema,	Rs. 10,000/- in addition to			
	Theatre, multiplex. Hotels with	normal fees at SI. 1 to 3.			
	Conference Halls in addition to the				
Loadbearing buildings					
1.	The plinth area upto 200 square meters	Rs. 50/- per square meter			

2.	The plinth area from 200 square	Rs. 100/- per square meter			
	meters and above				
Re	Revalidation of already approved Building Plans				
	Revalidation of Plans	Rs. 1,000/- per Annum			
Ins	stallation of Communication Towers				
1.	Fee for installation of Towers	Rs. 1,00,000/-per unit			
2.	For every Service Provider incase of	Rs. 50,000/-per unit			
	sharing in addition to fee for				
	installation of Towers.				
3.	Renewal fee for every service provider	Rs. 50,000/- per unit			
Oı	Opening of ATM booths				
	Application fee for one booth	Rs. 10,000/-			
Ar	oplication for a Filling Station				
	Application fee for a filling station	Rs. 40,000/-			

- (2) The owner shall be allowed to re-submit the revised proposal after complying with all the objections raised by the Council within a period of one year from the date of rejection after which fresh shall have to be paid. In the event of a building permit not issued, 50% of the fees so paid shall be returned to the owner".
- 8. (i) If within 30 days of the receipt of the notice under Bye-law 3 of these bye-laws, the Council fails to intimate, in writing to the person, who has given the notice of its refusal or sanction, the notice with its plans and statements shall be deemed to have been sanctioned provided nothing shall be construed to authorize any person to do anything in contravention of or against the terms of lease or titles of the land or against any other bye-laws, regulation or ordinance, operating on the site of the work.
  - (ii) Once the plan has been scrutinized and objections have been pointed out, the owner giving notice shall modify the plan to comply with the objections raised and re-submit it The Council shall scrutinize the re-submitted plan and, if there he no further objections, the plan shall not be rejected.
  - (iii) Not with standing anything contained therein the structure contravenes any byelaw or is adjudged structurally unsound, the person shall be deemed liable under these bye-laws.
- Occupancy certificate: No building hereafter erected, re-erected or altered materially shall be occupied in whole or in part until the issue of an occupancy certificate in the form prescribed in Appendix-B by the authorised officer of the Council, affirming that such building conforms in all respects to the requirements of these bye-laws and is fit for occupation.
- 10. Unsafe-building:- All buildings or structures which are structurally unsafe, insanitary or not provided with adequate means of egress or which in relation to existing use constitute a hazard to safety or health for an)' reason of in-adequate maintenance, dilapidation or abandonment are, for the purpose of this bye-law, unsafe buildings. All such buildings shall be considered to constitute danger to public safely which shall be abated by repairs or demolition or as otherwise directly by the Council.
- 11. Examination of Unsafe Buildings:-The authorised Officer of the Council shall examine every building reported to be unsafe or damaged, and shall make a written record of such examination.

- 12. Notice to owner and occupier:- Whenever the Council, from the report of the authorized officer, find any building or structure, or portion thereof, to be unsafe as defined under Byelaw 10, it shall give to the owner and the occupier of such building ox structure a written notice stating the defects thereof. This notice shall require the owner or the occupier within 30 days to complete specified repairs or improvements or to demolish and remove the building or structure or portion thereof.
- 13. In case the owner or occupier fails, neglects or refuse to comply with the notice to repair or to demolish the said building or structure or portion thereof, the Council shall cause the danger to be removed whether by demolition or repair of the building structure or portion thereof or otherwise.
- 14. Cases of Emergency:- In cases of emergency, which in the opinion of the Council, involves imminent danger to human life or health, the decision of the Council shall be final. The Council shall forthwith or with such notice may be possible, promptly cause such building, structure or portion thereof to be rendered safe or removed for this purpose. The Council may at once enter such structure or land on which it stands, or abutting land or structure, with such assistance and such cost as--may be deemed necessary. The Council may also get the adjacent structures vacated and protect the public by an appropriate fence or such other means as may be necessary.
- 15. Costs:- Costs incurred under byelaws 13 and .14 shall be charged to the owner of the premises involved. Such cost shall be a charge on the premises in respect of which or for the benefit of which the same have been incurred and shall .be recoverable as an arrear of revenue.
- 16. Building or structure over Municipal Drain:- Any masonry building or structure shall not be constructed or extended, over any municipal drain or land.
- 17. (1) The Executive Officer to sign Form VII, Building Permission Sanction to convey approval of the Building Plan."
  - (2) The sanction once accorded shall remain valid for 1 (one) year. The sanctioned plan may be renewed/revalidated and the Executive Officer to sign Form X, form for revalidation of already approved Buildings Plan on payment of fee prescribed in Section 7(1).
- 18. Enforcement of the Bye-laws without prejudice to the operation of any lather law, it shall be the duty of the Council to take necessary actions to institute proceedings against any person who contravenes any of the provision of these bye-laws.
- 19. Whoever erects, materially alters or commences to erect, -materially alters any building without the previous sanction of the council or violets the building permission sanction issued by the Council or contravenes with the provisions of this bye-laws or who interferes or obstruct any authorised personnel in the discharge of his duties shall be guilty oi an offence. The Council shall:
  - i. Punish the person as per the provisions of the Manipur Municipalities Act, 1994.
  - ii. Take suitable action which may include demolition of un-authorized work, sealing of premises, prosecution and criminal proceeding against the offender, in pursuance of relevent laws in force, as decided by the Council.
  - iii. lake suitable action against licensed technical personnel and license may be withdrawn in case of an offence as decided by the Council.

- iv. The Council reserves the right to take action and to debar/blacklist the licensed technical personnel, if found to have deviated from professional conduct or to have made any misstatement or on the account of miss presentation 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 Council finds at any time any violation of the building byelaws or miss presentation of fact, or construction at variance with the sanction or building byelaws, inclusive of prescribed documents, the Council shall be entitled to revoke the sanction and take appropriate action against such professional and such professional shall not be authorized to submit fresh plans till finalization of the case.
  - 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 (a) and (b) above, the Council shall give him a show cause notice with personal hearing and shall pass an order to debar him/her for submission and supervision of the construction with MI justification for the same. An appeal against this order shall lie with the Appellate Authority.
- 20. Conviction no bar to further prosecution. The conviction of any person under the provision of these byelaws for failing to comply with any of the said requirements or obligation shall not operate as a bar to further prosecution under this bye-law for any subsequent failure on the part of such person to comply.
- 21. Officers not liable for damages:- Any officer of the Council acting in good faith and without malice shall be free from liability for acts done in the performance of the official duties under any provision of these bye-laws.

#### CHAPTER – III

# **SPECIFIC REQUIREMENTS**

22. Projections:- No projection of any sort whatsoever extending more than 23cm. (or 9 in)below a height of 4.3 m. (or 14ft.) such as projection on the level of chabutara, Clrajja, cornice, water spouts, drains, pipes, advertisement boards and the like shall project over the land of the road or over any drain or over any portion outside the boundaries of the site, provided that projections arising out of the vertical, part of the rain water spouts projecting at the road level or the water pipe may be permitted in accordance with the drainage plan.

#### 23. Sun-shades over windows and ventilators:-

- (a) Notwithstanding any thing contained in these byelaws, no projection of any sort shall be permitted over the land of the road or over any drain or any other portion outside the boundaries of the site below a height of 4.3 m. (or 14ft.) from the ground level.
- (b) Sunshades provided above a height of 4.3 m. (or 14ft.) from the ground level shall be permitted to project upto a maximum width of 60 cm. (or 24 in) if the road over they project exceeds 9 no. (or 30ft) in width.
- (c) No projection of any short whatsoever shall be permitted on roads less than 9m. (or 30ft.) in width or on roads having no footpaths.
- 24. No construction shall be permitted beyond the set back line as provided in Section 54D.
- 25. (i) Habitable Room-The height of all rooms for human habitation shall not be less than 2.75 m. (or 9 ft.). The size of the habitable room shall not be less than 9.5 sq. metres (or 100 sq.ft.) with a minimum width of 2.4 in. (or 8 ft). Habitable room shall be provided for the purpose of light and ventilation with windows, doors, ventilators and other apertures having a total area of not less than. 1/8th of the floor area of the room excluding doors.
  - (ii) Bath room, WCs and Stores- The height of all such rooms measured from the floor to the lowest point in the ceiling shall not be less than 2.4 m. (or 8 ft.). Nothing on the ground floor shall be constructed in such a way as to leave a headway of less than 2.4m. (or 8 ft.) provided that in the case of a passage under the landing the minimum headway may be kept as 2.1 m.(or 7 ft.). The size of a bath room shall not less than 1.5 x L.2 m. (or 5' x 4' ft.) or 1.8 sq. metres or (20 sq. ft.) if it is combined bath room and water closet its floor areas shall not be less than 2.8 sq.metres (or 30 sq. ft.). The minimum floor area of a W.C. shall be 1.1 sq. metres (or 12 sq. ft) Bath room and we's shall be provided with natural light and ventilation by windows and ventilators.
    - (iii) Kitchen:- The height of the kitchen measured from the .floor to the lowest point the ceiling shall not be less than 2.75 m. (or 9 fit).

Every kitchen shall have a floor area of not less than 4.8 sq. m.(or 50 sq. ft.) if there is store or 5.6 sq. metres (or 60 sq. ft.) if there is no store and shall not be less than 1.8 In. (or 6 ft.) in width of any pan. A kitchen which is intended for use as dining room also shall have a floor area of not less than 9,5 sq. metres (or 100 sq. ft.) with a minimum width of 2.4 m. (or 8 ft.).

Every kitchen shall be provided with a flue and properly ventilated with doors, windows and ventilators to be standard prescribed for .habitable rooms.

#### 26. Stair Case:-

- (i) The minimum clear width of stair cases in case of residential buildings shall not be less than 1 m. (or 3 ft.).
- (ii) In case of public buildings a stair case shall be provided for every 300 persons which are expected to use the building. No. stir case shall be less than 1.5 m. (or 5 ft.) in width and the farthest comer of the building shall not be more than 18 m. (or 60 ft) "distant from the stair case.

The minimum riser and minimum width of tread of stair case shall be as follows:

Type of building	Maximum riser	Minimum Tread width
Public building	15 cm. (or 6 inch)	30 cm. (or 12 inch)
Domestic buildings	19 cm. (or 71/2 inch)	25 cm. (or 10 inch)

- (iii) No flight of stair case should consist of more than 16 steps a time. After that there should be a landing or half landing.
- (iv) The minimum clear head room in any stair case shall be 2.1 in. (or 7 ft.) as measured from the top of the riser upto the lowest portion of the ceiling perpendicular above it. Every stair case shall be properly lighted and ventilated.
- 27. Drainage and Sanitation:- Sites containing Deposited Refuses- No building shall be constructed on any site, on any part of which there is deposited refuse, excreta or other offensive matter to which the Public Health Authority object until refuse has been removed there from and the site has been prepared or left in a manner suitable for building purpose to the satisfaction of the Council.

Provided that where it is intended to find a building on piles or on reinforced concrete pillars, the Council may approve the erection of such building after the refuse has been appropriately treated by chemical or in some other manner to the satisfaction of the council and has been covered by a layer of sand or other suitable materials to a depth of not less than 0.6 m. (or 2ft.) or by a layer of cement concrete not less than 15 cm. (or 6 in) thick.

#### 28. Privy, Type to be allowed in an areas-

- (i) The- Council shall determine in each case whether the premises shall be served by a connected latrine or septic tank or other type, provided that it shall be a connected latrine if a sewer is within 30 m. (or 100 ft.) of the site, provided further that until the sewer begins to function a sewed latrine may be permitted subject to the condition that it shall be converted into a connected latrine as and when required by the Council.
- (ii) The Council may refuse to permit the construction of any latrine or urinal at a particular place, if in its opinion, such latrine or urinal would be anuisance in the neighbourhood or would be objectionable to the occupants of the neighbouring buildings.
- (iii) Every house should have one latrine, pit latrines should be at least covered and away from the tank, living room and kitchen by at least 25 ft.

(iv) Cow-sheds should be 25 ft. away from living rooms, kitchen, tank.

#### 29. Rain water Pipes:-

- (a) (i) Rain water pipe shall be at least 75 mm. (or 3 in) in diameter, and be constructed of cast iron, wrought iron glazed stoneware, asbestos or other equally suitable material and shall be securely fixed.
  - (ii) A rain water pipe conveying rain water shall discharge directly or by means of a channel, into or over an inlet to a surface drain or shall discharge freely in a compound drain to a surface drain, but in no case shall it discharge directly into any closed drain.
  - (iii) Whenever a rain water pipe cannot discharge into or over an inlet to a surface drain or in a compound drain to a surface dram and if a street drain within 30 m (or 100 ft.) from the boundary of the premises, such rain water pipe shall discharge into a gully which shall be connected with the street drain.
  - (iv) If such street drain is not available within 30 m.(or 100 ft.) of the boundary of the premises, a rain water pipe may discharge over a street provided its outlet is not more than 30 cm. (or 1 ft.) above the surface of the street.
  - (v) A rain water pipe shall not discharge into or connect with any soil pipe or soil ventilation pipe or any waste pipe or any waste ventilation pipe, nor shall it discharge into a sewer unless specifically permitted to do so by the Council in which case such discharge into a sewer shall be intercepted by means of a gully trap.
- (b) Ail sullage drains of a building shall be connected to the back street or land and not on the main road on which the building abuts without the special permission of the Council.
- 30. The penalty for the infringement of any of the bye-law Nos. 22 to 29 shall be (a) a line not exceeding Rs. 500/- and in the case of continuing infringement a daily fine not exceeding Rs. 100/- for each day after written notice of the offence is served by the Chairperson or the authorised officer.

# CHAPTER-IV HEALTH, SANITATION AND OTHER REQUIREMENT

- 31. Every person who erects a building shall provide a means of access to such building a clear way, not less than 3.6 m. (or 12 ft.) in which upto 3 storeys and 5 m. (or 16 ft.) in width beyond three storeys from a street to the entrance door of such building, such pathway to be. so long as it is used as a means of access to that building maintained free from any obstruction and shall not at any time cause or permit any portion of any building below a height of 5 m (16 ft.) to overhang or project over or into such passage.
- 32. No building shall be erected so as to deprive any other building of the means of access as provided in this chapter.
- 33. Every person who erects a building shall indicate upon any plan, required to be furnished by him in accordance with these byelaw, the whole area of such means of access by a distinguishing colour and description.
- 34. Every person who erects a building shall not at any time erect or cause or permit to be erected or re-erected any building which in any way encroaches upon or diminished the area so set apart for this purpose.
- 35. The space so set apart shall be separately distinguished from any house gully or open, space required to be provided under any other byelaw enforced by the Council.
- 36. Every such means of access shall be drained and lighted to the satisfaction of the Board and manhole covers OT other drainages, water or any other fittings laid in such means of access shall be flush with the finished surface level so as not to obstruct the safe travel over the same.
- 37. A person who under takes construction work on building shall not reduce the access to any building previously existing below the minimum width as required under Byelaw 31.
- 38. The means of access under these byelaws shall not be deemed to be suitable and sufficient until, they have been approved by Board who shall have power to prescribe the width of the clear way which he shall communicate.
- 39. Access to Dwelling Units and Rooms- In every building containing more than one dwelling, access shall be provided to each dwelling unit without the necessity of passage through any other dwelling unit.
- 40. Open Space Requirements:-
  - Open Air Space:- Every room intended for human habitation shall abut on an interior or exterior open air space or on an open verandah opening on to such interior or exterior toilet open space.
- 41. Joint Open Air Space:- Every such interior or exterior open air space unless the latter is a street, shall be maintained for the benefit of such building exclusively and shall be entirely within the owner's own premises.
- 42. If such interior or exterior open air space is interned to be used for the benefit or more than one building belonging to the same owner, then the width of such open air space shall be equal to one-half of the height of the tallest building on such open air space.

- 43. Open Space to be open to Sky Every open space, whether exterior or interior, provided in pursuance of any regulation or byelaw or under an agreement lodged with the Board shall be kept free from any erection thereon.. shall be open to the sky. Every open space or, chowk provided under these byelaws shall have a suitable and sufficient access. No open drain, except for rain water, shall be constructed in any open space required by these byelaws.
- 44. Open Space Around Residential Buildings should be as per Section 54D.
- 45. Open Space /Parking Space for Buildings other than Residential building should be as per Section 54E.
- 46. Safeguard against Reduction of Open Space:- No construction work on a building shall be allowed if such work operation to reduce an open air space of any other adjoining building belonging to the same over to an extent less than what is prescribed by any of the byelaws in force at the time of the proposed work or reduce further such open space if it is already less than that prescribed.
- 47. Building Abutting on Two public roads:- If a building abuts on two or more public roads of different widths, the building shall be deemed for the purpose of the bye-law to face upon the road that has the greater width and the height of the building shall be regulated by the width of the road and may be continued at this height to a depth of 13.5m (or 44 ft.) along the narrow road subject to conformity with bye-laws 44 and 45.
- 48. Bazar Area:- In Dew Bazar area and continuous shops provision shall be made for an arcade of 1.8 m. (or 6 ft.) width to be built by the allottee as public passage.
- 49. Additions or Extension to a Building:- No addition or extension to a building shall be allowed unless the addition or extension is such as would be permissible if the whole building was re-constructed from the Plinth with the open space required under these bye-laws applicable to the site of the building at the time of purposed addition, and no addition or extension to a building shall be allowed which would diminish the extent of air space below the minimum requirement under these bye-laws.
- 50. Building line:- The front of every building shall be in the same line as far as possible and the Council shall see that the building or buildings are constructed in the same line after giving the provision for set back mentioned in Bye-law 2.4.
- 51. Covered Area:- Subject to Bye-law Nos. 24 and 44 the maximum covered area of buildings of different classes shall be as under:-
  - (i) In a bazar or market area:- The covered area shall not exceed 80% of the area of the site provided that sufficient of-street parking facilities for loading and unloading of vehicles are provided on the same plot off the building.
  - (ii) In case of Industrial building:- The covered area shall not exceed 60% of the total site area. Bye-law Nos. 24 and 44 will not affect this pro vision.
  - (iii) In residential: area the covered area shall not be more than 2/3 of the plot area.

# <u>CHAPTER-V</u> CINEMA, THEATRE AND PUBLIC ASSEMBLY HALLS

- 52. (i) No person shall erect a building intended to be used as cinema, theatre, or public assembly hall, or convert the use of any exist building to any such purpose, unless such building is set back at least 9m. (or 30 ft) from the regular line of the public road and 4.5m(or 15ft) on rear end side.
  - (ii) Cinema building shall conform also to the provisions laid down by the Cinematograph Act in force and the rules framed thereunder.
  - (iii) The Ground Coverage and Far of such buildings shall be 40 and 125 respectively.
- 53. If any portion of such building is intended to be used as a domestic building, such portion (except accommodation for the caretaker and his family) shall comply with the provisions of the bye-laws for domestic building.

# CHAPTER-VI GENERAL REQUIREMENTS

- 54. (1) (i) All buildings under this chapter shall conform to the following general requirement in regards to water supply, drainage and sanitation..
  - (ii) All premises intended for human habitations, occupancy or use shall be provided as far as possible with a supply of pure and wholesome water, neither connected with unsafe water supply, nor subject to hazard of back flow.
  - (iii) Plumbing fixtures, device and appurtenances if any shall be supplied with water in sufficient volume and at pressure adequate to enable them to function satisfactorily and without undue noise under all normal conditions of use.
  - (iv) Plumbing shall be designed and adjusted to use the minimum quantity of water consistent with proper performance and cleaning.
  - (v) Devices for heating and storing water if any shall be so designed and installed as to prevent dangers from explosion thought over-heating.
  - (vi) Every building having plumbing fixtures installed and intended for human habitation, occupancy, or use on premises abutting on a public road, alley or easement in which there is a public sewer shall have connection with the sewer.
  - (vii) Each family dwelling unit on premises abutting on a sewer or with a private sewage-disposal system shall have, at least, one water closet and one kitchen type sink.
  - (viii) All other structures for human occupancy or use on premises abutting on a sewer or with a private sewage-disposal system shall have adequate sanitary facilities but in no case less than one water-closet and one other fixture for cleaning purposes,
  - 54(a) Segregated sanitation for visitors in Public Buildings

- 54(b) Special requirement of segregated sanitation for Visitors in Public buildings, Government Buildings, Hospitals, Educational Institutions, Commercial buildings etc. Provisions and occupancy shall be referred at Table 54.1 Public toilets are meant for floating population, usually located near railway stations, bus stands, market places, government hospitals, religious centres etc.
- 54(c) The preferable location of these toilets shall be within 200-500 metres from the main entry of the building.
- 54(d) The site shall be earmarked on site plan or a layout plan.
- 54(e) It must be accessible to visitors and general public during the operational hours of the building. However fiscal generation for maintenance may be planned w.r.t. user charges from visitors and general public.
- 54(f) Other factors to be considered.
  - a. Waste water conveyance/treatment and prevention of contamination. Location on site should allow easy and hygienic emptying of the pits/tanks and ensure that ground water table is not contaminated by waste water percolation.
  - b. Adequacy in provision.
  - c. Design consideration.
    - i. Adequate ventilation
    - ii. Door Design/ Direction of swing of the door (preferred outwards
    - iii. Adequate waiting area and
    - iv. Adequate volumes of water storage.

#### 54(g) The facilities should include

- i. Separate toilet blocks for men and women with separate entries.
- ii. Seats for children to be provided in both sections for men and women.
- iii. Waiting and holding area.
- iv. Space for facility caretaker and maintenance staff- from where they can monitor and maintain both facilities for men and women.
- v. Urinal facilities for men.
- vi. Waste water disposal system
- vii. Janitor/store room for cleaning material and equipments.
- 54(h) Norms for differently baled within segregated toilets.
  - i. One special W.C. in a set of toilet shall be provided for the use of differently abled persons with essential provisions of wash basins near the entrance.
  - ii. Minimum clear opening of the door shall be 900 mm and the door shall swing out.
  - iii. Suitable arrangement for vertical and horizontal handrails with 50 mm clearance from wall shall be made in the toilet. The W.C. seat shall be 500 mm from the floor.
- 54(i) Water requirement and facilities.

Water requirement to be kept for enough storage for ½ day operation either in underground sump or overhead tank. Alternatively a hand tube well can be used for

storing water. To minimise the wastage of water, self closing water taps should be used. The pans must be pouring flush with a steep design. Traps should be of 20 mm water seal. If toilet is to be linked to city sewer, a master trap has to be provided at sewer connection.

Table 54.1 Segregated sanitation facilities for visitors in Public Buildings.

No.	Sanitary Unit	For Male Personnel	For Female personnel
1.	Public toilet near Railway stations (24x7) (a) Water Closet (W.C) (b) Urinals (c) Ablution taps	(a) One for 100 users (b) One unit per 300-500 users (c) One in each W.C	(a) One for 50 users (b) (c) One in each W.C
2.	Public Toilet near market place/offices (for working hours) (a) Water Closet (b) Urinal (c) Ablution Taps	(a) One for 100 users (b) One unit per 200-300 users (c) One in each W.C	(a) One for 50 users (b) (c) One in each W.C
3.	Public toilets near Public Buildings (a) Water closet (b) Urinals (c) Ablution taps	(a) One for 100 users (b) One unit per 200 – 300 users (c) One in each W.C.	(a) One for 50 users (b) (c) One in each W.C

# The recommended areas for different facilities at Visitors toilets.

No.	Sanitary Unit	Dwelling with individual convenience	Dwelling without individual Convenience
1.	Bath Room	One provided with water tap	One for every two Tenement
2.	Water Closet	One	One for every two Tenement
3.	Sink	One	
4.	Water Tap		One with drainage Arrangement in each tenement One in common bath room and common water closet.

#### (2) WATER SUPPLY:

- (i) Water supply shall be provided for residential building, office buildings, factories, hospitals. Nurses home and medical quarters, hostels, restaurants, cinemas, concert halls, theatres, art Galleries, Libraries, Museums, Bus Stations, Schools, Colleges, and such other buildings as maybe required by the Board for drinking and other necessary uses.
- (ii) There shall be at least one tap from the piped water supply from drinking purposes for one or two houses.

#### (3) DRAINAGE AND SANITATION REQUIREMENTS:

(A) There shall be at least one water tap and arrangements for drainage in the vicinity of each water closet or group of water closets in all buildings,

#### (B) Residences.

- (i) Dwellings, with individual conveniences shall have at least the following fitments:-
  - (a) One bath room provided with a tap.
  - (b) One water closet; and
  - (c) One nahanit or sink either in the floor or raised from the floor.

Where only water closet is provided in a dwelling, the bath and water closet shall be separately accommodated.

#### (C) Buildings other than Residences:

(i) The requirements for fitments for drainage and sanitation in the case of buildings other than residences shall be in accordance with Table- I to X as follows:-

Table I Office building

Table II Factories

Table IIICinemas, concert halls and theatres

Table IV Art galleries, libraries and museums

Table V Hospitals, indoor and outdoor patient wards

Table VI Hospitals, administrative buildings, medical staff quarter

and nurses' homes.

Table VII Hotels

Table VIII Restaurant

Table IX Schools

Table X Hostels.

#### **CHAPTER VIA**

#### PROVISION FOR HIGH RISE DEVELOPMENT

# 54A. High Rise

Buildings higher than 15 m of height without stilts and above 17.5 m of height with stilts shall be considered as high rise buildings.

#### 54B Plot area

Plots to be used for high rise development in an approved layout Plan, Comprehensive plan or sub division as prepared and approved by competent authority.

#### 54C Means of Access

- a. A building shall be on a street or upon spaces directly connected from the street by a hard surface approach road; width of approach road is not less than 9 metres.
- b. If there is any bend or curve on the approach road a sufficient width shall be provided at the curve to enable the fire appliances to turn, the turning circle being at least of 9.0 m radius.
- c. The approach road to the building and open spaces on all its sides up to 6 m width and layout for the same shall be done with consultation with the Chief fire officer. The said open space shall be kept free from any obstruction and shall be motor able.
- d. Main entrance to the premises shall be adequate width to allow easy access to the fire engine and in no case it shall measure less than 6 m. The entrance gate shall fold back against the compound wall of the premises. If archway is provided, the height of the archway shall not be less than 5 m.
- e. For multi-storeyed group housing schemes on one plot, the width of approach road to the site shall be of minimum 18m width.

# 54D FAR, SETBACKS AND HEIGHTS OF RESIDENTIAL BUILDINGS

	Pro	posed setba	acks and h	eights of re	sidential	buildings		
<b>&gt;</b> T	Plot Area (sq.mt.)	FAR	Maximum Height (in metres)		Setbacks proposed (in meters)			
No					Front	Rear	Side 1	Side 2
1	90 - 150	1.80	11	G+2	1.50	0.90	0.90	0.90
2	150 - 300	1.80	11	G+2	2.00	1.20	1.20	1.20
3	300 - 500	1.80	13	G+3	3.00	2.00	1.80	1.20
4	500 - 750	2.00	13	G+3	4.00	3.00	2.40	1.20
5	750 -1000	2.00	16	G+4	5.00	4.50	4.20	2.50
			Abo	ve 16 MTS				
6	1000-1500	2.50	19	G+5	6.00	4.50	4.50	3.00
7	1500 -2000	2.50	22	G+6	7.00	4.50	4.50	3.50
8	2000 -2500	2.50	25	G+7	8.00	4.50	4.50	4.00

#### 54E Parking spaces.

- a. The parking space shall be provided as per the provisions of the Master Plan or Zonal Plan.
- b. In case of High Rise building parking will be permitted at any or all of the following
  - i. Basement
  - ii. Stilts
  - iii. Podium.
- c. Stacked /Multilevel/Automated parking is also permitted.

# 54F Building Components.

#### 1. Doorways

- a. Every doorway shall open into an enclosed stairway, a horizontal exit, on a corridor or passageway providing continuous and protected means of access.
- b. No exit doorway shall be less than 1m in width. Doorways shall be not less than 0.75 m wide.
- c. Exit doorways shall open outwards that is away from the room but shall not obstruct the travel along any exit. No door when opened shall reduce the required width of stairway or landing to less than 0.9 m, overhead or sliding doors shall not be installed.
- d. Exit door shall not open immediately upon a flight of stairs, a landing equal to at least the width of the door shall be provided in the stairway in each doorway, level of landing shall be the same as that of the floor which it serves.
- e. Exit doorways shall be opening able from the side which they serve without the use of a key.
- f. Mirrors shall not be placed in exit ways or exit doors to avoid confusion regarding the direction of exit.

# 2 Revolving doors

Revolving doors shall not be provided as a means of fire exit.

#### 3 Stairways.

- a. A staircase shall be arranged round a lift shaft.
- b. The staircase shall be ventilated to the atmosphere at each landing and a vent at the top, the vent openings shall be of 0.5 sqm. in the external wall and the top. If the staircase cannot be ventilated, because of location or other reasons, a positive pressure 50 pa shall be maintained inside. The mechanism for pressurizing the staircase shall operate automatically with the fire alarm. The roof of the shaft shall be 1m above the surrounding roof, glazing or glass bricks if used in staircase shall have fire resistance rating of minimum 2 hour.
- c. The minimum width of staircase shall be as given below:

Table 54F.3 Minimum width of staircase for different types of buildings

Type of building	Width	
Residential building(dwellings)	1.0 m	10,500
Residential hotel buildings	1.5 m	-: *
Assembly buildings like auditorium, theatre, cinemas.	2.0 m	
Educational buildings up to 30m in height	1.5 m	
Institutional buildings like hospitals	2.0 m	
All other buildings	1.5 m	

- d. The minimum width of treads without nosing shall be 0.25 m for staircase for residential building. In case of other buildings the minimum tread shall be 0.3 m. The treads shall be constructed and maintained in a manner to prevent slipping. The maximum height of riser shall be 0.19 m in the case of residential building and 0.15 m in the case of other buildings and shall be limited to 15 risers per flight.
- e. Handrails shall be provided with a minimum height of 0.9 m from the centre of the tread
- f. The minimum headroom in a passage under the landing of a staircase and under the staircase shall be 2.2 m.
- g. Access to main staircase shall be gained through adequate resistance rating. Automatic closing door placed in the enclosing walls of the staircases. It shall be swing type door opening in the direction of the escape.
- h. No living space, store or other for risk shall open directly to the open space, store or other fire risk shall open directly to the open spaces or can be reached without passing through any door other than a door provided to form a drought lobby.
- i. External exit door of staircase enclosure at ground level shall open directly to the open spaces or can be reached without passing through any door other than a door provided to form a drought lobby.
- j. The exit sign with arrow indicating the way to the escape route shall be provided at a height of 0.5 m from the floor level on the wall and shall be illuminated by electric light connected to corridor circuits. All exit way making signs shall be flushed with the wall and so designed that no mechanical damage shall occur to them due to moving of furniture or other heavy equipments. Further all landing of floors shall have floor indication boards indicating the number of floor. The floor indication board shall be placed on the wall immediately facing the flight of stairs and nearest to the landing. It shall be of size not less than 0.5 mx0.5 m and it shall be prominently on the wall facing the staircase.
- k. In case of single staircase it shall terminate at the ground floor and access to the

basement shall be by a separate staircase. However, the second staircase may lead to basement levels provided the same is separated at ground level by either a ventilated lobby with discharge points at two different ends or through enclosures with fire resistance rating door or through a fire protected corridor.

#### 4. Lifts

General requirements of the lifts

- a. All the floors shall be accessible for 24 hours by the lift.
- b. Grounding switch at ground floor level to enable the fire service to ground the lift shall also be provided.
- c. The lift machine room shall be separate and no other machinery shall be installed therein.
- d. Walls of lift enclosures and lift lobby shall have fire rating of 2 hour. Lifts shall have vent at the top of area not less than 0.2 sq m
- e. Lift car door shall have a fire resistance rating of 1 hour.
- f. Lift lobby doors in lift enclosures shall have fire resistance as per section 11.7.1 of chapter 11.
- g. Collapsible gates shall not be permitted for lifts and shall have solid doors with fire resistance of at least 1 hr.
- h. If the lift shaft and lobby is in the core of the building a positive pressure between 25 and 30 pa shall be maintained in the lobby and appositive pressure of 50 pa shall be maintained in the lift shaft. The mechanism for pressurization shall act automatically with a fire alarm. It shall be possible to operate this mechanically also.
- i. Lifts communicating with the basement, the lift lobby of the basements shall be pressurized as suggested in Clause 11.9.1 (g) and 11.9.1 (h) with self closing door with fire resistance rating (refer section 11.7.1 of chapter 11). Telephone or other communication facilities shall be provided in lift cars and to be connected to fire control room for the building
- j. Exit from the lift lobby, if located in the core of the building shall be through a self closing fire door of half an hour fire resistance.
- k. Suitable arrangements such as providing slope in the floor of lift lobby shall be made to prevent water used during fire fighting etc. at any landing from entering the lift shafts.
- l. A sign shall be posted and maintained on every floor at or near the lift indicating that in case of fire, occupants shall use the stairs unless instructed otherwise. The sign shall also contain a plan for each floor showing the location of stairways. Alternate source of power supply shall be provided for all the lifts through a manually operated change over switch.
- m. For pressurization specifications for various building components refer chapter 4 of NBC and lift safety clause 4.10.

#### 5. Basements

- a. Basements shall be permitted within the setback lines subject to clearance from the local bodies/departments concerned, Municipal Council and Fire Departments. Where there are no setbacks, it should be after leaving required 6 m from plot boundary (as per development control rules of Master Plan)
- b. Each basement shall be separately ventilated. Vents with cross sectional area not less than 2.5 percent of the floor area spread evenly round the perimeter of the basement shall be provided in the form of grills or breakable stall board lights or pavement lights or by way of shafts. Alternatively a system of air inlets shall be provided at basement floor level and smoke outlets at basement ceiling level, inlets and extracts may be terminated at ground level with stall board or pavement lights as before, but ducts to convey fresh air to the basement floor level have to be laid. Stall board and pavement lights should be in positions easily accessible to the fire brigade and clearly marked 'SMOKE OUTLET' or 'AIR INLET' with an indication of area served or near the opening.
- c. The staircase of basement shall be of enclosed type having fire resistance rating. The staircase shall be situated at the periphery of the basement to be entered at ground level only from outside open air. The staircase shall communicate with basement through a lobby with self closing doors with fire resistance rating as per relevant NBC code mentioned above.
- d. For travel distance Table given below shall be followed. If travel distance exceeds that given in the table below, additional staircases may be provided.

Table 54F.5 Travel distance for occupancy and type of construction

Group of	Maximum travel distance construction			
occupancy	Type 1 & 2	Type 3&4		
Residential (A)	30.0	22.5		
Educational (B)	30.0	22.5		
Institutional	30.0	22.5		
Assembly(D)	30.0	30.0		
Business(E)	30.0	30.0		
Mercantile((F)	30.0	30.0		
Industrial(G)	45.0	Construction Type 3 &4 not Permitted		
Storage(H)	30.0	Construction Type 3 &4 not Permitted		
Hazardous(J)	22.5	Construction Type 3 &4 not Permitted		
	Residential (A) Educational (B) Institutional Assembly(D) Business(E) Mercantile((F) Industrial(G)  Storage(H)	Residential (A)         30.0           Educational (B)         30.0           Institutional         30.0           Assembly(D)         30.0           Business(E)         30.0           Mercantile((F)         30.0           Industrial(G)         45.0           Storage(H)         30.0		

#### Notes:

- 1. For fully sprinkled building, the travel distance may be increased by 50% of the values specified above.
- 2. Ramps shall be counted as one of means of escape wherever permitted in National Building Code 2005.
  - e. In multi story basement intake ducts may serve all basement levels but each basement level and basement compartments shall have separate smoke outlet doctor ducts. Ducts so provided shall have the same fire resistance rating as the compartment itself. Fire rating may be taken as the required smoke extraction time for smoke extraction ducts.
  - f. Mechanical extractors for smoke venting system from lower basement levels shall also be provided. The system shall be of such design as to operate on actuation of heat/smoke sensitive detectors or sprinklers, if installed and shall have a considerably superior performance compared to the standard units. It shall also have an arrangement to start automatically.
  - g. Mechanical extractors shall have an internal locking arrangement, so that extractors shall continue to operate and supply fans for HVAC shall stop automatically with the actuation of fire detectors.
  - h. Mechanical extractors shall be designated to permit 30 air changes as per hour in case of fire or distress call. However for normal operation, air changes schedule shall be as given in part 8, Building Services, Section 3, Air conditioning, Heating and mechanical Ventilation of National Building Code 2005.
  - i. Mechanical extractors shall have an alternative source of supply.
  - j. Ventilating ducts shall be integrated with the structure and made out of brick masonry or reinforced cement concrete and when this duct crosses the transformer area or electrical switchboard, fire dampers shall be provided. k. Use of basements for kitchens working on gas fuel shall not be permitted unless air conditioned. The basement shall not be permitted ward block of a hospital/ nursing home unless it is fully sprinkled. Building services such as electrical sub stations, boiler rooms in basements shall comply with the provision of the Indian electricity Act/Rules. Boiler Room shall be provided at the first basement along the periphery wall with fire resistance rating or shall be separated with the blast wall.
  - l. If cut outs are provided from basements to the upper floors or to the atmospheres, all sides cut out openings in the basements shall be protected by sprinkler head at close spacing so as to form a water curtain in the event of a fire.
  - m. It is essential to make provisions for drainage of any such water on all floors to prevent and minimize water damage of the contents. The drain pipes should be provided on the external wall for drainage of water from all floors. On large area floors, several such pipes may be necessary which should be spaced 30 m apart. Care shall be taken to ensure that the construction of the drain pipe does not allow spread for smoke from floor to floor.

## 6. Compartmentation

The building should be suitably compartmentalized so that fire /smoke remains confined to the area where fire incident has occurred and does not spread to the remaining part of the building. Compartmentalization and pressurization method shall be adopted as per clause 4.10 of Para 4 of NBC 2005.

## 7. Ramps

- 'a. The ramps to basement and parking floors shall be not less than 7.2 m wide for two way traffic and 4 m wide for one way traffic provided with gradient 1:10 for cars and 1:15 for heavy vehicles. At curved portions of the ramp or for circular ramps the slope should not be more than 1:12.
- b. Ramps may also be provided in setback area which can be sloped considering unhindered movement of fire engine and in no case the gradient shall be less than 1:10.
- c. All structural safety and design aspects as per latest BIS Code and NBC, 2005 shall be complied along with consideration of weight of fire engine and in no case the gradient shall be less than 1;10
- d. The minimum width of ramps in hospitals shall be 2.4 m for stretcher and not for vehicular movement.
- e. In this case Handrails shall be provided on both sides of the ramp.
- f. Ramps shall lead directly to outside open space at ground level or courtyards or safe place.

## 8. Corridors

- a. Exit corridors and passageways shall be of width not less than the aggregate required width of exit doorways leading from them in the direction of travel to the exterior.
- b. The minimum width of a corridor in a residential building shall be 1.0.m for single loaded and 1.8 m for double loaded and in all other buildings shall be 1.5 m.
- c. Where stairways discharge through corridors and passageways, the height of corridors and passageways shall be not less than 2.4
- d. All means of exit including staircases lifts lobbies and corridors shall be ventilated.

## 9. Glass facades/service ducts/Shafts/Refuge area/vents

a. An opening to the glass facade of min width 1.5 m and height 1.5 m 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.

- 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 facade 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 must be separated internally by a smoker fire seal which is of non combustible material having a fire resistance rating of not less than 2 hours.
- f. Service ducts and shafts shall be enclosed by walls and doors with fire resistance rating. All such ducts and shafts shall be properly sealed and stopped fire ingress at all floor levels.
- g. A vent opening at the top of the service shall be provided having an area between one fourth and one half of the area of the shaft.
- h. The openable vent of minimum 2.5% of the floor area shall be provided. The open able vent can be pop out type or bottom hinged provided with fusible link opening mechanism and shall also be integrated with automatic smoke detection system.
  - 1. Alternate vertical glass panels of the facade shall be open able type with the mechanism mentioned above in order to ventilate the smoke.
  - 2. Refuge areas covered with the glass facade shall have all the panels fully open able (either left or right hinged (both from inside as well as outside). Glass quality practice of use of glass in buildings shall have to be in conformity with the BIS Codes.

## 54G BUILDING SERVICES.

- 1. Staircase and corridor lighting
  - a. The staircase and corridor lighting shall be on separate service and shall be independently connected so as it could be operated by one switch installation on the ground floor, easily accessible to fire fighting staff at any time irrespective of the position of the individual control of the light points, if any.
  - b. Staircase and corridor lighting shall also be connected to alternate supply from parallel high tension supply or to the supply from the stand by generator.
  - c. Emergency lights shall be provided in staircase and corridor passageway, horizontal exits, refuge area and all wires and other accessories used for emergency light shall have fire retardant properly.

## 2. Electrical services

- a. The electrical distribution cables/wiring shall be laid in separate duct the duct shall be sealed at every floor with non combustible materials having the same for resistance as that of the duct. Low and medium voltage wiring running in shaft and in false ceiling shall run in separate conduits.
- b. Water mains, telephone cables, intercom cables, gas pipes or any other service line shall not be laid in the duct for electric cables. Use of bus ducts/solid rising mains instead of cables is preferred.
- c. The provision of dedicated telecommunication ducts for all new building proposals is mandatory for conveyance of telecommunication and other data cables.
- d. Separate circuits for water pump lifts, staircases and corridor lighting and blowers for pressurizing system shall be provided directly from the main switchgear panel refer NBC 2005.

## 3. Alternate source of electric supply

A stand by electric generator shall be installed to supply power to staircase and corridor lighting circuits, fire lifts, the stand by fire pumps, pressurization, fans and blowers, smoke extraction and damper system in case of failure of normal electric supply. The generator shall be capable of taking starting current of all the machines and circuits stated above simultaneously. If the stand by pump is driven by diesel engine, the generator supply need not be connected to the stand by pump.

## 4. Air conditioning

Air conditioning shall conform to the following

- a. Escape routes like staircases, common corridors, lift lobbies etc shall not be used as return air passage.
- b. The ducting shall be constructed of sufficient gauge metal in accordance with good practice.
- c. Where ever the ducts pass through fire walls or floors, the opening around the ducts shall be sealed with materials having fire resistance rating of the compartment.
- d. Where duct crosses a compartment which is fire rated, the ducts shall be fire rated for same fire rating. Further depending on services passing around the duct work, which may get affected in case of the temperature rising, the ducts shall be
- e. insulated.
- f. Metallic ducts shall be used even for the return air passage instead of space above the false ceiling.
- g. Where plenum is used for return air passage, ceiling and its fixtures shall be of non combustible material.

- h. The materials used for insulating the duct system (inside or outside) shall be of non-combustible material; glass wool shall not be wrapped or secured by any material of combustible nature.
- i. Air ducts serving main floor areas, corridors etc shall not pass through the staircase enclosures.
- j. The air handling units shall be separate for each floor and air ducts for every floor shall be separated and in no way inter connected with the ducting of any other floor.
- k. If the air unit handling serves more than one floor, the recommendations given above shall be complied with an addition to the conditions given below.
  - i. Proper arrangements by way of automatic fire dampers working on smoke detector/or fusible link for isolating all ducting at every floor from the main riser shall be made.
  - ii. When the automatic fire alarm operates, the respective air handling units of the air conditioning system shall automatically be switched off.
  - iii. The vertical shaft for treated fresh air shall be masonry construction.
  - iv. The air filters of the air handling units shall be of non combustible materials or fire rated.
  - v. The air handling unit room shall not be used for storage of any combustible materials.
  - vi. Inspection panels shall be provided in the main trunking to facilitate the cleaning of ducts of accumulated dust and to obtain access for maintenance of fire dampers.
  - vii. No combustible material shall be fixed nearer than 150 mm to any duct unless such duct is enclosed and protected spy glass with neoprene facing enclosed and wrapped with aluminum sheeting) at least 3.2 mm thick and would not readily conduct heat.

#### 5. Transformers

- a. If the transformers shall be dry type and shall be kept in an enclosure with walls, doors and cut outs having fire resistance rating of 4 hour. The entrance to the room shall be provided with a steel door of fire rating of 2 hours. A curb of suitable height should be provided at the entrance in order to prevent the flow of oil from ruptured transformer into other parts of the basement. The switchgear should be housed in a separate room with fire resistance not less than 4 hours.
- b. The transformer shall be protected by an automatic foam sprinkler system. If they are housed on the ground floor they should be cut off from the other portion of the premises by fire resistant walls of 4 hours rating.

- c. A tank of R.C.C construction of adequate capacity shall be provided at lower basement level to collect the oil from the catch pit in case of emergency. The pipe connecting the catch pit to the tank shall be of non combustible construction and shall be provided with a flame arrester.
- d. The electric sub-station shall be located in a separate building in accordance I.E Rules 68(I) and 64 (I)(a).
- e. If this is not possible due to site conditions, the sub-stations shall be located on the ground floor. As far as possible due to site conditions the sub-station shall not be installed in a basement, for such situations special provisions like mechanical ventilation, wherever required, cable ducting, cable trays, top/bottom entry of HV/LV cable, hooks on Transformers and HV Panels, adequate fire detection and fire fighting arrangement, adequate drainage, effective measures to prevent flooding etc. shall be provided. Adequate precautions shall also be taken for water proofing to prevent seepage of water. A ramp shall also be provided with a slope, not steeper than 1 in 7, for easy movement of equipment's to and from sub station.
- f. Fire regulation- The installations shall be carried out in conformity with the local regulations and rules there under wherever they are in force. At other places NBC Guidelines shall be followed.

#### 6. General

- a. Architectural elements such as louvers, pergolas other sunshine materials should be free from FAR
- b. Followings are also permitted out of FAR if not used for habitable or commercial purposes.
- c. Building elements such as sky bridges and landscapes terraces which are meant for community purposes only shall be permitted free of FAR.
- d. Services can be permitted on roofs with adequate screening for the same.
- e. Service floor.
- f. Atrium /Atria at any floor will be counted only once in the FAR. Atrium may be enclosed by light roofing or R.C.C.
- g. Scissor staircase will be permitted provided all travel distance and fire norms are adhered to.
- h. Stilts in high rise will not be restricted to height of 2.4 m as long as it is used for parking.
- i. Multilevel car parking with car lifts would be permitted with adequate fire safety.

54H: FAR, Setbacks, Ground Coverage and Heights of Commercial/ Mixed Use Buildings

Prop	Proposed Setbacks and Heights of Commercial/Mixed Use Buildings other than Bazar Area								
No.	Plot Area	Maximum	FAR	Maximum		Minimum Setbacks proposed (in			
	(sq.mt)	Ground		Height		meters)		-	`
		Coverage		Permiss	ible (in	Front	Rear	Side 1	Side 2
				meters)					
1	90-150	NIL	150	11	G+2	1.50	.90	.90	.90
2	150-300	NIL	150	11	G+2	2.00	1.20	1.20	1.20
3	300-500	NIL	150	13	G+3	3.00	2.00	1.80	1.20
4	500-750	NIL	180	13	G+3	4.00	3.00	2.40	1.20
5	750-1000	NIL	180	16	G+4	5.00	4.50	4.20	2.50
			Ab	ove 16 N	ITS	-			
6	1000-1500	NIL	200	19	G+5	6.00	4.50	4.50	3.00
7	Above 1500	45%	200	22	G+6	7.00	4.50	4.50	3.50

## Note:

- 1. Requirement for parking shall be governed by Chapter X of the Principal Law.
- 2. For Bazar Area, the existing Setbacks, 6 feet arcade at front, 2 feet 6 inches side setbacks and 5 feet rear setbacks shall continue. Maximum Ground Coverage permissible is 80%. FAR permissible is 300.

54I: FAR, Setbacks, Ground Coverage and Heights of Institutional/ Educational Buildings

No.					Maximum Height		Educational Buildings  Minimum Setbacks proposed (in meters)			
			Coverage		Permiss meters)	sible (in	Front	Rear	Side 1	Side 2
1	750-1000		NIL	180	16	G+4	6.00	4.50	4.20	2.50
2	1000-1500		NIL	200	19	G+5	7.50	4.50	4.50	3.00
3	Above 1500		40%	220	22	G+6	10.00	4.50	4.50	3.50

#### Note:

- 1) For Government Institutions, regulations adopted by Education Department will be followed.
- 2) Requirement for parking shall be governed by Chapter X of the Principal Law.
- 54J: For the purpose of calculation of FAR, the following areas are exempted from FAR Calculations:
  - a) Balcony
  - b) Basement if not used for office or commercial purposes
  - c) Common Vertical Circulation viz., lifts, staircase, ducts/shafts
  - d) Corridor open on one side
  - e) Garages
  - f) Mumty and Lift Machine Room

## CHAPTER VII STRUCTURAL SAFETY

55. (1) Structural Design:- For any building construction work under the jurisdiction of these bye-laws, structural design/retrofitting shall only be carried out by a structural Engineer on Record (SER) or Structural Design Agency on Record (SDAR). Proof checking of various design/reports shall be carried out by the Council as per Table-VI wherever applicable.

Generally, the structural design of foundations, elements of mansory, timber, plain concrete, reinforced concrete, pre-stressed concrete and structural steel shall conform to the provision of part VI Structural Design, Section-1 loads, Section-2 foundation, Section-3 wood, Section-4 masonry, Section-5 concrete & Section-6 Steel of National Building Code of India (NBC), taking into consideration the Indian Standards as given below.

- (2) For Genera! Structural Safety:
  - (a) IS 456-2000" Code of Practice for plain and reinforced concrete
  - (b) IS 800-2007" Code of Practice for general construction in steel
  - (c) IS 801-2975" Code of Practice for use of Cold formal Light Gauge Steel Structural Members in General Building Construction
  - (d) IS 875 (Part 2): 1987 Design Loads (other than earthquake) for buildings and structures part 2 Imposed Loads
  - (e) IS 875 (Part 3): 1987 Design Loads (other than earthquake) for buildings and structures part 3 Wind Loads
  - (f) IS 875 Part 4): 1987 Design Loads (other than earthquake) for buildings and structures part 4 Snow Loads.
  - (g) IS 875 (Part 5): 1,987 Design Loads (other than earthquake) for buildings and structures part 5 special laods and load combination
  - (h) IS 883-1994" Code of Practice for Design Structural Timber in Building
  - (i) IS 1904-1987" Code of Practice for Structural Safety of Buildings: foundation"
  - (j) IS 1905-1987" Code of Practice for Structural Safety of Buildings: Masonry walls
  - (k) IS 2911 (Part I): Section 1:2010" Code of Practice for Design and Construction of Plie foundation Section 1

Part1: 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

Part2: Timber Piles

Part3: Under Reamed Piles Part 4: Load Test on Piles

## (3) For Cyclone/Wind Storm Protection:

- a) IS: 875 (3)-1987: code of Practice for Design Loads (other than earthquake) for Buildings and Structures, Part 3, Wind Loads"
- b) Guidelines (Based on IS 875 (3) 1987) for improving the Cyclonic Resistance of Low rise houses and other building

## (4) For Earthquake Protection:

- a) IS: 1893-2002 "criteria for Earthquake Resistant Design of Structures (Fifth Revision)
- b) IS: 13920-1993 "Ductile Detailing of Reinforced Concrete Structures subjected to Seismic forces-Code of Practice"
- c) IS: 4326-2013 "Earthquake Resistant Design and Construction of Buildings-code of practice (Second Revision)"
- d) IS: 13828-1993 "Improving Earthquake Resistant of Low Strength Masonry Buildings-Guidelines"
- e) IS: 13827-1993 "Improving Earthquake Resistant of Earthen Buildings-Guidelines"
- f) IS: 13935-2009 "Repair and Seismic Strengthening of Buildings-Guidelines"

## (5) For Protection of Landslide Hazard:

- a. IS: 14458 (Part 1): 1998 Guidelines for retaining wall for hill area: Part 1 Selection of type wall.
- b. IS: 14458 (part 2): 1997 Guidelines for retaining wall for hill area; Part 2 Design of retaining/breast wall.
- c. IS: 14458 (Part 3): 1998 Guidelines for retaining wall for hill area: Part 3 construction of dry stone walls
- d. IS: 14496 (Part 2); 1998 guidelines for preparation of landslide-hazard zonation
- e. 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.

## 56. Structural Design Basis Report:

In compliance of the design with the above Indian Standard, the Structural Engineer on Record will submit a structural design basis report in the format given in appendix-B converting the essential safety requirements specified in the Standard.

## 57. Review of Structural Design:

- a) The Council shall create a Structural Design Review Panel (SDRP) consisting of Senior Structural Design Engineers on Record and Structural Design Agencies on Record, whose task will be to review and certify the design prepared by Structural Engineer on Record or Structural Design Agency on Record whenever referred by the competent authority
- b) The Reviewing Agency shall submit addendum to the certificate or a new certificate in case of subsequent changes in structural design.
- c) Table below gives requirements of SDRP for structures of different complexities.

PROOF CHECKING REQUIREMENTS FOR STRUCTURAL DESIGN

	THE OF CHILDREN ON REQUIREMENTS TON STRUCTURAL DESIGN						
No.	TYPE OF STRUCTURE	SUBMISSION FROM SER	TO BE				
		OR SDAR	PROOF				
1	Highrise building, buildings above	Structural Design Basis Report	To be checked				
		Preliminary design	To be checked				
		Structural design/drawings	To be checked				
2	Public buildings with more than	Structural Design Basis Report	To be checked				
		Preliminary design	To be checked				
		Structural design/drawings	To be checked				
3	Lifeline & Special buildings		To be checked				
		Preliminary design	To be checked				
		Structural design/drawings	To be checked				

## Notes:

- \* Public buildings means assembly of large number of people including schools, hospitals, courts etc.
- \* Special structure means large span structures such as a stadium, assembly halls or tall structures such as water tanks, TV tower, chimney, etc. and the requirement of third party verification will depend on the type of structure.

## 58. Supervision:

All construction including load bearing buildings upto 3 storeys shall be carried out under supervision of the Construction Engineer on Record (CER) or Construction management Agency on Record.

## 59. Building Service:

The planning, design and installation of lifts and escalators shall be carried out in accordance of Part VII Building Services, Section 2 Electrical Installations, Section 3 Air Conditioning & Heating, Section V Installation of Lifts & Escalators of National Building Code of India, 2005.

## 60. Fire Safety Detection and Distinguishing System:

- a) The Council while according permission shall follow the Code of Practice and Standards of Requirement recommended in the national Building Code of India.
- b) Fire protection and extinguishing system shall conform the accepted standards and shall be installed as recommended in the National Building Code of India and to the satisfaction of Directorate of Fire Service.

## Chapter – VIII RAIN WATER HARVESTING & RECYCLING OF WASTE WATER

## 61. Rain Water Harvesting:

- a) Water Harvesting: Water harvesting through storing of water runoff including rain water in all existing and new buildings on pilots of 100 square metre and above will be mandatory. The plans submitted shall indicate the system of storm water drainage along with points of collection of rain water in surface reservoirs or in recharge wells.
- b) Soft Cover: Provision for soft cover should be included in the plan for building sites:
  - i. For any building having a minimum covered area of 500 square metre, the applicant should provide soft cover of at least 15% of the plot area.
  - ii. For any other building, having lesser covered area, the soft cover should be at least 10% of the plot area.

## 62. Recycling of waste water:

All buildings having a covered area of 500 Sq.mts or minimum discharge of 10,000 litre and above per day shall incorporate waste water recycling system. The recycled water should be used for non drinking purposes.

## 63. Incentive for rainwater harvesting/Recycling of Waste water:

The incentives in terms of rebate of 10% on building permission Sees will be given by the Council for owners or their successors-in-interest who undertake both recycling of waste water and ram water harvesting structures.

#### 64. Energy Conservation Building:

Building or building complexes having a connected load of 100 KW will be regulated as per the Energy Conservation Code 2007 as amended. Generally buildings or complexes having air conditioned area of 1.000 sq.m. or more will also fail under this category.

# Chapter - IX FACILITIES FOR PERSONS WITH DISABILITIES

## 65. Applicability:

These byelaws are applicable to all private and public buildings (proposed and existing) used by the public and shall not be restricted to a single floor or storey but shall allow free & full accessibility to the entire building.

#### 66. Definitions:

- a) Non-Ambulatory Disabilities: Impairment that regardless of cause or manifestation, for all practical purpose, confines individuals to wheelchairs.
- b) Semi-Ambulatory Disabilities: Impairments that cause individual with difficulty or insecurity, individuals using braces or crutches, arthritis, and those with, pulmonary and cardiac ills may be semi-ambulatory.
- c) Hearing Disabilities: Deafness or hearing handicaps that might make individual insecure in public area because he is unable to communicate or hear warning signals.
- d) Sight disabilities: Total blindness or impairments affecting sight to the extent that the individuals functioning in public areas in insecure or exposed to danger.
- e) Wheel Chair: Chair used by disable people for mobility. The standard size of the wheel chair shall be taken as 1050mm x 750mm.

## 67. Guiding/Warning Floor Materials:

The floor materials to guide or warn the visually impaired persons with a change of colour or material with different texture and easily distinguishable from the rest of the surrounding floor materials is called guiding warning floor materials. The materials with different texture give audible signals with sensory warning when a person moves on this surface with walking stick, it is meant to give the directional effect or warn a person when at critical places.

## 68. Visual Signage:

Appropriate identification of specific facilities within a building for the persons with disabilities should be done with proper signage. Visually impaired persons make use of other senses such as hearing and touch to compensate for the lack of vision, whereas visual, signals benefit those with hearing disabilities.

Signs should be designed and located so that they are easily readable by using suitable letter size (not less than 20 mm) high. For visually impaired persons, information board in Braille on the wall at a suitable height and it should be possible to approach them closely. To ensure safe walking there should not be any protruding sign which creates construction in walking. Public address system may also be provided m busy public symbols/information/should be in contrasting colour and properly illuminated because people with limited vision may be able to differentiate amongst primary colours.

## 69. Site Planning:

To accommodate the persons with disabilities and elderly people each building and its site should be planned and designed as an integral unit from the very beginning of the design proces.

## a) Walks and Paths:

Walking should be smooth, hard level surface suitable for walking and wheeling. The minimum walkway width should be 1200 mm. And for moderate two ways traffic should be 1650 mm-1800 mm. Longitudinal walk gradient should be 3 to 5% (30mm to 0.50 mm in meter). When walk exceed 60 meter in length it is desirable to provide rest area adjacent to walk at convenient intervals with space for bench seats. For comfort the seat should be between 350 mm to 425 heights but not over 450 mm. Texture change in walkways adjacent to sitting will be desirable for blind persons.

- b) Parking: For parking of vehicles the following provisions shall be made:
  - i. Surface parking for two car spaces shall be provided near entrance for the persons with disabilities with maximum travel distance of 30 m from building entrance.
  - ii. The width of parking shall be a minimum of 3.60 m.
  - iii. The information stating that the space is reserved for wheel chair users shall be conspicuously displayed.
  - iv. 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.

## c) Building requirements:

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

:

- **a.** 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.
- b. Ramped Approached: Shall be finished with non-slip materials. Minimum width of ramp shall be 1000 mm with maximum gradient 1:12 length of ramp shall not exceed 9.0 m having 800 mm. high handrails on both sides.
- c. Exist/Entrance Door: Minimum clear opening of the entrance door shall be 900 mm.
- d. Entrance Landing: Entrance landing shall be provided adjacent to ramp with a minimum dimension of 1800 mm x 2000 mm. finishes shall have a non-slip surface with a texture traversable by a wheel chair.
- e. Corridor connecting the entrance/exit for the handicapped: The corridor shall be provided as follows:
  - i. "Guiding floor materials" shall be provided for device than emit sound to guide visually impaired persons.
  - ii. The minimum width shall be 1500 mm.
  - iii. In case of level difference, slope ways shall be provided with a slope of 1.2.
- **f.** Handrails shall be provided for ramps/slope ways.
- **Stairways:** One of the stairways near the entrance/exit for the disabled shall have the following provisions:
  - i. The minimum width shall be 1350 mm.
  - ii. Height of riser shall not be more than 150 mm.
  - iii. Maximum number or riser on flight shall be 12.
  - iv. Handrails shall be provided on both sides.

h. Lifts: Wherever lifts is required as per bye-laws, provision for at least 1 lift shall be made for the wheel chair user with the following cage dimensions of lift recommended for passengers lifts of 13 persons capacity.

Clear internal depth- 1100 mm. Clear internal width - 2000 mm. Entrance door width - 900 mm.

- i. A handrail not less than 600 mm long at 900 mm- 1000 mm above floor level shall be fixed adjacent to the control panel.
- ii. The lift lobby shall be of minimum 1800mm x 1800 mm or more.
- iii. The time of an automatically closing door should be minimum of 5 seconds and the closing sipped should not exceed 0.25 metre/sec.
- iv. The Cage interior should be provided with a device that audibly indicates the floor the cage has reached and indicates that the cage has reached and indicates that the cage door for entrance/exit is either open or closed.
- i. Toilets: One special W.C. in a set of toilet shall be provided for the use of disabled with essential provision of wash basin near the entrances for the handicapped. The minimum size of a toilet shall be 1500 mmx 1750mm. The minimum clear opening of the door shall be 900 mm and the door shall swing out. Suitable arrangement of vertical horizontal handrails with 50 mm clearance from wall shall be made in the toilet. The W.C. seat shall be 500 mm from the floor.
- j. Drinking Water: Suitable provision of drinking water shall be made for the disabled near the special toilet provided for them.

# CHAPTER-X PARKING SPACES FOR ALL TYPES OF BUILDINGS

## 70. Parking Space

- 1) No off-street parking space shall be less than 1.5sq.m. (3.0m in width and 5.0 m. in length), for a motor car, with a minimum head room of 2.4 m. if parked in a covered area.
- 2) The minimum width of circulation driveway to be provided for adequate maneuvering of vehicles shall be 4.00 m for cars and 5.00 m for trucks exclusive-of parking space referred to in (1)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.
- 3) The parking layout plan shall be so prepared that the parking space for each vehicle becomes directly accessible from driveway or circulation driveway or aisles. However stack car parking arrangement will be allowed in such a way that every car can be moved by shifting not more than one car.
- 4) The Parking spaces shall be located beyond the mandatory setback spaces as provided in these Bye-Laws.
- 5) For building with different uses, the area of parking space shall be worked out on the basis of respective uses separately and parking spaced to bed provided for the total number of vehicles thus required.
- 6) 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.
- 7) The Minimum Off-street Parking space shall be as shown in table below.

No.	Type of use	Open parking space for a (four) wheelers	Open parking space for 2 (two) wheelers
1	Residential building	1 car for every 60 sq. metre of floor space	1 for every 40 sq. metre of floor space
2	Theatres, cinemas,	1 car for every 10 seats	1 for every 5 seats
3	Retail business	1 car for every 50 sq. metre of sales area	1 for every 30 sq. metre
4	Office building	1 car for every 50 sq. metre of floor space	1 for every 30 sq. metre of floor space
5	Hospital	1 car for each cabin 1 car for every 10 beds 1 car for every 2	1 for every bed
6	Restaurants	1 car for every 5 seats	1 for every 4 seats

## CHAPTER - XI MISCELLANEOUS PROVISIONS

## 71. Installation of Communication Towers:

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.

## 2) Application for permission:

- i. Location: The telecommunication infrastructure shall be either placed on the building rooftops or the ground or open space within the premises.
- ii. Installation of base station antenna shall be allowed only on;
  - a. The building which abuts on minimum 9.00 metre wide road in order to reduce the
    - risk caused by an earthquake or wind related disaster.
  - b. The existing sites of the Cell Towers abutting on roads having ROW less than 9.00
    - meters could only be regularised after specific clearance from the Fire Department
    - regarding the width of the road.
  - c. The base station antennas should at least be at least 3 metre away from the nearby
    - building and antennas should not directly face the building. Further, the lower end
    - of the antenna should be at least 3 meters above the ground or roof.
  - d. Sign Boards/Warning signs are to be provided at Base Station Antenna sites which should be clearly visible and identifiable. A warning sign should be placed at the
    - entrance of each zone.
  - e. "Warning Sign" should discourage longer stay in the zone, even for the maintenance
    - person. The sign board may contain the following text:
      - 1. Danger! RP Radiations, Do not enter.
      - 2. Restricted Area
  - f. The Operator shall display on board (minimum size 24" x 48") at conspicuous space of the building at Ground Floor the following details:
    - 1. Operators Name & Address
    - 2. Contact Persons name, Address & Tel No.
    - 3. Address of Complaint Redressing Authorities with Tel No.
    - 4. Police Control Room: 000
    - 5. Fire Control Room: 000
    - 6. Ambulance: 000
    - 7. Details of Insurance-Policy.
  - g. The operators, who have erected Cell Towers without permission, shall apply to the Council for regularisation within 30 days.
  - h. No towers shall be permitted to be erected within 100m radius of schools, colleges,

hospitals, nursing homes, religious institutions, lifeline buildings and the like. Antenna should not face hospitals nursing homes, religious institutions, lifeline buildings and the like and should be placed at a minimum of 3mts above the base.

- i. Type of structure:
  - a) Steel fabricated tower or antennas on M.S. pole
  - b) Pre-fabricated shelters of fiber glass or P.V.C. on the building rooftop/terrace for equipment.
  - c) Masonry Structure/Shelter on the ground for equipment.
  - Requirement: Every applicant has to furnish the following:
    - a) Obtain/procure the necessary permission from the "Standing Advisory Committee on Radio Frequency Allocation" (S ACFA) issued by Ministry of Telecommunications.
    - b) Site plan in the scale of 1:200.
    - c) Before erection of cell tower, application shall be filed by the owner(s) and the mobile service provider. Copy of the agreement between the service provider and the owner shall also be submitted along with the application.
    - d) Drawing of tower with complete details including specifications of foundations and design parameters.
    - e) Height of the tower along with its elevation.
    - f) 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 MeSEB has to be furnished accordingly.
    - g) Erection of Tower shall only be permitted only on regularized buildings. Produce the structural stability certificate from any one of the 6 (six) institutions are required to be obtained by the Cellular and Basic Cellular Operators.

Manipur Institute of Technology, Imphal
National Institute of Technology, Imphal
National Institute of Technology, Silchar
Indian Institute of Technology, Guwahati
Central Building Research Institute, Roorkee
Rail India Technical & Economic Services Ltd. (RITES), Delhi.

i) In case it is a rooftop tower, the applicant has to produce/submit approved building plans along with the structural safety certificate from the registered structural engineer that the building can take the additional load of the tower. The certificate is to be vetted by any one of the following institutions:

Manipur Institute of Technology, Imphal National Institute of Technology, Imphal National Institute of Technology, Silchar Indian Institute of Technology, Guwahati Central Building Research Institute, Roorkee

- j) For Ground Base Towers, a soil test report has to be submitted.
- k) Submission of undertaking from the Operator that the installation, of cell Tower does not cause any adverse effect to the health, of human being of the area.
- 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).
- m) The Service provider company shall provide 3rd Party Insurance and details of the Insurance shall be depicted on the Display Board.
- n) Mobile companies shall indicate the capacity of tower or antenna in megawatt.
- o) 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.
- p) In case the mobile tower is proposed to be installed in the vicinity of any airport, NOC from the Airport authorities shall be submitted.
- q) Generator sets installed at the tower site to cater to the power requirements of the antenna should conform to the noise and omission norms and other requirements prescribed by the Manipur Pollution Control Board,
- r) The Cellular & basic Telecom Operators shall produce a certificate from the Manufacturer of the D.G. set to the effect that set installed meets the following standards and guidelines as laid down in the Noise Pollution (Regulation and Control) Rules, 2000 as notified by the Ministry of Environment and Forest videits notification dated 14th February, 2010.
- s) A certificate from Manipur Pollution Control Board indicating fulfillment of "o" &"p" above.
- t) Any other information/data required by the Council.

## 3) 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.

## 4) Inspection of tower:

The Executive Officer of the Council or his authorised representative shall inspect the wireless telecommunication towers to:

- i. Conduct inspections of the telecommunication tower and other facility once in every 6 (six) months to ensure its structural safety and continuing compliance with these bye-law.
- ii. Conduct inspections to check abandonment or discontinuation of use and issue notice of discontinuation/notice for removal of the structures within 30 days from the date of notification.

## 5) Penalties for violation of Bye-law:

Whoever erects, materially alters or commences to erect,, materially alters any transmission tower without the previous sanction of the council or violates the Tower permission sanction issued by the Council or contravenes with the provisions of this bye-laws or who interferes or obstruct any authorised personnel in the discharge of his duties shall be guilty of an offence. The Council shall:

- 1. Punish the person as per the provisions of the Manipur Municipalities act, 1994.
- 2. Take suitable action which may include demolition of un-authorized works, sealing of premises, prosecution and criminal proceeding against the offender, in pursuance
  - of relevant laws in force, as decided by the Council.
- 3. Take suitable action against licensed technical personnel and license may be withdrawn in case of an offence as decided by the Council.

4. Impose a fine of not exceeding Rs. 5,000/- (Rupees five thousand) only payable within one month from the date of final notification and to a further fine not exceeding two hundred rupees for every day during which the operator continues to violate this Bye-law. Final notification shall be issued only after the operator is given a reasonable opportunity of being heard for showing cause within a period of 30 days.

## 6) Renewal of No objection Certificate (NOC):

- 1. NOC issued by the Council is valid for 5 (five) years only. The NOC shall be got renewed on payment of requisite fee as prescribed in section 7(1).
- 2. The Towers existing for more than 5 (five) years are also required to be renewed within 3 (three) months from the date of notification of this bye-law in the gazette on payment of requisite fee.
- 3. The Council reserves its right to withdraw permission/NOC at any time without assigning any reason.

## 7) Sharing of tower/Co-location 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.

71A: In-Building Solutions for Common Telecommunication Infrastructure: For installation of In-Building Solution (IBS) / Smart Connectivity infrastructure, the procedure laid down in Annexure-C shall be followed.

## 72. Gasoline (Motor Fuel) Filling Stations and Gasoline Filling cum Service Stations:

- 1) Definitions:
- a) 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.
- b) 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.

## 2) Information accompanying Notice:

- i) 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 sanctioned by the District Magistrate.
- ii. N.O.C. 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 read etc.
- iii. Layout plans for installation of the facilities at the retail outlet such as underground tank, pipeline, dispensing pump, sale room/office drainage, toilets, electrical layout

approved by the Explosive Department, Government of India.

iv. Photocopy of receipt of the application fee issued by the Council.

## 3) Layout Plans

- i. The distance to be kept from the dispensing pump of the three side i.e. side and rear should not be less than 1.5 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).
- ii. The following shall be applicable for locating the petrol pump cum service stations.
  - A) Minimum distance from the road intersections.
    - (i) For minor roads having less than 30mt. R/W: 50 mt.
    - (ii) For major roads having R/W 30 mt. or more 100 mt.
  - B) 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 meters R/W. In case of roads having 30 mt. or more R/W the R/W or the road should be protected.

## C) Plot Size

- (i) Only filling stations 30 mt. x 17 rnt. and small size 18 mt.
   x
   15 mt. (for two and three wheelers)
- (ii) Filling-cum-service station minimum size 36 mt. x 30mt. and maximum 45 mt. x 33 mt.)
- (iii) Frontage of the plot should not be less than 30 mt.

## 73. Automated Teller Machine (ATM):

- 1) Definition: ATM stands for Automated Teller Machine and basically used to perform bank transactions like withdrawal of money and to view bank statements.
- 2) Requirement: Every applicant has to furnish the following:
  - 1) Site plan in the scale of 1:200 prepared by a licensed architect.
  - 2) A photocopy of the receipt of the Application Fee issued by the Council.
  - Before opening, application shall be filed by the owner(s) and the Bank.Copy of the agreement between the Bank and the owner shall also be submitted along with the application.
  - 4) NOC from Transport Department, Traffic Police and PWD. 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, recommendations of the Master Plan for Greater Kakching etc.

- 5) Any other information/ data required by the Council.
- 74. Sanction/Approval for construction/installation: All Building Plan Sanctions, Revalidation, Installations of Towers, Issue of permission for erection of filling stations and opening of ATM booths shall be examined under this Bye-law and issue NOC or Refusal for sanction within 30 days of the receipt of notice as envisaged under Section 8(1) after obtaining Planning permission under Section 17(2) of this Bye-law.
- 75. Repeal: The Kakching Municipality Building Bye-laws, 2001 shall be deemed to have been repealed on the date of commencement of the Kakching Municipal Council Building Byelaws, 2023.

# CHAPTER XII GREEN BUILDINGS AND SUSTAINABILITY PROVISIONS

76. All buildings on various plot sizes above 100 sq m shall comply with the green norms and conform to the requirements mandatory for sanction as mentioned in this chapter.

(a) Provisions for applicability

The green building provisions on various plinth sizes are indicated in the table below Provisions and applicability for various plot sizes (Residential and non residential)

Table 76.1 Provisions and applicability for various plot sizes (Residential and non-Residential)

Residential)			
Plot	Applicable	Provisions for residential	Provisions for non
Category	plot area		residential
I	Up to 100	Nil	Nil
	100 to 500	1. Installation of solar	1. Installation of solar
		photovoltaic Panel	photovoltaic Panel
		2. Installation of solar	2. Installation of solar
		assisted Water heating	assisted
		system	Water heating system
		3. Segregation of Waste	3. Segregation of Waste
	500 to 1000	Installation of solar	1. Installation of solar
		assisted Water heating	assisted
		system	Water heating system
		2. Lighting of common	2. Lighting of common
		areas by solar energy /	areas by
		LED Devices.	solar energy / LED
		3. Segregation of Waste	Devices.
			3. Segregation of Waste
	1000 to 3000	1. Installation of solar	1. Installation of solar
		photovoltaic Panel	photovoltaic Panel
		2. Installation of solar	2. Installation of solar
		assisted Water heating	assisted
		system	Water heating system
		3. Energy efficiency in	3. Energy efficiency in
		HVAC Systems	HVAC
,		4. Lighting of common	Systems
		areas by solar energy /	4. Lighting of common
		LED Devices.	areas by
	·	5. Segregation of Waste	solar energy / LED
			Devices.
111			5. Segregation of Waste
III	Above	1. Low water	1. Low water consumption
	3000	consumption	plumbing fixtures
		plumbing fixtures	2. Installation of solar
		2. Installation of solar	photovoltaic Panel
		photovoltaic Panel	3. Installation of solar
		3. Installation of solar	assisted
		assisted Water heating	Water heating system
		system	4. Low energy consumption
	L	4. Low energy	lighting fixtures (Electrical

ligh (Eleapp) 5. HV Sys 6. I area by s Dev 7. S 8. C	tems Lighting of common	HVAC Systems
---------------------------------------------------------------------------------	----------------------------	-----------------

## 2. Roof top solar energy installation

Rooftop photovoltaic power station or rooftop PV System, in a photovoltaic system that has its electricity generating solar panels mounted on the rooftop of residential or commercial buildings. The various components of such a system include photovoltaic modules, mounting systems, cables, solar inverters and other electrical accessories. Rooftop PV Systems are faster than other types of renewable power plants. They are clean, quiet and visually unobtrusive.

Table 76.2 Norms for Roof top Solar PV installation and generation.

No.	Category of Building/area	Area standards	Generation requirement
		Residential	
1.	Plotted Housing	For HIG Plots above	Minimum 5% of connected load or 20 w/sqft for available roof space, whichever is less.
2.	Group Housing	All proposals as per Group Housing Norm	Minimum 5% of connected load or 20 w/sqft. for available roof space, whichever is less.
1	Educational	Plot size of 500 sqm. And	Minimum 5% of connected
2. 3. 4.	Institutional Commercial Industrial	Above	load 20w/sqft. for available roof space whichever is less.
5. 6.	Mercantile Recreational		1035.

<sup>3.</sup> Installation of solar assisted water heating systems in buildings
No new building in the following categories in which there is a system of installation for

supplying hot water shall be built unless the system of the installation is also having an auxiliary solar assisted water heating system.

- a. Hospitals and Nursing homes.
- b. Hotels, lodges, guest houses, Group housing with a plot area of 4000sqm.
- c. Hostels of Schools, Colleges, and training Centres with more than 100 students.
- · d. Barracks of armed forces, paramilitary forces and police.
  - e. Individual residential buildings having more than 150 sqm. Plinth area.
  - f. Functional buildings of railway stations and airports like waiting rooms, retiring rooms, rest rooms, inspection bungalows and catering units.
  - g. Community Centres, Banquet halls, baratghars, Mangalkaryalayas and buildings for similar use.

#### II. Definitions

I	"Solar assisted water heating system"	A device to heat wate5r by using solar energy as heat source.		
II	"Auxillary backup"	Electrically operated or fuel fired boilers/systems to heat water coming out from solar water heating system to meet continuous requirement of hot water.		
III	"New Building"	Such buildings of above said categories for which construction plans have been submitted to the Authority for clearance.		
IV	"Existing building"	Such buildings which are licensed to perform their respective business.		

## III. Installation of solar water heating system

- a. New buildings: Clearance of plan for the construction of new buildings of the aforesaid categories shall only be given if they have a provision in the building design itself for an insulated pipeline from the rooftop to the building to various distribution points where hot water is required. The building must have a provision for continuous water supply to the solar water heating system. The building should also have open space on the rooftop which receives direct sunlight. The load bearing capacity of the roof should at least be 50 kg /per sqm. All new buildings of above said categories must complete installation of solar water heating systems before obtaining necessary licence to commence their business.
- b. Existing buildings: Installation Of solar assisted Water heating Systems in the Existing Building shall be made mandatory at the time of change of use to above said category provided there is a system or installation for supplying hot water.

## IV. Capacity:

The capacity of solar water heating system to be installed on the building of different categories shall be decided in consultation with the local bodies. The recommended

minimum capacity shall not be less than 25 litres per day for each bathroom and kitchen subject to the condition that maximum of 50% of the total roof area is provided with the system.

## V. Specifications:

Installation of Solar Assisted Water Heating Systems shall conform to BIS specification IS 12933. The solar collectors used in the system shall have the BIS Certification mark.

## VI. Auxiliary System:

Wherever hot water requirement is continuous, auxiliary heating arrangement either with electric elements or oil of adequate capacity can be provided.

## 4. Sustainable Waste management

Zero waste is a concept of waste management and planning approaches that emphasize waste prevention as opposed to end waste management. This means restructuring production and distribution systems, designing and managing products and processes to systematically follow the three R S Rules of Reduce, Reuse and Recycle the volume of waste to conserve and recover all used resources and therefore eliminating all discharges to landfills and prevent air water and land pollution. Zero Waste and land fill can be achieved by adopting systematic approach of segregation at source by planning, by collection facilitation and most importantly creating public awareness. The green waste can be converted into fuel cakes, kitchen waste into manure, construction and demolition waste into bricks, plastic waste into oil, paper, glass and steel back into the same and all residual inert materials can also be converted into bricks. Achieving Zero landfills more conveniently possible, if

- a. The collection is made from house to house and some segregation is done at household level and
- b. Separate wet and dry bins must be provided at the ground level
- c. The recycling is done at decentralized say at ward or even lower level.

## 77. Various Guidelines for Green Rating Systems

The respective State Government may prepare their separate Green Rating System for buildings selectively combining/ adopting/ amending the provisions between the following Guidelines.

- 1. IGBC guidelines by the confederation of Indian Industries.
- 2. GRIHA guidelines by the Ministry of New and Renewable Energy, Government of India.

In pursuance of the National Sustainable Development Habitat Mission on Energy Efficiency in Buildings, the Authority shall encourage the provisions of the following energy Efficiency Guidelines by certain mandatory provisions and incentives.

- 3. ECBC guidelines prepared by Bureau of Energy Efficiency, Ministry of Power, Government of India.
- 4. Model Energy Efficiency guidelines (NSMH Sub report by Bureau of Energy Efficiency).

# CHAPTER XIII STREAMLINING OF BUILDING APPROVAL

## 78. Streamlining the building approval/sanction procedure (Ease of Doing Business)

Typically for any urban infrastructure development project, a number of clearances are required. As per World Bank's Report Doing Business, 2014 India is ranked 183, out of 189 countries in terms of dealing with construction permits and on an average there are 37 procedures involved and 162 days are spent before obtaining permission for undertaking construction. It clearly signifies that the procedure for obtaining clearances is time consuming and projects often get stalled due to delay in obtaining clearances from various agencies. In order to attract investments into the country efforts are being made to improve Ease of Doing Business'. In this direction, the limit of Built-up Area (BUA) for Foreign Direct Investment (FDI) has been reduced from 50,000 sqm. to 20,000 sqm. The local bodies have been directed to get the entire building approval process made online so that the building plan applications are submitted online along with building fees and other charges, and after due scrutiny, the approvals are also to be conveyed online. Further, external bodies like Urban Art Commission (UAC), National Monuments

Authority (NMA), Airports Authority of India (AAI), Metro Rail Corporation (MRC), Heritage Conservation Committee (HCC), etc. grant No Objection Certificate (NOC)/approvals on the proposed building plans to the local bodies. All such external bodies are mandated to prepare online NOC systems compatible to and integrated with that of the local bodies and the desired information is to be sent to the concerned external bodies and their comments/ NOC/ approval are to be received online so that there is no need for building proponents to pursue matter with local bodies or external agencies. The specific requirements of the external bodies are to be added in the Common Application Form (CAF) of the local body so that building proponent has to file all information at a single customized online application. The objective is to make the whole process simplified and streamlined to ensure ease in getting the approvals for building permit within stipulated time. Further, a procedure has been laid down in clause 2.14.1 d of the MBBL for sanction of building plans of small residential plots measuring up to 105 sqm. based on standard or other designs. The process is to facilitate building proponents of such small sized plots to either adopt standard plans or get their building plans prepared by a competent professional, and submit to the concerned local bodies along with fees, other charges, drawings and documents before commencement of the construction where the submission itself shall be deemed sanction. Hence, such persons may not have to wait for processes of approval from the local bodies to commence construction.

## 79. Clearances at Master Plan level

Individual construction proposals should not generally require separate clearances from various authorities each time. Such clearances should be integrated into the DCR of the Master/Development Plan of the concerned city. The areas unaffected by any of the restrictions should be clearly marked out and mapped, preferably on a GIS platform. Area zones of differential control regulations (within the city) by any of these agencies may also be mapped accordingly. This will result in a composite map of the city with various control regulations as per the various agencies clearly marked on the map. Thus, the sites which are located outside these restricted/regulated areas would not require availing clearance from the respective authorities, thereby reducing the clearance process significantly.

## Following are the clearances which should be integrated into the city Master Plan-

Table 79.1 Clearances from various agencies proposed to be integrated in Master Plans

No	Name of Agency	Type of clearance	Area of influence		
1	National Monument	Ancient Monument	As prescribed in the AMASAR (Amendment		
	Authority through	approval	and Validation) Act, 2010 for		
	competent authority				
	) C:-:	Environment	protection of monuments		
2	Ministry of		As prescribed in the		
	Environment	Clearance (EC)	statutory provisions for EIA clearance based on the		
			size of the project in accordance with		
			Environment protection Act,		
			1986		
3	Central Ground Water	Borewell Registration	As per Guidelines/criteria for		
	Authority	Certificate	evaluation of proposals/		
			requests for ground water		
			abstraction, 2012		
4	Ministry of Civil	AAI Height NOC	Critical and non-critical		
	Aviation		area as identified by AAI		
5	Ministry of Defence	Defence Clearance	Areas in and around Defence		
			Establishments as identified		
		•	by MoD.		
6	Coastal Zone	NOC if (sea or	Areas under the CRZ		
	Management	coastal areas)	regulations.		
	Authority				
7	NHAI/PWD	Road access	Buffer zones as prescribed by		
			NHAI along National		
			Highways.		
8	Ministry of Railways	Area clearance	Buffer zones as prescribed by		
			Railways along the Rail		
			tracks/depots/yards etc.		

Efforts are on at the Government of India level to coordinate with all the central ministries and their organizations so that they streamline their own internal processes to issue no objection etc. where ever required by law. The efforts are mainly focused on delegating the powers at appropriate levels, establishing an online application process for time bound delivery, creating public awareness about their requirements, reviewing the restrictions and reducing them, sharing the data and norms with local authorities to be incorporated in DCR etc. Recognizing the concern for streamlining the procedures for clearances to be obtained from various departments in least possible number of procedures and number of days, the following model is given which suggests that the entire process of Pre and Post-Construction approvals should be completed within one month:

Table 79.2 Timelines of clearances from various agencies

					-	
No	Type of approval	Approving Authority	Stage of project	Normal duration (days)	Reduced duration (days)	Activity sequence
A	Intimation of Disapproval (IOD)	Development Authority/ Municipality	Preconstruction	30	5	Start Activity
В	Site & Building layout approval	Development Authority/ Municipality	Preconstruction	30-60	5	Following A
С	NOC if near sea or coastal area	Coastal Zone Management Authority	Preconstruction	30-60	10	Following B
D	Road access	NHAI/PWD	Preconstruction	30	10	Following B ·
E	Ancient Monument approval	Archaeologic al Survey of India (ASI)	Preconstruction	30	10	Following B
F	Environment clearance	Ministry of Environment	Preconstruction	180	Only for Large project	Following B
G	Borewell registration certificate	Central Ground water Authority	Preconstruction	30	15	Following B
Н	Fire fighting Scheme approval	Fire Department	Preconstruction	30	15	Following B
Ι,	AAI Height NOC	Civil Aviation Department	Preconstruction	30-60	10	Following B
J	Defence Clearance	Ministry of Defence	Preconstruction	180	10	Following B
K	Building Permit Issue (NOC)	Development Authority/ Municipality	Preconstruction		1	Max of After CJ
	Sub total				26 (Max)	
L	Electric sub- station NOC (Substations/ Transformers in the building)	Electricity distribution Authority	During construction	15	5	After K

				1	T	T		
М	Damp Proof Course (on site)	Development Authority	During construction	7	3	After K		
N	Pollution Clearance	State Pollution control Board	During construction	30-60	3	After L		
Ø	Ø Construction Complete Construction Time depends on the project Scale and Size							
0	Building Completion Certificate	Development Authority/ Municipality	Post construction	30-60	5	After Ø		
P	Service plan clearance and service connection	Service Departments/ Parastatals	Post construction	30	10	After O		
Q	Occupancy certificate	Development Authority/ Municipality	Post construction	10	2	After P		
	Sub-To	tal		17 ( max	imum)			

## **Explanatory Notes:**

- 1. The above Table and Chart indicates that the processes after the applicant applies for building approval with clear land title and possession of land. Hence, clearances related to CLU and Land Title has not been considered.
- 2. The table illustrates the duration of clearances obtained in Normal course and suggests the reduced duration of 26 days (Pre-Construction) if the Approving Authority adopts online sanctions.
- 3. Clearances indicated at Sl. Nos. C J are concurrent with applications at the preconstruction stages, wherein their process of approval can be taken up simultaneously
- 4. Clearances indicated at Sl. Nos. L N are concurrent with applications during-construction stage, wherein their process of approval can be taken up simultaneously.
- 5. S No. P has to be linked with S No. O, once applicant receives the Completion Certificate, service plan clearances and connections would be deemed to be sanctioned

#### 80. Clearances at the Local Authorities

The Urban Local Bodies and Urban Development Authorities shall ensure clearance in minimum possible time. Clearances indicated at Sl. No. A,B,H,K,L,M,N,O,P, and have to be obtained at the local level and all efforts have to be made to sanction the building plan using online application procedures.

## 81. Options for reducing the timelines for approvals:

The above suggested model is only indicative, however, there is scope for streamlining the procedures for clearances to be obtained from various departments in the least possible number of procedures and number of days. The model should serve as a guide to Urban Local Bodies and Development Authorities for adoption. Since the number of procedures and duration varies from state to state, as per the local conditions, the model would require modifications to suit a specific city. Some of the options which can reduce the time taken for various procedures are:

- (a) Online sanctions: Some of the ULBs/Development Authorities like Pune Municipal Corporation and West Bengal Housing and Industrial Development Corporation have introduced online sanction for issuing building plan and completion certificate. This process reduces the time taken to a large extent. The example of Pune and West Bengal may be considered in other States. The process involves use of software tools for scrutiny of building plans. All the documents are required to be submitted electronically using a portal. In case the building plans do not confirm to the DCR the deviations are listed out in form of a report and intimated to the applicant/engaged Competent Professional for building plan design, vide an online ID in his account.
- (b) Empowering Professionals: Empowering Competent Professionals (as per Appendix E) for building plan design will facilitate to streamline the procedure for obtaining approvals. The Authority shall empanel such professionals based on their track record. The empowered professionals can, also on behalf of Developers/builders submit the documents required at the time of various clearances. Signing authority of Architects and Town planners for different size and type of layout shall be followed as per section 2.10.

Further to the Standard Building Layouts as specified in section 2.14.1 (d), any building proposed with a ceiling limit of 105 sqm of built-up area on plots of any size, conforming to the standard approved layout by the Authority shall be treated as deemed approved for construction. No formal sanction would be required for the owner/proponent who can submit a simple one page form along with other documents to the local body and can immediately take up construction work. Commencement of construction work on site shall be undertaken as per clause 2.15.1of the byelaws. The process of obtaining "Completion Certificate" can also be initiated by the owner by submitting "as-built drawings".

- (c) Outsourcing procedures: Countries like USA, Australia and New Zealand have outsourced work pertaining to clearances and have appointed firms /companies to undertake the work on behalf of Authorities. This has been working very successfully and the procedure for obtaining clearances is free of any hassles and the same has become transparent and streamlined. The example of Passport office is a good case to study to build confidence in favour of outsourcing non discretionary activities in order to support limitations of capacity and manpower at the Authority.
- (d) Creating a Cell in ULB/Development Authorities: There is a need for creating a specialized cell in Authority which is manned by qualified personnel conversant with the procedures and the interpretation of development regulations. The Cell should be headed by a qualified Town Planner who should lead a team of Architects, Engineers, Environment Specialist and Legal Experts among others. The cell should have the dedicated provision for online submissions and conveying the on line approvals as well.

This will require robust software and hardware system capable of handling large digital files.

- (e) Single Window System: This is a requirement that is growing popularity among the Authorities. All agencies involved in the process need to be integrated in a single electronic facility with proper coordination and monitoring of timelines. The Authority needs to constitute teams comprising of experts from various agencies to be formed under the overall supervision of a Town Planner designated to assist developers/builders with complex projects and to constantly improve the sanction process by cutting down delays.
- (f) Integration of agencies outside the ULBs for online clearances: Various agencies like AAI, NMA, SUAC, Fire Services, Department of Industries, Ministry of Defence, Metro Rail etc grant NOC clearance to the building plans in certain specific cases. This may be streamlines in the spirit of Ease of Doing Business by following 2 directions as given below –
  - i. Building permission for specific areas /sizes are to be examined by the external agencies. These areas should be plotted on GIS based colour-coded map which may be made available in the public domain on the agency's website, with clearly identified co-ordinates so that building falling only in these areas need to approach the concerned agencies for obtaining clearances. These maps may also be made available on the website of the concerned Local Bodies.
  - ii. The external agencies also need to develop online clearance/NOC application systems which should suitably be integrated with the online building approval systems of the Local bodies. The two systems should be so compatible that the building plans submitted to the local bodies may after scrutinizing with colour-coded zoning maps shall be e-transmitted to the external agencies. The agency concerned should give clearance within a period of maximum of 10 days with no requirement of applicant to physically visit the offices of the agencies. The NOC may again be e-transmitted to the concerned local body on the building permission system so that the ULB shall use those for final approval.

## 82. Risk based classification of building proposals

There is a need for make provisions for fast tracking building permission procedures for all non-automatic approvals. Therefore, in the spirit of "Ease of Doing Business" the buildings have been classified further on the basis of risk parameter/risk based classification to clear the building permits on fast track system.

## 83. Residential buildings

For approval of residential plotted and group housing buildings, risk based classification shall be as per Table

Table No 83.1 Risk Matrix for different residential buildings

Risks		Very Low	Low	Moderate	High
Criteria	Parameters				
Size of the plot	Square meters	Below 105 m <sup>2</sup>	105-500 m <sup>2</sup>	Above 500 m <sup>2</sup>	All sizes
Height of building	Meters	Below 15 m	Below 15 m	Below 15 m	15m and Above

Use of the premise	Various categories	Residential plotted	Residential plotted	Residential plotted	Group Housing

<sup>\*</sup> Group housing area is minimum 2000 sqm.

Suggested Fast tracking tools:

For Very Low Risk Buildings:

In case of standard building plans by the authority for residential plots upto 105 sqm. in size and forming part of the approved layout plan, the owner shall be entitled to sign such standard plans and the required documents for sanction. In such cases, certificate from professionals would not be necessary and the owner shall be bound to follow the approved standard plan in detail.

## For very Low Risk Buildings:

A competent professional (qualification and competence as per Annexure –E) shall be empowered to issue the building permit, but only after submitting the plan along with requisite documents and fees to the concerned local body. If the owner/professional desires to get the building plan sanctioned by the local body, building plans prepared by a qualified architect/engineer will have to be submitted to the concerned local body along with the fees and other requisite documents and the local body shall grant the building permit within 10 days.

## For Moderate Risk buildings:

Building plans and the building plans will have to be prepared by a competent professional and the building plans will have to be submitted to the concerned local body along with the fees and other requisite documents. The local body shall grant the building permit within 20 days.

## For High Risk Buildings:

Clearance from Fire Department and other necessary clearances from AAI,NMA and other Agencies have to be obtained. Building Plans will have to be prepared by a competent professional and the building plans will have to be submitted to the concerned local body along with the fees and other requisite documents. The local body shall grant the building permit within 20 days.

## 84. Storage/Warehouses Buildings

For approval of the buildings meant for use as storage buildings/warehouses/godowns/risk based classification shall be as per Table

Table 84.1 Risk Matrix for Storage/ Warehouses

	Very Low	Low	Moderate	High
Covered Area on all floors/Built up area	Upto 250 m <sup>2</sup>	Above 250 m <sup>2</sup> and upto 2000 m <sup>2</sup>	Upto 2000 m <sup>2</sup>	Above 2000 m <sup>2</sup>
Height of building	Below 15 m	Below 15m	Below 15m	Below 15m
Abutting Road	Min 12 m	Min 12 m	Min 12 m	Min 12 m

Type of Material storage	Category A	Category A	(stacking	Category B (stacking height-High)
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#### Note:

1. The level of Risk is classified according to the material stored in the warehouse/storehouse.

Suggested modes of fast tracking:

For Very Low Risk Buildings:

A competent professional (qualification and competence as per Annexure – e) shall be empowered to issue the building permit but only after submitting the plan along with requisite documents to issue the building permit, but only after submitting the plan along with requisite documents and fees to the concerned local body, he shall apply online to the local body and the local body shall grant the building permit within 10 days.

## For Low Risk Buildings:

Building plans will have to be prepared by a competent professional and the building plans will have to be submitted to the concerned local body along with the fees and other requisite documents. The local body shall grant the building permit within 20 days.

For moderate risk buildings:

Building plans will have to be prepared by a competent professional and the building plans will have to be submitted to the concerned local body along with the fees and other requisite documents. The local body shall grant the building permit within 20 days.

## For High Risk Buildings:

Building Plans will have to be prepared by a qualified architect and the building plans will have to be submitted to the concerned local body along with the fees and other requisite documents. The local body shall grant the building permit within 30 days.

## **Industrial Buildings:**

For approval of the building meant for use as storage buildings/warehouses/godowns, risk based classifications shall be as per Table below

Table 84.2 Risk Matrix for industries

Low Moderate

Risks		Low	Moderate	High	
Criteria	parameters				
Size of the plot	Sq Square meters	Upto 350 m <sup>2</sup>	About 350 m <sup>2</sup>	All sizes	
Height of the building	Meters	Less than 15 meters	Less than 15 meters	15 m and above	
Abutting Road width	Meters	Min.12 m	Min.12 m	Min.12 m	

i. The level of risk is classified according to the size and height of the industrial building proposed.

## Suggested mode of Fast tracking;

## For Low Risk Buildings:

- 1. Deemed Approval with Self- Certification
- 2. Plans to be submitted along with Structural drawings which does not require sanction.

## For Moderate Risk Buildings:

- 1. Plans to be submitted to the empanelled professional.
- 2. Fire/Structural safety certification by Fire Services/ Structural Engineers.
- 3. Approval to be granted within 10 working days by the empanelled professional.
- 4. Approved plan to be submitted to ULB/DA.

## For High Risk Buildings:

- 1. Online Application
- 2. Immediate acknowledgement by software.
- 3. Fire/Structural safety Certification by Fire Services/ Structural Engineers.
- 4. Approval by ULB/DA within 20 working days.
- 85. Other suggestions to enhance ease of doing business:

Some other suggestions regarding Fast-Track Construction Permits are:

#### 86. Citizen's Charter

A Citizen's Charter Lists out the timelines and upper limits of time for the delivery of citizen services of the organization. The objective of issuing the charter is to improve the quality of public service in terms of timely delivery. Such charters should be brought out by all municipalities to maintain high standards of accountability and transparency. The standards of service to be provided, the maximum number of days required for building approvals and the standard procedures should be listed out in Citizen's charter. Some states have gone a step further and introduced a citizen service delivery guarantee act whereby the timelines prescribed by a citizen charter are made statutory and binding on officials.

## 87. Capacity Building

Capacity building measures are to be adopted for such functionaries to identify Training Needs (TNA) and other technical requirement of duties that they are required to discharge. Fresh recruitments commensurate to the technical qualification/experience are to be made by the State government, if there is complete absence of the technical expertise needed by the said services.

## 88. Empowered Committee:

The Authorities may also consider constituting "Empowered Committee" or "Peer Expert Groups" for under taking scrutiny and approval. This Committee can be manned as per the requirement and area of more than one Municipality can be put

## 89. Simplification of Bye Laws:

The building Bye Laws need to be simplified for easy comprehension of lay person aswell as professionals involved in developmental activities. The simplification process should also include the process of application, the filling up of forms and streamlining the process of application.

# CHAPTER XIV CLIMATE RESILIENT CONSTRUCTION INTEGRATION OF ENVIRONMENTAL CLEARANCE WITH SANCTION

90. Land, Air, Noise, Water ,Energy biological/socio-economic/solid/other waste management are the main facets considered in relation to Pre, During and Post building Construction for Sustainable Environment Management. Therefore, it is necessary for the building process to ensure compliance to various conditions laid down by the Ministry of Environment, Forest and climate Change. The building construction sector is a major contributor towards carbon footprints which affects climate change. Indian is committed towards mitigating the effects of climate change and moving towards internationally accepted norms for environmental friendly building construction. Currently this objective of environmental safeguard is achieved through obtaining a specific environmental clearance (EC) for any construction project having a size of more than 20,000 sqm. This is administered under notification of Ministry of Environment, Forest and Climate Change.

With Rapid urbanization and growth of Indian economy, it is anticipated that the construction activity will experience a proportionate growth. Government is also committed towards streamlining of clearance for buildings and real estate sector and empowering the urban local bodies with an objective of Ease of Doing Business.

Environmental conditions for compliance during building approvals

The new building construction proposals are classified in the following 3 categories:

1) Conditions for Category "A" Buildings: Built up area 5000 sqm – 20000 sqm

Table 90.1 Environmental Conditions for buildings construction
(Category "A" 5000SO.M – 20000 sqm)

(Category A 50005Q.W = 20000 sqm)				
No.	Medium	Environmental Condition		
1.	Natural	The inlet and outlet point of natural drainage		
	Drainage	system should be maintained with adequate size of		
		channel for ensuring unrestricted flow of river.		
2.	Water	A rain water harvesting plan needs to be designed		
	conservations-	where the recharge bores (minimum one per 5000		
-	Rain Water	sq.m of built up area) shall be provided. The rain water		
	Harvesting	harvested should be stored in a tank for re use in		
	and Ground	household through a provision of separate water tank		
	Water	and pipeline to avoid mixing with potable municipal		
	recharge	water supply. The excess rain water harvested be		
		linked to the tube well bore in the premise through a		
		pipeline after filtration in the installed filters.		
2(a)		The unpaved area shall be more than or equal to 20%		
2(4)		of the recreational open spaces.		
3.	Solid Waste	Separate wet and dry bins must be provided at the		
	management	ground level for facilitating segregation of waste.		
4.	Energy	In common areas, LED/solar lights must be		
		provided.		
5.	Air quality and	Dust, smoke and debris prevention measures such as		
	Noise	screens, barricading shall be installed at the site during		
		construction, Plastic /tarpaulin sheet covers must be		
		used for trucks bringing in sand and material at the		

		site.
The Exhaust pipe of the D.G. set, if installed minimum 10 m away from building. In case than 10 m away, the exhaust pipe shall be ta 3 m above the building.		
6.	Green cover	A minimum of one tree for every 80 sq.m of land shall be planted and maintained The existing trees will be counted for this purpose. Preference should be given to planting native species.
6(a)		Where the trees need to be cut, compensatory plantation in the ratio of 1:3 (i.e. planting of 3 trees for every 1 tree that is cut) shall be done with the obligation to provide continued maintenance for such plantations.

# Chapter XV Electric Vehicle Charging Infrastructure

## 91. Electric Vehicle Charging Infrastructure

Charging infrastructure (CI) shall be provided in the premises of the various building types for Electric Vehicles (EVs) for at least 20% of the total parking capacity.

Additionally, the building premise will have to have an additional power load, equivalent to the power required for all charging points to be operated simultaneously with a safety factor of 1.25 as referred in Annexure-A.

(a) Residential buildings (Plotted House)

	, as o )
Ownership of Station	Private (Owner)
Connection and Metering	Domestic Meter
Type of Charger	Slow Chargers as per owner's specific requirements.
Modes of Charging	AC (Single charging gun)
Norms of Provisions	Minimum one Slow Charger and additional
	provisions as per owner individual

## (b) All other buildings (including Group Housing)

Any public charging stations installed at public/private areas or building premises of any category that caters to commercial mode of charging of EVs shall be deemed as a Public Charging Station and shall have to install the minimum requirement of chargers as specified in the guidelines issued vide No. 12/2/2018-EV dated 14.12.2018 by the Ministry of Power, Government of India, as referred in Annexure-B. However, in order to provide sufficient charging for the EV share in all vehicles, the Charging Infrastructure should be at least 20% of the parking capacity. The ratio of types of chargers shall be as specified in the Table below:

nam be as specified in the Table below.				
Building Type	Any building type			
Ownership of Station	Commercial Me	tering and Paymo	ent	
Types of Chargers	as per minimum	requirements spe	ecified in Ministry of	of Power
	guidelines as ref	erred in Annexui	re-B	
Additional chargers	PCS service pro	vider shall install	additional number	of kiosk or
	chargers beyond	the minimum sp	ecified requirement	s to meet the ratio
			below. (by the type	
Norms of Provisions	4-Wheelers	3-Wheelers	2-Wheelers	PV (Buses)
for charging points	(i) 1 Slow	(i) 1 Slow	(i) 1 Slow	(i) 1 Fast
	Charger(SC)	Charger (SC)	Charger (SC)	Charger (FC)
	each 3 EVs.	each 2 EVs	each 2 EVs	each 10 EVs
	(ii) 1 Fast			
	Charger (FC)			
,	each 10 EVs			

#### Note:

- 1. Charging bays shall be planned currently at 20% capacity of all vehicles including 2-wheelers and 4-wheelers.
- 2. Open metering and on-spot payment options to be available for all users.
- 3. Provision of Fuel Cooled Battery Charging Station (FCB CS) and Battery Swap (BS) shall not be mandatory and will be at the discretion of the service provider."

## Technology, options, specification of EV charging and PCS infrastructure.

# 1. EV Charging Technology

- 1.1 Electric Vehicle Supply Equipment (EVSE): An EVSE shall be a wall mounted box that supplies electric energy for recharging of electric vehicle batteries and shall have a safety lock-out feature that does not allow current to flow from the device until the plug is physically inserted into the car. EVSEs may be customized with added features as mentioned, namely:
  - a) Authentication;
  - b) Integrated payment gateways; and
  - c) Software for remote monitoring.

# 1.2 Types of EVSE:

- (a) Charging speeds: Charging power, which determines the time required to charge a vehicle, may vary by orders of magnitude across charge points, as shown in Table 91.1. A small household outlet may charge as slowly as 1.2 KW, while the most advanced rapid charging stations can charge up to 350 KW. Charging infrastructure is broadly broken into three categories based on speed: Level 1, Level 2, and direct current (DC) fast charging (sometimes referred to as Level 3).
- (b) Private Charging: Charging batteries of privately owned cars through domestic charging points. Billing shall be part of home or domestic metering.
- (c) AC-Slow Charging: The house private chargers are generally used with 230V/15A single phase plug which can deliver a maximum of up to about 2.5 KW of power. The EVSE supplies AC current to the vehicle's onboard charger which in turn shall convert the AC power to DC, allowing the battery to be charged.
- (d) Public Charging: For charging outside the house premises, electric power shall be billed and payment shall be collected. The power drawn by these chargers shall be managed from time to time.
- (e) DC-Fast Charging: DC current shall be sent to the electric car's battery directly via the charge port. FC chargers (usually 50 KW or more) may supply 100 or more kilometers of range per hour of charging. The fast chargers shall be used as a top-up, rather than fully charging vehicles, for cab companies and corporate users who have a fleet of electric cars.

## 2. EV share in all vehicles

The charging infrastructure prescriptions in all urban development guidelines shall be at least 20%.

## 3. Power Load sanction to premises

While adding Charging Infrastructures to the proposed set of building types, enhanced Power Load shall be added for each such building type by the Power Electric Supply Companies ESCOMs, commensurate to the total additional power requirement of simultaneous operation of all the specified charging points in the premise. The load capacity assigned to each premise shall be kept with a safety factor of 1.25 with a long term vision of thirty years.

**Table 91.1** 

EVs charging modes and availability:

Vehicle type	Slow Charging	Fast Charging	Public CI
2-Wheelers	Y	N	Yes/Limited
3-Wheelers	Y	N	Yes/Limited
PVs (Cars)	Y	Y	Yes
PVs (Buses)	N	Y	Yes

Table 91.2 Charging options for EV types (by ownership)

Vehicle type	Private CI	Public CS	Predominant place of charging
2-Wheelers	SC/BS	SC	Point of residence / Work
3-Wheelers	SC/BS	SC/BS	Residence / Parking stations
PVs (Cars)	SC/BS	FC	Residence / Point of work / other
			public places
PVs (Buses)	SC/BS	FC/BS	Bus Terminals/Depots

- 1) The option of Battery Swapping (BS) for privately owned 2-Wheelers and PV(Cars) shall be limited to Private CI.
- 2) For 3-Wheelers, the BS shall be made available in PCS, for faster recharge experience only.
- 3) For PV (Buses), Captive Fast charging infrastructure for 100% internal use for fleets may be adopted by privately owned Depots/Garages.
- 4) The charging infrastructure, installed at every Public Charging Station (PCS), shall follow the guidelines and standards for setting up Charging Infrastructure for Electric Vehicles, dated 14.12.2018, issued by the Ministry of Power and the connectivity regulations and safety norms shall be defined by respective authorities such as Central Electric Authority or Ministry of Power for grid access to such PCS or any other charging station or infrastructure.

## 4. Charger Specifications and PCS Infrastructure:

- 1) Any installed PCS shall have one or more electric kiosk or boards with installation of all charger models as prescribed in the guidelines and standards notified by the Ministry of Power, dated 14 December 2018, for Charging Infrastructure for EVs (at Annexure-B), with other necessary arrangements as deemed necessary.
- 2) Public Charging Station service providers shall be free to create charging hubs and to install additional number of kiosk or chargers in addition to the minimum chargers prescribed vide the guidelines and standards notified by Ministry of Power, dated 14 December 2018, including options for installation of additional chargers, if required.

#### Note:

- i. Minimum infrastructure requirements shall not apply to Private Charging Points which are meant for self-use of individual EV owners (non-commercial basis).
- ii. Captive charging infrastructure for 100% internal use for a company's own fleet shall not be required to install all type of chargers and to have Network Service Providers (NSPs) tie ups.

# 5. Location of Public Charging Station (PCS)/ Fluid Cooled Batteries (FCBs) CS in local area/building precincts.

In accordance with the guidelines and standards notified by the Ministry of Power, dated 14 December 2018, following minimum standards with regard to density of/distance between PCS in local level facilities in building premise/ urban precincts shall be followed, as per provisions in the Model Building Bye-Laws, namely:

- (1) At the local levels, within the urban area, at least one Public Charging Station is to be available within a grid of 3Km x 3Km.
  - (2) At the building premise levels, for various building types:-
  - (a) Private charging infrastructure (non-commercial use) for individuals.
  - (b) For all commercial modes of charging EVs, at least one PCS, as per the minimum specifications laid under the guidelines and standards notified by the Ministry of Power, dated 14 December 2018.
  - (c) Stand-alone Battery Swapping Stations may be added with the PCs.

Charging Infrastructure for Electric Vehicles - Guidelines and Standards (Issued by the Ministry of Power, Government of India vide letter No. 12/2/2018-EV dated 14.12.2018:

- 1. Private charging at residences or offices shall be permitted and ESCOMs may facilitate the same.
- 2. Setting up of Public Charging Stations (PCS) shall be a de-licensed activity and any individual or entity is free to set up public charging stations:

Provided that, such stations shall meet the technical as well as performance standards and protocols laid down below, as well as any further norms, standards or specifications laid down by the Ministry of Power and Central Electricity Authority from time to time.

- (a) Any person seeking to set up a Public Charging Station may apply for connectivity and he shall be provided connectivity on priority by the Distribution Company licensee to supply power in the area.
- (b) Any Charging Station or Chain of Charging Stations may also obtain electricity from any generation company through open access.
- 3. Minimum requirements for Public Charging Infrastructure (PCl): Every Public Charging Station (PCS) shall have the following minimum infrastructure: an exclusive transformer with all related substation equipment including safety appliance;
- (i) 33 or 11 KV line or cables with associated equipment including as needed for line termination, metering etc.;
- (ii) appropriate civil works;
- (iii) adequate space for charging and entry or exit of vehicles;
- (iv) current international standards that are prevalent and used by most vehicle manufacturers internationally like CCS and CHadeMO. Hence, Public Charging Stations shall have one or more electric kiosk or boards with installation of all the charger models as follows:

Charger Type	Charger Connectors*	Rated Voltage (V)	No. of Charging Points/No. of Voltage (V) Connector guns (CG)
Fast	CCS (min. 50 kW)	200-1000	1/1 CG
	CHAdeMO (min. 50 kW)	200-1000	1/1 CG
	Type-2 AC (min. 22 kW)	380-480	1/1 CG
Slow/ Moderate	Bharat DC-00 I (15 kW)	72-200	1/1 CG
	Bharat AC-001 (JO kW)	230	3/3 CG of 3.3 kW each

- \*In addition, any other fast/slow/moderate charger as per approved BIS standards whenever notified.
- (v) the kiosk or board may have options for installation or additional chargers if required;
- (vi) the Public Charging Station Providers shall be free to create Charging Hubs and to install additional number of Kiosk or Chargers in addition to the minimum number of chargers prescribed above; 6
- (vii)tie-up with at least one online Network Service Providers (NSPs) to enable advance remote or online booking of charging slots by EV owners. Such online information to EV owners shall include information regarding location, types and numbers of chargers installed or available etc.;
- (viii) share charging station data with appropriate ESCOM and to maintain appropriate protocols as prescribed by such ESCOM for this purpose. CEA shall have access to this database;
- (ix) appropriate public amenities; and
- (x) in addition to the above, fast charging facility are provided at the PCS by the PCI provider, the following additional infrastructure shall be provided, namely:
  - (a) appropriate Liquid Cooled cables, if High Speed Charging Facility for onboard charging of Fluid Cooled Batteries (FCBs) is provided; and
  - (b) appropriate Climate Control Equipment for Fast Charging of Batteries to be used for swapping (i.e. not onboard).

Every Public Charging Station (PCS) shall be operational only after inspection and clearance as communicated by a suitable clearance certificate, by the concerned electrical inspector or technical personnel, designated specifically by the respective ESCOM for this purpose. ESCOMs may also empanel one or more third party authorized technical agencies for this purpose.

- 4. Electric Vehicle Service Equipment (EVSE) shall be type tested by an appropriate reputed authority.
- 5. The above minimum infrastructure requirements shall not apply to Private Charging Points meant for self-use of individual EV owners (non-commercial basis).
- 6. Captive charging infrastructure for 100% internal use for a company's own or leased fleet for its own use shall not be required to install all type of chargers and to have NSP tie-ups.
- 7. Public Charging Station may have the option to add Stand-alone battery swapping facilities in addition to the above mandatory facilities, provided space and other conditions permit.
- 8. Public charging Infrastructure (PCI) for long distance EVs and/or heavy duty EVs like trucks, buses etc. shall have the following minimum requirements, namely:
  - i. at least two chargers of minimum 100 kW (with 200-1000 V), each of different specification (CCS & Chaderno) and with single connector gun, each in addition to the minimum charging infrastructure requirements as mandated for Public Charging Stations in para 3.

- 'ii. appropriate Liquid Cooled Cables for high speed charging facility for on board charging of Fluid Cooled Batteries, currently available in some long range EVs.
- iii. in addition to above, the Fast Charging Stations (FCS) for Long Distance EVs and/or Heavy Duty EVs may also have the option of swapping facilities for batteries, for meeting the charging requirements as per para 3. For Fast Charging or Long Distance use of EVs and/or for Heavy Duty Vehicles like buses/trucks etc. FCBs shall have higher charging rate and longer life. Such Fast Charging Stations (FCS) which are meant only for 100% in house/captive utilization, for example buses of a company, shall be free to decide the charging specifications as per requirement for its in-house company EVs.
- 9. Location of Public Charging Stations: In case of Public Charging Stations, the following minimum requirements are laid down with regard to density/distance between two charging points, namely
  - (i) at least one Charging Station shall be available in a grid of 3 km X 3 km. Further, one Charging Station shall be set up at every 25 km on both sides of highways or roads; and 7
  - (ii) for long range EVs, like long range SUVs and heavy duty EVs like buses, trucks etc., there shall be at least one Fast Charging Station with Charging Infrastructure Specifications at every 100 km, one on each side of the highway or road located preferably within or alongside the stations. Within cities, such charging facilities for heavy duty EVs shall be located within Transport Nagars, bus depots. Swapping facilities shall not be mandatory within cities for Buses, trucks, etc.
- 10. Additional public charging stations shall be set up in any area only after meeting the above requirements.
- 11. The above density or distance requirements shall be used by the state Governments or their Agencies for the twin purposes of arrangement of land in any manner for public charging stations, as well as for priority in installation of distribution network including transformers, feeders etc. This shall be done in all cases including where no central or state subsidy is provided.
- 12. The Central or State Government may also give priority to existing retail outlets (ROs) of Oil Marketing Companies (OMCs) for installation of Public EV Charging Stations, in compliance with safety norms including firewalls, etc., to meet the requirements. Further, within such ROs, Company Owned and Company Operated (COCO) ROs may be given higher preference.
- 13. Any deviation from above norms shall be admissible only after specific approval of State Nodal Agency, in consultation with the Central Nodal Agency.
- 14. Database of Public EV Charging Stations: Central Electricity Authority (CEA) shall create and maintain a national online database of all the Public Charging Stations through ESCOMs. Appropriate protocols shall be notified by ESCOMs for this purpose which shall be mandatorily complied by the PCS or BCS. This database shall have restricted access as finalized between CEA and Ministry of Power.
- 15. Tariff for supply of electricity to EV Public Charging Stations.

- (a) The tariff for supply of electricity to EV Public Charging Station shall be determined by the appropriate commission: Provided that, the tariff shall not be more than the average cost of supply plus fifteen percent.
- (b) The tariff applicable for domestic consumption shall be applicable for domestic charging.
- 16. Service charges at PCS or BCS. Charging of EVs is a service, as clarified by Ministry of Power, Government of India, vide letter No. 23i08/2018-R&R, dated 13.04.2018. The State Nodal Agency shall fix the ceiling of the Service Charges to be charged by the Public Charging Stations.

# 17. Priority for rollout of EV Public Charging Infrastructure:

- a) Phase-I (1-3 Years): All Mega cities with population of 4 million plus as per census 2011, all existing expressways connected to these Mega cities and important highways connected with each of these Mega Cities shall be taken up for coverage. A list of theses Mega Cities and existing connected expressways is attached at Annexure-1.
- b) Phase-II (3-5 Years): Big cities like State Capitals, at head quarters shall be covered for distributed and demonstrative effect. Further, important Highways connected with each of these Mega Cities shall be taken up for coverage.
- c) The above priorities for phasing of rollout shall be kept in mind by all concerned including, different agencies of Central/State Governments while framing of further policies/guidelines for Public Charging Infrastructure if EVs, including for declaring further incentives/subsidies for such infrastructure and for such other purposes.

#### 18. Implementation Mechanism for Rollout.-

- a) The Ministry of Power shall designate a Central Nodal Agency for the rollout. All relevant agencies, including Central electricity Authority (CEA) shall provide necessary support to this nodal agency.
- b) The State Government shall nominate a Nodal Agency for that State for setting up charging infrastructure. The State DISCOM shall generally be the Nodal Agency for such purposes. However, State Government shall be free to select a Central or State Public Sector Undertaking (PSU), including Urban Local Bodies (ULBs), Urban or Area Development Authorities etc. as its Nodal Agency.

## 19. Selection of Implementation Agency for Rollout.-

- a) The Central Nodal Agency shall finalize the cities and Expressways/Highways to be finally taken up from the above phasing, in consultation with the respective State Government.
- b) An Implementation Agency shall be selected by the State Nodal Agency and shall be entrusted with responsibility of installation, operation and maintenance of PCS/FCS/BCS/BSF for designated period, as per parameters specified and as entrusted by the concerned Nodal Agency. The Implementation Agency may be an Aggregator as mutually decided between Central and State Nodal Agencies: Provided that, they may decide to choose different PCS/FCS providers for bundled

packages or for individual locations as mutually decided. Provided further that, whenever bundled packages are carved for bidding, such packages shall necessarily include at least one identified expressway/highway or part thereof to prepare a cohesive regional package. The selected identified cities may be divided into one or more parts as necessary for such purposes.

- c) Where Implementing Agency is selected by bidding, all bidding shall be conducted by the State Nodal Agency.
- d) There shall be an upper cap on the Service Charges declared by the State Nodal Agency. Subsidy, if admissible from Central or State Government, shall be suitably factored in such calculations of Upper Cap or Bid Variable."

# **In-Building Solutions for CTI**

#### 1. Introduction: Communication System

Data growth is exploding globally and in India as per Nokia MBiT 2021 Report, the average monthly data usage per user in India has increased almost 17 times over the past 5 years. Covid 19 has further pushed data consumption with people staying indoors. Government has facilitated Work from Home (WFH) guidelines with a Work from Anywhere (within India) permitted. Home consumption of data has therefore grown exponentially through 2020. According to the Tower and Infrastructure Providers Association, almost 85% data traffic and 70% voice traffic is now generated indoors.

{Note - "Service Provider": an agency that provides any type of telecom / IT services in a building complex, as per scope defined by DOT i.e. TSP / ISP / IP1 etc.}

A broad variety of Information Communication Technology (ICT) systems are expected to be installed in buildings. In order to facilitate proper cabling and installation /up gradation of ICT systems and their cost effectiveness and maintenance, adequate physical infrastructure is required within buildings. This infrastructure will include common ducts, cable riser systems, conduits, cable trays and utility closets etc. among other things. The same can also be retrofitted into existing buildings wherever possible and feasible and must be designed in all new, re-developed and renovated structures. This section describes the general and specific requirements of such an ICT infrastructure in Building specially in respect of cabling aspects.

Communication systems are general utility in much the same way as water, power, gas, cable TV & CCTV/Security. Unlike traditional communication systems which are constantly evolving, the recommended Digital infrastructure has to be designed to be flexible enough to accommodate a variety of ICT systems and emerging technologies and be future proof for the next 25-30 years. Space and power is required for installation of common ducts, optical fibre, small cells, antennas, smart sensors etc, space, power and earthing is required for electronic equipment installation for supporting the various digital technologies of now and the future. Most communication utilities can share the same space since the physical topology and wiring requirements are similar and no significant power is present in the cables. However, in some cases state-of-the – art communication cabling or equipment will involve new or more specific requirements for utility spaces such as:

- Cable routing layout and cable length restrictions between Work-Space and utility closet.
- Bending radius and working clearance requirements for different cable types, e.g. Fiber optic cables, Cat-6 Cables and co-axial cables
- Isolated power circuits for permanent communication equipment,
- Protection, Safety, Grounding and environmental requirements of communication equipment.

## 2. Emerging Technologies in Telecommunication Services

The technologies used for telecommunications have changed greatly and over the past few years and particularly during the pandemic, India has experienced a massive surge in indoor voice and data consumption. According to the Tower and Infrastructure Providers Association, almost 85% data traffic and 70% voice traffic is now generated indoors. Telecommunication network architecture is changing to meet new requirements for a number of services/applications viz. 5G, massive Internet of things, Artificial Intelligence etc.

Choosing efficient and cost-effective and fast-deployment technologies such as wired and wireless networks will improve accessibility. Based on type of building and profile of customers in the buildings, the needs of wired and wireless may vary. Further, the architecture of the information and communication infrastructure is changing to accommodate the requirements of a growing number of ICT-enabled services/applications (broadband, IP, mobile, multimedia, surveillance, IoT etc.)

In line with the changing market needs, the Digital Service Providers (TSPs)/ISPs/IP-1'shave been scaling up the deployment of in-building solutions (IBS) and FTTx, covering active and/or passive infrastructure. Further, industry stakeholders are putting greater emphasis on sharing in-building infrastructure to save capex and capex, as well as to avoid the duplication of infrastructure deployment.

Moving forward, the humungous growth of data traffic riding on the use of the digital infrastructure during the pandemic and with the new WFH (Work-from-Home) and work-from-anywhere paradigms and with the emergence of 5G are expected to create huge opportunities for extension of ubiquitous, reliable and high speed digital infrastructure into the homes and inside residential buildings, and lead to huge growth of shared in-Building Solutions sites.

Theoretically, wireless services can be provided from outside the building. However, there are appreciable losses in signal strength when it penetrates building walls. While all wireless services can suffer from poor in-building coverage, this problem is particularly pronounced for the high-speed services. These services require a much better signal quality than their voice counterpart. Therefore, in order to improve in-building coverage and to offer better-quality high-speed data services, there is a definite need to install in-building solutions (IBS) for augmenting the wireless based voice and data services. This is equally true for installing 5G and Wi-Fi hotspots along with Fibre to x(FTTX) distribution network of Fiber and Cat-6 Cables for seamless data connectivity.

Provisioning of telecom services and broadcasting services viz. Cable TV, DTH and Security Services viz. CCTV Cameras and futuristic services viz. IoT based sensors would require suitable wireline connectivity inside the buildings inside buildings are not confined to wireless medium only. Wireline services through cables such as copper cables, optical fibre cables (OFC), LAN Cat-6 cables are also equally important for having uninterrupted connectivity. Also, for services such as Cable TV, DTH and Smart Devices Solutions (IoT), suitable cabling within building premises is a pre- requisite and for that, shared duct space across the building riser and floors is critical to achieve the flexibility in the future.

Improved IBS coverage MNOs / Network operators should be allowed to install such appropriate instruments as provided by licensor/ Regulator from time to time.

## 3. Policy Efforts

The proliferation of in-building connectivity has become a key component of government policies. The National Digital Communications Policy, 2018 proposes to make the installation of telecom infrastructure and associated cabling and in-uilding solutions mandatory in all commercial, residential and official buildings (including government buildings) by amending the National Building Code of India with the help of the Bureau of Indian Standards.

The Government has been taking a number of steps for promoting the sharing of in-building infrastructure, in line with TRAI recommendations.

- a) In October 2019, the Digital Communications Commission (DCC) approved in-building access and sharing of infrastructure among TSPs, thereby allowing them to share infrastructure and, in the process, curbing TSPs' monopoly to install infrastructure through exclusive contracts with the owners/builders.
- b) In November 2019, the Department of Telecommunications issued an advisory to encourage all TSPs/IP-1s to share their in-building infrastructure such as systems, optical fibre, other cables, ducts and boosters on government premises and other public places such as airports, railway stations, bus terminals and hospitals.

The government's policy and regulatory push coupled with the ever-expanding data usage has propelled TSPs/IP-1s to scale up the deployment of IBS. There is an urgent requirement to allow TSPs/IP-1s to own active built and manage active infrastructure in addition to passive infrastructure to help them cater to the ever-increasing data demand.

Bureau of Indian Standards (BIS) has framed National Building Code of India under which provision of Common Telecom Infrastructure (CTI) housed inside the buildings for convenient provision of telecom services has been envisaged.

Making cities smarter: Ministry of Housing and Urban Affairs led Smart Cities Mission is another key driver that is encouraging the adoption of in-building solutions (IBS) and FTTx/ IP networks covering Fiber and LAN cables. Since, the success of the mission relies on the underlying digital communications infrastructure, the cities identified under this programme have mandated to install common infrastructure inside buildings to enable seamless connectivity. To this end, certain smart cities have started collaborating with infrastructure providers to scale up the deployment of IBS and Fiber network. Moving forward, IBS and FTTx/ IP networks covering Fiber and LAN cables should be included as one of the key parameters in the selection of smart cities for granting financial assistance.

### 4.In- Building and Gated Buildings Solutions

It is important to ensure quality telecom services inside a building – in residential, multistory building, commercial complex, hotel or airport, police/Government offices/buildings etc. It is also essential for Telecommunication Service Providers/IP-1s to work on sharing of telecom infrastructure which may be made mandatory as they extend the services in the buildings. Telecom Service Providers/IP-1s require a non-discriminatory and unhindered access inside the building / along the premises to install the telecom infrastructure or lay their cables. At present, mobile operators and the building owner or building developer or Resident Welfare Associations (RWA) enter into commercial agreements for inbuilding deployment. Building owners or building developers delay the negotiations or request exorbitant rents — slowing down the speed of deployment. The Urban Local Body /Urban Development Authority may intervene in this regard wherein commercial agreements are insisted upon. TSPs/IP-1s should be given legal rights and permissions to use the Common Telecom Infrastructure (CTI) within the premises of Building / Gated Society free of charge or for a standardized nominal charge just like other essential services like water electricity and/or gas. Provision of CTI in a building should not be deemed as a revenue source in any way, much as the water and electricity utilities are not. Sufficient space should be provided within the premises to install telecom services by MNOs/ network operators.

The issue is not limited to sharing of IBS/ Distributed Antenna System (DAS) systems only, but TSP should get access to all telecom infrastructures including Fiber Cable and LAN cables for provision of wired and wireless network, other telecom/ ICT and IoT services.

It is important for telecom service providers to provide mobile coverage / network presence/high speed connectivity inside big residential / commercial complexes to improve QoS of

their networks. It may not be practical to install individual in-building infrastructure by TSPs/IP-1s as this will result in not only duplication of network resources but will also entail huge avoidable cost. It may also be not advisable to lay down cables again and again on the same land / building by several TSPs/IP-1s.

#### 5. Incorporation in State /UT Building Bye Laws

The buildings are to be constructed in such a way that they are 'Digital Infrastructure deployment' / 'Digital Connectivity' ready. There should be provision of telecom ducts / common pathways / runways (digital access paths) to reach to the accessible parts of the buildings. The common ducts /digital access paths to access buildings from outside should invariably be part of the CTI, which could be used by TSPs/IP-1s for laying/deploying digital infrastructure including cables. While approving the building plans, it has to be ensured that plan for creation of CTI including the common duct to access the common space used as telecom room inside the building is also prepared and separate set of drawings showing the inter / intra connectivity access to the building with distribution network need to be furnished.

Occupancy-cum-Completion certificate to a building to be granted only after ensuring that the CTI as per the prescribed standards is in place and an undertaking by the Architect or Engineer to be insisted to certify that building has ensured common access to all digital infrastructure to all Service providers in accordance with plan of creation of CTI. Provision of visit from Department of Telecom (DoT) / TRAI officials along-with joint inspection with TSPs - who may suggest any relevant modification in the plan to be ensured.

As part of Building Bye-Laws, the builder/RWA should be mandated to ensure that

- 1. While preparing the building plans, there is a need to mandate to have properly demarcated sections within buildings and on rooftops for housing Broadband / digital connectivity infrastructure / antenna. These areas should have access to power supply for reliable, always-on services.
- 2. Access to building as well as CTI facilities inside the building should be available on a fair, transparent and non-discriminatory manner to all Service Providers /IP1's.
- 3. The Service Providers / IP1's should have unrestricted access for maintenance work.
- 4. The permission to in-building access and/or CTI facilities inside the building should not be seen as a source of revenue generation for builder(s)/RWA(s) but as a means for facilitating penetration of broadband access and thereby helping in socio-economic growth of all the residents.
- 5. Charges (rentals/power rates etc.) levied to the TSPs/IP-1s should be fair, transparent and non-discriminatory and should be on residential rates. Suitable provision for the creation of Common Telecom Infrastructure (CTI) inside the newly constructed public places like Airports, commercial complexes and residential complexes, be incorporated in State/UT Building Bye Laws.

#### 6. At Layout Level

While developing Greenfield cities/towns, the layout plans should clearly indicate the telecom as Utility infrastructure lines. Standards followed for Utility planning shall be published and work shall be done by the respective department for bringing in the standardization of the utility coding and sequences. The placement and sequence of above- and below-ground utilities at the appropriate location in the right-of-way to be ensured for unconstrained movement as well as easy access for maintenance. Telecommunication cables should be placed in a duct that can be accessed at frequent service points with sufficient spare capacity to enable scaling and future expansion, and empty pipes (large size hume pipes / HDPE pipes) should be laid before planting trees in order to accommodate additional infrastructure.

Digital Readiness Rating of Buildings / Society in line to the GREEN ratings shall be created where the existing and new buildings shall be rated on standardized parameters such as; but not limited to; Digital Infrastructure access, provisions for Emerging Technologies, Maintenance and Operational ease to TSPs / IPv1, Quality of Wireless Services, Quality / Interchangeability ease of Wireline Services till each Unit Security, redundancy and Expandability of the digital infrastructure etc. A detailed rating parameters and calculation mechanism of Points / Stars shall be devised and benchmarked for all new / retrofitting of buildings/ societies.

Digital Asset repository which will ensure Proper planning and mapping of utilities through GIS is necessary especially when the alignments of telecommunication cables are identified. Design criteria and standards Utilities should meet the following criteria:

- Telecommunication cables should ideally be placed below the parking area or service lane, which may be dug up easily without causing major inconvenience. Where this is not possible, the cables may be placed at the outer edge of the right-of-way.
- There is a need to reduce conflicts with pedestrian movements is to place telecom boxes in easements just off the right-of-way. Where this is not possible, they should be placed within parking or landscaping areas. If cables have to be located in the pedestrian path, a space of at least 2m should be maintained for the through movement of pedestrians. Telecom boxes should never constrain the width of a cycle track.
- In order to minimize disruptions, cables should be installed with proper maintenance infrastructure.

#### 7. Other procedures for setting up In-Building Solution (IBS)/ Fiber Networks

1. There is a need to promote installation of In-Building Solution (IBS) / Smart Connectivity infrastructure, where there is a poor connectivity in terms of weak signal strength inside the office, shopping mall, hospitals, multi-story building, education institutions and the objective has to be to strengthen quality of service of the voice & data of mobile and Fiber broadband network and access to digital services being offered by TSP And IP1's

#### A) Procedures of obtaining IBS-NOC during plan approval and completion:

- a) While submitting the proposed Building plan seeking approval from the relevant sanctioning Authority, applicant shall also submit
- i. A complete Service Plan for IBS-infrastructure along with required specifications (in consultation with, and certified by a credible Telecom Networking hardware-consultant)
- ii. An undertaking that such IBS Infrastructure, when constructed shall be available for sharing by various TSPs/IP-Is.
- iii. Such Service Plan (IBS) shall be forwarded by the concerned Local Authority to the Telecom Enforcement Resource and Monitoring (TERM) cell of the State (external NOC agency) for approval NOC.

- iv. During the Joint Site Inspection of the completed building structure the TERM cell shall undertake inspection of the constructed/installed IBS infrastructure for issuance of NOC for OCC.
- b) The Local Authority shall liaise with the TERM cell as per its relevant online/offline process of communication to seek the relevant NOCs within the specified time as per the Service Charter/ Service Guarantee Act and rules in place. Separate communication from the applicant shall be needed to secure the IBS NOC.

## B) Provision of IBS components in building premises: (as per NBC 2016)

Entrance Facilities (EF) /Lead-in conduits: (clause 3.1.4, of Part 8: Sec 6) min. 1.2m x 1.83m space to be allocated for each TSP adjacent to the EF.

Underground conduits/pipes to MDF room: min 100mm dia encased conduits.

Main Distribution Frame (MDF)/Equipment Room(ER): (clause 3.1.2, Part 8: Sec 6)

- prescribed size with L:W ratio between 1:1 to 2:1
- appropriate ventilation of MDF room
- proper Lighting for vision of equipment,
- located at a level above from the Natural Ground lvl to avoid incidence of flooding

Electric distribution panels, isolators, sockets and earthing as per specific requirements w.r.t the area proposed for coverage (DUs/ service subscribers)

Telecommunications Room (TR) at each building block unless provided with MDF room: (all provisions of space to be as per clause 3.1.3.2, Part 8: Sec 6)

Appropriate nos. of Service/Telecom risers (vertical shafts) for all multi storeyed buildings w.r.t the area proposed for coverage (DUs/ service subscribers):

- of appropriate nos and size (width & depth) to accommodate cable trays
- with of access door at each floor.

Telecommunications Enclosures(TE) at each floor of a block or TR (clause 3.1.5, Part 8: Sec 6)

Telecom Media and Connecting Hardware(TE):(clause 3.2, Part 8: Sec6)

Various cabling system and trays:(clause 3.2.4, Part 8: Sec6)

Wireless systems:(clause 3.2.5, Part 8: Sec6)

Backbone Cabling Media Distribution and Bldg. pathways (clause 3.3, Part 8: Sec6) Horizontal Cabling Media Distribution and Bldg. pathways (clause 3.4, Part 8: Sec6)

IBS installation spaces: area for rooms or systems (e.g. antennas, base stations, remote units, power distribution boxes etc.) to be provided as per requirements w.r.t the area proposed for coverage/no. of proposed users (as per clause 3.1.3.2, Part 8: Sec6, table stated below)

#### 1 Telecom room space norm for buildings with Built-up area >465 sqmt

S1.	Area to be covered by IBS	Size of Telecom Room (all dimension in m)
1	Upto 465 sqmt	3.0 x 2.4
2	465.0 sqmt to 930.0 sqmt	3.0 x 3.4
.3	More than 930.0 sqmt	Additional TR required with same space norms
Space	requirements for smaller building	s with Built-up area < 465 samt

Sl.	Area to be covered by IBS	Space provisions (all dimension in m)
1	Upto 93.0 sqmt	Wall cabinets, self-contained enclosed cabinets.
2	93.0 sqmt to 465.0sqmt	Shallow Room(0.6x2.6)
		Walk-in Room (1.3x1.3)

IBS installation spaces, so provided, should be:

- not susceptible to flooding
- not exposed to water, moisture, fumes, gases or dust
- able to withstand designed equipment load (to be specified in design)
- located away from any vibrations to avoid dislocation/dislodgement

For any other necessary detailing of building components and service installations with respect to common Telecom/Digital connectivity Infrastructure, architects/ developers and other service consultants involved in preparing building and service drawings may refer Part 8 – Section 6: Information and Communication Enabled Installations of Volume 2 of the National Building Code, 2016

- (2) Mode of deployment of In-Building, FTTx/IP Solution: There shall be various mode of deployment of In Building solutions such as: The possible modes are deployment by a neutral host infrastructure provider or build and managed by mobile operator and sharing with other service providers on nondiscriminatory basis. The In-Build Solutions (IBS), FTTx/IP Solutions can also be deployed by TSPs/ IPs. Moreover, if TSP/ IP1 requires to install optical fiber for connecting In-Building Solution (IBS)/ Distributed Antenna System (DAS) nodes/ FTTx solutions, RoW/ permissions should be granted by the road owning agency through online mode (if same is working seamlessly) or offline mode till online system is established. For deploying indoor solutions these companies should have deemed permissions from the premises owners for installation of Distribution Network within the utility shafts / common spaces with provisions for common / shared Points of Interconnect for Connectivity to individual units. Moreover, if the TSP/IP requires to install optical fiber for connecting In-Building Solution (IBS) / Distributed Antenna System (DAS) nodes , FTTx/ IP Solutions . for which RoW / permissions should be granted by the road owning agency through online mode.
- (3) Permissibility: The IBS, FTTx/ IP component being small equipment can be installed on any type of land/building/utility pole and shall be exempted from obtaining the permission for installation of these components from the respective Urban Local Body/Urban Development Authority but should get permission from the Administrative Authority of the concerned premises.
- (4) Procedure for submitting application for obtaining clearance: TSP/ IP-1 will apply to the administrative authority of the building/ head of the office with layout diagram for implementing IBS in the building as mentioned in the RoW Rules 2016 or State notified RoW Policy
- (5) Fees: No fee will be charged for IBS/FTTx Network. However, charges may be levied for power (as per Industry tariffs), fixtures, etc. provided by building owners to TSP/ IP-1s as per

actuals.

(6) Access and Distribution Fiber and IP/LAN networks for connectivity for the Shopping Malls, Multi-Storey Residential Buildings, Cooperative Housing Societies, Residential Welfare Association and Commercial Buildings to be planned and deployed by TSP/IP-1s as per standard requirement of providing high bandwidth and adequate indoor coverage to each unit/apartment in these complexes

## 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 such Degree or Diploma, which makes him eligible for such membership, or such qualifications listed in Scheduled XTV of Architect Act, 1972 and shall be registered under the Council of Architecture, 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 STRUCTURAL ENGINEEER (RSE)

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

#### Grade-1

Scope of Work: To prepare structural design and structural drawings of high rise buildings, Educational Institutes, Hospitals, Public Buildings, Special Structures, Lifeline Buildings and the likes.

#### Eligibility:

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 OR;

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.

The experience as stated above shall be under a Structural Engineer on Record (This requirement shall be waived for the first ten years of the promulgation of these Regulations).

#### Grade- II

Scope of work: To prepare structural design and structural drawings of various buildings having ground floor+3 upper floors (Plinth Area upto 2000 square metre).

#### **Eligibility:**

B.E. Civil or equivalent with minimum 2 years experience (after attaining the degree) in structural design work at a responsible position as a structural designer OR; M.E. Structures/Earthquake Engineering or Ph.D in Structural Engineering

The experience as stated above shall be under a Structural Engineer on Record.

#### **Grade-III**

Scope of work: To prepare structural design and structural drawings of various buildings G+2 and upto 200 sq. meters total floor area.

Eligibility B.E. (Civil)/Diploma in Civil engineering +AMIE

#### A.2. REGISTRATION OF PROFESSIONALS:

The Council shall register Town Planners (RTP), Architects (RA), Structural Engineers (RSE), Structural Design Agencies (RSDA), Geo-Technical Engineers (RGE), Construction Engineers (RCE), Construction Management Agency (RCM A), 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, 1972. Application for registration shall be submitted by these professionals to the Council. Registration shall be valid for a period of one year and shall be renewable.

## A.2.1. REGISTERED CONSTRUCTION ENGINEER (RCE):

- 1) The requirements for registration shall be:
  - a) B.E. Civil, or equivalent with two years experience in construction OR;
  - b) Diploma in Civil Engineering with seven years experience in construction.
  - c) B. Arch or its equivalent with two years of experience in construction.

    The experience as stated above shall be under one or more Construction

    Engineer on Record of under one or more reputed construction companies.

    Such company of companies established within or outside the area of jurisdiction of the Council shall be of minimum ten years of standing.
- 2) The registration shall be renewed every one year.
- 3) The registration may be cancelled for unprofessional conduct permanently on for a specified period.

#### A.2.2. REGISTERED CONSTRUCTION MANAGEMENT AGENCY (RCMA)

- 1) The requirement for registration shall be
  - a) Owner of a proprietary firm shall be an RCE
  - b) Fifty percent partners of a partnership firm shall be RCE
  - c) A designed officer of a limited company shall be RCE
- 2) The registration shall be renewed every one year.
- 3) The registration maybe cancelled for unprofessional conduct permanently or for a specified period.

#### A.2.3. REGISTERED QUALITY AUDITOR (RQA)

- 1) The requirements for registration shall be:
  - a) B.E. Civil; or equivalent with five years experience in testing of building materials including concrete and/or experience in quality control work with a reputed construction agency
  - b) M.E. (Civil) or equivalent with two years experience as above
  - c) B. Arch or equivalent with five years of experience in quality control aspects of construction
  - d) The experience as stated above shall be under one or more registered quality inspector/s of one or more reputed construction agencies of minimum ten years of standing from within or outside the area of jurisdiction of the Council.
- 2) The registration shall be renewed after every one year.
- 4) The registration may be cancelled for unprofessional conduct permanently or for a specified period.

#### A.2.4. REGISTERED QUALITY AUDIT AGENCY (RQAA)

- The requirement for registration shall be
  - a) Owner of a proprietary firm shall be QAR
  - b) Fifty percent partners of a partnership firm shall be QAR
  - c) A designed officer of a limited company shall be QAR

- 2) The registration shall be renewed every three years
- 3) The registration may be cancelled for unprofessional conduct permanently or for a specified period.

## A.2.5. REGISTERED GEO-TECHNICAL AGENCY (RGA)

For foundation work, where required as per Regulation sendees of a Geo-Technical Agency on Record

- 1) The requirement for registration shall be
  - a) Owner of a propriety firm shall be M.E. (or equivalent) in Geo-Technical Engineering with minimum 10 years of experience
  - b) Fifty percent of a partnership firm shall have educational qualifications as in (i) but a minimum 5 years experience.
  - c) A designated officer of a limited company shall have qualifications as (i)
  - d) The experience as stated above shall be under one or more Geo-Technical Agency on Record. Such agencies established within or outside the area of jurisdiction of the Council shall be of minimum ten years of standing.
  - c) The agency has a Registered Laboratory. Any individual possessing qualifications as in (i) and hiring services of either RGA or Registered Testing Laboratory shall also be eligible for registration.
- 2) The registration shall be renewed every one year.
- 3) The registration maybe cancelled for unprofessional conduct permanently or for a specified period.

#### A.2.6. 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.

#### **B.I. APPOINTMENT OF PROFESSIONALS:**

The Owner/Developer shall appoint Town Planner on Record (TPR), Architect on Record (AR), Engineer on Record (ER), Structural Engineer on Record (SER), Structural Design Agency on Record (SDAR), Geotechnical engineer on Record (GER), Construction Engineer on Record (CER), (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.1.1.** The Owner/Developer shall appoint the following professionals, out of the registered professionals described in B.I above for every project as required.
  - -Town Planner on Record (TPR)
  - -Architect on Record (AR)
  - -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. 1.2. The Owner/Developer shall submit a list of the appointed professionals on Record with the application for building permission to the Council (Consent/undertaking from these professionals needed in the required format at the time of seeking building permission).

B.1.3. 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.2** GENERAL DUTIES AND RESPONSIBILITIES OF PROFESSIONALS:

- 1) 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.
- 2) 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'. They will not be held responsible for the severe damage or beyond the design forces provided in the above 'Indian Standard Specifications'.

# **B.2.1. STRUCTURAL ENGINEER ON RECORD (SER):**

Duties and Responsibilities:

- 1) At the time of seeking permission from Council for starting construction, the owner shall submit an undertaking from SER or SDAR that
  - a) The SER/SDAR is agreeable to accept the assignment to prepare designs, drawings
  - b) The designs shall be carried out according to relevant national codes and specifications and good engineering practice.
  - c) A structural design report giving salient features of the structure, loads and soil characteristics and capacity, etc. shall be submitted in the prescribed format.
- 2) In the case of high-rise buildings and special structures, SER/SDAR shall
  - a) Prepare preliminary design of the structure in addition to the Report indicated in 1(c) above.
  - b) Get required soil (geo-technical) investigation done from an approved laboratory and submit the report concerning the same in prescribed format to the Authority
  - c) Get the Preliminary Design checked through third party verification by a member of Structural Design Review Panel and submit a certificate concerning the same to the Council. Provided that in case of high rise buildings having seven or more structural floors and special structures detailed design verification of major structural components will be required.
- 3) All Reports and other submissions to the Council 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.
- 4) To prepare a report of the structural design.
  - a) 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.
  - b) To prepare detailed structural drawings and specifications for execution indication thereon, design live loads, safe soil bearing capacity, specifications of material, assumptions made in design, special precautions to be taken by contractor to suit the design assumptions etc. whatever applicable.
  - c) To advise the Owner/Architect/Engineer for arranging for tests and their reports for soil, building material etc. for his evaluation and design consideration.

- d) To prepare the revised calculations & drawings in case of any revision with reference to the earlier submission of drawings & design in a particular case.
- e) To inform in writing the Council within 7 days, if for any reason, he/she is relieved of his appointment/responsibilities as the registered structural designer for the development.

#### **B.2.2. CONSTRUCTION ENGINEER ON RECORD (CER)**

All construction work shall be carried out under the supervision .of a Construction Engineer on Record.

- 1) To adhere strictly to the structural drawings, specifications and written instructions of the Structural Engineer on Record and Architect on Record/Engineer on Record
- 2) To follow the provision of N.B.C. or IS. specifications as regards materials, components, quality control and the process of construction
- 3) To provide for safety of workers and others during excavation, construction and erection
- 4) To provide safe and adequate temporary structure required for construction and
- 5) To bring to the notice of the structural designer and Architect/Engineer any situation of circumstances which in his opinion are liable to endanger the safety of the structure
- 6) To deposit with the Authority one set of working drawings., of the works executed along with the progress certificates before proceeding with the next stage of the work
- 7) He/she shall be in overall charge of the site and responsible for overall supervision of the work
- 8) He/she shall ensure that all the work under his charge is carried out in conformity with the approved drawings and as per the details and specifications supplied by the registered Architect/Engineer
- 9) He/she shall take adequate measures to ensure that no damage is caused to the work under construction and adjoining properties
- He/she shall also ensure that no undue inconvenience is caused in the course of his/her work to the people in the neighborhood.
- He shall also ensure that no nuisance is caused to traffic & neighboring people by way of noise, dust, smell, vibration etc. in the course of his/her work

# **B.2.3. CONSTRUCTION MANAGEMENT AGENCY ON RECORD (CMAR)**

Construction work for a high-rise building or Special structures shall be carried out by a Construction management Agency on Record. .

Duties and responsibilities:

- 1) At the time of seeking permission from Council for starting construction of a high rise building or special structures, the Owner shall submit, an undertaking from CMAR that
  - a) The CMAR is agreeable to accept the assignment to execute the project as per designs, drawings and specifications.
  - b) The CMAR shall install a Quality Assurance programme by retaining on independent Quality Audit Agency on Record (QAAR) and submit a certificate concerning the same to the Owner/Developer as well as to the Council. The appointed QAAR shall be acceptable to the Owner/Developer.

(The text is put in italics as it does not specifically apply/reate for registration.)

- 2) Upon completion of the construction work of the high-rise building and special structures 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 as per guidance of the QAAR.
- 3) The CMAR shall submit a report and certificate in the prescribed format 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.
- 4) All Reports and other submissions to the competent Authority by and on behalf of the CMAR shall only be signed by Construction Engineer on Record (CER) as a proprietor, partner or as a designated officer of the company.

# **B.2.4. QUALITY AUDITOR ON RECORD (QAR)**

The construction work of a high-rise building executed by CMAR shall be under an independent quality inspection programme prepared and implemented under the supervision of an independent QAR

# **B.2.5 QUALITY AUDIT AGENCY ON RECORD (QAAR)**

For all high-rise construction and special structures, it will be necessary to have an independent Quality inspection Programme, which will be determined and executed by an independent quality audit Agency on Record (QAAR).

- 1) At the time of seeking permission from Council for starting construction of a high rise building, lifeline buildings or special structures CMAR shall submit an undertaking from QAAR that:
  - a) The QAAR is agreeable to accept the assignment to implement the quality inspection programme and that the appointed QAAR is acceptable to the Owner/Developer.
  - b) The QAAR will get all the testing of building materials, concrete etc. done by an independent approved testing laboratory.
- 2) During construction of a high-rise building and special structures the QAAR shall carry out necessary testing of materials as well as non-destructive testing of structural components with the help of approved testing laboratory and submit to the CMAR and the owner/developer the reports as per quality inspection programme.
- 3) Upon completion of the construction of high-rise building or the special structure the QAAR shall submit the report and certificate in the prescribed format based on the quality inspection programme. This report and certificate will be submitted to the CMAR and the owner/developer for final submission to the Authority.
- 4) All reports and other submission to the CMAR by QAAR shall only be signed by Quality auditor on Record (QAR) as proprietor, partner or as a designated officer of the company.

# **B.3.6. GEO-TECHNICAL AGENCY ON RECORD (GAR)**

All buildings described in Section 57 shall have, for foundation work, services of a Geotechnical Agency on Record.

#### **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 enable SER or SDAR to take site decision to case strata different than soil investigation report is met with
- d) To list out precautionary measures so that there is no damage to adjacent property.

#### **DEVELOPER:**

Duties and responsibilities:

- 1) To obtain and submit to the Council/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.
- To obtain at relevant stages certificates from them, for submission to the Council, that in designing the real estate development and providing detailed drawings and specifications for it they have complied with requirements as laid out in the GDGR Regulations.
- 4) To appoint a registered CER as site supervisor.
- 5) To obtain and adhere to the quality assurance procedure prepared by the registered site supervisor.
- 6) To adequately enable the site supervisor to carry out his responsibilities.
- 7) 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.
- 8) To obtain building permission from the Authority prior to commencement of construction of the real estate development.
- 9) To regularly submit progress reports and certificates as required by the Authority.
- 10) To inform in writing the Authority within 7 days, if for any reason be ceases to be the developer or is relieved of his responsibilities as the developer of the real estate development.
- 11) 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.
- 12) 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 fort he 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.
- 13) 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.
- 14) When no registered construction contractor or site supervisor is required to be appointed he shall be responsible for their duties and responsibilities under the byelaws.
- 15) 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. He shall provide adequate safety measures, for structural stability

and protection against fire hazards likely from installation of services like electrical installation, pumping, 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 to 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 Byelaws.

#### 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.

# E. Annual Rate of License/Annual Fees of Technical Personnel:

Annual license fee of Town Planner on Record (TPR), Architect on Record (AR), 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) and Quality Audit Agency on Record (QAAR) is Rs. 1,000/-(Rupees one thousand) only per year. For the Architects on Record who had already registered with the Council of Architecture, New Delhi, no payment of fee is required at the time of registration.

#### **APPENDIX -B**

# STRUCTURAL DESIGN BASIS REPORT

- This report to accompany the application for Building Permission. 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. 2.

Part	1 General Data		
SI. 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		

Γ_		
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	
8.	Number of basements below ground level	
у.	Type of structure	
ĺ	■ Load bearing	
	R.C.C. frame	
	R.C.C. frame and shear	
	11 Ct 1 C	
10.	Soil data	IS: 1893 CI.6.3.5.2
	■ Type of soil	IS: 1904
	■ Design safe bearing	
li.	Dead load (unit weight adopted)	IS: 875 Part 1
	■ Earth	
	■ Water	
	■ Brick masonry	
	Plain cement concrete	
	■ Reinforced cement concrete	
	■ Floor finish	
	Other fill materials	
	- Diagra floor fill and landscape	
12.	Imposed (Live) loads	IS: 875 Part 2
	■ Piazza floor accessible to Fire Tender	
	■ Piazza floor not accessible to Fire	
	Tender	
13.	Cyclone/Wind	"IS: 875 Part 3
	■ Speed	
L	■ Design pressure	

14.	Seismic zone	IS: 1893(2002)
15.	Importance factor	IS1893(2002) Table 6
16.	Seismic zone factor (Z)	IS: 1893 Table 2
17.	Response reduction factor	IS: 1893 Table 7
18.	Fundamental natural period-approximate	IS: 1893 CL. 7.6
19.	Design horizontal acceleration spectrum value (A)	IS: 1893 CL. 6.4.2
20.	■ Expansion/Separation joints	

- Enclose small scale plants of each floor on A4 sheets. In case terrace garden is provided, indicate additional fill load and live load.
- Indicate on a small scale plan on A4 sheet.

	Load bearing masonry buildings   Description	Information	Notes	
	Description	Intormation	140162	
1	■ Description		IS: 4326 CI	2. 7 read with
	Category		IS: 1893	
			Zone	II
			Bldg	III
				IV
				V
			Ordinary	В
				C
				D
				E
			Important	C
				D
				E
				E
2	Basement provided			
;	Number of floors			
	including ground			
	floor (all floors			
	including stepped			
	floors in hills slopes)			
	Type of wall			
	masonry			
i	Type and		IS: 4326	CL. 8.1.2
	mix of mortar			
•	Re : size		IS:	4326
	and	,	Table 4	4, Fig. 7
	position on			
	openings			
	(see note No. 1)		`	
	■ Minimum			
	distance (b <sub>5</sub> )			
	Ratio			
	$(b_1+b_2+b_3)/l_1$ or $(b_6+b_7)l_2$			
	Minimum pier width			
	Between consequent opening (b <sub>4</sub> )			
	■ Vertical of wall			
	height to thickness 4			
	Ratio of wall length			
	between cross			
	wall to thickness			
	2	3		4
,	Horizontal	IP TP	(See N	lote No. 2)
	seismic	NA	IS: 43	26 CL 8.4.6
	band			26 CL 8.3
	At plinth level		I IS · 43	26 CL 8.4.2

	<ul> <li>level</li> <li>At lintel level</li> <li>At ceiling level</li> <li>At eavelevel of sloping roof</li> <li>At top of gable walls</li> <li>At top of ridge walls</li> </ul>	IS: 4326 CL 8.4.3 IS: 4326 CL 8.4.4
8	Vertical reinforcing bar At corners and T junction of walls At jambs of doors and window openings	IS: 4326 CL 8.4.8 IS: 43.26 CL 8.4.9
9	Integration of prefab roofing/flooring elements through reinforced concrete screed	IS: 4326 CL 9.1.4
10	Horizontal bracings in pitched truss In horizontal plane at the level of ties in the slopes of pitched roofs	

# Notes:

- 1. Information in item 6 should be given on separate A4 sized sheets for all walls with number of openings

  2. IP. Indicated "Information Provided"

  3. TP indicates "Information to be provided"

  4. NA indicates "Not applicable"

  5. Tick mark one box.

# APPENDIX-B (continued)

Pa	rt 3 Reinforced co	ncrete framed build	lings
Sl.No		Information	Notes
1	Type of building	Information	Notes
1	Regular frames		IS:1893 CL, 7.1
	Regular frames with shear		13.1693 CL, 7.1
	walls		
	■ Irregular frames		
	■ Irregular frames with shear		
2	Number of basements		
3	Number of floors including ground floor		
4	Horizontal floor system		
•	Beams and slabs		
	■Waffles		
	■Ribbed floor		
	■ Flat slab with drops		
	■ Flat plate without		!
5	Soil Data		
	■ Type of soil		
	■ Recommended type of		
	foundation		IS :1498
	- Independent footings		15 .1496
	-Raft		
1	-Piles		
	■ Recommended bearing		
1	capacity of soil		
	■ Recommended, type,		
	length, diameter and load		
	capacity of piles		
	■ Depth of water table		
	■ Chemical analysis of		
	ground water		
6	Foundations		
	■ Depth below ground		
	level Type		
	■ Independent		
	■ Interconnected		
	■ Raft		
	■ Piles		
7	System of		
	interconnecting		IS: 1893 CL.
	foundations		7.12.1
	■ Plinth beams		
	■ Foundation		
8	Grades of concrete used		
	in different part of		

1	2	3	4
9	Method of analysis used		
10	Computer software used		

1.1		r	
11	' Torsion included		IS: 1893 CL.
			7.9
12	Base shear		IS: 1893 CL.
	a. Based on approximate		7.5.3
	fundamental period		
	b. Based on dynamic		
	analysis c. Ration of a/b		
13	Distribution of seismic		IS: 1893 CL.
	forces along the height of		7.7
	the		(provided sketch)
14	The column of soft		IS:1893 CL.
	ground storey specially		7.10
15	Clear minimum cover		IS: 456 CL.
	provided in		26.4
	<b>■</b> Footing		
	■ Column		
	■ Beams	-	
	■ Slabs		
	■ Walls		· .
16	Ductile detailing of RC		IS-456CL.
	frame		5.6
	■ Type of reinforced used		IS: 13920
	■ Minimum dimension of		CL. 6.1
İ	beans		IS:13920
	■ Minimum dimension of		CL. 7.1.2
1	columns		IS: 456 CL.
	■ Minimum percentage of		26.5.1.1.(a)
	reinforcement of beans		IS:13920CL.
	at any cross section	•	6.2.1
	■ Maximum percentage of		IS: 456 CL.
	reinforcement at any		26.5.1.1.(b)
	section of beam		IS: 13920
	■ Spacing of transverse		CL.6.2.2
	reinforcement in 2-d		IS: 13920
	length of beams near the		CL.6.3.5
	ends.		
	■ Ratio of capacity of		
	beams		
	in shear to capacity of		
	beams in flexure		
	■ Maximum percentage of		
	beams in flexure		

1	2	3	4.
	<ul> <li>confining stirrups near</li> <li>ends of columns and in</li> <li>beam-column joints</li> <li>a. Diameter</li> <li>b. Spacing</li> </ul>		IS: 456 CL. 26.5.3.1 IS: 13920
	<ul> <li>Ration of shear capacity of columns to maximum seismic shear in the storey</li> </ul>		CL. 7.4

## **General Notes**

- 1. A certificate to the effect that this report will be completed and submitted at least one month before commencement of construction shall be submitted 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 used give full particulars of the piles, type, dia, length, capacity.
- 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 plants of each floor.
- 2.4 In case of basements, Indicate the system used to contain earth pressures.

APPENDIX-B (continued)

			APPENDIX-B (continu
F	Part 4	Buildings in structur	ral steel
1	Adopted method of	□Simple	IS: 00; CL.3,4.4
	Design	□ □ Semi-rigid	IS:800;CL.
		□Rigid	3.4.5
<u> </u>			IS: 800; CL. 3.4.6
7	Design based on	☐ ☐ Elastic analysis	IS: 00; Section
	1	☐ ☐ Plastic analysis	-9
			SP: 6 (6)
3	Floor construction	□□Composite	
		□ □Non composite	
		□□Boarded	
4	Roof construction	□□Composite	
	1	□□Non-composite	
		□□Metal	
		□ □ Any other	
5	Horizontal force	□□Frames	Note: Seismic
	resisting system	□□Braced frames	force
	adopted	☐ ☐ Frames and shear	As per IS: 1893 would
		Walls	depend on system
6	Slenderness ratios	Members definded in	IS:800;CL.3.7
	maintained	Table 3.1, IS: 800	,
7	Member of	Beams,	IG. 800. CV 2.12
′	deflection limited to	Rafters	IS: 800; CL. 3.13
	defication infinited to	Crane Girders	
		Purlins	
		Top of	
		columns	
8	Structural members	□□Encased in concrete	IS:800;
		□□Not encased	Section-10
9	Proposed thickness	☐ ☐ General weld-able	IS :2062
	Specified for	☐ ☐ High strength	IS: 8500
	corrosion materials		IS: 801, 811
		□□Tubular	IS: 806
10	Minimum metal protection	☐ ☐ Hot rolled sections	IS:800; CL. 3.8
		□□Cold formed	CL. 3.8.1 to CL.
		sections	3.8.4
		□□Tubes	CL. 3.8.5
			CL. 3.8.5
11	Structural connections	□□Rivets	IS: 800;
,		□ □ CT Bolts	Section-8
1		□□SHFG Bolts	IS:1929,2155,
		□ □ Black Bolts	1149

		□□Welding-filed Shop (Specify welding type proposed) □□ Composite	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	IS : 1641, 4642, 1643

# **BUILDING PLAN APPLICATION FORM**

To,	
	The Executive Officer, Kakching Municipal Council, Kakching.
	Kakening Municipal Council, Kakening.
	Sub: Building Plan Application.
Sir/Ma	ndam,
	I/We hereby apply for permission to undertake development and carry out:
	<ol> <li>Construction ofstoried building.</li> <li>Re-construction of an existing building.</li> </ol>
	<ol> <li>Re-construction of an existing building.</li> <li>Alteration/addition to the existing building.</li> </ol>
	<ol> <li>Revalidation/Renewal of plan for construction of allstoried building.</li> <li>Certificate of Undertaking as per Form I(d)</li> </ol>
	6. (if any other please specify)
	In respect of Patta NoDag NoVillage No
at Kakcl	
	cipal Council. The said land and building shall be used forpurpose.
	I/We enclosed herewith the following 4 (four) plans, other details and specifications duly signed
	by
Licen	d the Architect/Engineer/Group Agencybearing Registered Noce No who has/have prepared the plan, designs etc. And who will supervise the opments.
	I/We the owner(s) of every part of the land/building to which this application relates. Request,
permi	ssion for the above development may kindly be considered.
No	The Building permit fee as required under bye-laws has been deposited vide receipt
Place:	Signature of Owner(s)
	· · · · · · · · · · · · · · · · · · ·
Det	
Date:	Name of Owner(s)

#### CERTIFICATE OF UNDERTAKING BY ARCHITECT

build	With respect to the building work of erection, re-erection or for making alteration in the ing located at
Dag	NoVillage Noof Ward
Coun	kching Municipal Council, I certify that I am a Licensed Architect duly registered with the cil Vide Registration Noor that I am an Architect by profession duly registered with the Council of Architecture, New Delhi vide Registration
1.	That I have been engaged as an Architect for preparing the Building plans and to supervise construction in respect of building of Shri/Smt
2.	That I have personally inspected that site. The plot has been demarcated at site and the size, shape . and area of plot available at site tallies with the land document
3.	That there is no construction in existence at the plot and no construction shall be started before sanction of the building plans.
4.	That there is no encroachment on the Municipal land/road/other property and road widths as shown in the layout plan are available at site.
5.	That the proposal have been prepared strictly in accordance with the Building Byelaws/rules/regulation and practice of the Council and no misinterpretation on inference of provision of Building Bye-law has been done while preparing the plans.
6.	The construction shall be carried out strictly in accordance with the sanctioned building plans and in case any deviation is carried out, I shall inform the Council within 48 hours.
7.	That in case the owner dispenses with my services at any stage whatsoever, I shall inform the Council within 48 hours.
8.	That mandatory setbacks have been proposed and shall be maintained in accordance with the setbacks marked in the layout plan/Master Plan/byelaws.
9.	That nothing has been concealed and no misrepresentation has been made while preparing and submitting the building plans.
10.	That in case anything contrary to the above is found or established at any stage, the Council shall be at liberty to take any action as it may deem fit including revocation of sanction of building plans and debarring me for submission of building plans with the Council and also lodge a complaint with the Council of Architecture for appropriate action/take action as deemed fit. (Strike out whichever is inapplicable).
	ture of owner  Signature of the Registered Architect/ Architect on Record with Registration No. & date.
A 44m	2001

#### FORM III

# CERTIFICATE OF UNDERTAKING BY STRUCTURAL ENGINEER ON RECORD (SER)

(Only in respect of Lifeline & Special Building and Special Structures)

14-	With respect to the building work of erection, re-	erection or for making alteration in the building
No Ward	Dag No	Village Noof al Council, I certify that I am a Licensed/
1.	That I have been engaged as a Registered Str Design Basis Report, detailed structural design and Building Shri/Smt	nd detailed structural drawings for preparing the plans of
2.	That I am fully conversant of my duties and responsible I shall fulfill them in all respects.	onsibilities under the regulations and assure that
3.	That I have prepared and signed a structural des	ign basis report (SDBR).
4.	That I undertake to carry out a detailed structument the proposed building as per the latest Indian Structure requirements for all situations including natural applicable, as stipulated under Chapter VII of this Bye-lambuilding Code of India, 2005 and other relevant	Standard Specifications, their structural safety l disasters like cyclone & earthquake etc., as w, Part-6 (Structural Design) of the National
5.	That undertake to supply the owner and the structural drawings. If my services are terminated	
_	ture of owner h date	Signature of the Structural Engineer on Record with Registration No. & date.
Name	e:	
Addr	ess:	
Tel N	lo. :	

#### **FORM IV**

#### CERTIFICATE FOR STRUCTURAL SAFETY

With respect to the building	work of erection, re-erection or for making alteration in the building
located at	••••••
Patta No	Dag Noand Village
Noof	Ward No of Kakching Municipa
Council, I certify that the structura	al plans and details of the building submitted for approval satisfy the
structural safety requirements for all	situations including Natural disasters like cyclone & earth quake etc.
as applicable, as stipulated under	Chapter VII of this Bye-law, Part-6 (Structural Design) of the
National Building Code of India, 2	2005 and other relevant codes; and the information given therein i
factually correct to the best of my kn	owledge. I will be responsible and liable for action by the Council i
the plan/design contain misrepres	entation or fraudulent information and the construction is made in
deviation of approved plan or if the	ere is any structural failure due to wrong/unsafe structural design. I
my services are terminated, I undert	ake to intimate the Council in writing.
	-
•	
G*	
Signature of owner with date	Signature of the Registered Structural
with date	Engineer on Record with Registration No. & date.
37	
Name:	•••
•••••	
Address:	

# CERTIFICATE OF UNDERTAKING BY CONSTRUCTION ENGINEER ON RECORD

(CER)

locat					at
No No Muni	of icipal Council, I certify that I at tered with the Council vide Regi	Dag Ward No m a Licensed/	No/Registered Construct	of I	Village Kakching
1.	That I have been engaged of	as a Constru	ction Engineer on	Record for Buildir	ng plans
	Shri /Smtat Ward No				situated
2.	That I am fully conversant of r all the works under my cha specifications prepared for thi	rge shall be	-	-	
_	ature of owner ith date		_	Construction Engir Registration No. &	
Nam	ne:				
Add	ress:			••••	
		• • • • • • • • • • • • • • • • • • • •		·····	
Tel	No. :		•		

FORM VI

# STATEMENT OF THE PROPOSAL AND CERTIFICATE By the owner and Registered Architect

With respect to the b	uilding work of erec	tion, re-erection	n or for m	aking alteration in the bu	ilding
located					
at	• • • • • • • • • • • • • • • • • • • •	***************************************	• • • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • • • • • • • • • •	.of
Shri/Smt					
Dag No	of	Village N	o	of	Ward
Noof	Kakching Municip	al Plot Area:	• • • • • • • • • • • • •	Square Metre.	
				•	
AREA STATEMENT					
DESCRIPTION	PERMISSIBLE	PROPOSED	SO.	REMARKS SQ. MT.	1
Maximum Ground					1
Basement					1
Ground Floor					1
First Floor					1
Second Floor					1
Third Floor					1
Total Floor Area					]
Floor Area Ratio					]
Maximum height (in met	res) Permissible:	P	roposed:		
Setbacks	PERM	ISSIBLE	I	PROPOSED (in	]
Front					]
Rear					_
Left					
Right		·			
Parking Spaces					-
Parking Spaces		-			-
Parking (No. of Cars)	Ground Floor		Open Space Parking		
	parkii	ıg			_
					_
We hereby certify that					
1. Plot is lying v	acant and no constr	uction shall be	started be	efore sanction.	
	ee from all encumbra				
*					
Signature of Owner(s)		Signature of Registered Architect			
		J			
Name		Nama			
	•••••••			••••••	•
(in block letters)		(in block le	•		
Address	* * * * * * * * * * * * * * * * * * * *	Address	• • • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • • • • • • • • • •	
•••••	• • • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • • •	***********	••
Dated:		Dated:			

#### **FORM VII**

## OFFICE OF T1IE KAKCHING MUNICIPAL COUNCIL

No.8/4/KM	C-BP/2023.	Kakching, the//
То,		
•••••		
•••••	••••••	
•••••	••••••	
Subj	ect: Building Permission Sanction	•
Sir/Madam,		
Re-construction application application of Municipal C	on/alteration/addition in the building situated in/at	for the grant of sanction to construction/ to carry out the development specified in the said Ward No
(1)	The plans are valid uptoyear.	months
(2)	the bye-laws will be permitted with	n as per sanctioned plan only and no deviation from hout prior sanction. Any deviation done against the d and the supervising licensed Architect/Engineer run the risk of being black listed.
(3)	to ensure that the sanctioned plan/Building Bye-laws, If any in Council reserves the right to amer	be plot and the Architect/Engineer preparing the plans plans are as per prevalent Master Plan/Zonal infringement of bye-laws remains unnoticed, the nd the plants as and when infringement come to the nified against any claim on this account.
(4)	of the building as per bye-laws. Sim	Council before commencement of the constructions illar notice, will be sent to Council when the building tion base/plinth level and at any other level as desired
(5)	The owner shall not occupy or per the building or any part thereof affe issued by the Council.	mit to occupy the building or use or permit to use exted by any such work until occupancy certificate is

Council will stand indemnified and kept harmless from all proceedings in court and before

other authorities of all expenses/claims which the Council may incur or become liable to pay as a result or in consequences of the sanction accorded by it to these building plans.

(6)

- (7) Building permission accorded cannot be construed as evidence in respect of right title interest of the plot over which the plan is approved.
- (8) Any dispute arising out of the land record or in respect of right/title/interest after this approval, the plan shall be treated automatically cancelled during the period of dispute.
- (9) The doors and window leaves shall be fixed in such a way that they shall not, when open project on any street.
- (10) The owner will not convert the house into more dwelling units on each floor than, the sanctioned.
- (11) The building shall not be constructed within minimum distance as specified in Indian Electric Rules from voltage lines running on side of the plot.
- (12) The sanction will be void if auxiliary .conditions mentioned above and other conditions imposed hereunder are not complied.
- (13) The owner will use the premises for the use, which has been sanctioned.
- (14) The owner will not proceed with the construction without having the supervision of an Architect/Engineer as the case may be. If he/she changes his Architect/Engineer he/she shall inform the Council about the appointment of new Architect/Engineer within 48 hours, with a proper certificate from him.
- (15) The permission is valid for a period of one year with effect from the date of issue.

(	16	Other conditions.	if any
- 1		,	<del> ••</del> j ••••••••••••••••••••••••••••••

Yours faithfully,

End: 2 sets of sanctioned plan.

Executive Officer, Kakching Municipal Council.

#### **FORM VIII**

# OFFICE OF THE KAKCHING MUNICIPAL COUNCIL

No8/4/KMC-BP/2023	Kakching, the/
То	
•••••	
••••••	
•••••••••••••••••••••••••••••••••••••••	·····
Subject: Refusal of Building Per	mission Sanction
Sir/Madam,	
to construction/re-construction/alteration ad in the said application situated in/at  No	dition in the building to carry out the development specified
1.	
2.	
3.	
4.	
5.	
6.	
	V. C'41 C 11
	Yours faithfully,
Encl: A set of plan.	
•	Executive Officer, Kakching Municipal Council.

#### FORM IX

#### FORM FOR NOTICE FOR COMMENCEMENT OF BUILDING WORK

	Kakching,	the,,	•••••
То,			
The Executive Officer, Kakching Municipal Council, Kakching.		·	
Sub: Notice for commencement of worl	<b>K.</b>		
Dear Sir,			
I/We hereby certify that the building work of the	building	located	ration in at
No	Village 1 al Council will com /4/KMC-BP/2023-	Nomence on// dated 00.00.0000Architect/Cons	as per 0 under truction

#### FORM X

# OFFICE OF TOE KAKCHING MUNICIPAL COUNCIL

No. 8/4/]	KMC-BP/2023-xxx(A	7)		Kakchin	ng, the/	/
То,						
•••		•••••				
***	•••••	•••••				
•••	•••••••••••••••••••••••••••••••••••••••	•••••				
Su	ibject: Revalidation of	Building Plans				
Sir/Madar	m,					
to constru in	ith reference to your a ction/re-construction/alte	ration/addition in said	the building to app	carry out the	e developm	nent specified situated
No plan whic	of Kakching ch were sanctioned on been re-validated up to.	Municipal Cour	icil, I am directe	d to inforn	n you that y	our building
Or acknowle receipt.	riginal sanctioned plan	n submitted by	you is also	returned	herewith	and kindly
Encl: A se	t of plan.			Yours fai	ithfully,	

Executive Officer, Kakching Municipal Council

#### FORM XI

# INTIMATION OF COMPLETION AT DIFFERENT STAGES OF CONSTRUCTION WORK

	Kakching, the .,
Го,	
	The Executive Officer, Kakching Municipal Council, Kakching.
	Sub: Intimation of completion at different stages of construction work.
Dear :	Sir,
the Shri/S	I/We hereby certify that the building work of erection, re-erection or for making alteration in building of Smtlocated
at No	Patta No
accor	dance with your permission vide office communication No. 8/4/KMC-BP/2023 dated/
	You may please fix a convenient date and time to confirm the same.
	Yours faithfully,
	Signature of Licensed Architect/Engineer/Supervisor
	Name: (in block letters) Address:

#### FORM OF NOTICE OF COMPLETION

Kakchiı	ning, the	
	The Executive Officer, Kakching Municipal Council, Kakching.	
	Sub: Notice of Completion.	
Dear Sir	Sir,	
building No No Council	ng situated at	
	Yours	faithfully,
	Name (in Blo	of Owner:

## FORM FOR CERTIFICATE OFARCH1TECT/ENGINEER/SUFERVISOR (To be submitted along with notice of completion)

То,	Kakchi Kakchi	ng Municipal Council, ng.  Iotice of <b>Completion</b> .		
Dear S	ir,			
ated at has be sanctic dated materi specifical laws at	mteen sup oned, sa als (typications	hereby certify that the erection, re-erection	of Kakching Municip naccording to mmunication No. 8/4/KMC /BP satisfaction, the workmanship accordance with general and ye-Laws. No provisions of the bu	situ val Council the plans 2020 and all the d detailed ilding Byeurse of the
2.	Certifi	cate:		
	a.	Certified that the building(s) has been constructural design (one set of structural draincorporate provisions of structural safety as spec standards/ Guidelines.	wings as executed is enclosi	ng) which the
	b.	Further, certified that water harvesting as well provided as per the auctioned building plan.	as waste- water re-cycling systen	ns has been
	<b>c.</b> .	It is also certified that construction has been and adheres to the drawings submitted ar maintained by us.	one under our supervision and d the records of supervision	guidelines have been
	d.	Permission to occupy of use the building may	be granted.	
Sig	nature o	f Structural Engineer	Signature of Registered Archite	ect
Lic	ense No Iress		NameNoAddress	••••••
Dat		••••••	Dated:	

1:

# OFFICE OF THE KAKCHING MUNICIPAL COUNCIL

No.8/4/KMC-BP/2023	Kakching, the 00/00/0000
To,	
•••••	
•••••	
••••••	
Subject: Completion-cum-Occupancy Certificate.	
Sir/Madam,	
With reference to your notice of completion dated completion cum occupation in respect of the building plan sanction communication No. 8/4/KMC-BP/2023dated 00.00.0000 has to building bye-laws in." respect of the structural safety, hygienic as and in the surroundings arid is declared fit for occupation/release of and permitted to be occupied.	ed by the Council vide office been inspected with reference and sanitary conditions inside
Y	ours faithfully,

Executive Officer/ Executive Engineer, Kakching Municipal Council.

# OFFICE OF THE KAKCHING MUNICIPAL COUNCIL

No.8/4/KMC-BP/2023-	Kakching, the 00/00/0000
To,	
•••••••••••••••••••••••••••••••••••••••	
Subject:: Rejection of Completion-cur	m-Occupancy Certificate.
Sir/Madam,	
issue of completion cum occupation certificate Council vide office communication No. No.	pletion dated
1	••••
2	
3	······
4	******

Yours faithfully,

Executive Officer/ Executive Engineer Kakching Municipal Council

**FORM-XVI** 

#### INDEMNITY BOND FOR BASEMENT:

C	To be submitted on no commissioner) Indemnity Bond is exe						
D/O,	W/O	cuted by Sin 17	Sim	• • • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • • • • • • • • • •	5/0,
Shri/S	rnt	• • • • • • • • • • • • • • • • • • • •		1	ereinafter	called the ov	vners in
favou	r of Kakching Municipal	Council, its su	ccessors o	or entitle	i.		
Where basem							
4store		d above	in	the	plot	located	at
	•••••••••••••••••••••••••••••••••••••••	•••••		• • • • • • • • • • • • • • • • • • • •		• • • • • • • • • • • • • • • • • • • •	
v IIIag	Noof ions of the: Act and Rules	ward No	of	Kakching	z Municipa	al Council u	and nder the
that thad adjoin of its	whereas the owners have ag ne owner shall indemnify the ing building On account of foundations or in the court concern thereto.	he Council in the the construction	ne event on of the said	f any loss id baseme	or damagent either a	e being caus t the time of	e to the
and abide	whereas, the owners have by the terms imposed by tent/4storey and above buil	the Council t	also				to
Now t	this deep witnesses:  That in consideration of construction	the sanction o	f the plan	s by Kal	ching Mu	nicipal Cou	ncil for
	of the basement the exec from						any
	liability, loss or damages/ properties or to any perso of its foundations or duri	on as a conseque	ence of the	e constru	ction of at	the time of	built-up digging
2.	The owner agreed and person or persons again granted by the Council to the construction or maconsequences flowing fround not authority.	st Kakching Mu o the owner for anner of const	unicipal C r the construction o	council einstruction for the base	ther in responder in responder in the second content of the second content in the second	pect of the sent or in reset the owner	anction pect of of the

The owner agreed and undertake to indemnity the Council fully in respect of any amount

the Council may be required to pay to any person either by way of compensation or on

3.

any other account as a result of any claim or suit or any other proceedings concerning t	he
sanctioning of the construction of the basement or the making thereof and also in respe	ct
of the costs and expenses which the Council may incur on defending any action.	

4.	Without prejudice to the above undertaking the owners hereby binds itself to pay to the Council to the full extent any amount which the Council may be required to pay to any person in connection with, relating to or concerning the sanctioning of the basement or the making thereof.
5.	The owner further agrees and undertakes that this bond shall remain in full force and effect till the owner faithfully observes/performs the undertaking herein before contained.
6.	In witness whereof the owner above named has signed this bond this
Witne	Indemnifier ess:
Name	(Signatures)
Full A	Address:
2. Na	(Signatures)

N.B. Council will ask for this Bond for building with basement/4storey and above.

Full Address:....

**FORM-XVII** 

# Application for Enrolment as Competent Technical Personnel in Kakching Municipal Council (individual)

To,	The Executive Officer, Kakching Municipal Council, Kakching.
	Sub: Enrolment as competent technical personnel.
Dear S	Sir,
Kakch Counc No	I hereby apply for enrolment of my name as Licensed Architect/Engineer/Town Planner/Firm the various works of schemes for Building Permit and supervision under Section 2(20a) o ing Municipal Eul Building Bye-laws, in response to your Notification
in forc	I do hereby also declare that I shall follow and will abide by all the rules and regulations nove and that may be framed from time to time under the provision of the Kakching Municipal Building Bye-laws.
Му ре	ersonal bio-data are- as follows-
	Name : Qualification : (Certificate to be enclosed) Past experience : Father's Name : Age : Present Address : Permanent Address :
•••••	I deposit herewith annual enrolment fees of Rs (Rupees) only in cash as required.

N.B. I am not associated with any other similar group or agency in any manner for this purpose.

Signature: Dated:

## Application for enrolment as Competent Technical Personnel in Kakching Municipal Council

(in Group or Agency)

To,

The Executive Officer, Kakching Municipal Council, Kakching.

Sub: Enrolment as competent technical personnel

Dear Sir,

We hereby apply for enrolment of our Group/Agency in the name and style as mentioned below, as competent technical personnel to do the various works of schemes for Building Permit and supervision under Section 2(20a) of Kakching Municipal Council Building Bye-laws in response to your notification No......

We do hereby also declare that we shall follow and will abide by all the rules and regulations now hi force and that may be framed from time to time under the provision of the Kakching Municipal Council Building Bye laws. Name of the group and persons associated with personnel bio-data are as follows:

- 1. Name of the Group or Agency:
- 2. Present & Permanent Address:-
- 3. Name of persons associated:- with his/her personnel capacity and rank and personal bio-data (Certificates enclosed)
  - (A)
  - (B)
  - (C)
  - (D)

We deposit herewith the annual enrolment fees of Rs...... (Rupees ......) only in cash as required.

Signature of head of the group or agency.

Dated:

N.B. Any person associated with any group or agency will not be eligible for enrolment as an individual.

### TABLE-I OFFICE BUILDING [Clause C (i)]

Fitments For Accommodation other than for

**Principals** 

Water closets For Male Personnel
1 for every 25 persons or part

thereof

Ablution taps I in each water closet

1 water tap with drainage

arrangements shall be provided for every 50 persons or part thereof hi

the vicinity of water closet and urinals

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 rate of 3 percent
From over 200 persons
Add at the rate 2.5%
1 for every 25 persons

Washbasins 1 for every 25 persons

Baths

of part thereof

Drinking water fountains 1 for every 100 persons with a

minimum of one each floor Preferably 1 on each floor

Cleaner's sinks 1 per floor, minimum, preferable in

or adjacent to sanitary rooms

For female personnel

1 for every 15 persons

thereof

1 in each water closet

# TABLE-II FACTORIES [Clause C(i)]

Fitments Water	For Male Personnel 1 for 1-15 persons	For Female Personnel 1 for 1-12 persons
Closets	2 for 16-35 persons	2 for 13-25 persons
Closets	3 for 36-65 persons	3 for 26-40 persons
	4 for 66-100 persons	4 for 41-57 persons
	•	5 for 58-77 persons
		6 for 78-100 persons
	From 101-200 person add at the	From 101-200 persons
	rate of 3%	add at the rate of 5%
	For over 200 persons	For over 200 persons
	add the rate of	add at the rate of
	2.5 percent	4 percent

Ablution taps

1 in each water closet

1 in each water closets

1 water tap with draining arrangements shall be provided for

every

50 persons or part thereof in the vicinity of water closets and

urinals.

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 Add at the rate of 3% For over 200 persons add At the rate of 2.5%

Washing taps with draining

1 for every 25 persons or

arrangement

Part thereof

Drinking

Tare increor

Water fountains

1 for every 100 persons with a minimum of one on each floor

Bath (preferable showers)

As required for particular trades or

Occupations

Note:- For many trades of a dirty or dangerous character, more extensive provisions are required by law.

# TABLE-III CINEMAS, CONCERT HALLS AND THEATRES [Clause C (i)]

Fitments	For Male Public	For Female Public	For Male Staff	For Female Staff
Water closets	1 per 100 persons upto 400 persons	2 per 100 persons upto 200 persons	1 for 1-15 persons	1 for 1-12 persons
	For over 400 persons add at the rate of 1 part thereof	For over 200 persons, add at the rate of 1 per 100 persons or part thereof		
Ablution taps	1 in each water closet	1 in each water closet	1 in each water closet	1 in each water closet
	1 water tap with draining arrangement shall be provided for every 50 or part thereof in the vicinity of water closets and, urinals			ery 50 persons
Urinals	1 for 50 persons or part thereof		Nil upto 6 persons 1 for 7-20 persons 2 for 21 -45	
Wash Basin	1 for every 200 persons or part thereof	1 for every 200 persons or part thereof	1 for 1-15 persons 2 for 16-35-	1 for .1-12 persons 2 for 13-25 persons

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

# TABLE-IV ART GALLERIES, LIBRARIES AND MUSEUMS [Clause C (i)]

Fitments	For Male Public	For Female Public	For Male Staff	For Female Staff	
Water closets	1 per 200 person upto 400 persons. For over 400 persons add at the rate of 1 per 250 persons or part thereof	1 per ] 00 persons upto 200 persons. For over 200 persons, add at the rate of 1 per 150 persons or part thereof	1 for 1-15 persons	1 for 1-12 persons	
Ablution taps	1 in each water closet	1 in each water closet	1 in each water closet	1 in each water closet	
	1 water tap with draining arrangement shall be provided for every 50 persons or part thereof in the vicinity of water closets and urinals				
Urinals	1 for 50 persons Nil upto 6 persons 1 for 7-20 persons 2 for 21-45 persons				
Wash Basin	1 for every 200 persons or part thereof. For over 400 persons, add at the rate of 1 per 250 persons or part	1 for every 200 persons or part thereof. For over 200 persons, add 1 per 150 persons or part thereof	1 for 1-15 persons 2 for 16-35 persons	1 for 1-12 persons 2 for 13-25 persons	
	thereof	-	persons		
Cleaner's sinks		1 per floor, min			

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

# TABLE-V HOSPITALS, INDOOR AND OUTDOOR PATIENT WARDS [Clause C (i)]

	Indoor Patient Wards		Outdoor Patient Wards	
	For Males and Females		For Males	For Females
Water Closets	1 for every 8 beds or part thereof	Water closets	1 for every 100 persons or part thereof	2 for every 100 persons or part thereof
Ablution taps	1 in each water closet plus one water tap with draining arrangement in the vicinity for every 50 beds or part thereof	Ablution taps	1 in each water closet	1 in each water closet
Wash Basins	2 upto 30 beds, add 1 for every additional 30 beds or part thereof		1 water tap with draining arrangement shall be provided for every 50 persons or part thereof in the vicinity of water closets and	
Baths	1 bath with shower for every 8 beds or part thereof	Urinals	1 for every 50 persons or part thereof	
Bed pan washing sinks	1 for each ward			
Cleaner's inks	1 for each ward	Warm basins	1 for every 100 persons or part thereof	1 for every 100 persons or part thereof
Kitchen sinks and dish washers (where kitchen is provided)	1 for each wards			

# TABLE-VI HOSPITALS (Administrative Buildings, Medical Staff Quarters and Nurse' Homes) [Clause C(i)]

Fitments	For Administrative	e Buildings	For Medical Staff Quarters (Hostel Type)		For Nurses' Home (Hostel Type)	
	For Male personnel	For Females personnel	For Males Staff	For Female Staff		
Water	1 for every 25 persons or part thereof	1 for every 15 persons or part thereof	1 per 4 persons	1 per 4 persons	1 for 4-6 persons or part thereof	
Ablution taps	1 in each water closet	1 in each water closet	1 in each water closet	1 in each water closet	1 in each water closet	
	1 water tap with drai .part thereof in the vi	ning arrangen cinity of water	ents shall be closets and u	provide for ever rinals	ery 50 persons or	
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, add at the rate of 3 percent. For over 200, add at the rate of 2.5 percent					
Wash Basins	1 for every 25 persons or part thereof	1 for every 25 persons or part thereof	1 for every 25 persons or part	1 for every 25 persons or part thereof	1 for every 25 persons or part thereof	
Bath (with shower)	1 for each floor	1 for each floor	1 for 4persons or part thereof	1 for 4persons or part thereof	1 for 4-6 persons or part thereof	
Cleaner's sinks		1 per floor, min	1 per floor min		1 per floor, rain	

# TABLE-VII HOTELS [Clause C(i)]

Fitments	For Residential Public	For Public	Rooms	For Non-Re	esidential Staff
	For Male personnel	For Females personnel	For Males Staff	For Female Staff	
Water	1 for every 25 persons or part thereof	1 for every 15 persons or part thereof	1 per4 persons	1 per4 persons	1 for 4-6 persons or part thereof
Ablution taps	1 in each water closet	1 in each water closet	1 ineach water closet	1 in each water closet	1 in each water closet
	1 water tapwith drain part thereof in the v				50 persons or
Urinals	Nil upto 6-persons 1 for 7-20 persons 2 for 21 -4 5 persons 3 for 46-70 persons 4 for 71-100 persons From 101 to 200, add at the rate of 3 percent. For over 200, add at the rate of 2.5 percent				
Wash Basins	1 for every 25 persons or part thereof	1 for every 25 persons or part thereof	1 for every 2:5 persons or part		1 for every 25 persons or part thereof
Baths (with shower)	1 for each floor	1 for each floor	1 for 4 persons or part thereof	1 for 4persons or part thereof	1 for 4-6 persons or part thereof
Cleaner's sinks		1 per floor, min	1 per floo	or, min	1 per floor, min

TABLE-VII : HOTEL [Clause C(i)]

Valer   1 per 8 persons omitting   1 per 100 persons   2 per 100 persons   1 for 1-15 persons   2 for 2-40 persons   2 for 2-40 persons   2 for 2-40 persons   2 for 7-40 persons   2 for 1-10 persons   2 for 1-15 perso	Fitments	For Residential Public and Staff	For Public Rooms	Rooms	For Non-Residential Staff	idential Staff
ets cocupants of the room vith attached water closet; minimum of 2 per 200 persons. For over with attached water doset if both sexes and lodged closets, minimum of 2 per 250 persons or part at the rate of 1 per doset closet if both sexes and lodged thereof, 1 in each water closet line each water line closet line each water line each water line closet line each water line closet line each water line closet line each water line each water line each water line each water line line each water line each water line each water lifer persons or part line each water lifer each water closet line each water lifer persons or part line each water lifer each water closet liper each water lifer person each water lifer person each water lifer lifer each water closet liper each water lifer person each water lifer lifer each water lifer lifer each water lifer each water lifer each water lifer lifer each water lifer			For Males	For Females	For Male Staff	For Female Staff
ets occupants of the room with attached water with attached water closets, minimum of 2 per 250 persons or part if both sexes and lodged thereof. I in each water closet I water tape with draining arrangement shall be provided for every 50 persons closets and urinals als I per 50 persons or part thereof I for over 200 add 3 for over 200 persons or part I in each water I in each water closet I water thereof I per sons or part I for 2 for 3 for omitting the wash and urinal provided closet provided 2 for a for own with bathing suit  I per 10 persons or part I per each water closet I per each water I for 3 for	Water	1 per 8 persons omitting	1 per 100 persons upto	2 per 100 persons	1 for 1-15 persons	1 for 1-12 persons
with attached water closets, minimum of 2 per 250 persons or part if both sexes and lodged thereof. I in each water closet thion tap 1 in each water closet 2 part thereof 2 persons or part 1 in each water closet 2 closet 2 part thereof 2 persons closets and urinals 3 for 2 for 3 f	Closets	occupants of the room	400 persons. For over	upto 200 persons.	2 for 15-35 persons	2 for 13-25 persons
closets, minimum of 2 per 250 persons or part at the rate of 1 per 4 for if both sexes and lodged thereof. 1 in each 100 persons or water closet water closet 1 in each water line closet 1 water tape with draining arrangement shall be provided for every 50 persons closets and urinals  1 per 50 persons or part thereof 1 for 2 for 3 for		with attached water	400 and at the rate of 1	For over 200 add	3 for 36-65 persons	3 for 26-40 persons
if both sexes and lodged water closet water closet   1 in each water   1 for   2 for   3 for   4 for		closets, minimum of 2	per 250 persons or part	at the rate of 1 per	4 for 66-100 persons	4 for 41-57 persons
tition tap 1 in each water closet 1 in each water closet 1 in each water closet 1 in each water 1 in each water closet 1 water tape with draining arrangement shall be provided for every 50 persons or part closets and urinals  als 1 water tape with draining arrangement shall be provided for every 50 persons or part thereof 1 for 2 for 3 for omitting the wash basins installed in the room suit 1 per each water closet 1 per each water 1 for 2 for 3 f		if both sexes and lodged	thereof. 1 in each			5 for 58-77 persons
tition tap			water closet	part thereof		6 for 78-100 persons
I water tape with draining arrangement shall be provided for every 50 persons closets and urinals  I per 50 persons or part thereof  I per 50 persons or part thereof  I per every 100 persons  I per each water closet closet provided  I per each water closet provided  I per each water closet provided  I per each water l for closet provided  I per 10 persons omitting occupants of the room with bathing suit  I per 300 bedrooms:  minimum  closet provided closet provided  I per ach water l for a for closet provided  I per 300 bedrooms:	Ablution tap	1 in each water closet	1 in each water closet		1 in each water	1 in each water
l water tape with draining arrangement shall be provided for every 50 persons closets and urinals  I per 50 persons or part thereof  I per 60 persons or part thereof  I per each water closet closet provided water l for person shains installed in the room suit  I per 10 persons omitting occupants of the room with bathing suit  I per 300 bedrooms:  minimum  I per floor				closet	closet	closet
closets and urinals  I per 50 persons or part thereof  I per eof  I per every 100 persons of persons or part thereof  I per every 100 persons of basins installed in the room suit  I per 10 persons of the room with bathing suit  I per 300 bedrooms:  ninimum  I per floor  Nil ug the water of persons or part thereof  I per each water closet closet provided closet provided  I per each water of closet provided  I per sons or part thereof  I per each water of closet provided  I per each water of closet provided  I per sons or part thereof  I per each water of closet provided  I per sons or part thereof  I per each water of closet provided  I per sons or part thereof  I per each water of closet provided  I per sons or part thereof		1 water tape with drainin	g arrangement shall be pr	rovided for every 50 p	ersons or part thereof i	n the vicinity of water
als  I per 50 persons or part thereof  I per every 100 persons  I per each water closet room suit  I per 10 persons  I per 10 persons or part thereof  I per each water closet closet provided the room with bathing suit  I per 300 bedrooms:  I per floor  I per 50 persons or part thereof  I per son part thereof  I per each water closet closet persons  I per each water closet closet provided closet provided and urinal provided closet provided and urinal persons  I per 10 persons  I per 300 bedrooms:  I per 300 bedrooms:		closets and urinals				
thereof  thereof  thereof  thereof  the room suit  l per every 100 persons  l per every 100 persons  l per each water closet omitting the wash basins installed in the room suit  l per 10 persons  omitting occupants of the room with bathing suit  l per 300 bedrooms:  ninimum  thereof  l for 7-20 persons  2 for 21-45 persons  4 for 71-1000  persons  closet provided 2 for 16-35 persons 3 for 36-65 persons 4 for 66-100 persons  1 per 300 bedrooms:  ninimum  l for 7-20 persons  2 for 21-45 persons 4 for 71-1000  persons  4 for 66-100 persons  1 per 300 bedrooms:	Urinals		1 per 50 persons or part		Nil upto 6 persons	
2 for 21-45 persons 3 for 46-70 persons 3 for 46-70 persons 4 for 71-1000 persons 4 for 71-1000 persons 5 persons 1 per every 100 persons 1 per each water closet 1 per each water closet provided 2 for 1-15 persons 2 for 36-65 persons 3 for 36-65 persons 4 for 66-100 persons 5 persons 6 fuhe room with bathing 7 per 300 bedrooms: 8 per 10 persons 9 persons 1 per 10 persons 1 per 300 bedrooms: 9 per 10 persons 1 per 10 persons			thereof		1 for 7-20 persons	
I per every 100 persons omitting the wash basins installed in the room suit  I per 10 persons omitting occupants of the room with bathing suit  I per 300 bedrooms:  I per floor  I per each water closet l per each water l for 1-15 persons closet provided closet provided 2 for 16-35 persons 4 for 66-100 persons 4 for 66-100 persons 4 for 66-100 persons 5 l per 10 persons 6 the room with bathing suit					2 for 21-45 persons	
I per every 100 persons l per each water closet l per each water l for 1-15 persons omitting the wash basins installed in the room suit  I per 10 persons omitting occupants of the room with bathing suit  I per 300 bedrooms:  I per floor					3 for 46-70 persons	
h l per every 100 persons l per each water closet l per each water l for 1-15 persons omitting the wash and urinal provided closet provided 2 for 16-35 persons loser room suit 2 for 10 persons omitting occupants of the room with bathing suit 1 per 300 bedrooms:    1 per 300 bedrooms: minimum   1 per floor   10 persons   10					4 for 71-1000	
ns omitting the wash omitting the wash basins installed in the room suit  s 1 per 10 persons of the room with bathing suit  1 per 300 bedrooms:  1 per 400 persons of liper floor  1 per each water closet provided closet provided 2 for 16-35 persons 2 for 36-65 persons 3 for 36-65 persons 4 for 66-100 persons 4 for 66-100 persons 5 for 1 per 10 persons 5 for 1 per 300 bedrooms:  1 per 300 bedrooms:  1 per floor					persons	
omitting the wash and urinal provided basins installed in the room suit  I per 10 persons omitting occupants of the room with bathing suit  I per 300 bedrooms: minimum  closet provided 2 for 16-35 persons 3 for 36-65 persons 4 for 66-100 persons 4 for 66-100 persons 5 for 36-65 persons 5 for 36-65 persons 5 for 36-65 persons 6 for 36-65 persons 6 for 36-65 persons 7 for 36-65 persons 8 for 36-65 persons 9 for 36-65 persons	Wash	1 per every 100 persons	1 per each water closet	1 per each water	1 for 1-15 persons	1 for 1-12 persons
basins installed in the room suit  3 for 36-65 persons 4 for 66-100 persons omitting occupants of the room with bathing suit 1 per 300 bedrooms: minimum  1 per floor	Basins	the	and urinal provided	closet provided	2 for 16-35 persons	2 for 13-25 persons
room suit  1 per 10 persons omitting occupants of the room with bathing suit 1 per 300 bedrooms: minimum  1 per floor  4 for 66-100 persons 4 for 66-100 persons		basins installed in the			3 for 36-65 persons	3 for 26-40 persons
s 1 per 10 persons omitting occupants of the room with bathing suit 1 per 300 bedrooms: minimum 1 per floor		room suit			4 for 66-100 persons	4 for 41-57 persons
s 1 per 10 persons omitting occupants of the room with bathing suit 1 per 300 bedrooms: minimum 1 per floor						5 for 58-77 persons
omitting the room suit 1 per 300 minimum 1 per floo	Raths	10				O TOT 10-100 betaoms
the room suit 1 per 300 minimum 1 per floo	Bains					
		suit				
02	Stop	1 per 300 bedrooms:				
		minimum				
	Sinks	1 per floor				

	washers	dish	sinks and	Kitchen	
Note: If ma					
Note: If may be assumed that two-thirds of the number are males and					
wo-thirds of the num					
ber are males and or					
one-third females.					
				•	

# TABLE-VIII: RESTAURANTS [Clause C(i)]

				1 in the restaurant	Slop or service sinks
		,		1 in each kitchen	Kitchen sinks and dish washers
L.,				1 for every water closet provided	Wash Basins
<u> </u>		4 for 71-100 persons			
		3 for 46-70 persons			
		2 for 21-45 persons			
		1 for 7-20 persons			
		Nil upto		1 per 50 seats	Urinals
<u> </u>	part thereof in the vicinity	ded for every 50 persons or	l water tape with draining arrangement shall be provided for every 50 persons or part thereof in the vicinity of water closets and urinals	1 water tape with draining of water closets and urinals	
	1 in each water closet	1 in each water closet	1 in each water closet	1 in each water closet	Ablution tap
L	6 for 78-100 persons				
	5 for 58-77 persons				
	4 for 41-57 persons	4 for 66-100 persons	thereof	persons or part thereof	
	3 for 26-40 persons	3 for 36-65 persons	per 100 persons or part	rate of 1 per 100	
	2 for 13-25 persons	2 for 16-35 persons	persons. For over 200 seats add at the rate of 1	200 persons. For over 200 seats add at the	
	1 for 1-12 persons	1 for 1-15 persons	1 per 50 persons upto 200	1 per 50 persons upto	Water Closets
	For Female Staff	For Male Staff	For Females Public	For Males Public	Fitments

Note: If may be assumed that two-thirds of the number are males and one-third females.

TABLE-IX : SCHOOLS [Clause C(i)]

Cleaner's 1 per floor, min	Drinking 1 for every 100 1 for every 100 1 for every 100 pupils or part thereof fountains	Baths 1 bath-sink per 40 pupils	Wash 1 per 25 pupils or 1 per 60 pupils or 1 per 60 pupils or part thereof part thereof	Urinals 1 per 50 pupils or 1 per 60 pupils or pat thereof	1 water tap with draining arrangement shall be provided for every 50 persons or part thereof in the vicinity	Ablution tap 1 in each water 1 in each water closet 1 in each water closet	Water 1 per 25 pupils or 1 per 60 pupils or 1 per 40 pupils or Closets part thereof part thereof	For Boys For Girls	Fitments Nursery School Schools other than Nursery Schools
	1 for every 100 reof pupils or part thereof	1 for every 10 pupils or part thereof	1 for every 10 pupils or part thereof	or pat 1 for every 50 pupils	y 50 persons or part thereof i	1 in each water closet	or part thereof	For Boys	Boardi
1 per floor, min	1 for every 100 pupils or part thereof	1 for every 10 pupils or part thereof	1 for every 10 pupils or part thereof		in the vicinity	1 in each water closet	1 per every 8 pupils or part thereof	For Girls	Boarding School

<sup>\*\*</sup> For teaching staff, the schedule of fitments to be provided shall be the same as in the case of office buildings (See Table-II)

TABLE-X HOSTEL [Clause C(i)]

		1 on every floor				Cleaner's
				part thereof	part thereof	
				persons or	persons or	
				1 per 10	1 per 10	Baths
		persons				
		6 for 78-100	persons			
		4 for 41-5 / persons	4 for 66-100			
	provided	3 for 26-40 persons	3 for 36-65 persons	part thereof	part thereof	
closet provided	closet and urinal	2 for 13-25 persons	2 for 16-35 persons	persons or	persons or	basins
1 per each water	1 per each waster	1 for 1-12 persons	1 for 1-15 persons	1 for 10	1 for 10	Wash
			persons			
			4 for 71-100			
			3 for 46-70 persons			
			2 for 21-45 persons		part thereof	<del>- , . , . ,</del>
	or part thereof				persons or	
	1 per 50 persons		Nil upto 6 persons		1 for 25	Urinals
				als	closets and urinals	
ity of water	part thereof in the vicinity of water		shall be provided for	1 water tap with draining arrangement shall be provided for every 50 persons or	1 water tap with	
water closet	water closet	water closet	water closet	water closet	water closet	taps
1 in each	1 in each	1 in each	1 in each	1 in each	1 in each	Ablution
part thereof			persons			
100 persons or	thereof	thereof	6 for 78-100			
the rate of 1 for	persons or part	persons or part	5 for 58-77 persons			
persons add at	rate of 1 for 100	rate of 1 for 250	persons			
For over 200	persons add at the	4 for 41-57 persons	4 for 66-100			
200 persons.	For over 400	3 for 26-40 persons	3 for 36-65 persons	thereof	part thereof	
persons upto	upto 400 persons.	2 for 13-25 persons	2 for 16-35 persons	persons or part	persons or	Closets
2 for 100	1 per 100 persons	1 for 1-12 persons	1 for 1-15 persons	1 for every 8	1 for every 10	Water
For Females	For Males	For Females	For Males	For Females	For Males	
ved	received					
outsiders are	Rooms wherein outsiders are	For Non-Residential Staff	For Non-Re	For Residential and Residential Staff	For Residential	Fitments
			1			