

# **BUILDING REGULATIONS**

For Industrial Growth Centres & Parks of WBIIDC in West Bengal

2016



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# Preface

In compliance of requirements mentioned in recommendation no. 62 for area 4a: Construction Permit Enablers and Area 4b: Building Plan Approval, under State Business Reform Action Plan - Implementation Guide for States December 2015, desiring formulation of a comprehensive formal building regulations applicable to the entire State of West Bengal, this "Building Regulations For Industrial Growth Centres & Parks of WBIIDC in West Bengal, 2016" has been framed out.

This will be applicable throughout the State of West Bengal in all Industrial Growth Centres & Parks under administrative control of West Bengal Industrial Infrastructure Development Corporation (WBIIDC).

During preparation of this Building Regulations, the recommendations of *"State Business Reform Action Plan - Implementation Guide for States | December 2015"*, circulated by DIPP, as scheduled below have been duly taken care of:

- 1. Ensure that the building code/building bye-laws include provisions for risk-based classification of buildings. [**Recommendation no.** 63]
- 2. Ensure that the building code/building bye-laws include accreditation programs and clear responsibilities and liabilities for professionals including architects and engineers engaged in the construction process. [Recommendation no. 64]
- 3. Design and implement a system at all ULBs and IDC that allows building permit issuing agencies to assess building plans for compliance with building codes/building bye-laws using AutoCAD (or similar) software [**Recommendation no.** 65]
- 4. Mandate that a single, joint site inspection will be carried out by various government authorities responsible for granting construction permits at all ULBs and IDCs. [Recommendation no. 66]
- 5. Define mandatory qualifications for architects, structural engineers and contractors. [Recommendation no. 69]
- 6. Implement a system to allow approval based on third party certification (during construction and/or completion stage, as applicable) of structural design and architectural drawings by authorized structural engineers and architects respectively across all ULBs and IDCs. [Recommendation no. 70]
- 7. Allow authorized architects to issue the completion certificate at all ULBs and IDCs, instead of requiring a separate completion certificate to be issued [**Recommendation no. 71**]
- 8. Ensure information on the procedure and a comprehensive list of all documents that need to be provided are available on the web site [**Recommendation no. 76**]

Following references have been consulted during of preparation of the Regulations:

- Draft Nation Building Code, 2016
- Haryana Building Code, 2016
- Model Building Bye laws, 2016
- Unified Building Bye Laws for Delhi, 2016
- Uttarakhand Building Bye laws and Regulations 2011(Amendment 2016)



- I. Short title, extent and commencement.
- 1) These Regulations shall be called the "Building Regulations for Industrial Growth Centres & Parks of WBIIDC in West Bengal, 2016".
- 2) This shall be applicable to entire State of West Bengal for Industrial Growth Centres & Parks of WBIIDC with effect from the date of its adoption.
- 3) For any item of specification not mentioned herein or for any update of mentioned item/s, relevant Provisions of following standards, of latest amendment shall apply :
  - a. National Building Code of India
  - b. National Electrical Code
  - c. Energy Conservation Building Code
  - d. West Bengal Municipal (Building) Rules
  - e. Relevant Indian Standard Code of Practice published by BIS [Bureau of Indian Standards]
  - f. Relevant regulatory orders etc. issued by Govt. / Competent Authorities time to time.
- 4) Compliance requirements of Provisions as applicable of following Act & Rules with latest amendments and orders should be strictly maintained during preparation of Plant layout and Building Plan;
  - a. The Factories Act, 1948
  - b. The West Bengal Factories Rules, 1958
  - c. The Environment (Protection) Act, 1986
  - d. The Environment (Protection) Rules, 1986
  - e. The Hazardous and other Waste (Management and Transboundary Movement) Rules, 2016
  - f. The Manufacture, Storage and Import of Hazardous Chemical Rules, 1989
  - g. The Plastic Waste Management Rules, 2016
  - h. The Criteria for Finished Leather as Environment Friendly Products, 2000
  - i. The Noise Pollution (Regulation and Control) Rules 2000
  - j. The Bio-Medical Waste Management Rules, 2016
  - k. The Solid Waste Management Rules, 2016
  - I. The Batteries (Management and Handling) Rules, 2001
  - m. The Wetlands (Conservation and Management) Rules, 2010
  - n. The Ozone Depleting Substances (Regulation & and Control) Rules, 2000
  - o. The Uniform Protocol on Water Quality Monitoring Order, 2005
  - p. The National Green Tribunal Act, 2010
  - q. The 2-T Oil (Regulation of Supply and Distribution)) order, 1998
  - r. The e-Waste (Management) Rules, 2016
  - s. The Regulation of Polychlorinated Biphenyls Order, 2016
  - t. The Construction and Demolition Waste Management Rules, 2016
  - u. The West Bengal Fire Services Act, 1950
  - v. The West Bengal Fire Services (Fire License) Rules, 2004
  - w. The Electricity Act, 2003
  - x. Rules under Electricity Act, 2003
  - y. Energy Conservation Act, 2001
  - z. Energy Conservation (Amendment) Act, 2010
  - aa. Rules and Regulations under Energy Conservation Act
  - bb. The Explosives Act, 1884
  - cc. The Explosives Rules, 2008
  - dd. The West Bengal Panchayet(Gram Panchayet Administration) Rules, 2004
  - ee. The West Bengal Panchayet(Panchayet Samity) Administration) Rules, 2008



# 1. Definitions

(1) In this Regulations, unless the context otherwise requires,-

- "abut" in relation to a building means when it is on a street and the outer face of any of its external walls is on the street boundary;
- III. "Act" means the respective Act of Competent Authority;
- IV. "ancillary zone" in the industrial/ commercial/ institutional plot means the building ancillary to and serving the main industrial building and includes meter-room, security room, Sewerage Treatment Plant, godown, guard room, cycle-shed, dispensary, canteen, electric substation and labour quarters for watch and ward staff but shall not include residential accommodation for supervisory staff;
- V. "apartment" means a part of a property, intended for any type of independent use, including building having one or more rooms with enclosed spaces located on one or more floors or any part or parts thereof, to be used for rest station, office or for practicing any profession or for carrying on any occupation, trade, business or manufacturing or other uses relating to Information Technology or for such other type of independent use, as may be prescribed, with a direct exit to a public street, road or highway or to a common area leading to such street, road or highway and includes any garage or room (whether or not adjacent to the building in which such apartment is located) of such property for use by the lease holder of such apartment for parking any vehicle or for the rest station of any person employed in such apartment, as the case may be.
- VI. "Applicant" means a person(s) including legal heirs who is lease holder(s) of the site and who applies to the Competent Authority, of his/ her intention to erect or re-erect a building under this Regulations and includes his/ her legal heirs;
- VII. "apparel industry" means the industrial unit primarily engaged in the design, cutting and sewing of garments from fabrics, processed leather and its variant;
- VIII. "Approved" means approved by the Competent Authority;
- IX. "Architect" shall mean a person registered with valid membership of the Council of Architecture, India as prescribed under the Architect Act 1972 (Please see Appendix "A");
- X. "Area" means area under the jurisdiction of Competent Authority;
- XI. "atrium" means a high open area or central court within multi-storeyed building, covered with transparent material at the terrace;
- XII. "Authorized officer" or "officer authorized" means an officer authorized by the Competent Authority;



- XIII. "Balcony" means a horizontal projection with a handrail or balustrade or a parapet, to serve as passage or sitting out place;
- XIV. "Basement or cellar" means the lower storey of a building partly or wholly below the ground level or the abutting road level, whichever is higher;
- XV. "bio-technology industry" means the industrial unit primarily engaged in research in micro-organisms and its software developments. No hardware manufacturing unit of pharmaceutical industry will be included;
- XVI. "Boundary wall" means a wall constructed along the property line not exceeding permissible height as specified in these Regulations;
- XVII. "building" means any shop, house, hut , outhouse, shed or stable whether used for the purpose of human habitation or otherwise and whether of masonry, bricks, wood, mud, thatch, metal or any other material whatever, and includes a wall and a well;
- XVIII. "building line" shall mean a fixed line, if any specified for a site beyond which no building shall project within that site other than balcony, canopy and compound wall;
- XIX. "Building plan" means a plan accompanying a notice for sanction, or provisional sanction for erection, or re-erection or addition to, or alteration of, a building;
- XX. "building services" in relation to a building means lighting and ventilation, electrical and allied installations, air-conditioning, heating and mechanical ventilation, acoustics, sound insulation and noise control, installation of lifts and escalators, water supply, drainage and sanitation, gas supply, landscaping, signs and outdoor display structures, fire fighting and safety arrangements, solid waste management, electronic and telecommunication installations;
- XXI. "carpet area" shall mean the net usable area of an apartment, excluding the area covered by the external walls, areas under service shafts, exclusive balcony or verandah area and "exclusive open terrace area, but includes the area covered by the internal partition walls of the apartment;

Explanation - The expression "exclusive balcony or verandah area" means the area of the balcony or verandah, as the case may be, which is appurtenant to the net usable floor area of an apartment, meant for the exclusive use of the allottee; and "exclusive open terrace area" means the area of open terrace which is appurtenant to the net usable floor area of an apartment, meant for the exclusive use of the allottee.

- XXII. "canopy"- shall mean a structurally secured and supported projection from the face of the wall over an entrance to the building at the lintel or slab level provided that:
  - a. It shall not project beyond the plot line.



- A canopy or canopies and/or a porch or porches each not exceeding 15
   square meters in area or one percent (1%) of the ground floor area whichever is
   .higher, having a clear width of not less than 2.5 meters may be allowed at a
   minimum clear height of 2.5 meters from the ground level:
- c. Requisite space for the movement of fire tender is left all round the building unobstructed by such canopies or porches.
- d. There shall be no structure on it and the top shall remain open to sky.
- XXIII. "Chimney" means the ventilating shaft provided in the building for disposal of smoke; with a construction by means of which flue is formed for the purpose of carrying the products of combustion to the open air, and includes chimney stack and flue-pipe.
- XXIV. "class of building" shall mean a building in one of the following categories:
  - a. Assembly building;
  - b. Commercial and mercantile building;
  - c. Educational building;
  - d. Industrial building;
  - e. Information Technology building;
  - f. Inland Container Depot/ Custom bounded area;
  - g. Institutional building;
  - h. Mixed land-use building;
  - i. Residential building;
  - j. Storage building;
  - a. "Assembly Building"- A building or part thereof, where groups of people (not less than 50) congregate or gather for meeting, conference, amusement, recreation, social, religious, patriotic, civil, travel and similar purposes; '
  - b. "Commercial and Mercantile Building"- includes a building or complex or part thereof used as shops, stores or market for display and sale of wholesale and/ or retail goods or merchandise, including office, Restaurant, Banquet Hall, Hotel, Motel, Resort, Dhaba, Boarding house, Guest house, Amusement Park, office establishments and service facilities incidental thereto and located in the same building;
  - c. "Educational Building"- includes a building exclusively used for a school, college, training/ research institute, vocational institute & University including quarters for essential staff required to reside in the premises, and building used as a hostel captive to such educational institution in its campus;',



- d. "Industrial Building"- includes a building or part thereof wherein products or material are fabricated, assembled or processed, such as assembly plant, cold storage, laboratory, power plant, refinery, gas plant, mill, dairy and factory etc.;
- e. "Information Technology building"- includes building for software development activities, and IT enabled services and/ or IT related manufacturing;
- f. "Inland/ Freight Container Depot/ Custom bounded area"- includes a building being used as an inland intermodal terminal directly connected by road or rail to a seaport/ airport and involved as operating centre for the transshipment of a sea/ air cargo to inland destination, which may include temporary storage;
- g. "Institutional Building"- includes a building constructed by Government, Semi- Government Organization or Registered Trust/ Society and used for medical or other treatment and care for persons suffering from physical or mental illness, disease or infirmity, care of orphans, differently-abled persons, 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. It shall also includes an auditorium or complex for cultural, social, religious, patriotic and allied activities or for an hospice, assembly halls, city halls, town halls, exhibition halls, museums, places of worship, dharamshala, hospital, sanatoria, custodial and penal institutions such as jail, prison, Government office, Secretariat, road or railway or air or sea or other public transportation station, etc.;
- **Mixed land-use building**<sup>"</sup>- includes a building consisting of one or more conforming uses/ activities duly allowed by competent authority;
- i. "Residential Building"- includes a building in which sleeping and living accommodation is provided for residential purposes, with cooking facilities and includes one or more family dwellings, residential apartments, flats and garages used by occupants of such building;
- j. "Storage Building"- includes a building or part thereof used primarily for storage or shelter of goods, wares, merchandise and freight depot includes a building used as a warehouse, godown, freight depot, transit shed, store house, public garage, hanger, truck terminal, grain elevator/ silos, barn and stables.
- XXV. "Competent Authority" shall mean an officer/ agency duly authorized by the Corporation (WBIIDC)
- XXVI. "Corporation" means any of the three Organizations viz. West Bengal Industrial Infrastructure Development Corporation (WBIIDC).



- XXVII. "courtyard" means a space permanently open to sky, enclosed fully or partially bybuildings and may be at ground level or any other level within or adjacent to a building.
- XXVIII. "covered area" means the area covered immediately above the plinth level by the building but does not include the space covered by
  - a. Soak pit, rain water harvesting tank, sewage treatment plant, swimming pool (uncovered);
    - Cantilevered porch (without any storey above) and areas covered by canopy and portico, open staircases for fire escape;
    - c. Area under solar panel, service floor and service shaft, atrium;
  - XXIX. "damp proof course (DPC)" means a course consisting of some appropriate water proofing material provided to prevent seepage/ penetration of dampness or moisture from any part of the structure to any other part;
  - XXX. "dangerous" in relation to a building means a building which by reason of its age, inadequate maintenance, dilapidation, abandonment or by any other reason, has become structurally unsafe or is not provided with adequate means of egress or which constitutes a fire hazard or which has otherwise become dangerous to human life;
  - XXXI. "depth" in relation to a plot means the distance from the front to the rear line of the plot:
  - XXXII. "Digital signature" means "digital signature" defined in the Information Technology Act, 2008.
  - XXXIII. "Drain" means a conduit or channel for the carriage of storm water, sewage, waste water or other waterborne wastes in a building drainage system.
  - XXXIV. "drainage system" means a system or a line of pipes, with their fittings and accessories, such as manholes, inspection chambers, traps, gullies, floor traps used for drainage of building or yards appurtenant to the buildings and includes an open channel for conveying surface water or a system for the removal of any waste water.
  - XXXV. "dwelling unit" means a building or a part thereof which is used or is intended to be used by a person or family for habitation comprising of Kitchen, toilet and room;
  - XXXVI. "Engineer" means a person graduate in civil engineering or in Construction Engineering from recognized Indian or Foreign University or Associate Membership of the Institute of Engineers (India), engaged for the supervision, construction or for the preparation of structural design/ drawing or both (Please see Appendix "A");
- XXXVII. "Erection or re-erection of building" means and includes any material addition, alteration or enlargement of any building including sub-division of the existing covered area;



- XXXVIII. "escalator" means a mechanical device to transport persons between two or more levels in an inclined direction by means of guided moving steps;
- XXXIX. "Exit" means a passage channel or means of egress from the building, its storey or floor to a street or, other open spaces;
  - XL. "external wall" means an outer wall or vertical enclosure of any building not being a party wall, even though adjoining to a wall of another building and also includes a wall abutting on an interior open space of any building but shall not include an outer verandah wall;
  - XLI. "Factory" shall have the same meaning as defined in the Factories Act, 1948 (Act LXIII of 1948)
  - XLII. "flat" means a part of any property, intended to be used for residential purposes, including one or more rooms with enclosed spaces located on one or more floors, with direct exit to a common area leading to such streets or roads;
  - XLIII. "Floor" means 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 termed as floor-2, and so on upwards.
  - XLIV. "floor area" means the covered area of a building at any floor level;
  - XLV. "Floor area ratio (FAR)" mean a quotient obtained by dividing the multiple of the total covered area of all floors and hundred, by the area of plot including the area of the water bodies, if any within the plot i.e.

For the purpose of calculating FAR, cantilevered permitted roof projections, lift room, mumty, balcony, basement if used for parking, services and storage, stilt area (unenclosed) proposed to be used for parking and pedestrian plaza only, open staircase (without mumty), open court yard of permitted size shall not be counted towards FAR;

- XLVI. "Form" means a Form appended to this Regulations;
- XLVII. "footwear manufacturing industry" means the industrial units primarily engaged in the design, cutting, assembly and manufacturing of footwear from finished leather, fabric, rubber and their variants and shall include other similar products such as belts, purses, bags, suit-cases, brief cases etc. but shall not include the processing and tanning of leather and its variants;
- XLVIII. "Foundation" means a part of a structure which is below the lower most floor and which provides support for superstructure and which transmit load of the superstructure to the bearing surface;



- XLIX. "framed building" means a building where the dead load and superimposed load are transferred to foundation through framed members with rigid joints, which may be of R.C.C., pre-stressed concrete, steel, timber, or the like, such members at the transfer of loads being not only experienced with directional stress but also bending stress and sheer stress as well;
  - I. "Front" as applied to a building shall mean generally the portion facing the street from which it has access and in case of doubt as determined by the Competent Authority;
  - "Garage" shall mean a building or portion thereof used or intended to be used for shelter, storage or parking of a wheeled vehicle;
  - III. "Geo-technical Engineer" shall mean a person who having a minimum bachelors degree in civil or construction engineering from a recognized university, institute or an equivalent engineering qualification recognized by the Government and Post Graduation Degree in Foundation / Geo-technical Engineering with not less than five years' experience in soil investigation work and formulation of basis for design and construction of different types of foundation;
  - IV. 'Green Building' means a structure created by using processes that are environmentally responsible and resource-efficient throughout a building's life-cycle i.e. from design, construction, operation, maintenance, renovation, and demolition. The same should be certified by the designated authorities or agencies notified by Municipal Affairs Department, Government of West Bengal;
  - V. "Ground coverage" is the percentage of the largest covered area as per roof plan of building/buildings against the area of the plot including the area of the water bodies, if any, within the plot;

- VI. "Government" means the Government of West Bengal
- VII. "ground level" means the level at a height of 15 cm above the average level of the centre line of the street or passage to which the plot abuts;
- VIII. "Group housing" means a building designed and developed in the form of flats for residential purpose or any building ancillary to group housing;
- IX. "Habitable room" means a room occupied or designed for occupancy by one or more persons for study, living, sleeping, eating, 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.



X. "height of a building" shall mean vertical distance measured from the ground level, as defined in VII, to the highest point of the building, in case of flat roofs and in the case of sloped roofs, the mid-point between the eave's level and the ridge;

Note.—for hill areas, the vertical distance shall be measured from the lowest floor level instead of average ground level as applicable in case of plains;

- XI. "integrated commercial complex" means building containing apartments sharing common services and facilities and having their undivided share in the land and meant to be used for office or for practicing of any profession or for carrying on any occupation, trade, business or such other type of independent use as may be prescribed;
- XII. "layout plan" means a plan of the entire site showing location of plots/ building blocks, roads, open spaces, entry/ exit, parking, landscaping etc. indicating activity of all land or partial;
- XIII. "ledge or tand" means a shelf-like projection, supported in any manner except by means of vertical supports within a room itself but not having projection wider than 0.75 m., to be used only as storage space;
  - i. "load" includes, -
    - a. 'dead load' i.e. weight of all permanent stationary construction becoming a part of the structure; and
    - b. 'live load' i.e. all load except dead load that may be imposed on a structure including wind loads shall be considered as live upon it;
  - ii. "loft" means an intermediary floor between two floors or a residual space in a pitched roof above normal floor level which is constructed or adopted for storage purposes;
  - iii. "Material change of use" shall mean a change from one class building to another;
  - iv. "Mean level of street" means the average level of all points on the surface of the street from which the site derives its access measured at the centre line of street;
  - v. "mezzanine floor" means an intermediate floor, between two floors, with area restricted to 1/2(half) of the area of the lower floor and with a minimum height of 2.3 metres and shall not be lower than 2.3 metres above floor level;
  - vi. "mumti" means a small structure erected on the roof of a building to protect such staircase from weather;
  - vii. "non-nuisance professional consultancy services" shall include Doctors (without nursing home), Lawyers, Tax Consultants, Architects & Town Planners (without studio), Contractor Consultants, Chartered Accountants, Company Secretaries,



Property Consultants, Ayurvedic and Homeopathic Practitioner, Psychiatrist, Clinical Psychologist and Tourist Guides;

- viii. "occupancy" means the main purpose for which a building or a part of building is used or intended to be used;
- ix. "open space" means a space forming an integral part of the plot left open to sky;
- x. "parapet" means a low wall built along the edge of a roof or a floor not more than 1.2 metre in height;
- xi. "parking" means a space enclosed or unenclosed, to park vehicles together with a driveway connecting the parking space with a street permitting ingress and egress of the vehicles;
- xii. "partition" means a wall which bears no load other than its own weight;
- xiii. "party wall" means a common wall partly constructed on the plot of land, and partly on the adjoining plot and serving both structurally or otherwise;
- xiv. "plinth" means the portion or structure between the surface of the surrounding ground and surface of the floor immediately above the ground;
- xv. "plinth area" means the built up covered area measured at floor level on the basement or of any storey;
- xvi. "plinth height" means the level of ground floor above the street level surface of the surrounding ground and surface of the floor immediately above the ground;
- xvii. "plinth level" means the level of the ground floor of building;
- xviii. "plot" means piece of land or site enclosed by definite boundaries;
- xix. "porch" means a covered surface supported on pillars or otherwise for the purpose of pedestrian or vehicular approach to a building.
- xx. "premises" means messuages, buildings, land easements and hereditament of any tenure;
- xxi. "Proof consultant" shall be a person / Engineering Organisation possessing qualification, adequate knowledge & experience, credentials in Structural Engineering activities. The persons dealing with the work should have postgraduate qualification in structural engineering with ten years experience in structural design and evaluation thereof, for multi-storeyed and specialized structure, and/ or an institute of the following type, employed for evaluation/checking of the structural design of the buildings referred to in the relevant Form 3 or 4 (Please see Appendix "A"): -



- a. Institute of Structural Engineers (India)
- b. Central Building Research Institute, Roorkee
- c. Various engineering institutes, like
  - i. Indian Institute of Technology;
  - j. National Institute of Technology;
  - k. Any other institute of repute;
- i. "public sewer" means a sewer line owned and maintained by Competent Authority of the Corporation for carrying out the sewage;
- ii. "public street" means any street heretofore leveled, paved, metalled, channeled, sewered or repaired out of Corporation or other public funds, unless before such work was carried out, there was an agreement with the proprietor that the street shall not thereby become a public street, or unless such work was done without the implied or express consent of the proprietor.
- iii. "rainwater pipe" means a pipe or drain used or constructed to be used solely for carrying off rain water directly from roof surfaces;
- iv. "Rear" as applied to a building means that portion which is on the opposite side of the 'front';
- v. "self-certification" means seeking approval of building plans duly prepared and certified by Architect as per relevant building Regulations, zoning plan and as per parameters/ policies issued by the Competent Authority of the Corporation from time to time;
- vi. "Service floor" means the floor of a building with maximum height of 2.4 metres, where service equipment, utility lines and various machinery are located;
- vii. "setback" means a line usually parallel to the plot boundary as laid down in each case by the Competent Authority of the Corporation beyond which nothing can be constructed towards the plot boundary unless specifically allowed by Competent Authority;
- viii. "site" same as "plot" defined in this regulations.
- ix. "site plan" means 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 this building Regulations;
- x. "Storage tank" means a tank or a cistern for storage of water which is connected to water main by means of a supply pipe;
- xi. "storey" mean 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;
- xii. "Stilt" means poles, posts or pillars or columns used to allow a structure or building to stand at a distance above the ground;



- xiii. "Street line" means the line defining the side limits of a street;
- xiv. "Structural Engineer" means a person who is a graduate in Civil Engineering of a recognized Indian or Foreign University or Corporate Member of Civil Engineering Division of the Institute of Engineers of India or equivalent Institute with a minimum of three years experience in structural engineering practice in designing structures and field work and/ or registered as such with the local development / Municipal /Corporation Authority/Authorities, employed for preparation of the structural design for residential and commercial buildings up to 14.5 metres height. However, only the Structural Engineer possessing **post graduate qualification** in structural engineering along with a minimum of three years experience in the design of multi storey and specialized structure, and/or registered as such with local development / Municipal /Corporation Authority/Authorities, shall be employed to undertake and submit the structural design of buildings **other than residential and commercial buildings** up to 14.5 metres height.

xv. "Structural wall" means a load bearing wall or wall that carries load in addition to its own load;

- xvi. "sub-soil drain" mean a drain used or constructed to be used solely for conveying to any sewer (either directly or through another drain) any water that may percolate, through the subsoil;
- xvii. "sun-shade" means a slope or horizontal or vertical structure over hanging, usually provided over openings on external wall to provide protection from sun and rain and shall not be used for human habitation;
- xviii. "Temporary building" mean a building built of un-burnt bricks, burnt bricks Without mortar, corrugated iron, bamboo, thatch, wood, board or plywood but shall not include a building built of burnt bricks, cement blocks or stones laid in mortar;
- xix. "Town Planner" means a person holding valid Associate Membership of the Institute of Town Planners or Graduate or Post-Graduate Degree in Town and Country Planning from a recognized Indian or Foreign Institute/ University.
- xx. "verandah" means a covered area with at least one side open to the outside with the exception of 1.2 metre high parapet on the upper floors to be provided on the open side;
- xxi. "Water closet" means a privy with arrangement for flushing the pan with water. It does not include a bathroom;
- xxii. "zoning plan" mean the detailed layout plan of the Industrial Growth Centre / Park / Estate or a part thereof maintained in the office of the Competent Authority of the Corporation showing the sub division of plots, open spaces, streets and other features and in respect of each plot, permitted land use, building lines and restrictions with regard to use and development of each plot in addition to those laid down in the building Regulations,



# 2. Application for erection or re-erection of building

- Any person who intends to erect, re-erect or make alternation in any place in a building or demolish any building shall give notice in writing to the Competent Authority of the Corporation of his / her intention in the Form 1, accompanied by the following documents:-
  - Lease holding documents- viz. lease deed/ agreement to lease and possession certificate in the name of lease holder issued by the allotment authority or permission to use the land issued by Competent Authority;
  - ii. Up to date payment receipt clearing payment of user and other charges.
  - iii. a site plan as required by the Regulations ;
  - a building plan or plans along with an un-editable Compact Disc/ DVD or any other electronic medium permissible by the Competent Authority of the Corporation from time to time containing the drawings in ".DWG" format(saved in Auto CAD or lower Version) as required by the Regulations;
  - v. Drainage Plan showing proposed layout for drainage of both Storm and treated Septic Sewer along with water requirements computations.
  - vi. Water Supply Pipeline Network Layout & Water Storage Tanks for Fire & Essential Storage along with water requirements computations.
  - vii. Detailed Soil Test Report duly prepared and authorized by a Geo-technical Engineer recommending safe and stable load bearing capacity and slope stability analysis for desired construction work.
  - viii. Detailed Structural analysis and Design Calculations [STAAD / ETABS input and output files and complete design report in .pdf format (for record).
  - ix. details of specifications of the work to be executed in Form 2;
  - x. Structural drawings (for record);
  - xi. fire safety design as required under National Building Code or under West Bengal
     Fire Services Act, 1950, as applicable;
  - xii. Heating, Ventilation, Air-Conditioning (H.V.A.C.) service plan;
  - xiii. Certificate of conformity to regulation and structural safety for the relevant buildings (depending upon type and height) in the relevant Form 3 or 4;
  - xiv. Public health services plan in un-editable compact Disc/ DVD or any other electronic medium, containing drawings in ".DWG" format;
  - xv. Certificate for incorporation of Green Building Features in Form 15



ii. Scrutiny fees (non-refundable) at the rate of ten rupees per square metre of the covered area achieved shall be deposited in favour of WBIIDC as applicable through any prescribed payment mode. Service Tax as applicable to be paid in extra.

Note: The applicant shall submit all kind of plans in electronic format at the online portal of West Bengal e-district and as advised from time to time. The Competent Authority of the Corporation shall convey objections/ observations or sanction/ refusal through online portal or prescribed mode.

- 2) Every person applying for building plan approval shall appoint an Architect/ Engineer for drawing up of building plans/ structural drawings and for the supervision of erection or re-erection of the building. The supervision of erection or re-erection of Industrial or commercial building of low or medium risk classification may be undertaken either by the Architect or the Engineer. However, in case of buildings of high risk, the supervision shall be undertaken by both the Architect and the Engineer. During construction if appointed Architect/ Engineer notices that violation (except compoundable) are going on he shall intimate the lease holder and advise him to stop further construction and remove the violation. In addition he/they will also bear the responsibility to intimate to the concerned authority regarding the violation.
- 3) The applicant, the Architect and Engineer shall digitally sign the application, plans, structural drawings, specifications and the certificates as required in the relevant Forms and documents, before making submission to Competent Authority.
- 4) In case the building application is returned, it may be re-submitted within 60 days from the date of such return without fresh scrutiny fees. Such re-submission however may not be allowed more than two times in 60 days from the date of first return.

#### 4. Online receipt and approval.

- All functions performed under this building Regulations be performed through electronic Form.
- Without prejudice to the generality of sub-Regulations (1) above, include all or any of the followings:-
- I. receipt or acknowledgement of applications and payments;
- II. issue of approvals, orders or directions;
- III. scrutiny, enquiry or correspondence for approval of building plans or grant of occupation certificates, etc.;
- IV. filing of documents;



- V. issue of notices for recoveries;
- VI. maintenance of registers and records;
- VII. Any other function that the Competent Authority of the Corporation of the Corporation may deem fit in public interest.

#### 5. Preparation of building plans by Government Departments in specific

The Government Departments shall prepare the building plans of all Government buildings conforming to this building Regulations and shall issue a certificate specifying that the provisions of this building Regulations have been followed in all respects. Such plans with relevant documents shall be sent to the Competent Authority, for information and record before commencement of erection or re-erection of the building.

# 6. Constitution of Building Plan Approval Cell / Division

The Competent Authority of the Corporation shall constitute Building Plan Approval Cell for-

- I. Approval of building plans;
- II. Composition of violation of building plans;
- III. Grant of Occupation Certificate; and
- IV. Relevant other activities

The Corporation may also constitute any other Committee, as may deem proper in relation to Building Plan sanctioning activities.

#### 7. Size of drawing sheets and colouring of plans

1) The size of drawing sheets shall be any of those specified as below:

SI.	Sheet name	Sheet size (in mm)
1	A0	841 x 1189
2	A1	594 x 841
3	A2	420 x 594
4	A3	297 x 420
5	A4	210 x 297
6	A5	148x210

- 2) All dimensions in plan shall be indicated in metric units.
- 3) Various elements of plans (site and building), elevation, section and details shall be shown in different colors and thickness/ type of line, etc., and shall be preferably prepared in layers and as per BIS Code of Practice.
- 4) The prints of drawings shall be on one side of paper only.



The site plan to be submitted along with the application for seeking permission shall be drawn to a

scale of 1: 100 for plots up to 500 square metres in size and on a scale of 1:500 for plots above 500

square metres in size. The plan shall show as below:

- I. The boundaries of the site and any contiguous features.
- II. The position of the site in relation to neighboring street/ Plot.
- III. The names and width of the streets on which the building is proposed to be situated, if any.
- IV. All existing buildings standing on, over or under the site.
- V. 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 (i).
- VI. 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
- VII. The width of the street, in front, if any at the sides or rear of building.
- VIII. The direction of north point relative to the plan of the buildings.
- IX. Any existing physical features such as well, drains, trees, overhead/ underground electric supply lines including its capacity, etc.
- X. The site area of the property and the covered area on each floor along with its percentage covered to the total area of the site.
- XI. such other particulars as may be prescribed by the Competent Authority; and
- XII. Plot number or Mouza name, Dag no. etc., of the property on which the building is intended to be erected.

#### 9. Clearance zone for buildings near High Tension electrical line.

Building shall not be constructed within the clearance zone. The clearance zone shall be provided as per table below:

	Type of supply line	Horizontal clearance (in metres) (including both sides and from the center line of the tower)
а.	High voltage lines up to and including 11 KV.	11.50
b.	High voltage lines up to 11 KV and up to and including 33KV.	15.00
C.	High voltage lines up to 33 KV and up to and including 66KV.	18.00
d.	High voltage lines up to 66 KV and up to and including 132 KV	27.00
e.	High voltage lines up to 132 KV and up to and including 220 KV	35.00
f.	High voltage lines up to 220 KV and up to and including 440 KV	52.00

No building shall be allowed to be erected or re-erected, or any additions or alterations made to



the existing building, unless the following minimum clearances are provided from the overhead electric supply lines:

SI.	Type of Supply Line	Voltage	Cle	arance
No.			Vertical [meter]	Horizontal, Meter]
1	Low and medium		2.5	1.2
	voltage			
2	High voltage	Up to and including 11KV	3.7	1.2
3	High voltage	Above 11 kV up to and	3.7	2.0
		including 33 kV		
4	Extra high voltage		3.7( <i>see</i> Note)	2.0( <i>see</i> Note)

NOTE — for extra high voltage lines apart from the minimum clearances indicated, a vertical and horizontal clearance of 0.30 m for every additional kV or part thereof shall be provided.

# 10. Building Plan

- 1) The plans, elevations and sections of the building accompanying the notice with dimensions shall be drawn to a scale of:-
  - I. 1:50 for plots measuring upto 500 square metres;
  - II. 1:100 for plots measuring from 500 square metres to 1000 square metres;
  - III. 1:200 for plots measuring more than 1000 square metres.
- 2) These shall show:
  - the plans of all the floors including basements and all external elevations and cross sections illustrating distinctly all the different levels and minimum one section through stair case, water closet, bath, kitchen and garage;
  - II. the plinth level of the building with reference to the level of the mean level of street from where approach to the site is taken;
  - III. the schedule indicating the size of the doors, windows, openings and other methods of ventilation of each room/ area;
  - IV. the means of access to the buildings and to its various floors as well as the means of escape in case of fire, if required under the specific law/ Ac; along with ramps and steps with respect to the building;
  - V. in case of proposed additions and alterations in the existing building, all new works shall be shown on the drawings in distinctive colours along with index;
  - VI. the method of disposal of waste water, sewage, storm water and water supply in detail;
  - VII. provision for Solid Waste Management as per regulations
  - VIII. provision of Fire Protection as per regulations



- IX. provision of rain water harvesting system as per regulations
- X. provision for photo voltaic solar power plant as per regulations
- XI. provision of arrangements following Energy Conservation Building Code
- XII. provision for differently-abled person as per Regulations

#### 11. Validity of building plan application

All building plan application submitted under the Regulation shall be considered valid, only if it is made on the prescribed Form and is accompanied with the requisite number of plans and documents, along with scrutiny fee and other charges (as prescribed by the Competent Authority). In case of non- compliance, the application together with plans and documents shall be returned to the applicant for resubmission in accordance with these Regulations.

#### 12. Scrutinizing and sanction of building plan

- The Competent Authority of the Corporation shall constitute such Cell/Division for the purpose specified in Regulations, for scrutiny of applications received as specified under Regulations 3 and for submission of recommendations for sanction/ refusal of such applications.
- The Committee shall consist of officer/ official as decided by the Competent Authority of the Corporation and shall meet every week;
- 3) The recommendations of the Cell/Division shall be forwarded to the Competent Authority of the Corporation for consideration and approval, with or without change.
- 4) The committee or any officer authorized shall pass on order and convey the decision of sanction or rejection in Form 5.

#### 13. Validity of sanctioned plans

- 1) Every sanction for the erection or re-erection of any building shall remain valid for two years s from the date of sanction.
- 2) If a building is not completed within two years of the date of permission, the sanction will be deemed to have lapsed with respect to that portion of the building which has not been completed. In regard to the incomplete portion of a building, a fresh application shall be submitted in accordance with Regulations and prescribed scrutiny fee.
- 3) Temporary structures: No temporary structure will be allowed to be constructed within the area except with the prior written permission of the WBIIDC. Such temporary structures as are put up with prior written permission of the WBIIDC shall be removed on the expiry of the period for which permission is granted.

#### 14. Re-validation of building plans



After sanction of building plan, in case the construction could not be started within two years or has been started but could not be completed within the stipulated period, the lease holder/ applicant may apply for the revalidation of building plans (for once only) for further 6(six) months period, before the sanction has lapsed simply by submitting revalidation fee @ Rs 10/- (rupees ten only) per square metre for the proposed covered area requesting for re-validation. Fresh application submitting all documents and requisite fees as per regulation to made before the Corporation for further validation / approval of building plan beyond 2½ years period and in situation when revalidation application has not been made within due date. Under such circumstances the Corporation shall apply discretionary approval power evaluating feasibility of execution of the project proposed by the applicant.

#### 15. Deemed sanction

The Competent Authority of the Corporation of the Corporation shall pass an order within a period of 60 (sixty) days of submission of building plans, accompanied by all necessary documents as mentioned in Regulations, either sanctioning or rejecting it. The building plan shall be deemed to be sanctioned, if it is in conformity with building Regulations and in accordance with the permitted land use of the area and all leviable fee/ charges have been deposited by the applicant but no orders have been passed by the Competent Authority of the Corporation within the specified time.

#### 16. Submission of revised building plans during the validity period of sanction

- 1) If during the construction of a building, any deviation from the sanctioned plan is intended to be made, approval of the Competent Authority of the Corporation for the same shall be obtained before the change is made. The revised plan showing the deviations shall be submitted and the procedure laid down for the sanction of building plan as stated in Regulations, shall be followed for all revised plans, along with the depositing balance scrutiny fee, if any.
- 2) Any notice and building approval is not necessary for compoundable alterations/ violations, which do not otherwise violate any provisions regarding general building requirements, structural stability and fire safety requirements of this building Regulations.

#### 17. Revocation of sanction

The buildings are to be erected on the plot in total conformity with the approved plan. No factory building will be allowed to be constructed within the area earmarked for residential purposes and similarly no building/portion of building can be provisioned for residential accommodation within factory premises unless otherwise mentioned in this regulation. No construction of religious structures such as the temples and shrine within the factory premises is allowed under this regulation.



No tube wells, bore wells or open wells will be constructed by the plot holders without the written permission from the WBIIDC.

The sanction granted under Regulation can be revoked by the Competent Authority, if it is found that such sanction has been obtained by the lease holder by misrepresentation of material facts or fraudulent document submitted along with the building plan application or otherwise, the construction is not being done in accordance with the sanction granted and debarred construction activity/activities has/have been undertaken.

#### 18. Maintenance of E-Register for sanction /Registration of Building Plans

An online E-register shall be maintained for all building applications received, permissions given or deemed to have been given or refused or returned under this Regulations. The said register shall be available online to public for inspection at Corporation's website [www.ebiidc.org].

#### 19. Notice of commencement of work

A person, who has been given permission under these Regulations and intends to commence the erection or re-erection, shall give a notice of not less than 15 days at which the erection or re-erection of the building shall commence, in writing to the Competent Authority of the Corporation or to the authorized officer in this behalf in Form 6.

#### 20. Presentation of Certificate for Construction up to Plinth Level

The lease holder shall submit a certification from Architect and / or Engineer that the construction of building up to Plinth level is as per sanctioned plan in the Form 7. The Competent Authority of the Corporation shall verify the certification and shall issue consent/ comments within 15 days of receiving the certification in the Form 8. The Plinth Level Construction certificate shall be deemed to accepted, if it is in conformity with Regulations, but no consent/ comments have been passed by Competent Authority of the Corporation within specified time.

#### 21. Occupation Certificate

- Every person who intends to occupy such a building or part thereof shall apply for the occupation certificate in Form 9 or 11, which shall be accompanied by certificates in relevant Form 10 or Form 12 duly signed by the Architect and/ or the Engineer and along with following documents:
  - Complete Completion drawings or as-built drawings in soft(.dwg format saved in Auto CAD 2010 or lower version) and hard( duplicate) copies.



- II. Colored Photographs in duplicate of front, side, rear setbacks, front and rear elevation of the building shall be submitted along with photographs of essential areas like cut outs and shafts from the roof top. An un-editable compact disc/ DVD/ any other electronic media containing all photographs shall also be submitted.
- III. Completion certificate from Bureau of Energy Efficiency (BEE) Certified Energy Auditor for installation of Rooftop Solar Photo Voltaic Power Plant in accordance to orders/ policies issued by the Renewable Energy Department from time to time.
- 2) No leaseholder/ applicant shall occupy or allow any other person to occupy new building or part of a new building or any portion whatsoever, until such building or part thereof has been certified by the Competent Authority of the Corporation or by any officer authorized by him in this behalf as having been completed in accordance with the permission granted and an 'Occupation Certificate' has been issued in Form 13. Further, permission for permanent water, sewer and electricity connection will be released only after issuance of said occupation certificate by the Competent Authority.
- 3) The 'Occupation Certificate' shall be issued on the basis of parameters mentioned below:-
  - Minimum 25% of total permissible ground coverage, excluding ancillary zone, shall be essential for issue of occupation certificate for the first time or as specified by the Corporation from time to time.
  - II. The debris and rubbish consequent upon the construction has been cleared from the site and its surroundings.
- 4) After receipt of application, the Competent Authority of the Corporation shall communicate in writing within 60 days, his decision for grant/ refusal of such permission for occupation of the building in Form 13. The E-register will be maintained as specified in Regulations-for maintaining record in respect of Occupation Certificate.
- 5) If no communication is received from the Competent Authority of the Corporation within 60 days of submitting the application for "Occupation Certificate", the leaseholder is permitted to occupy building, considering deemed issuance of "Occupation certificate" and the application Form 9 or 11 shall act as "Occupation Certificate". However, the Competent Authority of the Corporation may check the violations made by the lease holder and take suitable action which may include demolition of unauthorized works,



sealing of premises, prosecution and criminal proceeding against the offender in pursuance of relevant laws in force.

6) If the lease holder or Architect or Engineer or Consultant as mentioned in Regulations as the case may be, submits a wrong report while making application under this Regulations or if any additional construction or violation is reported to exist at site or has concealed any fact or made wrong representation regarding completion of construction of building along with its eligibility for seeking occupation certificate or before the completion of such report, he shall be jointly and severally held responsible for such omission and complaint against the Architect/Engineer for suspension of his registration and black listing will be made and the lease holder shall be liable to pay for the penalty as may be decided by the Competent Authority of the Corporation after giving an opportunity of hearing. Further, if it is emerged that the information is concealed by Engineer/ Consultant/ Lease holder, necessary penal proceedings will be initiated along with debarring Engineer/ Consultant/ Architect from practicing in the State of West Bengal.

#### 22. Revocation of Occupation certificate

In case, after the issuance of occupation certificate, if found at any stage that the building is used for some other purpose against the permission or make any addition/ alteration in the building then, after affording personal hearing to the lease holder, the Competent Authority of the Corporation may pass orders for revocation of occupation permission and the same shall be restored only after removal of violations.

#### 23. Risk based classification of building applications

Building classifications and assessment is important for determining the frequency and scope of inspections. Not all buildings face the same risks. The Risk based Classification for Buildings has been made on following considerations:

a. Use & Physical Features of Building

The buildings have been divided into High Risk, Medium Risk and Low Risk based on various parameters like fire safety, height of the building, floor area, venerability to Natural Disaster and Slope.

#### b. Degree of Skill Competence of Design & Inspection Team

Risk based classification of Building is also attached to the experience of design and building team, Inspection Mechanisms clearly identifying the body which will conduct which type of inspection at what stage of the buildings.



RISK MATRIX WITH VARIOUS PARAMETERS				
parameters	Risk Levels			
	Low Risk	Medium Risk	High Risk	
Building	Low hazard	moderate hazard	High hazard Occupancies	
Classification	Occupancies as	Occupancies as defined in	as defined in NBC-2005,	
	defined in NBC-	NBC-2005, Part 4, Annex-B	Part 4, Annex-B & closed	
	2005, Part 4, Annex	& Open assembly building	assembly building	
	-B & non- assembly			
	building			
Height of Building	Below 14.50 meter	Below 14.50 meter	14.50 meter and above	
Floor Area	Covered area on	Covered area on each	Covered area on each	
	each floor less than	floor more than 350 Sq.	floor more than 500 Sq.	
	350 Sq. meter for	meter and less than 500	meter for all	
	all non-residential	Sq. meter for all	non-residential buildings.	
	and residential	non-residential buildings.		
	buildings.			
Slope	Less than equal to	Greater than 10 degrees &	26.5 degrees and above	
	10 degrees	less than 26.5 degrees		
Experience of the	Practitioners	Practitioners designing	Practitioners designing	
Design & Building	designing and	and constructing the	and constructing the	
Team	constructing the	building have been	building have no previous	
	building have been	involved with and	experience relating to the	
	involved with more	completed fewer than	proposed classification of	
	than 3(three)	3(three) buildings of the	building type.	
	buildings of the	same classification.		
	same classification.			

A risk matrix forms part of the guidelines and complement the Risk-based approach to inspections.

All the parameters shall be assessed separately to classify the building low, medium or high risk in that particular parameter and the overall risk category of the building will be determined on the basis of the highest risk category for any parameter. The inspection shall be done specifically for the identified risk nature.

In addition to above Risk Based Classification, the Concerned Authority will further determine whether the location of the plot is faced by any of the known risks in terms of Natural Disasters like flood, bushfire, earthquake zone 4/5, landslide, contaminated land, cyclone, landslide, avalanche, soil liquefaction etc. and take necessary corrective action to reduce such risks by either requesting modification from the application in their submitted building plan or rejecting the application, in case the incidence of any such risk is very high.



In consideration of the parameters, the building plan will be sanctioned as per procedure detailed in paragraphs under "Application for erection or re-erection of building".

# 24. Requirement of Climate Resilient Construction: Integration of Environmental Clearance conditions with Building Permission

Land, Air, Noise, Water, Energy, Biological/ Socio-Economic factors, 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 construction process to ensure compliance to various conditions laid down by the Ministry of Environment, Forest & Climate Change (MoEF & CC).

The building construction sector is one of the major contributors towards carbon footprints which affect climate change. India is committed towards mitigating the effects of climate change and moving towards internationally accepted norms for environment friendly building construction. Currently, this objective of environmental safeguard is achieved through obtaining Environment Clearance (EC) for any construction project having built up area (BUA) more than 20,000 sqm from the State Environment Impact Assessment Authority (SEIAA) designated by MoEF &CC for the States/UTs. This is administered under notification of MoEF &CC. With rapid urbanization and growth of Indian economy, it is anticipated that the construction activities will experience a rapid growth. Government is committed towards streamlining the clearances for buildings and real estate sector and empowering the urban local bodies with an objective of 'Ease of Doing Business'.

MoEF & CC has now decided to integrate the environmental safeguards into building plan approval process and to empower the concerned local body to examine, stipulate and ensure compliance of the environmental requirements in their respective areas. The environmental conditions required to be met by the buildings have been classified in the following 3(three) categories based on the total BUA of the building:

- i. Category 'A' buildings: BUA above 5,000 sqm and up to 20,000 sqm
- ii. Category 'B' buildings: BUA above 20,000 sqm and up to 50,000 sqm
- iii. Category 'C' buildings: BUA above 50,000 sqm and up to 1,50,000 sqm

WBIIDC shall approve the building plans by ensuring that stipulated conditions for the respective categories of buildings are met. No separate Environment Clearance (EC) will be required in these cases.



#### **Environmental conditions for sanctioning Building Plans**

For building plans with a total built-up area (BUA) between 5,000 sqm and 1,50,000 sqm, no separate environment clearance will be required provided that the integration of environmental conditions, and thus considering exemption from the requirement of separate environment clearance has been approved and notified by MoEF &CC.

For building plans under three categories of projects with built up area between 5,000 -20,000 sqm, 20,000 - 50,000 sqm and 50,000 - 1,50,000 sqm, different set of environmental conditions are being integrated in the building permission conditions to address environmental concerns.

After the MoEF&CC Notification, as referred above, WBIIDC, which is authorized to sanction building plans, shall ensure at the time of sanctioning a building plan that the environmental requirements stipulated in Tables below for BUA above 5,000 sqm and up to 20,000 sqm, for BUA above 20,000 sqm and up to 50,000 sqm) and for BUA above 50,000 sqm and up to 1,50,000 sqm, as the case may be, are complied with.

SI. No.	Medium	Environmental conditions
1	Natural Drainage	The inlet and outlet point of natural drain system should be maintained with adequate size of channel for ensuring unrestricted flow of water.
2	Water conservations – Rain Water Harvesting and Ground Water Recharge	A rain water harvesting plan needs to be designed where the recharge bores (minimum one per 5,000 sqm of built-up area) shall be provided. The rain water harvested should be stored in tank for reuse in household through a provision of separate water tank and pipeline to avoid mixing with potable water supply. The excess rainwater harvested should be linked to the tube well bore in the premise through a pipeline after filtering arrangement of the rain water.
2(a)		The unpaved area shall be more than or equal to 20% of the recreational open spaces.
3	Solid Waste Management	Separate wet and dry bins must be provided at the ground level for facilitating segregation of waste.
4	Energy	In common areas, LED/ solar lights must be provided.
5	Air Quality and Noise	Dust, smoke and debris prevention measures such as 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.

#### Conditions for Built-Up Area above 5000 sqm and up to 20,000 sqm



5(a)		The exhaust pipe of the DG set, if installed, must be minimum 10m away from the building. In case it is less than 10m away, the exhaust pipe shall be taken up to 3m above the building.
6	Green cover	A minimum of 1 tree for every 80 sqm 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.

# Conditions for Built-Up Area above 20,000 sqm and upto 50,000 sqm

SI. No.	Medium	Environmental conditions
1	Natural Drainage	The inlet and outlet point of natural drain system should be maintained with adequate size of channel for ensuring unrestricted flow of water.
2	Water conservations – Rain Water Harvesting and Ground Water Recharge	A rain water harvesting plan needs to be designed where the recharge bores (minimum one per 5,000 sqm of built-up area) shall be provided. The rain water harvested should be stored in tank for reuse in household through a provision of separate water tank and pipeline to avoid mixing with potable water supply. The excess rainwater harvested should be linked to the tube well bore in the premise through a pipeline after filtering arrangement of the rain water.
2(a)		The unpaved area shall be more than or equal to 20% of the recreational open spaces.
3	Solid Waste Management	Separate wet and dry bins must be provided at the ground level for facilitating segregation of waste.
4	Energy	In common areas, LED/ solar lights must be provided.
4(a)		At least 1% of connected applied load generated from renewable energy source such as photovoltaic cells or wind mills or hybrid should be provided.
4(b)		As per the provisions of the Ministry of New and enewable energy solar water heater of minimum capacity 10 litres/4 persons (2.5 litres per capita) shall be installed.
4(c)		Use of fly ash bricks: Fly ash should be used as building material in the construction as per the provisions of Fly Ash Notification of September, 1999 and as amended from time to time.
5	Air Quality and Noise	Dust, smoke and debris prevention measures such as 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.
5(a)		The exhaust pipe of the DG set, if installed, must be minimum 10m away from the building. In case it is less



		than 10m away, the exhaust pipe shall be taken up to 3m above the building.
6	Green cover	A minimum of 1 tree for every 80 sqm 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.

# Conditions for Built-Up Area above 50,000 sqm and upto 1,50,000 sqm

SI. No.	Medium	Environmental conditions	
1	Natural Drainage	The inlet and outlet point of natural drain system should be maintained with adequate size of channel for ensuring unrestricted flow of water.	
2	Water conservations – Rain Water Harvesting and Ground Water Recharge	A rain water harvesting plan needs to be designed where the recharge bores (minimum one per 5,000 sqm of built-up area) shall be provided. The rain water harvested should be stored in tank for reuse in household through a provision of separate water tank and pipeline to avoid mixing with potable water supply. The excess rainwater harvested should be linked to the tube well bore in the premise through a pipeline after filtering arrangement of the rain water.	
2(a)		The unpaved area shall be more than or equal to 20% of the recreational open spaces.	
2(b)		The ground water shall not be withdrawn without approval from the competent authority.	
2(c)		Use of potable water in construction should be minimized.	
2(d)		Low flow fixtures and sensors must be used to promote water conservation.	
2(e)		Separation of grey and black water should be done by the use of dual plumbing system.	
3	Solid Waste Management	Separate wet and dry bins must be provided at the ground level for facilitating segregation of waste.	
3(a)		All non-biodegradable waste shall be handed over to authorized recyclers for which a written tie-up must be done with the authorized recyclers.	
3b)		Organic waste composter/ vermiculture pit with a minimum capacity of 0.3 Kg/tenement/day must be installed wherein the STP sludge may be used to be converted to manure which could be used at the site or handed over to authorized recyclers for which a written tie-up must be done with the authorized recyclers.	
4	Energy	In common areas, LED/ solar lights must be provided.	
4(a)		At least 1% of connected applied load generated from renewable energy source such as photovoltaic cells or wind	



		mills or hybrid should be provided.	
4(b)		As per the provisions of the Ministry of New and enewable	
		energy solar water heater of minimum capacity 10 litres/4	
		persons (2.5 litres per capita) shall be installed.	
4(c)		Use of fly ash bricks: Fly ash should be used as building	
		material in the construction as per the provisions of Fly Ash	
		Notification of September, 1999 and as amended from time	
		to time	
4(d)		Use of concept of passive solar design of buildings using	
.()		architectural design approaches that minimize energy	
		consumption in buildings by integrating conventional	
		energy-efficient devices, such as mechanical and electric	
		pumps, fans, lighting fixtures and other equipment, with the	
		passive design elements, such as building orientation,	
		landscaping, efficient building envelope, appropriate	
		fenestration, increased day lighting design and thermal mass.	
4(e)		Optimize use of energy systems in buildings that should	
		maintain a specific indoor environment conducive to the	
		functional requirements of the building by following	
		mandatory compliance measures (for all applicable buildings)	
		as recommended in the Energy Conservation Building Code	
		(ECBC) 2007 of the Bureau of Energy Efficiency, Government	
		of India.	
5	Air Quality and Noise	Dust, smoke and debris prevention measures such as	
		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.	
5(a)		The exhaust pipe of the DG set, if installed, must be	
		minimum 10m away from the building. In case it is less than	
		10m away, the exhaust pipe shall be taken up to 3m above	
		the building.	
6	Green cover	A minimum of 1 tree for every 80 sqm 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.	
7	Sewage Treatment	Sewage treatment plant with capacity of treating 100%	
	Plant	waste water shall be installed. Treated water must be	
		recycled for gardening and flushing.	
8	Environment	The environment infrastructure like Sewage Treatment Plant,	
	Management Plan	Landscaping, Rain Water Harvesting, Power backup for	
	-	environment, Infrastructure, Environment Monitoring, Solid	
		Waste Management and Solar and Energy conservation,	
		should be kept operational through Environment Monitoring	
		Committee with defined functions and responsibility.	



#### **Development Code for Site Planning**

#### 25. Use of site, type and character of building

- Type and character of building, including ancillary buildings, that may be erected or re-erected on a site and the purpose for which these may be used shall not be other than that shown in the Development Plan or the approved layout plan or sector plan or zoning plan of the Industrial Growth Centre / Park. Estate.
- 2) Where the site does not form part of such layout or sector plan or zoning plan, the use shall be in conformity with the use of the surrounding area, or use prescribed in development plan and the decision of the Competent Authority of the Corporation shall be final in this respect.
- 3) Every building that may be erected or re-erected on site shall, in addition to other limits under this Regulation, where it is silent, shall comply with the provisions made in the National Building Code of India, Indian Standard Code of Practice of Bureau of Indian Standards and relevant standard practices as mentioned in "short title, extent and commencement section of this regulation.

#### 26. Residential accommodation for essential staffs :

The leaseholders may be allowed residential accommodation for the essential staffs with in allotted premises according to the following standards:-

Area of plot	Number of residential tenements allowed	Remarks
Up to 4,000 sqm.	One	No separate structure but only as part of the building
Between 4,000 sqm. to 20,000 sqm.	Two	Separate structure may be allowed.
Above 20,000 sqm.	Two	Separate structure may be allowed.

The total covered area of the residential units shall not exceed 5 %( five percent) of the area of the plot. However total covered area including such residential covered area must not exceed the limit of maximum allowable ground coverage.

#### **27.** Temporary structures :

No temporary structure will be allowed to be constructed within the area except with the prior written permission of the WBIIDC. Such temporary structures as are put up with prior written permission of the WBIIDC shall be removed on the expiry of the period for which permission is granted.



#### 28. Approaches to factories :

Necessary approach road from the main roads to be constructed by the Leaseholder and cross drainage structures of approved design with suitable clearances for cleaning & maintenance of drainage lines to be constructed with span pipes of diameter not less than 60 centimeter or R.C.C. slab of minimum clear span of 60 centimeters.

#### 29. Treatment of industrial effluents :

Each and every individual leaseholder will have to arrange for treatment of industrial effluent within the said plot in order to make the effluent harmless.

#### 30. Not to sink any well/tube well on the said land:

No tube wells, bore wells or open wells will be constructed by the plot holders without the written permission from the WBIIDC.

#### 31. Underground Water Reservoir of Sufficient Capacity to be built

Water from WBIIDC's pipeline network will be supplied to underground reservoir of the leaseholder by free fall only. Thus water reservoir of appropriate capacity for fire and essential storage to be built within the premises of the leaseholder.

#### **32. DEVELOPMENT CODES**

The provisions contained in Master Plan/Zonal Plan/Development Code or as per the Urban and Regional Development Plan Formulation and Implementation [URDPFI] Guidelines, 2014 shall apply and where these are silent on such issues or which require interpretation the norms as decided by the Authority, shall apply. The provisions include but are not limited to the use/ activity of premises, ground coverage, FAR, setbacks, open space, height, density and number of dwelling units and parking standards for Residential premises on plotted development, Group housing, Resettlement colonies, Slums, In-situ up-gradation, Non-residential premises The permission of uses/use activities in use premises shall permitted in accordance with provisions of Master Plan/Zonal Plan/ Local Area Plan/ Layout Plan. The object of these regulations is to provide control for building/buildings within use premises excluding the internal arrangement, which is covered and controlled by Building Bye-Laws.

#### Notes:

The premises for which building regulations have not been given shall be examined by the Authority on the basis of actual requirements and other relevant factors.

*i)* Wherever there is a need for relaxation in height for achieving urban Form, the same may be permitted with the recommendation of the Authority.

*ii)* The provision of minimum setbacks for different sizes of plots for all categories of the plots shall be as per the Master Plan/Development Plan or as per simplified Development Promotion



Regulations of the Urban and Regional Development Plans Formulation and Implementation (URDPFI) Guidelines.

#### **Flexible FAR**

#### a. Additional FAR

Provision of Additional FAR, as provided in the Master Plan may also be examined with a view to provide flexibility and also to utilize the scarce urban land optimally. Flexible range of FAR on a site may be based upon its Additional FAR Factor which is a product of 'creativity' and 'context'. Creativity can be defined by design parameters such as urban form, parking provision, pedestrian safety, concern for the poor through induced informal activities, and provisions for evacuation during an emergency due to disaster (for example, Delhi falls in the Zone 5). It also includes the impact of the design on essential services and environment. As a principle, the additional FAR should not result in a negative impact on the essential services and environment. Locational attributes, of the site being assigned additional FAR, refer to its location with respect to land use as given in the approved Master/Zonal/Layout Plan (as the case may be), accessibility, level of congestion on the approach road and nearness to a heritage building if any.

Additional FAR Factor	= Creativity x context
	= Design parameters x Locational attributes
	= <u>(a+b+c+d+e) m.n.o.p</u> x + y
Where,	<ul> <li>a = Parking provision value</li> <li>b = Disaster emergency provision value</li> <li>c = Urban Form value</li> <li>d = Pedestrian Safety value</li> <li>e = Induced informal activities value</li> <li>x = Impact on essential services value</li> <li>y = Impact on environment value</li> <li>m = Land Use value</li> <li>n = Accessibility (Right of way of the approach road) value</li> <li>o = Congestion (Mobility index in terms of travel speed) value</li> <li>p = Heritage Value</li> </ul>

#### b. Purchasable FAR

Provision of purchasable FAR in Group Housing, Commercial, Institutional, and Industrial, Sport and amusement complex, recreational greens and Low Density Sports plot may be considered, where:

- > The Plots exist on '24mtrs. and above' wide road.
- The construction has not started, or
- The allottee wants to construct a new additional building within the limits of permissible ground coverage, or



- > The allottee wants to construct new building on the vacant plot, or
- > The allottee has already constructed building within purchasable F.A.R limits, or
- Purchasable F.A.R may be allowed on minimum 18.0mtrs. road width and above road width for institutional and industrial use.
- Explanation: The Purchasable FAR shall be allowed up to the maximum limit of the applicable FAR in the Building Regulations.

#### Purchasable FAR may be allowed with the following provision/ conditions:

- No construction shall be allowed beyond the limit of maximum permissible ground Coverage.
- Parking facilities shall be provided within the plot as per the provisions of the building bylaws.
- No objection certificate from the Airport Authority of India/ Competent Authority shall be obtained for the height of the building.
- Structure design duly checked and verified by the I.I.T/ N.I.T./ Government Engineering College shall be submitted along with the proposal in case where additional floors are being proposed.
- No objection certificate for Fire Safety and Environmental Clearance shall be obtained from the Competent Authorities.
- Purchasable FAR shall be applicable only on the basis of assessment of planned and available physical infrastructure.
- ➤ Use of purchasable FAR shall be governed by the terms and conditions of lease deed.
- In case where purchasable FAR is allowed, the Authority shall permit increase in the height of building as per requirement.
- Additional proportionate residential units shall be allowed on purchasable FAR for Group Housing.

#### Note:

- (i) Purchasable FAR is an enabling provision. It shall not be allowed to any Allottee as a matter of right.
- (ii) With the consideration of Traffic density, conditions of approach road, availability of physical infrastructure, distance from the protected area and heritage sites or in the light of planning the Authority may identify the zones/ areas where purchasable FAR shall not be allowed.
- (iii) In case of mixed land use permitted in any pocket/plot:
  - a) Permissible FAR for various uses shall be as applicable for respective use including the purchasable FAR
  - b) The total FAR in the pocket/plot shall be subject to the overall permissible FAR for the pocket/plot.
  - c) Purchasable FAR shall be calculated on the basis of the FAR of the individual uses within that pocket/plot.

#### Floating FAR

The Authority shall allow development by restricting / regulating height of the building width of abutting road and plot sizes. This method is based on the carrying capacity analysis of the infrastructure planned. In keeping with the norm in the provision of infrastructure adjusted to the percentage, plot owners shall be permitted to use the additional FAR on payment basis.



# Basis for increasing FAR:

Carrying Capacity analysis tool is useful to rationalize fixation of FAR including increase in given FAR. Two major determining factors should be considered:

# 1. V/C (V= volume, C= capacity) :

V/C: optimum level is 0.8; it can be relaxed up to 0.9. Above 0.9 is dysfunctional and 1.0 is not desirable.

# 2. LPCD of piped water supply

The planned LPCD should be as per the minimum of norm i.e. 135 litres. However, the density is to

be capped by the Development/ Master Plan as per the threshold.

# *Note: Assignment of Values for flexible FAR and other calculations may be referred from* <u>urban</u> <u>and regional development plan formulation and implementation</u> [*URDPFI*] *Guidelines, 2014*

#### **Development Guidelines for Specific premises**

#### a) Guest House, Boarding House and Lodging House, Hostel

Minimum plot size	500 sq m
Maximum ground coverage	30%
Maximum floor area ratio	1.20
Maximum height	15 m
Other Controls:	

- I. Minimum right of Way (R/W) in front 20 m.
- II. Basement up to the building envelope to the maximum extent of 50% of plot area shall be allowed and if used for parking and services should not be counted in FAR.

#### b) Dharmshala, Baratghar, and Night Shelter

Minimum plot size	1000 sq m.
Maximum ground coverage	30%
Maximum floor area ratio	1.20
Maximum height	26 m
Other Controls:	

I. Minimum R/W in front 16 m

II. Basement up to the building envelope to the maximum extent of 50% plot area shall be allowed and if used for parking and services should not be counted in FAR.

#### c) Convenience Shopping

Maximum ground coverage	40%
Maximum floor area ratio	0.60
Maximum Height	15 m
In hills	6 m



# d) Local Shopping/ Neighborhood Shopping Centre

Maximum ground coverage	30%
In hills	35%
Maximum FAR	1.00
Maximum Heigh	t 15 m
In hills	9 m

#### e) Community Centre

Maximum ground coverage	25%
In hills	30%
Maximum FAR	1.00
Maximum Height	26 m
In hills	15 m

#### f) Wholesale Trade/Ware Housing/Integrated Freight complex

Maximum ground coverage	30%
Maximum floor area ratio	0.80
Maximum height	As per requirement
Other Controls:	

I. Basement up to the building envelope to the maximum extent of 50% plot area shall be allowed and if used for parking and services should not be counted in FAR.

#### g) Informal Bazaar/market

Maximum ground coverage	40%	
Maximum floor area ratio	0.40	
Maximum Height	8m	

#### h) Petrol Pumps

The following regulations are recommended for locating the petrol pump cum service stations:

- i. Minimum distance from the road intersections
  - a) For minor roads having less than 30 m. R/W 50 m.
  - b) For major roads having R/W 30 m. or more 100 m.
- ii. 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 m. R/W. In case of roads having 30 m. or more R/W, the R/W of the road should be protected.
- iii. Plot Size
  - a) Only filling stations 30 m. x 17 m. and small size 18 m. x 15 m. (for two and three wheelers)
  - b) Filling-cum-service station minimum size 36 m. x 30 m. and maximum 45 m. x 33 m.
  - c) Frontage of the plot should not be less than 30 m.
  - d) Longer side of the plot should be the frontage.
- iv. New Petrol Pump shall not be located on roads having less than 30 m. R/W.


## Other Controls:

- A. Filling-cum-service station size (36 m. x 30 m. and 45 m. x 33 m.)
  - (1) Ground coverage 20%
  - (2) FAR 0.20
  - (3) Max. Height 6 m
  - (4) Canopy Equivalent to permissible ground coverage within setback line.
  - (5) Front Setback Min. 6 m.
- B. Filling Station (size 30 mt. x 17 mt. and 18 mt. x 15 mt.)
  - Ground coverage 10%
    FAR 0.10
    Max. Height 6 m
    Canopy Equivalent to permissible ground coverage within setback line
    Front Setback Min. 3 m
- C. Other Regulations
  - I. Shall be approved by Explosives/Fire Deptt.
  - II. Ground coverage will exclude canopy area.
  - III. Mezzanine if provided will be counted in FAR
  - IV. Wherever the plot is more than 33 m. x 45 m. development norms shall be restricted to as applicable to the size i.e. 33 m. x 45 m. both in urban and rural areas.
- D. Compressed Natural Gas (CNG) Mother Station
- V. Plot Size (Max.) 36 m. x 30 m.
- VI. Maximum ground coverage 20%
- VII. Maximum Height 4.5 m. (single storey)
- VIII. Building Component Control room/office/Dispensing room, store, pantry and W.C.

## i) Hotels

Maximum ground coverage	40%
Maximum floor area ratio	3.00
In hills	1.75
Maximum height	as per requirement
Other Controls:	

- I. 5% of the FAR can be used the commercial space related to hotel function.
- II. Basement(s) up to the building envelope to the maximum extent of plot area shall be allowed and if used for parking and services should not be counted in FAR.

# j) Service Apartments

0%
.50
.50
s per requirement
mum scale of 2 ECS per 100 sq m. of floor area, including
asement.



# Industrial plots

# A. Flatted Group Industry and Service Centre

Minimum plot size	2000 sq m.
Maximum ground coverage	30%
Maximum floor area ratio	1.20
In hills	1.00
Maximum height	15 m
In hills	15 m
Other Controls:	

Basement up to the building envelope line to the maximum extent of 50% plot area shall be allowed and if used for parking and services should not be counted in FAR.

## B. Light and Service Industry

## **Development Controls on Service and Light Industrial Plots**

SI. No.	Plot Size (Sq m.)	Max. Ground Coverage	Maximum FAR in		Maximum Height in (m)	
			Plains	Hills	Plains	Hills
1	Less than 400	60%	1.25	1.00	12	9
2	Above 400 & up	50%	1.25	1.00	12	12
	to 4000					
3	Above 4000 &	45%	1.25	1.00	12	12
	up to 12000					
4	Above 12000	40%	1.00	0.75	12	9

## **Other Controls:**

- I. Maximum floors allowed shall be basement, ground floor and first floor; basement should be below ground floor and to the maximum extent of ground coverage shall be counted in FAR. In case the basement is not constructed, the permissible FAR can be achieved on the second floor.
- *II.* In case of roof trusses, height of buildings could be adjusted/relaxed.

## C. Extensive Industry

## Development Controls on Extensive Industrial Plots

SI. No.	Plot Size (Sq m.)	Max. Ground	Maximum FAR in		Maximum
		Coverage	Plains	Hills	Height in (m)
1	400 to 4000	50%	1.00	0.75	9
2	Above 4000 & up to 12000	45%	0.90	0.60	9
3	Above 12000 & up to 28000	40%	0.80	0.50	9
4	Above 28000	30%	0.60	0.45	9

## Other controls:

- *I.* Single Storey building with basement is allowed. Basement shall be below the ground floor and the maximum extent of ground coverage and shall be counted in FAR.
- *II.* In case of roof trusses, height of building could be adjusted / relaxed.

Notes:

*III.* A new planned industrial area to have minimum 100 to 300 sq.mtr size of plot and its width shall not be < 15 m.



- IV. For industrial plots up to 1000 sq.m, 5% of the total area shall be reserved as amenity open space which shall also serve as general parking space. When such amenity open space exceeds 1500 sq.m, the excess area could be utilized for construction of buildings for banks, canteen, welfare centre and such other common purposes.
- V. For industrial plots more than 1000 sq m, 10% of the total area to be reserved as amenity/ open space to a maximum of 25 sq. m.

## Height Limit

The height and number of storey shall be related to FAR and the provisions of open spaces around the plots.

Where a building height is not covered by this regulation the maximum height shall be limited according to the width of the street as follows:

- a) The maximum height of building shall not exceed 1.5 times the width of road abutting plus the front open space;
- b) If a building abuts on two or more streets of different widths, the building shall be deemed to face upon the street that has the greater width and the height of the building shall be regulated by the width of that street and may be continued to this height to a depth of 24 m along the narrower street subject to conformity of open spaces around the plot requirements; and
- c) For buildings in the vicinity of aerodromes, the maximum height of such buildings shall be decided in consultation with the Airports Authority of India who shall be responsible for issuing the no objection certificate. This shall be in accordance with the concerned notification of the Ministry of Civil Aviation, Govt of India.

## **Height Exemptions**

The following structures shall not be included in the height of building covered under Building Bye-Laws.

- I. Roof tanks and their supports not exceeding 1.8 m.
- II. Ventilating apparatus, air conditioning equipments and lift machine room(s) if required as per the specification of lift manufacturer and similar service equipments,
- III. Stair covered with mumty not exceeding 3.0 m in height.
- IV. Chimneys and parapet wall not exceeding 1.5 m in height
- V. Screen wall up to the height of 1.8 m.
- VI. Solar panel fixed on terrace



#### **MEANS OF ACCESS**

Every building/plot shall abut on a public/private means of access like streets/roads duly formed. Every person who erects a building shall not at any time erect or cause or permit to erect any building which in any way encroaches upon or diminishes the area set apart as means of access required in the regulation. No buildings shall be erected so as to deprive any other building of the means of access.

## Width of Means of Access

For all industrial buildings, theatres, cinema houses, assembly halls, stadia, educational buildings, markets, other buildings which attract large crowd, the means of access shall not be less than the following:

Width of Means of Access [m]	Length of Means of Access [m]
12.0	200
15.0	400
18.0	600
24.0	above 600

Further, in no case shall the means of access be lesser in width than the internal access-ways in layouts and subdivision.

## Access from Highways/Important Roads

No premises other than highway amenities like petrol pumps, motels, etc, shall have an access direct from highways and such other roads not less than 52 m in width, which the Authority with the approval of the Highway Authority shall specify from time to time. The Authority shall maintain a register of such roads which shall be open to public inspection at all times during office hours. The portion of such roads on which direct access may be permitted shall be as identified in the Development Plan. However, in the case of existing development on highways/other roads referred to above, the operation of this clause shall be exempted. These provisions shall, however, be subject to the provisions of the relevant State Highway Act, and National Highway Act.

For high rise buildings and buildings other than residential, the following additional provisions of means of access shall be ensured:

- a) The width of the main street on which the building abuts shall not be less than 12 m and one end of this street shall join another street not less than 12 m in width;
- b) The approach to the building and open spaces on all its sides shall be not less than 6 m in width and the layout for the same shall be done in consultation with the Chief Fire Officer Page | 40



of the city and the same shall be hard surface capable of taking the mass of fire engine, weighing up to 45 tonnes. The said open space shall be kept free of obstructions and shall be motorable.

c) The main entrance to the plot shall be of adequate width to allow easy access to the fire engine and in no case shall it measure less than 6 m. The entrance gate shall fold back against the compound wall of the premises, thus leaving the exterior accessway within the plot free for movement of fire service vehicle. If the main entrance at the boundary wall is built over, the minimum clearance shall be 4.5 m. A turning radius of 9 m shall be provided for fire tender movement.

## Requirements for fire engine movement

- a) Buildings having height more than 15 m above ground level shall necessarily be accessible by fire engine, as follows :
  - 1) For buildings having floor area less than 10 000 m2, fire engine shall have access to at least 1/3 of the perimeter of building.
  - 2) For buildings having floor area more than 10 000 m2, fire engine shall have an access to at least to 1/2 of the perimeter of building.
- b) Minimum 6.0 m driveway width and 9.0 m width at turning shall be available for fire engine movement.

## OPEN SPACES (WITHIN A PLOT)

## General

Every room intended for human habitation shall abut on an interior or exterior open space or an open VERANDAH open to such interior or exterior open space.

The open spaces inside and around a building have essentially to cater for the lighting and ventilation requirements of the rooms abutting such open spaces, and in the case of buildings abutting on streets in the front, rear or sides, the open spaces provided shall be sufficient for the future widening of such streets.

## **Open Spaces Separate for Each Building or Wing**

The open spaces shall be separate or distinct for each building and where a building has two or

more wings, each wing shall have separate or distinct open spaces for the purposes of lighting and

ventilation of the wings.

However, separation between accessory and main buildings more than 7 m in height shall not be less than 1.5 m; for buildings up to 7 m in height no such separation shall be required.

The open space shall be the minimum distance measured between the front, rear and side of the building and the respective plot boundaries. The front, rear and side of the building shall be the point of the building nearest to the boundary.



Open spaces for occupancies other than residential shall be as below:

- a. **Educational Buildings** Except for nursery schools, the open spaces around the building shall be not less than 6m.
- b. Institutional Buildings The open spaces around the building shall be not less than 6 m.
- c. **Assembly Buildings** The open space at front shall be not less than 12 m and the other open spaces around the building shall be not less than 6 m.

NOTE – However, if assembly buildings are permitted in purely residential zones, the open spaces around the building shall be not less than 12 m.

- d. **Business, Mercantile and Storage Buildings** The open spaces around the building shall be not less than 4.5 m. Where these occur in a purely residential zone or in a residential with shops line zone the open spaces may be relaxed.
- e. Industrial Buildings The open spaces around the building shall be not less than 4.5 m for heights up to 16 m, with an increase of the open spaces of 0.25 m for every increase of 1 m or fraction thereof in height above 16 m.

NOTE – Special rules for narrow industrial plots in the city, namely plots less than 15 m in width, and with appropriate set-backs from certain streets and highways, shall be applicable.

- f. Hazardous Occupancies The open spaces around the building shall be as specified for industrial buildings.
- g. tower-like structures, The open spaces shall be as below :
  - i. Up to a height of 24 m, with one set-back, the open spaces at the ground level, shall be not less than 6 m;
  - ii. For heights between 24 m and 37.5 m with one set-back, the open spaces at the ground level, shall be not less than 9 m;
  - iii. For heights above 37.5 m with two set-backs, the open spaces at the ground level, shall be not less than 12 m; and
  - iv. The deficiency in the open spaces shall be made good to satisfy 8.2.3.1 through the set-backs at the upper levels; these set-backs shall not be accessible from individual rooms/flats at these levels.

## **Exemption to Open Spaces**

## Projections into Open Spaces

Every open space provided either interior or exterior shall be kept free from any erection thereon and shall be open to the sky, except as below:

- a) Cornice, roof or weather shade not more than 0.75 m wide;
- b) Sunshades over windows/ventilators or other openings not more than 0.75 m wide;



- c) Canopy not to be used as a sit out with clearance of 1.5 m between the plot boundary and the canopy;
- d) Projected balcony at higher floors of width not more than 1.2 m; and
- e) Projecting rooms/balconies [see (d)] at alternate floors such that rooms of the lower two floors get light and air and the projection being not more than the height of the storey immediately below.

However, these projections into open spaces shall not reduce the minimum required open spaces.

## Accessory building

The following accessory buildings may be permitted in the open spaces:

- a) In an existing building, sanitary block of 2.4 m in height subject to a maximum of 4 m2 in the rear open space at a distance of 1.5 m from the rear boundary may be permitted, where facilities are not adequate.
- b) Parking lock up garages not exceeding 2.4 m in height shall be permitted in the side or rear open spaces at a distance of 7.5 m from any road line or the front boundary of the plot; and
- c) Suction tank and pump room each up to 2.5 m2 in area.

## Sunshades over windows and ventilators

Projections of sunshades over windows or ventilators in existing built-up or congested areas when permitted by the Authority shall fulfill the following conditions:

- a) No sunshade shall be permitted over the road or over any drain or over any portion outside the boundaries of the site below a height of 2.8 m from the road level;
- b) Sunshades provided above a height of 2.8 m from the ground level shall be permitted to project up to a maximum width of 60 cm, if the road over which they project exceeds 9 m in width; and
- c) No sunshade shall be permitted on roads less than 9 m in width or on roads having no footpaths.

# Special Requirements for Occupancy/ Land Development - Industrial buildings (Factories, Workshops or any other)

a. The relevant provisions contained in the Factory Act. 1948 shall apply for the construction of factory buildings. The minimum internal height of workrooms shall not be less than 3 m with subject to height of the ground floor being not less than 3.66 m (both being clear height at soffit level) provided in these Regulations shall not apply to room intended for storage, godowns and the like purposes but only in rooms occupied by workers for purposes of manufacturing.



- b. Requirements of water supply, drainage and sanitary installation shall be as per provisions of Indian Standard Code of Practice issued by BIS from time to time but in no case less than one W.C. and one urinal shall be permitted.
- c. Notwithstanding the provision of exits requirements, each working room shall be provided with adequate number of exits not less than two in number.
- d. No exit shall be less than 1.5 m in width and 2.2 m in height and doors of such exit shall be so arranged that it can be opened easily from inside.
- e. No staircase, lobby corridors or passage shall be less than 1.5 m in width. In addition to the requirement in this part, provisions contained in chapter-3 will be followed.
- f. There shall be provided at all time for each person employed in any room of factory at least 3.5 sq.m of floor space exclusive to that occupied by the machinery and a breathing space of at least 15 cum. (Further the provision of Part VIII Section 1 Lighting and Ventilation of National Building code of India with amendments time to time) shall be followed.
- g. The effluent from industries (industrial and biological in nature) shall be treated and shall be of quality to the satisfaction of the Authority/ concerned local body before letting out the same into a watercourse or municipal drain.

## Limitations to Open Spaces

## Safeguard Against Reduction of Open Space

No construction work on a building shall be allowed if such work operates to reduce an open air space of any other adjoining building, belonging to the same owner to an extent less than what is prescribed at the time of the proposed work or to reduce further such open space if it is already less than that prescribed.

## 33. Green building measures and incentives

- (1) For reducing consumption of total energy, fresh Potable water and reduction in total waste generation by modern buildings, the green building measures are to be adopted by all building (except plotted residential) on various plot sizes above 100 square metres shall comply with the green norms.
- (2) The applicant shall be awarded benefits of additional Floor Area Ratio for adopting either green norms specified in sub-Regulations (3) or by getting his building/ site/ project certified from Green Rating for Integrated Habitat Assessment(GRIHA) and achieving the GRIHA rating as specified in sub-Regulations (4):



(3) The details of green norms and additional Floor Area Ratio (FAR):

# (i) For installing solar photovoltaic power plant :

Generating power in respect of total connected load in building from solar photovoltaic power plant	15 to 25%	26 to 50%	51 to 75%	76 to 100%
Additional FAR for all building uses (except plotted residential)	5%	10%	15%	20%

# (ii) For installing Solid Waste Treatment plant :

Installing Solid Waste Treatment Plant for treatment of total generated waste				
Additional FAR for all building uses (except plotted	5%			
residential)				

(4) The details of Green Rating for Integrated Habitat Assessment (GRIHA) rating and Additional Floor Area Ratio (FAR):

GRIHA Rating	1 Star	2 Star	3 Star	4 Star	5 Star
Additional FAR for all	5%	10%	15%	20%	25%
building uses (except					
plotted residential)					

Note: The additional FAR shall be given over and above the maximum permissible FAR as stated in Regulations.

# **Provisions for Green Buildings**

All buildings on various plot sizes should comply with the green norms and conform to the requirements mandatory for sanction as mentioned herein. These are not specific to any rating system and are not intended to provide a single metric indication of overall building performance. These provisions allows the practitioners to easily exercise their engineering judgment in holistically and objectively applying the underlying principles of sustainability to a development or building facility, considering its functionality and required comfort level.

# **Provisions and Applicability**

These provisions for green buildings are applicable on all plots more than 105 sq. m in size the green building provisions on various plot sizes are indicated in the table below:

Category of Plot Sizes (sq.m.)	Sub-category	Applicable plot area (sq. m)	Provisions for Green Building
I		up to105	Nil
II	А	105 to 500	1(a), 2(b), 4(a)
	В	500 to 1,000	1(a), 1(c), 2(b), 4(a)
	C	1,000 to 3,000	1(a), 1(c), 1(d), 2(b), 3(b), 4(a)

# Provisions and applicability for various plot sizes (all use premises)



III	А	Above 3,000	1(a), 1(b),	1(c),	1(d),
			2(a), 2(b),	3(a),	3(b),
			4(a), 4(b)		

The above mentioned provisions should be followed in case of residential plots forming part of approved layout plan/ colony plan/ developed area\*.

## Notes:

\*The schemes/ projects formulated on the basis of provisions given in Master plan/ Zonal Development Plan will require approval as indicated:

EIA/ ECC (as per MoEF), NBC (latest), ECBC 2007 or latest, BEE Star rating/ LEED of IGBC/ GRIHA of TERI Certification}, EIA- Environmental Impact Assessment Study Report, ECC- Environmental Clearance Certificate, MoEF – Ministry of Environment and Forest, NBC – National Building Code, ECBC – Energy Conservation Building Code, BEE – Bureau of Energy Efficiency, LEED– Leadership in Energy and Environment Design, IGBC – Indian Green Building Council, GRIHA– Green Rating for Integrated Habitat Assessment, TERI – The Energy and Resources Institute.

The prevailing provisions of the above shall be applicable. However if there are any modification in the same, the modified provisions shall become automatically applicable.

## **Provisions for Sanction:**

(As per APPENDIX – B)

## 1. Water Conservation and Management

- a. Rain Water Harvesting (by Recharge)
- b. Low Water Consumption Plumbing Fixtures
- c. Waste Water Recycle and Reuse
- d. Reduction of hardscape

#### 2. Solar Energy Utilization

- e. a. Installation of Solar Photovoltaic Panels
- f. b. Installation of Solar Assisted Water Heating Systems

## **3. Energy Efficiency**

- g. a. Low Energy Consumption Lighting Fixtures (Electrical Appliances BEE Star and Energy Efficient Appliances)
- h. b. Energy Efficiency in HVAC systems

#### 4. Waste Management

- i. a. Segregation of Waste
- j. b. Organic Waste Management

In case Leaseholders desire to procure green building ratings from one or more rating bodies, they may suitably incorporate any other provisions if required and additional incentive FAR as per prevalent MPD may be availed.

#### 34. Parking



- (1) In Group Housing minimum 2.0 Equivalent Car Space (ECS) for each dwelling unit shall be required. Also minimum 75% of the total car parking is to be provided in the form of covered parking. Further minimum 5% of the total car parking area shall be made available to the EWS category flats.
- (2) In Integrated/ Multi Storey Commercial Building, 1 ECS for every 50 square metres of covered area shall be required. Further 15% of the total parking requirement has to be at surface level and remaining 85% shall be in the form of covered parking.
- (3) In Cyber Park/ IT Park/ Cyber Cities, 1 ECS for every 40 square metres of covered area shall be required.
- (4) The covered parking in the basement or in the form of multi-level parking above ground level shall not be counted towards Floor Area Ratio (FAR). However, the footprint of separate parking building blocks shall be counted towards ground coverage.
- (5) In case of provision of mechanical parking in the basement floor/ upper stories, the floor to ceiling clear height of the basement/ floor may be maximum of 4.75 metres.
- (6) No storage and commercial activities shall be permitted in the covered parking areas.
- (7) The misuse of the covered parking space shall immediately attract levy of three times the penalty of the composition fee prescribed for the excess covered area in the respective category.
- (8) Note: 1 ECS = 23 square metres for open parking, 28 square metres for parking on stilts and 32 square metres for basement parking.

## 35. Courtyard

- (1) The courtyard shall have a minimum area, throughout its height, of not less than the square of one-fifth the height of the highest wall abutting the courtyard. Provided that when any room (excluding staircase bay, bathroom and water-closet) is dependent for its light and ventilation on an inner courtyard, the dimension shall be such as is required for each wing of the building.
- (2) Provided that such courtyard shall not be less than 12.0 sq. metres in area and the minimum width of every such courtyard in any direction shall not be less than 3.00 metres. In determining the said aggregate, floor area of the rooms and verandah abutting on the courtyard, following shall be considered:
  - (i) Only one half of the floor area of such rooms and verandahs as abut on another courtyard or an open space or road not less than 6 metres in width
  - (ii) The area of the courtyard for the purposes of this Regulations shall be the area open to sky, clear of all projections.



## 36. Plinth

- (1) The plinth of the main building shall be so located with respect to surrounding ground level that -proper drainage of the site is assured. The height of the plinth shall not be less than 600 mm and more than 1.5 metres in case of habitable rooms.
- (2) The plinth of court-yard shall be at least 150 mm above the level of the street from where entry to plot has been taken and shall be satisfactorily drained.
- (3) In no case, any part of the ramp/ steps connecting building plinth to street/ road shall lie on street/ road and obstruct traffic movement. However, the ramp/ step from the plot boundary to the entry of house building, if required shall be provided.

# **37.** Minimum area, size, height and light and ventilation of different components of Residential premises

(1) Minimum area for a habitable room, kitchen and water closet shall be followed in accordance to tablet given as under:

SI. No.	Room Type	Minimum Area (in Square Mtr.)	Size (minimum width) (in Mtr.)	(minimum height) (in mtr. )	Light and Ventilation (area of open-able windows, ventilators)
1	Habitabl e Room	9.5	2.4	2.75	Total area not less than 1/8 <sup>th</sup> of the total floor area of the room.
2	Kitchen	5.5	1.8	2.75(Except for the portion accommoda ting floor trap of above floor)	Total area not less than 1/8th of the total floor area of the room.
3	Pantry	3.00	1.40	2.75	Not Applicable
4	Bathroo m	1.80	1.20	2.45	Not Applicable
5	Water Closet	1.10	0.90	2.45	Not Applicable
6	Combine d Bath &	2.8	1.2	2.45	0.3 Square Meter on wall not less



	Water Closet				than 0.3 meter wide
7	Store	No Restriction	No Restriction	2.10	Not Applicable
8	Garage	14.85	2.75 x 5.40	2.40	Not Applicable
9	Doorway s for Habitabl e Rooms	Not Applicable	0.90	2.10	Not Applicable
10	Doorway s for Kitchen, Bath. W.C.	Not Applicable	0.75	2.00	Not Applicable

### (2) Habitable Room

- (i) In case of Group Housing Scheme the dwelling unit having more than one room may have one of the rooms with a clear floor area not less than 7.5 sq. metres with one side not less than 2.4 metres.
- (ii) In case of air conditioned rooms, the height shall not be less than 2.4 metres measured from the surface of the floor to the lowest point of air conditioning duct or false ceiling; and
- (iii) All doors and windows shall open directly or through a verandah or to a permanent open space or an open space abutting the building not less than 1.8 metres in width. No portion of a room shall be assumed to be lighted, if it is more than 10 metres or as stated in National Building Regulations 2005, away from the opening provided for lighting that portion.

## (3) Kitchen

(i) In case there is a separate store, the floor area of the kitchen shall be reduced to 4.5 square metres.



- (ii) In case of houses constructed on plots up to 100 square metres, the size of the kitchen shall be reduced to 3.8 square metres.
- (iii) The kitchen which is intended for use as a dining space also shall have a floor area of not less than 9.5 square metres with a minimum width of 2.45 metres.
- (iv) For the purpose of this regulation, a kitchen shall be deemed to be a habitable room and all the aforementioned requirements regarding ventilation shall apply to it provided that the minimum area of the kitchen shall not be less than 5.5 square metres with a minimum width of 1.8 metres.
- (v) In case of Group Housing Scheme the minimum area of the kitchen shall not be less than 5.5 sq. metres with a minimum width of 1.8 metres.

#### (4) Bathroom and Water Closet (W.C):

- (i) Every bathroom and water closet shall:-
  - (a) Preferably be so situated that at least one of its walls shall have opening for circulation of external air, with provision of exhaust fan.
  - (b) Not be directly over any room other than another W.C, washing place, bath or terrace unless it has a water-tight floor;
  - (c) Have a platform or seat made of water tight non-absorbent materials;
  - (d) preferably be enclosed by walls and partitions and the surface of every such walls or partition, shall be finished with a smooth impervious material to a height not less than 1.5 metres above the floor of such room; and
  - (e) Be provided with impervious floor covering sloping towards the drain with a suitable gradient and not towards verandah or any other room.
- (ii) Where the water-closet room in a building is not connected to exterior, it shall be ventilated by mechanical means or through a vertical shaft open to sky of a minimum size of 1.25 metre X 1.50 metre for ventilation to toilet, bath and water closet, but it shall be counted towards covered area.
- (iii) No room containing water-closet shall be used for any other purposes except as lavatory and no such room shall open directly into any kitchen or cooking space by a door/ window or another opening. Every room containing water-closet shall have a door completely closing the entrance to it.
- (iv) Soil or ventilating pipes shall not be allowed on the exterior face of any building, provided these shall either be embedded in the walls or pipe ducts to be provided to accommodate them.



## 38. Boundary Wall, Fence

- (1) Boundary wall up to the height of 2.5 metres may be permitted by the Competent Authority of the Corporation in industrial buildings, electric sub-stations, transformer stations, institutional buildings like hospitals, industrial buildings like workshops, factories and educational buildings like schools, colleges, including hostels and other uses of public utility undertakings and strategically sensitive buildings.
- (2) A railing/ grill with or without poly carbonate/ fiber glass sheet covering of 0.50 metre height shall be permitted over and above the maximum height of boundary wall at all sides.

## 39. Staircase

(1) Every building intended to be used as multiple residential building or commercial or educational and institutional or industrial building shall be provided with required number of staircases (accessible from a maximum distance of 30 metres (45 metres, if building has automatic sprinklers for firefighting) from any part of the building, extending from ground floor level to the highest floor, having following specifications:

SI. No.	Type of Building		Minimum Permissible Clear Width of Staircases (in meter)	Minimum Permissible Width of tread (in meter)	Maximum Permissible Height of riser (in meter)
1	ntial	Plots up to 15 meter height	0.90	0.25 (without nosing)	0.19
Resider	Reside	Plots above 15 meter height	1.20		
2	: rcial	Plots up to 50 Sq. mtr. area	0.90	0.30 (without nosing)	0.15
	Comme	Plots above 50 Sq. mtr. area	1.20		
3	Assembly Building		2.0	0.30 (without	0.15



			nosing)	
4	Educational building	1.5	0.30 (without nosing)	0.15
5	Institutional building	2.0	0.30 (without nosing)	0.15
6	Inland Container Depot & Custom bounded area	1.5	0.30 (without nosing)	0.15
7	Industrial building;	1.5	0.30 (without nosing)	0.15
8	Any other buildings	1.5	0.30 (without nosing)	0.15

- (2) The minimum head-room in a passage under the landing of a staircase shall be 2.1 metres. The minimum clear head-room in any staircase shall be 2.1 metres.
- (3) The maximum numbers of risers in single flight are limited to 14.
- (4) If a service or a spiral staircase is provided, its width shall not be less than 1.0 metre and its average tread width shall not be less than mention in table of sub-Regulations (1).
- (5) Notwithstanding anything contained in sub-Regulations (1), the staircases in the private portion of a public building and industrial building not open to the general public, may be of the sizes mentioned for residential building.

## 40. Ramps and Lifts

- (1) Every building having more than 15 metres height shall be provided with a lift or a ramp with an inclination of 1:10 in addition to the staircases.
- (2) In case of public building with only ground floor, ramp shall be provided for reaching its plinth level. Further, in case of public building is more than one storey lift or ramp shall be provided.

# (3) Ramps:

- (i) The ramp to basement and parking floors shall not be less than 7.2 metres wide for two way traffic and 4 metres wide for one way traffic, provided with minimum gradient of 1:10.
- (ii) The minimum width of the ramps in hospitals shall be 2.4 metres for movement of stretcher and for public use. In no case, the hospital ramps shall be used for vehicular movement, except at entry gate to the building.



- (iii) Ramps may also be provided in the setbacks which can be sloped considering unhindered movement of fire engine and in no case the gradient shall be less than 1:10. (to be read with basement)
- (iv) All structural design/safety aspects as per latest Bureau of Indian Standards Regulations and National Building Regulations, 2005 shall be complied along with consideration of weight of Fire Engine & its maneuvering.
- (v) The minimum width of the ramps in hospitals shall be 2.4 m for stretcher and not for vehicular movement.
- (vi) A ramp shall have handrail on at least one side, and preferably two sides with minimum height of 0.90 metres, measured from the surface of the ramp. The handrails shall be smooth and extend to 0.30 metres beyond the top and bottom of the ramp. Where major traffic is predominantly children, the extra handrail shall be placed 0.76 metre height.
- (4) Where ramps with gradients are necessary or desired, they shall conform to the following requirements:

A ramp when provided shall not have a slope greater than 1:20 or maximum of 1:12 for short distance up to 9 metres.

## (5) Lifts:-

Wherever lift is required as per Regulations, provision of at least one lift shall be made for the wheel chair users, with the following cage dimensions, recommended for passenger lift of 13 persons capacity by the Bureau of Indian Standards:-

- Clear internal depth 1.1 metres.
- Clear internal width 2.0 metres.
- Entrance door width 0.9 metre.
- (i) A handrail not less than 0.6 metre long and 1 metre above floor level shall be fixed adjacent to the control panel.
- (ii) The minimum size of lift lobby shall be 1.8 metres x 2.0 metres or more.
- (iii) The interior of the cage shall be provided with Braille symbols and auditor signage that audibly indicates the floor. When the cage reached on floor, it shall indicate that the door of the cage for entrance/ exit is either open or closed.

## 41. Passages and corridors

 The minimum width of corridors and passages in a residential building shall be at least 1.0 metres and these shall be of fire resistant material.



(2) Minimum width of any corridor and passage in case of residential building with multiple dwelling units and for other type of building, shall be as given below:

SI. No.	Building Type	Minimum Permissible Width of Passage & Corridor (in meter)
1	Residential	1.0
2	Commercial	1.25
3	Assembly Building	2.0
4	Educational Building	2.0
5	Institutional Building	2.0
6	Inland Container Depot & Custom Bonded area	1.5
7	Industrial Building	1.5
8	Hospital, Nursing homes. Etc.	2.4
9.	All other buildings including Hostels	1.5

- (3) The clear headroom height of passage and corridors shall, in no case, be less than 2.15 meter.
- (4) All surfaces including ceiling shall be of fire resistance materials.
- (5) All the passages and corridors shall be naturally lighted and ventilated and if not possible, provision for artificial lighting and mechanical ventilation shall be made.

## 42. Exit

- (1) The requisite number and size of various exits shall be provided, based on the occupants in each room and floor based on the occupant load, capacity of exits, travel distance and height of buildings as per provisions of Part 4- Fire and Life Safety, National Building Regulations as amended from time to time.
- (2) At least one primary entrance and exit to each building shall be usable by individuals in wheelchairs, indicated by a sign and on a level that would make the elevators accessible.

# (3) Arrangement of Exits

- (i) Exits shall be so located so that the travel distance on the floor shall not exceed 22.50 metres for residential, educational, institutional and hazardous occupancies and 30.0 m. for assembly, business, mercantile, industrial and storage occupancies. Whenever more than one exit is required for a floor of a building they shall be placed as remote from each other as possible. All the exits shall be accessible from the entire floor area at all floor levels.
- (ii) The travel distance to an exit from the remote point shall not exceed half the distance as stated above.



Note: Provided for fully sprinklered building, the travel distance may be increased by 50 percent of the values specified.

## (4) Width of Exit

- (i) No exit doorways shall be less than 1 metre in width except assembly and institutional buildings where it shall not be less than 2 metres.
- (ii) Exit doors 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 0.90 metre. Overhead door shall not be installed.

## 43. Means of Access

- (1) No Building shall be erected as to deprive any other building of its means of access.
- (2) If there are any bends or curves in the approach road, sufficient width shall be permitted at the curve to enable the fire tenders to turn, the turning circle shall be at least of 9.0 metres radius.
- (3) Other provisions of means of access for buildings other than plotted residential and commercial:
  - (i) The approach to the building and open spaces on its all sides upto 6.0 metres width, shall have composition of hard surface capable of taking the weight of fire tender, weighing upto 22 tonnes for low rise building and 45 tonnes for building 15 metres and above in height. The said open space shall be kept free of obstructions and shall be motor-able.
  - (ii) Main entrance to the premises shall be of adequate width to allow easy access to the fire tender and in no case it shall measure less than 6.0 metres. The entrance gate shall fold/ slide back against the compound wall of the premises, thus leaving the exterior access way within the plot free for movement of the fire service vehicles. If archway is provided over the main entrance, the height of the archway shall not be of height less than 5.0 metres.
  - (iii) In case of basement extending beyond the building line, it shall be capable of taking load of 45 tonnes for a building of height 15.0 metres and above and 22 tonnes for building height less than 15.0 metres. j
- (4) Every person who applies for permission for erection or re-erection of building shall also submit NOC for accessing the road (whether National Highway, State Highway) if applicable from the concerned authority.



## 44. Light and Ventilation of building

- (1) Every room that is intended for human habitation shall abut on an interior or exterior open space or on to a verandah open to such interior or exterior open space.
- (2) The setback area can be sunk for light, ventilation and access to basement, provided fire tender movement is not hindered.
- (3) The whole or part of one side of one or more rooms intended for human habitation and not abutting on either the front, rear or side open spaces shall abut on an interior open space whose minimum width in all directions shall be 3.0 metres in case of buildings not more than 15 metres in height, and in case of buildings above 15 metres it shall have mandatory mechanical ventilation in addition.
- (4) Sunken courtyard up to the lowest floor of basement(s) shall be allowed as 'light well' within building envelop for light and ventilation for basement area.
- (5) Other provisions of light and ventilation for buildings other than plotted residential and commercial:

If exterior open air space is intended to be used for the benefit of more than one building on same plot/ site, then the width of such open air space shall be the one specified for the tallest building abutting on such open air space, shall be as given below:

Sl. No.	Height of Building in meter up to	Exterior Open Spaces to be left on all sides (in meter) (front, rear and sides in each plot)
1	10	3
2	15	5
3	18	6
4	21	7
5	24	8
6	27	9
7	30	10
8	35	11
9.	40	12
10	45	13
11	50	14
12	55 and above	16

# (6) Ventilation shaft:

For ventilating the spaces for water closets and bathrooms, if not opening on the front side, rear and interior open spaces, shall open on the ventilation shaft, the size of which shall not be less than the values given below:



Sl. No.	Height of Building (in meter)	Minimum size of Ventilation Shaft(in Square meters)	Minimum Width of Shaft (in meter)
1	Up to 10.0	1.2	0.9
2	Up to 12.0	2.8	1.2
3	Up to 18.0	4.0	1.5
4	Up to 24.0	5.4	1.8
5	Up to 30.0	8.0	2.4
6	Above 30.0	9.0	3.0

Notes:

- (i) For buildings above 30.0 metres height, mechanical ventilation system shall be installed on ventilation shaft.
- (ii) For fully air-conditioned buildings the ventilation shaft shall not be required, provided the air-conditioning system works on uninterrupted source of power supply.
- (iii) Horizontal ducting for ventilation may be installed in building with exhaust fan of appropriate capacity for discharging used air to external face of building.

## 45. Cantilevered roof and chajja projections

- (1) No building verandah, chajja or other projections from the face of the building shall be allowed to be erected or re-erected on or over a road or beyond the boundaries of the applicants own land/ plot.
- (2) Balcony of a width of maximum 1.80 metres in front and rear sides of a plot can be permitted within the plot, provided the width of balcony do not exceed half of the width of setback.
- (3) On plots of the size of 300 square metres or above, where side setback has been provided, a balcony of maximum width of 1.0 metre, in side set back shall be permitted.
- (4) Sun-shades over opening shall be allowed subject to the following:-
  - (i) Sun-shade of 0.50 metre width is permitted over any road/ over any park/ public place.
  - (ii) Sun-shade if provided, shall be at a height of 2.3 metres from the ground level shall be permitted to project up to a maximum of 0.45 metre within the applicants own land, provided it does not exceed half of the width of setback/open space.

## 46. Mezzanine floor

- (1) A mezzanine floor or internal balcony shall not be permitted unless the height of the room is at least 5.0 metres and such mezzanine floor or balcony do not cover more than 1/2of the room area. The area of such mezzanine floor shall be counted towards FAR.
- (2) The height of such mezzanine floor or internal balcony shall not be less than 2.3 metres from the floor level.



## 47. Motor Garage

- (1) The minimum size of a private motor garage shall be 2.75 metres X 5.0 metres. The clear height of the garage shall not be less than 2.40 metres. The plinth of the motor garage shall not be less than 150 mm above the average ground level.
- (2) A garage shall be permitted within zoned area and shall be counted towards covered area.
- (3) Garage shall not be used for habitable purposes.

## 48. Minimum provisions with regard to dwelling unit

Each dwelling unit shall have following minimum provisions, for granting permission to construct or use/ occupy:

E	conomic Weaker Section (EWS)	Other than EWS
(I)	Living / bedrooms;	(i) Living / bedrooms;
(11)	One Pantry;	(ii) One Kitchen;
(111)	One Bathroom; and	(iii) One Bathroom; and
(IV)	One Latrine or W.C.	(iv) One Latrine or W.C.

## 49. Basement

- (1) The construction of the basement shall be allowed by the Competent Authority of the Corporation of the Corporation in accordance with the provisions of Zoning Plan.
- (2) The basement shall be constructed within the zoned area and may be put to following uses:
  - (i) Storage of household or other goods of ordinarily non-combustible material;
  - (ii) Strong rooms, bank cellars, etc.;
  - (iii) Air-conditioning equipment and other machines used for services and utilities of the building.
  - (iv) Modern automated laundry shall be allowed only in the basement of Hotel and Hospital/ Nursing Home sites, group housing, service apartment, as an ancillary services for the purpose for which permission is granted by Competent Authority of the Corporationof the Corporationand meant for in-house services only subject to the condition that the effluent of the laundry shall be properly pumped up to ground floor inspection chambers and discharged to the main sewer;
  - (v) Car wash, security room, ticketing booth, driver waiting room, toilets, loading/ unloading activities, lift/ escalator lobbies and parking.



- (3) The basement may be used for habitable purpose subject to fulfillment of fire safety, light & ventilation and exit provisions on opposite directions. However, in case basement is used for habitable purpose, th e area utilized will be counted towards total covered area of building i.e. FAR. The basement is used for uses other than specified in sub-Regulations (2) above, shall be considered for habitable use and shall be counted towards FAR, subject to fulfillment of fire safety, light and ventilation and exit provisions on opposite directions.
- (4) The use of basement shall be specified in the building plans at the time of submission, stated in Regulations 3 and 4.
- (5) The basement shall have the following provisions:

#### (i) Light and ventilation of basement:

- (a) An open area of a minimum width of 1.8 metres shall be provided across the full length and/ or width of the basement storey. This area shall be within the limits of the site and shall be paved with impervious material above a concrete bed. It shall be completely unobstructed except that in this area steps may be allowed for access to it, if considered necessary
- (b) In the case of buildings governed by the zoning, basement storeys shall be lighted and ventilated by means of windows of the minimum area within 1/10th to 1/25th of the total floor area, at least half of which must open subject to the condition that the deficit of light and ventilation shall be made up by providing artificial lighting and mechanical ventilation as per provision of National Building Regulations.

In case of buildings governed by Architectural Control and the basement are for storage/ services, the provisions of light and ventilation shall be as shown on the control sheets. In case the basement is extended, the deficit in light and ventilation be proportionately increased subject to fulfilment of fire safety norms and structural stability is ensured by the Structural Engineer.

In the second basement and basement below the lower ground floor where it is to be used for parking/ services, the provisions contained in National Building Regulations and Fire Safety Regulations as applicable shall be followed. The basement story for any other purpose conforming to the land of the site can be allowed.

(c) Adequate ventilation shall be provided for the basement. The ventilation requirements shall be the same as required by the particular occupancy according to Regulations. Any



deficiency may be met by providing adequate mechanical ventilation in the form of blowers, exhaust fans, air-conditioning systems, etc.;

## (ii) Damp proofing of basement:

The walls of the basement story shall be properly damp proofed and if in contact with the soil, they must be effectively secured against dampness from the soil with the approved vertical and horizontal damp proof course.

## (iii) Height of the basement:

- (a) The minimum clear height of the basement shall be 2.4 metres and maximum height of the basement shall be up to 4.75 metres from floor to the underside of the roof slab or ceiling subject to structural stability to be certified by the Structural Engineer.
- (b) The minimum height of the roof of any basement shall be 0.9 metre and the maximum, 1.5 metres above the average surrounding ground level.

## (iv) Drainage of basement:

- (a) Open area adjoining a basement story, if any, shall be effectively rendered \ to the satisfaction of the Competent Authority:
- (b) The responsibility of draining a basement storey and for protecting it from rain shall be that of the lease holder
- (c) The access to the basement shall be separate from the main and alternative staircase providing access and exit from higher floors.
- (d) Where the staircase is continuous in the case of buildings served by more than one staircase, the same shall be of enclosed type serving as a fire separation from the basement floor and higher floors. Open ramps shall be permitted if they are constructed within the building line subject to the provision of Regulations 38.
- (e) The "Exit" requirements in basements shall comply with the provisions of Part 4 'Fire and Life Safety'
- (6) Basement shall not be constructed beyond the zoned area or in case existing adjacent building, setback of 2.4 metres shall be taken from the existing adjacent building.



#### 48 Fire

- (1) Fire protection measures provided in Part IV of National Building Regulations of India, dealing with the fire protection measures as amended from time to time, shall be followed.
- (2) The fire provisions made in the building wherever applicable, shall have to be got verified from the Competent Authority of the Corporationof the Corporationor office authorized from fire safety point of view and accordingly a certificate shall be submitted by the lease holder.

## 49 Rain Water Harvesting

(1) In the areas specified by the Competent Authority, through a notification arrangement of roof rain-water harvesting within the plot shall have to be made by the plot lease holder, constructing the building on the plot where the area of the rooftop is 100 square metres or more.

## (2) Ground Water Recharge:

- Recharging of ground water shall be mandatory not only for residential buildings but for all types of buildings, including Group Housing Societies having a plot area more than 500 square metres and above.
- (ii) The Ground Water Recharge shall be mandatory for open spaces like parks, parking, plazas, playgrounds and other common areas. The harvesting and recharge structures could be constructed by the Authority with the involvement of community based organizations like Resident Welfare Associations.

## (3) Rain Water Harvesting System Measures:

- (i) The system of collection, conveyance and dispersion of rain-water for harvesting shall be made in such a manner that only clear water is able to enter and no contaminated waste water from the building or surrounding area finds its way in this system.
- (ii) The entry points of the rain-water for harvesting shall be designed in such a manner that, in normal days, these remain covered. Arrangements of segregation of the rain-water from the first shower (Containing wash water) shall also be made.
- (iii) The arrangement of quick filtration of rain-water shall also be made in the rainwater harvesting well/ tube well so that rain-water does not pollute or choke the strata.
- (iv) The complete system of rain-water harvesting shall be constructed within the plot area available with the lease holder.
- (v) The recharge well shall be located at a distance of not less than 10 metres away from any structure handling sewage or industrial waste water (such as septic tank or effluent



treatment plant etc.). This minimum distance of 10 metres shall not be applicable to manholes or sewer lines although it shall be ensured that they are leak proof.

- (vi) The detailed proposal of the system comprising collection, conveyance and dispersion of rain-water harvesting well/ tube well shall have to be shown on the building plan submitted for approval.
- (vii) An Architect/ Engineer duly engaged for supervision and execution of the construction of the building shall submit the certificate stating that the rain water harvesting system is functional at site and same conforms to the provisions of this Regulations. However, if the Architect/ Engineer found guilty of misrepresentation of the facts, penal proceedings shall be initiated along with debarring the concerned Architect/ Engineer from practicing in the State of Haryana.
- (viii) The provision of Water (Prevention and Control of Pollution) Act, 1974 (Act 6 of 1974), with all amendments made from time to time, shall be applicable.
- (ix) The construction of the building as laid down in sub-clause (1) shall be the part of occupation certificate. Unless such construction is completed as per the approval, no occupation certificate shall be issued.
- (x) The lease holder of every building in the Regulations shall ensure that the rain water harvesting structure is maintained in good repair for storage of water of Non-potable purposes and recharge of ground water at all time.
- (4) The above said provisions of Rain Water Harvesting shall be strictly implemented in all Industrial Growth Centre / Park / Estate.

## 49. Provision of Rooftop Solar Photo Voltaic Power Plant

- (1) The mandatory installation of Rooftop Solar Photovoltaic Power Plant for the buildings/ areas shall be in accordance with the order bearing no. 22/52/2005-5 Power, dated 21st March 2016 notified by Renewable Energy Department, Haryana and as amended from time to time.
- (2) Installation of Solar Photovoltaic Power Plant as laid down in sub-Regulations-1above, shall be part of the occupation certificate.
- (3) The Competent Authority of the Corporation of the Corporation shall empanel consultants (experts in solar photo voltaic power plant installations) for inspecting, verifying and issuing certification for installation of Rooftop Solar Photovoltaic Power Plant.

#### 50. Provision of Energy Conservation Building Regulations

(1) The provision for Energy Conservation Building Regulations shall be mandatory applicable on



buildings/ areas in accordance to the direction no. 19/6/2016-5P, dated 31stMarch 2016 notified by Renewable Energy Department, Haryana and as amended from time to time.

- (2) The applicant/ lease holder along with building plan application shall submit a certificate from an Architect confirming that the building plans confirms to the Energy Conservation Building Regulations.
- (3) Occupation certificate of building shall be issued by the Competent Authority of the Corporation of the Corporation only after the applicant/ lease holder submit a certificate from an Architect (who has supervised the construction of building) that the building has been constructed in accordance with the provision of the Energy Conservation Building Regulations.

#### 51. Water Re-use and recycling

- (1) All buildings having a minimum discharge of 50,000 litres and above per day shall incorporate waste-water recycling system. The recycled water shall be used for horticultural, flushing and cooling tower purposes.
- (2) The dual pipe system shall be adopted for these buildings.

#### 52. Sustainable Building Materials

The following supplementary building materials (derived or processed waste) may be suitably used while constructing building in combination with conventional resources:

- (i) Panels, hollow slabs, hollow blocks Conservation of materials, less water requirement.
- (ii) Fly Ash form bricks, Portland Pozzolana cement, Fly ash concrete, phosphor gypsum based walling & roofing panels, particle wood – Recycled use of industrial/ agricultural by-products.
- (iii) Fly ash/ AAC (Autoclaved Aerated light weight Concrete) panels/ CLC (Cellular Light weight Concrete) panels- Ensures thermal comfort (significant reduction in air-conditioning requirement)
- (iv) Use of bamboo & rapidly growing plantation timbers- Environmental benefits. Compressed Soil Earth Block and Rammed Earth Walls and Vaults- Environmental friendly

## 53. Provision/ facilities for differently-abled persons

- (1) In all public buildings/ places of public gathering, the level of the roads, access paths and parking areas shall be described in the plan, along with specification of the materials.
- (2) The specified facilities in public buildings for differently-a bled persons shall be as follows:-
- (i) Parking- For parking of vehicles of differently-a bled people the following provisions shall be



made:-

- a) surface parking for two car spaces shall be provided, near the entrance, for the differently-abled persons, with maximum travel distance of 30 metres from building entrance;
- b) the width of parking bay shall be minimum 3.6 metres;
- c) information stating that the space is reserved for wheel chair users shall be conspicuously displayed; and
- d) guiding floor materials shall be provided or a device which guides the visually impaired persons, with audible signals or other devices which serve the same purpose, shall be provided.
- (ii) Every building shall have at least one entrance accessible to the differently-abled and shall be indicated by proper signage. This entrance shall be approachable through a ramp together with the stepped entry.
  - (a) Ramped approach- Ramp shall be finished with non slippery material to enter the building. Minimum width of ramp shall be 1.5 metres with maximum gradient 1:12, length of ramp shall not exceed 9.0 metres having 0.8 metres high handrail on both sides extending 0.3 metres beyond top and bottom of the ramp. Minimum gap from the adjacent wall to the handrail shall be 5 cms.
  - (b) **Stepped approach** For stepped approach size of tread shall not be less than 0.3 metres and maximum riser shall be 0.15 metres. Provision of 0.8 metres high handrail on both sides of the stepped approach similar to the ramped approach shall be made.
  - (c) **Exit/ entrance door** Minimum clear opening of the entrance door shall be 0.9 metres and it shall not be provided with a step that obstructs the passage of a wheel chair user.
  - (d) **Entrance landing-** Entrance landing shall be provided adjacent to the ramp, with the minimum dimension 1.8 metres x 2.0 metres. The entrance

landing that adjoin the top end of a slope shall be provided with floor materials to attract the attention of the visually impaired persons (limited to coloured floor material whose colour and form 13ightness is conspicuously surrounding floor material that emit different sound to guide visually impaired persons, hereinafter referred to as "guiding floor material"). Finishes shall have a nonslip surface with a texture traversable by a wheel chair. Kerbs, wherever provided shall blend to a common level.

(iii) **Corridor connecting the entrance/exit for the differently-abled-** The corridor connecting the entrance/exit for differently-abled leading' directly outdoor to a place where information concerning the overall use of the specified building can be provided to visually



impaired persons either by a person or by signs, shall be provided as follows:-

- a) guiding floor materials shall be provided or devices that emit sound to guide visually impaired persons;
- b) the minimum width of corridor shall not be less than 1.5 metres;
- c) in case there is a difference of level, slope-ways shall be provided with a slope of 1:12;
- d) handrails shall be provided for ramps/slope-ways.
- (iv) Stair-ways- One of the stair-ways near the entrance/ exit, for the use of differently-abled, shall have the following provisions:
  - a) the minimum width shall be 1.35 metres;
  - b) Height of the riser shall not be more than 0.15 metres and width of the tread 0.30 metre. The steps shall not have a abrupt (square) nosing;
  - c) maximum number of risers on a flight shall be limited to 12;
  - d) handrails shall be provided on both sides.
- (v) Lifts- Wherever lift is required as per Regulations, provision of at least one lift shall be made for the wheel chair users, with the following cage dimensions, recommended for passenger lift of 13 persons capacity by the Bureau of Indian Standards:-
  - Clear internal depth 1.1. metres.
  - Clear internal width 2.0 metres.
  - Entrance door width 0.9 metre.
- a) a handrail not less that then 0.6 metre long and 1.0 metre above floor level shall be fixed adjacent to the control panel
- b) the lift lobby shall be of an inside measurement of 1.8 metres x 2.0 metres or more;
- c) the time of an automatically closing door shall be minimum 5 seconds and the closing speed shall not exceed 0.25 metre/ second;
- d) the interior of the cage shall be provided with a device that audibly indicates the floor. When the cage reaches on floor, it shall indicate that the door of the cage for entrance/ exit is either open or closed.
- (vi) **Toilets:**-One special water closet in a set of toilets shall be provided for the use of differently-abled, with essential provision of wash basin inside toilet near the entrance for the differently-abled. It shall have
  - a) the minimum size of 1.50 metres x 1.75 metres;
  - b) minimum clear opening of the door of 0.90 metre and it shall swing out;
  - suitable arrangement of vertical/horizontal handrails with 50mm clearance from the wall;



- d) at least 0.50 metre distance between the water closet seat and the floor.
- (vii) **Drinking Water-** Suitable provision of drinking water shall be made for the differently-abled persons near the special toilet provided for them.
- (viii) **Designing for Children** In the building meant for the predominant use of children, the height of the handrail and other fittings and fixtures, shall suit the requirements of children.

## STRUCTURAL MATERIALS AND CONTROL

#### 54. Materials

The requirement of building materials to be used in construction shall conform to Part V Building Materials of the National Building Regulations of India, as amended from time to time.

#### 55. Foundations

- (1) The loads and forces on buildings shall be calculated in accordance with Part VI-Structural Design Section on Loads in the National Building Regulations of India, as amended from time to time.
- (2) The structural design of foundations and elements of substructures and superstructures of wood, masonry, reinforced, or pre-stressed concrete shall be in accordance with Part VI-Structural Design, Section 1-Loads, Section 2-Foundations, Section 3-Wood, Section 4-Masonry, Section 5-Concrete, Section 6-Steel Section 7-Prefabrication and Systems Building of the National Building Regulations of India, as amended from time to time.
- (3) After obtaining Occupation Certificate, the building shall not be modified or any additional structure be erected, which may induce such loads on foundation which may cause in stability of such settlements of the building or any part of the building.
- (4) For building more than three storey high, foundations shall be designed after making standard tests and establishing the safe bearing capacity of the soil

## 56. Building Services

The planning, design and installation of air-conditioning and heating installations of the building shall be in accordance with Part VIII, Building Services, Section 2-Electrical Installations and Section 3-Air-conditioning and Heating of the National Building Regulations of India, as amended from time to time.

## **57.** Plumbing Services

The planning design and installation of water supply systems, drainage, sanitary installations and gas supply installations in buildings, shall be in accordance with Part IX- Plumbing Services, Section 1-Water Supply, Section 2-Drainage and Sanitation and Section 3-Gas supply of the National Building Regulations of India, as amended from time to time.



## **58.** Construction Practices and Safety

- (1) The various construction activities like: demolition, excavation, blasting, actual construction from foundation level up to completion shall be in accordance with Part VII – Construction Practices and Safety of the National Building Regulations of India, as amended from time to time.
- (2) The Safety Measures to be adopted during the various construction operations, including storage of materials on the construction site and Corporation/ public land shall be in accordance with Part VII- Construction Practices and Safety of the National Building Regulations of India, as amended from time to time.

## 59. Damp Proof Course

- (1) Wall of a building including a pier forming a part of the wall or a compound wall shall be provided with a damp proof course, except when built up of materials such as cement concrete known as 1:2:4 cement concrete with or without the addition of any damp proofing material.
- (2) The materials specified as Damp Proof Course shall be as indicated in the Haryana Public Works Department or as per the Indian Standard Institution specifications, specified for this purpose and as amended from time to time.
- (3) In external wall, the horizontal Damp Proof Course shall be laid immediately above the plinth protection and a vertical damp proof course shall be provided on the interior face of the wall extending between the horizontal Damp Proof Course and the level of the upper surface of the concrete in finished floor.
- (4) In an internal wall, the horizontal Damp Proof Course shall be laid in level with the upper surface of the concrete in the finished floor. The section continuity of damp proof course between the internal and external wall shall be secured by the insertion any damp proof material.

## **Public Health Installations**

## 60. Two pipe system in drainage

- (1) The drainage system of building shall be of two pipe system in which the soil and waste pipes are distinct and separate. The soil pipes being connected to the drain direct and waste pipes through a trapped gully. All traps of all appliances are completely ventilated in this system.
- (2) In Group housing, commercial complexes, commercial (other than plotted), institutional, industrial, other building specified by the competent authority, the water from waste pipes shall be treated within the premises from appropriate treatment plant. The treated water



shall be used for flushing, horticulture and cooling tower purposes.

## 61. Minimum sanitary facilities required for various type of buildings

- (1) Dwellings with individual convenience shall have at least the following namely:-
- (i) one bath room provided with a tap;
- (ii) one water closet; and
- (iii) for kitchen wash basin, one nahani trap in the floor or a sink trap raised from the floor shall be provided. Where only one water closet is provided in a dwelling, the bath and water closet shall be separately provided.

All waste water outlets shall be provided with suitable traps for preventing back flow of water or foul smell or both.

- (2) Dwellings (tenements) without individual conveniences shall have the following fitments namely: -
- (i) one water tap with draining arrangements in each tenement;
- (ii) one water closet and one bath for every two tenements; and
- (iii) water tap in common bath room and common water closet.
- (3) The requirements for fitments for drainage and sanitation, in case of buildings other than rest stations such as office buildings, factories, cinemas, concert halls, theatres, hospitals, hotels, restaurants, schools and hostels shall be in accordance with relevant Bureau of Indian Standards of "Basic Requirements for Water Supply, Drainage and Sanitation" with such modifications as may be made from time to time.

## 62. Method of disposal

- (1) Every water borne drainage installation shall be connected with the public sewer, but in case no public sewer exists in the vicinity of the said premises the drainage system may as a temporary measure and subject to the previous written approval of the Competent Authority of the Corporation be connected to a septic tank from which the effluent shall be drained off
  - (i) into absorption pits; or
  - (ii) by sub-soil drain:

Provided that no absorption pit shall be allowed in the case of any premises or area in which domestic supply is taken from sub soil water:

Provided further that if in future a public sewer is constructed in the nearby area, which can serve the premises, the lease holder shall at his own expense cause the said drainage system to be connected to the sewer.

(2) Effective arrangements shall be made to treat the effluents up to the parameters/ guidelines



issued from time to time by Central Pollution Control Board (CPCB) or Haryana State Pollution Control Board from the sewer system so as to ensure that the untreated effluents do not enter any canal, river or water body.

## 63. Septic tank

- (1) No septic tank shall be located -
  - (i) at a distance of less than 25 metres from a dwelling unit or any other building used for human habitation or for work or recreation;
  - (ii) within a public through fare;
  - (iii) within 60 (sixty) metres from any percolation well, watercourse or stream used or likely to be used for drinking or domestic purposes or for manufacture or preparation of any article of food or drink for human consumption and it shall be readily accessible so as to permit cleaning operation being carried out without interference with the operation of any water borne sanitary installation as a whole.
- (2) Every septic tank intended to serve a population of 24 (twenty four) or more persons shall be constructed into two separate compartments so that one compartment when required can be put out of use for cleaning purposes. The capacity of every compartment of the septic tank shall be 2 ½ (two and half) times the total water supply allowances for the total number of residents of the buildings in premises.
- (3) Every inlet pipe into a septic tank shall be effectively trapped.
- (4) The design of septic tank shall be in accordance with the National Building Regulations and guidelines issued by Public Works Department, Haryana.

## 64. Absorption pit

- (1) In the matter of location, every absorption pit shall conform to same restrictions as are laid down for a septic tank in Regulations 63.
- (2) No absorption pit shall have, any outlet into, a means of communication with any sewer, storm water drain and surface drain.
- (3) The walls of every absorption pit shall be at least 0.5 metres above ground level so as to exclude effectively the entry of storm water into the absorption pit.
- (4) The absorption pits shall be constructed in duplicate so that one pit can be put out of
- (5) Other details shall conform to the National Building Regulations.

## 65. Sub-soil irrigation for disposal of effluent

(1) No Sub-soil irrigation work for disposal of effluent from a septic tank shall be laid out within a premise till a suitable area of open land, the situation and extent and subsoil of which is previously approved by the Competent Authority, is set apart within the premises to be used



as a farm or a garden.

- (2) The area set apart shall be one hectare for every 25,000 liters of effluent per day.
- (3) No part of any area reserved for sub soil irrigation, shall be within a distance of 25 metres from the nearest point of any dwelling unit or any other building used for human habitation or for work or for recreation and of any canal or irrigation well.
- (4) No such works shall be laid out within a distance of 75 metres from any percolation well, tube well, or water-course or stream used or likely to be used for drinking or domestic purposes or for the manufacture or preparation of any articles of food or drink for human consumption.

#### 66. Zero waste water discharge

- (1) The group housings, industries, commercial, institutions and any other building specified by the Competent Authority of the Corporation shall ensure zero waste water discharge to main sewer line and shall install suitable treatment plant for treatment of waste water. The applicant shall submit completion certificate of installation of treatment plant from independent expert agency along with the application of Occupation Certificate.
- (2) For water conservation in the building, provision shall be made whereby the waste water generated from the sources such as dishwashing or washing machines, is used for sub-surface irrigation, or if treated, for non-potable purposes e.g. to flush toilets and for washing cars. Note: The above restriction shall not apply in case of plots up to 100 square metres.

#### 67. Notice and certificate of completion of work

No connection to any public sewer shall be made nor any water borne sanitary and drainage installations intended to be connected through the connection, shall be brought into use until a certificate after completion of these works, has been applied for by the applicant to the Competent Authority of the Corporation and a certificate has been issued by the letter to the effect that the sanitary installations and drainage have been satisfactorily completed in compliance with this Regulations. If no decision is communicated on the application for a certificate within 30 days of the receipt of the application, the certificate shall be deemed to have been granted.

#### 68. Application for connection with public sewer

1) After the grant of a certificate referred to in the building Regulations or in the event of the said certificate having been deemed to have been granted, every person intending to



connect a drain to a public sewer shall apply to the Competent Authority of the Corporation at least seven days before the date on which such connection is required.

- 2) The application shall be accompanied by a certificate referred to the Regulations 67 and such amount as may be laid down from time to time by the Competent Authority of the Corporation and calculated on the basis of the current schedule of rates to meet the cost of the proposed connection.
- On receipt of the application and subject to the requirement of the foregoing clauses, the Competent Authority of the Corporation shall sanction or reject the request.
- 4) In the event of the required connection having been sanctioned, it shall be made only through an officer authorized by the Competent Authority.

#### 69. Sewer connection

- (1) Every drain discharging into a public sewer shall join the sewer obliquely in the direction of the flow of the sewer.
- (2) If practicable, the connection shall be made at an existing junction in the sewer and if not possible, then there shall be an intercepting manhole before the connection.

#### 70. Drainage of roof

The roof of every building shall drain rain water into gutters, chutes or trough and shall be carried down through adequate number of down pipes without causing dampness in any part of the wall or foundation of the building or any adjacent building. Provided that in the case of detached or semidetached building not exceeding one storey, in height, rain water pipe, may be provided for so long as these do not discharge into any public roadway, footpath or on private land of adjoining lease holder.

## 71. Inspection of work

Every person by or for whom any water borne sanitary installation or drainage installation or any other work in connection therewith is carried out for any existing or new building or any other premises, shall at all reasonable times, afford the Competent Authority of the Corporation or any other officer/official duly authorized by him, free access to such water borne sanitary installations or drainage installations or work in connection therewith, for the purpose of inspection.

## 72. Applicability of this Regulations

Where any building permit which has been issued by the Competent Authority of the Corporation before the commencement of the this Regulations and where construction is in progress and has not been completed within the specified period from the date of such approval, the said shall be



deemed to be sanctioned under this Regulations and shall only be eligible for revalidation there under. Accordingly, where the validity of sanction has expired and construction has not commenced, construction shall be governed by the provisions of this Building Regulations.

# 73. Authority of the Chief Executive Officer of WBIIDC

For interpretation or otherwise of these regulations, the decision of the Chief Executive officer, WBIIDC, will be final and binding on the plot holders.

The Chief Executive Officer, WBIIDC shall have the right to demolish and remove any building or structure, whether permanent or temporary, constructed, erected in violation of any of on going provisions and without the prior permission in writing of the WBIIDC.

The Chief Executive Officer, WBIIDC reserves the power and right to add, to amend or to rescind any provision of these regulations from time to time as it deems fit so that the main purpose of the regulation is not pre-judiciously affected. The Chief Executive Officer, WBIIDC also reserves the right to waive, wholly or in part, the applicability of any of the foregoing regulation in respect of any building for valid and exceptional reasons.


# Appendix "A" Qualification and Competence of Architect/ Engineer/ Structural Engineer/ Proof Consultant

SI.	Professional	Qualification	Competency / Functions
No.			· · · · · ·
1	Architect	Registered with valid membership of the Council of Architecture, India as prescribed under the Architect's Act 1972	The prepare, sign all plans and submissions of building plans under Regulations 4 Further supervise construction of any building and issue certificate of supervision and completion of all buildings pertaining to Architectural aspects, as stated in this Regulations.
2	Engineer	Graduate in Civil Engineering from recognized Indian or foreign university, having Associate membership of Institute of Engineer, India.	Supervise all building construction including preparation of service plans, structural drawings, details and calculations of buildings up to 15 metres height.
3	Structural Engineer	Post-Graduate in Structural engineering from recognized Indian or Foreign University, having Associate membership of Institute of Engineer, India with minimum three years experience in structural engineering practice with designing and field work.	The Structural Engineer shall be competent to prepare the structural design, calculations and details for all buildings and undertake their Supervision.
4	Proof Consultant	<ul> <li>Structural Engineer or a group/ firm of Structural Engineers having post -graduate qualification in structural engineering, having Associate membership of Institute of Engineer, India with ten years experience in structural design and evaluation thereof, for multi storied and specialized structure, and/ or an institute of the following type:</li> <li>a) Institute of Structural Engineers (India).</li> <li>b) Central Building Research Institute, Roorkee.</li> <li>c) (Various engineering institutes, like:</li> <li>&gt; Indian Institute of Engineering Science and Technology, Shibpur</li> <li>&gt; FACULTY OF ENGG.&amp; TECH., Jadavpur University, Kolkata</li> <li>&gt; National Institute of Technology;</li> <li>&gt; Any other institute of repute:</li> </ul>	Evaluation/ checking of the structural design of the buildings referred to in relevant Form 4.



# **APPENDIX – B**

### Provisions for Green Building (Please refer to respective provision in these Regulations)

# 1. Water Conservation and Management

Considering an ever increasing demand for water, efforts are needed to substantially reduce water consumption in buildings. Integrated and sustainable water management focusing on least anthropogenic water discharge from human activities should be pursued. The use of water conserving

fixtures, landscaping, rain water harvesting, aquifer recharging and waste-water recycling need to be given due consideration.

# a. <u>Rain Water Harvesting from roof and non-roof areas (by Recharge)</u>

Design rainwater harvesting system to capture at least 'peak-month rainfall' runoff volume from roof and non-roof areas.

# b. Low Water Consumption Plumbing Fixtures

Use water efficient plumbing fixtures (as applicable) whose flow rates meet the baseline criteria in aggregate. The total annual water consumption of the building should not exceed the total base case water consumption computed. The baseline criteria are as below:

### **Baseline Flow Rates / Consumption for Plumbing Fixtures**

Sl. No.	Fixture Type	Maximum Flow Rate / Consumption	Duration Estimated Daily Uses per FTE**
1	Water Closet (Full Flush)	6 LPF	1 for male, 1 for female
2	Water Closet (Half Flush)	3 LPF	2 for female
3	Urinals	4 LPF	2 for male
4	Faucets / Taps*	6 LPF	4
5	Health Faucet*	6 LPF	1
6	Shower Head / Handheld Sprav*	10 LPF	0.1

Source: Uniform Plumbing Code – India

### Notes:

- 1. LPF: Litre per flush
- 2. \*Reporting pressure for these fixtures shall be at 3 bar.
- 3. \*\*Full Time Equivalent (FTE) represents a regular building occupant who spends 8 hours per day in the building. Part-time or overtime occupants have FTE values based on their hours per day divided by 8.
- 4. 4. Plumbing fixtures certified by IGBC under Green Product Certification Programme can be used by the project to show compliance, as and when certified fixtures are available As per MoEF & CC guidelines, water reduction can be achieved up to 36% using water conserving fittings with sensors, auto valves, pressure reducing device wherever possible which can result in significant reduction in water consumption.



# i. Water closets (WCs):

- Conventional toilets use 9 litres of water per flush. Low flush toilets are available with flow rate of 6.0 litres and 3.0 litres of water per flush.
- Dual flush adapters can be used for standard flushing for solid waste and a modified small flush for liquid waste
- > Flush valves with 20-25 mm inlets can be used for restricting the water flow

# ii. WC faucets, wash basin taps, and kitchen taps:

- Faucets and taps can have flow rates upto 25 litre/min. The flow rate can be reduced without compromising on the water pressure by having restrictors, pressure inhibitors and aerators. Auto control valves can further help in reducing wastage.
- Pressure reducing device: Use of aerators can result in flow rates as low as 2 litre/min, which is adequate for hand washing purpose.
- Auto control valves: Installation of magic eye solenoid valve (self-operating valve) can result in water savings. The sensor taps has automatic on and off flow control. It functions with parameters such as distance and timing.

#### iii. Urinals:

- > The conventional urinals use water at a rate of 7.5-11 litres per flush.
- Low flush urinals use only 2 litre/flush
- Use of electronic flushing system or magic eye sensor can further reduce the flow of water to 0.4 litres per flush
- Waterless urinals use no water

### iv. Shower heads:

- > Conventional showerheads can deliver water at flow rates above 25litres/min.
- A perfectly pleasant shower can however, be obtained with flow rates well below 10 litres / min.
- Shower heads fitted with aerators and pressure regulators can reduce flow rates as low as
   4.5litrs/min and their use will show a significant saving.

### c. <u>Waste Water Recycle and Reuse</u>

 Waste Water Treatment: Design an on-site treatment system to handle 100% of waste water generated in the building, to the quality standards suitable for reuse, as prescribed by Central (or) State Pollution Control Board, as applicable.



ii. Waste Water Reuse: Use treated waste water for at least 25% of the total water required for landscaping, flushing, and cooling tower make-up water (if the project uses water-cooled chillers). The treated waste water could be used for landscaping, flushing and air-conditioning.

#### Notes:

- 1. Waste water here refers to both grey and black water
- 2. Waste water can be treated in-situ and reused in-situ
- 3. In case the local authorities insist the project to divert waste water to a centralized/ common waste water treatment plant, then the project can show compliance, by reusing treated wastewater from the centralized/ common/ any other waste water treatment plant
- 4. Treated waste water from other sites/ local authorities through permanent piped connections or other means can also be considered to show compliance
- 5. Captured rain water can also be considered to show compliance
- 6. The water requirement and average number of watering days for landscaping shall be considered as 6 liters per sq.m. per day (i.e. 6 liters/ sq.m./ day) for a minimum of 300 days (or) Justify if the water requirement and the average number of watering days for landscaping is less than the above requirement.

### d. <u>Reduction of hardscape</u>

At least 50% of the total paved area on site should either be soft-paved and/or shaded under trees/ pergolas/ solar photovoltaics, etc.

### Note:

- i. Limit use of turf on the site to conserve water and/ or ensure that landscaped area is planted with drought tolerant / native / adaptive species.
- ii. Avoid disturbance to the site by retaining natural topography (and/ or) design vegetated spaces on the ground, for at least 15% of the site area.
- iii. Restore disturbed site area by designing vegetated spaces over built structures and on the ground, for at least 30% of the site area (including development footprint).
- Preserve or transplant at least 75% of existing fully grown trees within the project site / campus.
- v. Plant tree saplings that can mature into fully grown up trees within the next 5 years on the project site, as per the below criteria (including existing and transplanted trees in the project site).
- vi. The landscape here refers to soft landscaping which includes only pervious vegetation.



- vii. Areas planted with turf should not exceed a slope of 25 percent (i.e., a 4:1 slope).
- viii. Landscape areas over built structures such as basements, podium, roofs, etc., can be considered for the calculation.
- ix. Retaining 'Natural Topography' in its broad sense means preserving the natural features of the terrain such as exposed natural rocks, water body, etc.,
- x. Grass medians, grass pavers, jogging track, open-air theatre, parking areas, driveways, walkways, playground, swimming pool, etc., are considered as site disturbances.
- xi. Native / adaptive vegetation shall be retained as much as possible.
- xii. Potted plants shall not be considered as vegetation.

# 2. Solar Energy Utilization

All efforts need to be made towards optimum and efficient use of energy sources for life sustenance. The increasing thrust on using non-fossil fuel energy for all needs have to be given priority consideration. The tapping of renewable sources of energy for lighting, heating, cooling and ventilation needs, deserve special attention.

**Note:** For captive solar power generation, a minimum of 15 % of sanctioned load is the requirement.

### a. Installation of Solar Photovoltaic Panels

Solar photovoltaic (PV) systems are direct energy conversion systems that convert solar radiation into electric energy. Roof of buildings as well as other exposed areas such as of parking shade, can be installed with solar PV system.

### b. Installation of Solar Assisted Water Heating Systems

i. Solar water heating systems should be made in the building for hospitals, hotels, hostels, guest houses, police men/ army barracks, canteens, laboratories and research institutions, schools and colleges and other institutes.

ii. The solar water heating system should be mandatory in the hospitals and hotels, where the hot water requirements are of continuous nature. These buildings must be provided with auxiliary back-up system.

iii. The use of solar water heating system is recommended in the following type of buildings in Government/ Semi-Government and Institutional buildings where the hot water requirements may not be continuous/ permanent.

- Guest Houses
- Police men/Army barracks
- Canteens



- > Laboratory & Research Institutions where hot water is needed.
- ▶ Hostels, Schools, Colleges and Other Institutes.

The Installation of the electrical back up in all such water heating system shall be optional depending on the nature of requirements of the hot water.

It is suggested that solar heating systems of the capacity of about 100 liters per day based on thermos phonic with necessary electrical back-up be installed at residential buildings like hostels.

In order to facilitate the installation of the solar water heating systems, the new buildings shall have the following provisions:

All such buildings where solar water heating systems are to be installed will have open sunny roof area available for installation of solar water heating system.

- The roof loading adopted in the design of such building should be at least 50 kg per sq. m. for the installation of solar water heating system.
- A solar water heating system can also be integrated with the building design. These either can be put on the parapet or could be integrated with the south facing vertical wall of the building. The best inclination of the collector for regular use throughout the year is equal to the local latitude of the place. The Collectors should be facing south. However, for only winter use the optimum inclination of the Collector would be (Latitude + 15 degrees of the south.). Even if the Collectors are built in south facing vertical wall of building the output from such Collectors during winter month is expected to be within 32% output from the optimum inclined Collector.
- All the new buildings to be constructed shall have an installed hot water line from the rooftop and insulated distribution pipelines to each of the points where hot water is required in the building.
- The capacity of the solar water heating system to be installed on the building shall be described on the basis of the average occupancy of the building. The norms for hospitals, hotels and other functional buildings are given below:

Sr. No.	Type of Buildings	Capacity recommended - liters per ca	pita per
		day	
1	Hospitals	100	
2	Hotels	150	
3	Hostels & other such Building	25	
4	Canteen	As required	
5	Laboratory & Research	As required	
	Institutions		



- An Open area of 3 Sqm would be required for installation of a collector which supplies about 100 liters of water per day. At least 60% of the roof area may be utilized for installation of the system.
- The specification for the solar water heating system laid down by the Ministry of Non-Conventional Energy Sources can be followed. Flat plate collector confirming to Bureau of Indian Standards - latest standard should be used in all such solar water heating systems.

# 3. Energy Efficiency

### a. Low Energy Consumption Lighting Fixtures

Lamps, luminaries, ballasts and the controlling systems should be monitored for achieving energy efficiency through artificial lighting.

# Interior Lighting

- For Residential Buildings
- Lamps Lamps used for general lighting scheme shall conform to the following
- Point Light Source All the point light sources installed in the building for general lighting shall be CFL or LEDs or equivalent.
- Linear Light Source All the linear light sources installed in the building for general lighting shall be T-5 or at least 4 Star BEE rated TFLs or equivalent
- The installed interior lighting power shall not exceed the LPD (lighting power density) value as recommended by ECBC 2007

# > For buildings other than residential

- Lamps Lamps used for general lighting shall conform to the following
- Point Light Source All the point light sources installed in the building for general lighting shall be CFL or LEDs or equivalent.
- Linear Light Source All the linear light sources installed in the building for general lighting shall be T-5 or at least 4 Star BEE rated TFLs or equivalent
- The installed interior lighting power shall not exceed the LPD (lighting power density) value as recommended by ECBC 2007 (Chapter 7, section 7.3)
- Lighting controls shall be installed as recommended by ECBC 2007 in buildings with connected load of 100 kW or more.
- \* Exemption to (a) Spaces in the building where high bay lighting is required



# ii. Exterior Lighting

For Commercial, Multi-storey Residential Complexes, Group Housing Societies, Apartment complexes, etc. Lamps – External lighting sources shall have minimum luminous efficacies as per the table given below:

Sr. No.	Light Source	Minimum allowable luminous efficacy (lm/W)
1	CFLs (compact fluorescent lamps)	50
2	LEDs (light emitting diodes)	50
3	Fluorescent Lamps	75
4	Metal Halide Lamps	75
5	High Pressure Sodium Vapour	90
	Lamps	

# Minimum allowable luminous efficacy of various light sources

- The installed exterior lighting power density for the respective applications shall be in accordance with ECBC 2007
- > Lighting controls shall be installed as recommended by ECBC 2007 for external lighting.

# b. Energy Efficiency in HVAC systems design (Applicable to all use premises) (mandatory for commercial and desirable for residential):

- > Energy efficiency in HVAC system design for buildings
- The inside design conditions of a conditioned space shall conform to National Building Code 2005 The outside design conditions shall conform to National Building Code 2005
- > Efficiency of the equipment installed shall comply with ECBC 2007 requirement
- The distributed cooling systems (Unitary air conditioners/ Split air conditioners) shall be at least BEE 3 Star rated products.
- ➢ To avoid the conductive heat losses through piping and ductwork insulation shall be provided as recommended by ECBC 2007

### 4. Waste Management

Facilitate segregation of waste at source to encourage reuse or recycling of materials, thereby avoiding waste being sent to landfills.

### a. <u>Segregation of Waste</u>

i. Building-level Facility

Provide separate bins to collect dry waste (paper, plastic, metals, glass, etc.,) and wet waste (organic), at all the floors and common areas of the building, as applicable. Divert the collected waste to a centralized facility, which is easily accessible for hauling.

ii. Centralized Facility

- In addition to dry and wet waste bins, provide separate bins for safe disposal of the following hazardous waste, at the centralized facility:

Batteries



- 'e' waste
- Lamps
- Medical waste, if any

**Note:** The project has to follow the Hazardous Waste Management Guidelines as prescribed by the Ministry of Environment & Forest (MoEF), Government of India.

# b. Organic Waste Management

Ensure effective organic waste management, so as to avoid domestic waste being sent to landfills and to improve sanitation & health. Install an on-site waste treatment system for handling at least 50% of the organic and landscape waste generated in the building (including tenant-occupied areas). The generated manure or biogas shall be utilized as appropriate.

### Note:

For calculation, food waste can be considered as 0.1 kg per person per day (i.e. 0.1 kg/ person/ day) or as prescribed by the local byelaw, whichever is more stringent; landscaped waste can be considered as 0.25 kg per sq.m per day (i.e. 0.25 kg/ sq.m/ day).



# FORM 1 Form of application

From:		
Institutional		
Educational	Any other	
Commercial	Industrial	
Residential	Warehousing	
Class of Building –		

# To: The chief Executive Officer WBIIDC, DJ-10, Sector II, Saltlake City, Kolkata 700 091

Sir,

I/We apply for permission to erect/re-erect/add/alter	(description of the building
/ structure) in accordance with the plans submitted herewith on P	Plot no; at Industrial
Growth Centre / Park of WBIIDC in the district of (strike	out whichever not applicable)

- 2. I/We attach:
  - a. Lease holding documents- viz. lease deed/ agreement to lease and possession certificate in the name of lease holder issued by the allotment authority or permission to use the land issued by Competent Authority;
  - b. Up to date payment receipt clearing payment of user and other charges.
  - c. site plan (in triplicate) showing the position of site proposed to be built upon as required by the Regulations along with an un-editable Compact Disc/DVD or any other electronic medium permissible by Competent Authority of the Corporation from time to time containing the drawings so submitted;
  - d. Plans, elevations and sections (in triplicate) as required by the Regulations along with an un-editable compact Disc/DVD or any, other electronic medium permissible by Competent Authority of the Corporation from time to time containing the drawings so submitted;
  - e. Drainage plans (in triplicate), as required by Regulations along with an un-editable compact Disc/DVD or any, other electronic medium permissible by Competent Authority of the Corporation from time to time containing the drawings so submitted;
  - f. Water Supply Pipeline Network Layout & Water Storage Tanks for Fire & Essential Storage along with water requirements computations (in triplicate), as required by Regulations along with an un-editable compact Disc/DVD or any, other electronic medium permissible by Competent Authority of the Corporation from time to time containing the drawings so



submitted;

- g. Detailed Soil Test Report with recommended Safe Bearing Capacity and computations (in triplicate for record), as required by Regulations along with an un-editable compact Disc/DVD or any, other electronic medium permissible by Competent Authority of the Corporation from time to time containing the Soil Test Report so submitted;
- h. Structural drawings (for record), as required in Building Regulations;
- i. Structural Analysis and Design Calculations both in soft files along with an un-editable compact Disc/DVD and in printed bound volumes in triplicate [for record]
- j. Specifications of the proposed building (in triplicate) in Form 2;
- k. fire safety design as required under National Building Code or under West Bengal Fire Services Act, 1950, as applicable;
- I. Heating, Ventilation, Air-Conditioning (H.V.A.C.) service plan;
- m. Certificate of conformity to regulation and structural safety for the relevant buildings (depending upon type of risk) in Form 3 or 4; and
- n. Certificate for incorporation of Green Building Features in Form 15
- o. Scrutiny fee @ Rs. 10 per square metre deposited as per prescribed mode \_\_\_\_\_\_
- 3. The construction of the building will be undertaken as per the approved building plans, structural design given by the Structural Engineer, and will be supervised through the following Architect/Engineer:
  - A. Architect :
    - I. Name of Architect
    - II. Council of Architecture Registration No. \_\_\_\_\_\_ valid up to \_\_\_\_\_\_
    - III. Complete Address
    - IV. E mail
    - V. Mobile No.
  - B. Engineer:
    - I. Name of Engineer
    - II. Qualifications
    - III. Complete Address
    - IV. E mail
    - V. Mobile No.

Dated \_\_\_\_\_

Enclosures

Signature of Applicant Phone No E-mail address



# Specifications

The materials to be used in the construction to be clearly specified under the following heads:-

Items	Specifications
(a)	Foundations
(b)	Superstructure
(c)	Walls
(d)	Damp-proof course
(e)	Floors
(f)	Roofs
(g)	Windows and Doors and other wood-work
(h)	Steel work
(i)	Internal finish
(j)	External finish

Signature of Applicant

Signature of Architect / Engineer

- I. Complete Address
- II. E-mail
- III. Mobile no.



# Certificate of conformity to Regulations and structural safety For <u>Buildings of Low & Moderate Risk</u>

Certificate to be submitted along with the building application in Form 1 duly signed by the Architect and the Structural Engineer

# Details of the building for which the certificate is issued by the Applicant, Architect & Engineer

Name of the B	uilding:	
Plot No	in	Industrial Growth Centre / park of WBIIDC in the district of
	, West Bengal	
Mouza	J.L. No	, Dag no
Name of the le	ase holder	
Complete addr	ess of the lease hold	der
A. Building Pl	an:	

- I. Name of Architect:
- II. Council of Architecture Registration No. \_\_\_\_\_ Valid up to \_\_\_\_\_
- III. Complete Address
- IV. E-Mail
- V. Mobile no.

### B. Structural Design:

- I. Name of Engineer:
- II. Qualifications:
- III. Complete Address
- IV. E-Mail
- V. Mobile no.

### Certificate

It is hereby certified that the plans submitted in Form 1 for the building detailed above, are in accordance with the Building Regulations for Industrial Growth Centres, Parks & Estates in West Bengal, 2016 and the approved zoning plan of the plot. The structure has been designed in accordance with the provisions of the National Building Regulations and the relevant Indian Standard Regulations (with latest amendments) including Bureau of Indian Standard Regulations for structures resistant to earthquakes and other natural hazards. The local soil conditions, its load bearing capacity and the underground water table etc. have been kept in view while designing the same.

Dated	

Signature of Lease holder
(No Digital Signatures are required)
Mobile no.
E-mail

Signature of Architect

Signature of Structural Engineer



# Certificate of conformity to Regulations and Structural safety For **Buildings of Higher Risk**

Certificate to be submitted along with the building application in Form 1 duly signed by the Architect and Structural Engineer and the Proof Consultant

# Details of the building for which the certificate is issued by the Applicant, Architect & Engineer

Name	of the Building:	
Plot No	oin	Industrial Growth Centre / park of WBIIDC in the district of
	, West Bengal	
Mouza	J.L. No	, Dag no
Name	of the lease holder	
Comple	ete address of the lease holde	r
А.	Building Plan:	
١.	Name of Architect:	
II.	Council of Architecture Regis	stration No Valid up to
III.	Complete Address	
IV.	E-Mail	
V.	Mobile no.	
В.	Structural Design:	
١.	Name of Engineer:	
II.	Qualifications:	

- III. Complete Address
- IV. E-Mail
- V. Mobile no.

### Certificate

It is hereby certified that the plans submitted in Form1 for the building detailed above, are in accordance with the Building Regulations for Industrial Growth Centres, Parks & Estates in West Bengal, 2016 and the approved zoning plan of the plot. The structure has been designed in accordance with the provisions of the National Building Regulations and the relevant Indian Standard Regulations (with latest amendments) including Bureau of Indian Standard Specifications for structures resistant to earthquakes and other natural hazards. The local soil conditions, its load bearing capacity and the underground water table etc. have been kept in view while designing the same.

Dated

ed		
VI. Signature of Lease holder	Signature of Architect	Signature of Structural Engineer
Mobile no.	Mobile no.	Mobile no.
E-mail	E-mail	E-mail



The structural design has been checked and has been found to be in order. The design is in accordance with the provisions of the National Building Regulations and the relevant Bureau of Indian Standard Regulations (with latest amendments) including Bureau of Indian Standard specifications for structures resistant to earthquakes and other natural hazards. The local soil conditions, its load bearing capacity and the underground water table etc. have been kept in view while designing the same.

Dated \_\_\_\_\_

**Signature of Proof Consultant** Mob. No. E-mail



# FORM 5 Form of Sanction

From:

**The Chief Executive Officer, WBIIDC** DJ-10, Sector Ii, Saltlake City, Kolkata 700 091

To:

Memo No Dated the \_\_\_\_\_

Dear Sir/Madam

With reference to your application dated ...... for the grant of sanction to erect/ re-erect/ add to/alteration in the building to carry out the development specified in the said application relating to Plot No \_\_\_\_\_Situated in/at ......Industrial Growth Centre / park, I am to state that the same has been sanctioned on ...... by the WBIIDC subject to the following conditions and corrections made on the plans:-

- 1. The plans are valid up to ..... day of month ..... year......
- 2. The construction will be undertaken as per sanctioned plan only and no deviation from the Regulations will be permitted without prior sanction. Any deviation done against the Regulations is liable to be demolished and the supervising Architect, engaged on the job will run the risk of having his license cancelled.
- 3. Violation of building Regulations will not be compounded.
- 4. It will be duty of the owner of the plot and the Architect preparing the plan to ensure that the sanctioned plans are as per prevalent building Regulations. If any infringements of the Regulations remain unnoticed the WBIIDC reserves the right to amend the plans as and when the infringement comes to its notice and WBIIDC will stand indemnified against any claim on this account.
- A notice in writing shall be sent to WBIIDC before commencement of the erection of the building as per Regulations similar notice will be sent to WBIIDC when the building has reached up to plinth level.



- 6. The Lessee shall not occupy or permit it to occupy the building or use permit the building or part there of affected by any such work until occupancy certificate is issued by the Authority.
- 7. WBIIDC will stand indemnified and kept harmless from all proceedings in courts and before other authorities of all expenses/losses/claims which the WBIIDC may incur or become liable to pay as a result or in consequences of the sanction accorded by it to these building plans.
- 8. The door and window leaves shall be fixed in such a way that they shall not when open project on any street.
- 9. The Lessee will convert the house into dwelling units of each floor as per the approved parameters of the project and shall use the premises only for residential purpose.
- 10. The building shall not be constructed within minimum mandatory distance as specified in Indian Electricity Rules and as per the requirement of WBSEDCL from the voltage lines running on any side of the site.
- 11. The land left open on consequences of their enforcement of the set back rule shall Form part of the public street.
- 12. The thickness of outer walls will be maintained at least 0.23 mtR. (9").
- 13. The basic levels should be got ascertained from the concerned at the site of the construction.
- 14. The owner will display boards of minimum size of 3 ft. X 4ft. indicating the following
- i. Plot No. and location
- ii. Name of lessee/owner
- iii. Use of the property as per lease deed
- iv. Date of sanction of Building Plan with No.
- v. Sanction valid up to
- vi. Use of different floors and areas sanctioned
- vii. Name of the Architect & his address
- viii. Name of the contractor and his address
- 15. The provision of the display board on the construction site is a mandatory requirement and non-compliance of the same will invite a penalty of Rs. 5000/-.
- 16. It will be ensured that the construction / demolition work shall be carried out in such a manner that no disturbance/nuisance is caused to residents of the neighborhood.
- 17. It will be ensured by the owner and the Architect that during the construction the building plans sanctioned shall satisfy the water harvesting requirement as well as waste water



recycling system for building with minimum anticipated discharge of 10,000 liters and above per day of waste water as stipulated under these Regulations and the information given there in.

- 18. As per this regulations the owner through his Architect/Engineer shall give notice to the WBIIDC in the proforma as per Form 7 given herein on completion of work up to plinth level to enable WBIIDC to ensure that work conform to the sanctioned building plans and Building Regulations. Further completion-cum-occupancy certificate will be applied and obtained as per regulations.
- 19. The building shall be constructed strictly in accordance with the sanction plan as well as in accordance with the certificate submitted jointly by the owner/Architect/Structural Engineer for safety requirement as stipulated in these Building Regulations, and the structural Design including safety from any natural hazards duly incorporated in the design of the building.
- 20. The debris accumulated during the construction will be removed on weekly basis.
- 21. During construction, it is mandatory on the part of the owner to properly screen the construction site of the main road by means of erecting a screen wall not less than 8 ft. in height from ground level which is to be painted to avoid unpleasant look from the road side. In addition to this a net or some other protective material shall be hoisted at the facades or the building to ensure that any falling material remains within the protected area.
- 22. Noise related activities will not be taken up for construction at night after 10.00 PM.
- 23. Compliances of following to be strictly maintained :
- Every builder or owner shall put tarpaulin on scaffolding around the area of construction and the building. No person including builder, owner can be permitted to store any construction material particularly sand on any part of the street, roads in any common place.
- ii. The construction material of any kind that is stored in the site will be fully covered in all respects so that it does not disperse in the air in any Form.
- iii. The construction material and deform13is shall be carried in the trucks or other vehicles which are fully covered and protected so as to ensure that the construction deform13is or the construction material does not get dispersed into the air or atmosphere, in any Form whatsoever.
- iv. The dust emissions from the construction site should be completely controlled and all precautions taken in that behalf.
- v. The vehicles carrying construction material and construction deform13is of any kind should be cleared before it is permitted to ply on the road after unloading of such material.



- vi. Every worker working on the construction site and involved in loading, unloading and carriage of construction material and construction deform13is shall be provided with mask to prevent inhalation of dust particles.
- vii. Every owner and or builder shall be under obligation to provide all medical help, investigation and treatment to the workers involved in the construction of building and carry of construction material and construction deform13 relatable to dust emission.
- viii. It shall be the responsibility of every builder to transport construction material and deform13 is waste to construction site, dumping site or any other place in accordance with rules and in terms of this order.
- ix. All to take appropriate measures and to ensure that the terms and conditions of the earlier order and these orders should strictly comply with by fixing sprinklers, creations of green air barriers.
- x. Compulsory use of wet jet in grinding and stone cutting.
- xi. Wind Form 13eaking walls around construction site.
- xii. All efforts to be made to increase the 'tree cover' area by planting large number of trees of various species depending upon the quality content of soil and other natural attendant circumstances.
- xiii. All the builders who are building commercial, residential complexes which are covered under the EIA Notification of 2006 shall provide green belt around the building that they construct.
  - 24. The approving authority approves Architectural Drawings/Development Control norms with respect to the Building Regulations and Master Plan provisions only. The technical drawings/documents submitted by the owner/consultant/Architect/Engineer/Structural Engineer/Landscape Architect /Urban Designer /Engineer for Utility Services are considered as part of the records/inFormation supporting the building permit only. The responsibility of the correctness of inFormation/application of technical provisions fully vests with the owner/consultant/ Architect/Engineer/Structural Engineer/Landscape Architect/Engineer/Structural Designer/Engineer/Landscape Architect/Engineer/Structural Designer/Engineer for Utility Services are considered as part of the records/inFormation supporting the building permit only. The responsibility of the correctness of inFormation/application of technical provisions fully vests with the owner/consultant/ Architect/Engineer/Structural Engineer/Landscape Architect /Urban Designer/Engineer for Utility Services and shall be liable as per laws.
  - 25. No puncture, perforation, cutting, chiseling, trimming of any kind for any purpose are permitted in the structural members (beams / columns) submitted by the structural engineer as structural drawing for building permit in accordance with the relevant structural codes.



26. The sanction will be void ab initio if any material fact has been suppressed or mis-represented of if auxiliary conditions mentioned above are not complied.

Plot No	in	Industrial Growth Centre / park of WBIIDC in the district of
	, West Bengal	
Mouza	J.L. No	, Dag no
Name of the l	ease holder	

Encl: One set of sanctioned plan.

# **REFUSAL OF SANCTION**

With reference to your application No	dated	for the grant of
sanction for the erection of building/exe	cution of work in House No	_ Plot No
_ Situated at	I am directed to inForm you that the	sanction has been
refused on (date	e) on the following grounds.	

1

2

3

4

**Competent Authority** 



# FORM 6 Form for Notice of Commencement of Work

To:

The Chief Executive Officer

**Temporary Address** 

(with STD Regulations)

Telephone No.

Mobile No.

E-mail address

WBIIDC, DJ-10, Sector II, Saltlake City Kolkata 700 091

# Sir,

l/ we	hereby give notice	that the erection	on/ re-e	rection/	addition	/ alte	ratior	n of the	building	on
Plot No	in	Indu	ustrial G	rowth Ce	entre / pa	ark of	fWBII	DC in tl	ne distric	t of
	, West	Bengal, at M	ouza _		J.L. No	o			_, Dag	no.
	shall be	commenced	on _		_(date)	as	per	your	permiss	ion
	granted vide	memo no		_dated		u	nder	the su	pervision	of
	Architect (Regi	stration No		_/ Engin	eer, and	in ad	corda	ance wi	th the pl	ans
sanctioned	l									
Date :										
Place :										
				<b>C</b> :		h a <b>A</b>				
				Signa	ture of t	ne Ap	plicar	nt / Lea	se noide	r
Nomo	of the Analisent									
Name	of the Applicant									
Perma	anent Address									



# FORM 7 Form for Certificate of Completion of Work up to plinth Level

To **The Chief Executive Officer** WBIIDC, DJ-10, Sector II, Saltlake City Kolkata 700 091

Sir,

This is to Certify that the construction up to plinth level has been completed for the \_\_\_\_\_Building in plot no. \_\_\_\_\_ of \_\_\_\_Industrial Growth Centre / park of WBIIDC in the district of \_\_\_\_\_\_, West Bengal, at Mouza \_\_\_\_\_\_ J.L. No. \_\_\_\_\_, Dag no. \_\_\_\_\_\_in accordance with the Sanctioned Building Plan[Reference: your permission No.......dated......] under my / our supervision.

# Yours faithfully,

Ι.	Signature of Lease holder	Signature of Architect	Signature of Structural Engineer
	Mobile no.	Mobile no.	Mobile no.
	E-mail	E-mail	E-mail

Date:....



# Form of Consent / Comment on Certificate of Completion of Work up to plinth Level

From:

**The Chief Executive Officer, WBIIDC** DJ-10, Sector Ii, Saltlake City, Kolkata 700 091

To:

Memo No

Dated the \_\_\_\_\_

 Reference your Certificate completion of Building Construction at Plot No. \_\_\_\_\_\_\_in

 \_\_\_\_\_\_\_Industrial Growth Centre / park of WBIIDC in the district of \_\_\_\_\_\_\_,

 West Bengal, at Mouza \_\_\_\_\_\_\_ J.L. No. \_\_\_\_\_\_, Dag no. \_\_\_\_\_\_in accordance with the plans submitted with it.

Permission is hereby-

- (i) Granted/sanctioned for further progressing with aforesaid construction subject to the provisions of the respective Acts and Building Regulations for Industrial Growth Centres, Parks & Estates in West Bengal, 2016 with its amendments, terms and conditions;
- (ii) Progressing further construction is rejected for reasons given below

**Enclosures :** 

**Competent Authority** 



# FORM 9 For <u>Buildings of Low & Moderate Risk</u> APPLICATION FOR PERMISSION TO OCCUPY

From:

\_\_\_\_

To:

\_\_\_\_

Sir,

I/ we hereby give you notice that the building / part of building described below and sanctioned vide your order no. \_\_\_\_\_\_ dated \_\_\_\_\_\_ has been completed on \_\_\_\_\_\_ in all respect according to the sanctioned plans and the structural design made for the same and the suggested modifications have been carried out.

# Description of the building

Plot No	in			Industrial Growth Centre / park of WBIIDC in the distri								
,	West	Bengal,	at	Mouza		J.L.	No.	,	Dag	no.		
Name of the lease hole	der											
Mobile No												
E-mail												
Complete address of t	he leas	e holder							_			

- 2. The modifications made to the building plans and carried out at site during the course of construction are submitted herewith :
- 3. Corresponding to the above medications made in the building plans, the necessary amendments were also carried out in the structural design and implemented at site.
- 4. Completion Certificate from the Architect / Engineer who supervised the construction of the building is submitted herewith.
- 5. Kindly issue an Occupation Certificate as required by Building Regulations for Industrial Growth Centres, Parks & Estates in West Bengal, 2016.

Date :\_\_\_\_\_

# Signature of the Applicant / Lease holder

(No digital signatures are required) Signature of the Architect / Engineer supervising the construction at site Complete Address

E-mail address

Mobile No.



# FORM 10 For <u>Buildings of Low & Moderate Risk</u> COMPLETION CERTIFICATE BY AN ARCHITECT

I do hereby certify:

- 1. That the following work has been supervised by me and has been completed to my satisfaction in accordance with sanctioned plan.
- 2. That the workmanship and the whole of the materials used are good; that no provision of Building Regulations for Industrial Growth Centres, Parks & Estates in West Bengal ,2016 and no requisition made, conditions prescribed or order issued there under has been violated in the course of the work.

Details of construction (on floor-wise along with covered area on each floor)

 Description of the building :

 Plot No. \_\_\_\_\_\_\_in \_\_\_\_\_\_\_Industrial Growth Centre / park of WBIIDC in the district of \_\_\_\_\_\_, West Bengal, at Mouza \_\_\_\_\_\_ J.L. No. \_\_\_\_\_\_, Dag no. \_\_\_\_\_\_

 Dated

 Signature of the Architect

 Complete Address

- I. Complete Address
- II. E-mail address
- III. Mobile No.

### **Enclosure : Certified Completion Drawing in Triplicate**



# FORM 11 For <u>Buildings of High Risk</u> APPLICATION FOR PERMISSION TO OCCUPY

From:

To:

The Chief Executive officer WBIIDC, DJ-10, Sector II, Saltlake City, Kolkata 700 019

Sir,

I/ we hereby give you notice that the building / part of building described below and sanctioned vide your order no. \_\_\_\_\_\_ dated \_\_\_\_\_\_ has been completed on \_\_\_\_\_\_ in all respect according to the sanctioned plans and the structural design made for the same and the suggested modifications have been carried out.

### Description of the building

Plo	•t No	in		Industrial Growth Centre / park of WBIIDC ir						ct of
		, West E	Bengal, at	Mouza		J.L. No	D	,	Dag	no.
Na	me of the lease ho	older								
Mo	bile No									
E-n	nail									
Co	mplete address of	the lease	holder _						-	
3.	The modification construction are	ns made t submitted	o the bui herewith	lding plan :	s and carı	ied out	at site	during the	course	e of

3.	Corresponding	to	the	above	medications	made	in	the	building	plans,	the	necessary
	amendments w	ere	also d	carried c	out in the struc	ctural de	esig	n and	l impleme	nted at	site.	

5. Kindly issue an Occupation Certificate as required by Building Regulations for Industrial Growth Centres, Parks & Estates in West Bengal, 2016.

Date :\_\_\_\_\_

Signature of the Applicant / Lease holder Complete Address E-mail address Signature of the Architect Complete Address E-mail address Mobile No. Signature of the Engineer

Mobile No.

<sup>4.</sup> Completion Certificate (Form 10) from the Architect / Engineer who supervised the construction of the building is submitted herewith.



# FORM 12 For Buildings of Higher Risk

Completion Certificate by an Architect / Engineer in respect of building on :

Plot No	in			Industrial Growth Centre / park of WBIIDC in the							
	, West	Bengal,	at	Mouza		_ J.L.	No.		,	Dag	no.
Name of the lease	 e holder										
Complete address	s of the lease	e holder								_	

It is hereby certified that the above work has been supervised by me and has been completed to my satisfaction in accordance with the sanctioned building plans and its structural design. The workmanship and all the material used for construction meet the specifications laid down in the national Building Code. No provision of the Building Regulations for Industrial Growth Centres, Parks & Estates in West Bengal, 2016 and no Regulations made, conditions prescribed or order issued there under has been transgressed in the course of the work.

Dated

### A. Signature of the Architect

- a. Complete Address
- b. E-mail address
- c. Mobile No.

and

- B. Signature of the Engineer supervising the construction at site
  - d. Complete Address
  - e. E-mail address
  - f. Mobile No.

**Enclosure : Certified Completion Drawing in Triplicate** 



# FORM 13 FORM OF OCCUPATION CERTIFICATE

From:

The Chief Executive officer, WBIIDC, DJ-10, Sector II, Saltlake City, Kolkata 700 091

To:

Memo No Dated the \_\_\_\_\_

With reference to your notice of completion date	d, I hereby certify that the building
as per description below and certified plans of	whose Bldg. plan
were sanctioned vide letter No	dated, the
NOC has been approved on	. The site has been inspected with reference to
Building Regulations, hygienic and sanitary condit	ions inside and in the surroundings and is declared
fit for occupation.	

The approving Authority approves Architectural Drawings/Development Control norms with respect to the Building Regulations only. The technical drawings/documents submitted by the owner/consultant/Architect/Engineer/Structural Engineer/Landscape Architect /Urban Designer/ Engineer for Utility Services are considered as part of the records/inFormation supporting the building permit only. The responsibility of the correctness of inFormation/application of technical provisions fully vests with the owner/consultant/ Architect/Engineer/Structural Engineer/Landscape Architect /Urban Designer/Engineer for Utility Services and shall be liable as per laws.

The structural stability of the building is based on the certificate given jointly by the Owner/Architect/ Structural Engineer & Proof Consultant along with one set of Structural Drawings, incorporating therein the provisions of Structural Safety as specified in the relevant prevailing IS Codes/Standards/Guidelines stated in this Regulations. For the fire-safety clearances are to be obtained from respective authority of the fire Department, Govt. of West Bengal. The Authority /Local Body shall not have any responsibility for any loss caused to the building from any natural hazard / calamity.

Completion Certificate is issued for Plot No	as per enclosed
drawings.	

**Competent Authority** 



# FORM 14 Form of Rejection on respect of Occupancy Certificate

From:

**The Chief Executive officer,** WBIIDC, DJ-10, Sector II, Saltlake City, Kolkata 700 091

To:

Memo No Dated the \_\_\_\_\_

Dear Sir / Madam,

1) With reference to your letter dated \_\_\_\_\_\_

2) With reference to your notice of completion dated \_\_\_\_\_\_

3) In continuation of this office letter of even no. \_\_\_\_\_\_ dated on the subject noted

above, I am directed to inform you that your case has been examined and occupancy certificate is rejected for the reasons as given below:-

I am directed to request you to comply with the following: -

(a) SUBMISSION OF THE FOLLOWING DOCUMENTS

- (1)
- (2)

(b) RECTIFICATION OF THE FOLLOWING DEVIATIONS

- (1)
- (2)

**Competent Authority** 



# FORM 15 CERTIFICATE FOR INCORPORATION OF GREEN BUILDING FEATURES

Plot No	in			Industrial Growth Centre / park of WBIIDC in the							
	_, West	Bengal,	at	Mouza		J.L.	No.		, Dag	no.	
Name of the lease h	nolder										
Complete address of	of the lease	e holder									

I/ We certify that the building plans submitted for approval satisfy the Green Building provisions given in Building Regulations, and the inFormation given therein is factually correct to the best of my knowledge and understanding.

Signature of Architect/ Engineer\_\_\_\_\_ Name of Architect/ Engineer\_\_\_\_\_ Address of Architect/ Engineer\_\_\_\_\_

Date \_\_\_\_\_

COUNTER SIGNED BY Signature of Owner(s) \_\_\_\_\_ Name of Owner(s) \_\_\_\_\_ Address of Owner(s) \_\_\_\_\_ Date \_\_\_\_\_